Analysis: Smart Meter and Smart Grid Problems

Legislative Proposal
December 2012

Original edition sponsored by

Sonoma County Citizens
Against Smart Meters

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Second Edition
December 2012

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Introduction

This book was originally written to inform California legislators about Smart Meters. Though the proposals at the end have some California-specific language, and a number of California laws are cited, most of the information is general and is intended for any state or country.

This updated edition includes new information.

The situation with Smart Meters has not changed. As you will see, the problems created by these meters are far-ranging and extremely serious. To disregard them is lunacy.

Yet Smart Meters are still being “deployed” (the term used by the utility industry), and the problems are becoming more and more difficult to hide. Most political figures continue to discount or ignore the problems. Some officials have even adamantly refused to take any action. A review of campaign contributions can reveal why.

The news media in many areas of the country is not covering Smart Meters or is misinforming the public, and/or is maligning those who raise the various issues. This leaves the public in the dark about this program and its problems.

We need safe and reliable energy and water service. We also need a secure grid throughout the United States. I hope this information moves the public and policy makers to take action.

I have made every attempt to provide accurate information. I apologize for any errors, and I will correct them in subsequent editions.

Nina Beety
December 2012

What is a Smart Meter?

Smart Meters are new electric, gas, and water digital meters that send usage information via radiofrequency electromagnetic radiation (RF) to a utility company. They are primarily called AMI (advanced metering infrastructure) or AMR (automated meter reading) meters, and also have other trademarked names (for example, ERT, AWS).

In much of California, electric and gas Smart Meters are wireless. Smart Meters can also be wired. The meters collect our energy usage information in very detailed format and transmit that information directly to the utility company every day, throughout the day. Most electric meters use a mesh network system in which the meters relay the energy information from meter to meter until it arrives at a collector meter, which then sends the information on to an antenna, usually mounted on a utility pole. From there, it is transmitted to the utility company. Wired Smart Meters send the usage data via electrical lines or telephone lines.

Electric Smart Meters have a second antenna to “talk” to new Smart appliances and devices. This is called the Home Area Network (HAN). These appliances and devices, such as thermostats, air conditioning units, refrigerators, washing machines, dishwashers, and various sensing units are outfitted with 2-way transmitter/receivers which send to and receive information from the Smart Meter throughout the day.

The natural gas Smart Meters used by California investor-owned utilities are star system, which means these Smart Meters individually communicate directly with an antenna often mounted on a utility pole. Some electric Smart Meters also use a star system.

AMR meters usually refer to meters that use a drive-by reader to collect the data from the meter. Water meters are often AMR. Data collection is done at intervals, such as once a month. Some meters download information wirelessly on command by that reader; other AMR meters are constantly transmitting, and the reader “grabs” that transmission whenever they drive by. There is very little difference between AMI and AMR meters, and installing collector antennas in a neighborhood can enable some AMR meters to become full-fledged AMI meters with complete wireless connection to the utility company.

Non-Smart digital meters can have the capacity to be upgraded to Smart Meters merely by installation of a module which enables the wireless function. The switching mode power supply of digital meters is a major problem, as it is with AMI/AMR Smart Meters. This is one of the many issues covered in this report.

Smart Grid/Smart Meter problems and issues

Overview: The Smart Grid/Smart Meter program has created a growing array of serious problems needing immediate action. The mounting public health emergency and the potential for a national cyber-security and hacking crisis are just two issues that demonstrate the deeply flawed nature of the Smart Grid, Smart Meter, and Home Area Network programs. Doing nothing is not an option. The costly impacts to the public will continue to grow until this program is halted.

These problems include:

- Overcharging, accuracy, and the Structure Group report
- Reliability questions
- Privacy invasion
- Fires and electrical problems
- Health problems
- Switching mode power supply (SMPS)
- Interference with electronics
- Interference with medical devices
- Hacking/cyber-security
- Remote disconnection of power
- Vulnerability of nuclear facilities
- Vulnerability to electromagnetic pulses (EMPs)
- No utility liability for hacked data
- Increased burglary risk
- Increased metal and infrastructure corrosion
- impacts to building integrity
- Job loss
- Environmental costs
- Smart Grid/Smart Meters – energy intensive
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- Costs exceed benefits
- Fraudulent claims and unavailable information
- Strong-arm tactics by CPUC and utilities
- Violation of jurisdiction and mandate by CPUC
- CPUC procedural violations

- No CEQA EIR
- Violation of state and federal laws
- Overburdening utility easements
- Criminal negligence
- Strengthening utility monopolies
- Ignoring realities and open process

Smart Grid/Smart Meter problems and issues:

OVERCHARGING, ACCURACY, AND THE STRUCTURE GROUP REPORT

Customers have seen their bills go up for the same energy use, bills sometimes doubling, tripling and more – including for empty houses. This surfaced in Bakersfield and Fresno initially, and contrary to PG&E claims, the bill increases started in the winter time, not in the summer, according to Bakersfield Californian columnist Lois Henry.

The Structure Group was hired to evaluate these issues, but their hiring created some controversy. A cursory examination of Structure Group's own website reveals why -- this is not an independent auditing firm, though they, the utility industry, and the CPUC repeatedly state they are. This is a company which is thoroughly involved in Smart Grid deployment.

> "Structure assists companies in implementing their Smart Grid initiatives"
> www.thestructuregroup.com

Furthermore, Structure Group lists PG&E as a client. They also employ former PG&E personnel.

Smart Grid News lists Structure Group under "Key Players" as one of its 25 "industry's leading smart grid companies". http://www.smartgridnews.com/artman/publish/Key_Players/

> ...Structure's website indicates that it has worked with more than 120 utilities and energy companies in the United States and Europe. In one such arrangement discussed on the website, the firm was hired by an Oklahoma utility to help build support for its rollout of "smart grid" technology, which involves smart meters. The consulting firm hired to investigate Pacific Gas and Electric Co.'s SmartMeter system performed work for the utility as recently as last year, and at least two of the Houston-based firm's executives are former managers within PG&E's parent company.
>
> Bakersfield.com: "Firm hired to study SmartMeters has had business ties to PG&E, March 31, 2010: http://www.bakersfield.com/news/local/x2143248587/Firm-hired-to-study-SmartMeters-has-had-business-ties-to-PG-E

> "TURN is very concerned about the Structure Group because of the fact that they have been a consultant to PG&E from 2002 to 2008," says TURN spokesman Mark Toney. "What that means, is they have a vested interest making sure that the SmartMeters are exonerated."
>
> KGO-TV: "Texas utilities admit billing errors with SmartMeters," April 14, 2010: http://abclocal.go.com/kgo/story?section=news/7_on_your_side&id=7386817

However, the CPUC continues to assert that this was an independent investigation.

When the report was released, the CPUC's Division of Ratepayer Advocates questioned the findings (October 29, 2010):

"The Commission should establish a process that allows interested parties to evaluate and comment on the Structure Group Report. The Commission should then make its own findings on the reasons for the problems consumers have experienced with PG&E's SmartMeters, and decide whether they have been adequately addressed."

As an example of a question about the analytic approach used, the Structure Group's study sampled a number of meters in the laboratory and field, and relied on the results of this survey to conclude that the entire population of PG&E's electric SmartMeters is accurate (8). However, for the critical field end-to-end test, only four (4) meters were tested and Structure Group concluded that they "did not identify issues during the testing of the meter billing system accuracy". This statement is not the same as confirming that the complicated communication and data management systems and new interfaces with the existing billing system are not subject to errors. Similarly, Structure Group noted instances where PG&E swapped out high bill complaint meters in advance of previously scheduled field tests. The statement that "Structure did not identify malicious intent on the part of PG&E" does not address the more pertinent question of whether these instances of pre-testing meter replacement could have impacted the findings. As a final example, of the six (6) meters which were subjected to environmental testing, one meter did not meet the manufacturer's or PG&E's high temperature accuracy test. While the Report downplayed this failure by stating that this meter passed using averaged data, the implications of 16.6% of sampled meters failing a manufacturer's specification at 122° Fahrenheit (F) needs to be addressed, particularly in light of the fact that meters in the Bakersfield area could be exposed to significantly higher temperatures.

(8) The Structure Group Report states at page 13 that:
"While Structure cannot ensure that all issues related to the SmartMeter™ program have been identified or that future issues may not develop at a later date due to process, controls, or technical modifications instituted after the completion of The Assessment, Structure's evaluation provides the reasonable conclusion that PG&E's SmartMeters™ are accurately recording electric usage within acceptable CPUC tolerances, and are being accurately utilized in Customer billing."

Note that "CPUC tolerances" are 2%, whereas PG&E tolerances for digital meters are .5%, and the manufacturer's tolerances are .2%, per Figure 26, page 112 of the Report.

DRA Reply Comments on What the Commission Should Do in Light of the Structure Group Report, p. 3-5, 6, Application 07-12-009, October 29, 2010

DRA also stated in another proceeding that there is more work to be done to evaluate these meters to

"restore public confidence in SmartMeters (if such confidence is warranted)"

DRA Response to Application of Californians For Renewable Energy, Inc. (CARE) To Modify Decision 06-07-027, A.10-09-012, page 10, October 20, 2010

However, the CPUC did not agree.

> In particular, we find that the argument of CCSF, DRA, and TURN that the Commission should use this proceeding to review the Structure Group Report is unpersuasive. As noted previously, the facts alleged in the record of this proceeding, even if true, fail to warrant the suspension of the SmartMeter installation program. The PG&E reports cited by CCSF and the customer complaints reported in the media do not warrant the costly action of suspending the installation of a major infrastructure program that offers important conservation and demand response benefits. Thus, the Commission does not need the findings of the Structure Report to decide the matter before us.
>
> As a general proposition, the Commission's requesting of a report does not trigger a proceeding. The Commission orders, sponsors, and receives many reports that do not become the subject of a Commission proceeding. An investigation of the Structure Report is not warranted in this proceeding nor necessary to its resolution.
>
> Final Decision (10-12-031) Denying the City and County of San Francisco's Petition to Modify Decision 09-03-026, December 2010, p. 19, 20

When the CPUC did not follow its recommendations, the DRA began its own investigation of the Structure Group report. However, Structure Group refused to cooperate, and the CPUC did not compel them to do so.

Radiofrequency interference could be one explanation for these problems. There has been conjecture that wireless signals from other devices, such as cell towers, cell phones, even garage door openers, can interfere with the meters, much as the problem Toyota had with their cars.

The meters' numbers can also roll when there is no energy use. A farmer in California's Central Valley was charged almost $12,000. from a Smart Meter connected to unused equipment. PG&E finally admitted it was a problem with the meters.

> PG&E says the numbers on Brent Paul's SmartMeter actually rolled backward, charging him the high rate of $11,857. That amount has been reversed to $178, but Paul is one of hundreds of customers questioning the SmartMeter's accuracy that PG&E maintains is trustworthy.
>
> "We did go out and put a SmartMeter in," Kern County PG&E spokesman Denny Boyles said referring to Brent Paul's SmartMeter mishap. "Something I have learned, when there's not draw in a meter, it has a tendency to roll slightly. It rolled slightly backwards. So in this case it rolled from all zeros to all nines so when we got a read, that's what showed."

Although his bill was adjusted, Paul, the co-owner of Paul Farms is convinced residential customers suffer with mistakes like this all the time.

http://www.kget.com/news/local/story/Man-disputes-11-857-bill-from-PG-E/CWMFzCRF30-rmQ5ygd2moQ.cspx
http://www.kget.com/news/local/story/PG-E-responds-to-11-857-utility-bill/QMXed7V4e0mtYffRjVJisg.cspx
Man disputes $11,857 bill from PG&E and follow-up, October 8, 2009

This was in 2009, early in PG&E's Smart Meter program, yet they continued installing the meters.

There have also been questions about these wireless meters interfering with each other and the likelihood of bills being ascribed to the wrong customer. How frequently that happens, no one knows, because there has been no investigation.

In 2010, Stanford students had their billing information mixed up wirelessly with their neighbors, and they were billed for their neighbor's electrical use. They had the savvy to figure out why their bills had skyrocketed, but PG&E only took corrective action after Michael Finney and a Bay Area TV station got involved.

http://abclocal.go.com/kgo/story?section=news/7_on_your_side&id=7424533
Stanford students' bill mix-up raises questions about SmartMeters

In response to customers' high bills, utility companies have blamed the weather, new rates, water leaks, and the public, and have worked out payment plans. This is the reason why former State Senator Dean Florez got involved.

People are experiencing high bills in other parts of the country and the world as well. The website BurbankAction.com has several pages full of information and personal accounts on this, including overbilling in Australia.

https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/smart-meter-consumers-anger-grows-over-higher-utility-bills
https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/lessons-learned-what-s-happened-in-australia

Monterey Bay area TV news channel KION did a side-by-side comparison of an analog meter with a PG&E Smart Meter on a single family home for three months. The Smart Meter logged an extra 37 kilowatt hours over the three months, compared to the analog meter, costing an extra $10.76. That would be a yearly increase of $43.04 for 148 kilowatt hours. If all Smart Meters similarly measured energy, that would mean a substantial revenue increase for the utility companies, even at Feb. 2011 rates -- $430 million for PG&E alone from its approximately 10 million customers. That is without time-of-use rates.

When presented with this information, utility companies claim that Smart Meters are more accurate and that consumers weren't paying enough with analog meters. However, ratepayers pay for most utility company costs, and these costs are factored into rates.

This issue also comes up with regard to who pays for the energy use of the mesh network and the transmissions to and from each meter and the collector antennas. PG&E claims that the company pays for everything on "their" side of the meter. Though this energy use may not show up in the kilowatt hours billed to a customer, it shows up in the rates the public has to pay for those kilowatt hours.

Smart Water Meters

Water bills have also skyrocketed with these new meters.

> "I thought we were sinking in a hole of water," said Debbi Scarborough. "It scared me to death. I thought we had a major leak when I got the bill."
>
> …Many of the problems arose after the installation of new, automated water meters, which began nearly five years ago, and involved contracts for meter installations, the electronic meters and software equipment.
>
> The automated meter-reading technology eliminates the need for city workers to manually check every meter. Instead, they retrieve the data by driving by each property. The meter electronically transmits data showing the amount of water used.
>
> From the beginning, there were problems.
>
> In 2007, city auditors found they were "unable to verify electronic meter readings" because of "meter read errors, equipment failures or human errors."
>
> Specifically, the audit said "about 9% of the meters could not be read due to broken or malfunctioning equipment."
>
> Two years later, another audit concluded that a "high number of accounts" were not getting "actual meter readings" because of "meter read errors, equipment failures or human errors."
>
> http://www.cnn.com/2011/US/03/01/water.bills.war/index.html
> CNN: Skyrocketing water bills mystify, anger residents; bills rise to the thousands, March 2, 2011

Customers hire plumbers who in many cases find no leaks, not even leaky toilets.

Georgia, Massachusetts, Florida, North Carolina, Ohio, and now California have experienced overbilling problems with smart water meters. Neptune Technology Group is mentioned in the

CNN article. Neptune also makes the AMR water meters which California-American Water is installing in Monterey County, California -- the most recent example of bill spikes with a flurry of articles over the last few months.

> "They offer a leak adjustment even when there is no leak," (Lindy) Levin said.
>
> Jennifer Russo said she had two spiked bills a year apart.
>
> "We have to have another solution," she said. "The leak adjustment isn't it."
> http://www.montereyherald.com/local/ci_21781595/cal-am-water-customers-have-ally-complaints
> Monterey Herald: Cal Am water customers have ally in complaints, Oct. 15, 2012

What further compounds the public mistrust is the lack of investigation by the water company and blaming the customer for the huge bills. In Monterey County, the water company has not even informed the public that these are Smart Meters (AMR). And despite these problems and the history of overbilling with Smart Meters, the local newspapers are not informing the public that these are Smart Meters. Monterey County newspapers are not alone; newspapers in other parts of California and the country are not reporting the problems and opposition to Smart Meters. One has to wonder why there is such a cover-up on this issue.

Incidentally, California-American Water is seeking reimbursement from ratepayers for water bill credits it has issued as “leak adjustments”. The public is starting to ask whether these were leaks or misreads, and has protested any reimbursement for these “leaks” that may be only paper figures. With the widespread knowledge in the industry of Smart Meter overbilling problems, and without an investigation into the exact nature of these high bills, this looks like not only a cover-up, but attempted fraud.

RELIABILITY

For this section, I will focus on PG&E. PG&E denied there were any technical problems for months until April 2010, when the CPUC forced them to release some records to the public. The records they released (there may be others) showed over 43,000 problems.

Problems with PG&E Smart Meters as of June 2010:

> “Among the problems that PG&E has admitted to are the following:
> • PG&E had to replace nearly 45,000 meters — 23,200 that were installed incorrectly, 12,376 that had data storage issues, and 9,000 that had wireless transmission problems.’
> • PG&E admits that less than 100% of its SmartMeters are accurate. This means that tens of thousands of PG&E customers are getting inaccurate bills.
> • Approximately 4% (13,674) of the Aclara SmartMeters 9 installed by PG&E are expected to have “poor read performance.”

• Based on "issues related to Aclara electric meter performance PG&E had to "contain" its deployment of Aclara meters at 145,000.
• Deployment delays due to Silver Spring Network's inability to provide a consistent supply of SmartMeters.
• "production performance problems" with Silver Spring Networks SmartMeters related to "[a]bility to read" the meters.
• PG&E skipped approximately 12,000 meter installations between March 31 and May 20, 2009 based on interference with ground field interrupters ("GFI"). In buildings where a OFI is placed next to a Silver Spring Networks meter panel, PG&E determined that the SmartMeters could trip the GFI.
• Silver Spring Networks found a problem with a component that could cause its meters to stop working. PG&E placed a "hold" on installing 340,000 meters that could be affected by this problem. As of March 2010, only 50,000 meters were removed from "hold" status. "

> City And County Of San Francisco's Petition To Modify Decision 09-03-026 To Temporarily Suspend PG&E's Installation Of Smart Meters, A.07-12-009, June 2010, p. 6.7

And then there's this from PG&E's March 2012 semi-annual report, with data as of December 31, 2011, which indicates something is wrong. The chart on the following page summarizes this data.

PG&E says:

> As of the end of 2011, PG&E had installed nearly nine million second-generation gas and electric SmartMeters™ – far and away the largest AMI-deployment in North America – and the associated network equipment and information technology (IT) necessary to operate PG&E's SmartMeter™ system. (p.3)
> …The deployment of the RF Mesh network was planned to consist of an initial phase to deploy Access Points (APs) at defined locations throughout PG&E's service territory, followed by subsequent phases to deploy additional APs to strengthen the network where required. As of December 31, 2011, PG&E had installed all of the 11,379 electric network devices (APs and Relays) and 4,817 gas network data collection units (DCUs) that it planned to install.
>
> As of December 31, 2011, approximately **8,858,000** meters (approximately 4,711,000 electric and 4,147,000 gas) have been converted to, or replaced with, SmartMeter™ technology, representing approximately 91 percent of the total PG&E meter population. Of this number, PG&E has "activated" approximately **5,042,000** meters…. (p. 4)

In other words, even though the network devices are fully deployed and the complete IT "necessary to operate PG&E's SmartMeter system" is in place, for some reason only 57% of the meters are activated.

The chart below in their semi-annual report breaks this down by gas and electric meters. It further shows that, though the electric and gas meter locations were 100% enabled, only 49% of the electric meters and 61% of the gas meters they installed were "activated." Why?

Pacific Gas and Electric Company
Advanced Metering Infrastructure Semi-Annual Assessment Report
SmartMeter™ Program Quarterly Report
March 2012
(CPUC Decisions 06-07-027 and 09-03-026)
Page 9

Table II – 1: AMI Project Status as of December 31, 2011

Progress Toward Completion	Total Budgeted Plan	Actual	% of Total Project Plan Installed
Electric Network - RF Network	1,553	1,371	88%
Gas Network Collectors	5,000	4,815	96%
Electric Network Enabled Locations	5,260,391	5,260,391	100%
Electric Meter Installations*	5,630,886	5,074,494	90%
Electric Meters Activated	5,260,391	49% 2,503,631	48%
Gas Network Enabled Locations	4,449,040	4,449,040	100%
Gas Meter-Module Installations	4,449,040	4,147,136	93%
Gas Meter-Modules Activated	4,449,040	61% 2,538,535	57%

*Includes installation of retrofitted SmartMeters™.

Definition of "activated":
"The Program realizes operational benefits when meters fitted with SmartMeter™ technology are installed, transitioned, and activated. Following installation, PG&E transitions gas and electric meters to wireless reads and billing when: (1) the meters are installed and capable of wireless reads and billing; (2) the communications network infrastructure is in place to remotely read the meters; and (3) the remote meter reads become stable and reliable for billing purposes. Once enough customers on a particular "route string" transition to SmartMeter™ billing, manual reading of the meters on that "route string" ceases, at which point those meters are considered "activated."

Through 2011, approximately 8,638,000 meters have been transitioned, and approximately 5,042,000 meters have been activated…" (p. 23)

PG&E states that 91% of their meters have been changed to Smart Meters. Why are only 57% of those meters "activated"? Are the meters not "capable of wireless reads and billing" or are "the remote meter reads" not "stable and reliable for billing purposes"? Or is there some other problem?

Clearly, something is wrong.

PRIVACY INVASION

Consumer profiling

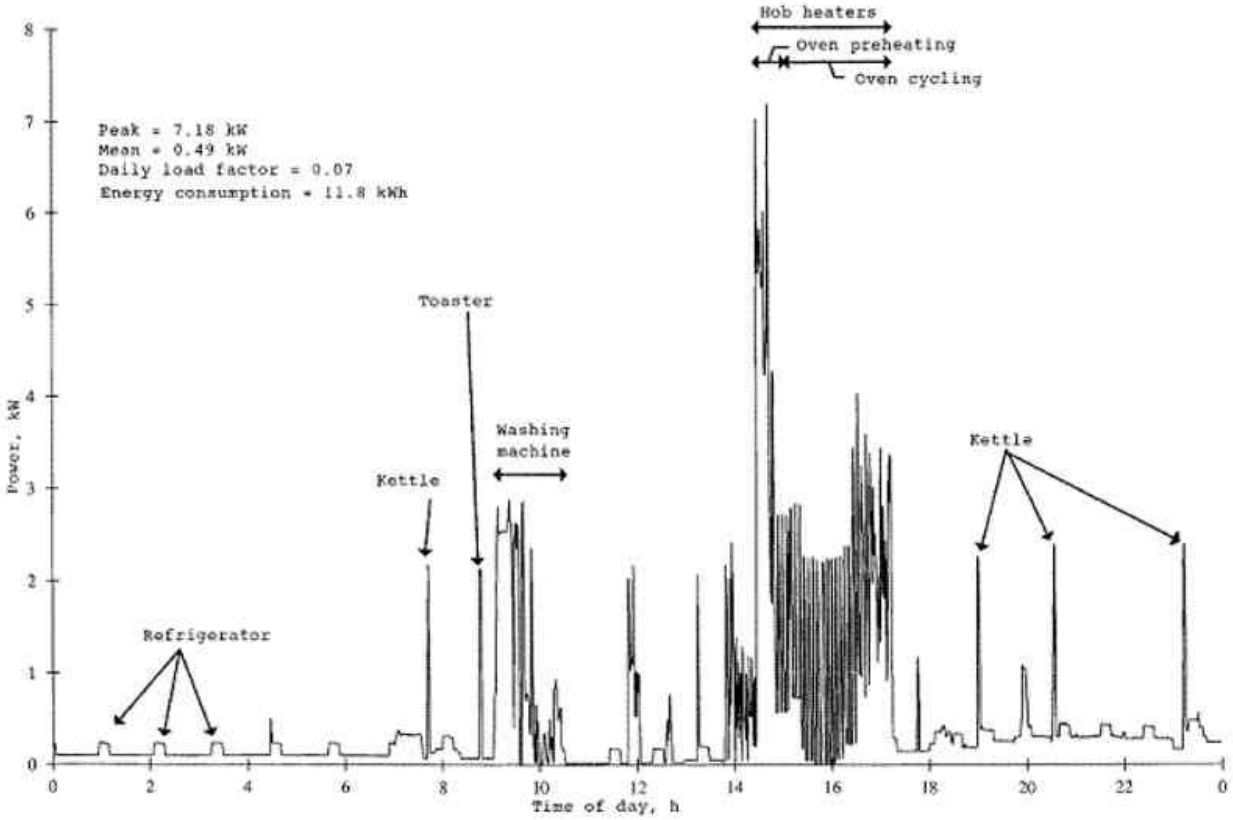


Image: National Institute of Standards and Technology

You Sure Drink a Lot of Tea: Smart meter data can show what's going on in a home, because tea kettles, toasters, and other appliances have identifiable load signatures.

Back in 2007, when the Dutch government announced that all 7 million homes in the Netherlands would be equipped with smart meters by 2013, it anticipated little resistance...But consumers worried that such intelligent monitoring devices, which transmit power-usage information to the utility as frequently as every 15 minutes, would make them vulnerable to thieves, annoying marketers, and police investigations. They spoke out so strongly against these “espionage meters” that the (Netherlands) government made them optional.

It all sounds less paranoid when you consider that each appliance -- the refrigerator, kettle, toaster, washing machine -- has its own energy fingerprint, or “appliance load signature,” that a smart meter can read. Anyone who gets hold of this data gets a glimpse of exactly what appliances you use and how often you use them.

Privacy on the Smart Grid, Ariel Bleicher, October 2010

http://spectrum.ieee.org/energy/the-smarter-grid/privacy-on-the-smart-grid
Note: the IEEE -- the Institute of Electrical and Electronics Engineers -- is a professional and industry organization.

The "smart" electric grid may be just a little too smart. Once a smart meter is attached to a home, it can gather a lot more data than just how much electricity a family uses. It can tell how many people live in the house, when they get up, when they go to sleep and when they aren't home.

It can tell how many showers they take and loads of laundry they do. How often they use the microwave. How much television they watch and what kind of TV they watch it on.

"This is technology that can pierce the blinds," said Elias Quinn, author of a smart grid privacy study for the Colorado Public Utilities Commission.
Source: Denver Post," New electricity grids may be smart, but not so private," May 18, 2010: http://www.denverpost.com/frontpage/ci_15106430)

Smart Meters collect finely detailed personal energy usage data and wirelessly transmit that data to the utility company and to whoever has access to the feed. The level of detail collected by the meter can also be increased. Individual privacy was considered so important as to be enshrined in the California Constitution. This is an invasion of our privacy.

Spectrum IEEE:

Each appliance has its own energy fingerprint.

Smart Metering and Privacy: A Report for the Colorado PUC, Elias Leake Quinn, Spring 2009

"…the load signatures of various appliance categories are surprisingly unique, and an impressive amount of detail concerning customer usage habits could be discerned… smart meters allow for the collection and communication of highly detailed electricity usage information…all told, 52 million smart meters would be installed throughout the country over the next five to seven years. Smart-metered information, collected at levels as fine as one-minute intervals, can be disaggregated into its constituent appliance events, allowing both consumers and utilities (and anyone else with access to the information) to see exactly what makes up an individual household's electricity demands."
Elias L. Quinn: "Smart Metering & Privacy: Existing Law and Competing Policies," Spring 2009: http://www.dora.state.co.us/puc/DocketsDecisions/DocketFilings/09I-593EG/09I-593EG_Spring2009Report-SmartGridPrivacy.pdf

Chaos Communication Conference, Germany (January 2012) –

> Hackers analyzed Smart Meter data and were able to identify "the number of PCs or LCD TVs in a home, what TV program was being watched, and if a DVD movie being played had copyright-protected material."
> http://www.networkworld.com/community/node/79486
> Hacking For Privacy: 2 days for amateur hacker to hack smart meter, fake readings

At the Las Vegas Consumer Electronics Show, January 2012:

> Tech companies are poised to gather unprecedented insights into consumers' lives--how much they eat, whether they exercise, when they are home and who they count as friends. Silicon Valley is in a gold rush for information, highlighted by Google's announcement Tuesday that it would incorporate data posted by users on its social networking service into the results of its main search engine.
>
> Microsoft's Kinect game console collects some biometric information that Chief Executive Steve Ballmer said on Monday is a potential springboard for health-care and other industries.
>
> "We are collecting data second by second," said Tivo Senior Vice President Tara Maitra. LG was among several companies to showcase "connected homes," where appliances are connected to one another as well as energy grids via the Web.
>
> http://www.washingtonpost.com/business/economy/privacy-rights-activists-worry-about-potential-abuse-of-high-tech-devices-featured-at-ces-event/2012/01/10/gIQAX3kJpP_story.html
>
> Aside from the home consumers, let's imagine a company's data center is making energy efficiency a top priority. The company management is keen on monitoring energy and reporting usage back to the grid. The data center facility controllers will communicate with smart meters and send data to the utilities to be analyzed. If in some way this data is leaked, it could pose serious issues to the overall security posture of the company and data center.
>
> http://blogs.hbr.org/cs/2010/10/how_private_is_your_smart_grid.html
> How Private Is Your Smart Grid Data? Usman Sindhu October 13, 2010

The profile at the beginning of this section is from the National Institute of Standards and Technology. Much finer data collection is planned through the Home Area Network (HAN), with transmitters in all appliances, and additional "Smart" devices.

The UCLA Smart Grid project has wireless sensors in rooms which can tell how many people are in the room. New cellular phone technologies (University of Texas, 2012), and conceivably Smart Meters as well, will be able to see through walls. This is the field of "remote sensing". University of Illinois professor and Bioelectromagnetics Editor James Lin has demonstrated that

the Soviet microwaving of the Moscow Embassy between 1953 and 1976 could have been for testing just such remote sensing capability (Liakouris, 1998). Much research has been done since then on remote sensing applications, including for medical purposes, including

-- "Behind thick layers of nonconductive walls", "up to 30 meters"
Microwave sensing of physiological movement and volume change: a review, James Lin, 1992

-- Under sponsorship of the U.S. Army, researchers used 850 MHz and 2.4 GHz microwave frequencies to monitor respiration and heart rate at a distance.
Note: electric Smart Meter frequencies are 900 MHz and 2.4 GHz.
A Digital Signal Processor For Doppler Radar Sensing Of Vital Signs, Lohman et al.,2001.

New devices, such as "baby radar" (University College Cork, Ireland, 2011), and other medical applications are being reported in the media frequently.

Who wants our information and why?

Who wants smart meter data?	How could the data be used?
Utilities	To monitor electricity usage and load; to determine bills
Electricity usage advisory companies	To promote energy conservation and awareness
Insurance companies	To determine health care premiums based on unusual behaviors that might indicate illness
Marketers	To profile customers for targeted advertisements
Law enforcers	To identify suspicious or illegal activity*
Civil litigators	To identify property boundaries and activities on premises
Landlords	To verify lease compliance
Private investigators	To monitor specific events
The press	To get information about famous people
Creditors	To determine behavior that might indicate creditworthiness
Criminals	To identify the best times for a burglary or to identify high-priced appliances to steal

Source: "Potential Privacy Impacts that Arise from the Collection and Use of Smart Grid Data," National Institute of Standards and Technology, Volume 2, pp. 30–32, Table 5-3.
http://spectrum.ieee.org/energy/the-smarter-grid/privacy-on-the-smart-grid
Reprinted in www.burbankaction.com

California Public Utilities Commission:

> Currently, there are about 200 firms or other providers of energy efficiency services who have Commission authorization to conduct energy efficiency programs or energy efficiency program evaluations and have access to information for this primary purpose under contract with the Commission. Beyond these firms, other government entities, such as local government and state agencies, implement energy efficiency programs and obtain access to consumption data under the Commission's supervision.
> …Still other third parties may acquire consumption data: (including) from the utility via the "backhaul" with the consumer's authorization and pursuant to tariff conditions (currently Google obtains information in this matter from San Diego)…
>
> CPUC Decision Adopting Rules to Protect the Privacy and Security of the Electricity Usage Data, Rulemaking 08-12-009, p. 34, 35, 7-29-2011
> http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/140369.PDF

Data fusion

At a PUC workshop on Dec. 9, 2011, PG&E representatives said that customers would be able to compare their energy usage online to others with the same home square footage. Asked how they would know the square footage of our homes, a rep quickly responded, "That's public information."

Smart Grid TMC-Net.com:

> "GridGlo is working with utilities to combine consumer household behavioral data with energy usage data—along with a dollop of data on weather, demographics, motor vehicle registrations, and even satellite imagery—and from all that, to draw strategic operational and marketing conclusions. **The process is called data fusion**.
>
> Behave Yourself! The Utilities 'Have Got Your Numbers' and Next They'll Know Your Habits, Too
> http://smart-grid.tmcnet.com/topics/smart-grid/articles/176270-behave-yourself-utilities-have-got-numbers-next-theyll.htm

The possibilities for data fusion are endless, particularly with the implementation of the Home Area Network. Medical and pharmaceutical records, and data collected from intelligent transportation systems are just a few examples of the data that can be "fused" together to create complete portraits of our daily lives.

New Samsung LED HDTVs "will now include built-in, internally wired HD cameras, face tracking and speech recognition capabilities, and twin microphones. In the 2012 8000-series plasmas, the cameras and microphones are built directly into the screen bezel. The 7500 – 8000ES-series TV's, however, will have the cameras permanently attached to the top of the set."

> http://info.themicroeffect.com/2012/04/06/cia-home-invasion-smart-tvs-and-the-internet-of-things/

Former CIA Director David Petraeus on the “internet of things” at In-Q-Tel summit, April 2012:

> “‘Transformational’ is an overused word, but I do believe it properly applies to these technologies,” Petraeus enthused, “particularly to their effect on clandestine tradecraft.”
>
> “Items of interest will be located, identified, monitored, and remotely controlled through technologies such as radio-frequency identification, sensor networks, tiny embedded servers, and energy harvesters — all connected to the next-generation internet using abundant, low-cost, and high-power computing,” Petraeus said, “the latter now going to cloud computing, in many areas greater and greater supercomputing, and, ultimately, heading to quantum computing.”
>
> Reported in http://www.wired.com/dangerroom/2012/03/petraeus-tv-remote/

In 1999:

> "You have zero privacy anyway," Scott McNealy told a group of reporters and analysts Monday night at an event to launch his company's new Jini technology.
> "Get over it."
>
> McNealy's comments came only hours after competitor Intel (INTC) reversed course under pressure and disabled identification features in its forthcoming Pentium III chip.
>
> … Sun Microsystems is a member of the Online Privacy Alliance, an industry coalition that seeks to head off government regulation of online consumer privacy in favor of an industry self-regulation approach.
>
> … McNealy made the remarks in response to a question about what privacy safeguards Sun (SUNW) would be considering for Jini. The technology is designed to allow various consumer devices to communicate and share processing resources with one another.
>
> "I think Scott's comments were completely irresponsible and that Sun and Intel and many of these leaders are creating public policy every time they make a product decision," said Lori Fena, chairman of the board of the Electronic Frontier Foundation.
>
> Sun on Privacy: 'Get Over It', Polly Sprenger, Jan. 26, 1999
> http://www.wired.com/politics/law/news/1999/01/17538
>
> In 2009, McNealy’s assessment was confirmed by Google’s CEO, Eric Schmidt. In an interview with NBC's Mario Bartiromo, he proclaimed, "If you have something that you don't want anyone to know maybe you shouldn't be doing it in the first place." Schmidt’s words have become Google’s new mantra. Welcome to 21st-century corporate morality….

> In 2010 it was revealed that Google partnered with the CIA in a venture called "Recorded Future." Google's vast data archive can be harnessed to meet "security" needs. This is especially troubling in light of a controversial bill being pushed through Congress, the Cyber Intelligence Sharing and Protection Act (CISPA). The act would allow sharing of data between companies like Google and the National Security Agency (NSA) to combat alleged cyber-security threats.
>
> The Terrifying Ways Google Is Destroying Your Privacy
> David Rosen, AlterNet May 20, 2012
> www.alternet.org/story/155479/the_terrifying_ways_google_is_destroying_your_privacy

Journalist James Bamford spoke on March 21, 2012 on Democracy Now about the new facility in Bluffdale, Utah, being built by the U.S. National Security Agency to store collected data. http://www.democracynow.org/2012/3/21/exposed_inside_the_nsas_largest_and#.T5F22Ve7pFU.mailto
There will certainly be a great deal of it.

In March, 2012, U.S. Attorney General Eric Holder signed new guidelines for the National Counterterrorism Center, lengthening to five years (previously 180 days) the amount of time the center can retain data on Americans when there is no suspicion that they are tied to terrorism.

> The guidelines are also expected to result in the center making more copies of entire databases and "data mining them" using complex algorithms to search for patterns that could indicate a threat.
>
> The center has developed a priority list of databases it wants to copy entirely, but he and other officials declined to say which ones they were.
>
> "We're all in the dark, and for all we know it could be a rerun of Total Information Awareness, which would have allowed the government to make a computerized database of everything on everybody," said Kate Martin, the director of the Center for National Security Studies.
>
> The guidelines were also signed by the director of national intelligence, James R. Clapper Jr., and the director of the center, Matthew G. Olsen.
>
> U.S. Relaxes Limits on Use of Data in Terror Analysis
> http://www.nytimes.com/2012/03/23/us/politics/us-moves-to-relax-some-restrictions-for-counterterrorism-analysis.html?_r=1&emc=na
>
> There is a shift currently taking place in the security industry, replacing traditional analog systems with newer, IP (Internet Protocol) cameras and computer networking technologies… IP surveillance allows a virtually unlimited number of cameras and

computers to be interconnected to form a distributed surveillance network spanning vast distances (much like the internet in general).

You, yes you: welcome to the world of advanced surveillance Part 1 (5-part series written by Australian researchers and developers of this technology) http://theconversation.edu.au/you-yes-you-welcome-to-the-world-of-advanced-surveillance-830

Face recognition technology is being rolled out now, leaving no place unwatched.

Privacy, guaranteed under the Constitution, is quickly vanishing. We will soon live and move in the equivalent of glass-walled houses, every element of our lives watched, recorded, and archived. Smart Meters are part of this "convergence."

Data marketing

Smart Grid TMC-Net.com:

'We realized utilities were getting all this data from advanced metering infrastructure (AMI) deployments and there was no clear understanding [of] how to **monetize** the data or use the data,' said Isaias Sudit, CEO of the origins of GridGlo."

"'Smart grid utilities are evolving into brokers of information,' says industry analyst Marianne Hedin."

Behave Yourself! The Utilities 'Have Got Your Numbers' and Next They'll Know Your Habits, Too
http://smart-grid.tmcnet.com/topics/smart-grid/articles/176270-behave-yourself-utilities-have-got-numbers-next-theyll.htm

From the CPUC proceeding on privacy and the Smart Grid, Docket #: R 08-12-009 (July 28, 2011)

- Commissioner Timothy Alan Simon, "I support today's decision because it adopts reasonable privacy and security rules and expands consumer and third-party access to electricity usage and pricing information. I hope this decision stimulates market interest in the data."
- "The privacy rules in today's decision establish a solid framework for creating balance between protecting consumer privacy and fostering a new market for third-party participants," said Commissioner Mark J. Ferron.

Press Release regarding Docket #: R 08-12-009, July 28, 2011

In May, AT&T and Verizon filed comments on the CPUC's Smart Grid Workshop summary about market access to consumer data from Smart Meters:

A means to achieve a greater degree of certainty is to establish forward-looking, pro-competitive principles from the beginning that prohibit barriers to market entry. New

entrants need prompt, unfettered and reasonable access to the detailed customer usage data collected by a Smart Meter. And such access needs to reflect consistent, standardized methods across utilities. Principles such as these will spur investment and innovation in Smart Grid-enabled products and services and, in turn, will benefit customers, the environment and the economy. In short, the Commission should not delay the principles for access to detailed data at the customer side of the smart meter.

A. No barriers to entry

The IOUs should not impose onerous, expensive or cumbersome technical or administrative requirements on third parties that want to participate in the Smart Grid market. Any qualified third party should be able to participate without delay or unnecessary expense. That said, it is understandable that certain safeguards may be necessary to ensure the security and integrity of IOU systems and customer information. But any such network security safeguards should not become a means to impede or delay competitive entry or constrain innovation.

B. Prompt, Unfettered and Reasonable Access to Consumer Electricity Usage Data

…At a very minimum "unfettered and reasonable access" would mean that the IOU should not be able to dictate the level of granularity or the intervals of time during which smart meter data is extracted by third party equipment. Third parties should be able to extract detailed, granular, real-time information…. So long as the customer consents to give his or her information to a third party, that third party should be able to provide services that employs any or all of the information that the Smart Meter is equipped to collect. That is the most effective way to ensure that IOUs do not dictate the quality, quantity or speed at which the third parties extract information from the smart meter.

