

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company (U 39 M)
for Approval of Modifications to its Smart Meter Program
and Increased Revenue Requirements to Recover the Costs
of the Modifications.

Application 11-03-014
(Filed March 24, 2011)

And Related Matters.

Application 11-03-015
Application 11-07-020

**OPENING BRIEF OF
ECOLOGICAL OPTIONS NETWORK**

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TABLE OF AUTHORITIES

California Public Utilities Code § 451

California Constitution, Article XI, Section 7

ECOLOGICAL OPTIONS NETWORK OPENING BRIEF

The Ecological Options Network (EON) respectfully submits this brief in accordance with the amended schedule established by assigned Administrative Law Judge Amy Yip-Kikugawa during the Nov. 8, 2012 evidentiary hearings.

PROCEDURAL BACKGROUND

The “Assigned Commissioner’s Ruling Amending Scope of Proceeding to Add a Second Phase,” issued June 8, 2012¹ divided the topics to be explored in Phase 2 into three segments: (a) evidentiary hearings on cost allocation issues;² (b) evidentiary hearings on community opt- out plans;³ and (c) consideration of the relevance of the Americans with Disabilities Act and Public Utility Code Sec. 453(b) to rate-setting for individual opt out customers and to community opt out proposals for which written pleadings would be submitted.⁴ The assigned ALJ granted a Motion filed by another party⁵ for a modification of the original schedule, limiting this evidentiary hearing and briefing period to cost allocation for individual customer opt-outs.⁶

EON PARTICIPATION

EON has been involved in these ‘smart meter’ proceedings since the filing its Protest to PG&E’s A.11-03-014 on April 25, 2011. In that Protest, EON reported that wireless so-called ‘smart meters’ contain at least two sources of RF radiation that impact decisions about both individual and community-wide opt-outs because of ‘mesh network’ deployment:

'SmartMeters™' Contain Harmful Switched-Mode Power Supply (SMPS)

Examination of the "SmartMeters™ by qualified engineering professionals (engineering degrees from MIT and Stanford) shows that they each contain a switching-mode power supply (SMPS) which are widely known to induce electro-

¹ *Amended Scoping Ruling* - 5-6.

² *Id.* - 4.

³ *Id.* - 6.

⁴ *Id.* - 5-6.

⁵ Local Governments Motion, August 27, 2012.

⁶ *ALJ Ruling Granting Motion Regarding Community Opt-Out Testimony*, served via email on September 28, 2012.

magnetic interference (EMI), high frequency transients, in the electrical wiring systems to which they are attached.

The SMPS function transforms the 240v AC from the utility pole power line to the 5v DC to run the meter's electronics. The SMPS functions 24/7, constantly emitting sharp spikes of high frequency transients in its efforts to transform and convert the voltage and current characteristics. These spikes, or high frequency transients, are created on the power lines when the current is repeatedly interrupted. ([Switched-mode power supply](#))

“Higher switch frequency allows component sizes to be shrunk, but can produce more radio frequency (RF) interference.”

The harmful effects from exposure to EMI, electromagnetic interference, from the pulsed high frequency transients, are similar to those of exposure to pulsed RF.⁷

As we have argued before in this proceeding,

“According to the California Public Utilities Code § 451 utilities are required to furnish and maintain such ‘service, instrumentalities, equipment, and facilities . . . as are necessary to promote the safety, health, comfort, and convenience of [their] patrons, employees, and the public.’ The CPUC is required to enforce these codes....

“By not taking unresolved (and as yet unconsidered) public health, safety, financial and security issues into account, utilities are violating Cal. PUC Code § 451.”⁸

TOPICS to be ADDRESSED

In this brief we will argue, in concurrence with other parties that:

- “Smart meter” Deployment is Imprudent as to Usefulness and Use
- Individual Opt-Out is Insufficient Due to Mesh Network Impacts
- Only Community-Wide Opt-Out Even Begins to Address Multiple “Smart Meter” Problems

⁷ EON Protest, p. 11

⁸ ECOLOGICAL OPTIONS NETWORK REPLY BRIEF, July 30, 2012, pp. 4-5

- No-Cost Opt-Out is the Only Justifiable Policy

1. “Smart meter” Deployment is Imprudent as to Usefulness and Use

As EON has argued before:

The utilities conducted an ill-considered mass rollout of untested wireless meters, and imposed them on customers without their informed consent. This constituted grave errors on the part of utility management, and therefore the costs of opt-outs – both individual and community-wide – must be borne by the stockholders of the mismanaged utilities and not the customers.⁹