Joint Reply Comments of AT&T and Verizon to March 1, 2012 Smart Grid Workshop Summary, A. 11-06-006 et al., May 17, 2012

Privacy laws and rules change. What consumers have a choice about divulging one year, becomes "no choice" the next. If agencies such as the CPUC do not listen to the public, these issues must then be fought with attorneys in courts if members of the public have the money and can find the attorneys to do so. And the outcome has very little to do with what's right or what's constitutional.

FIRES AND ELECTRICAL PROBLEMS

There have been exploding meters, overheating meters, burning meters, house fires, "fried" appliances, burned outlets and electrical wiring, arcing, and interference with AFCIs and GFCIs. And there appears to be a vulnerability to surges with these digital meters.

Sage and Associates:

> Typical gauge electrical wiring that provides electricity to buildings (60 Hz power) is not constructed or intended to carry high frequency harmonics that are increasingly present on normal electrical wiring…
> The use of smart meters will place an entirely new and significantly increased burden on existing electrical wiring because of the very short, very high intensity wireless emissions (radio frequency bursts) that the meters produce to signal the utility about energy usage…
> Reports detail that the meters themselves can smoke, smolder and catch fire, they can explode, or they can simply create overcurrent conditions on the electrical circuits…
> Electrical wiring was never intended to carry this - what amounts to an RF pollutant - on the wiring. The higher the frequency, the greater the energy contained…
> Faulty wiring, faulty grounding or over-burdened electrical wiring may be unable to take the additional energy load.
>
> Wireless Smart Meters and Potential for Electrical Fires, January 2011

In August, 2011, 80 Smart Meters caught fire in East Palo Alto following a power outage and a surge when power was restored.

> Some Palo Alto Utilities engineers said what happened in East Palo Alto illustrates why Palo Alto is moving cautiously before installing similar devices. Palo Alto utilities spokeswoman Debbie Katz said that surges have not burned out the city's analog meters….
>
> Katz said the advantage of the analog meter is that it doesn't have internal electronics. When a power surge hits a digital meter, the extra jolt of electricity can disrupt the flow of data or even shut down the meter, she said.
>
> But "the analog says, 'OK, whatever,' and keeps going. The SmartMeter says, 'Oh I've got a headache and I can't think,'" she said.
>
> …"In the collective memory of TURN, we have not seen similar incidents with analog meters," (Mindy Spatt of TURN) said.
>
> http://www.paloaltoonline.com/news/show_story.php?id=22378
> Power surge raises questions about SmartMeters, Sue Dremann

3 Smart Meters exploded off the wall at Santa Rosa Mall (April 2011). Fires have been widely associated with Smart Meters, here and overseas. In Houston, TX, Leigh Law Firm specializes in Smart Meter-related fires.

The Australian Metropolitan Fire Brigade launched an official investigation into fires, linked to Smart Meters (November 2011). They ordered “all firefighters to report fires, where smart meters are present and has advised officers not to allow power companies to take the meters

from the scene." http://www.3aw.com.au/blogs/breaking-news-blog/fires-linked-to-smart-meters/20111107-1n2jz.html

Australia, February 2012:

> "The state's electrical union fears someone will have to die before safety concerns about controversial smart meters are addressed. The Electrical Workers Union has repeated demands to suspend the rollout until power companies commit to mounting all meters on flame-resistant boards. But the Government and suppliers are adamant the units aren't a fire risk and are safer than those they replaced. Energy Safe Victoria is investigating claims power surges are causing smart meters to explode."
>
> http://www.heraldsun.com.au/news/more-news/smart-meter-death-fears/story-fn7x8me2-1226285463342

From New Zealand:

> Front line firefighters are concerned about the number of household power meter boxes that are bursting into flames.
>
> There have been 67 callouts in Christchurch to electrical malfunctions so far this year, and new smart meters have been involved in three in the last five days.
>
> Graham Hobbs considers himself lucky. He was woken at 4:30am to find his smart meter on fire.
>
> "I lifted this up it was still glowing and smoking, and slammed it shut to try and seal it off."
>
> The following night Kelvin Dixon, who lives nearby, suffered a similar fate.
>
> "I pulled into my drive way and found my meter box on fire great amounts of smoke."
>
> Mr Dixon is a registered electrician and says the contactor that sits beneath the smart meter caught fire and melted.
>
> "I have suspicions that maybe the installation the terminals weren't tightened enough."
>
> "It was very dangerous," says station officer Murray Jamieson. "The whole thing burnt out completely, last night's one was a melt down and it was significantly dangerous."
>
> News 3 NZ: "Fire-prone meter boxes causing concern, June 3, 2010:
> http://www.3news.co.nz/Fire-prone-meter-boxes-causing-concern/tabid/423/articleID/159133/Default.aspx
> Quoted in BurbankAction.com

In Canada --

> The smart meter on the side of my house caught fire and per the Fire Inspector it was the cause of the fire. Hydro came and took the meter saying it was there property. Who is at fault and if there property burnt my house why should I have to pay my deductible and risk my insurance to go up? Will my insurance go after the Hydro company? Should I get a good Lawyer?
>
> Yahoo Answers: "Smart Meter caused a fire and hydro said meter was there property Who pays for the damages?"
> http://answers.yahoo.com/question/index?qid=20100724135841AAE29x3

Because of overheating meters and Smart Meter fires, Pennsylvania's PECO Energy Co. suspended deployment of Smart Meters in August (2012). The Pennsylvania Public Utilities Commission and the neighboring Maryland Public Service Commission both opened investigations, as did the state of Illinois. In October, PECO changed from Sensus Smart Meters to Landys-Gyr Smart Meters. However, PG&E uses L&G meters and has had Smart Meter-related fires, exploding and overheating meters, and electrical problems as well.

In June (2012), the Ontario Office of Fire Marshall in Canada wrote a report on Smart Meter fires, and in September (2012), the Institute of Electrical and Electronic Engineers (IEEE) expressed its alarm over Smart Meter fires, including citing EMF Safety Network's archive of fire incidents.

> This appears to be not just a matter of freak incidents that may or may not have taken place here or there.
>
> …Obviously all companies with smart meter programs, and all their suppliers and sub-contractors, are going to have to take a close look at the issue of fire hazards. This is just the beginning of a difficult story…The last thing the smart grid needs is meters causing fires.
>
> http://spectrum.ieee.org/energywise/energy/the-smarter-grid/smart-meter-fire-reports
> Smart Meter Fires, Bill Sweet, IEEE Blog, September 5, 2012

In November (2012), a California Fire Captain came forward to detail how his household electronics malfunctioned repeatedly and two surge protectors melted down after two different Smart Meter installations.
http://emfsafetynetwork.org/?p=9013

Other accounts are here: http://emfsafetynetwork.org/?page_id=1280

These fire and electrical problems show no sign of going away, and with the possibility of microwave radiation rapidly increasing metal corrosion, including that of electrical wiring, this could quickly become disastrous for many homes and businesses.

One final note: Smart Meter manufacturer Sensus and Southern Power were sued in Alabama in 2009 by a former engineering employee for knowingly installing defective meters which could cause fires and using federal funds to do it. Ironically, the court declined to hear the case. http://stopsmartmeters.org/2012/01/20/meters-that-endanger-shocking-details-from-a-whistleblower/
Sensus Smart Meters are used by utilities including Nevada Energy (NVE), Portland General Electric (PGE), and formerly, PECO (Pennsylvania).

HEALTH PROBLEMS

Summary

People have reported serious health problems following Smart Meter installation. There is extensive scientific research showing health and environmental damage from radiofrequency (RF) and electromagnetic frequency (EMF) radiation, much of it decades old. In May, 2011, the World Health Organization's IARC declared radiofrequency electromagnetic radiation to be a possible carcinogen, and in January, 2012, the American Academy of Environmental Medicine called on the CPUC to immediately halt the program and investigate these issues. Yet, Smart Meter installation continues, and the problems are being ignored.

This is a public health emergency.

On May 31, 2011, the World Health Organization's International Agency for Research on Cancer (IARC) declared that the radiation that these meters emit is a Class 2B carcinogen – possible human carcinogen -- putting it in same category as lead and DDT.

Does this apply to Smart Meters? Yes.

From Dr. Robert Baan, member of the World Health Organization IARC:

> "Although the key information came from mobile telephone use, the Working Group considered that the three types of exposure entail basically the same type of radiation, and decided to make an overall evaluation on RF-EMF, covering the whole radiofrequency region of the electromagnetic spectrum…So the classification 2B, possibly carcinogenic, holds for all types of radiation within the radiofrequency part of the electromagnetic spectrum, including the radiation emitted by base-station antennas, radio/TV towers, radar, Wi-Fi, smart meters, etc."
>
> Personal correspondence with Connie Hudson

IARC member Dr. Jonathan Samet, UCLA, confirmed this designation applies to all RF sources.

Authorizing

- wireless and RF-emitting Smart Meters on every building,
- an all-surrounding wireless mesh network and star system,
- transmitting collector antennas/access points and data collection units on utility poles,
- the wireless Home Area Network with transmitting Smart appliances and devices, and
- wireless components for the Smart Grid,

is authorizing a Class 2B carcinogen inside and outside of every building, everywhere.

There are no safe zones. There is no safe environment.

Smart Meters have a range of at least one mile and may go much farther. Silver Spring Networks has bragged their signal can penetrate mountains. These are tremendously powerful meters.

RF and microwave RF is generally measured in milliwatts or microwatts. One watt equals one million microwatts. RF radiation is very biologically potent. One ten-trillionth of one microwatt per cm2 can alter genetic structure in e coli bacteria.

Three feet away from a Smart Meter is an estimated 53-160 times the whole body radiation exposure from a cell phone held to the head (Daniel Hirsch, CCST critique, 2011). These are very powerful meters.

Health complaints

> I managed to have smart meter installation delayed at my house, but suddenly became sick overnight with palpitations, chest pain, insomnia, dizziness, inability to concentrate and memory loss and fainting spells. AFTER becoming sick I found out that the day I became suddenly sick was the day the smart meter roll-out was completed in my area and the smart meters were remotely turned on from base.
>
> Dr. Federica Lamech, Australian physician
> http://stopsmartmeters.com.au/2012/03/26/sick-with-palpitations-chest-pain-insomnia-dizziness/

People are getting sick following Smart Meter installation. Health problems include:

> nausea and vomiting, agitation, migraines, dizziness and disorientation, tinnitus/hearing ringing or buzzing, auto-immune problems, insomnia/sleep problems, ear pain, seizures, heart rhythm disturbances, nosebleeds, pacemaker defibrillation, rashes, depression, suicidal thoughts, anxiety and other mood disorders, eye problems, increased blood pressure, physical weakness and/or pain, decline of health, pulsing or pressure sensations, cognitive problems including worsening memory and concentration and "brain fog", flu-like symptoms, urinary problems, hair loss, blackouts, developing hypersensitivity to other electronics and to wireless radiation.

These symptoms range from debilitating to life threatening. Symptoms tend to worsen and multiply over time. Some people have been forced to leave their homes due to the severity of these health problems

There have been reports of pets dying or becoming ill, bees disappearing, and nearby plants and trees dying.

Members of the public have submitted written complaints as well as testified during public comments at CPUC business meetings and met privately with commissioners. They have supplied the CPUC with voluminous material on the risks of this technology. In the fall of 2010, there was a private meeting at the CPUC with CPUC staff members where members of EMF Safety Network presented research on health impacts.

However, when PG&E Smart Meter program directors were asked at a CPUC workshop (December 9, 2011) if they were keeping track of health complaints, Jim Meadows, the head of the Smart Meter program, shrugged his shoulders, looking around at the other directors, and said, "I'm not aware of it."

Known serious cumulative and long-term effects

Research going back decades shows biological and health impacts from electromagnetic and radiofrequency radiation, including

> DNA damage, causing single strand and double strand breaks; calcium ion efflux, where calcium ions leave cell membranes, causing those membranes to leak; sperm damage and dysfunction; cellular stress; increased risk for cancers and tumors; seizures; microwave hearing; brain damage, brainwave alteration, and changed brain function; decreased melatonin and other hormones; heart problems, including tachycardia; cataracts; thyroid changes, including thyroid cell death; damage to the blood-brain barrier which keeps toxins and other substances out of the brain, increasing the risk of stroke, auto-immune diseases, and dementia; suspected damage the blood-placental barrier, which protects babies; links to autism, ADHD, Alzheimer's, stroke; changes in the blood, including rouleau formation, where RBCs clump together, raising the risk of thrombosis;

and much, much more.

Stanford Research Institute (1974):

> "the vast literature that exists on the biological effects of microwave radiation"
>
> Polson, P, DCL Jones, A Karp, and JS Krebs. 1974. Mortality in rats exposed to CW microwave radiation at 0.95, 2.45, 4.54, and 7.44 GHz. Final Technical Report Prepared for U.S. Army Mobility Equipment Research and Development Center, Fort Belvoir, Virginia, Contract DAAK02-73-C-0453. p. 1

http://www.magdahavas.com/2010/09/06/pick-of-the-week-9-0-95-and-2-45-ghz-most-lethal-microwave-frequencies/

The Swiss telecom company Swisscom (2004):

"The influence of electrosmog on the human body is a known problem."

Reduction of Electrosmog in Wireless Local Networks, Patent Application by Swisscom AG, Sept. 2, 2004, cited in The Swiss Experience, Magda Havas, p. 3
http://www.safeschool.ca/uploads/WiFi_Swisscom_Patent.pdf

Government of India, Ministry of Environment and Forests (2011):

The adverse effects of electromagnetic radiation from mobile phones and communication towers on health of human beings are well documented today."

Report on Possible Impacts of Communication Towers on Wildlife including Birds and Bees, October 2011
http://moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf

Zorach Glaser compiled over 2300 references for the Naval Medical Research Institute in 1972. In 1997, Karl Hecht and Hans-Ullrich Balzer wrote a report for the German Federal Institute for Telecommunication based on 878 Russian studies from the years 1960-1996, In 2007, the international Bioinitiative Report was published which included over 1500 peer-reviewed studies on EMF and RF health effects; much of this information was subsequently published in the August 2009 issue of the journal Pathophysiology.

http://www.ntia.doc.gov/broadbandgrants/comments/71B9.pdf

The ECOLOG Institute was commissioned to do a report reviewing the scientific literature for T-Mobile which it presented in 2000. The long list of biological and health impacts it found from mobile telecommunications is all the more amazing because T-Mobile, the wireless industry, the utility industry, and the United States government have ignored the findings.

http://www.hese-project.org/hese-uk/en/niemr/ecologsum.php Summary

In the USA from 1955 until 1969, eleven large conferences took place under the title

"Microwaves – Their Biologic Effects and Damages to Health". The so-called Richmond Conference in 1969 presented such overwhelming facts that the ("Program for Control of Electromagnetic Pollution of the Environment", published December 1971) government report had to be compiled. Besides the microwave symptoms mentioned, gastric bleeding, leukemia, chromosome breakages, cancer, and clouding of the eye lenses were also observed by doctors in the USA.

Overloading of Towns and Cities with Radio Transmitters (Cellular Transmitter) Karl Hecht, Elena N. Savoley, IRCHET International Research Centre of Healthy and Ecological Technology Berlin – Germany
www.hese-project.org/hese-uk/en/niemr/hechtvortrag070724englisch.pdf

Michael Bevington:

> …a standard textbook on bioelectromagnetics (2007 edition) states that 'the biophysical lore prevailing until the late 1980s and lingering to this day' was that external EFs had no effect on human tissue unless they could trigger an excitable membrane, such as in the heart by a pacemaker, produce heating (thermal), or move an ion along a field gradient. 'However, the position had to be changed as the evidence for weak (nonthermal) EMF bioeffects became overwhelming'.(3)
>
> (3) Barnes, Frank S., and Greenebaum, Ben (edd.), Handbook of Biological Effects of Electromagnetic Fields: Biological and Medical Aspects of Electrical Fields, CRC Press, 3rd ed. based on updated literature reviews to mid 2005, 2007), p.377.
>
> Attitudes to the health dangers of non-thermal EMFs, 2008
> http://www.powerwatch.org.uk/news/20080117_bevington_emfs.pdf

Robert C. Kane:

> The bold step back ward is a historical accounting of the research that is available, has been available for forty years or more, and has been neglected or buried by an industry that will place its absolute need to sell products above the health and well-being of its own customers. The practice of producing such products can only be viewed as predatory.
>
> (This book) is a commentary that presents a litany of past research studies, hundreds of research studies from the 1950s through the mid-1990s…These older studies are equally alarming (as current studies) in their findings of radiation exposure, DNA damage, chromosome damage, tissue damage, radiation absorption, cataract formation, tumor formation, memory loss, motor skills degradation, and more. There are many more studies, hundreds that might have been added, but the point is well made by those that are cited without the need to bludgeon the reader with more than what has been presented.
>
> Cellular Telephone Russian Roulette, Robert C. Kane 2001
> Kane was a senior research scientist and product design engineer for Motorola.
> http://microondes.wordpress.com/2010/04/17/robert-c-kane-cellular-telephone-russian-roulette/

There are literally thousands of studies.

And the research continues, showing damage and biological impacts.

In 2007, the German research report Birds, Bees and Mankind: Destroying Nature by Electrosmog was translated into English. The following an excerpt:

4.2.2 Primary mechanism found: Enzymes transferring electrons are magneto-sensitive
Stimulation of free radicals – including NO (nitrogen monoxide) – through physical fields and radiated fields is therefore scientifically and reliably proven. But viewed critically, this is no proof of damage unless the underlying primary mechanism is identified.

For this reason, we searched for a long time for a link to explain the damaging effect. And we have found it in one of the latest studies: The NADH oxidase enzyme exhibits a high – and quite reproducible – sensitivity for magnetic and electromagnetic fields of mobile phones (FRIEDMAN et al. 2007).

… The NOX family is also responsible for a large range of pathological processes, especially neurodegeneration and heart diseases (BEDARD et al. 2007).

These oxidase enzymes are magnetically sensitive due to their capability of shepherding electrons through plasma membranes. When electrons move, an electrical current flows that in turn builds up its own magnetic field and also generates electromagnetic high frequency oscillations through acceleration and deceleration of electron movement. All these processes create sensitivity to external fields.

The electron transfer is finally responsible for the production of superoxide radicals and other reactive oxygen species (ROS). The consequences of this are far reaching in completely different areas, because radicals and ROS are very aggressive. In this way, the destruction of viruses and bacteria is promoted, the creation of proteins is forced through reinforced gene expression and finally cell proliferation is supported at the cost of cell differentiation.

Over-stimulation is a threat. It is analogous to a drug or medicine: Dosed correctly, the substance can be beneficial; but overdosing can be poisonous. This is exactly what happens with permanent exposure to magnetic and electromagnetic fields.

…Because this mechanism is so important, we shall summarise it in one sentence: The serious pathological disruption is caused by exposure to magnetic and radiated fields resulting in the creation of additional reactive oxygen species (ROS) such as superoxide radicals and hydrogen peroxide, that combine with the increasingly produced NO to form extremely toxic peroxinitrite, that in turn reacts with hydrogens to form more hydrogen peroxide. The consequences of the pathological process are listed further down.

Many vital substances, required for functioning of the body, are rendered useless.

If the cascade of effects is disrupted, the normal and healthy effects of NO are restored (HORNIG et al. 2001).

> The NADH oxidase is important in another sense as well. It is also found in the cell nucleus where it can – depending on the redox system – control the gene expression, but can also damage genes (MASUKA, 2006).
>
> Bees, Birds and Mankind: Destroying Nature by Electrosmog, Ulrich Warnke, 2007. p. 36.37
> http://broschuerenreihe.net/britannien-uk/brochure/bees-birds-and-mankind/index.html

In his report, Dr. Warnke details the devastating results of this disruption.

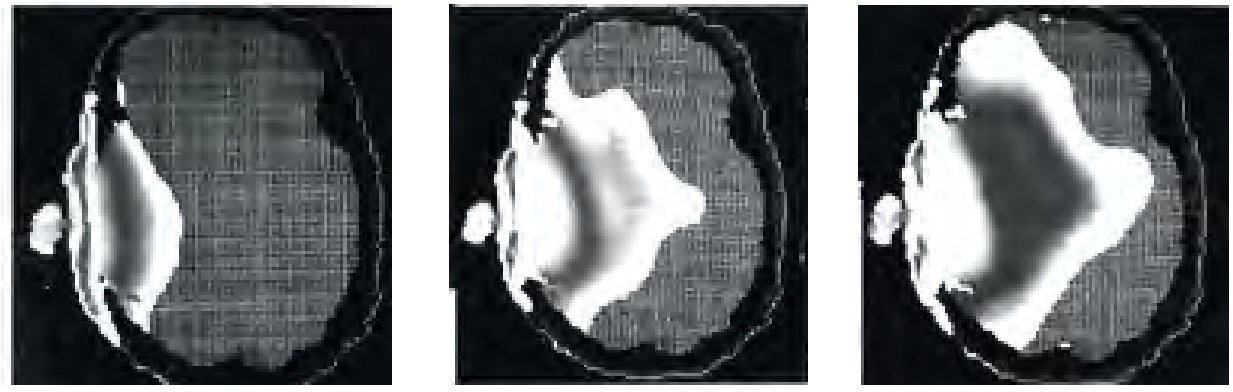
And in January 2012, Electromagnetic Biology and Medicine published research showing 143 proteins in the mammalian brain dysregulated by this radiation, including in regions of the brain important for learning and memory.

> Brain proteome response following whole body exposure of mice to mobile phone or wireless DECT base radiation, Fragopoulou et al. Early Online: 1–25, 2012, http://www.emfacts.com/2012/01/new-paper-emf-effects-on-mouse-brain-proteome/ Release

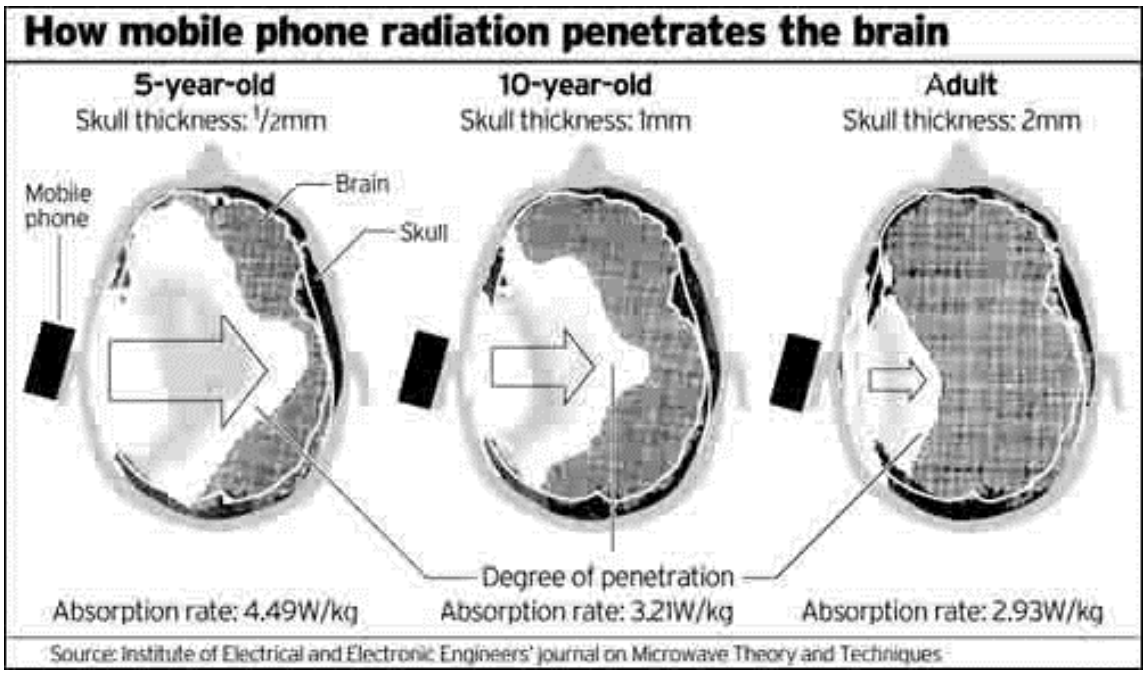
Children

In March 2012, research from Yale University showed in-utero exposure to 800-1900 MHz radiation from cell phones (electric Smart Meters are 900 MHz) caused hyperactivity and impaired memory.

Children are much more vulnerable to electromagnetic and radiofrequency radiation, due to their developing nervous and immune systems, their thinner, softer craniums, and their much greater absorption into their brains and eyes. Om Gandhi, University of Utah, showed this in 1996 from cell phone exposure.



Adult 10 year old 5 year old



This is another representation of this information.

How many children sleep on the other side of the wall from Smart Meters?

Reflection and metal implants

Research from Japan showed that microwave RF can re-radiate in metal buildings increasing radiation intensity up to 2000 times (Hondou et al. 2006). Mobile homes are often made of metal. Reports by Sage and Associates, which found FCC violations by Smart Meters, included the discussion of reflection and re-radiation, as well as localized heating causing problems for those with metal implants (http://sagereports.com/).

> Metal implants can magnify the intensity of the microwave exposure by forming standing waves and those with such implants may be vulnerable to tissue damage from microwave exposure. Swelling and pain associated with metal implants have been reported with the symptoms disappearing when exposure was stopped. Those with metal implants should be excluded from working with microwave emitting equipment.
>
> Source: http://www.magdahavas.com/2010/08/23/pick-of-the-week-7-hazards-of-microwave-radiations-review-from-1960/
>
> Kuo-Chiew Quan. 1960. Hazards of Microwave Radiations – A Review. Industr. Med. Surg. 29:315-318, July 1960 and reprinted in Occupational Medicine, Medical News Letter, Vol. 36, No. 10. November 18, 1960, pp 29-34. http://www.magdahavas.com/wordpress/wp-content/uploads/2010/08/Quan_1960.pdf

Increased exposure in high density housing and with multiple meters

Personal account, Shane, California:

> … I checked in with my neighbors in the small bungalow complex where I lived. EVERY person living there had begun to notice that they weren't feeling normal after the smart meters were installed. Examples: The hale-and hearty-fisherman who lived across the garden from me said he hadn't slept for more than an hour, the 20-somethings were having daily headaches and I couldn't help but notice that they were arguing all the time, the 40-something woman living in the building next door suspected she was starting menopause because of increased irritability and insomnia (8 smart meters had been installed directly below her bedroom) that drove her into her living room, the little kids next door began to scream and cry all the time, the 30-something woman upstairs was having daily headaches and exhaustion, the writer across the way developed blood pressure problems, and I was only able to tolerate my apartment for 4 hours at a time.

Apartment and condominium dwellers with multiple meters on one wall have increased exposure to this radiation.

Personal account, R.H. San Diego:

> In July 2010, SDG&E installed Smart Meters in my condo complex. I own a townhouse that is situated in clusters: 8 units per cluster. Therefore 16 Smart Meters were installed in the utilities shed outside my kitchen/bedroom walls, ten feet away.
>
> I began having symptoms of head burning and pressure on my chest within a few days. As time progressed the symptoms worsened. I had severe burning in my head and headaches of a new type. I started having palpitations, arrhythmias and flutter. I called SDG& E. Three people including an engineer and the director of the Smart Meter program came to my home, spent an hour talking and photographing the meters. They took no measurements of the radiation, though they said they would on the phone. The next day SDG&E informed me that they would not be replacing the meters with the analogue meters. They assured me that they are concerned about people's health.
>
> By six weeks in, my cardiac symptoms were so severe and erratic that I had to move out. I rented an apartment, which turned out to be unsafe as well. The Smart Meters are everywhere. With the intensification of my symptoms, I have become EMF/RF sensitive and now have the above problems around cell towers, Wi-Fi and other sources, accompanied by skin rashes and burning.
> I am being evaluated by a cardiologist. I have always had a strong, healthy heart, even told so by doctors. The cardiologist has sent me for an evaluation by a neurologist as well.

> Five people have reported symptoms in my home: My father has experienced headaches and visual migraines. My mother reported having pressure on the upper part of her chest and palpitations. One neighbor exposed to these 16 cluster meters is experiencing headaches and chest tightness. Another neighbor has difficulty opening her eyes in the mornings after 8 hours by the meters. Her ophthalmologist could find no explanation. She said she uses her fingers to open her lids. All of the above symptoms have occurred since the smart meter installations. The symptoms are worsening for everyone.
>
> I am running scared living this nightmare. I don't know where to live and fear for my well-being. I already have a prior immune disability and I thought I would be legally protected by the ADA. I don't know where it is safe for me to live. In addition, the financial impact of this disaster compounds. I pay my monthly mortgage and rented a place, which due to symptoms, I cannot stay in. I am not sure that I can rent or sell my condo in good conscience. I am seeking medical care including treatments not covered by any insurance. My out of pocket costs continue to grow.

These problems will only grow with time.

Swiss MP and physician Dr. Yolanda Gilli:

> How high do you estimate the economic costs, for example as a result of the increase of multi-system diseases in area-wide introductions of smart grids, which operate with GSM, WLAN, or PLC?
>
> Radiation risks and Smart Grid, Parliamentary filing (14 co-signers), 3-14-12
> http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20123169

Electrohypersensitivity

Dr. Poki Stewart Namkung, Santa Cruz County Health Officer

> In the 1950s, 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 headaches, weakness, sleep disturbance, emotional instability, dizziness, memory impairment, fatigue, and heart palpitations. Clinical research….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 (Levalios et al., 2002), and 8% in Germany (infas Institut fur angewandte Sozialwissenschaft GmbH, 2003)….
>
> 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).

Health Risks Association with SmartMeters, January 13, 2012
County of Santa Cruz, Health Services Agency
http://sccounty01.co.santa-cruz.ca.us/bds/Govstream/BDSvData/non_legacy/agendas/2012/20120124/PDF/041.pdf

Arthur Firstenberg

The Soviets named it, appropriately, radio wave sickness and studied it extensively.

The Largest Biological Experiment Ever, 2006
http://proliberty.com/observer/20070307.htm

Catherine Kleiber

This impairment is known by many names: radiowave sickness, microwave sickness, EHS. Radiofrequency sickness results from overexposure to radiofrequency radiation. Radiofrequency sickness is not a disease. It is an environmentally induced functional impairment. Radiofrequency sickness has real and disabling consequences. People with radiofrequency sickness experience illness (or even death) upon exposure to radiofrequency radiation. The most common sources are electrical pollution – high frequencies that travel on building wiring – and transmitters – all wireless devices.

The iron-clad rule in environmental medicine is that where there are cases of toxic exposures the source of the exposures must be removed.

The only "cure" for radiofrequency sickness is not to be exposed to radiofrequency radiation. People with radiofrequency sickness often become ill almost immediately upon exposure, although the severity of the illness depends on how often the exposure occurs, the frequency and amplitude of the radiation signal and the duration of the exposure. Studies show pulsed microwaves, as utilized by modern communication devices - including transmitting meters - are very potent biologically.

A New Advocacy Crisis: Radiofrequency Sickness, for
National Council on Independent Living
http://www.ncil.org/resources/radiofrequencyarticle.html

In 1998, a survey conducted by the California Department of Health Services indicated that 120,000 Californians were unable to work due to electromagnetic pollution -- California EMF Program, The Risk Evaluation: An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances (2002).

EMF Safety Network:

EMF sensitivity is also known as electrohypersensitivity, electrosensitivity,

electrical sensitivity, and others. It is estimated that 3% of the population has EMF sensitivity and up to 35% have symptoms of EMF sensitivity. Opting out of the Smart Meter program, especially on living and working premises is absolutely essential because prudent avoidance is the only known relief for health symptoms from EMF sensitivity. Other vulnerable groups include children, pregnant women, seniors, people with medical implants and the immune compromised.

5.5.1 Electrohypersensitivity: State-of-the-Art of a Functional Impairment

“In summary it is evident from our preliminary data that various alterations are present in the electrohypersensitive persons’ skin. In view of recent epidemiology studies, pointing to a correlation between long-term exposure from power-frequent magnetic fields or microwaves and cancer, our data ought to be taken seriously and analyzed”.

Johansson, O. 2006. Electrohypersensitivity: State-of-the-Art of a Functional Impairment. Electromagnetic Biology and Medicine. December 2006; 25(4): 245-258.

5.5.2 European Parliament EMF Resolution

The European Parliament EMF Resolution of April 2009 “calls on member states to follow the example of Sweden to recognize persons that suffer from electrohypersensitivity as being disabled so as to grant them adequate protection as well as equal opportunities”.

5.5.3 US Access Board Recognizes EMF Sensitivity (2002)

"The Board recognizes that multiple chemical sensitivities and electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions of an individual that it substantially limits one or more of the individual's major life activities. The Board plans to closely examine the needs of this population, and undertake activities that address accessibility issues for these individuals.

“The Board plans to develop technical assistance materials on best practices for accommodating individuals with multiple chemical sensitivities and electromagnetic sensitivities. The Board also plans to sponsor a project on indoor environmental quality. In this project, the Board will bring together building owners, architects, building product manufacturers, model code and standard-setting organizations, individuals with multiple chemical sensitivities and electromagnetic sensitivities, and other individuals. This group will examine building design and construction issues that affect the indoor environment, and develop an action plan that can be used to reduce the level of chemicals and electromagnetic fields in the built environment."

in EMF Safety Network CPUC Application, A. 10-04-018, April 2010

Janet Newton, EMR Policy Institute.

> FCC's RF limits …do not protect individuals with EMR functional impairment. No federal agency keeps track of cumulative wireless radiation levels…Nor require signage to identify wireless environments so that individuals with EMR functional impairment can avoid these locations…
>
> Testimony to Department of Justice December 2010 hearing on disabilities Exhibit G, Southern Californians For Wired Solutions To Smart Meters (SCWSSM) Protest Of SDG&E, SCE and PG&E applications for approval of Smart Grid Deployment Plans, A.11-06-006 et al., August 4, 2011

Medical/Health organization response

On January 19, 2012, the American Academy of Environmental Medicine sent a letter to the CPUC calling for an immediate moratorium on Smart Meters.

> "Chronic exposure to wireless radiofrequency radiation is a preventable environmental hazard that is sufficiently well-documented to warrant immediate preventative public health action…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 serous medical concerns are resolved. We consider a moratorium on installation of wireless "smart meters" to be an issue of the highest importance."
>
> http://aaemonline.org/images/CaliforniaPublicUtilitiesCommission.pdf

They also called for "immediate relief to those requesting it and restore the analog meters." They have now released a position paper in April entitled "Electromagnetic and Radiofrequency Fields Effect on Human Health." (http://aaemonline.org/emf_rf_position.html)

Santa Cruz County Health Department, January 13, 2012

> "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 by localized heating and by electromagnetic interference..."
>
> "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, harmful effects on sperm, double strand breaks in DNA which could lead to cancer genesis, stress gene activation indicating an exposure to a toxin, and alterations in brain glucose metabolism."

> "…FCC guidelines are irrelevant and cannot be used for any claims of SmartMeter safety unless heat damage is involved."
>
> Health Risks Associated with Smart Meters, Health Officer Dr. Poki Stewart Namkung MD, MPH; Attachment B, B1, B2
> http://sccounty01.co.santa-cruz.ca.us/bds/Govstream/BDSvData/non_legacy/agendas/2012/20120124/PDF/041.pdf

In July 2012, Dr. David Carpenter, founder of the New York University of Albany's School of Public Health and director of UoA's Institute for Health and the Environment, together with several international experts, wrote the letter "Smart Meters: Correcting the Gross Misinformation". That letter has now been signed by 54 international scientists and health professionals. http://maisonsaine.ca/smart-meters-correcting-the-gross-misinformation/

Austrian Medical Association:

> The planned area-wide introduction of so-called 'smart meters', can lead to health consequences, in the opinion of the Department of Environmental Medicine of the Austrian Medical Association (ÖÄK)… The available transmission options such as radio or transmission over the power grid itself (Powerline Communication, short PLC) lead to electrosmog that is harmful to health. Additionally, with Power Line Communication the existing electrical lines and the connected devices now emit increasing electrosmog (electric fields in the Kilohertz range).
>
> Press Release, February 4, 2012
>
> The expected health consequences would be an increase in symptoms and diseases that fall into the category of so-called multi-system diseases. This illness is characterized by involving several organs or functional systems at the same time and in interaction… Who is liable in the event of health problems and diseases caused by the increased field exposure on the part of the Smart Meter?...
>
> From the perspective of the Austrian Medical Association, the planned timetable of mandatory introduction of 'smart meters' should be reconsidered or suspended until pending clarification and solution of open questions."
>
> Letter to Austrian Federal Ministry for Economics, Family and Youth, 1-18-2012
> Translated from German http://www.aerztekammer.at

The Austrian Medical Association also issued a report "Guideline of the Austrian Medical Association (ÖÄK) for the diagnosis and treatment of EMF-related health problems and illnesses (EMF syndrome)" on March 3, 2012.
http://www.aerztekammer.at/documents/10618/976981/EMF-Guideline.pdf
In that report, they set preliminary benchmarks for "normal" RF exposure at .0001 microW/cm2 – ten million times lower than FCC guidelines.

Swiss MP and physician Dr. Yolanda Gilli to the Swiss Parliament (with 14 co-signers)—

> With an area-wide introduction of "smart meters", and for example their connection via PLC, would massively increase the burden from these electric or magnetic fields on the Swiss population, Physicians for Environmental Protection (AefU) (1500 physicians) insist.
>
> - How do you intend to preventatively protect the Swiss population against such radiation?
> - How do you intend to enforce the precautionary principle? Are you prepared to tighten the limits?
> - Do you share the opinion that through GSM, WLAN, or tethered Smart Grid PLC, the exposure of the population to fields in the intermediary frequency range is massively increased?
> - What do you intend to do about it? Are you prepared to take accompanying measures?
> - How high do you estimate the economic costs, for example as a result of the increase of multi-system diseases in area-wide introductions of smart grids, which operate with GSM, WLAN, or PLC?
>
> Radiation risks and Smart Grid, Parliamentary filing, March 14, 2012
> http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20123169

Division of Ratepayer Advocates

> "There is clearly a high level of public concern over possible adverse safety and health impacts of the SmartMeter system. The Commission has an obligation to investigate whether these concerns are well founded, in a public proceeding…
>
> To the extent that the Commission finds, based on information that is publicly and properly vetted, that the public's concerns are misplaced, the Commission's actions and explanations should reassure the public. If the Commission finds that there are health or safety problems that need to be addressed, it can (and must) proceed to finding solutions."
>
> "DRA recommends immediate Commission action to address concerns about RF interference and possible adverse impacts on health and safety. . .The Commission has the primary authority and responsibility to protect the health and welfare of California residents by ensuring that public utility service is safe and reliable."
>
> DRA Response, October 20, to A.05-06-028 Californians for Renewable Energy, Inc. (CARE), alleging Smart Meters ignited the San Bruno fire and calling for health and safety impacts to be evaluated, p. 4-5, 6

DRA further recommended that

a) PG&E should be ordered to quantify SmartMeter RF emissions and customer exposure levels.

b) The Commission should direct PG&E to explain what safety precautions it took in deploying SmartMeter equipment in close proximity to gas equipment.
c) The Commission should review SmartMeter customer complaints to determine the prevalence and magnitude of interference from Smart Meter.

DRA Response to CARE, p. 6-9

Part of their conclusion states:

"To fully address the concerns that have been raised, the Commission should ensure that accurate, non-biased, comprehensive, evidence-based data is gathered and used to support its findings. It may want to consider public outreach efforts to ensure that the Commission's findings and resolutions of RF issues restore public confidence in SmartMeters (if such confidence is warranted)."

DRA Response to CARE, p. 10

Administrative Law Judge Sullivan issued a proposed decision (PD) on October 26, in accordance with PG&E's request, dismissing EMF Safety Network's application raising health issues before the PUC. On November 15, 2010, the Division of Ratepayer Advocates once again weighed in with comments on PG&E's request:

"Notwithstanding the FCC's authority to set RF emissions standards, this Commission has ample authority (as well as a responsibility) under the Public Utilities Code to ensure that PG&E's AMI system poses no threat to public health or safety. The PD errs in reaching conclusions based on limited and incomplete evidence about the RF emissions from PG&E's AMI system. The record in this proceeding is not robust enough to support conclusions about the health impacts of Smart Meters. DRA recommends that the Commission delay consideration of this PD until additional evidence is compiled and reviewed in a public process. If the Commission decides to defer all questions concerning RF emissions of the AMI system to the FCC, it should refrain from making findings about Smart Meter RF exposure levels that are not supported by complete and adequate data, as this PD does. DRA strongly recommends the first approach as a means of building public confidence in the statewide advanced metering network, and restoring confidence in the Commission as a defender of the public interest."

DRA Comments on Proposed Decision to Dismiss EMF Safety Network Application, A.10-04-018

And on Friday, November 19, 2010, DRA issued yet another document, commenting on the proposed decision.

PG&E's opening comments state that "given the strength of the undisputed factual record in this proceeding, the PD's dismissal of EMF Safety Network's Petition is well-founded." This statement is incorrect in two ways: the factual record in support of PG&E's motion to dismiss the application is actually quite thin, and that evidence is clearly disputed by Network. In contrast, Network in its application and subsequent

filings provided references to many scientific studies indicating that there may be adverse health effects from RF emissions from wireless devices in common use (including a peer review of 1500 studies on the health impacts of known as the 2007 Bio-Initiative Report, which led the European Parliament to initiate an investigation on this subject). Accordingly, DRA agrees with Network that the PD grants PG&E's motion on the basis of weak and unreliable evidence, while ignoring more substantial evidence presented by Network.

The PD errs by: (1) relying on inadequate and disputed evidence about SmartMeter RF emissions submitted by PG&E; (2) ignoring evidence provided by Network, specifically, citations to scientific studies about health impacts of RF emissions from wireless devices; and (3) concluding that the SmartMeter RF emissions are within federal standards that do not in fact exist. The Commission should reject the PD and give serious consideration to investigating the health concerns raised by Network and other groups.

DRA Reply Comments on Proposed Decision, A,10-04-018
(Adopted decision was D.10-12-001)

CPUC response

Concerning CCSF's (City and County of San Francisco's) request that the Commission now use this proceeding to investigate EMF from SmartMeters, we decline to alter the scope of this proceeding. Moreover, the Commission, in D.10-12-001 (December 2, 2010), found that EMF produced by SmartMeters is "far below the levels of many commonly used devices," that the radio components of SmartMeters "are licensed or certified by the FCC" and that "it is not reasonable to re-open the Commission's review of Smart Meters for the purpose of considering the alleged health impacts of RF emission from Smart Meters."

Final Decision, 10-12-031, Decision Denying the City and County of San Francisco's Petition To Modify Decision 09-03-026, p. 21, December 2010

California Council on Science and Technology report on Smart Meters (2011)

The California Council on Science and Technology (CCST-- www.ccst.org) was asked by Assemblymembers Jared Huffman and Bill Monning to report on RF health risks from Smart Meters, whether FCC guidelines were sufficiently protective of public health, and whether additional standards were needed.

As background, the CCST is an appointed advisory panel for the state of California representing industry, university and government interests. It is not impartial or independent. It did not conduct any research.

Their findings: FCC guidelines are protective for thermal impacts from Smart Meters; non-thermal impacts are unknown. http://www.ccst.us/publications/index.php

The report did not say Smart Meters are safe.

This report was criticized by:

- California Department of Public Health, which actually did EMF research in the past,
- Dr, Raymond Neutra (Director Emeritus of the CDPH unit that conducted EMF research),
- Dr. De-Kun Li (Senior Research Scientist, Kaiser Permanente),
- Dr. Karl Maret (electrical engineer and medical doctor) who reviewed the research in his critique,
- Dr. David Carpenter (Director of the Institute for Health and the Environment, University of Albany, New York),
- Daniel Hirsch (nuclear policy expert; UCSC lecturer; President, Committee to Bridge the Gap),

and other scientists and health care professionals.

A prominent chart in the CCST report, which has been used repeatedly by utility companies in Smart Meter marketing materials, is in error. Daniel Hirsch exposed the errors in his critique of the CCST report. The CCST panel attempted to compare different units of measurement when comparing Smart Meter radiation exposure to that of cell phones and other microwave-emitting devices. This fundamental error reveals the lack of statistical background of the panel.

When Hirsch corrected these basic statistical errors (and Hirsch does not claim his answers are definitive but merely estimates), it revealed the following figures:

- at 10 feet from a Smart Meter, a person receives **5 – 16 times** the whole body radiation exposure from a cell phone held to the head
- at 3 feet from a Smart Meter, a person receives **53 – 160 times** the whole body radiation exposure from a cell phone held to the head
- using the inverse square calculation, at 1 foot, one Smart Meter exposes people to **450 - 1400 times** the whole body radiation exposure of a cell phone held to the head. (Figure 3 and 4) http://eon3emfblog.net/wp-content/uploads/2011/02/110212_GBG-on-Smart-Meters.pdf

How many children and adults sleep against walls where Smart Meters are mounted?

Much of the extensive research showing health damage from RF is at cell phone exposure levels. The implications of this much higher exposure are staggering.

Maine's Center for Disease Control hired experts from Exponent to assist its Smart Meter study and to report about the health effects from wireless smart meters. The Maine CDC report is often referenced by smart meter advocates. However, Exponent is a company that has defended the tobacco and asbestos industries in cancer cases. Exponent is featured in the

book, Doubt is Their Product: How Industry's Assault on Science Threatens Your Health, by David Michaels, Ph.D., M.P.H., Assistant Secretary of Labor for OSHA.

Industry response

Utility company response has been to repeat that Smart Meters are safe over and over again, on their websites, in media advertising, in public meetings, at the Public Utilities Commission.

Klaus Bender of the Utilities Telecom Council wrote a paper entitled: No Health Threat from Smart Meters.

> The Utilities Telecom Council (UTC) is a global trade association dedicated to creating a favorable business, regulatory, and technological environment for companies that own, manage, or provide critical telecommunications systems in support of their core business. http://www.utc.org/utc/about-utc

He concluded his remarks by saying:

> So when confronted with complaints that say smart meters cause a variety of health effects, ask the complainant to produce the science to support the claim. The conversation should end shortly thereafter.

His references were links to FCC web pages.

Cindy Sage of Sage and Associates wrote a rebuttal to his brief paper; she included 37 pages of research studies.

When asked if PG&E was keeping track of health complaints at a PG&E/Energy Commission workshop, Dec. 9, 2011, Jim Meadows, Director of Smart Meter program for PG&E, replied, "I'm not aware of it." This was after two years of customer complaints.

Richard Tell's reports for PG&E are frequently mentioned by the industry as studies PG&E had commissioned to assess safety. However, Richard Tell merely measured meter emissions against FCC exposure limits, nothing more. He did not assess safety. Health impacts were deferred to the FCC.

He also "time-averaged" the RF pulses emitted by Smart Meters, instead of providing the true maximum, or "peak" power, of those RF pulses. Time-averaging takes the time intervals of the pulses, and averages it with the intervals of time when the meter is not pulsing; an example would be to fire a gun twice in a minute, then average the intervals of actual firing with all the intervals where it was not fired. The resulting number for impact or pounds per square inch or velocity is meaningless, a junk number. The Tell reports are here:
http://www.pge.com/mybusiness/edusafety/systemworks/rfsafety/index.shtml

Dr. Leeka Kheifets is a utility industry researcher and consultant who testifies before city and county governments on behalf of the utilities – she has worked for the Electric Power Research Institute (EPRI) and PG&E. She also worked at the CPUC, and while there, had her financial records sealed. She has worked for EPRI while working for ICNIRP (International Committee for

Non-Ionizing Radiation Protection) – a clear conflict of interest. But the worst and most flagrant conflict of interest and violation of the public trust was when she was hired to work for the World Health Organization as assistant to Michael Repacholi, head of WHO EMF Project while being paid by EPRI. She brought in other EPRI and industry personnel to assist with the work of writing EMF guidelines. There is extensive information on her and the WHO EMF project at www.microwavenews.com . The irony of this is that Kheifets' own research has shown impacts from this type of radiation.

The issue of conflict of interest comes up with other national and international agencies as well.

Industry response: EPRI – Electric Power Research Institute

The Electric Power Research Institute is the research arm of the electric power industry. As noted above, their personnel were involved in writing World Health Organization EMF guidelines. They have issued several reports about Smart Meters. Their work was cited in the CCST report and included in the chart in that report. They represent the industry.

Federal Communications Commission (FCC)

Norbert Hankin, U.S. EPA, 2002:

> "The FCC's current exposure guidelines, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-ionizing Radiation Protection (ICNIRP), are thermally based, and do not apply to chronic, nonthermal exposure situations. They are believed to protect against injury that . . . result(s) in tissue heating or electric shock and burn. . . The FCC's exposure guideline is considered protective of effects arising from a thermal mechanism. . . the generalization by many that the guidelines protect human beings from harm by any and all mechanisms is not justified."
>
> Letter to Janet Newton, EMR Policy Institute
> http://www.emrpolicy.org/litigation/case_law/docs/noi_epa_response.pdf

FCC guidelines have been criticized for years by scientists and health professionals as inadequate for the reasons stated above. They are for short-term thermal exposure only, and they were modeled for a large man.

Robert Kane, Motorola engineer:

> What we learn is that a repeated insult or irritation to a particular biological area, such as a small region of the brain, can lead to irreparable damage. That is, given the existence of energy absorption "hot spots," the existence of which have been verified by numerous researchers, then each damaging exposure to radiofrequency radiation provides a new opportunity that the damage will become permanent. Part of

the problem is that an exposed person would never know of the penetration and damage.

Perhaps even more troublesome is that tissue damage in the body is usually followed by a process of repair or restoration.

So, each damaging exposure is likely to activate the growth of new cells to replace damaged or destroyed tissue. Cells that participate in the repair process are also likely to be some of the cells that were earlier damaged.
S. M. Michaelson reported that the thermal sensation of pain is evoked when thermal sensors in the skin reach approximately 46°C. From data given in that same research report we learn that no sensation of warmth would be felt in the skin, or scalp, until a dose of radiofrequency radiation was so high that internal damage to deep tissue was certain to result.

Researchers have pointed out that electromagnetic energy in the 900MHz region may be more harmful because of its greater penetrating capability compared to 2450 Mhz. More of the energy in the 900 MHz frequency range is deposited deeply within biological tissue.

J. C. Lin concluded that 918 MHz energy constitutes a greater health hazard to the human brain than does 2450 MHz energy for a similar incident power density. (J. C. Lin, "Interaction of Two Cross-Polarized Electromagnetic Waves with Mammalian Cranial Structures," IEEE Transactions on Biomedical Engineering BME-23, no. 5 (September 197 6): 371-75.)

Cellular Telephone Russian Roulette, p. 13, 14

The frequency of greater health hazard is the frequency for electric Smart Meters (902-928 MHz) and the mesh network.

PG&E representatives have said rather proudly that their meters emit 1/70 of 601 microwatts per cm2, the FCC guidelines for 902-928 MHz frequency (the electric Smart Meter frequency band). They also have said they are not RF experts. That is very clear. Biological harm from microwave and radio frequency can occur at millions of times below FCC guidelines.

The proposed Austrian Medical Association “normal range” benchmark below takes that into account.

Austrian Medical Association recommendations for high frequency electromagnetic radiation (March 2012).

≥ .1 microW/cm2	very far above normal
.001 - .1 microW/cm2	far above normal
.0001 - .001 microW/cm2	slightly above normal
≤.0001 microW/cm2	within normal limits

FCC guidelines allow up to 1000 microW/cm2.

FCC guidelines are 10,000 times higher than Austrian "very far above normal" recommendations, and 10,000,000 (ten million) times higher than Austrian "within normal limits" recommendations.

> "The FCC MPEs for the general public are well recognized by most RF operators and these exposure limits are among the most stringent of those that exist. It is, therefore, relevant to use the FCC MPEs as bench marks for evaluating potential human exposure to the AMR system to be deployed by PG&E."
>
> Richard Tell, Supplemental Report on an Analysis of Radiofrequency Fields Associated with Operation of the PG&E SmartMeter Program Upgrade System October 27, 2008

This statement by Richard Tell is false.

FCC exposure limits are not among the most stringent of those that exist. Other countries have far more stringent limits than the U.S. Switzerland, Russia, Belgium, Italy, Bulgaria and Hungary allow 1/100 or less of the radiation which FCC guidelines allow. And the Swiss Physicians for the Environment in April, 2012, asked its government for a further downward revision by a factor of 10, based on the research.

The international Bioinitiative Report, released in 2007, reviewed more than 1500 peer-reviewed studies that demonstrate biological effects and negative health effects resulting from EMF and RF radiation exposure at non-thermal levels. That report has been taken very seriously overseas, together with its recommendation for a drastic lowering of permitted exposures.

European Parliament, September2008:

> (Members of the European Parliament) are greatly concerned at the Bio-Initiative international report on electromagnetic fields, which highlights the health risks posed by emissions from mobile-telephony devices such as mobile telephones, UMTS, Wifi, Wimax and Bluetooth, and also DECT landline telephones. It notes that the limits on exposure to electromagnetic fields which have been set for the general public are obsolete.
>
> http://www.europarl.europa.eu/sides/getDoc.do?language=en&type=IM-PRESS&reference=20080903IPR36136

SWITCHING MODE POWER SUPPLY (SMPS)

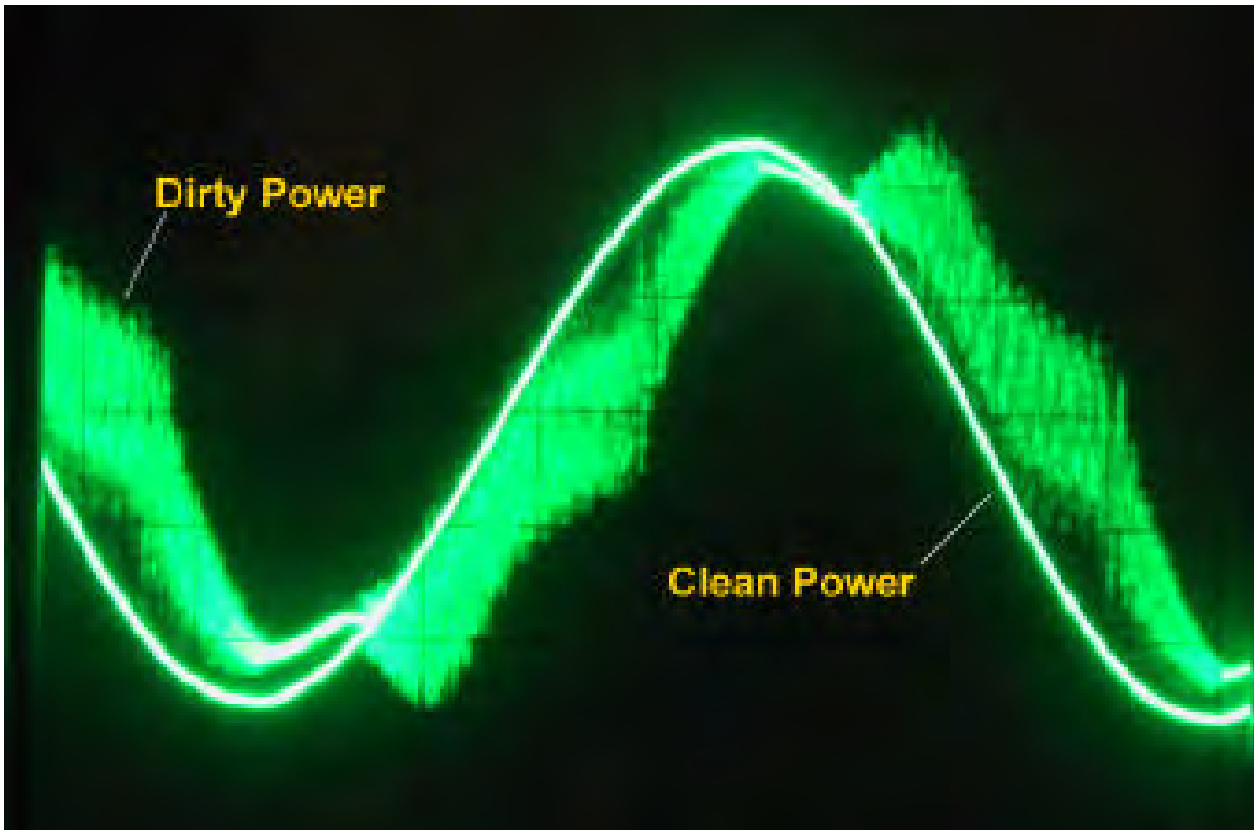
One source of the emissions from Smart Meters deserves special focus. Daniel Hirsch's charts correcting CCST exposure estimates were only for microwave RF exposure. That did not take

into account the EMF and RF from the switching mode power supply (SMPS) of digital, AMR, and AMI meters/Smart Meters.

The SMPS in these various digital meters creates powerful spikes of EMF and RF -- “dirty” electricity – and these occur constantly as the meter switches back and forth from alternating current (AC) to direct current (DC). http://eon3emfblog.net/?p=2180

This gets on house wiring, coupling to water and gas pipes, surrounding us in our homes, offices and other buildings, and traveling into other buildings. It also travels on and radiates from power lines.
This potent radiation problem and source, on its own, creates a serious health hazard which some scientists and engineers think is even more dangerous than the Smart Meter microwave emissions. And one could argue for an additive, even harmonic effect between the two sources of radiation which would only increase the level of harm.

“Dirty” electricity is a problem for digital meters, Smart Meters, and for wired Smart Meters using power-line carrier (PLC) systems. With PLC systems, utility companies are actually intentionally putting the RF signal on the lines.



from The Health Effects of Electrical Pollution, National Foundation for Alternative Medicine

Southern California Edison, Nevada Energy, and a number of municipal and investor owned utility companies, as well as PUCs, are insisting on digital or radio-off Smart Meters as an opt-out. This is not a solution.

Samuel Milham:

> Since dirty electricity is a potent carcinogen, and causes numerous health problems, the only way to avoid a public health catastrophe is to send the smart meter information over existing telephone land lines or go back to the analog meters. I'm not making light of or ignoring the RF pollution caused by the smart meters, but think the dirty electricity may be a more serious and intractable problem.
>
> Critique of CCST report, 2011

Retired epidemiologist (Washington State) Samuel Milham recently published a book "Dirty Electricity" which explains the phenomenon.

Austrian Medical Association:

> The Austrian Medical Association emphatically calls to attention that with the area-wide introduction of 'smart meters' and their connection via power line communication (PLC), the Austrian population's exposure to electrical or magnetic fields in the intermediate frequency range (kilohertz range) would be massively raised. These fields are also emitted by cables in the building, including connecting cables to appliances and electrical appliances, far removed from the Smart Meter. The expected health consequences would be an increase in symptoms and diseases that fall into the category of so-called multi-system diseases. This illness is characterized by involving several organs or functional systems at the same time and in interaction. The consequences are, among others, an increased stress load on people. This can, depending on an individual starting position and exposure level, lead to an increased risk for exhaustion (keyword burn out), learning problems, depression, and cancer.
>
> The Austrian Medical Association assumes that these health aspects and resulting significant socioeconomic consequences and costs were not considered up to then, because the technical and environmental medicine expertise in this regard were to given in the two reports (PWC, Kearney). These health and socioeconomic consequences that are to be expected are, from the perspective of the Austrian Medical Association, mandatory to be included in the consideration. The Austrian Medical Association strictly rejects another, in this case actually state-mandated, expansion of the Electrosmog exposure on the Austrian population.
>
> January 18, 2012, Letter to Austrian Federal Ministry for Economics, Family and Youth

"Dirty" electricity is also created by electronics, appliances, and other household devices, some touted as "energy efficient." Light dimmer switches and compact fluorescent bulbs are often

cited as two of the worst sources. “Dirty” electricity is potent and damaging to biological systems, and is suspected as being a carcinogen.

Additional information on “dirty” electricity is available at www.electricalpollution.com.

INTERFERENCE WITH ELECTRONICS

People have reported problems with security systems, cordless phones, baby monitors, automated garage doors, and more.

> "Right about the time that SmartMeters were installed, our phone went insane," wrote Jane Meckman of San Jose.
>
> "Your article concerning the PG&E SmartMeter was exactly what I needed to see," wrote Mario after one of my earlier columns. "Ever since PG&E has installed that stupid device, our DirecTV has been having massive signal issues."
>
> Violeta Perez of San Jose wrote that, "Ever since my SmartMeter was installed, my home alarm system has been going off randomly."
>
> "A mystery has been solved for us," wrote Veronica Wong, complaining that her baby monitor has suddenly picked up static.
>
> Cordless phones and crib monitors, patio speakers and wireless headsets are spitting out static and startling pops and crackles, they complained. Also affected, they said, are wireless microphones, security systems, motion detectors and remotely controlled garage doors. This equipment operates largely on the 900- to 928-megahertz radio spectrum.
>
> http://www.mercurynews.com/top-stories/ci_16007725
> SmartMeters interfere with baby monitors, other household gadgets, Sept. 2010
>
> My home suffered numerous electrical problems after Smart Meters were installed. Ground Fault Interrupters (GFIs) tripped for no apparent reason, and a wide variety of appliances (old and new) stopped working. PG&E indicated the problem was with my old electrical meter. I was told that my old meter had been restricting electricity, so my house wiring and appliances were reacting to a new electrical flow, and the implication was that I was fortunate because these appliances would have burned-out long ago if this corrected flow had been there all along. At no time did PG&E disclose to me that Smart Meters operate in a fundamentally different manner from the analog/electromechanical meter, that the new meter was the source of the disruptions, or that Smart Meters were causing problems with GFIs and spiky conditions that damage appliances.
>
> PG&E customer, personal correspondence

Smart Meter Interference: Assessment of Chatham-Kent Hydro Smart Meter Implementation:

The Smart Meters installed by Chatham-Kent Hydro utilize an unlicenced radio transmitter operating on the 902-928 MHz band to convey data back to the billing system...

This implementation is unwise for a number of reasons.

Much consumer equipment exists in this band. Early tests indicate that most of this equipment suffers from detrimental performance in areas where Smart Meters are installed. Most of these consumers are not aware that they are receiving interference from all the Smart Meters within range of their equipment. In many cases, the interference, which causes random loud pops or clicks, renders the devices completely useless to the consumer.

Chatham-Kent Hydro is aware that these devices will be negatively impacted, and states,

> "900 MHZ telephones and baby monitors can be interfered with by the Smart Meter network. Our vendor has done testing in the area and they report that the devices ability to filter out the interference varies greatly from supplier to supplier. Some phones work perfectly fine while others report short "popping sounds" every minute or so. This interference is, although undesirable, within the realm of acceptable performance for devices operating in the 900-928 MHZ band."

Technically, there is absolutely no way for any analog radio device to "filter out" this interference since it is co-channel interference and not a design deficiency. In other words, the undesired Smart Meter signal overpowers the desired signal on the same frequency, and there's no filter or other technology that could eliminate it. The occurrence of interference is much more frequent than once "every minute or so" as stated. In one recent sample, over one hundred "pops" were documented in a single minute, and this kind of intensity is observed throughout much of the day and night. There were very few times where the intensity dropped to the level claimed by Hydro. The problem with Chatham-Kent Hydro's assurance that this is "acceptable performance for devices operating in the 900-928 MHZ band" is that it is ILLEGAL to cause this interference in the first place. Industry Canada requires all equipment operating under RSS-210 to cause no interference to other users, including licence-exempt users...

> "Smart Meters operate in the 902-928 MHz frequency band, and the modules are fully certified for operation by Industry Canada and the Federal Communications Commission in the USA. i.e. the meters operate completely within regulations and are designed to coexist with any potential interferers. Because of the shareable nature of the band and the corresponding "rules" around its use, users cannot expect to have clear access, without interference from other devices."
>
> Chatham-Kent Hydro

This interpretation is incorrect, according to Industry Canada, and could land Chatham-Kent Hydro in some expensive trouble. There is nothing about this system which is designed to "co-exist" with other users. Even though each TUNet module is Industry Canada certified, compliance with the regulations is not guaranteed. When these rules were implemented, Industry Canada and the various stakeholders which contributed input to the bandplan did not envision a mesh network of 32,000 such devices effectively monopolizing the entire band in a geographic area. The certification is for a single TUNet module, not an entire network.... The assertion that "users cannot expect to have clear access" is incorrect, as the regulations clearly state that licence-exempt users CANNOT cause interference to each other, therefore, users CAN expect to have clear access to individual frequencies in this band....

Chatham-Kent Hydro offered their solution to interference caused to consumer devices by Smart Meters:

> "Thankfully, as time goes on, less and less devices will be operating in this band as most commercial products seem to be moving onto the 2.4GHZ and 5.8 GHZ bands."
> (Chatham-Kent Hydro also posted instructions on their website for customers to go out and purchase new equipment that used other bands.)

This is a presumptive statement, and what it really means is that they expect their system to chase consumers entirely off the band. It makes no accommodation for the thousands of 902-928 MHz devices already in use. Forcing a migration to other bands is a poor precedent, since there is nothing to stop some other user from deciding to use those bands and chasing consumer equipment to the next band, ad infinitum...

When contacted, Industry Canada was not even aware of the use of 902-928 MHz by Chatham-Kent Hydro for Smart Meters, but they are now. Under the rules, IC stated that the legality of this implementation is highly questionable, but it's worded in such a way that Industry Canada would only get involved if a licenced user is being interfered with.

However, the use of a network of 32,000 Smart Meters on this band effectively monopolizes it and prevents most other uses, which was never the intent of the bandplan, nor of RSS-210. It is highly likely that this kind of non-conforming use would be examined and banned in future bandplan updates, which could force the system to cease operation and move to a more appropriate system. Industry Canada and the Radio Advisory Board have already discussed the problem caused by Chatham-Kent Smart Meters.

Use of this band for meter telemetry required consultation with all stakeholders of the band. Nobody was consulted by Chatham-Kent Hydro, and most users are quite opposed to the ongoing implementation of these Smart Meters due to the clandestine use of 902-928 MHz without any public disclosure or consultation. Industry Canada

stated that the continued use of this band by Chatham-Kent Hydro is “highly risky”, since they have no protection from interference whatsoever, and have no guarantee that long-term access to this band will continue to be allowed. They added that it doesn’t matter “who’s there first” or who spent the most money – Chatham-Kent Hydro has “no rights” when using this band; they can use it for now on a “cause no interference basis,” and will receive “no protection from interference to their system.”

VE3NCQ, Chatham-Kent Amateur Radio Club
http://www.ve3ncq.ca/wordpress/?page_id=10

CEPro: “Do Smart Meters Interfere with Alarms? --

"Alarm service providers should closely monitor the potential for interference to alarm systems, make appropriate filings with the FCC and others, and help employees understand the issue and how it may affect their installation and operational practices," the CSAA advises. "The difficulty of detecting sources of interference and accurately prevent it enhances the problems."

A report from consulting group Sage Associates says, "Devices in the home may experience RF bursts of high enough intensity to cause malfunction and/or damage. These events are reported where smart meters have been installed."

The report adds that alarms using unlicensed frequencies are "automatically" at higher risk, adding the interference creates "the possibility of [the alarm] going haywire, causing false alarms, costly city fines for responding to false alarms, and headaches for the homeowner."

“Association issues warning that electrical smart meters can cause wireless security systems go 'haywire.'” January 21, 2011
http://www.cepro.com/article/do_smart_meters_interfere_with_alarms/

Maine Public Advocate

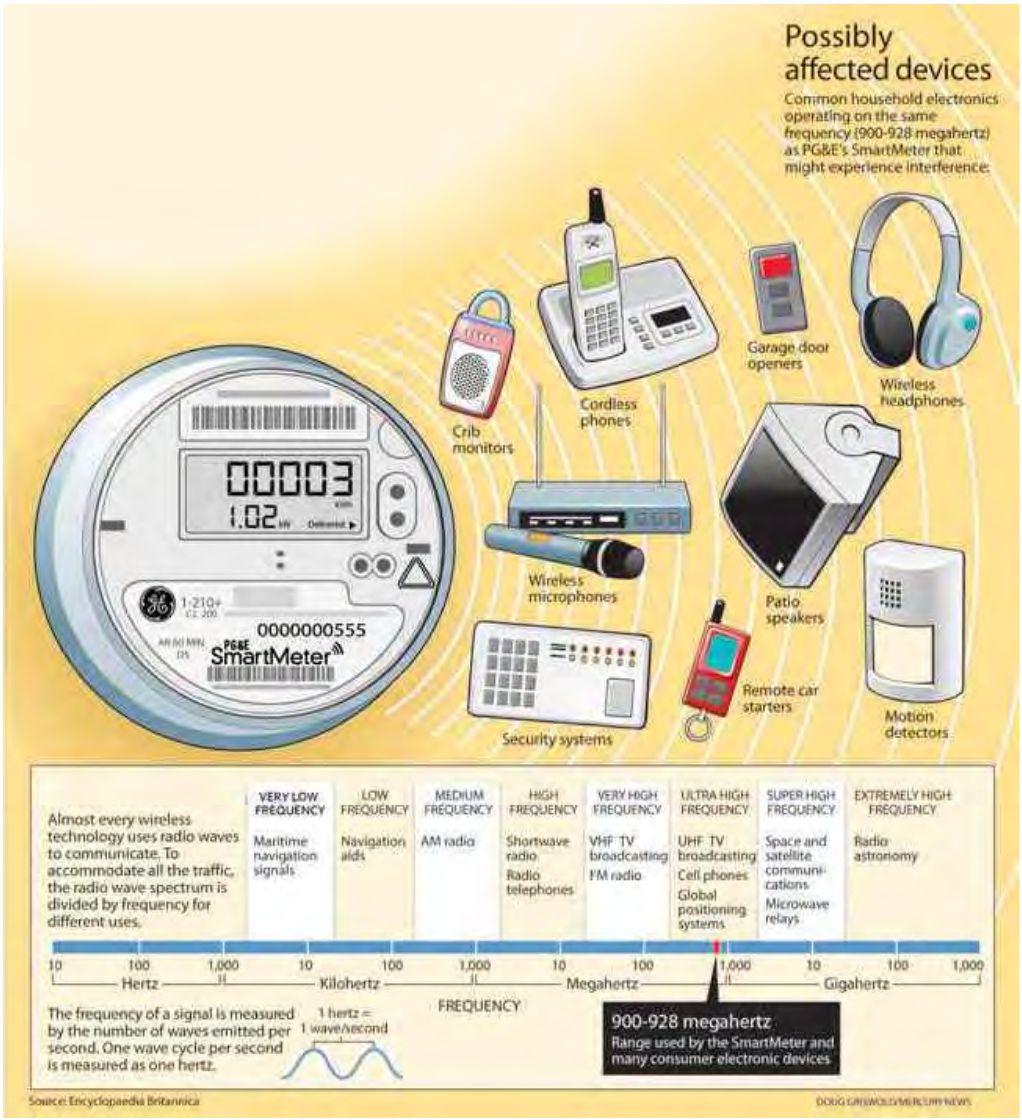
To date, over 200 customers have contacted CMP (Central Maine Power) about problems with a variety of appliances and devices including phones (cell, cordless, and landline), answering machines, Internet routers and wifi, personal computers, TVs, garage doors, fire alarms, clocks and even electric pet fences….

CMP received the first calls about interference problems shortly after they began installing the meters last fall, and they continue to receive calls as meters are installed in more communities.

Public Advocate Richard Davies said, “We believe that these 200 plus customers are only a subset of those affected. CMP has already installed nearly 425,000 meters, so there may be many more customers who are having problems with devices and appliances, but don’t know that the problems may be caused by the smart meter…. My agency is

troubled by the possibility that people may be spending their time and money fixing a problem that may be caused by CMP's meters, and that can and should be fixed by CMP."

Press release, Maine Office of Public Advocate, November 17, 2011
http://www.maine.gov/tools/whatsnew/index.php?topic=meopa_news&id=318771&v=Default



http://www.mercurynews.com/top-stories/ci_16007725

INTERFERENCE WITH MEDICAL DEVICES

EMF Safety Network:

> Widespread wireless installations including Smart Meters are creating safety risks for 20-25 million people, who have medical implants such as pacemakers, infusion pumps, metal rods and hearing aids. In some cases these interference risks are life threatening. Dr. Gary Olhoeft, professor of Geophysics in Colorado, has a medical implant, a deep brain stimulator for Parkinson's disease. Olhoeft shares his research and knowledge about wireless interference with implants. Video at http://emfsafetynetwork.org/?p=4560
>
> In part two (of the video) Dr. Ohloeft describes a situation where as he passed through a retail store security system his stimulator was turned off. He shares, "I had to turn myself back on. I have about four seconds to do that before I start shaking so bad I can't do it."

Pacemakers and insulin pumps are just two common medical devices which have warnings about RF interference potential. One woman in Salinas had her pacemaker defibrillate 4-5 feet away from a Smart Meter at a PG&E demonstration.

Institute of Electrical and Electronics Engineers -- IEEE (1998)

> The past few years have seen increased reports that medical devices, such as pacemakers, apnea monitors, electrically powered wheelchairs, etc., have failed to operate correctly because of interference from various emitters of radiofrequency energy. This condition is called radiofrequency interference (RFI)…. If there exists the possibility of RFI problems to medical devices, steps should be taken to ensure that all sources of RF energy be kept at a sufficient distance.
>
> Hundreds of incidents of RFI induced medical device failure have been reported, studied, and summarized. The most likely source of those failures has been RFI from mobile radio transmitters. The consequences have ranged from inconvenience to serious injuries and death. However, many more incidents may occur that are not reported because most users of medical devices are unaware that RF fields are present when problems are recognized and because of the intermittent nature of the failures that could cause them to be unobserved…
>
> Portable wireless communications equipment, including cellular phones, handheld transceivers, and vehicle mounted transceivers, comprise one of the largest sources of RFI. Some medical devices are especially sensitive to the type of digital modulation that some of the wireless communications devices utilize...

> In the mid-1980s, the US Food and Drug Administration (FDA) had become aware that approximately 60 infants died in the United States while being monitored for breathing cessation by one model of apnea monitor. Subsequent tests have shown that this particular monitor is extremely susceptible to low level RF fields, including those from mobile communication base stations several hundred meters away and FM radio broadcast stations more than one kilometer away. Other apnea monitors have been shown to be similarly susceptible to malfunction.
>
> Radiofrequency Interference with Medical Devices, Technical Information Statement, IEEE Committee on Man and Radiation. IEEE Engineering in Medicine and Biology Magazine 17(3):111-114 (1998)
> http://ewh.ieee.org/soc/embs/comar/interfer.htm

Janet Newton, EMR Policy Institute.

> The most seriously threatened are the NIH-estimated 20 million Americans with IMDs. This is eight to 10 percent of Americans. Smart meters and wireless broadband present the most serious threat because of their ubiquitous deployment throughout the public's living and working environments… FCC's RF limits certainly do not protect those with IMDs or who require critical care equipment that can malfunction in the presence of wireless signals from outside sources. Such malfunctions can be fatal…No federal agency keeps track of cumulative wireless radiation levels, nor identifies critical levels in locations where individuals with IMDs may be at risk.
>
> Testimony to Department of Justice, December 2010 hearing on disabilities Exhibit G, Southern Californians For Wired Solutions To Smart Meters (SCWSSM) Protest Of SDG&E, SCE and PG&E applications for approval of Smart Grid Deployment Plans, A.11-06-006 et al., August 4, 2011

In addition to the serious danger of interference, potential hacking of medical devices has already been demonstrated for insulin pumps, pacemakers and implantable cardiac defibrillators (ICDs). A team of researchers from the Universities of Washington and Maryland and Harvard Medical Center affirmed that pacemakers and ICDs could be attacked. They intercepted personal data and telemetry. They were able to change settings and therapies, and they successfully triggered command shocks to induce fibrillation.

> Next-generation IMDs [implantable medical devices], which may incorporate greater communications capabilities and be more networked, should not rely solely upon external mechanisms like firewalls on external devices and controlled distribution of commercial programmers. Firewalls on wireless programmers or Internet-connected at-home monitors do not immediately protect the wireless links themselves and may not protect the integrity of communications.

According to security researcher Jay Radcliffe, a diabetic,

> An attacker could intercept wireless signals and then broadcast a stronger signal to change the blood-sugar level readout on an insulin pump so that the person wearing the pump would adjust their insulin dosage. If done repeatedly, it could kill a person. Radcliffe suggested scenarios where an attacker could be within a couple hundred feet of a victim, like being on the same airplane or on the same hospital floor, and then launch a wireless attack against the medical device. He added that with a powerful enough antenna, the malicious party could launch an attack from up to a half mile away.
>
> Black Hat hacker can remote attack insulin pumps and kill people, Chenda Ngak http://www.cbsnews.com/8301-501465_162-20088598-501465.html

Why would someone do it? Dr. William Maisel, assistant professor at Harvard Medical School:

> "Motivation for such actions might include the acquisition of private information for financial gain or competitive advantage; damage to a device manufacturer's reputation; sabotage by a disgruntled employee, dissatisfied customer or terrorist to inflict financial or personal injury; or simply the satisfaction of the attacker's ego."
>
> …if a medical device embedded in the body were to glitch out, seemingly malfunction, and cause a target's death, who would think to look at it as a long-range wireless assassination which left no smoking gun?
>
> Pacemakers and Implantable Cardiac Defibrillators: Software Radio Attacks and Zero-Power Defenses, presented at 2008 IEEE Symposium on Security and Privacy

Medical conditions have already been targeted. One known incident is when epileptics were targeted by computer in 2008 to induce seizures when an epilepsy website was attacked. Evidence links this incident to the group Anonymous.

> The incident, possibly the first computer attack to inflict physical harm on the victims, began Saturday, March 22, when attackers used a script to post hundreds of messages embedded with flashing animated gifs.
> The attackers turned to a more effective tactic on Sunday, injecting JavaScript into some posts that redirected users' browsers to a page with a more complex image designed to trigger seizures in both photosensitive and pattern-sensitive epileptics.
>
> Hackers Assault Epilepsy Patients via Computer, Kevin Poulsen March 28, 2008 http://www.wired.com/politics/security/news/2008/03/epilepsy

Whether Intentional or as a result of rapid proliferation of wireless or RF-emitting devices, interference is a real problem. Jackie Christensen who has a deep brain implant (her “battery operated brain” or BOB for short) for control of Parkinson’s disease, writes of some of the things she has to avoid:

large magnets, commonly found in refrigerator doors, grocery-store freezer doors and stereo speakers; metal detectors used in airport security; antitheft systems in stores; MRIs -- basically all large sources of electromagnetic interference (EMI).
Each time I see (the medical device programmer), the list of potential problem products or situations grows: invisible dog fencing, home gaming systems with wireless controllers (Wii, Xbox 360, PS3), and cell phones in breast pockets.

It seems that every day, there is a new wireless product: light switches, pest-control systems -- you name it. And now the corollary products to *block* wireless signals are beginning to emerge, such as a Japanese device whose makers claim it can block cell-phone signals within 100 feet. If it can do that to a cell phone, what can it do to BOB and me?

I now find myself cringing whenever I hear of a new wireless widget, as I wonder what its implications will be for BOB and me, and for those with cardiac pacemakers or defibrillators, which could also be affected. Some of us seem to be more sensitive to sources of EMI than others. We are the proverbial canaries in the coal mine.

This canary is not going to go quietly, nor simply begin building a nest of tinfoil to block the electromagnetic interference.

http://www.emrpolicy.org/science/forum/29june08_christensen_op_ed.pdf
Wireless effects on Parkinson's brain implants: Watch where you're beaming that signal

This was written in 2008, before the deployment of Smart Meters.

The question has to be asked: how many people have died due to Smart Meters?

HACKING/CYBERSECURITY

Division of Ratepayer Advocates:

> It should be obvious that the pre-AMI meters had no security problems other than a minor amount of energy theft. The meters were mechanical and did not include any components that could be reprogrammed. Hence, no truck rolls were required to change software for the entire stock of meters. The situation is similar with the DSCI system examined in A.05-06-028. Mr. Vahlstrom readily admitted under cross-examination that the DCSI system is relatively impermeable to security threats. As Mr. Vahlstrom stated, "there is not much you can do to hack a nonprogrammable device" (RT I, 130:13-15).
>
> …Mr. Vahlstrom added that the disconnect switches that are part of the upgrade make a system "much more appealing for people who want to do something" (RT I, 129:18-19).

> Thus Mr. Vahlstrom's argument collapses into nothing more than a solution to a problem created by the enhanced functionality added by the AMI upgrade. It was not a problem with the system examined in A.05-06-028, nor with the pre-AMI meter stock. …the enhanced functionality brings about security concerns that didn't exist previously…
>
> Opening Brief of DRA, August 29, 2008, in Application of PG&E for Authority to Increase Revenue Requirements to Recover the Costs to Upgrade its SmartMeter™ Program, A. 07-12-009. p. 46- 48

The grid, as it transitions to a Smart Grid, is becoming less secure.