A recent white paper by Timothy Schoechle, Ph.D., published by National Institute for Science, Law and Public Policy¹⁰ amply substantiates this assertion. We respectfully recommend that all participants in this Proceeding consider the information presented in Dr. Schoechle’s paper. An international consultant in computer and communications engineering and technical standards development, who has played a role in the development of standards for home networks and for advanced metering infrastructure (AMI), Dr. Schoechle shows that not only is the granularity of information on individual households purportedly provided by wireless meters unnecessary to a truly ‘smart’ grid - and are neither used or useful - but the deployment of wireless meters actually prevents fulfilling the stated goals of the ‘smart grid’ plan. Not only has the heavy-handed approach to deployment generated growing public opposition across the U.S. in at least 18 states, such as CA, VT, AZ, TX, FL, PA, ME, IL, OR and the District of Columbia, which is spreading internationally, but it has soured the public perception of the ‘smart grid’ concept generally, despite the validity of some of its objectives.

Schoechle writes,

Much early rhetoric about the smart grid and its potential was visionary and grandiose, but what has been delivered has been less impressive, offering little or no public benefit but much public expense (Fehrenbacher, 2010). The meter has come to symbolize a “bait-and-switch” situation, mainly to the benefit the utility

⁹ ECOLOGICAL OPTIONS NETWORK REPLY BRIEF, July 30, 2012, p. 7

¹⁰ ‘Getting Smarter About the Smart Grid’ <http://www.gettingsmarteraboutthesmartgrid.org/>

industry and its vendors as well as to politicians and bureaucrats. In their present form, smart meters offer few or no benefits to consumers, but pose significant risks and costs to them and to society....¹¹

He goes on,

The smart grid may yet be an important key to a new energy economy, but the current smart meter approach is irresponsible—financially, politically, and technologically. [emphasis added] This is because the smart meter emphasis does not contribute to the balancing of supply and demand or to the integration of renewable sources, while sapping the resources needed for true progress and squandering public support. Over the last year, utilities around the country have installed an estimated two million smart meters. These were included as part of \$3.4 billion in federal stimulus funding to “modernize” the nation’s power grid. The Edison Institute (IEE) estimates that 65 million smart meters will be deployed by 2015, representing 54% of U.S. households, and that as of September 2011, 27 million smart meters had been installed.... The presumed contribution of these meters to the goals of the smart grid deserves close examination.¹²

He concludes,

However, the unfortunate reality is that very little progress has been made toward moving the grid toward distributed renewable energy or enabling the other goals proclaimed.... Disproportionate benefit from the funding has accrued to utilities and meter and metering network manufacturers (e.g., Elster, GE, Itron, Landis+Gyr, Oncor, Sensus, Silver Spring Networks, etc.) rather than to consumers....

Following the initial hype about smart grid and all of the benefits it could bring, the smart meter rapidly became “low hanging fruit” that would provide “two-way communication” to the end user that could deliver all the wonderful benefits of the smart grid. So the narrative went. But this starry-eyed account turned out to be

¹¹ ‘Getting Smarter About the Smart Grid’ pp. 4-5

¹² ‘Getting Smarter About the Smart Grid’ p. 11

wrong. In reality, the smart meter delivered unemployed meter readers and a deluge of meter data that utilities had no idea what to do with.¹³

Deployment of wireless meters is increasingly revealed to be an imprudent and irresponsible policy-making, regulatory, and management mistake of huge and mounting proportions. No costs associated with deployment or opting-out should be born by ratepayers or taxpayers, but should be seen as totally the liability of utilities and their stockholders.

2. Individual Opt-Out is Insufficient Due to Mesh Network Impacts

As documented in previous EON filings in this proceeding,

‘smart meters’ propagate both RF and Electro-magnetic frequencies (EMF): (1) through the air from their built-in wireless antenna, and (2) through connected wiring systems from the switching mode power supply (SMPS) contained in each meter which generates high frequency transient ‘spikes,’ or ‘dirty electricity’ throughout interacting circuits.

Individual customer opt-outs in areas where ‘mesh networks’ are established between neighboring wireless meters and area data collection points still leave the opt-out customer exposed to both sources of pollution.¹⁴

There are inherent problems caused by microwaves pulsing at 9 billion times per second, each electric meter radiating these pulsing signals omni-directionally in concentric spheres, capable of traveling up to one mile in PG&E territory. Multiple banks of meters multiply and exponentially increase these effects for apartment dwellers and anyone nearby.