> "Every endpoint [meter] is a new potential threat vector," according to Doug Powell, manager, SMI Security, Privacy & Safety, for Canadian utility BC Hydro.
>
> http://www.marketwatch.com/story/hacking-expert-david-chalk-joins-urgent-call-to-halt-smar t-grid-2012-04-12

Scientific American (October 2010)

> "Connecting what are now isolated systems to the Internet will make it possible to gain access to remote sites through the use of modems, wireless networks, and both private and public networks," says Melissa Hathaway. "Achieving greater efficiency and control requires hooking almost every aspect of the electricity grid up to the Internet, making it more vulnerable to cyber attacks."
>
> Power Hackers: The U.S. Smart Grid Is Shaping Up to Be Dangerously Insecure, Melissa Hathaway,
> http://www.scientificamerican.com/sciammag/?contents=2010-10

Computerworld (October 2011)–

> The U.S. government is keeping a wary eye on what it says is hacking collective Anonymous' growing interest in attacking critical infrastructure targets.
>
> A DHS bulletin posted this week assesses the ability of the collective to inflict damage on industrial control systems that manage equipment at power plants, water treatment facilities, chemical plants and other potential targets.
>
> The report says that Anonymous recently called on members to target energy companies. DHS said the call is likely to attract both members of the collective and the broader activist hacking community.
>
> DHS issues warning that Anonymous may attack infrastructure, Jaikumar Vijayan
> http://www.computerworld.com/s/article/9220951/DHS_issues_warning_that_Anonymous_may_attack_infrastructure

Massachusetts Institute of Technology: "Future of the Electric Grid" (December 2011):

> "Millions of new communicating electronic devices ... will introduce attack vectors -- paths that attackers can use to gain access to computer systems or other communicating equipment. That increase[s] the risk of intentional and accidental communications disruptions," including "loss of control over grid devices, loss of communications between grid entities or control centers, or blackouts."
>
> Cyber security: Power grid grows more vulnerable to attack, report finds, Mark Clayton, http://www.csmonitor.com/USA/2011/1206/Cyber-security-Power-grid-grows-more-vulnerable-to-attack-report-finds

Pike Research white paper (November 2011):

> Utility cyber-security is in a state of near chaos. After years of vendors selling point solutions, utilities investing in compliance minimums rather than full security, and attackers having nearly free rein, the attackers clearly have the upper hand. Many attacks simply cannot be defended.
> http://www.pikeresearch.com/research/utility-cyber-security

Homeland Security Newswire (December 2011):

> SCADA systems' vulnerability (is) key weakness in Smart Grid deployments
>
> http://www.homelandsecuritynewswire.com/dr20111212-scada-systems-vulnerability-key-weakness-in-smart-grid-deployments

New York Times (March 2012)

> During the five-month period between October and February, there were 86 reported attacks on computer systems in the United States that control critical infrastructure, factories and databases, according to the Department of Homeland Security, compared with 11 over the same period a year ago.
>
> None of the attacks caused significant damage, but they were part of a spike in hacking attacks on networks and computers of all kinds over the same period. The department recorded more than 50,000 incidents since October, about 10,000 more than in the same period a year earlier, with an incident defined as any intrusion or attempted intrusion on a computer network.
>
> James A. Lewis, a senior fellow and a specialist in computer security issues at the Center for Strategic and International Studies, a policy group in Washington, said that as hacking awareness had increased, attacks had become more common. He said that the attacks on the nation's infrastructure were particularly jarring.

> He added: "We hit rock bottom on this in 2010. Then we hit rock bottom in 2011. And we are still at rock bottom. We were vulnerable before and now we're just more vulnerable. You can destroy physical infrastructure with a cyberattack just like you could with a bomb."
>
> New Interest in Hacking as Threat to Security, Michael S. Schmidt
> http://www.nytimes.com/2012/03/14/us/new-interest-in-hacking-as-threat-to-us-security.html?_r=1

Chaos Communication Conference, Germany (January 2012)

> "It takes an amateur hacker only two days to hack a home smart meter and fake the readings -- which could result in a utility bill showing absolutely no power consumption at all." Hackers also analyzed Smart Meter data and were able to identify "the number of PCs or LCD TVs in a home, what TV program was being watched, and if a DVD movie being played had copyright-protected material."
>
> Hacking For Privacy: 2 days for amateur hacker to hack smart meter, fake readings
> http://www.networkworld.com/community/node/79486

Secretary of Defense Leon Panetta (June 2011)

> I've often said that there's a strong likelihood that the next Pearl Harbor that we confront could very well be a cyber attack that cripples our power systems, our grid.
>
> http://www.energynow.com/video/2011/08/13/guarding-grid-08142011
> http://abcnews.go.com/News/cia-director-leon-panetta-warns-cyber-pearl-harbor/story?id=12888905

Now he has gone even further in a news report dated October 11, 2012:

> In a speech before business executives in New York, Panetta revealed that cyber intruders have already gained access to some of America's critical control systems that run chemical, electric and water systems with the intent to "cause panic, destruction and loss of life."
>
> http://usnews.nbcnews.com/_news/2012/10/11/14376572-panetta-cyber-intruders-have-already-infiltrated-us-systems?lite
> Panetta: Cyber intruders have already infiltrated US systems

Furthermore, it was reported in November (2012);

> Last month an attack was carried out on the Telvent, the maker of software and services meant to be used with smart grid networks. The attack was announced as a breach of Telvent's internet firewall and security systems, and Telvent officials said the attack included the installation of malicious software and the theft of project files for OASyS SCADA…

> In a time where these SCADA systems are used to regulate the electrical grid through the Internet or over phone lines, a serious attack can result in electricity being denied to hundreds of thousands of people.
>
> http://www.militaryaerospace.com/blogs/aerospace-defense-blog/2012/11/electrical-grid-attacked-cybersecurity-more-important-now-than-ever.html
>
> Electrical grid attacked, cybersecurity more important now than ever, Military & Aerospace, November 6, 2012

"100% certainty of catastrophic failure of energy grid within 3 years," says security expert David Chalk.

> Chalk's strong words come amidst increasing reports of the smart grid's fatal insecurities, even from the governments and energy companies who are forcing their hand with the smart program. “Every endpoint [meter] is a new potential threat vector,” according to Doug Powell, manager, SMI Security, Privacy & Safety, for Canadian utility BC Hydro.
>
> “We're in a state of crisis,” said Chalk. “The front door is open and there is no lock to be had. There is not a power meter or device on the grid that is protected from hacking - if not already infected - with some sort of trojan horse that can cause the grid to be shut down or completely annihilated.”
>
> “One of the most amazing things that has happened to mankind in the last 100 years is the Internet. It's given us possibility beyond our wildest imagination. But we also know the vulnerabilities that exist inside of it. And then we have the backbone, the power grid that powers our nations. Those two are coming together. And it's the smart meter on your home or business that's now allowing that connectivity.
> “Unless we wake up and realize what we're doing, there is 100% certainty of total catastrophic failure of the entire power infrastructure within 3 years,” said Chalk. “This could actually be worse than a nuclear war, because it would happen everywhere. How governments and utilities are blindly merging the power grid with the Internet, and effectively without any protection, is insanity at its finest.””
>
> Hacking Expert David Chalk Joins Urgent Call to Halt Smart Grid
> http://www.marketwatch.com/story/hacking-expert-david-chalk-joins-urgent-call-to-halt-smar t-grid-2012-04-12

Former CIA Director James Woolsey (August 2011):

> “What they're doing now, they're constructing what they call a ‘Smart Grid.’… And a so-called ‘Smart Grid’ that is as vulnerable as what we've got is not smart at all, it's a really, really stupid grid.”
>
> http://www.energynow.com/video/2011/08/13/guarding-grid-08142011

Texas A&M (2010)

> Attackers could manipulate power-grid data by breaking into substations and intercepting communications between substations, grid operators, and electricity suppliers. This data is used by grid operators to set prices for electricity and to balance supply and demand, the researchers say. Grid hackers could make millions of dollars at the expense of electricity consumers by influencing electricity markets. They could also make the grid unstable, causing blackouts.
>
> The attacks would be difficult to trace, according to Le Xie, an assistant professor of electrical and computer engineering at Texas A&M University, speaking at the IEEE SmartGridComm2010 conference in Gaithersburg, Maryland, this week.
>
> … Fixing the vulnerability will not be easy either.
>
> …Deepa Kundur, a professor of electrical and computer engineering at Texas A&M, is developing simulations to help determine the risks involved. "It's not yet clear whether the smart grid will be worth the risks," she says.
>
> How to Hack the Power Grid for Fun and Profit, Kevin Bullis
> http://mobile.technologyreview.com/energy/26472/

Governmental Accounting Office (January 2011)

> With respect to challenges to securing smart grid systems, GAO identified the following six key challenges:
>
> - Aspects of the regulatory environment may make it difficult to ensure smart grid systems' cybersecurity.
> - Consumers are not adequately informed about the benefits, costs, and risks associated with smart grid systems.
> - Utilities are focusing on regulatory compliance instead of comprehensive security.
> - There is a lack of security features being built into certain smart grid systems.
> - The electric industry does not have an effective mechanism for sharing information on cybersecurity.
> - The electricity industry does not have metrics for evaluating cybersecurity.
>
> http://www.gao.gov/new.items/d11117.pdf
> GAO: Electricity Grid Modernization

John McNabb, security expert (August 2011)

> The smarter water meters become, the easier they're getting to hack. Like many things in electronics, water meters become easier for hackers to break into and misuse when they are upgraded to include wireless and computer technology.
>
> The problem with the wireless water meters is that they are vulnerable because of the wireless medium they use. Communications are not encrypted (largely due to higher costs) and so they are easily intercepted, faked or even jammed. The sensors are unattended and hang on the meter, outside the house, and so they are easily tampered with. The cyber attacks against them can be active, where commands are issued to them, or passive, where the data is taken.
>
> If people want to reduce their water bills, they could hack the sensors. They could also increase the bill paid by a neighbor they don't like, or evade restrictions on the amount of water used. And since the usage of water indicates the presence or absence of the homeowner, the hacked water meters can be used for surveillance purposes.
>
> http://venturebeat.com/2011/08/06/hacking-water-meters-is-easier-than-it-should-be/
> Hacking water meters is easier than it should be, August 6, 2011

University of South Carolina (November 2012)

> Researchers at the University of South Carolina have discovered that some types of electricity meter are broadcasting unencrypted information that, with the right software, would enable eavesdroppers to determine whether you're at home.
>
> The meters, called AMR (automatic meter reading) in the utility industry, are a first-generation smart meter technology and they are installed in one third of American homes and businesses. They are intended to make it easy for utilities to collect meter readings. Instead of requiring access to your home, workers need simply drive or walk by a house with a handheld terminal and the current meter reading can be received.
>
> While many gas and water AMR meters continuously listen for a query signal from a meter reading terminal and only transmit a reading when requested, the researchers found at least one type of electricity meter works on the opposite principle. It continuously sends a meter reading every 30 seconds around the clock.
>
> …said Wenyuan Xu, an assistant professor at the University of South Carolina, speaking to IDG News Service. "We thought about privacy and wondered how secure are the meters currently in use."
>
> It turns out, not very.

> …The good news is a new generation of meters based on a more advanced technology, called AMI (advanced metering infrastructure), are supposed to employ encryption. Guidelines from the National Institute of Standards and Technology's Smart Grid Interoperability Panel made such a recommendation in a 2010 report.
>
> But that's too late for the AMR meters already installed across the U.S.
>
> There are 46 million AMR meters in use in 2011, according to a U.S. Department of Energy report. That represents about one in three houses and businesses. While they are likely to be replaced with AMI meters, the slow upgrade cycle of utility companies could mean they remain in use for years to come.
>
> http://www.computerworld.com/s/article/9233265/Smart_meters_not_so_clever_about_privacy_researchers_find
> Smart meters not so clever about privacy, researchers find, November 5, 2012

David Dilworth, Director of Helping our Peninsula's Environment, found out not only that data is from PG&E is not encrypted until it reaches the collector antennas, but that it is relatively easy to get remote disconnect codes. He relates this incident:

> A local scientist, Monterey Councilman Jeff Haferman, raised a concern at a Monterey Council meeting about Smartmeters. He asked "If PG&E (local electric power provider) can turn off your power remotely with a smartmeter, what keeps a hacker from doing that ?" Or worse, he asked "what keeps a hacker from turning off whole neighborhoods – or an entire community?"
>
> The PG&E representative was silent until prompted to respond. "I don't have any information on that. I'll get back to you." That was in February (2011), it's now October and PG&E has made no response or answer yet.
>
> What we have learned since then is that your data going out and PG&E's "Power Shutoff" radio commands are not encrypted at the neighborhood level. This means "Smart"meter communication data is in "plain English" — it is readable by anyone with a laptop and WiFi. This means your so-called "Smart"meter is easily controlled by anyone with a laptop and a WiFi. Is this a wild speculative fantasy? No.
>
> http://daviddilworth.com/pol/smartmeters-facilitate-cyber-war-against-us/
> SmartMeters Facilitate Cyber War Against US, November 2011

He then relates a very simple procedure for discovering "shut-off" commands, which then can be used "to shut down your house electricity and millions of others – and probably all electricity and gas for your community's businesses and government as well."

Finally,

Defcon Hobbyist hackers have built a DIY flying spy drone that's capable of intercepting communications over remote Wi-Fi and cellular networks and beaming them to snoops located half a world away.

Short for wireless aerial surveillance platform, the WASP is equipped with a battery of off-the-shelf hacking tools that can secretly hover over unsuspecting targets and infiltrate their networks. A 4G cellular connection links it to a back-end server that allows operators to control its operations and monitor its sensors in realtime.
All of the tools have been around for years, or even decades. What makes WASP novel is their all-in-one packaging in a 14-pound plane that can penetrate a target's geographical boundaries to tap a variety of electronic sources.

…At 27 inches high and 76 inches long, WASP can reach altitudes of 22,000 feet. It's equipped with a small computer running BackTrack 5, a penetration-testing tool that contains more than 500 separate components for hacking wireless networks, voice-over IP servers and other sensitive systems.

DIY aerial drone monitors Wi-Fi, GSM networks/Passwords cracked on the fly, Dan Goodin, August 2011
http://www.theregister.co.uk/2011/08/05/flying_spy_drone/

[1]

REMOTE DISCONNECTION OF POWER

AARP, National Consumer Law Center, and Public Citizen:

[1] John Hersey, illustrator
http://www.scientificamerican.com/sciammag/?contents=2010-10

> ...Another major consumer concern that has yet to be addressed by smart metering proponents is the threat smart meters pose to consumer protections that have been developed over the last 30 years. Smart meters have been touted by industry proponents as offering the benefit of remote disconnection. From a consumer perspective, this is not a benefit but rather an erosion of fundamental consumer rights.
>
> AARP, National Consumer Law Center, and Public Citizen Comments to: DEPARTMENT OF ENERGY Smart Grid RFI: Addressing Policy and Logistical Challenges, November 1, 2010," David Certner et al. http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/AARPNCLCPublic_CitizenCommentsDOE1101.pdf
>
> Quoted in https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/going-deep-understanding-the-big-picture-and-real-costs-and-concerns

State of Maine, Office of Public Advocate:

> While current PUC rules allow for this, we view this as very risky because of the possibility that the wrong house will be disconnected or that reconnection will malfunction. Also, when a CMP worker physically visits the premises to disconnect the power it not only reduces the chance of a wrongful disconnection, it also gives a non-paying customer one last chance to pay and avoid the dark. These benefits and protections vanish with AMI.
>
> http://www.maine.gov/meopa/smartgrid/index.shtml

It's not just the dark. Particularly in hot summer or cold winter areas, or those who have medical devices or must keep the temperature at a certain level because of health problems, the risk to human life is substantial. In Wisconsin, the utilities cannot disconnect power from Nov. 1- April 15. In Maine, it is from Nov. 15 – April 15. However, does California have a similar law? What if people cannot pay their bill during hot or cold weather? What if elderly people who have become forgetful, forget to pay their bill? What if there is a mistake? There may be no second chance when the power is disconnected. A simple check by a human can remind someone to pay the bill, or give information on financial help to pay the bill, or verify that it is the right address.

> Residential customers who are remotely disconnected without a last chance to make payment arrangements, or who shut themselves off with no utility contact (when their prepayment card runs out of funds) are at great risk in terms of health and safety.
>
> A recent investigative news report from Texas (where deregulated electricity commodity vendors can offer service on a pre-paid only basis) tells of vulnerable pre-payment electricity customers being cut off without notice. Families with children have had to abandon their homes. A paraplegic who requires air conditioning to maintain a

> safe body temperature lost his electricity on days when the temperature exceeded 100 degrees.
>
> A heart failure patient who needed power for an oxygen machine was cut off twice by her pre-payment meter in one summer.
>
> The risks of disconnection by remote control or by automatic action of a pre-payment meter or service limiter are also shown in the case of a 90-year old Michigan man who froze to death in his own kitchen last winter. When he was found, there were funds to pay for his bill on the table. But he had missed a payment and the utility had installed a service limiter. When the service limiter tripped, the gentleman could not or did not know how to reset the limiter.
>
> Customers whose utilities are disconnected have died from hypothermia, from fires set by candles used for lighting in the absence of electricity, and from other consequences of loss of power. The concern of consumer advocates over the dangers of involuntary remote controls on household usage cannot be overstated.
>
> AARP, National Consumer Law Center, and Public Citizen Comments to Department of Energy Smart Grid RFI: Addressing Policy and Logistical Challenges, November 1, 2010," David Certner et al. http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/AARPNCLCPublic_CitizenCommentsDOE1101.pdf quoted in https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/going-deep-understanding-the-big-picture-and-real-costs-and-concerns

And with a remote shut-off, what are the possibilities of the signal going to the wrong house? With potential for mistakes, especially with this wirelessly involved system, the wrong household pays the consequences.

There are too many ways for this system to fall apart and harm people, especially with utility companies that already exhibit a disregard for the public's welfare or have difficulty with existing record-keeping.

It's just too easy to flip a switch back at the head office.

Los Angeles Times, February 5, 2010:

> The Division of Ratepayer Advocates speculates that widespread installation of Smart Meters is part of the 75% increase in low-income shut-offs and 40% overall shut-offs by PG&E between Sept. 2008 and Sept. 2009, compared with the previous twelve months.
>
> Jump in service disconnections sparks move by California, Marc Lifsher, 2/5/10 http://articles.latimes.com/2010/feb/05/business/la-fi-puc-disconnect5-2010feb05

Also: http://abclocal.go.com/kgo/story?section=news/7_on_your_side&id=7555472

However, of much greater impact is the threat of intentional disconnection by those with a little technical know-how (previously discussed under "Hacking/Cybersecurity"). They could disconnect an individual home, a neighborhood, a city, a region, or our nation. "They" could be a disgruntled ex-spouse or neighbor, a gang, a mischief-maker, or a terrorist. The cost of injury and death, and damage to our society is beyond calculating. We depend on electricity for even the most basic needs, such as power for pumping water. If these fail, most people have no back-up plan. And if it occurred in extreme weather areas, during the summer or the winter, with no way to cool or heat, the consequences would be horrifying.

And then, there is the threat to our nuclear reactors.

VULNERABILITY OF NUCLEAR FACILITIES

Nuclear reactors depend on external electrical power for their energy requirements.

Arne Gundersen:

> …the most likely type of a nuclear accident is caused by a loss of offsite power. That is what happened at Fukushima: the power system AROUND the plant broke down. If that happens, not only will the plant not have power, but the street lights won't work. According to the NRC, the street lights DO work. Not only that, but your home lighting won't work and your radio and TV won't work. But according to the NRC, you will be able to contact the outside world by phones or by radio or by television.
>
> But remember the most likely cause of a nuclear accident is loss of offsite power and that has NEVER been part of an emergency plan, assuming that all of that does not work.
>
> http://fairewinds.com/content/white-house-nrc-recommend-50-mile-fukushima-evacuation-yet-insist-us-safe-only-10

If power is disconnected to these facilities, from whatever cause, generators must be relied on instantly to function. Energy must be available constantly to keep fuel rods and reactor cores cool.

A failure In this system, a failure in being able to shut down a reactor safely, could result in a nuclear disaster at each and every nuclear reactor, not just in California, but across the United States, affecting all of us.

That would create Fukushimas many times over.

Greg Palast:

A page from the notebook of an Emergency Diesel Generator expert, R.D. Jacobs, hired to monitor a test for a nuclear reactor's back-up cooling system.

> This is to record that on my last visit,….I pressed [a company executive] saying that we just did not know what the axial vibration of the crankshaft was doing to the [diesel] units. I was unable to impress him sufficiently.

The diesels were "tested" by turning them on for a few minutes at low power. They worked find. But R.D., a straight shooter, suspected problems. He wanted the motors opened and inspected. He was told by power company management to go to hell.

When we forced the plant builder [in Suffolk County, New York] to test the three Emergency Diesel Generators in emergency conditions, one failed almost immediately (the crankshaft snapped, as R.D.[Jacobs} predicted), then the second, then the third. We named the three diesels "Snap, Crackle, and Pop."

…I knew that all these diesels were basically designed, or even taken from, cruise ship engine rooms or old locomotives. . I'm not an engineer, but I suspect a motor designed for a leisurely float n Bermuda is not fit for a life-and-death scramble. So, I asked [an industry insider], "They really can't work at all, the diesels, can they?"

That's when he introduced me to the phrase "crash start."

On a ship, he explained, you would take half an hour to warm up the bearings, and then slowly build up to "critical" crankshaft speed, and only then add the "load." the propeller…

That's for sailing. But in a nuclear emergency, "the diesels have to go from stationary to taking a full load in less than ten seconds."

Worse, to avoid having to buy additional diesels, the nuclear operators turbo-charge them, revving them to 4,000 horsepower in ten seconds when they are designed for half that output.

The result: snap, crackle, pop.

I learned that, at Fukushima, at least two of the diesels failed before the tsunami hit. What destroyed those diesels was turning them on. In other words, the diesels are junk, are crap, are not capable of getting up to full power in seconds, then run continuously for days….

"So, you saying emergency diesels can't work in an emergency?"

"Actually, they're just not designed for it."

> from Vulture's Picnic, p. 294-297

This Is the present system in place to protect all of us in case of a power outage to nuclear reactors.

Former NRC Chairman Gregory Jaczko:

> The events at Fukushima reinforce that any nuclear accident with public health and safety or environmental consequences of that magnitude, is inherently unacceptable. But we focused on the radiological consequences of this event. I believe we cannot ignore the large social and economic consequences such an event poses to any country with a nuclear facility that deals with such a crisis.
>
> In Japan, more than 90,000 people remain displaced from their homes and land, with some having no prospect for a return to their previous lifestyle in the foreseeable future. While not easy to characterize, these are significant hardships on these people and they are inherently unacceptable. So as we look to the future and we look in a proactive way, we ultimately will have to address the issue of how do we deal with nuclear events that lead to significant land contamination. And displacement, perhaps permanently, of people from their homes and their livelihoods and their communities.

Arne Gundersen:

> What you have just heard was the Nuclear Regulatory Commission's chairman, Gregory Jaczko, saying that the NRC does not take in to account mass evacuations and people not getting back on their land for centuries when it does a cost benefit analysis as to whether or not a nuclear plant should be licensed.
>
> http://fairewinds.com/content/tokyo-soil-samples-would-be-considered-nuclear-waste-us

Nor is it taken into account when considering the cost/benefit analysis of a Smart Grid, such as we have, or whether it should be built.

VULNERABILITY TO ELECTROMAGNETIC PULSES (EMPs)
Natural or Manmade

From Wikipedia, the free encyclopedia

> An electromagnetic pulse (sometimes abbreviated EMP) is a burst of electromagnetic radiation. The abrupt pulse of electromagnetic radiation usually results from certain types of high energy explosions, especially a nuclear explosion, or from a suddenly fluctuating magnetic field. The resulting rapidly-changing electric fields and magnetic fields may couple with electrical/electronic systems to produce damaging current and voltage surges.

An EMP occurred in 1859 caused by the sun. It is known as a Carrington event, after solar astronomer Richard Carrington who observed it. It caused major problems for telegraph communications worldwide. We did not then have an electrical grid as we do now, with so much dependent on it. Much weaker solar storms since then have disrupted the electric grid and even melted transformers, and disrupted telephone communications, as well as ground-to-satellite communications and GPS navigation systems.

> "More than 35 years ago, I began drawing the attention of the space physics community to the 1859 flare and its impact on telecommunications," says Louis J. Lanzerotti, retired Distinguished Member of Technical Staff at Bell Laboratories and current editor of the journal Space Weather… Lanzerotti points out that as electronic technologies have become more sophisticated and more embedded into everyday life, they have also become more vulnerable to solar activity.
>
> A Super Solar Flare
>
> http://science.nasa.gov/science-news/science-at-nasa/2008/06may_carringtonflare/

Washington State Department of Health

> When "detonated," an EMP weapon produces a pulse of energy that creates a powerful electromagnetic field capable of short-circuiting a wide range of electronic equipment, particularly computers, satellites, radios, radar receivers and even civilian traffic lights. Since EMP is electromagnetic energy traveling at the speed of light, all of the vulnerable electronic equipment in the detonation zone could be affected simultaneously.
>
> Society has entered the information age and is dependent on electronic systems that work with components that are very susceptible to excessive electric currents and voltages. Many of these electronic systems are controlled in some way by semiconductors. Semiconductor devices fail when they encounter an EMP because of the local heating that occurs. Failure of semi-conductive chips could destroy industrial processes, railway networks, power and phone systems, and access to water supplies.
>
> Telecommunications equipment can be highly vulnerable and receivers of all varieties are particularly sensitive to EMP. Therefore radar and electronic warfare equipment, satellite, microwave, UHF, VHF, HF and low band communications equipment and television equipment are all potentially vulnerable to the EMP effect. Cars with electronic ignition systems/ and ignition chips are also vulnerable.
>
> Some other notable collectors of EMP include railroad tracks, large antennas, pipes, cables, wires in buildings, and metal fencing. Although materials underground are partially shielded by the ground, they are still collectors, and these collectors deliver the EMP energy to some larger facility. This produces surges that can destroy the connected device, such as, power generators or long distance telephone systems.

> Department of Health: Division of Environmental Health, Office of Radiation Protection
> http://www.doh.wa.gov/ehp/rp/factsheets/factsheets-htm/fs41elecpuls.htm

This discussion is about a localized weapon, not about a general electrical storm over the earth.

Austrian Medical Association, February 2012 –

> To date, the Interference resistance of smart meters is not clarified in the case of elevated solar activity. From NASA there are corresponding warnings for the years 2012 to 2014. This could lead to an increased risk to total failure of the power supply.
> http://www.aerztekammer.at

Dr. Peter Vincent Pry, former Director of the US Nuclear Strategy Forum and President of EMPact America:

> "... given our current state of unpreparedness, within 12 months of an EMP event, about two-thirds of the U.S. total population... would perish from starvation, disease and societal collapse."
>
> Cited in "Smart Meters – Smarter Practices," Dr. Isaac Jamieson, for the Radiation Research Trust
> http://www.radiationresearch.org/index.php?option=com_content&view=article&id=173

British House of Commons Defense Committee report on EMP as a developing threat:

> Written evidence from the Government suggests that a severe space weather event, with resulting damage, may occur in the next few years…with the potential to cause damage to electrically conducting systems such as power grids, pipelines and signaling circuits….
>
> The US National Research Council estimated the wider societal and economic costs of a severe geomagnetic storm occurring today to be around $1-2 trillion…
>
> It is essential that this hazard is sufficiently recognized and addressed by the Government and relevant civil bodies…
>
> It is therefore vitally important that the work of hardening UK infrastructure is begun now and carried out as a matter of urgency.
>
> Cited by Jamieson, 2/23/12

Isaac Jamieson, PhD, author of ˜Smart Meters - Smarter Practices", commenting on the EMP risk at the Consumer Focus Meeting (UK), Feb. 23, 2012:

> "A large scale EMP event would cause a devastating loss of life, with Smart Meters in their current configuration being far more vulnerable to damage than traditional analogue meters."
>
> Cited in Comments on CPUC staff report on Smart Grid deployment workshops, A.11-06-006, page 8-10. http://docs.cpuc.ca.gov/efile/CM/162030.pdf

Center for Electrosmog Prevention, March 2012:

> Setting up our vital power grids to be more vulnerable to EMP events and tampering by relying on wireless infrastructure and in the control of multinational private corporations is irresponsible and may even be considered by some to be an act aiding and abetting our nation's enemies.
>
> Comments on CPUC staff report on Smart Grid deployment workshops, A.11-06-006, page 8-10. http://docs.cpuc.ca.gov/efile/CM/162030.pdf

NO UTILITY LIABILITY FOR HACKED DATA

CPUC, July 2011:

> The utility is not liable for the third party's use of the usage data since the usage data is not provided to the third party pursuant to a contractual arrangement with the utility… At this time in the evolution of the Smart Grid, the distinctions drawn here are reasonable for several reasons. First, the consumer has a right to the usage data. Second, under the rules adopted in this decision, the consumer can elect at any time to discontinue the provision of the data to the third party. Third, it is not reasonable to require utilities to police privacy policies of those entities who receive information pursuant to Commission requirement or customer wishes.
>
> CPUC Decision Adopting Rules to Protect the Privacy and Security of the Electricity Usage Data, Rulemaking 08-12-009, p. 35, 7-29-2011 http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/140369.PDF

It does not appear that any provision was made for hacked data; hence, there is no liability to the utility, even though the utility created the situation from the beginning.

INCREASED BURGLARY RISK

Access to our energy usage data, which can be obtained wirelessly or from any one of the many companies with legal access to the data, will reveal when we are home and what room we are in, and when we are away.

INCREASED METAL AND INFRASTRUCTURE CORROSION

Very alarming is the research by Dr. Andrew Michrowski that metal and metal infrastructure are suffering much more rapid corrosion due to radiofrequency and microwave radiation, "because cyclic pulsing at millions of times-per-second (or more) rapidly fatigues metal at the molecular level."

> There has been a significant increase in corrosion problems in the last few decades, parallel to the spread and implementation of wireless technologies. Whereas in the 1970s, only a small number of engineers consulted on corrosion problems, now a full quarter of all engineers in North America are experts in corrosion trying to resolve problems associated with building structures, water and oil and gas pipelines, fluid containers. How radiofrequencies affect corrosion can be verified by anyone who replaces a fluorescent compact bulb [which typically emit RF] into a metallic fixture that once had an incandescent bulb. It takes only a few weeks to have the onset of paint coating corroding in lamp holders, followed by the steady eating away of metallic sheeting. Likewise, one can see which urban areas are exposed to elevated levels of microwave emissions: where sewer and telephone service covers rust – actually powder away rather than just coat themselves with oxidation, where fire hydrants crumble – even if installed within the previous 6 months - that is likely to be a zone subject to microwave emissions. Normally, such fittings last problem–free for decades. This is an effect of enormous burden to tax and rate-payers.
>
> In 2008 the Federation of Canadian Municipalities has made an emergency plea to the federal government for $123 Billion within 5 years to avoid building collapses in Canadian cities due to corrosion, which only emphasizes how outrageously expensive for our civilization is this problem of accelerated corrosion from radiofrequencies and microwaves is. What is little known is that most corrosion is induced by weak voltages and amperages from net currents in our electric power delivery systems, which are imbalanced. What is even less known that as the electric power system becomes more affected by the use of computers and wireless systems, radiofrequencies and microwaves penetrate the electric power system's ground via neutral wires. The ground in many populated areas now carries charges that are highly electronic with radiofrequency and microwave characteristics. This new phenomenon accelerates corrosion of materials – whether pipelines, rebars in buildings and transportation infrastructure or even nuclear power plant reactor rods - by quantum leaps. Galvanic coupling between alloys and hydrogen and e particles is accelerated, leading to hydrogen-induced cracking in steels. This conduction of charges has been observed with electrochemical impedance spectroscopy (EIS) and reported this year by scientists from Atomic Energy of Canada and the National Research Council of Canada. There is also greater spattering of deposits, crevice enhancements and oxidation reactions.
>
> Electromagnetic fields: high-level microwave technology concerns. p. 9-10

Other effects, including corrosion (see the boxes as "non-wave-effects": "electrochemical", "chemical" → "rate of chemical reactions"; "chemical bonding", "interaction with ferromagnetic materials"), are documented at intensities well below those that are able to heat body tissue, which were explained in the 1972 Canadian National Research Council flow charts… [see following page]

Wi-Fi, SMART meters, wireless gadgets – are they safe? p. 6
Whole Life Expo, Toronto, November 27, 2011

Dr. Michrowski and other experts are noticing that all electric power grids are being hit by the burgeoning use of wireless systems, radiofrequencies and microwaves that piggyback on the electrical distribution's system's "ground".

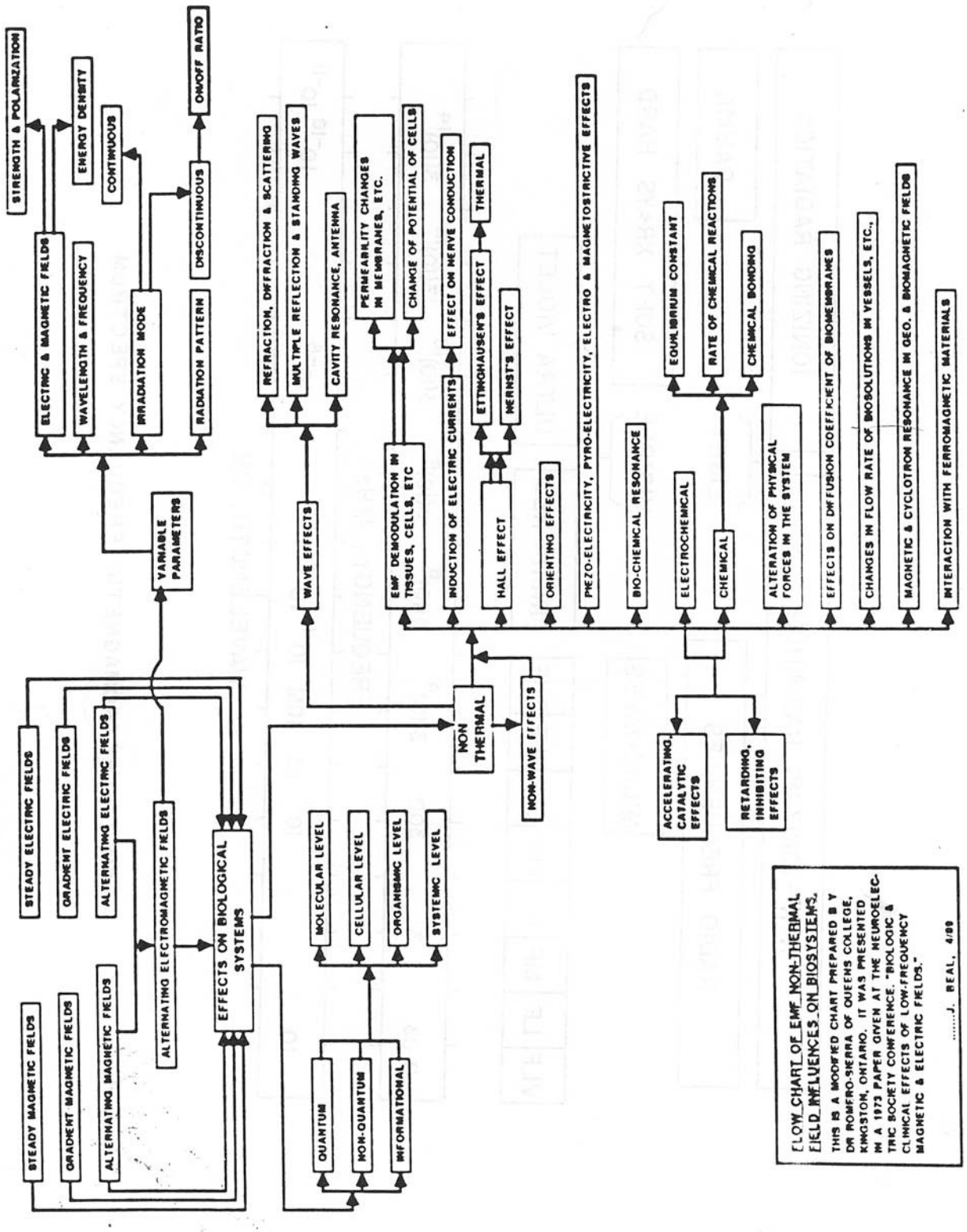
"The ground in many populated areas now carries charges that are highly electronic with radiofrequency and microwave characteristics. This new phenomenon accelerates corrosion of materials – whether pipelines, rebar in buildings and transportation infrastructure or even nuclear power plant reactor rods – by quantum leaps," Dr. Michrowski explains. This deterioration is occurring because cyclic pulsing at millions of times-per-second (or more) rapidly fatigues metal at the molecular level.

Home wiring, nails and other metal fasteners, as well as electrical equipment, fuse boxes and metallic siding and framing are literally being rotted by invisible wireless harmonics that are now being found to violate building and electrical codes across North America. Instead of being addressed, wireless pitting of metal is about to be ramped up worldwide with the introduction of continuously pulsing smart meter and Radio Frequency ID (RFID) reporting grids operating at ever-rising frequencies. Buildings, bridges and pipelines are also facing early failure and collapse unanticipated by the engineers who designed them.

Nuclear power stations are especially vulnerable because nuclear radiation is already known to rot concrete, rebar, valves, pipes, tubing – even critical zirconium cladding around fuel rods. Acids, stress and water are other causes of nuke plant corrosion that may interact synergistically with nuclear and electromagnetic radiation to speed component failure. Experts like Dr. Michrowski fear that electromagnetic radiation is further shortening the already drastically reduced life-spans of nuclear power plants – many of which in the USA are currently being re-licensed for greatly increased power output beyond their designed life.

Bolstering their alarm are findings from a court hearing in Granby, PQ, took place September 19- 23, 2011.

As an expert witness, Dr. Andrew Michrowski of the Planetary Association for Clean Energy (PACE) was there from Monday to Thursday, and the final legal statements were made Friday.



NRC Canada: Environmental Pollution by Microwave Radiation – A Potential Threat to Human Health, LTR CS-98, Bigu del Blanco, Romero-Sierra, Tanner, 1973. p. 21

Under cross-examination, Hydro Québec representatives admitted that they had measuring equipment of the highest sensitivity, they had never reported their findings. Hydro Quebec's measurements showed not only harmonics content, but also other emissions into the radio frequency range along the transmission line.

Dr. Michrowski writes: "In that urban-development district, some sewer tops (manhole covers) were rapidly rusting – or, more accurately, "shrinking" – in a strange non-rust-like colour. Instead of the familiar reddish-brown of oxidized iron, the surface was turning yellow (with spots) then orange. "I was able to obtain the power density data. At the wireless technology bandwidth the phenomenon became pronounced: in a few months the equivalent of 1 to 2 decades of traditional rust-corrosion was occurring.

"Then, as a presenter at the National Association of Corrosion Engineers (NACE) international meeting in Ottawa, I attended a series of thesis presentations by several teams of University of Waterloo students who were reporting a new type of corrosion. Their observations were taken at the Chalk River nuclear reactor (Atomic Energy of Canada Limited, the world's largest research reactor and one of the first to be built). It had been in good maintenance for decades – until recently.

"Their data revealed a linearly frequency-dependent, electron-stripping process that is so accelerated that there is no time available for oxidation (normal, red-brown rusting) to occur. This new corrosion phenomenon follows a fractal geometry pattern (branching out after each penetration-stripping), rather than progressing layer by layer. "This new branching degenerative phenomenon is designated 'Pit Corrosion'.

"Even without the use of sophisticated meters, you can now observe across the landscape –where there is significant presence of background microwave emissions – reinforced concrete sidewalks, bridges, and building foundations being 'eaten away'. Weakened window frames, popping panes and so on, are occurring. "Adding to the overload are more wireless gadgets: so-called SMART meters...

"Meanwhile Canadian municipalities express alarm, getting up-in-arms over the extraordinary new maintenance expenditures – many billions of dollars (trillions for their US colleagues) – which they face trying to maintain the provision of essential services. The infrastructure is corroding away thousands of times faster than planners expected their amortization plans to cover."

Oops! may be our epitaph.

http://willthomasonline.net/smart%20meter%20insistence%20bowing%20to%20resistance.htm
Smart Meter Insistence Bowing to Resistance, Will Thomas

Electromagnetically-induced Hydrogen diffusion has become so commonplace under such environmental conditions that a Russian scientist, P. S. Orlov proposed this year a

method of locating underground corroded (hydrogen saturated/embrittled) steel gas-supply pipes simply by measuring hydrogen leakages.

Electromagnetic fields: Questions and answers about wireless technologies, 2007 Whole Earth Expo

Who cares if the increase in wireless signals in environment corrodes bridges, basements of large buildings, bursts pipelines, water mains, gas mains, pops windows out of buildings, dissolves fire hydrants, sidewalks, sewer tops. Who cares….– as long as "boardrooms" are happy with the prospects of new, short term business - regardless of the trillions of dollars of losses to Canadian taxpayers due to emergent damages in the coming years.

Wi-Fi, SMART meters, wireless gadgets – are they safe? Whole Life Expo 2011 Toronto, November 27, 2011

Infrastructure impacts are critical and costly issues which must be examined.

NOTE: Dr. Andrew Michrowski can be contacted at:

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IMPACTS TO BUILDING INTEGRITY

Curtis Bennett, Thermographix Consulting Corporation, in a letter to the British Columbia government, warns about the "molecular earthquakes" from Smart Meters and other wireless devices that threaten building integrity.

Building Code and Fire Separations

Blanketing areas with frequencies for ease of communication has serious ramifications on buildings and infrastructure that requires immediate attention. (British Columbia) Building Code and Part 4 don't want buildings subjected to molecular earthquakes. If you aggressively vibrate or electromagnetically induce everything, engineers, education, fire services and professionals at many levels have to be informed. You will have catastrophic failures with a domino effect at several levels….

Natural EMFs like solar radiation are so important, it is addressed in building codes…. We wire and construct building development as well as infrastructure to keep people safe from EMFs. We run cables instead of single conductors so the 60 Hz EMFs from each conductor cancel each other out. When we don't, the expanding and collapsing EMFs from singular wires would impact anything they interact with…

Frequencies blasting across the atmosphere to communicate with smart devices will interact with all infrastructure including industry. Electromagnetically induction and high

speed vibrations penetrating concrete isn't our objective. Whether smart meters on buildings or Wi-Fi in schools, frequencies are going through walls and structures. Towers, collectors or wireless infrastructure is communicating with meters and meter banks. The frequencies are blasting buildings, everything on the way there and going through structural components as well as fire separations. 900 MHz [electric Smart Meters] going through walls is going to cause molecules of construction material to change direction 1.8 billion times per second. 2.4 GHz [HAN frequencies] or 5 GHz in schools means 4.8 or 10 billion times per second…

Design Professionals including professional engineers, fire services have to be informed that when a structure will be vibrated billions of times per second. Buildings subjected to frequencies have to be designed for it I.e. RF Engineer from Norad reported their buildings had grounded copper mesh to address the potential charge from frequencies.

Engineers, municipalities, building inspection, etc. can't rule out the building's structure and fire separations compromised as a result of frequency interaction. Multiple smart devices under more load will increase the intensity of the molecular earthquakes caused to structures, fire separations, electrical systems, etc. Meter banks on highrises are in the basement or on the ground floor and vibrating the structure holding up the highrise.

Professionals signing off on buildings, municipalities, developers, fire services, insurers and banks haven't been informed the function of their building has changed as would liability. It brings complex liabilities forward which require clarification from the authorities having jurisdiction. If studies were completed on building and infrastructure safety, please advise ASAP. Every minute of this subtle radiation compounds problems.

We design fire separations to contain a fire(,) and fire rated drywall changing direction 1.8 to 10 billion times **per second** with frequency exposure is going to impact fire separation integrity and perceived safety of fire fighters.

…Please provide the appropriate response so we can address building inspections and building compliance for municipalities, professionals and insurers. Wi-Fi, smart meters and cellphones are determined to be low emissions devices that can be used 24/7. At billions of times per second, 24 hours per day and 7 days a week, how much can a structure or fire separation take before the building isn't safe?

Letter to Energy Minister, Government of British Columbia, March 7, 2012
Radio Frequencies Compromising Buildings, Fire Separations, Electrical Systems, Fire Safety, Infrastructure, etc.
www.thermoguy.com/urbanheat.html

JOB LOSS

A PG&E rep admitted during a Marina City Council meeting in 2010 that when PG&E knew they were going to this program, they began shifting meter reading employees to temp positions,

and that when they said there was very little job loss, they were talking about very little "employee" job loss, not meter reader job loss.

How many meter readers have been employed by all the utility companies, including municipal utility districts? "Positions captured" is what the quarterly PG&E reports say. Literally, thousands of people statewide are losing their jobs due to this program. This program contributes to state unemployment.

For those utility companies using ARRA funds, this is in conflict with the stated intent of that program, which was to put people back to work, not take away their jobs.

Meter readers are often the ones who spot gas leaks. They have even responded to other emergency situations on their routes. That layer of oversight will be gone.

ENVIRONMENTAL COSTS

Humans aren't the only ones who suffer.

> After a week (after Smart Meters were installed), I noticed the millions of frogs that thrived here and all the crawfish in the creek completely disappeared, and the crickets' chirps had all but left as well.
>
> The trees started exhibiting grey/white patches on their bark, some patches as thick as paint. The bark was splitting on most trees, and appearing scabbed over and covered in fungi, lichen, and moss. Now these trees, from Portland, throughout Beaverton, Hillsboro, and Forest Grove are dying and falling to the ground at an alarming rate. ALL trees, that I have seen, are showing signs of disease or infestation, even the huge ancient ones (one of these fell in Forest Grove a week or so ago and blocked traffic).
>
> My cats who slept with me since the day they were born spend most of their time outside now, not that the pulse can be escaped, and they, and some of the chipmunks outside, are becoming aggressive. My cats are nervous wrecks and my smallest spends days without coming in to eat.
>
> Oregon
>
> I have two dogs and it seems the smart meter bothers one of the dogs more than the other. I came home from work one afternoon and I saw the utility company truck pulling away. I had received a notice two weeks prior that they were going to install a smart meter, but I really did not think too much about it.
>
> That very first night, my dog wandered the hallways whining and crying . … I have learned that the smart meter is more active at night. My dog's face went completely white within a two week period. Usually this happens more gradually. He was also diagnosed with arthritis after two weeks of the smart meter forced radiation and he

> refuses to sleep inside at night now. He just can't stand it. Which never, ever happened before. He always slept at the foot of my bed in the years prior.
>
> My dog used to LOVE to go on long walks… Since the smart meter was installed (within a two-week period of time) he is only able to go on very short limited walks now due to swelling in his joints."
>
> Canada

Susan Morin, Red Wolf Ranch, Grass Valley CA:

> We had three bee hives that were healthy and had no other reason to leave–when bees are uncomfortable, threatened, or lack food sources, they leave. Now, a colony will leave individually, yet these hives, all on completely different areas of the property left within three days of the installation of a PG&E smart meter. We also called PG&E and asked them not to install, and they did when we were off the property.
>
> I have read reports on the smart meters and was not enrolled that they were/are safe and now have evidence that they effected our personal livelihood and lost three hives which equates to $250/hive loss, pollination loss to fruit tress (bees pollinate 80% of all fruits and vegetables) $5k+/-, and honey as a source of medicine and food $4k.

A man in Santa Cruz lives in a housing complex with flowering bushes that were popular with bees. After Smart Meters were installed in his housing complex, the bees were bumping into walls and acting disoriented. A reporter who came to interview him on the problems he was having with Smart Meters, asked, "What's wrong with the bees?" After a few days, the bees disappeared.

In a study done last year in France, when a cell phone was placed under a hive, the bees began piping, which they do when they swarm or are in distress (Favre, 2011).

The report Birds, Bees and Mankind: Destroying Nature by Electrosmog, translated from German in 2009, details the research showing extensive impacts from artificial EMF and RF on birds, bees, and humans.

> "Today, unprecedented exposure levels and intensities of magnetic, electric, and electromagnetic fields from numerous wireless technologies interfere with the natural information system and functioning of humans, animals, and plants. The consequences of this development, which have already been predicted by critics for many decades, cannot be ignored anymore. Bees and other insects vanish; birds avoid certain places and become disorientated at others. Humans suffer from functional impairments and diseases. And insofar as the latter are hereditary, they will be passed on to next generations as pre-existing defects"
>
> Bees, Birds and Mankind, Ulrich Warnke, p. 47. 2007

http://broschuerenreihe.net/britannien-uk/brochure/bees-birds-and-mankind/index.html

Magnetite, which navigational creatures, such as butterflies, bees, and birds have in their bodies (and humans have in their brains), is extremely sensitive to fluctuations in natural EMR. The only reason our communication devices work is because they are so much louder than that background EMR.

Biologist Andrew Goldsworthy:

> Our present exposure to man-made microwaves is about a million billion billion (one followed by eighteen zeros) times greater than our natural exposure to these frequencies.
>
> The Biological Effects of Weak Electromagnetic Fields, p. 4. March 2012

How will wild creatures navigate? And what other impacts are happening because of this exquisitely sensitive mineral in their bodies and in ours?

But that is just one impact. Warnke further details the impacts to bees including to their immune system, sense of smell, learning ability, and navigation:

> 3.10 Disrupted NO (nitric oxide) system damages learning ability, olfactory orientation and the immune system
> …The salient fact is that the NO system is affected by magnetic and electromagnetic oscillations and may in the worst case become totally disrupted – finally destroying molecular functions.
>
> As in mammals, nitric oxide (NO) normally acts as a carrier of information in insects as well. The synthesis and excretion of NO is particularly high in the insect brain. In bees, NO plays a role in the ability to smell and in learning processes (MÜLLER, 1997).
>
> As proven in humans, if the NO system of bees is disrupted through the effect of technical magnetic fields, they lose the ability to orientate themselves by smell and the vital learning programme also becomes defunct. But since NO also materially controls the immune system, disruptions to the NO household always affect the immune defences of the organism as well.
>
> p. 28. 29

And there are additional impacts as well.

His final section in the book, “Humans suffer functionality disorders,” is a devastating overview of the health impacts humans can expect as this exposure continues.

Dr. Warnke wrote this book before the much increased EMF and RF exposure from the worldwide roll-out of wireless and wired Smart Meters.

The government of India, Ministry of Environment and Forests released a report last year that looked at the impacts of the radiation from cell towers on wildlife, including bees.

> The review of existing literature shows that the Electro Magnetic Radiations (EMRs) are interfering with the biological systems in more ways than one. There had already been some warning bells sounded in the case of bees and birds, which probably heralds the seriousness of this issue and indicates the vulnerability of other species as well. The electromagnetic radiations are being associated with the observed decline in the population of sparrow in London and several other European cities (Balmori, 2002, Balmori, 2009, Balmori & Hallberg, 2007). In case of bees, many recent studies have linked the electromagnetic radiations with an unusual phenomenon known as 'Colony Collapse Disorder'. A vast majority of scientific literature published across the world indicate deleterious effects of EMFs in various other species too.
>
> Along with the growth of phone towers and subscribers, India is also witnessing a rapid population growth. To feed and support this rapidly growing population the agricultural security and the factors influencing them should be of concern. However, the population of many species such as honey bees, which is one of the most important pollinator and important factor for agricultural productivity, has seen a drastic population drop. Unfortunately we do not have much data about the effects of EMR available for most of our free-living floral and faunal species in India. Therefore, there is an urgent need to do further research in this area before it would be too late.
>
> … Most of the short-term studies primarily looking into the thermal impacts of EMR exposure on biological systems have neither succeeded to detect any statistically significant changes in the biological processes nor could prove any acute change in health conditions at the present background levels of exposures (Brent 1999; Hanowski Niemi and Blake 1996; Hoskote, Kapdi and Joshi 2008; Lönn et al. 2005; Mixson et al. 2009; Zach and Mayoh 1984; Zach and Mayoh 1986). On the other hand, long-term studies have reported alarming observations, detecting negative consequences on immunity, health, reproductive success, behaviour, communication, co-ordination, and niche breadth of species and communities (Preece et al. 2007; Levitt and Lai 2010; Hardell et al. 2008; Hardell et al. 2007; Fernie and Bird 2001).
>
> Report on Possible Impacts of Communication Towers on Wildlife including Birds and Bees, October 2011, p. 4, 6
> http://moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf

Their study reviewed 919 studies. "it should be noted that this is not a complete review of the impact of the electromagnetic radiation on all life forms as the mandate of the Committee was limited to birds and bees. However, for the context purpose the committee has referred to

many papers concerning other taxa." (p. 5) Of the 919 studies, they found that 593 showed a negative impact of cell towers on birds, bees, human, wildlife and plants, 196 were neutral or inconclusive, and 130 showed no impact.

An experiment with frog tadpoles conducted in a normal city environment near cell towers found 90% mortality and abnormal behavior and reactions in an unshielded aquarium, compared to 4% mortality and normal behavior and reactions in a shielded aquarium. The study was for 2 months; the majority of the experimental group died within 6 weeks.

> Balmori, A. 2010 Mobile Phone Mast Effects on Common Frog – The City Turned into a Laboratory, Electromagnetic Biology and Medicine 29: 31–35,2010
> http://citizensforsafetechnology.org/uploads/balmori_city_as_lab1.pdf

A study of storks near cell towers found reproductive problems, aggression among nesting pairs, and infertility.

> Balmori, A. 2005. Possible effects of electromagnetic fields from phone masts on a population of white stork. Electromagnetic Biology and Medicine 24:109-119
> http://www.livingplanet.be/Balmori_EBM_2005.pdf

Government of India report:

> House Sparrow (Passer domesticus) is associated with human habitation and it is one of the indicator species of urban ecosystems. A declining population of the bird provides a warning that the urban ecosystem is experiencing some environmental changes unsuitable for living in the immediate future (Kumar, 2010). London has witnessed a 75 per cent fall in House Sparrow population since 1994, which coincides with the emergence of the cell-phone (Balmori, 2002). Electromagnetic radiation may be responsible, either by itself or in combination with other factors, for the observed decline of the sparrows in European cities (Balmori, 2009, Balmori & Hallberg, 2007).
>
> p. 14

A study with mice near a cellular antenna park found irreversible sterility after 5 generations. Exposure was between 1.05 to 0.17 microW/cm2. Time -averaged (not actual or maximum) power density of the microwave radiation from Smart Meters is 8.8 microW/cm2.

> Magras 1997. Radio frequency radiation-induced changes in the prenatal development of mice. Bioelectromagnetics 18(6):455-461.

Analysis of Health and Environmental Effects of Proposed San Francisco Earthlink Wi-Fi Network:

> A study funded by the Bavarian State Government in Germany followed reports of adverse health effects in dairy cattle after a Telecoms mast had been erected for TV and cell phone transmission. Scientists documented a significant drop in milk yield and behavioral disorders in some of the cows that related to the microwave transmissions

> from the mast. When the cattle were moved to a farm 20 km away, their milk yield and behavior returned to normal within days.
>
> When the cattle were returned to the mast environment their symptoms returned as well. Fodder analysis and the amount of feed could not account for the changes among the cattle. Analysis of aborted fetal material did not find any pathogens causing the abortion based on microscope and cultural examination and on serological tests. Autopsy of dead cows reported acute heart and circulatory collapse with internal bleeding from several organs. Exposure to RFR at the stable entrance was 80 microW/cm2 and the highest reading reported on the farm near the stable was 350 microW/cm2. These values are much lower than the FCC guideline of 1000 microW/cm2.
>
> Löscher and Käs. 1998. Conspicuous behavioural abnormalities in a dairy cow herd near a TV and Radio transmitting antenna. Practical Veterinary Surgeon 79: 5, 437-444. Cited in http://www.buergerwelle.de/pdf/snafu_havas_wifi.pdf

Microwave radiation alters e coli bacteria genetic structure at 1/ten-trillionth of 1 microW/cm2 (Belyaev, 1996), far lower than the levels coming from a Smart Meter.

Biologist Andrew Goldsworthy:

> Trees are now dying mysteriously from a variety of diseases in urban areas all over Europe and are also showing abnormal photoperiodic responses. In addition, many have cancer-like growths under the bark (phloem nodules) and the bark may also split so that the underlying tissues become infected. All of these can be explained as being a result of weak radio-frequency radiation from mobile phones, their base stations, WiFi and similar sources of weak non-ionising radiation. But first let us look at how living organisms use electric currents that they generate themselves and which perform vital functions in their normal day-to-day metabolism and growth. We will then go on to see how weak electromagnetic fields can disrupt these and bring about many unwanted biological effects.
>
> Why Our Urban Trees are Dying, 2011. Dr. Goldsworthy is retired and was an Honorary Lecturer, Imperial College, London http://www.mastsanity.org/health/research/299-why-our-urban-trees-are-dying-by-andrew-goldsworthy-2011.html

Wolfgang Volkrodt and Ulrich Hertel

> ". . .There is also this important fact: any tree may act as a receiving dielectric rod or monopole antenna with the ability to both absorb energy from the wave passing by and to scatter the wave in many directions. If the polarization of the transmitting tower antenna matches the particular tree or trees (i.e. vertical orientation of the antenna which is usually the case for collinear dipole arrays on towers), maximum coupling or

absorption of the wave energy by the tree will occur. Polarization and conduction currents will generally flow to the root system.

Chapter 11:"Brief Overview of the Effects of Electromagnetic Fields on the Environment" by Raymond S. Kasevich, BSEE, MSE, PE, Registered Professional Electrical ;Cell Towers: Wireless Convenience or Environmental Hazard? Proceedings of the 'Cell Towers Forum' State of the Science/State of the Law edited by B. Blake Levitt (2001)

Volkrodt provides evidence in his papers that the decimation of forests is not caused by acid rain but by the acidification of the soil due to "electrosmog."

"Microwaves are 'received' by our trees and finally converted into electrical currents which flow into the soil….A type of electric rectification takes place within the cell membranes. In turn, the direct current that spreads from the roots into the soil causes a type of electrolysis. And this, in turn – and not 'acid rain' – leads to the soil 'acidification' which is being repeatedly observed in the ground under trees exhibiting the new type of forest damage."

Are Microwaves faced with a fiasco similar to that experienced by nuclear energy? 1991

An additional environmental impact unrelated to radiation is the mining of rare earth minerals, which are needed for high tech and "clean" tech like cell phones and Smart Meters. The mining of these minerals, like tantalum, in the Congo is a major contributor to their civil war and the destruction of gorilla habitat, which may result in the extinction of gorillas. In addition, people there are enslaved to work the mines, and women are raped.

How is it that so many intelligent, inside-the-beltway environmentalists are buying into an eco-health-safety-finance debacle with the potential to increase energy consumption, endanger the environment, harm public health, diminish privacy, make the national utility grid more insecure, cause job losses, and make energy markets more speculative?

Answer: by not doing their homework.

http://www.energybulletin.net/stories/2011-03-23/problems-smart-grids, The problems with Smart Grids, B. Blake Levitt, Chellis Glendinning, Mar 18 2011

Environmental Defense Fund (EDF)

The Pecan Street Project, EDF's pilot project with government and industry partners in Austin, TX, is one of the nation's first comprehensive smart grid deployments. Launched in December 2008, the project recently completed its first phase, in which EDF played a leading role in development of recommendations forming the basis of the project… In December 2009 the Pecan Street Project received $10.4 million in funding from the U.S.

> Department of Energy… Pecan Street is the first of several partnerships EDF will launch to help design the future grid.
>
> http://www.edf.org/page.cfm?tagID=51221

Despite being presented with evidence of harm, EDF remains a cheerleader for the Smart Grid. EDF's conflict of interest is substantial. EDF receives ratepayer funds from the CPUC for offering assistance. EDF board member Ann Doerr is the wife of John Doerr. He is one of the main venture capitalists backing Silver Spring Networks, of Smart Meter fame. And EDF is a partner in the Smart Meter/Smart Grid project in Austin, TX.

The Natural Defense Resource Council (NRDC) and the national Sierra Club are examples of two additional mainstream environmental groups that are corporate cheerleaders instead of environmental guardians.

> http://stopsmartmeters.org/2011/07/26/the-green-sheen-wearing-thin-how-corporate-environmental-organizations-are-providing-cover-for-the-mounting-ecological-catastrophe-of-the-%E2%80%9Csmart-grid%E2%80%9D/

SMART GRID/SMART METERS -- ENERGY INTENSIVE

There is no proof of diminished greenhouse emissions. Quite the contrary.

> The energy consumption of electronic devices is skyrocketing, as was recently reported by the International Energy Association ("Gadgets and gigawatts"). According to the research paper, the electricity consumption of computers, cell phones, flat screen TV's, iPods and other gadgets will double by 2022 and triple by 2030. This comes down to the need for an additional 280 gigawatts of power generation capacity… There are multiple reasons for the growing energy consumption of electronic equipment; more and more people can buy gadgets, more and more gadgets appear, and existing gadgets use more and more energy (in spite of more energy efficient technology
>
> …While these reports are in themselves reason for concern, they hugely underestimate the energy use of electronic equipment. To start with, electricity consumption does not equal energy consumption. In the US, utility stations have an average efficiency of about 35 percent. If a laptop is said to consume 60 watt-hours of electricity, it consumes almost three times as much energy (around 180 watt-hour, or 648 kilojoules).
>
> So, let's start by multiplying all figures by 3 and we get a more realistic image of the energy consumption of our electronic equipment. Another thing that is too easily forgotten, is the energy use of the infrastructure that supports many technologies; most notably the mobile phone network and the internet (which consists of server farms, routers, switches, optical equipment and the like),
>
> …Most important, however, is the energy required to manufacture all this electronic equipment (both network and, especially, consumer appliances). The energy used to

produce electronic gadgets is considerably higher than the energy used during their operation.

An old-fashioned car uses many times more energy during its lifetime (burning gasoline) than during its manufacture. The same goes for a refrigerator or the typical incandescent light bulb: the energy required to manufacture the product pales into insignificance when compared to the energy used during its operation.

…Advanced digital technology has turned this relationship upside down. A handful of microchips can have as much embodied energy as a car. And since digital technology has brought about a plethora of new products, and has also infiltrated almost all existing products, this change has vast consequences… The most up-to-date life cycle analysis of a computer dates from 2004 and concerns a machine from 1990. It concluded that while the ratio of fossil fuel use to product weight is 2 to 1 for most manufactured products (you need 2 kilograms of fuel for 1 kilogram of product), the ratio is 12 to 1 for a computer (you need 12 kilograms of fuel for 1 kilogram of computer). Considering an average life expectancy of 3 years, this means that the total energy use of a computer is dominated by production (83% or 7,329 megajoule) as opposed to operation (17%). Similar figures were obtained for mobile phones.
While the 1990 computer was a desktop machine with a CRT-monitor, many of today's computers are laptops with an LCD-screen. At first sight, this seems to indicate that the embodied energy of today's machines is lower than that of the 1990 machine, because much less material (plastics, metals, glass) is needed. But it is not the plastic, the metal and the glass that makes computers so energy-intensive to produce. It's the tiny microchips, and present-day computers have more of them, not less.

While there are significant differences between configurations, all these manufacturing methods require between 1 and 10 megajoule of electricity per kilogram of material. This corresponds to 278 to 2,780 watt-hour of electricity per kilogram of material. Manufacturing a one kilogram plastic or metal part thus requires as much electricity as operating a flat screen television for 1 to 10 hours (if we assume that the part only undergoes one manufacturing operation).

The energy requirements of semiconductor and nanomaterial manufacturing techniques are much higher than that: up to 6 orders of magnitude (that's 10 raised to the 6th power) above those of conventional manufacturing processes. This comes down to between 1,000 and 100,000 megajoules per kilogram of material, compared to 1 to 10 megajoules for conventional manufacturing techniques.

Digital technology is a product of cheap energy

The research of Timothy Gutowski shows that the historical trend is toward more and more energy intensive processes. At the same time, energy resources are declining.

> Gutowski writes: "This phenomenon has been enabled by stable and declining material and energy prices over this period. The seemingly extravagant use of materials and energy resources by many newer manufacturing processes is alarming and needs to be addressed alongside claims of improved sustainability from products manufactured by these means.
>
> …The ecological footprint of digital technology described above is far from complete. This article focuses exclusively on energy use and does not take into account the toxicity of manufacturing processes and the use of water resources, both of which are also several orders of magnitude higher in the case of both semiconductors and nanomaterials. To give an idea: most water used in semiconductor manufacturing is ultrapure water (UPW), which requires large additional quantities of chemicals. For many of these issues, the industry recognizes that there are no solutions. There are also the problems of waste & war.
>
> Last, but not least: the energy-intensive nature of digital technology is not due only to energy-intensive manufacturing processes. Equally as important is the extremely short lifecycle of most gadgets. If digital products would last a lifetime (or at least a decade), embodied energy would not be such an issue."
>
> The monster footprint of digital technology, Kris De Decker, June 2009
> http://www.lowtechmagazine.com/2009/06/embodied-energy-of-digital-technology.html

For Smart Meters, there is also the energy used for data transmission from the meters and the mesh network 24 hours a day, including the collector antennas. There is the energy required for data collection centers, to operate and for cooling.

That is for the technology itself.

As regards the public use of energy, the reduction of energy use by consumers is an assumption that has not been proven. In fact, there is evidence from the utility companies that it is not happening. Moving energy use to off-peak hours or reducing levels of heating or cooling is simply not practical for many, including those on fixed schedules and those who have health problems.

Rather than penalize the public for using more and more of the energy-intensive devices that are freely marketed and sold, it seems a good idea to rethink the nature and consequences of what our market economy creates. If our state is serious about energy conservation.

WEAPONIZED RF

Microwave signalling Smart Meters are a powerful technology with very suppressive properties "deployed" on every building throughout the United States.

Barrie Trower, retired British military intelligence expert in microwave weapons:

> Debriefing spies during The Cold War extended my military education into the full diversity of stealth microwave warfare and communication systems. In so doing, I learned a list of approximately 30 pulse frequencies that could induce some 50 physical and mental ailments by entrainment.
>
> Portland Public Schools are transmitting electromagnetic, specifically MW[microwave], frequencies at low exposure levels compared to thermal levels. However, these exposure levels are very high compared to natural background levels at the frequencies deployed: 2.45 GHz and 5 GHz frequency, which means between 2.45 and 5 billion cycles per second. When I realized that power densities and frequencies similar to those used as weapons during the Cold War were being used as WI-FI in schools, I decided to come out of retirement and travel around the world free of charge and explain exactly what the problem is going to be in the future."
>
> Declaration, Civil Action No. Cv-739-MO, Alexandra Helene Morrison and David Mark Morrison v. Portland Public Schools

The Smart Meter Home Area Network antenna transmits at 2.4 GHz.

A single Smart Meter, at 3 feet, is already an estimated 53-160 times the whole body radiation exposure from a cell phone held to the head. It is emitting a Class 2B carcinogen according to the World Health Organization.

Microwave radiation kills quickly at high doses. This was demonstrated by the Stanford Research Institute study, testing 950 MHz and 2.45 GHz as low as 200,000 microW/cm2 – almost identical to the frequencies used by electric Smart Meters. This study found that 950 MHz, the lowest frequency they tested, was the most lethal.

> http://www.magdahavas.com/2010/09/06/pick-of-the-week-9-0-95-and-2-45-ghz-most-lethal-microwave-frequencies/ overview
> http://www.magdahavas.com/wordpress/wp-content/uploads/2010/09/Mortarity_in_Rats_Exposed_to_CW_Microwave_Radiation.pdf

PG&E Smart Meters are capable of 2 ½ watts which equals 2 ½ million microwatts. Peaks have already been detected at over 20,000 microwatts per cm2. That's 10% of a lethal dose at these frequencies.

Robert Becker:

> Since 1986 the American Walter Reed Army Institute of Research has been working on the development of a new type of microwave weapons. In this research it was found that microwave energy within the range of 1 to 15 GHz enters all organ systems of the body, and that microwave pulses tend to couple with the central nervous system….

> (This) constitutes a danger to all organ systems. The test program, which commenced in 1986, dealt with four areas:
> 1. Effect on immediate debilitation;
> 2. Immediate stimulation/irritation through acoustic effects;
> 3. Effects on influencing or prevention of work (activities), and
> 4. Effect on stimulus-controlled behavior.
>
> In "The Spark of Life", 1991; cited by Wolfgang Volkrodt, "Are Microwaves faced with a fiasco similar to that experienced by nuclear energy?" p, 7, 9

In April 2012, the Russian government announced plans to introduce microwave weapons

> Russian military have worked out non-lethal electromagnetic weapons that are presently undergoing tests… The USA is the leader in this field, and Russia has become the second state in the world that has started developing electromagnetic weapons.
>
> Sources in Moscow say Mr Putin has described the guns, which use electromagnetic radiation like that found in microwave ovens, as 'entirely new instruments for achieving political and strategic goals'. Mr Putin added: 'Such high-tech weapons systems will be comparable in effect to nuclear weapons, but will be more acceptable in terms of political and military ideology.'
>
> http://www.dailymail.co.uk/news/article-2123415/Putin-targets-foes-zombie-gun-attack-victims-central-nervous-system.html#ixzz1rgW2NZUw
> http://english.ruvr.ru/2012_04_25/72924745/

The second article says that this research has been going on in the U.S. and Russia since the 1950s.

A very common complaint after Smart Meter installation is tinnitus or hearing ringing or buzzing. It was discovered in the 1950's that microwave radiation could be "heard," and researchers like Allen Frey worked to discover the mechanism and to see what uses it could be put to. A report for the U.S. Army elaborates some of the possibilities,

> Incapacitating Effect: Microwave Hearing
> Microwave hearing is a phenomenon, described by human observers, as, the sensations of buzzing, ticking, hissing, or knocking sounds that originate within or immediately behind the head. There is no sound propagating through the air like normal sound.
>
> … This technology makes use of a phenomenon first described in the literature over 30 years ago. Different types of sounds were heard depending on the particular of the pulse characteristics…..One study (in 1975) using human volunteers, identified the threshold energy of microwave-auditory responses in humans as a function of pulse width for 2450 MHz radiofrequency energy. [Electric HAN network – 2450 MHz]

Tunability
The phenomenon is tunable in that the characteristic sounds and intensities of those sounds depend on the characteristics of the RF energy as delivered. …it could only be heard within a person's head. In one experiment, communication of the words from one to ten using "speech modulated" microwave energy was successfully demonstrated. Microphones next to the person experiencing the voice could not pick up the sound. Additional development of this would open up a wide range of possibilities.

Recovery/Safety
Humans have been subjected to this phenomenon for many years. The energy deposition required to produce this effect is so small that it is not considered hazardous

Possible Influence on Subject(s)
Application of the microwave hearing technology could facilitate a private message transmission, It may be useful to provide a disruptive condition to a person not aware of the technology. Not only might it be disruptive to the sense of hearing, it could be psychologically devastating if one suddenly heard "voices within one's head."

Technological Status of Generator/Aiming Device
This technology requires no extrapolation to estimate its usefulness, Microwave energy can be applied at a distance, and the appropriate technology can be adapted from existing radar units… Signals can be transmitted long distances (hundreds of meters) using current technology.

Bioeffects of Selected Non-Lethal Weapons, 1998, released 12/06 by United States Army Intelligence and Security Command
http://www.wired.com/images_blogs/dangerroom/files/Bioeffects_of_Selected_Non-Lethal_Weapons.pdf p. 6-8
Nonlethal Weapons Could Target Brain, Mimic Schizophrenia; Sharon Weinberger, 2-08
http://www.wired.com/dangerroom/2008/02/report-nonletha/

Making people hear voices, making people believe they are schizophrenic, is a powerful capability. Representative Jim Guest of the Missouri Legislature has become an advocate for Americans who presently claim they are being electronically harassed.

In 2006, Project Censored, Sonoma State University, reported on capabilities already in use, including the LRAD – Long Range Acoustical Device – a “non-lethal” weapon, that has already been used against demonstrators and that can permanently injure and kill with internally experienced sound, as well as Voice to Skull weapons, “which uses microwave transmission of sound into the skull of persons or animals by way of pulse-modulated microwave radiation.”

US Electromagnetic Weapons and Human Rights, Peter Phillips, Lew Brown, Bridget Thornton, http://www.projectcensored.org/wp-content/uploads/2010/05/ElectromegnaticWeapons.pdf

Investigative journalist and veteran William Thomas, in “Microwaving Iraq,” describes the use of “poppers” or “domes” which use multiple frequencies to have specific disruptive physical and psychological effects, but also have unintended effects.

> On the rooftop of a shrapnel-pocked building in the ruins of Fallujah, a team of GI's stealthily sets up a gray plastic dome about two-feet in diameter. Keeping well back from the sight lines of the street and nearby buildings, they plug the cable connectors on the side of the "popper" into a power unit. The grunts have no clue what the device does. They are just following orders.
>
> "Most of the worker-bees that are placing these do not even know what is inside the "domes" just that they were told where to place them by Intel weenies with usually no nametag," reports my source, a very well informed combat veteran I will call "Hank".
>
> The grunts call the plastic devices "poppers" or "domes". Once activated, each hidden transmitter emits a widening circle of invisible energy capable of passing through metal, concrete and human skulls up to half a mile away. "They are saturating the area with ULF, VLF and UHF freqs," Hanks says, with equipment derived from US Navy undersea sonar and communications…
>
> "The "poppers, are capable of using a combo of ULF, VLF, UHF and EHF wavelengths in any combination at the same time, sometimes using one as a carrier wave for the others," Hank explains, in a process called superheterodyning. The silent frequencies daily sweeping Fallujah and other trouble spots are the same Navy "freqs that drove whales nuts and made them go astray onto beaches."
>
> …He is concerned that innocent Iraqi families and unsuspecting GIs alike are being used as test subjects for a new generation of "psychotronic" weapons using invisible beams across the entire electromagnetic spectrum to selectively alter moods, behavior and bodily processes.
>
> According to Hank's front-line buddies, Iraqis exposed to secret beam weapons "get laid back, confused and mellow, and then blast out in a rage, as opposed to our folks going on what could only be called a "bender" and turning into a mean drunk for a while."
>
> Once they wander away from direct electromagnetic-fire, startled GIs come to their senses. They return to their units, Hank explains, saying, "What was I thinking?"
>
> …The recovery rate among US troops "seems to be about a day or so, where the locals are not getting over it in less than a week or more on average," Hank has learned.
>
> While the mobile microwave weapons currently deployed in Iraq may or may not lead to lasting harm, rooftop "poppers" and "domes" left to radiate for days at a time are

irradiating unsuspecting families already coping with illness, wounds, hunger and the stress of losing homes and loved ones...

…Very Low Frequency (VLF) weapons include the dozens of "poppers" currently deployed in Iraq, which can be dialed to or "long wave" frequencies capable of traveling great distances through the ground or intervening structures. As air force Lt Col. Peter L. Hays, Director of the Institute for National Security Studies reveals, "Transmission of long wavelength sound creates biophysical effects; nausea, loss of bowels, disorientation, vomiting, potential internal organ damage or death may occur."

Hays calls VLF weapons "superior" because their directed energy beams do not lose their hurtful properties when traveling through air to tissue. A French weapon radiating at 7 hertz "made the people in range sick for hours."

Microwaving Iraq: 'Pacifying' Rays Pose New Hazards In Iraq, 1-25-2005

Measurement by a member of the public has found the electric Smart Meter frequency of 900-928 MHz modulated by an ELF frequency of 11-15 Hz – brainwave range. Nausea, vomiting, dizziness and disorientation are symptoms people experience after Smart Meter installation, as well as sleep disturbance, inability to concentrate, memory problems and mood disorders.

Incapacitating Effect: Disruption of Neural Control

The nature of the incapacitation is a rhythmic-activity synchronization of brain neurons that disrupts normal cortical control of the corticospinal and corticobulbar pathways; this disrupts normal functioning of the spinal motor neurons which control muscle contraction and body movements. Persons suffering from this condition lose voluntary control of their body. This synchronization may be accompanied by a sudden loss of consciousness and intense muscle spasms

Mechanism to Reproduce the Desired Effects

Application of electromagnetic pulses is also a conceptual nonlethal technology that uses electromagnetic energy to induce neural synchrony and disruption of voluntary muscle control. The effectiveness of this concept has not been demonstrated. However, from past work in evaluating the potential for electromagnetic pulse generators to affect humans, it is estimated that sufficiently strong internal fields can be generated within the brain to trigger neurons.

..The ionic basis and biochemical substrate of this activation have been areas of considerable study but still leaves many questions unanswered. What are the basic cellular properties, present in normal cells and tissues, that could contribute to the generation of abnormal activity? What parts of the system are low threshold and function as trigger elements?

Different types of technologies could be employed to influence wide areas or single individuals. Because this technology is considered to be tunable, the influence on

subjects could vary from mild disruption of concentration to muscle spasms and loss of consciousness. The subject(s) would have varying degrees of voluntary control depending on the chosen degree of incapacitation.

Technological Status of Generator/Aiming Device
An electric field strength of roughly 100Kv/m over a time period of 1 nanosecond is approximately the condition thought to be necessary to produce the desired effect when provided to an overall repetition rate of 15 Hz. Such a field may be developed during a radar-like, high-peak-power, pulsed source or an electromagnetic pulse generator operating at 15 Hz. These technologies exist today sufficient to evaluate the disabling concept. Power requirements are not high because the duty factor is so low… Because there were no open literature reports from which to make inferences, there is some uncertainty about the power levels required.

Bioeffects of Selected Non-Lethal Weapons, 1998, released 12/06 by United States Army Intelligence and Security Command
http://www.wired.com/images_blogs/dangerroom/files/Bioeffects_of_Selected_Non-Lethal_Weapons.pdf p. 8-12

Researchers Gale Craviso and Indira Chatterjee, University of Nevada at Reno, have been working on various applications for the U.S. military.

This basic research initiative is geared ultimately toward developing effective and safe non-lethal technologies that alter skeletal muscle contraction and/or neural functioning via radiofrequency (RF)/microwave (MW) electromagnetic radiation. Major accomplishments included 1) near completion of studies examining the effect of 1 to 6 GHz MW fields on catecholamine release from chromaffin cells; 2) initiating studies using a novel exposure system for real-time imaging of intracellular effects in chromaffin cells in response to high electric field RF/MW pulse modulated radiation, broadband Gaussian pulses or RF/MW modulated Gaussian pulses with the frequency spectrum centered in the band 0.75-6 GHz; 3) completion of studies on the effect of 0.75 to 1 GHz RF fields on skeletal muscle contraction using fixed frequencies and just recently implementing frequency sweep paradigms; 4) initiation of studies to examine the effect of nanosecond electric pulses of high intensity on catecholamine release from chromaffin cells.

Sponsorship by U.S. Air Force

Naval Studies Board on Directed-Energy Non-Lethal Weapon

"The first radiofrequency non-lethal weapons, VMADS, is based on a biophysical susceptibility known empirically for decades. More in-depth health effects studies were launched only after the decision was made to develop that capability as a weapon. The heating action of RF signals is well understood and can be the basis for several additional directed-energy weapons. Leap-ahead non-lethal weapons technologies will

> probably be based on more subtle human/RF interactions in which the signal information within the RF exposure causes an effect other than simply heating: for example, stun, seizure, startle and decreased spontaneous activity. Recent developments in the technology are leading to ultrawideband, very high peak power and ultrashort signal capabilities, suggesting the phase space to be explored for subtle, yet potentially effective non-thermal biophysical susceptibilities is vast. Advances will require a dedicated effort to identify useful susceptibilities."
>
> National Academy of Sciences - National Research Council
> An Assessment of Non-Lethal Weapons Science and Technology by the Naval Studies Board, Division of Engineering and Physical Sciences (National Academies Press (2002) (prepublication copy, page 2-13)
> Cited in Bioinitiative Report, Section 4, p. 11, 12

At a foggy military base in Northern California years ago, an experiment was made with frequency to see if the fog could be eliminated. Someone stationed there agreed that frequency is powerful, recalling, "We didn't get rid of the fog, but we did kill all the wild turkeys."

This description of what women protesting at Greenham Common in England experienced:

> A preview of what lies in store for long-suffering families in Iraq can be gleaned from Greenham Common, where the British Army reportedly used an electromagnetic weapon against 30,000 women who had camped for nearly two decades around that UK military base to protest the deployment of nuclear-tipped US cruise missiles.
>
> One day in the summer of 1984, more than 2,000 British troops suddenly pulled back, leaving the fence unguarded. Peace mom Kim Besley recalls that as curious women approached the gate, they "started experiencing odd health effects: swollen tongues, changed heartbeats, immobility, feelings of terror, pains in the upper body."
>
> Besley found her 30-year-old daughter too ill to stand. Other symptoms typical of electromagnetic exposure included skin burns, severe headaches, drowsiness, post-menopausal menstrual bleeding and menstruation at abnormal times. Besley's daughter's cycle changed to 14 days and took a year to return to normal.
>
> Two late-term spontaneous miscarriages, impaired speech, and an apparent circulatory failure prompted the women to begin monitoring for a directed-energy beam, Using an EMR meter, they measured beams sweeping their camp at 100-times normal background levels.
>
> Microwaving Iraq: 'Pacifying' Rays Pose New Hazards In Iraq, William Thomas, January 25, 2005

Reports periodically come out in the press about experiments conducted on the general public or on groups in our society by agencies within our own government or the military. Plutonium

injections, syphilis experiments, Agent Orange denied and soldiers still denied benefits, Gulf War illness denied and veterans denied benefits, patented genetically engineered "bugs" showing up in the general population, MKULTRA, atomic bomb experiments on soldiers, and on and on. The public usually learns about this decades after the incidents occur and after responsible parties are no longer alive. It is important to bear this in mind, as well as the danger from other nations and groups doing directed energy development.