Additionally, an individual household opting out in a neighborhood where a mesh network is in place will still be exposed to both the wireless RF pollution and the dirty electricity pollution generated by the constant ‘chirping,’ or cross-transmissions emanating from the surrounding households’ wireless meters and the nearby data

¹³ ‘*Getting Smarter About the Smart Grid*’ p. 12

¹⁴ ECOLOGICAL OPTIONS NETWORK REPLY BRIEF, July 30, 2012, p. 5

collection points. Many cases of people having to abandon their homes and workplaces in such circumstances have been reported.¹⁵

Here is one example from a recent CPUC Public Meeting in Santa Rosa, California, ALJ Yip-Kikugawa, presiding: STATEMENT OF MS. HAHN

Hello, your Honor. Thank you for the opportunity to speak today. My name is Kim Hahn. I'm a private citizen from San Raphael. My life changed completely on September 9th, 2010. Within 24 hours of the installation of a gas and an electric smart meter on my home my physical health began a rapid downward descent. Within days I was unable to sleep, to concentrate, or to eat. Within weeks I had developed a sensitivity to all things wireless. I could not tolerate proximity to cell phones, computer routers, cordless phones, digital TV or DVD players. I was not able to stay in my home when the electricity was on nor walk through the streets of my town. A private tutor for the previous 15 years, I now could no longer visit my clients in their own homes or work with them in the libraries. My ability to earn a reasonable income became severely jeopardized.

In the early months since I began to lose town after town, I remained convinced that there were places where I could go to clear my body of radiation. My partner Bob and I drove to more sparsely populated locales hoping to find sanctuary. Smartmeters had not been deployed so much in Sonoma and Mendocino Counties, but that ended as PG&E overtook those places. It soon became apparent that there was indeed no place to run to nor to hide from the devastation of smart meters. So we hired a number of electrical professionals to help us determine to what extent our problem is responsible for my illness and whether we could remedy the problems and stay in our home. We even had lots of help from PG&E, who removed the smart meters, replaced our transformer and rebundled our cables to lessen the EMFs running on our lines.

All six professionals detected a transient running on our house wires, and all six of them were certain that it was not being generated inside my house. In short, the problem was equally present with the electricity disconnected from the power lines as it was when it was connected. The smart meters were sending pulses that

¹⁵ See, <http://stopsmartmeters.org/>

travel through the air and catch a ride on whatever conducts frequency, be it cables, power lines, internal house wiring, water, sewers, or gas pipes or houses themselves that act like antennas.... The mesh network has a life of its own.¹⁶ Who is accountable for the medical and property costs and living expenses in such tragic cases? Why should they not be factored into the total cost accounting?

Furthermore, PG&E employee, Brian Rich, testified that due to individuals opting out, PG&E had to install 33 additional data collection nodes. This adds to the microwave pollution in the areas where this is done, eliminating some of the slight benefit to the individual opting out of a single meter.¹⁷

3. Only Community-Wide Opt-Out Even Begins to Address Multiple “Smart Meter” Problems

It is clear from the foregoing considerations that individual opt-outs in otherwise mesh-networked neighborhoods not only does not address the issues of wireless meter emissions, but can be argued to constitute a violation of citizens’ rights to safety under the California constitution.

To date, over 55 cities and counties have voted against deployment of ‘smart meters’ in their jurisdictions. The full costs of a comprehensive opt-out program cannot be calculated until the concept of ‘community’ is defined and a community-wide opt-out option is in place.

4. No-Cost Opt-Out is the Only Justifiable Policy

It is understandable that at first the utilities were ignorant of the adverse effects from wireless mesh networks. However, many thousands of complaints from sickened customers over the past three years should have adequately alerted them to the multiple problems. Obviously, the validity of thousands of customers’ experience should be respected, not ignored or denied.

¹⁶ Kim Hahn, Vol. 10 RT, Santa Rosa, CA, December 20, 2012, pp. 1059-1061

¹⁷ Brian Rich, Vol. 2 RT _pg.291 lines 27, 28 to pg. 292 lines 1 to 6

Cost causation is logically, from the point of view of the customer, borne by the utility who installed the wireless mesh networked 'smart' meters, not the customer wishing to avoid harm.

It is outrageous to claim, as Ray Blatter, of PG&E claimed, that the benefit of not having the adverse problems of the meters should be paid for by the customer.¹⁸

Conclusion and Recommendations

EON respectfully recommends that all utilities offer an analog meter at no cost to any customer wishing one. There should be no time limit involved. Small businesses should be included.

The costs of a mis-conceived and mis-managed program should be born by its perpetrators, not its victims. For all the above reasons, no costs of either individual or community-wide opt-out programs should be passed on to ratepayers, but born by IOUs and their investors, or the contingency allotment already provided by the commission for the AMI rollout should be used for any expenses incurred.

Since no legitimate, comprehensive or responsible opt-out policy can be arrived at without consideration of the key reasons for public opposition to 'smart meter' deployment: safety, privacy, health effects and cyber-security. CPUC should hold public evidentiary hearings on these topics as part of its decision-making and policy-setting process.

¹⁸ Ray Blatter, Vol. 3 RT_pg. 346 lines 27, 28 to pg. 347, line 9

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Respectfully Submitted,

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