The American government is now claiming responsibility with Israel for the Stuxnet virus.

Though utility companies claim aspects like duty cycles are fixed, it is important to note:

> (Smart Meters have) the ability for remote installation of meter or communication board firmware which may be required for upgradability.
>
> CPUC Opt-out decision, 2-9-12, p. 9, #7

If the meters can be hacked and "upgraded," what is the possibility for harm, beyond the harm already being caused?

With the widespread use of microwave RF devices in our society, including cell towers everywhere, it is sobering to realize how these devices could additionally and intentionally harm our communities.

CONTROL OF HOUSEHOLD ELECTRICAL USE

Smart Meters can be remotely disconnected by utility companies.

In addition, "load control management" (Opt-out decision, 2-9-12), and "Smart" appliances with internal transmitters which communicate with the meter means external agencies can control the use of our appliances. Already reports are surfacing of people unable to use their appliances at certain times of the day.

A report for the Australian Ministerial Council on Energy Smart Meter Working Group states

> Direct load control occurs when appliances within a customer's premises are remotely controlled by a retailer, network operator or demand aggregator to lower electricity consumption without affecting the service provided by the appliance. Direct load control technology is being used to control appliances such as air conditioners, pool pumps and electric hot water systems. Importantly direct load control need not mean that an appliance is remotely turned off entirely. In the case of air conditioners, direct load control systems cycle the air conditioner compressor to lower electricity consumption whilst minimising the impact on the cooling capability of the air conditioner. This reduction in consumption translates into lower expenditure on electricity which implies a redistribution of retailer, generator and network operator surplus to consumers.

The initial effect of direct load control on customers is therefore likely to be relatively small. There is no change to the pattern of consumption as the result of DLC (ie, no substitution between peak and off-peak consumption), only a reduction in the level of peak consumption. It is likely that the function of the appliances will be maintained such that there will be no loss of value to the customer from using the appliance that is controlled…

There are a range of household and commercial appliances that could be the subject of remote automated load control. The most common appliances controlled through DLC programmes are air conditioners and swimming pool pumps.

This Phase 2 report also considers further the issue of the additional demand response that may be associated with incorporating either an interface for load control devices (functionality 15) or an interface to a Home Area Network (HAN) using an open standard (functionality 16) in a smart meter rollout.

Functionalities 15 and 16 both provide the capability for DLC as part of a smart metering rollout.

p, 17, 51, vii
http://sedc-coalition.eu/wp-content/uploads/2011/05/NERA-08-02-29-Cost-Benefit-Analysis-Report-for-Australia.pdf

Division of Ratepayer Advocates, CPUC

PG&E's AC Cycling program, recently renamed "SmartAC," is a dispatchable demand response program that delivers peak load reduction via direct load control of customers' AC units. During summer peak events, PG&E would remotely and intermittently turn off customers' AC units. In the AC Cycling Application (A.) 07-04-009, PG&E proposed two ways to do this: (1) directly by turning the AC unit on and off using a switch installed on the AC unit, and (2) indirectly by setting the thermostat back 4 degrees Fahrenheit

…As background, the California Energy Commission (CEC) sets energy efficient building standards, and considered the installation of remote-controllable Programmable Communicating Thermostats (PCTs) as a requirement for new home constructions and qualifying building retrofits. However, in January 2008, the CEC withdrew the proposed PCT requirement from its 2008 Building Standards. The PCT requirement had received negative mass media attention, and news articles on the public backlash appeared in major publications such as the New York Times and the San Francisco Chronicle. The consideration of the PCT requirement in CEC building standards, as a result, has been deferred.

> …DRA questions whether PG&E can "seamlessly integrate" the HAN functionality with its SmartAC program operation as it claims. Operating the SmartAC program through the HAN interface does not mean that PG&E can replace the 900 MHz paging system approved for its SmartAC program. In fact, PG&E states in the Upgrade testimony that:
>
> > "Separate communications systems are likely to be necessary due to the possibility that customer-owned equipment installed under the current SmartAC program may not be able to communicate with the new HAN network."
>
> In other words, PG&E may not be able to operate all AC units participating in its SmartAC program through the HAN interface. PG&E has already successfully sought Commission approval of the SmartAC program, based on PG&E's argument that it could ameliorate increasing AC load among new construction, and that:
>
> > "both PCTs and [AC] switches can be readily integrated with the so-called "smart meters" that it is rolling out in place of traditional meters as part of its advanced meter initiative (AMI) approved in D.06-07-027."
>
> As approved in D.08-02-009, PG&E has a communication system to remotely control PCTs. DRA points out that, during the period when the CEC was considering the Title 24 PCT requirement, it had proposed an AM/FM communication protocol. To promote interoperability, the CEC also considered requiring the PCTs to incorporate "communication expansion ports," to allow for remote control of the PCTs via other communication systems, such as the 900 MHz paging system for which PG&E received ratepayer funding in D.08-02-009.
>
> …Having yet another technology for PG&E to remotely control customers' thermostats will not make customers more willing to surrender their thermostat control to PG&E.
>
> > Opening Brief of DRA, August 29, 2008, in Application of PG&E for Authority to Increase Revenue Requirements to Recover the Costs to Upgrade its SmartMeter™ Program, A. 07-12-009. p. 41- 44

In this document is mention that there are multiple ways to remotely communicate with thermostats and air conditioning units. Also stated is that PG&E didn't think the then-current SmartACs would be able to communicate to the HAN, presumably because the HAN is 2.45 GHz, and the paging system PG&E received funding for is 900 MHz. A question not asked is will this paging system cause interference or receive interference from the 902-928 MHz Smart Meters?

To consider that PG&E and other utility companies plan to remotely turn on and off air conditioning units and thermostats in extreme weather is extremely alarming, especially given utility company competence, reliability, and concern about customer safety in other matters. What if the signal doesn't make it back to the SmartAC to turn it back on, or does so only intermittently? Even if there is a manual override, what if the customer is not home and leaves children or animals in the house? What if the customer is not mobile? PG&E's history alone on safety is chilling, and their competence as a company is regularly called into question. The above document is well worth reading on many counts.

The letter to the editor below was published in the Santa Rosa Press-Democrat:

> PG&E technology
>
> EDITOR:
> For 17 years, PG&E has robo-dialed my house monthly to inform me, "Our records show that you are a dog owner . . ." For 16 of those years, the dog has been dead.
>
> Correcting this should be easy. Per PG&E's instructions, all I have to do is press a number on the key pad to delete my number from the system. Up until now, it's only been mildly annoying when the very next month, I have received the same recorded message, "Our records show that you are a dog owner . . ."
>
> Well, I just learned PG&E will soon install SmartMeters in my neighborhood. Am I worried? You bet I am. If PG&E's information technology department cannot effectively monitor and maintain the oldest and simplest phone technology (the removal of a phone number from its speed dial), how will it handle a highly sophisticated wireless network to accurately measure my gas and electric usage?
>
> SmartMeters are only as smart as those who install, operate and maintain them. You'll have to forgive me if I question whether PG&E is up to the task.
>
> JACQUELYN de l'EAU
> Penngrove
> June 20, 2010

http://www.pressdemocrat.com/article/20100630/OPINION/100629506/1044/opinion02?Title=Wednesday-s-Letters-to-the-Editor

FCC VIOLATIONS

There is strong evidence of violations of FCC standards and FCC regulations.

> The EMF Safety Network alleges that PG&E Smart Meters violate one or more FCC conditions that determine RF exposure compliance. The FCC Grants of Equipment Authorization, which govern the rules upon which FCC compliance is based, warns that RF exposure compliance depends on specific conditions. The conditions include one or more of the following, depending on the specific make and model of Smart Meter.
>
> • limited single module approval requires professional installation;
> • antenna(s) must provide a separation distance of at least 20 cm from all persons;
> • antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter;
> • end-users and installers must be provided with antenna installation and

transmitter operating conditions for satisfying RF exposure compliance

> Smart Meters are widely co-located in banks of multiple meters. Co-location also occurs within Smart Meters because electric Smart Meters include at least two internal RF antennas. One antenna is used for the mesh network system and the other is for the Home Area Network (HAN) systems. Antennas are designed to work in conjunction with the HAN and RF appliances and with other Smart Meters in a mesh network. Antennas have separate Grants of Equipment Authorization, which suggests that manufacturers have tested antennas in isolation and individually, and not in combination, which is how the Smart Meter and the Smart Grid system were designed to operate….
>
> …Network alleges one or more FCC exposure compliance violations for the following meters PG&E is deploying: FCC ID numbers: OWS-NIC514, OWS-NIC507, and LLB6327PWM.

Furthermore, "antenna(s) must provide a separation distance of at least 20 cm (8 in.) from all persons," yet there are no warning labels on Smart Meters, and PG&E has actually encouraged people to get close to their meters to read them.

> Many Smart Meters are installed within 20 cm of public access. In some cases the meters are installed inside homes and businesses. In many situations Smart Meters are easily accessible to the public. This rule is clearly violated.
>
> EMF Safety Network, A. 10-04-018, Declaration p, 1. Jan. 5, 2011



Café in Berkeley





Businesses, Pacific Grove

Sage Associates, January 2011:

> FCC compliance violations are likely to occur under normal conditions of installation and operation of smart meters and collector meters in California.
>
> Sage Associates, Assessment of Radiofrequency Microwave Radiation Emissions from Smart Meters ITRON Smart Meter (SKAMI-4)
> http://sagereports.com/smart-meter-rf/

Sage Associates, February 2011:

> Violations of FCC safety limits for uncontrolled public access are identified at distances out to a distance of more than one foot for a single meter, and several feet for multiple meters, even under the most restrictive FCC formula using only a 60% reflection factor.
>
> Sage Associates, Smart Meter Addendum Report,
> PG&E Smart Meter (Silver Springs OWS-NIC514)
> http://sagereports.com/smart-meter-rf/?page_id=429

"The emissions from one meter are strong enough that the public is put at risk from exposures outward from the meter from approximately one foot to over six feet, depending on the reflection factor," says Cindy Sage, Sage Associates. "For multiple meters at the same location, the zone of impact where FCC limits may be violated is somewhere between three feet and 19 feet, depending on the reflection factor."

Press release, Environmental Health Coalition of West Marin, February 18, 2011

BURDENSOME AND EXCESSIVE COSTS

- Costs borne by the public for the initial roll-out and subsequent program costs for a program which financially benefits the utilities and partners, whether by federal grants or rate hikes, instead of by shareholders.

> DRA would like the Commission to apply some procedural restraint on what PG&E apparently perceives to be a runaway AMI gravy train. It is respectfully submitted that a Decision approving this cost-ineffective upgrade could lead to a staggering waste of ratepayer money. Very little, in terms of PG&E's AMI performance to date, causes DRA to have much confidence in PG&E. The jury is still out as to when, or if, its ratepayers will ever see the benefits identified in PG&E's original, or this upgrade proposal, that would justify its enormous cost. DRA does not find this Upgrade Application to be cost-effective, and therefore respectfully recommends that the Commission reject it.
>
> Opening Brief of DRA, August 29, 2008, in Application of PG&E for Authority to Increase Revenue Requirements to Recover the Costs to Upgrade its SmartMeter™ Program, A. 07-12-009. p. 5

- For time-of-use pricing, increased energy costs
  - for those on fixed schedules
  - for businesses which use power during peak hours, such as restaurants
  - for individuals with medical conditions which
    - require certain temperatures
    - require 24-hour medical devices
  - for the housebound
  - for low income ratepayers

- Future costs of HAN-enabled devices, retrofits, and Smart appliances will be borne by consumers.

  PG&E assumes residential customers will purchase in-home information feedback devices (IHD's) that will be able to communicate with the meters. Electric energy consumption information can then be transmitted directly from the meters to the in-home information displays.

  Opening Brief of DRA, August 29, 2008, in Application of PG&E for Authority to Increase Revenue Requirements to Recover the Costs to Upgrade its SmartMeter™ Program, A. 07-12-009. p. 31

  (Consumers can purchase those home energy monitors now, without a Smart Meter.)

- Current costs to the public:
  - Fire damage
  - Damaged electronics and wiring,
  - Medical costs including
    - medical visits for diagnosis and treatment
    - hospital trips
    - medications
    - therapies
  - Shielding materials
  - Loss of use of homes or portions of homes
  - Loss of value of homes or commercial property
  - Moving expenses and storage fees
  - Restriction of life with resultant economic costs to cities and counties
  - Inability to work and lost income
  - Costs of unemployment benefits

- Long-term chronic and/or degenerative medical conditions
  - Damage to children
  - DNA damage
  - Increased cancer and tumor risks
  - Increased Alzheimer's risk
  - Increased risks for stroke
  - Increased ADHD and autism
  - Increased heart problems and pacemaker malfunctions

- Accidents and deaths

- Costs of remote disconnection consequences to people, particularly in extreme weather areas.

- Costs of direct load control impacts to vulnerable populations, such as the elderly and the ill, in extreme weather areas.

- Costs of loss of bees and other pollinators, with resultant impacts to food availability and food system

- Costs of loss of birds and increased costs of insect control if bird loss isn't balanced by insect loss

- Costs of forest loss, especially urban forests, with increased and more rapid replacement costs for cities to replace tree cover and habitat, and hazardous conditions for the public with sick trees.

- Societal costs due to widespread, increasing corrosion of metal infrastructure, including water mains, and buildings' structural frames and bridges, creating hazardous conditions and replacement costs.

- Societal costs from damaged building material integrity from RF radiation.

- Societal costs from increased vulnerability and incidents of hacking, EMPs, and cyberattacks

- Societal costs of nuclear accidents, including evacuation and relocation, contaminated land, air, and water, soil contamination for centuries, increased disease and death rates, damaged genetic material for all species, etc.

- Costs in hours, money, time away from family, and life deferred for 2 + years by members of the public to educate Californians and public officials about this program.

COSTS EXCEED BENEFITS

There is little to no benefit for the consumer, with debatable energy savings; thus the costs exceed any possible benefits.

Connecticut Attorney General George Jepson (February 2011):

> "(Connecticut Light & Power's) proposal would force the company's ratepayers to spend at least $500 million on new meters that are likely to provide few benefits in return,

> "The pilot results showed no beneficial impact on total energy usage. And, the savings that were seen in the pilot were limited to certain types of customers and would be far outweighed by the cost of installing the new meter systems,"

John Rowe, CEO of Exelon, parent company of Illinois utility company Commonwealth Edison, recently said of the smart grid:

> "… it costs too much, and we're not sure what good it will do. We have looked at most of the elements of smart grid for 20 years and we have never been able to come up with estimates that make it pay." (quoted by AG Madigan)

Illinois Attorney General Lisa Madigan (June 2011):

> "The utilities want to experiment with expensive and unproven smart grid technology, yet all the risk for this experiment will lie with consumers.
>
> The $63 million smart grid pilot program consumers are currently paying for has turned in disappointing results that reinforce what Rowe already knows. On hot summer days, people continue to run their air conditioners no matter how much information they have from their smart meter.
>
> Consumers don't need to be forced to pay billions for so-called smart technology to know how to reduce their utility bills. We know to turn down the heat or air conditioning and shut off the lights. The utilities have shown no evidence of billions of dollars in benefits to consumers from these new meters, but they have shown they know how to profit.
>
> I think the only real question is: How dumb do they think we are?"

Michigan Attorney General Bill Schuette (April 2012)

> …at least two very substantial issues remain that must be further addressed before the MPSC (Michigan Public Service Commission) authorizes or approves any further deployment of smart meters by Michigan electric utilities and the recovery from ratepayers of the costs of smart meter deployment. First, there must be a sufficient demonstration that implementation of the smart meter programs will actually produce a net economic benefit to customers. Second, customers must be afforded a meaningful and fair opportunity to opt out of smart meter installation without being penalized by unwarranted and excessive costs.
>
> A net economic benefit to electric utility ratepayers from Detroit Edison's and Consumers smart meter programs has yet to be established. In the absence of such demonstrated benefit, the Attorney General has opposed, and will oppose any Commission action that unjustly and unreasonably imposes the costs of such

programs upon ratepayers. To a significant extent, the asserted potential benefits to utility customers depend upon assumptions that a customer will consider additional "real time" data on electricity usage provided by smart meters, and adjust their electrical consumption to achieve cost savings under variable pricing programs that do not yet exist. (See Edison, Document No. 0146, p 5; and Consumers, Document No. 0148, pp. 6-7). Any assumption that large numbers of residential customers will have the time, ability and motivation to attend to, and act upon daily or even hourly changes in their electrical is questionable.

Comments, Michigan Public Service Commission Case No. U-17000, p. 3-4

What the record does reveal is that AMI is a pilot program that even Robert Ozar, Manager of the Energy Efficiency Section in the Electric Reliability Division of the PSC, concedes "is as yet commercially untested and highly capital intensive, resulting in the potential for significant economic risk and substantial rate impact." At best, the actual evidence presented by Detroit Edison to support the rate increase was aspirational testimony describing the AMI program in optimistic, but speculative terms. *What the record sadly lacks is a discussion of competing considerations regarding the program or the necessity of the program and its costs as related to any net benefit to customers.*

Michigan Court of Appeals Nos. 296374, 296379, slip opinion, pp. 7-9, April 10, 2012
Cited in Attorney General Comments, Case No. U-17000, p. 4-5

Division of Ratepayer Advocates, March 2012:

Executive Summary:
Key Findings presented in Section V of this report include:

- According to SCE's AMI business case, the total cost to customers will be greater than $5 billion, rather than the $1.6 billion cost explicitly approved by the CPUC, which only included nominal deployment costs;

- Many forecasted benefits have been delayed or reduced, which <u>erases</u> the projected margin of net benefits as calculated in SCE's business case [see below];

- SmartConnect-related costs not anticipated in SCE's original business case have already been approved by the CPUC in other proceedings, beyond the over $5 billion cost referenced above. In many cases, these costs were approved without a showing of incremental benefits, and DRA anticipates that more will be requested;

- SmartConnect features such as remote disconnect and SmartConnect-enabled time-varying rates have a high potential for adverse impacts for low-income and other "at-risk" customers… (p. 2)

SCE was the last electric IOU to file an AMI application (2007). At the time that PG&E and SDG&E submitted their applications (2005), SCE's business case analysis, including multiple scenarios, showed that AMI deployment was not a cost-effective endeavor. Two of its scenario analyses showed a Present Value Revenue Requirement (PVRR), largely due to the added Demand Response from large customers that already had interval meters. SCE stated that "the technology envisioned by the Ruling is unproven and commercially unavailable at this time." (p. 7-8)

…SmartConnect was adopted based on an estimate of $9.2 *million* in net benefits on a PVRR [Present Value Revenue Requirement) basis owing to the time-discounted value of money… (p. 10)

Conclusion:
The CPUC required California's large IOUs to file AMI applications and required a demonstration that AMI systems *could* produce net customer benefits. Initially, SCE found that AMI was *not* cost-effective for its customers, but AMI technological developments in 2005 and 2006 led to the SmartConnect application in 2007, which forecasted a very slim margin of lifetime net benefits on a present value basis. The CPUC authorized SmartConnect deployment costs of $1.634 billion, and SCE customers in aggregate have so far experienced a revenue requirement increase in excess of $193.1 million to cover these costs. This is a real cost increase, one which will certainly rise as more meters are purchased and deployed, and as SCE begins to incur post-deployment costs.

…Total SmartConnect costs paid by customers will actually be more than $5 billion (nominally), accounting for post-deployment costs and the financing costs incurred over the 20 years life of the SmartConnect system. This total cost will be even greater if the cost of future AMI-enabled investments and programs are included. While SCE's incremental cost requests have thus far been relatively conservative, it is important to note that PG&E and SDG&E have so far requested much higher amounts in incremental AMI funding: PG&E has requested and received approval for funding in excess of $500 million, and SDG&E has received funding approval for over $93 million. (p. 50)

Case Study of Smart Meter System Deployment: Recommendations for Ensuring Taxpayer Benefits; Hieta, Kao, Roberts

AARP, National Consumer Law Center, and Public Citizen:

...past experience with time of use rates cautions that initial interest in such rates tapers over time. In addition, the low take-rate in the PG&E service territory over the last two years does not bode well for the popularity of critical peak pricing.

...Studies to date attempting to show that low-income customers will benefit do not demonstrate that such will be the case.

…The failure to address and resolve questions about the benefits of smart metering and dynamic pricing versus the risks noted by consumer advocates has led such organizations to view smart metering propositions with mistrust. (p. 4-6)

Conclusion

The policy solutions developed concerning the issues raised in this RFI will have a profound impact on residential consumers, and low-income and fixed-income seniors in particular. It is unfortunate that many continue to inappropriately lump smart grid and smart meters together in a way that fails to address the consumer protections that are necessary in a transition to smart meters. As outlined in the attached paper, the adoption of smart meters should be carefully examined and considered in light of key concerns and, where implemented, should be accompanied by several essential consumer protections. (p. 10-11)

Comments to Department of Energy Smart Grid RFI: Addressing Policy and Logistical Challenges, November 1, 2010
http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/AARPNCLCPublic_CitizenCommentsDOE1101.pdf
Cited in
https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/going-deep-understanding-the-big-picture-and-real-costs-and-concerns

The “attached paper” mentioned above is the report:

The Need For Essential Consumer Protections: Smart Metering Proposals And The Move To Time-Based Pricing, August 2010
www.nclc.org/images/pdf/energy_utility_telecom/additional_resources/adv_meter_protection_report.pdf

Table II
PG&E SmartMeterTM Program Enabled Energy Conservation Programs
Subscription Statistics
December 31, 2010

		Energy Savings (MWh)		Demand Reduction (MW)		
Program	Service Accounts	Energy Savings	Financial Benefits (thousands)	Load Impacts (MWs)	Financial Benefits (thousands)	Total Financial Benefits (thousands)
Energy Conservation						
Customer Web Presentment	128,000	0	$0	0	$0	$0
Home Area Network	0	0	$0	0	$0	$0
Energy Alerts	30,155	0	$0	0	$0	$0
Total		0	$0	0	$0	$0

PG&E 2010 Program Year SmartMeter™ Program Enabled Demand Response and Energy Conservation Annual Report, 4-29-11, p.20

Table II
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Program	Service Accounts	Energy Savings	Financial Benefits (thousands)	Load Impacts (MWs)	Financial Benefits (thousands)	Total Financial Benefits (thousands)
Energy Conservation						
Customer Web Presentment	199,833	1,917	$94	0	$0	$0
Home Area Network	0	0	$0	0	$0	$0
Energy Alerts	73,261	0	$0	0	$0	$0
Total	243,432*	1,917	$94	0	$0	$0

* 29,662 customers were dually enrolled in CWP and EA; there were 243,432 unique service accounts

PG&E 2011 Program Year SmartMeter™ Program Enabled Demand Response and Energy Conservation Annual Report, 4-30-12, p. 21

The financial benefits for 2011 were $94,000 divided by 199,833 enrolled customers. Each customer saved 47 cents for the entire year. The energy savings per customer was .0096 MWh or 9.6 kWh for the entire year.

In contrast,

Utilizing power strips, unplugging electronics and small appliances not in use	Savings: 300 kWh/yr
Utilizing a variety of energy savings measures	Savings: 1,712 kWh/yr (average single family home)

Source: Pacific Gas & Electric, "Path to your Energy Savings", 11-04-09

9.6 kWh per year versus 300 kWh per year – that's a big difference.

UK National Audit Office (June 2011)

> The costs of the UK Government's plans to rollout smart meters to the country's homes and businesses could escalate while providing little saving, warns the National Audit Office (NAO).
>
> The report warns that the benefits are far from certain and there is limited evidence that consumers' behaviour would be permanently changed.
> http://www.energyefficiencynews.com/i/4225/

Smart Grid News (September 2011)

> "Illinois Gov. Pat Quinn, citing an excessive financial burden on consumers, "sweetheart deals" and no guarantees of improved service, knocked down legislation that would have paid for the widespread installation of smart meters and other electric grid improvements." His veto was overridden by the legislature.

Palo Alto, a municipal utility district, has decided after three years of research that they will not be installing Smart Meters for the time being. They found that Smart Meter benefits were overstated, and that costs exceeded benefits. http://paloalto.patch.com/articles/no-smart-meters-for-palo-alto-before-2015 Palo Alto is considered the heart of the Silicon Valley and is the home of Stanford University and EPRI. It took courage to take this action.

A white paper: "Advanced Metering Infrastructure – Implications for Residential Customers in New Jersey" states:

> Savings to ratepayers. The estimates of savings to residential customers from AMI-enabled dynamic pricing, a form of time-differentiated pricing, hinge upon three major assumptions:
> • the reduction in peak use per participating customer,
> • the percentage of customers who will voluntarily participate, and

> • the long-term persistence of the reductions per participating customer.
> There is considerable uncertainty regarding each of these assumptions despite the results from pilot projects in other jurisdictions. First, most pilots entice customers to participate through some form of "appreciation" payment and therefore provide no guidance regarding the percentage of customers who will voluntarily participate in the absence of such an incentive. Second, most pilots have only operated a few years, thus they provide little guidance regarding the long-term persistence of participation and reductions per participant.

It also concludes:

> …reductions from dynamic pricing will not lead to significant reductions in annual emissions of carbon dioxide and sulfur dioxide which are a function of annual electricity use.
>
> Report prepared by Synapse Energy Economics, Inc. for New Jersey Department of Public Advocate, Division of Rate Counsel, July 8, 2008. p. 2
> http://www.state.nj.us/publicadvocate/utility/docs/AMI_White_Paper-_final.pdf

Barbara Alexander, "Smart Regulatory Approach For Smart Grid Investments":

- Federal policies are not mandatory; states have discretion about adopting any PURPA policies, including Smart Grid policies in the Energy Policy Acts of 2005 and 2007
- Rate impacts (AMI costs alone in CA over $3 B; $200-400/meter is typical)
- Technology obsolescence
- Almost 50% of residential customers have very low price elasticities (less than -0.10); half will make very little usage changes
- YET all must pay for program; TURN found that 60% of customers who use less than 6,000 kWh annually would have to shift more than half their peak load to see bill savings when costs of AMI taken into account
- TURN concluded that only a relatively small group of high usage residential customers can realistically shift sufficient peak load to find bill savings.
- PUGET SOUND ENERGY: Mandatory TOU prices for all residential customers abandoned in 2002 when analysis showed negative cost benefit and higher, not lower, customer bills
- Customers with most adverse bill impacts: multi-family and mobile homes
- MAINE: Mandatory TOU prices for high use electricity customers made voluntary with onset of restructuring and widespread customer dissatisfaction in face of higher electricity prices
- Elderly customers in newly built multi-unit condos and senior and low income housing complexes most adversely affected and without alternative options
- NEW YORK: Previous efforts to push for Time of Use pricing resulted in state law that prohibits such time-based pricing except as voluntary options.

- Many utilities offer Time of Use rate options to residential customers using interval meters; little customer interest
- RESTRUCTURING STATES: Most abandoned mandatory TOU and other rate design structures associated with generation supply management and assumed that the competitive market would provide such products.
- Utilities typically couple smart metering with the functionality of remote connection and disconnection of the meter; CA results document significant increase in volume of disconnections with AMI; elimination of premise visit increases risk of wrongful or disputed disconnection; health and safety risks
- These new meters may give rise to a host of degraded service options, e.g., prepayment (pay in advance and automatically disconnect when meter is not fed); service limiters
- Dynamic pricing does not "empower" customers; it presents a Hobson's Choice to many low use, low income, and elderly customers who must use electricity during peak hours for health and safety reasons (Chicago heat wave; over 700 deaths, mostly seniors living alone)
- A voluntary approach to dynamic pricing or relying on Peak Time Rebates is preferred approach; PTR has been successfully demonstrated to result is peak load reduction without TOU or CPP
- Smart Grid and smart metering must not be used as a means to impose dramatic changes in retail rate design for residential customers
    - Dynamic and time-based price programs must remain optional on an "opt in" basis
    - Rewards in the form of credits for peak usage reduction should be the preferred approach

      Presentation, July 15, 2010, 2010 National Energy and Utility Affordability Conference

      http://www.energyandutilityconference.org/Assets/2010%20Conference/2010%20Presentations/Plenary%201_Alexander.pdf

      As summarized in

https://sites.google.com/site/nocelltowerinourneighborhood/home/wireless-smart-meter-concerns/going-deep-understanding-the-big-picture-and-real-costs-and-concerns

FRAUDULENT CLAIMS AND UNAVAILABLE INFORMATION

Smart Meters and the Smart Grid are being installed without full disclosure to the public. Utility companies have repeatedly lied and concealed information from the public or given out misleading information, including the following:

a) "There is a federal mandate."
b) "There is a state mandate."
c) "Smart Meters are much less exposure than cell phones"
d) "Smart Meters empower the consumer by giving them information"
e) "Analog meters undercharged customers"

f) "Smart Meters transmit only 6 times per day"
g) "Smart Meters only transmit for 45 seconds (PG&E median average), or a few minutes (SCE) each hour."
h) "Smart Meters are low power."
i) "Smart Meter emissions are a fraction of FCC guidelines."
j) "Who is going to get close to Smart Meters?"
k) "I'm sorry I don't have the answer. I'll have to get back to you on that."

"There is a federal mandate."
There is no federal mandate for this program; the Energy Act of 2005 only says this must be "offered" to customers, and it is only "upon customer request" that they receive time-based rates and Smart Meters.

"There is a state mandate."
Time-variant (time-of-use) pricing is optional with no penalty -- P.U.C. Section 745

"Smart Meters are much less exposure than cell phones."
Smart Meters are much greater exposure than cell phones. The Hirsch correction to the CCST chart, earlier discussed, estimated that Smart Meters at three feet give 53-160 times the whole body radiation exposure from a cell phone held to the head, as well as even greater exposure compared to other wireless devices. Yet the CPUC and utilities continue to give out false information to the public.

"Smart Meters empower the consumer by giving them information."
18-24 hours later, consumers get batched information for the previous day, not for individual appliances. They would have to keep a log to know what they used during the previous day, but with no separation of the energy usage of appliances, this would be impossible to break down.

Energy monitors that consumers can purchase now, give real-time information about their energy usage. These monitors also give this information privately.

"Analog meters undercharged customers"
Customers pay most of the utilities' expenses in rates. Un-tabulated, un-expensed energy would be factored into utility rates.

"Smart Meters transmit only 6 times per day"
The public has repeatedly asked for technical information from the utility companies, only to be stonewalled or given contradictory answers. Members of the public have repeatedly brought the results of their own investigations to elected officials and to the PUC, results which the utility companies denied.

When individuals measured pulses from Smart Meters occurring every few seconds, the utility companies repeatedly denied this. Only when ordered by Administrative Law Judge Yip-Kikugawa during the opt-out proceeding, did the utilities disclose data on transmissions.

PG&E electric Smart Meters transmit over **14,000 (mean average) to 190,000 times each day,** including the "only 6 times" for data transmission. SCE and SDG&E electric meters transmit from **1250 to 26,000 times per day**. This is a completely different picture than the few seconds or few minutes each day stated by the utility companies.

Most of the transmissions at this time are for network maintenance, though duty cycles for data transmission can increase. Also, these transmission totals may not include the relay transmissions from neighboring meters in the mesh network.

"Smart Meters only transmit for 45 seconds (PG&E median average), or a few minutes (SCE) each hour."
Smart Meters transmit constantly throughout the day, 24 hours per day, as often as every few seconds. The public has repeatedly documented and reported this information.

"Smart Meters are low power."
Words such as "weak", "low power", "miniscule" are repeatedly used by utility companies in their RF Fact Sheets to imply safety.

For example:

PGE's SmartMeter™ technology makes use of low-power radiofrequency (RF) transmitters… These low power transmitters are found inside each power meter, in repeater units, and in access points.

Richard Tell, 2008 Smart Meter report for PG&E
www.pge.com/mybusiness/edusafety/systemworks/rfsafety/index.shtml

GWP's smart metering devices communicate using relatively low-power, weak radio wireless signals that are similar or weaker in strength than those created by common consumer devices.

Glendale Water and Power Frequently Asked Questions,
http://www.glendalewaterandpower.com/radio_frequency_faqs.aspx)

SCE's smart metering devices communicate using low-power, wireless signals that are similar or weaker in strength than those created by common consumer devices…--- levels much too low to produce tissue heating or an increase in body temperature.

Frequently Asked Questions (FAQs) About SCE's Edison SmartConnect Meters And Radio Frequency
http://www.cityofcalabasas.com/pdf/agendas/ctc/07192011/item6-attachment-4.pdf

Utility personnel are not healthcare professionals or biologists. They dismiss biological non-thermal effects and research. They ignore or dismiss phenomenon such as calcium efflux, which occurs with weak EMF fields, in which calcium ions leave cell membranes allowing them to leak. They dismiss research such as altered genetic structure of e coli bacteria at .0000000000001 (1/ten-trillionth) microwatts per cm2 (Belyaev) and altered EEGs in humans at .000000001

(1/hundred millionth) microwatts per cm2 (Bise). And they dismiss the truly low levels of EMF that our body uses for cellular communication.

Truly alarming and criminal is the work the utility industry does to hide EMF health impacts from the public. This was discussed in "Health" under "Industry response."

"Smart Meter emissions are a fraction of FCC guidelines."
Southern California Edison:

> A feature of the FCC's safety guidelines is that there is a safety factor of fifty included in the general population limits.
> Edison SmartConnect meters and cell relays emit only a fraction of the FCC's human exposure limits.
>
> > Frequently Asked Questions, July 2011
> > http://www.sce.com//CustomerService/smartconnect/industry-resource-center/rf-faq.htm

These statements rely on the public's ignorance of the science.

No safe level for radiofrequency electromagnetic radiation exposure has been established. None. FCC guidelines are for a one-time brief exposure that does not cause heating in a large man. It is not for long-term, cumulative, repetitious, or constant exposure.

The FCC refuses to take into consideration biological, non-thermal effects which have been known and studied for decades.

FCC guidelines are among the most lax in the world. Countries are increasingly tightening theirs, lowering the levels they allow the public to be exposed to, while the U.S. calls other countries to "harmonize" their limits to match ours.

This year, the FCC decided to open an inquiry into its exposure guidelines.

> The U.S. Federal Communications Commission plans to ask whether its standards protect people from mobile-phone radiation, a question it hasn't posed in 15 years, as people use smartphones for longer, more frequent calls.
>
> Julius Genachowski, the agency's chairman, is asking fellow commissioners to approve a notice commencing a formal inquiry, Tammy Sun, a spokeswoman for the agency, said in an e-mailed statement. The notice won't propose rules, Sun said.
>
> "Our action today is a routine review of our standards," Sun said. "We are confident that, as set, the emissions guidelines for devices pose no risks to consumers."
>
> The FCC last updated its guidelines setting maximum radiation-exposure levels, which are based on the amount of heat emitted by mobile phones, in 1996.

http://www.bloomberg.com/news/2012-06-15/mobile-phone-radiation-safety-to-be-examined-by-u-s-regulator.html

Frontal and temporal brain tumors have increased 50% in the UK between 1999 and 2009 according to figures published in April by the British Office of National Statistics, and there has been a 1-2% annual increase in brain cancers in children according to Bordeaux Segalen University. And in November 2012, the Danish Cancer Society reported a doubling in aggressive brain cancer in men over the last 10 years. That is in addition to an epidemic of autism, ADHD, and Alzheimer's.

The FCC is "confident that…the emissions guidelines for devices pose no risks for consumers."

"Who is going to get close to Smart Meters?"
The photographs in the section "FCC violations" are a few examples of unavoidably close exposure the public has to Smart Meters and their radiation.

Meters, including banks of meters, are on the other side of walls where people spend a great deal of time, such as bedrooms and living rooms. Adults and children have beds on the other side of the wall from Smart Meters, within inches. Many meters are next to narrow walkways by the side of a house, or ganged together in a bank by a common walkway in an apartment complex. They are near where people keep their garbage cans or beside a garage door. And many of these are in areas where children have access and can play on them. The range and the penetrating value of the meters' pulses are important to keep in mind.

Finally,
"I'm sorry I don't have the answer. I'll have to get back to you on that."
This is a frequent answer from PG&E representatives and perhaps other utility companies as well. Many members of the public and elected officials have publicly commented that the utility company representatives do not "get back to you." The motivation for this is uncertain. However, it becomes another way to avoid giving the public straight answers.

STRONG-ARM TACTICS BY CPUC AND UTILITIES

CPUC and utility company employees and contractors have bullied and lied to people. They have ignored signs, hopped fences, waited until no one was home to install, and tasered at least one dog to install Smart Meters. They have told people they had no choice, even after the delay and opt-out programs were in place. They have laughed at people's concerns over pacemaker interference, and have walked past people saying "no," installing Smart Meters over their objections. In three cities, they used law enforcement personnel to force installation of Smart Meters, in two instances destroying protective cages and taking analog meters owned by the customers.

They have spied on the public and called nonviolent Smart Meter protestors insurgents. They have mounted glossy and deceptive public relations campaigns with ratepayer money to "educate" and "engage" the public and sell the program.

Despite the PUC's mandate to employ low-cost, no-cost EMF mitigation, the PUC has ignored EMF hazards. The Electric Power Research Institute and utility companies have engaged in subterfuge by installing their personnel at the WHO EMF Project to hide evidence of health risk from power lines, putting not only the public but their own employees at risk. They have run roughshod over communities, rather than working with communities – for instance, Chino Hills – in power line construction for the Smart Grid.

> Chino Hills Mayor: Open Letter to Southern California Edison and the CPUC
> http://www.chinohills.com/news-articles-details/An_Open_Letter_to_SCE_and_the_CPUC-1925

While Smart Meter health problems are ongoing and increasing, though numerous protests have been filed at the PUC, and though moratoriums have been adopted by cities and counties, the utility companies have ignored the problems and the protests, and proceeded with installing Smart Meters, often at an accelerated pace. There was even a report that SCE installed a Smart Meter in the middle of the night, a very dangerous maneuver, if true; many people rely on medical devices, such as CPAP machines for sleep apnea, to breathe at night while they are sleeping.

PG&E is also deriding those who attempt to bring these health issues to the fore in proceedings at the PUC. For instance:

> "It behooves us to point out, unfortunately, that the last sentence in paragraph 2 of sec. III A is unintelligible, which is inexcusable for a corporation that can hire the best lawyers available. It refers to a "procedurally impermissible collateral attack". What kind of Orwellian statement is this? We, who are defending the people against a serious and intentional incursion on their welfare are being accused of "attacking"? It is "impermissible" for citizens to hold their government and its assigned agents accountable to the law and the constitution? Since when? Only in a tyranny would such a thought be intelligible. It is a disgrace that PG&E would stoop to such derogation and calumny against the citizens of this state. There is nothing, and can be nothing, that procedurally prohibits investigation (or even relitigation) into harms that occur in the wake of a government sponsered program carried out by a private corporation such as PG&E."
>
> PUC Application 11-07-009, Reply of Alameda County Residents Concerned about Smart Meters to PG&E's protest, Section 3.1

VIOLATION OF JURISDICTION AND MANDATE BY CPUC

CPUC has shared jurisdiction over utilities

The California Public Utilities Commission does not have sole jurisdiction over utilities. This is spelled out in Public Utilities Code Sections 2901-2906 and in Section 761.3d, and in the California Constitution, Article 12, Section 8. Municipal corporations, and federal, state, and local agencies, share jurisdiction with the CPUC in aspects of utility regulation, particularly regarding public health and safety issues.

The CPUC is not just ignoring the law about this shared jurisdiction; it is actively misleading, even lying to elected officials and the public about its jurisdiction and authority.

> We are writing to inform you of our view that the Town of Fairfax's proposed ordinance would interfere with the exclusive jurisdiction of the California Public Utilities Commission (CPUC or Commission) over the regulation of public utilities.
>
> Section 8 of Article 12 of the California Constitution states that "[a] city, county, or other public body may not regulate matters over which the Legislature grants regulatory power to the Commission." The Legislature has granted the Commission authority over a public utility's infrastructure, including the installation of meters. (See Public Utilities Code section 761, granting the Commission authority (i) to regulate the practices, equipment, appliances, facilities, service and the methods of supply and distribution of public utilities and (ii) to determine whether any of those are unjust, unreasonable, unsafe, improper, inadequate, or insufficient; see also Public Utilities Code section 701, granting the Commission jurisdiction to regulate every public utility in the State and do all things, whether specifically designated in the Public Utilities Act or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction.)…
>
> As part of your due diligence, I would ask that your office and the Town's legal counsel carefully consider the legal issues associated with the proposed ordinance.
>
> Letter of Frank Lindh, CPUC General Counsel, to the town of Fairfax, August 2, 2010

CPUC general counsel Frank Lindh, formerly an attorney for PG&E, misquotes the Public Utilities Code. Section 761 actually says:

> Whenever the commission, after a hearing, finds that the rules, practices, equipment, appliances, facilities, or service of any public utility, or the methods of manufacture, distribution, transmission, storage, or supply employed by it, are unjust, unreasonable, unsafe, improper, inadequate, or insufficient, the commission shall determine and, by order or rule, fix the rules, practices, equipment, appliances, facilities, service, or methods to be observed, furnished, constructed, enforced, or employed. The

> commission shall prescribe rules for the performance of any service or the furnishing of any commodity of the character furnished or supplied by any public utility, and, on proper demand and tender of rates, such public utility shall furnish such commodity or render such service within the time and upon the conditions provided in such rules.

These duties are within the context of a hearing. This section, however, does not require that the Commission hold hearings. It does not provide any threshold over which evidence must be investigated. The Commission is required to "fix" a situation, only whenever it holds a hearing and finds that problems exist.

Section 761.3d then goes on to say:

> (d) Nothing in this section shall result in the modification, delay, or abrogation of any deadline, standard, rule, or regulation adopted by a federal, state, or local agency for the purposes of protecting public health or the environment, including, but not limited to, any requirements imposed by the State Air Resources Board or by an air pollution control district or an air quality management district pursuant to Division 26 (commencing with Section 39000) of the Health and Safety Code.

That's extremely clear, and Mr. Lindh omitted that section in his letter to Fairfax. Federal, state and local agencies may adopt deadlines, standards, rules and regulations for protecting public health and the environment. And these may not be modified, delayed, or abrogated (voided), presumably by the Commission.

So, here in the Public Utilities Code is jurisdictional power by federal, state, and <u>local</u> agencies over public health and environmental issues related to the utilities.

Furthermore, Mr. Lindh neglected to mention Sections 2901-2906 of the Public Utilities Code.

> 2901. Any municipal corporation may retain or surrender to the commission the powers of control vested in it to supervise and regulate the relationship between any one or more classes of public utilities, and their present or prospective customers, consumers, or patrons, and, if it has retained such powers over any class of public utilities, may thereafter surrender such powers to the commission.
>
> 2902. <u>This chapter shall not be construed to authorize any municipal corporation to surrender to the commission its powers of control to supervise and regulate the relationship between a public utility and the general public in matters affecting the health, convenience, and safety of the general public</u>, including matters such as the use and repair of public streets by any public utility, the location of the poles, wires, mains, or conduits of any public utility, on, under, or above any public streets, and the speed of common carriers operating within the limits of the municipal corporation.

> 2904. "Municipal corporation" means a city and county or incorporated city.
>
> 2906. "Powers of control" means all powers of control vested in a municipal corporation to supervise and regulate (a) the relationship between public utilities and their present or prospective customers, consumers, or patrons. The term does not include the powers of control vested in any municipal corporation to supervise and regulate the relationship between such public utilities and the general public in matters affecting the health, convenience, and safety of the general public, including matters such as the use and repair of public streets by any public utility, the location of the poles, wires, mains, or conduits of any public utility, on, under, or above any public streets, and (b) the speed of common carriers operating within the limits of the municipal corporation.

This is very clear: municipal corporations have vested powers of control to regulate the relationship between public utilities and the general public in matters affecting the health, convenience, and safety of the general public. And apparently, they cannot relinquish them.

Public Utilities Code Section 701, which Mr. Lindh notes, lists responsibilities of the Commission. However, it uses the verb “may,” It does not use “will”, “shall” or “must”.

> The commission may supervise and regulate every public utility in the State and may do all things, whether specifically designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction.

Section 761, however, uses the verb “shall” as far as the Commission taking action based on what it finds in a hearing – there is no choice given the Commission in that section. Section 701 appears to lay out the actions the Commission may take if it so chooses. Nothing is stated here that gives sole authority to the Commission.

One final note on Section 701: the CPUC may supervise and regulate every public utility. Period. It is not given jurisdiction to supervise and regulate the public. The relationship is further developed in Section 702:

> Every public utility shall obey and comply with every order, decision, direction, or rule made or prescribed by the commission in the matters specified in this part, or any other matter in any way relating to or affecting its business as a public utility, and shall do everything necessary or proper to secure compliance therewith by all of its officers, agents, and employees.

So, the public utility “shall” obey and comply with the Commission, while the Commission “may” supervise and regulate the utilities. But the relationship is between them. The jurisdiction of the CPUC is the utilities, not the public.

Article 12, Section 8 of the California Constitution further states that cities have the right "to grant franchises for public utilities or other businesses on terms, conditions, and in the manner prescribed by law." It also states that cities in existence as Oct 10, 1911, have "power over public utilities relating to the making and enforcement of police, sanitary, and other regulations concerning municipal affairs," unless that power has been revoked by the voters.

Finally, there is the sovereignty and jurisdiction of the people.

The Bagley-Keene Open Meeting Act, which governs state agencies, states in its Preamble (Section 11120):

> The people of this state do not yield their sovereignty to the agencies which serve them. The people, in delegating authority, do not give their public servants the right to decide what is good for the people to know and what is not good for them to know. The people insist on remaining informed so that they may retain control over the instruments they have created. This article shall be known and may be cited as the Bagley-Keene Open Meeting Act.

So, the California Public Utilities Commission shares legal jurisdiction over the utilities, particularly in regards to public health and safety, with federal, state, and local agencies, and with municipal corporations – cities and counties. And the public is sovereign and retains jurisdiction. To claim otherwise is a blatant lie.

There has also been considerable discussion of the overburdening of utility easements. These easement limitations are spelled out in Tariff Rule 16. Nowhere in the rule is an allowance for installing radio transmitting equipment on every building for the purpose of relaying information about a customer from building to building. Yet again, the CPUC appears to be overreaching its jurisdiction.

CPUC mandate violations

> The California Public Utilities Commission serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.
>
> CPUC Mission, 5/22/12 http://www.cpuc.ca.gov/PUC/aboutus/pucmission.htm

Public Utilities Code Section 761, cited in the previous section, states the Commission shall fix utility-related issues that, after a hearing, they find "unsafe, improper, inadequate, or insufficient."

Furthermore, when SB 17 was adopted, this language was added to the Public Utilities Code:

> It is the policy of the state to modernize the state's electrical transmission and distribution system to maintain safe, reliable, efficient, and secure electrical service.
>
> Section 8360-69

The CPUC must make sure that the public is provided with safe, reliable, and secure energy to the public. However, there is substantial and growing evidence that it is not fulfilling its mandate, because it is neglecting, ignoring and denying the existence of various substantial problems.

There has been no investigation of the many problems with Smart Meters, other than the Structure Group report (previously discussed), and there have been no public hearings.

So, on one side, the CPUC is being grossly negligent and is failing to fulfill its mandate.

On a different issue, it is over-reaching in its mandate and powers.

California Constitution, Article 12, Section 6:

> The commission may fix rates, establish rules, examine records, issue subpoenas, administer oaths, take testimony, punish for contempt, and prescribe a uniform system of accounts for all public utilities subject to its jurisdiction.

Public Utilities Code Section 701 says “The commission may supervise and regulate every public utility…”

Public Utilities Code 762:

> Whenever the commission, after a hearing, finds that additions, extensions, repairs, or improvements to, or changes in, the existing plant, equipment, apparatus, facilities, or other physical property of any public utility or of any two or more public utilities ought reasonably to be made, or that new structures should be erected, to promote the security or convenience of its employees or the public, or in any other way to secure adequate service or facilities, the commission shall make and serve an order directing that such additions, extensions, repairs, improvements, or changes be made or such structures be erected in the manner and within the time specified in the order.

Public Utilities Code 768:

> The commission may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner so as to promote and safeguard the health and safety of its employees, passengers, customers, and the public.”

The CPUC's jurisdiction is over the public utilities. It does not have jurisdiction over the public, other than setting the rates which utility customers must pay to get service.

The CPUC can mandate that the utilities offer Smart Meters to the public; that is within their authority. However, they cannot require that utilities install Smart Meters on the property of those who don't want them. The CPUC regulates utilities, and aside from setting rates, it cannot regulate the public. Therefore, there is no mandate to install Smart Meters. Hence, an opt-out is an irrelevancy.

CPUC vs. FCC

The CPUC inappropriately defers to the FCC as having jurisdiction over RF emissions from Smart Meters.

> (In dismissing EMF Safety Network's application regarding health impacts from Smart Meters in D.10-12-001) At the Commission's December 2 (2010) public meeting, (President) Peevey stated, "I believe that relying on the FCC in this case is reasonable, prudent and fully consistent with our responsibilities to provide safe and reliable electric service to ratepayers. We're relying on the federal agency in this regard." Commissioner Peevey concluded his statements by telling the audience at the hearing, "You should take these concerns to the FCC, it's the proper body."
>
> …The Commission, not the FCC, mandated RF Smart Meters in California. It is the responsibility of the Commission to "serve the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy." (quote from CPUC home page: http://www.cpuc.ca.gov/puc/)
>
> EMF Safety Network Application for Rehearing of Decision 10-12-001, January 2011

Furthermore, PG&E, in its arguments, implied that Smart Meters are personal wireless service facilities over which the FCC was granted legal jurisdiction by Congress by quoting Section 704 of the 1996 Telecommunications Act.

But Smart Meters are not "personal wireless service facilities," otherwise known as cellular antennas or cell towers, and therefore, the FCC does not have jurisdiction over Smart Meters.

However, the FCC itself has denied jurisdiction over Smart Meters.

On September 9, 2010, Michael Boyd of Californians for Renewable Energy filed a complaint with the FCC over the installation of Smart Meters by PG&E and regarding RF compliance with FCC regulations. The FCC responded October 20, 2010.

> The matter you have outlined in your correspondence does not come under the jurisdiction of the FCC. Included below is contact information for an agency that may be of more assistance.
>
> Letter from Sharon Bowers, Consumer & Governmental Affairs Bureau, FCC

The agency she referred him to was the CPUC.

CPUC PROCEDURAL VIOLATIONS

The Smart Meter opt-out proceeding Phase 1 scope was sharply limited, and no hearing was held. The only evidence allowed was from by utility companies and their vendors.

> In Resolution ALJ 176-3272 dated April 4, 2011, the Commission characterized this proceeding as a ratesetting proceeding and determined a hearing would be necessary. In the Assigned Commissioner's Ruling and Scoping Memo dated May 25, 2011, the Commission identified the issues to be addressed in this proceeding, without setting a schedule. The Commission also determined that a second pre-hearing conference would be necessary to establish a schedule. The Commission subsequently held a second prehearing conference, during which time the parties discussed the schedule for further proceedings among other things.
>
> Based on this record, the parties to this proceeding reasonably expected the Commission to issue an order establishing deadlines for filing their testimony and set dates for a hearing. Yet, no further scheduling order was issued. The parties were never given an opportunity to submit written testimony.
>
> Despite this procedural posture, the PD (Proposed Decision) would dispose of this case without a hearing. The PD determines that a hearing is not necessary because "there were no disputed factual issues material to the resolution of this application." The PD, however, makes this determination based solely on the uncontested evidence submitted by PG&E in support of its application…. The Commission cannot make such a finding when it prevented the parties other than PG&E from making a record.
>
> City and County of San Francisco Comments on Proposed Decision on A. 11-03-014, December 12, 2011
> http://docs.cpuc.ca.gov/efile/CM/155223.pdf

The evidence submitted by the IOUs was not evaluated nor allowed to be countered. Within a few weeks of the release of the information by PG&E and the other IOUs, Chairman Peevey issued a proposed decision, closing off further investigation. The date he issued the PD was immediately prior to Thanksgiving.

> Numerous other local government, industry and public interest groups, and concerned citizens groups have become parties to this proceeding and expressed support for the Protest filed by the Town of Fairfax et al. The inability of these parties to join in these

> Comments does not reflect their endorsement of the Proposed Decision or any disagreement with these comments. Rather, it is due to the presumably purposeful release of the Proposed Decision (and commencement of the twenty day period available for comment) at approximately 2:25 PM on November 22, 2011, leaving only hours more than one full business day before the Thanksgiving holiday. The Commission is well aware of the formal procedures which must be followed by governmental bodies in California in order to properly review and authorize an official position in proceedings such as this. The Commission's timing of the release of the Proposed Decision, combined with the known legal requirements binding on participating parties and practical realities of the Thanksgiving holiday, is one more example of the failure of the Commission to provide a meaningful ability to be heard in this proceeding. It is cumulative to the other such failures which in total, if the Proposed Decision is adopted, will result in reversible legal error as summarized in these Comments and demonstrated by the Commission's official records of the proceeding even if not set forth in detail here.
>
> Comments by the Town of Fairfax et al. to the proposed decision of Commissioner Peevey, Dec. 12, 2011
> http://docs.cpuc.ca.gov/efile/CM/155827.pdf

When EMF Safety Network's application 10-014-018 was dismissed, it was on the basis of PG&E evidence solely. That application was dismissed without hearings, without even a pre-hearing conference. And the application for rehearing, filed in January 2011, has yet to be granted a pre-hearing conference, now 1 ½ years later -- despite an increasing volume of complaints from the public about the effects of the Smart Meter program.

Alameda County Residents Concerned About Smart Meters (ACRCASM) filed an application in August 2011. That application questions the legitimacy of the original Smart Meter authorization based on current evidence. However, it has also not been given a pre-hearing conference to date.

NO CEQA EIR

No CEQA EIR was prepared for Smart Meters or wireless Smart Meters.

PG&E has said this is one of the largest technological roll-outs in California history. Yet no CEQA EIR was done for Smart Meters -- wired or wireless.

CEQA Guidelines at Section 15126.2 requires Consideration and Discussion of Significant Environmental Impacts:

> The Significant Environmental Effects of the Proposed Project. An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as

> they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services.

Was a CEQA EIR done for the Smart Grid itself?

VIOLATION OF STATE AND FEDERAL LAWS

> All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness, and privacy.
>
> Article 1, Section 1, California Constitution:

The Smart Meter and aspects of the Smart Grid program violate our rights to enjoy life and liberty, protect our property, and obtain safety, happiness and privacy for all the reasons mentioned previously.

Violations of U.S. Constitution:

The Preamble to the Constitution:

> We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity,…

This program creates extensive current and potential harm and violates the general Welfare. Furthermore, there is no liberty in a country or state which oversees a forced illegal program that puts surveillance devices on every building.

4th Amendment:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause…

Smart Meters are surveillance devices installed without permits or warrants. They record highly detailed personal energy usage data that chronicles everything we do in our homes and when we are gone. That data is then wirelessly transmitted elsewhere and stored. This is unconstitutional.

14th Amendment:

> …No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the US; nor shall any State deprive any person of life, liberty, or property, without due process of law…

The State of California is actively abridging the privileges of U.S. citizens through the enforcement of this program, and depriving residents of life and property, as well as liberty.

Federal law violations:

The Energy Policy Act of 2005 (H.R. 6) states

> Section 1252 Smart Metering
> (a) (14) Time-Based Metering and Communications.—(A) Not later than 18 months after the date of enactment of this paragraph, each electric utility shall offer each of its customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time periods and reflects the variance, if any, in the utility's costs of generating and purchasing electricity at the wholesale level. The time-based rate schedule shall enable the electric consumer to manage energy use and cost through advanced metering and communications technology.
> (B) The types of time-based rate schedules that may be offered under the schedule referred to in subparagraph (A) include, among others—
> (i) time-of-use pricing…,(ii) critical peak pricing…,(iii) real-time pricing…, and (iv) credits…
> (C) Each electric utility subject to subparagraph (A) shall provide each customer requesting a time-based rate with a time-based meter capable of enabling the utility and customer to offer and receive such rate, respectively.
> (f) FEDERAL ENCOURAGEMENT OF DEMAND RESPONSE DEVICES.—It is the policy of the United States that time-based pricing and other forms of demand response, whereby electricity customers are provided with electricity price signals and the ability to benefit by responding to them, shall be encouraged…

"Offer," "upon customer request," "encouraged" – there is no federal mandate for the Smart Meter program as it is being conducted in California.

Americans with Disabilities Act violations

Americans with Disabilities Act of 1990, 42 USC 12101 (as amended by ADA Amendment Act of 2008) defines a disability as

A) a physical or mental impairment that substantially limits one or more major life activities of such individual;
B) a record of such an impairment; or
C) being regarded as having such an impairment

Major life activities

A) include, but are not limited to, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working.
B) include the operation of a major bodily function, including but not limited to, functions of the immune system, normal cell growth, digestive, bowel, bladder, neurological, brain, respiratory, circulatory, endocrine, and reproductive functions.

The ADA Amendment Act of 2008

states at section 2, that “physical or mental disabilities in no way diminish a person’s right to fully participate in all aspects of society, yet many people with physical or mental disabilities have been precluded because of discrimination; others who have a record of a disability or are regarded as having a disability also have been subjected to discrimination; Also the definition of disability in this Act shall be construed in favor of broad coverage of individuals under this Act to the maximum extent permitted by the terms of this Act.

US Access Board Recognizes EMF Sensitivity

"The Board recognizes that multiple chemical sensitivities and electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions of an individual that it substantially limits one or more of the individual's major life activities. The Board plans to closely examine the needs of this population, and undertake activities that address accessibility issues for these individuals.

“The Board plans to develop technical assistance materials on best practices for accommodating individuals with multiple chemical sensitivities and electromagnetic sensitivities. The Board also plans to sponsor a project on indoor environmental quality. In this project, the Board will bring together building owners, architects, building product manufacturers, model code and standard-setting organizations, individuals with multiple chemical sensitivities and electromagnetic sensitivities, and other individuals. This group will examine building design and construction issues that affect the indoor environment, and develop an action plan that can be used to reduce the level of chemicals and electromagnetic fields in the built environment."

EMF Safety Network CPUC Application, A. 10-04-018, April 2010

The CPUC and utility companies have failed to accommodate those who are disabled due to electromagnetic sensitivities, and therefore, they are in violation of ADA. This includes rendering homes inaccessible, or making the home the only marginally safe place a person can be, if there is no Smart Meter, while restricting access to one's community.

> These customers continue to experience discrimination and are harmed personally by the forced exposure to the radiation/rf/emf emitted by smart meters surrounding their homes.
>
> …Numerous physicians have written letters to SCE [Southern California Edison] and the PUC warning of life threatening dangers to their patients if the patient is exposed to the radiation and dirty electricity that is created by the wireless smart meter mesh network. Medical conditions such as environmental illness, neurological damage, immunological damage, elderly, and children, respiratory and cardiac medical conditions are a few of the conditions that are adversely affected by this mesh network of wireless smart meters. These disabilities are recognized and given protection under federal and state laws infra.
>
> …The mesh network and wireless smart meters surrounding their home cause a barrier to accessing their home either fully or partially. This barrier also causes illness and deterioration of their disability or medical condition.
>
> …The consequence of this "deployment", throughout the State, literally on every home and business, leaves this vulnerable population in the unfathomable situation where they (are) excluded from participation in society and precluded from access to homes, businesses and government buildings and services. They cannot find anywhere to seek refuge because the mesh network is virtually everywhere.
>
> Southern Californians for Wired Solutions to Smart Meters (SCWSSM), Comments on SCE Compliance Filing, 11-07-020, January 16, 2012, p. 4, 5

California Constitution, Article 1 -- multiple violations:
(Constitution text source: www.leginfo.ca.gov/.const/.article_1)

SECTION 1

> All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness, and privacy.

People have been arrested for defending their life, for protecting their property, and for pursuing their safety and happiness by trying to stop Smart Meter installation in their communities.

In this illegally forced installation of Smart Meters, they are barred from pursuing their privacy, safety, and happiness, barred from protecting their property, and barred from enjoying and defending their liberty and their lives.

With the new imposition of the illegal opt-out, only those with the financial wherewithal can participate – in itself a discriminatory process – in obtaining some small modicum of their Section 1 rights.

SECTION 3 (A)

> (4) Nothing in this subdivision supersedes or modifies any provision of this Constitution, including the guarantees that a person may not be deprived of life, liberty, or property without due process of law, or denied equal protection of the laws, as provided in Section 7.

SECTION 7

> (a) A person may not be deprived of life, liberty, or property without due process of law or denied equal protection of the laws;

There has been no due process of law for the deprivation of life, liberty, and property which people have experienced as a result of this program. People have been rebuffed at the CPUC, by the Attorney General's office, and by local city and county governments when they have attempted to assert their rights.

People have been deprived of liberty, including the right to travel freely in their own communities and equal access, because of Smart Meters, the mesh network and/or star system, and the data collection antenna infrastructure.

People have been deprived of their own property either because Smart Meters were installed on their homes or infrastructure installed nearby, because Smart Meters were installed on other homes nearby, or because of high frequency voltage transients ("dirty" electricity) travelling on electrical lines in their neighborhood and/or into their homes and buildings via electrical wiring and water pipes, making their homes or buildings unlivable.

And it is clear from the severity of symptoms some are experiencing, that they are in danger of losing their lives, leaving us to wonder how many hundreds have already died.

This has all happened without due process, without warning, without full disclosure to the public.

SECTION 13

> The right of the people to be secure in their persons, houses, papers, and effects against unreasonable seizures and

searches may not be violated; and a warrant may not issue except on probable cause, supported by oath or affirmation, particularly describing the place to be searched and the persons and things to be seized.

As stated under the 4th Amendment of the U.S. Constitution, Smart Meters are, by their very nature, surveillance devices which violate our rights to be secure and private. Under the "Privacy" section, there was extensive information on how this information can be used, and that the wireless nature of its transmission, particularly with the mesh network, makes its availability to others very easy.

SECTION 19

(a) Private property may be taken or damaged for a public use and only when just compensation, ascertained by a jury unless waived, has first been paid to, or into court for, the owner. The Legislature may provide for possession by the condemnor following commencement of eminent domain proceedings upon deposit in court and prompt release to the owner of money determined by the court to be the probable amount of just compensation.

(b) The State and local governments are prohibited from acquiring by eminent domain an owner-occupied residence for the purpose of conveying it to a private person.

(c) Subdivision (b) of this section does not apply when State or local government exercises the power of eminent domain for the purpose of protecting public health and safety; preventing serious, repeated criminal activity; responding to an emergency; or remedying environmental contamination that poses a threat to public health and safety.

(d) Subdivision (b) of this section does not apply when State or local government exercises the power of eminent domain for the purpose of acquiring private property for a public work or improvement.

5. "Public work or improvement" means facilities or infrastructure for the delivery of public services such as education, police, fire protection, parks, recreation, emergency medical, public health, libraries, flood protection, streets or highways, public transit, railroad, airports and seaports; utility, common carrier or other similar projects such as energy-related, communication-related, water-related and wastewater-related facilities or infrastructure; projects identified by a State or local government for recovery from natural disasters; and private uses incidental to, or necessary for, the public work or improvement.

6. "State" means the State of California and any of its agencies or departments.

Private property is being taken and damaged by the installation of Smart Meters on one's property or adjoining properties, and through the installation on Smart Meter infrastructure. This has been ostensibly to further state energy policy and plans.

> 3. The best opt-out option to be adopted must balance the concerns expressed by customers against California's overall energy policy.
> 4. Allowing residential customers an opportunity to opt out of receiving a wireless SmartMeter should not impede ongoing state energy objectives.
> 8. Further review of the feasibility of continuing to offer an analog meter optout option may be warranted in the future to ensure that this opt-out option does not impede the full implementation of net metering, demand response and smart grid.
>
> President Michael Peevey, Final Decision Modifying PG&E's Smart Meter Program to Include Opt-out Option, D12-02-014, February 9, 2012

This taking and damaging will most likely continue into the future as a result of the Smart Meter program.

Private property has also been taken and damaged by the installation of Smart Grid components and the creation of transmission corridors, such as in the city of Chino Hills, again to further provisions in state law.

This private property has been considered expendable.

> KABC Channel 7 reported, "The California Public Utilities Commission sided with SoCal Edison, saying in a statement that "there are overriding statewide values which outweigh the community values of Chino Hills."
>
> http://www.chinohills.com/news-articles-details/An_Open_Letter_to_SCE_and_the_CPUC-1925

This taking and damaging is legal under the California Constitution because it is related to a "public work or improvement" defined as "utility, common carrier or other similar projects such as energy-related," etc. if it is taken under eminent domain.

However, there have been no eminent domain proceedings.

Furthermore, there must be compensation to the property owner.

However, there have been no court proceedings to establish compensation to the owners of these taken or damaged properties as a result of the Smart Meter program, and I am unaware of any court proceedings to establish compensation in situations such as for the citizens of Chino Hills.

Finally, the use of privately-owned buildings to site radio antennas to both send and receive data as part of the mesh network, for the benefit of utility companies, has been done without permits, permission, or compensation to the owners of each of those buildings – whether residential, commercial, or public.

SECTION 20

Noncitizens have the same property rights as citizens.

Anyone who has property in California has the above cited rights, and this program equally violates their rights.

These are multiple, serious violations of the California Constitution, pointing to the conclusion that the Smart Meter program is inescapably unconstitutional.

California penal code violations

Penal Code Section 273

> (a) Any person who, under circumstances or conditions likely to produce great bodily harm or death, willfully causes or permits any child to suffer, or inflicts thereon unjustifiable physical pain or mental suffering, or having the care or custody of any child, willfully causes or permits the person or health of that child to be injured, or willfully causes or permits that child to be placed in a situation where his or her person or health is endangered, shall be punished by imprisonment in a county jail not exceeding one year, or in the state prison for two, four, or six years.
>
> (b) Any person who, under circumstances or conditions other than those likely to produce great bodily harm or death, willfully causes or permits any child to suffer, or inflicts thereon unjustifiable physical pain or mental suffering, or having the care or custody of any child, willfully causes or permits the person or health of that child to be injured, or willfully causes or permits that child to be placed in a situation where his or her person or health may be endangered, is guilty of a misdemeanor.
>
> 273d. (a) Any person who willfully inflicts upon a child any cruel or inhuman corporal punishment or an injury resulting in a traumatic condition is guilty of a felony and shall be punished by imprisonment pursuant to subdivision (h) of Section 1170 for two, four, or six years, or in a county jail for not more than one year, by a fine of up to six thousand dollars ($6,000), or by both that imprisonment and fine.

The utility companies have denied and hidden research findings showing links from ELF EMF to childhood leukemia and other diseases. When faced with scientific evidence of harm to children, including through research by consultant Leeka Kheifets, they continued straight ahead in this program. They have denied repeatedly any health risks and negative effects from the RF emissions from Smart Meters. They have refused to remove meters when told of health problems. When people with various pre-existing health problem, even with doctor's letters, have asked to retain their analog meters, they have been told they had to have Smart Meters.

Utility companies have taken no precautions to warn parents about keeping children away from Smart Meters, and there are no warning labels on the meters. Utility companies have installed Smart Meters, even banks of Smart Meters, on the other side of walls where children sleep.

Even though PG&E was informed that children in a Santa Cruz home were having nosebleeds and other symptoms after Smart Meters were installed, PG&E refused to remove the Smart Meter. When Bianca, the mother of those children, faced with no other choice, hired a licensed technician to remove the Smart Meter and openly returned it to a PG&E service center, along with 9 other customers in the Santa Cruz area, PG&E disconnected the power to those homes. One of Bianca's children is autistic spectrum. This child also takes medication that requires refrigeration. This was just prior to Christmas, during the winter.

The power disconnection happened the day of the Santa Cruz Board of Supervisors weekly meeting. The supervisors grilled PG&E Government Relations Representative Wendy Sarsfield, following public testimony where they heard what had happened. The video of that grilling can be viewed here: http://www.youtube.com/watch?v=yIGqz_2uGTs&feature=youtu.be
Sarsfield and PG&E refused to budge.

The electricity stayed disconnected to those homes, including to Bianca and her children, for 5 days, until the YouTube video, media coverage, and letters from their state assemblyman and senator created too much pressure. Bianca came back home to a refrigerator full of ruined food, as I'm sure the others did.

What I don't understand is that those sitting in the room who knew the law -- attorneys and law enforcement -- did not arrest Ms. Sarsfield for child endangerment. Have we grown so used to the utility companies and large corporations in general doing whatever they want? Have we become so timid, so afraid? Why have we forgotten the law?

The CPUC and the utility companies, as well as their contractors and their union, have been given information on the hazards and risks from Smart Meters. They have heard hours and hours of testimony, and received substantial documentation on the scientific evidence for health dangers. They have heard what is actually happening to people, including a private meeting requested by the CPUC with members of EMF Safety Network in 2010, two years ago.

Gross or criminal negligence

> Criminal negligence (sometimes referred to as "gross" negligence) takes place when an individual behaves in a way that is an extreme departure from the way that a "reasonable" person would act. Criminal negligence is basically analogous to an "I don't care what happens" type of attitude.
>
> …Criminal negligence requires more than merely a mistake in judgment, inattention, or simple carelessness. It only pertains to conduct that is so outrageous and reckless that it

marks a clear departure from the way an ordinary careful person would act under similar circumstances.

The defendant must have knowledge of the danger

Actual or constructive knowledge means that either

1. the defendant *actually* knew that he/she was involved in behavior that was likely to result in death or serious bodily injury to another person, or

2. a reasonable person in a similar situation would have appreciated the risk. When this is the case, that knowledge is imputed to the defendant and is called "constructive" knowledge.

California's Legal Definition of "Criminal Negligence"
http://www.shouselaw.com/criminal-negligence.html

Members of the public have begged the utility companies, the CPUC, and their local government officials for mercy for themselves and their loved ones to have Smart Meters removed. They have been threatened with arrest and with power disconnection if they remove the meters themselves.

After public comment period is finished at the CPUC business meetings I've attended, the commissioners go on with their business meeting as if we had not spoken. Merely playing the tapes of the PUC meetings would be enough evidence to convict all members of the Commission, Executive Director Paul Clanon, and executive staff, and all utility company representatives present on criminal negligence and child endangerment. That is how shameful and flagrant their actions are.

Tariff Rule 16 violations, overburdening utility easements

This rule lays out the rules which the utility company must follow and limits it must abide by. In this rule, are the parameters for the easement granted to utility companies to enter a person's property – what they may do.

A. GENERAL (Cont'd.)
11. ACCESS TO APPLICANT'S PREMISES. PG&E shall at all times have the right to enter and leave Applicant's Premises for any purpose connected with the furnishing of electric service (meter reading, inspection, testing, routine repairs, replacement, maintenance, emergency work, etc.) and the exercise of any and all rights secured to it by law, or under PG&E's tariff schedules. These rights include, but are not limited to,
a. The use of a PG&E-approved locking device, if Applicant desires to prevent unauthorized access to PG&E's facilities;
b. Safe and ready access for PG&E personnel free from unrestrained animals;
c. Unobstructed ready access for PG&E's vehicles and equipment to install,

remove, repair, or maintain its facilities; and
d. Removal of any and all of its property installed on Applicant's Premises after the termination of service.

Nowhere in this rule is there an allowance for installing radio transmitters. Nowhere is there permitted a function such as the mesh network which permeates everywhere, not merely the access area to the meters granted by the easement. And there is no utility easement for blanketing entire neighborhoods and cities with radiofrequency electromagnetic radiation from this system. It simply doesn't exist.

California Environmental Quality Act violation

CEQA Guidelines require consideration and discussion of significant environmental impacts:

Section 15126.2:

> The Significant Environmental Effects of the Proposed Project. An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services.
>
> http://ceres.ca.gov/ceqa/guidelines/art9.html

No CEQA EIR was done on the Smart Meter program. I have seen no evidence that a CEQA EIR was done on the Smart Grid, for SB 17, or as a part of any of the Smart Grid proceedings.

California Civil Code violations

California Civil Code Section 43

> " Besides the personal rights mentioned or recognized in the Government Code, every person has, subject to the qualifications and restrictions provided by law, the right of protection from bodily restraint or harm, from personal insult, from defamation, and from injury to his personal relations."

The ongoing significant harm resulting from this program has repeatedly been brought to the attention of elected officials at the federal, state and local levels, CPUC commissioners and staff, medical personnel, even law enforcement. There is, in addition, the bodily restraint taking place when people cannot freely travel in their communities, where individuals are even trapped in their homes, or in portions of their homes, due to the radiation emitted by these meters and their infrastructure.

There is also the defamation and personal insult by utility company personnel, particularly visible in the PG&E/William Devereaux investigation at the PUC. PG&E personnel called rate payers "insurgents" who opposed to Smart Meters and nonviolently protested the program.

California Civil Code Section 50

> Any necessary force may be used to protect from wrongful injury the person or property of oneself, or of a wife, husband, child, parent, or other relative, or member of one's family, or of a ward, servant, master, or guest.
> http://law.onecle.com/california/civil/50.html

People who nonviolently stopped Smart Meter installation, because of the injury that would result to themselves, their families, and their homes from Smart Meters, were arrested. What would have happened if they had attempted to use force to stop installation?

In at least one case in the city of Salinas, law enforcement officers were used to enforce installation of Smart Meters. What would have happened if that individual had acted within his rights in Section 50? Or in the cities of Covina and San Gabriel, where officers assisted SCE personnel to vandalize private property to replace analog meters with Smart Meters – what would have happened if tenants of those apartment buildings had protected themselves by using force to stop the forced installation of Smart Meters, with armed law enforcement assisting the utility company?

California Civil Code Section 51

> (b) All persons within the jurisdiction of this state are free and equal, and no matter what their sex, race, color, religion, ancestry, national origin, disability, medical condition, genetic information, marital status, or sexual orientation are entitled to the full and equal accommodations, advantages, facilities, privileges, or services in all business establishments of every kind whatsoever.

California Civil Code Section 51.7

> (a) "All persons within the jurisdiction of this state have the right to be free from any violence, or intimidation by threat of violence, committed against their persons or property because of political affiliation, or on account of any characteristic listed or defined in subdivision (b) or (e) of Section 51, or position in a labor dispute, or because

> another person perceives them to have one or more of those characteristics. The identification in this subdivision of particular bases of discrimination is illustrative rather than restrictive."

California Civil Code Section 52

> (a) Whoever denies, aids or incites a denial, or makes any discrimination or distinction contrary to Section 51, 51.5, or 51.6, is liable for each and every offense for the actual damages, and any amount that may be determined by a jury, or a court sitting without a jury, up to a maximum of three times the amount of actual damage but in no case less than four thousand dollars ($4,000), and any attorney's fees that may be determined by the court in addition thereto, suffered by any person denied the rights provided in Section 51, 51.5, or 51.6.
>
> (b) Whoever denies the right provided by Section 51.7 or 51.9, or aids, incites, or conspires in that denial, is liable for each and every offense for the actual damages suffered by any person denied that right and, in addition, the following:
>
> (1) An amount to be determined by a jury, or a court sitting without a jury, for exemplary damages.
>
> (2) A civil penalty of twenty-five thousand dollars ($25,000) to be awarded to the person denied the right provided by Section 51.7 in any action brought by the person denied the right, or by the Attorney General, a district attorney, or a city attorney. An action for that penalty brought pursuant to Section 51.7 shall be commenced within three years of the alleged practice.
>
> (3) Attorney's fees as may be determined by the court.
>
> (c) Whenever there is reasonable cause to believe that any person or group of persons is engaged in conduct of resistance to the full enjoyment of any of the rights described in this section, and that conduct is of that nature and is intended to deny the full exercise of those rights, the Attorney General, any district attorney or city attorney, or any person aggrieved by the conduct may bring a civil action in the appropriate court…

By creating a fee-based opt-out, the state has discriminated against utility customers including those who are ill, low income, live in clustered housing and/or have multiple meters on one wall. By employing a forced installation and not recognizing illness or disability, much less personal rights to safety, the CPUC and the utility companies are in violation of the law.

This action of "conduct of resistance to the full enjoyment of … rights" has been taken by the CPUC, by the utility companies, and by those employees and elected officials which have barred the public from their legal rights.

California Civil Code Sections 52.1 (a), (b), (d) (Interference with Exercise of Civil Rights)

> (a)If a person or persons, whether or not acting under color of law, interferes by threats, intimidation, or coercion, or attempts to interfere by threats, intimidation, or coercion, with the exercise or enjoyment by any individual or individuals of rights secured by the

> Constitution or laws of the United States, or of the rights secured by the Constitution or laws of this state, the Attorney General, or any district attorney or city attorney may bring a civil action for injunctive and other appropriate equitable relief in the name of the people of the State of California, in order to protect the peaceable exercise or enjoyment of the right or rights secured…
> (b)Any individual whose exercise or enjoyment of rights secured by the Constitution or laws of the United States, or of rights secured by the Constitution or laws of this state, has been interfered with, or attempted to be interfered with, as described in subdivision (a), may institute and prosecute in his or her own name and on his or her own behalf a civil action for damages, including, but not limited to, damages under Section 52, injunctive relief, and other appropriate equitable relief to protect the peaceable exercise or enjoyment of the right or rights secured…..
> (d) If a court issues a temporary restraining order or a preliminary or permanent injunction in an action brought pursuant to subdivision (a) or (b), ordering a defendant to refrain from conduct or activities, the order issued shall include the following statement: VIOLATION OF THIS ORDER IS A CRIME PUNISHABLE UNDER SECTION 422.77 OF THE PENAL CODE.

This has already been violated repeatedly by the CPUC, the utility companies and their contractors, and law enforcement personnel. This occurred on the phone with utility and CPUC representatives, as well as in person.

Those intimidated, coerced, and interfered with include not only individuals, but also counties, cities, and tribal governments. The CPUC and the utility companies and their contractors have lied and used veiled threats with regard to jurisdiction and power to coerce local governments. However, this does not seem to trouble the Attorney General, county district attorneys, or local law enforcement.

PG&E refused to pay the fine levied by the city of Watsonville when they illegally installed Smart Meters on a building after Watsonville had adopted their Smart Meter moratorium. Watsonville was within its legal right per Section 2902-2906 of the Public Utilities Code to adopt the ordinance, and PG&E violated the law.

> But PG&E said no it didn't. "Smartmeter is a state mandated program, the CPUC has exclusive jurisdiction over it and they have said, it alone has jurisdiction over the Smartmeter program," said (PG&E) spokesperson Jeff Smith… PG&E said it…didn't do anything wrong, and it won't be paying any fine."The CPUC preempts any type of local ordinance," said Smith.
> http://www.kionrightnow.com/Global/story.asp?S=13334089

Watsonville did not have the financial resources to pursue legal remedies, and so PG&E was able to threaten, coerce, and intimidate the city into not enforcing its ordinance.

California Civil Code Section 1708 (Duty to Avoid injuring persons or property)

> Every person is bound, without contract, to abstain from injuring the person or property of another, or infringing upon any of his or her rights.
> http://codes.lp.findlaw.com/cacode/CIV/5/d3/3/s1708

California Civil Code section 1709, 1710, 1711 Deceit-Damages and Fraud

> 1709. One who willfully deceives another with intent to induce him to alter his position to his injury or risk, is liable for any damage which he thereby suffers.
>
> 1710. A deceit, within the meaning of the last section, is either:
> - The suggestion, as a fact, of that which is not true, by one who does not believe it to be true;
> - The assertion, as a fact, of that which is not true, by one who has no reasonable ground for believing it to be true;
> - The suppression of a fact, by one who is bound to disclose it, or who gives information of other facts which are likely to mislead for want of communication of that fact; or,
> - A promise, made without any intention of performing it.
>
> 1711. One who practices a deceit with intent to defraud the public, or a particular class of persons, is deemed to have intended to defraud every individual in that class, who is actually misled by the deceit.

Members of the public have repeatedly been told falsehoods by utility personnel, including the quantity, frequency, and power of emissions from Smart Meters, that Smart Meters are safe, as well as attempting to induce them to "change their mind," whether it was about getting on the delay list, or "opting out." They have lied to them about the type of meter they were getting. They have lied to them about their ability to say "no."

California Civil Code Section 1714

> (a) Everyone is responsible, not only for the result of his or her willful acts, but also for an injury occasioned to another by his or her want of ordinary care or skill in the management of his or her property or person,…

One example of this is when PG&E Smart Meter program directors were asked at the PUC, after two years of complaints, if they were keeping track of health complaints, and Jim Meadows, head of the Smart Meter program replied, "I'm not aware of it."

That is not only "want of ordinary care." That is a willful act.

California Civil Code Section 1714.45 Product liability

> (a) In a product liability action, a manufacturer or seller shall not be liable if both of the following apply:
> (1) The product is inherently unsafe and the product is known to be unsafe by the ordinary consumer who consumes the product with the ordinary knowledge common to the community.
> (2) The product is a common consumer product intended for personal consumption, such as sugar, castor oil, alcohol, and butter, as identified in comment i to Section 402A of the Restatement (Second) of Torts.
> (b) This section does not exempt the manufacture or sale of tobacco products by tobacco manufacturers and their successors in interest from product liability actions, but does exempt the sale or distribution of tobacco products by any other person, including, but not limited to, retailers or distributors.
> (c) For purposes of this section, the term "product liability action" means any action for injury or death caused by a product, except that the term does not include an action based on a manufacturing defect or breach of an express warranty.
> (d) This section is intended to be declarative of and does not alter or amend existing California law, including Cronin v. J.B.E. Olson Corp. (1972), 8 Cal. 3d 121, and shall apply to all product liability actions pending on, or commenced after, January 1, 1988.

Though Smart Meters are in many ways inherently unsafe, this is not known to the “ordinary consumer.” Therefore, it would appear that utility companies are liable for the damages Smart Meters cause.

California Civil Code Section 1770 (excerpts):

> (a) The following unfair methods of competition and unfair or deceptive acts or practices undertaken by any person in a transaction intended to result or which results in the sale or lease of goods or services to any consumer are unlawful:
>
> (5) Representing that goods or services have sponsorship, approval, characteristics, ingredients, uses, benefits, or quantities which they do not have or that a person has a sponsorship, approval, status, affiliation, or connection which he or she does not have.
>
> (7) Representing that goods or services are of a particular standard, quality, or grade, or that goods are of a particular style or model, if they are of another.
>
> (15) Representing that a part, replacement, or repair service is needed when it is not.
>
> http://codes.lp.findlaw.com/cacode/CIV/5/d3/4/1.5/3/s1770

Smart Meters have been represented as conferring benefits which are uncertain and highly debateable at best. Representatives have misrepresented the functionality of Smart Meters, and lied about their emissions. Digital meters have been misrepresented to customers as

analog meters. Smart Meters were marketed to people as a required replacement, when they were merely an option.

California Government Code Section 11135

> (a)No person in the State of California shall, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, or disability, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state, or receives any financial assistance from the state. Notwithstanding Section 11000, this section applies to the California State University.
> (b)With respect to discrimination on the basis of disability, programs and activities subject to subdivision (a) shall meet the protections and prohibitions contained in Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof, except that if the laws of this state prescribe stronger protections and prohibitions, the programs and activities subject to subdivision (a) shall be subject to the stronger protections and prohibitions.
> (c)(1)As used in this section, "disability" means any mental or physical disability, as defined in Section 12926.

California Government Code Section 12926

(l) "Physical disability" includes, but is not limited to, all of the following:

> (1) Having any physiological disease, disorder, condition, cosmetic disfigurement, or anatomical loss that does both of the following:
> (A) Affects one or more of the following body systems:
> neurological, immunological, musculoskeletal, special sense organs, respiratory, including speech organs, cardiovascular, reproductive, digestive, genitourinary, hemic and lymphatic, skin, and endocrine.
> (B) Limits a major life activity.
> (iii) "Major life activities" shall be broadly construed and includes physical, mental, and social activities and working.

The Smart Meter program is administered through the CPUC. After months and months of public testimony of injury, primarily from women, a Mr. Vyas spoke at a hearing about the ill effects he was experiencing since Smart Meter installation. President Peevey told him to talk to PG&E and that he could have an analog meter. It appeared that it was Mr. Vyas' sex that got the response from President Peevey. He had not responded to the women who had asked for assistance.

The opt-out proposal discriminates against those who are electrically sensitive by making them pay for a modicum of safety.

Smart Grid authorization violations

Senate Bill 17, adding "Chapter 4: Smart Grid Systems" to the Public Utilities Code

> 8360. It is the policy of the state to modernize the state's electrical transmission and distribution system to maintain safe, reliable, efficient, and secure electrical service, with infrastructure that can meet future growth in demand and achieve all of the following, which together characterize a smart grid:
> (a) Increased use of cost-effective digital information and control technology to improve reliability, security, and efficiency of the electric grid.
>
> 8363. This chapter shall be implemented in a manner that does not compromise customer or worker safety or the integrity or reliability of the electrical transmission and distribution system in this state.

"Safe, reliable, efficient, and secure,""improve reliability, security and efficiency,""does not compromise customer or worker safety or the integrity or reliability" – this program is having the exact opposite effect of what was envisioned.

Public Utilities Code violations

California Public Utilities Code Section 451 spells out the responsibilities of utility companies:

> Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public
>
> All rules made by a public utility affecting or pertaining to its charges or service to the public shall be just and reasonable.

California Public Utility Code Section 453 (b)

> 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, or any characteristic listed or defined in Section 11135 of the Government Code. A person who has exhausted all administrative remedies with the commission may institute a suit for injunctive relief and reasonable attorney's fees in cases of an alleged violation of this subdivision. If successful in litigation, the prevailing party shall be awarded attorney's fees.

The disabled and those with medical conditions cannot be charged for accommodating their disability/medical condition. Presumably those who do not wish to have a medical condition also cannot be discriminated against by charging different rates.

Very cleverly, CPUC President Peevey has said the current opt-out is for anyone who doesn't want a Smart Meter, whether they have a reason or no reason. In that way, he hopes to avoid violating this section. However, the effect is the same – if a person is electrosensitive, they will have to pay a fee to avoid even just the Smart Meters on their own dwelling. That discriminates and therefore, violates California law.

This law puts the very high hurdle of "exhaust(ing) all legal remedies with the commission," and financial resources for an individual to initiate a court proceeding. As with many laws, rights do not come automatically. Though written into state and federal legal codes, relief can often only be obtained if one a) is well enough or even lives long enough to outlast the delays of the CPUC, and b) has the financial resources to initiate court action.

That is shameful, inherently unjust. and lacking in all common sense. Why is there a Constitution and codes of law if they aren't automatically enforced? People need relief now, in this and other situations. The public is not protected by the law as it is currently practiced. Instead, it protects those who perpetrate crimes.

Public Utilities Code Section 745

> (d) On and after January 1, 2014, the commission shall only approve an electrical corporation's use of default time-variant pricing in a manner consistent with the other provisions of this part, if all of the following conditions have been met:
> (1) Residential customers have the option to not receive service pursuant to time-variant pricing and incur no additional charges as a result of the exercise of that option. Prohibited charges include, but are not limited to, administrative fees for switching away from time-variant pricing,…

Utility companies may not mandate nor charge for those customers who do not opt-in to time-variant pricing, and Smart Meters are the vehicle by which time-variant/time-of-use pricing occurs.

California Public Utilities Code Section 761.3d
Legal jurisdiction of agencies over utilities
California Public Utilities Code Section 2901-2907
Vested powers of control of municipal corporations over utilities

The violation and misrepresentation of CPUC jurisdiction by the Commission and the utility companies was previously discussed in the section "Violation of jurisdiction and mandate by CPUC."

Public Utilities Code 762:

> Whenever the commission, after a hearing, finds that additions, extensions, repairs, or improvements to, or changes in, the existing plant, equipment, apparatus, facilities, or other physical property of any public utility or of any two or more public utilities ought reasonably to be made, or that new structures should be erected, to promote the security or convenience of its employees or the public, or in any other way to secure adequate service or facilities, the commission shall make and serve an order directing that such additions, extensions, repairs, improvements, or changes be made or such structures be erected in the manner and within the time specified in the order.

One way of avoiding the fact-finding described in section of the Public Utilities Code and Section 701 is simply not to hold a hearing. And this is what has been done with Smart Meters.

Local law and ordinance violations

All ordinances were ignored by PG&E. PG&E also refused to pay the fine levied by the city of Watsonville.

Permits have not been obtained for this program at the local level.

Radiofrequency transmitting and receiving equipment have been deployed without informed consent and without permits on all buildings and on utility poles.

The utility companies are using private property to site radio transmitters, which are used to relay signals for the companies. Yet, there has been no compensation or financial benefit to building owners for this use. This is a “taking” of private property.

This roll-out gives others the right to harm or threaten to harm – such as neighbors who won’t opt-out because they “don’t like you” – already reported by a number of people. This is a form of bullying.

The Smart Meter program violates at least one local wireless ordinance.

> For example, a City of Sebastopol wireless facility ordinance requires that minor antennas cannot be installed within 10 feet of power lines, cannot be installed on wood structures, and are limited to six antennas in a single location. Smart Meters clearly contain minor antennas. Chapter 17, General Provisions Relating to Telecommunications Facility and Minor Antenna, Sections 17.100.010 (A) through (C)
>
> > “Reply Comments of EMF Safety Network on Proposed Decision of ALJ Sullivan,” November 22, 2010, pp. 1-3.

To repeat, there has been no Informed consent, and the precautionary principle is being ignored.

Law enforcement violations

California Civil Code section 52.3 (Law enforcement officer shall not deprive individual of constitutionally protected rights, privileges or immunity.) and section 52.3 (b) Attorney General may bring a civil action in the name of the people to obtain appropriate equitable and declaratory relief to eliminate the pattern or practice of conduct…"

Many law enforcement personnel are refusing to enforce city and county ordinances as well as the Constitution. They have escorted Smart Meter installers past peaceful demonstrators, and evicted PG&E customers attempting to openly and peacefully return de-installed Smart Meters to PG&E. Law enforcement officials have arrested people for enforcing a local ordinance. They have also arrested demonstrators who have attempted to stop installations. They have assisted SCE installers in vandalizing and stealing private property and forcibly installing Smart Meters in Covina and San Gabriel. They have assisted PG&E installers in installing Smart Meters against the wishes of residents. But they have not arrested PG&E, SCE, or SDGE employees or contractors, nor have they held them accountable.

In addition, the District Attorney offices in at least two counties (Monterey and Santa Cruz) have refused to take action to protect the public. The California Attorney General's office, both under former Attorney General Jerry Brown, and under current Attorney General Kamala Harris, has also refused to act. In the case of Kamala Harris, her response to letters signed by a variety of public advocacy organizations and members of the public has been silence.

CRIMINAL NEGLIGENCE

For five years, the California Public Utilities Commission and the utility companies have heard hours and hours of public testimony at PUC public meetings and received written complaints about the various problems with Smart Meters. Members of the public have met individually with commissioners and staff.

In spite of that, they have Ignored or denied evidence of harm, not opening hearings, not undertaking investigations, not stopping the program.

> Hundreds of people in Bakersfield and around the state reported major problems since Pacific Gas & Electric started installing so-called smart meters two years ago (in 2007). Complaints have spiked as the utility began upgrading local meters with even "smarter" versions…
>
> Even worse, though, has been PG&E's response -- accuse, deny, obfuscate and shuffle. (That's somewhat better than the Public Utilities Commission, I suppose, which never got back to me at all!)

> No matter. I've found that with PG&E, answers tend to vary anyway.
>
> As we reported in May, customers checking their usage online saw that the SmartMeters were reporting usage even during power outages.
>
> PG&E admitted there was a glitch in the system, it wouldn't affect anyone's bills and the upgraded meters wouldn't have that problem.
>
> Nope.
>
> On September 3, one of The Californian's bloggers (check it out here: http://people.bakersfield.com/home/Blog/rwestfall/49095/) was monitoring his usage while on vacation and saw it was at five kilowatts per day until -- blip -- for no reason at all it jumped to 57 kilowatts per day.
>
> First he was told it was a bad read and would correct itself (which it didn't). Then he was told the information customers get isn't accurate anyway.
>
> But again, don't worry, it won't affect your bill. HUH?
>
> Complaints to the PUC have gone essentially nowhere. One woman I spoke with was told by a PUC rep she should move out of Bakersfield.
>
> > Lois Henry, 'SmartMeters' leave us all smarting, Bakersfield Californian, September 12, 2009
> > http://www.bakersfield.com/news/columnist/henry/x746309880/Lois-Henry-Smart-meters-leave-us-all-smarting

PG&E started hearing about “blown out” appliances in 2008 – four years ago. Did they take action then? No. And appliances and electronics are still malfunctioning. And the public is not being told that this can be a Smart Meter problem.

When asked if PG&E was keeping track of health complaints at a workshop at the CPUC on December 9, 2011, Jim Meadows, the head of PG&E’s Smart Meter program, after shrugging his shoulders and looking around the room at other Smart Meter program directors, including the former head of the Smart Meter program, said, “I’m not aware of it.”

http://www.youtube.com/watch?v=drgLF8TNA0c&feature=youtu.be

Though personnel, like PG&E’s Michael Herz (and reportedly, consultants including Dr. Leeka Kheifets), have actually visited homes of people who have complained of Smart Meter-related health problems, PG&E is not keeping a database of Smart Meter health complaints. Instead, PG&E is focusing its efforts and ratepayer money on public relations --“reaching out to consumers”, “customer engagement” and “education centers”.

The day the PUC voted on the opt-out decision, February 1, 2011, the Commission heard an hour and a half of public testimony beforehand, much of it concerning the health problems people were experiencing. When public testimony concluded, at least one commissioner read from a pre-prepared statement supporting the proposed opt-out decision. The decision was then approved, and public testimony was ignored as it had been at many other PUC meetings.

One participant told the commission, after they approved the decision, that these are crimes against humanity.

STRENGTHENING UTIILTY MONOPOLIES

Instead of developing localized, independent energy systems, the state and the CPUC have encouraged for-profit existing monopolies to become more powerful, centralized, and exclusive, at the expense of consumer choice and freedom.

This was underlined when Gov. Jerry Brown appointed PG&E Vice President Nancy McFadden to his office. Ms. McFadden was in charge of the Proposition 16 campaign to restrict the ability of cities and counties to create municipal utility districts. That proposition was defeated by the voters. Yet the governor appointed her to be an advisor in his office.

IGNORING REALITIES AND OPEN PROCESS

Not to have extensive, well-publicized public hearings and fact findings when the Smart Grid and Smart Meters were being considered, including from independent experts, is a violation of the public trust. This, according to PG&E spokespersons, is one of the largest technological roll-out in California history. In addition, perhaps the more common-sense input from the public would have revealed many of these problems before they arose and halted this program before it was approved.

If conserving energy and lowering our carbon footprint is the goal, the state has ignored basic educational and conservation approaches. There was no discussion with the public, or looking at alternative methods to solve our energy situation.

Some experts believe we have plenty of energy. CPUC Commissioner Florio has said there is a 50% energy glut, and PG&E reps stated to the Monterey City Council In 2011 that California has “plenty of energy”.

How much of the push for the Smart Grid is due to the artificial energy shortage and brown-outs created during the Enron fraud of which PG&E was a part? Former PG&E Vice President Nancy McFadden was in Gov. Gray Davis’ office during that time, and is now back working with Governor Jerry Brown. Why?

However, if there is a coming energy shortage, all parties are refusing to engage in open, honest dialogue with the public.

What is our true energy situation? What are our true state energy needs?

How did this happen?

Origins

The federal government ignored the known risks with this technology, including the risks to national security, and encouraged with legislation (Energy Act of 2005) and grants (ARRA) the deployment of this system.

Public agencies, such as the EPA and the FCC, did not step in. A report prepared by EPA scientists on the carcinogenicity of EMF in the 1980s, initially classifying EMF as a probable carcinogen, has still not been released to the public by EPA officials. Members of the federal RF Interagency Working Group raised substantial questions on standards in 1999. The FCC has refused repeated calls to revise national standards to include non-thermal impacts, in marked contrast to the European Parliament and many member nations which have been revising or considering revising limits downward. The Austrian Medical Association has proposed "preliminary benchmarks" that are 10 million times lower than ours – FCC 1000 microW/cm2 (maximum) vs. .0001 microW/cm2 Austrian recommendation. The Swiss organization Physicians for the Environment proposes lowering Swiss limits by a factor of 10; for instance, cell tower antennas are subject to a limit of 5 microW/cm2. This would further lower that to .5 microW/cm2 – 2000 times lower than FCC guidelines.

Overseas medical doctors and governments are taking the extensive research and documents, such as the Bioinitiative Report, seriously. As a result, they are taking measures to protect the public.

Industry has proceeded in an approach more akin to the Gold Rush and piracy than to any responsible business practices. Known and potential problems were ignored by utility companies and municipal utility districts, especially in the rush to obtain federal grants and meet deadlines under ARRA.

Report after report has shown security problems because of "compliance minimums".

With regard to public health risks, telecommunications companies, utility companies, and those with knowledge of RF/EMF health impacts continued to ignore, bury, or even pervert the extensive research on risks to the public and proceed as if all was well. They have used industry insiders like Leeka Kheifets to provide scientific cover. Dr. Kheifets is rather legendary in this regard, working for the WHO, Electric Power Research Institute, PG&E, even the CPUC. These companies have lied to the public repeatedly, and at least in the case of PG&E, spied on and engaged in espionage-like activities, calling those opposing Smart Meters "insurgents". Some of those opposing Smart Meters have experienced tampering with their computers and suspected phone tapping.

The CPUC has failed to comply with its own mandate to insure "safe, reliable, efficient, and secure electrical service" P.U.C. 8360-69. They have ignored laws. CPUC personnel have bullied communities and the public, loudly asserting sole jurisdiction in contradiction to the Public Utilities Code and the California Constitution. The CPUC has ignored the public and the harm being reported, and they have treated the public as invisible. They have been grossly negligent, endangering the public health, the environment and the grid, ignoring international public health warnings. They have ignored prior CPUC decisions to employ low-cost EMF mitigation measures and to continue to study this issue. They have put inaccurate, out-dated, and PUC decision-friendly information on their website. They have lied to the public, and misled the legislature. Latest reports to the legislature avoid all mention of the extensive problems and the opposition by the public.

Chris Ackerman, CPUC spokeswoman --

> "The primary function of the CPUC is to insure that the utilities we regulate are in compliance with the tariffs (rules) we use to regulate them. We are not a consumer advocacy group."
>
> Phone conversation with Marilyn Garrett, February 16, 2010

That is abundantly clear.

There has been utility company dominance in state agency and state governance. Examples are CPUC chairman Michael Peevey (SCE), CPUC General Counsel Frank Lindh (PG&E), Marzia Zafar, Energy Division and CPUC spokesperson (Sempra, SoCal Gas). PG&E execs Nancy McFadden and Dana Williamson are top aides in Governor Jerry Brown's office, and Williamson directs the governor's Washington D.C. office;

IOU companies and many municipal utility districts, and the CPUC have not only been unresponsive to the public, even ridiculing and dismissive. In the face of suffering and illness, high bills, appliance problems and interference, etc., they have poured ratepayer dollars into increased public relations "outreach", aggressively pushing this program on the public instead of facing and fixing the problems.

> Overall, the four-day workshop identified that the utilities believe that for the most part their Plans are complete and any weaknesses arise from misunderstandings. Moreover, the utilities believe these misunderstandings can be dispelled if stakeholders initiate constructive dialogue with the respective utility.
>
> CPUC Smart Grid 4-day workshops, excerpt from 3-1-12 report, p. 10

The CPUC has dismissed formal filings on these issues without holding hearings, and rubber stamped utility company claims of safety, accuracy, etc. The CPUC commissioned the Structure Group to prepare a report on accuracy despite protests of bias and conflict of interest, and accepted their findings without demur. They did not undertake the further investigation advocated by the Division of Ratepayer Advocates in 2010, as previously mentioned.

Opt-Out Limitations:

An opt-out is fundamentally flawed, because it ignores the many, very serious problems with Smart Meters and the Smart Grid.

Opt-outs ignore those with implanted medical devices (IMDs) or "who require critical care equipment that can malfunction in the presence of wireless signals from outside sources. Such malfunctions can be fatal… No federal agency keeps track of cumulative wireless radiation levels, nor identifies critical levels in locations where individuals with IMDs may be at risk…The most seriously threatened are the NIH estimated 20 million Americans with IMDs. This is eight to 10 percent of Americans. Smart meters and wireless broadband present the most serious threat because of their ubiquitous deployment throughout the public's living and working environments…"

> Janet Newton, EMR Policy Institute. Testimony to Department of Justice December 2010 hearing on disabilities

Opt-outs ignore the health risks to the general public from RF – it is a possible carcinogen -- and require no warning signage or alerts to the public.

Opt-outs ignore the fact that Smart Meters are deployed everywhere -- businesses, homes, public buildings, schools, etc. – on every building that has a meter and has not "opted out." The RF radiation from these and the mesh network and access points and antennas is everywhere, and cannot be avoided.

Opt-outs do not address the growing overall amount of wireless radiation everywhere from all wireless devices which is not being monitored by state or federal agencies. Cumulative levels are not being tracked.

The current opt-out only applies to residential customers. The current opt-out doesn't include businesses, schools, or public buildings.

The current opt-out doesn't address densely situated buildings, clustered housing, or multiple meters on a wall, including many bedroom walls.

Time-variant pricing (time-of-use pricing) is opt-in – P.U.C. Section 745. Not "opting in" is at no charge. Costs of opt-out should have been included in original program.

Opt-out fees

Opt-out fees for time-variant pricing (which is what Smart Meters are used for) are illegal under Public Utilities Code Section 745 on or after 2014.

An opt-out fee discriminates against those with medical conditions and violates the Americans with Disabilities Act.

An opt-out fee discriminates against low-income customers.

In September 2010, at a PG&E and industry Smart Meter information forum in the Santa Clara Valley, representatives said that 60% of PG&E customers and 25% of those in Southern California had requested to opt-out from Smart Meters. These are industry figures, so the actual numbers, especially now, may be much higher.

> "The fees imposed on customers are arbitrary and appear to be intended to dissuade customers from opting-out" – City and County of San Francisco, December 2011

In December, 2012, at a PG&E/Energy Commission joint workshop, PG&E representatives described a survey done by Southern California Edison to gauge ratepayer opt-out. They found that fees and increased levels of fees caused a significant decrease in those interested in opting-out.

The Sacramento Municipal Utility District meeting on February 29, 2012 was very frank about the reason for opt-out fees:

> One Director: "I think the 166 dollars up front will convince them they can really afford a lot of tin foil hats."
>
> Another Director: "But they're already wearing them."
>
> Director Sherman: "Can we narrow our rate action strictly to 2500 [customers] and there is no opt out for the folks who already have them [Smart Meters]. Just narrow it just to those folks and also I'm wondering . . .given Nancy's calculation shall we reconfigure it with a shorter payback [laughter]. There ought to be -- These are actual costs and we're giving you a break because we're doing it over these many years versus...what we ought to do is tell you to pay it right up front--all of it."
>
> "Making sure we're not making it too easy for customers to not go along with the program--but not be responsive to customers. . . think this is a right balance. $124.00 and $54.00 a month is going to be very expensive for the vast majority of our customers. . .We're willing to work with you. More than that money would look so cost prohibitive, would look like we're not going to give them an option."
>
> Director: "This is going to be subsidized, but it's a very small amount of money because the number's going to drop off precipitously. And you've priced it and I understand the logic of how you priced it so it's not totally out of the ballpark for someone to be able to pay. So what's going to happen is people will say—that's fine. I'll take the (Smart) meter. So my guess is you are going to be down under 500 when they see these numbers--that

middle number that you put up so SMUD is going to bear the costs, but it's a cost to get past this problem. That's really what it is. With the constraints that you've put on it--If you put the constraints of nobody else except this group and if you move, the meter goes in, the calendar will take care of the problem."

One of the persons says if it gets to a low enough number such as 90 people,

"…the remaining 90 customers must move to a smart meter or tell them they will increase it by quite a bit."

Director: "A bridging effort toward getting everyone on the smart meter grid. . .If someone feels trapped in their home, they may feel trapped in their home for a whole host of reasons."
[The trapped discussion has to do with they are making this such a narrow opt out that someone will not be able to move to a different home and have the opt out]

"Sunset clause--opt in prior to end of year--Closed after that." "After 9 months, no new enrollments."
[This is also so the social media doesn't get onto it and people learn they can do this. So they are making it available in a very small window period]

Customers' health concerns about effects of radiation are called an "extreme" viewpoint.

One Director: I have no sympathy. Clearly their concerns are unfounded in my mind. If you think it will give you a stomach ache, it will.

Director Posner: Cut them off if they don't want the (Smart) meter and keep them in the dark.

In dealing with the press:

One Director: SMUD adopts out-out—working to have a neutral story—giving the messaging point we would discuss today. We would not communicate or discuss with the press the nuances of different rate options. We would simply be very direct and focused. This is our opt out policy. Story would pretty much be a non story very quickly."

"The less that's said about this [opt out option] the better."

"under the radar" "We want very limited communication and nothing on our website."

Quotes and comments from
http://stopsmartmetersirvine.com/2012/03/20/smud-audio-tape-the-makings-of-a-sham-smart-meter-opt-out-ditto-burbank-glendale/
http://stopsmartmeters.org/2012/05/23/sacramanto-municipal-utility-district-they-can-really-afford-a-lot-of-tin-foil-hats/
http://smartmetersmurder.com/0065.html

The whole tape is here:
http://smud.granicus.com/MediaPlayer.php?view_id=16&clip_id=811

Center for Electrosmog Prevention --

All Extra Fees And Costs Are Illegal, Prejudicial, Preferential, Disadvantage, Discriminate And Block Access

All costs proposed by Judge Yip-Kikugawa are illegal under California Public Utilities Code Section 453, which subjects all customers and those with medical conditions to prejudice and disadvantage, requiring different rates and charges, giving preferential treatment to those with higher incomes.

> (a) No public utility shall, as to rates, charges, service, facilities, or in any other respect, make or grant any preference or advantage to any corporation or person or subject any corporation or person to any prejudice or disadvantage.
> (b) 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, or any characteristic listed or defined in Section 11135 of the Government Code...
> (c) No public utility shall establish or maintain any unreasonable difference as to rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service. (California Public Utilities Code Section 453)

These costs and fees discriminate against utility customers as these costs are a disincentive to obtain an analog meter, which may be necessary for safety and security, guaranteed by the California Public Utilities Code, the CA and US Constitutions, and may be considered international human rights violations as indicated above, especially as analogs are intended to (be the standard), per federal energy guidelines.

By allowing or charging fees of any kind, the CPUC and utilities will be infringing upon the rights of all customers and citizens, noted in California Public Utilities Code Section 453. In particular, this will create a situation whereby those middle income or lower middle income families struggling to pay costs in a depressed and uncertain economy, or those with financial concerns of any kind,…will not be able to pay the extra fees and will constitute a impediment or disincentive to accessing the analog meters.

Customers with physicians who have determined smart meters may be unhealthful or a risk to health should not be charged for an opt-out as California Law does not allow utilities to charge additional fees for medical reasons. In addition, they must be able to insure that their property is not irradiated by their neighbors' smart meter(s) and public

access facilities are RF radiation free from metering sources so that they can avoid increased RF radiation and maintain their health and safety.

Conclusion: People should not have to pay extra to access energy and be safe and secure, nor should smart meters be forced upon customers per state and federal laws. The disabled, those with medical conditions, or the poor or financially struggling should not have access blocked to analog metering. Fees of any kind must be stricken from the opt-out plan for utility customers, as these are illegal. Provide a no-cost analog option to all customers.

The only conclusion one can logically come to is that the fees for opt-outs are punitive and intended to dissuade customers from choosing an analog option.

Center for Electrosmog Prevention, Comments on Proposed Decision on UCAN, 11-03-015, March 15, 2012

As members of the public have repeatedly stated, an opt-out fee is extortion, allowing utility companies the right to extort.

Publicly owned utilities

Kiku Lani Iwata, Burbank Action

Publicly owned utilities (including municipal utilities) are not included in the smart meter opt out programs approved by the CPUC. A list of these utilities is found in this promotional brochure by the Calif. Municipal Utility Association for reference: http://www.anaheim.net/utilities/anaheim_cmua.pdf.

Publicly owned utilities service million of California residents who do not reside in the vast territory serviced by PG&E, SCE and SDG&E. Customers of these publicly owned utilities also want the right to opt out, but some of their utilities, for instance BWP, GWP and SMUD in Burbank, Glendale and Sacramento, have adopted smart meter "opt-out" programs that fail to offer the analog option (the option these utilities have adopted are a different form of smart meters, thus, failing to address the privacy and health concerns) and are thus providing to their residents an unfair, inequitable, discriminatory and prohibitory opt-out program compared to millions of Californians serviced by the investor-owned utilities that must offer the analog option per CPUC's decision on smart meter options. BWP and SMUD have also imposed one-time-only opt-out deadlines, violating the civil liberties of residents that they service, either confining them to their homes or forcing them to evacuate or flee from their homes.

The CPUC does not regulate these publicly owned utilities except when it concerns matters of public safety; however, the CPUC has so far failed to acknowledge there is a public safety problem with smart meters. These publicly owned utilities, for the most part and unlike the CPUC, also fail to have an independent ombudsman or consumer

advocate department or representative to represent consumers who oppose and do not want smart meters on their homes or businesses.

Smart Meter Opposition:

As of 7/22/12, 56 cities and counties, and 1 tribal government have taken formal actions opposing Smart Meters. 14 of those communities adopted ordinances prohibiting Smart Meter and infrastructure installation in their communities in **bold**).

Humboldt County
Lake County
Marin County
Mendocino County
City and County of San Francisco
San Luis Obispo County
Santa Barbara County
Santa Cruz County
Sonoma County
Tehama County
Ventura County

Arcata
Belvedere
Berkeley
Blue Lake
Bolinas
Buellton
Calabasas
Camp Meeker
Capitola
Carpinteria
Clearlake
Cotati
Fairfax
Fillmore
Fort Bragg
Goleta
Grover Beach
Lakeport
Marina
Mill Valley
Monterey
Monte Sereno
Morro Bay
Mount Shasta
Novato
Ojai
Pacific Grove
Palo Alto
Piedmont
Richmond
Rio Dell
Ross
San Anselmo
San Rafael
San Luis Obispo
Santa Cruz
Sausalito
Scotts Valley
Seaside
Sebastopol
Solvang
Simi Valley
Thousand Oaks
Watsonville
Willits

Big Valley Band of the Pomo Indian Tribe

Cities and counties have also joined formal filings at the PUC against Smart Meters.

Political and community organizations including the Marin Association of Realtors, the California Peace and Freedom Party, the San Francisco Sierra Club, the Sonoma County

Republican Central Committee, and the Alameda County and Monterey County Green Parties have called for a moratorium or a complete halt to this program.

In March, Palo Alto (a municipal utility district) decided after three years of research not to install Smart Meters because the costs would exceed benefits, and the benefits are minimal. They had also been monitoring the problems and complaints with Smart Meters.

Nationwide, opposition to Smart Meters includes bills in the Michigan, Maryland, and Georgia legislatures; Smart Meter and Smart Grid lawsuits, including in Texas, Alabama, Maine, Illinois and Hawaii; a petition for a referendum to halt Smart Meter installations in Naperville, Illinois, which collected over 4200 signatures; the Connecticut and Illinois Attorney Generals and Illinois governor opposed plans for Smart Meters; the Maine Public Advocate raised objections to Smart Meters, including over electronic interference problems; and the Vermont Legislature has now mandated a free opt-out for consumers.

Internationally, 90,000 Australians in the state of Victoria refused Smart Meters as of December, 2011, and the Australia Electrical Works Union is calling for a halt to the program until fire safety issues are addressed; in the United Kingdom, the National Audit Office warned about costs and uncertain benefits from the roll-out, and the British and Dutch government have now made Smart Meters voluntary due to public opposition; in British Columbia, 13,000 residents signed a petition to halt the program and demanding a full review, and the Union of British Columbia Municipalities adopted a resolution calling for a moratorium, investigation into the problems, and no-cost alternatives to consumers.

And the opposition grows.

Legislative Solutions:

Overview and objectives:

- Halt Smart Meter deployment on all buildings throughout the state
- Re-deploy analog meters on all buildings throughout the state
- Immediately protect those who request relief, including creating zones of safety
- Hold RF health impact hearings
- Costs should be borne by shareholders
- Require rapid CPUC action on current and future matters affecting public health and safety and consumer fraud, and prohibit inaction

To address the problems with this program, we are asking for action in phases, beginning immediately, for all electric, gas and water meters, the Smart Meter program as a whole, and the Smart Grid.

Phase One

An immediate halt to any and all further deployment or activation of the AMI/AMR/Smart Meter/Smart Grid Programs or digital meters, and AMR/AMI water meters statewide for all investor owned utility companies (IOUs), municipal utility districts (MUDs) and private utilities.

Immediate de-activation of infrastructure, collectors, WiFi, servers, etc.

Immediate reinstallation with analogs at no charge for **all** ratepayers who request them. This will include a no-cost analog perimeter/zone of safety without Smart Meters or digital meters. of no less than 1000 feet radius. This includes residences, businesses, schools, and public buildings. Alert the public to this program via TV, radio, newspaper, and bill inserts.

Communities which have adopted ordinances by their local government will immediately be made Smart Meter-free, and access points, data collection infrastructure, and all other infrastructure removed as well.

Begin overall redeployment of analog meters, beginning with removal of all banks of Smart Meters/digital meters; progressing to removal of all wireless and digital meters and infrastructure from the smart grid, with full public disclosure.

Disclose all collector meter and repeater locations

Place radio frequency radiation (RFR) warning signs at all Smart Meter locations, and on all infrastructure.

Prohibit the disposal of analog meters, and require that they be securely stored and accounted for.

Commence immediate state public hearings and investigation into Smart Meter problems, including radiofrequency radiation (RFR) health and safety issues. Alert the public to this investigation through TV, radio, and newspaper advertising.

Where Smart Meters are still in place, require a premise visit before disconnection of service.

> A utility's premise visit to the customer's dwelling at the time of disconnection which is required in some states is for the purpose of allowing the utility to respond to customer statements at the time of disconnection, detect a medical emergency, or other conditions that may result in forbearance by the utility from effectuating the disconnection of service, and consider the customer's dispute allegations if made orally at that time. Where an attempt at personal contact is required, some utilities accept customer payment by means of a credit or debit card. www.nclc.org/images/pdf/energy_utility_telecom/additional_resources/adv_meter_protection_report.pdf

Prohibit power disconnection throughout the state in severe weather areas during critical times of the year.

Require zero emissions/no increase in RF/EMF emissions from additions or changes to the grid

Require the CPUC to open evidentiary hearings on RF health impacts from utility company Smart Grid/Smart Meter program immediately, in compliance with the CPUC's mandate.

Launch investigation into personnel and commissioners in the CPUC and CEC for conflicts of interest with the utilities and telecommunications industry. Include those who have received complaints from the public and have not taken action during this time. Terminate all personnel including commissioners who have failed to take action to protect the public.

Phase Two – within 30 days

Within 30 days of Phase One beginning, the public shall be notified via ads in local newspapers, on radio and in billing statements/a letter to all utility customers

a) that the program is being halted and Smart/digital meters are being de-installed.
b) of health effects which members of the public are experiencing
c) of the full range of complaints about wireless smart meters and digital meters, with content of notification to be approved by EMF Safety Network and associates.
d) of the possibility of fire and explosions from Smart Meters and afforded the opportunity for immediate no-cost change out and use of a traditional analog meter if they encounter appliance losses, humming, or intermittent power outages.

Establish public information and awareness-raising campaigns within 30 days and continue on an on-going basis on the risks of all possible harmful long-term health or biological effects from electromagnetic fields on the environment and on human health, pets, animals, insect

populations wildlife, or the environment as determined by independent researchers, scientists, and experts in the field of electromagnetic radiation and in particular RF radiation. These campaigns should especially include information on possible health impacts on children, teenagers, and young people of reproductive age. Content of notification to be approved by public advocacy groups including EMF Safety Network, Ecological Options Network, Stop Smart Meters, Center for Electrosmog Prevention, Cellular Phone Task Force, EMR Policy Institute.

Continue replacing all AMI/AMR/Smart Meters and digital meters with analog meters.

Begin removing access points/collector antennas, and wireless infrastructure.

Commence an investigation into the CPUC and its ties to industry. Recommendations for reform include replacement of staff and commissioners, including those with conflicts of interest.

Subpoena records related to consumer complaints and health problems related to Smart Meters, including phone conversations, correspondence, and contacts with customers, including site visits, from all utility companies.

Recognize electrohypersensitivity as a disability and a functional impairment, requiring accommodation.

Phase Three

Commence state investigation on how to “harden” the grid, and replace all wireless components with wired devices. Require that there be no additional EMF emissions from any grid components, and include adding shielding. Also require no RF or microwave emissions.

Require the CPUC, within 30-45 days of receiving formal filings regarding health, safety, or consumer fraud issues affecting Californians statewide or entire communities, specific areas or a significant number of Californians, to open proceedings with a pre-hearing conference and set a calendar of hearings. Replace language in CPUC duties from “may” to “shall”.

Further require that evidentiary hearings on consumer fraud or health or safety issues commence at the CPUC within 30 days of that prehearing conference.

Require the CPUC to open evidentiary hearings within 30 days of receiving information on consumer fraud or health or safety issues affecting Californians statewide or communities or specific areas.

Require concurrent oversight by Assembly Utilities and Commerce Committee and if deemed necessary by a simple majority of the Committee, separate evidentiary hearings by the Committee.

Change California Constitution so that CPUC commissioners are elected, rather than current system of appointments

Fiscal impacts (see also Costs under "Problems"):

- Costs to California residents forced out of homes
- Property loss -- takings – loss of use of home
- Costs to California residents who become ill – medical expenses, shielding costs, damage to health, long-term costs
- Death
- Emotional harm
- Fires, electrical wiring, appliance and electronic damage
- Loss of wages – 120,000 Californians unable to work according to 1998 CDPH EHIB study
- Unemployment costs
- Cost of Smart appliances and devices
- Environmental damage
- Loss of bees
- Increasing state/taxpayer liability for impacts from program not halted
- Future costs of downed grid, locally, regionally, throughout the state, or the entire country
- Grid blackout across Southern California to Arizona
- Costs of Smart Meter/Smart Grid program thus far through rates, ARRA funds, and other taxpayer-funded mechanisms

Other States:

		Status
Vermont	Senate Bill 0214 no fee opt-out	May 2012 -- Passed
Georgia	Senate Bill 459 opt-out	Feb. 2012 -- Passed Senate Mar. 13, 2nd reading in House
Michigan	House Bill 5411 opt-out, rules for data use	No hearing yet in House Energy and Tech. Committee

	House Bill 5439 no fee for opt-out, rules for power disconnection, data use, AMI installation procedures	No hearing yet in House Energy and Tech. Committee
Maryland	House Bill 878 opt-out provisions	Unfavorable report by House Economic Matter Committee Killed in committee
Texas	Rep. Dennis Bonnen, who authored Texas' original Smart Meter authorization legislation, and Sen. John Carona have announced that if the Texas Public Utilities Commission does not take action to allow Smart Meter opt-outs, they plan to introduce opt-out bills. Rep. Bonnen: "Never was it presented as something that would be forcibly deployed," http://www.texaswatchdog.org/2012/12/texas-lawmakers-push-for-customer-optout-from-smart-meters/1354820718.column	

Prior or similar legislation:

AB 37 opt-out legislation –
Introduced by Asm. Jared Huffman, December 2010.
Died in committee.

Websites for additional information:

EMF Safety Network	www.emfsafetynetwork.org
Burbank Action (Smart Meter pages)	www.burbankaction.com
Maryland Residents Against Smart Meters	www.marylandsmartmeterawareness.org
Stop Smart Meters	www.stopsmartmeters.org
Stop Orange County Smart Meters	www.stopocsmartmeters.com
Stop Smart Meters Irvine	www.stopsmartmetersirvine.com
Center for Electrosmog Prevention	www.smartmeterdangers.org
Stop Smart Meters Australia	www.stopsmartmetersau.com
Stop Smart Meters Georgia	www.stopsmartmetersgeorgia.org
Naperville Smart Meter Awareness	www.napervillesmartmeterawareness.org
W4AR	www.w4ar.com
Citizens for Safe Technology	www.citizensforsafetechnology.org
American Academy of Environmental Medicine	www.aaemonline.org
Electrical Pollution	www.electricalpollution.com

There are many more websites with information.

For a list of additional websites: www.stopsmartmeters.org