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### Pacific Sun News

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## Feature: Attack of the SmartMeters!

*PG&E's not-so-smart approach to wireless power grid*

by Peter Seidman

When Pacific Gas and Electric Company stuck its finger in the smart meter socket it got a shock.

PG&E began installing the advanced meters, which transmit power-consumption information to the utility over a wireless network, last year. It didn't take long before complaints started rolling across the new SmartMeter grid--whether or not the complaints had merit. PG&E isn't scoring high on the public relations meter these days, especially in Marin, where the utility spent big bucks trying to stop Marin Clean Energy from rolling out its local-power plan. It also spent about \$47 million pushing a proposition to stop other communities from creating local-power agencies. Prop. 16 would have required a two-thirds vote before a community could create a local-power agency, a requirement widely seen as an attempt to stifle competition. The unsuccessful proposition attempt left bad blood flowing through the PG&E customer base, especially in Marin.

Among those critical of the new SmartMeter rollout are residents who say they're sensitive to electromagnetic radiation, electricity. They say the SmartMeters trigger health problems. They want PG&E to let them opt out of SmartMeter program. But the company maintains that opting out is not an option. And the California Public Utilities Commission backs that position.

Layered on the complaints about the new meters causing health problems, are protests that the investor-owned utility is loading the bill for SmartMeter installation onto the backs of ratepayers rather than shareholders. And it's a substantial bill. The SmartMeter rollout is expected to cost \$2.2 billion, and most of that will come from ratepayers.

The new meters represent a critical link in what will become the nation's smart grid, say proponents. Keeping tabs on power from source to consumer, monitoring the flow of electrons, could boost energy efficiency and reduce the need for new power plants. A SmartMeter, which is the trade name of the advanced meter PG&E contractors are installing in California, can take an energy-use snapshot of a home every hour, and a customer can track energy use to determine where the electrons have been flowing and when.

PG&E ads now running on television hint that time-of-use knowledge can allow residents to be more energy efficient, but it's an unfocused message that leaves out a critical element in the broad PG&E plan. The SmartMeter strategy and the smart grid vision begin to sharpen when an hour-by-hour time of use element gets thrown into the mix.

Call it congestion pricing for power. It works the same as congestion management on bridges and freeways. A resident who runs a dishwasher in the middle of the night would pay less for the electricity than a resident who runs a load during peak hours in the middle of a summer heat wave. And in a blue-sky scenario, appliances one day will have the technology to tie into the smart grid. That could allow customers to tell their coffee pots and air conditioners to turn on or off via instructions sent over a wireless system (or a utility might do it for them.)

Almost everyone acknowledges the possibilities inherent in a smart grid to improve energy efficiency and reduce pollution. Not nearly everyone, however, buys the company line that new meters PG&E and other utilities are installing actually will produce the tangible results painted in the blue-sky scenario, at least not for many years. And if that's the case, say critics, why were utilities, including PG&E, rushing through neighborhoods hooking up SmartMeters at a fast pace?

"It doesn't look to me like the SmartMeters are really an essential part of the smart grid," says Barbara George of Women's Energy Matters. The Fairfax resident has been following the PG&E request for a rate hike, part of which would go toward SmartMeter installation and costs associated to promote a smart grid scenario. She, like other utility watchdogs, recognizes the possibilities but questions the probabilities. "The smart grid is really the stuff that you can put on to the distribution system, and it looks to me like PG&E hasn't done the work it was supposed to have done to realize the benefits of the system of SmartMeters. They would have put together databases and [other elements to determine some of the benefits they could potentially get."

George says the utility could "save a bunch of money" because the cost of the meters gets charged to ratepayers, and the company can eliminate meter readers. PG&E acknowledges that SmartMeters could eliminate the need for meter readers, a workforce estimated at about 820 employees in 2011. The company says some of those employees could move to other PG&E jobs. SmartMeters also will allow the utility to turn off power quickly from a central location rather than requiring an employee to go out and do it manually.

"Those are their primary goals," says George. "The other things touted as related to SmartMeters as far as energy-saving devices--that's all up to the individual." George and others recognize that the smart grid could trigger an entrepreneurial boom in energy-efficiency devices and strategies, but she says, "I don't think that's going to be a booming business any time soon, and according to the general rate case [the rate request now before the CPUC, PG&E doesn't think so either. They are expecting something like 30 percent of customers to do something [related to SmartMeters and the smart grid by 2025. It's not like it's happening tomorrow."

The rush to rollout became a big issue two months ago in Maryland. That state's version of the CPUC, the Maryland Public Service Commission, rejected a Baltimore Gas and Electric Company request to deploy smart meters as part of a smart grid project. Regulators questioned the real-world advantages of the smart meters as well as the plan to charge ratepayers a hefty chunk for the \$482-million plan. The utility resubmitted its plan, acceding to the regulators' stipulation that the company can recoup costs from ratepayers only after the meters are installed.

That's a relatively mild adjustment for many SmartMeter critics. Hawaiian Electric Company has been planning to install a \$115-million smart grid project on Oahu, Maui and the Big Island. But regulators denied the electric company request because it called for using ratepayer money to pay for installing meters. Critics there also echo concerns in California that utilities have failed to educate customers and explain the practical benefits and real-world use of the smart grid system before attempting to deploy meters.

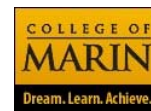
Many Californians first heard about SmartMeters when PG&E customers in Bakersfield complained their electricity bills skyrocketed after the utility installed SmartMeters. PG&E says the electricity bill spike coincided with a serious heat wave, and the bills reflected

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air conditioner use rather than faulty meters. But reports began surfacing in other areas about questionable bills after SmartMeter installation. PG&E has acknowledged that about 45,000 SmartMeters have exhibited anomalies. Most of the problems resulted from faulty installations, software problems and glitches in the wireless system. The problems, according to the company, represent a relatively small percentage of the total number of meters installed. SmartMeters actually are more accurate than the old analogue-style meters, according to company officials.

The CPUC is investigating the meter anomalies and will report results probably next month. The San Anselmo Town Council recently voted to wait until the release of that report before taking any action on SmartMeter installation in town. But Fairfax took a tougher stand. Earlier this month, the council there voted to impose a 12-month moratorium on SmartMeter installation. That kind of pushback, from suspicion to at least temporary rejection, has surfaced in communities across the North Bay and beyond. The Marin County Board of Supervisors joined the chorus calling for PG&E to slow SmartMeter installations pending a review. The board also wants to see a public hearing about possible health effects. Assemblyman Jared Huffman has asked the California Council on Science and Technology to determine whether federal standards for SmartMeter transmissions are sufficiently stringent to protect public health.

According to CPUC rules and regulations, service agreements grant the utility the right to do anything it wants to its meters, including switching out analogue meters for SmartMeters. At least for now, the utility says it will temporarily put the brakes on its SmartMeter installations in Marin, but company spokespeople won't say for how long.

The SmartMeter pushback took the company by surprise. "When we were rolling out the SmartMeter program, we were looking at it more as a technology upgrade, like we would replace a transformer or something of that nature," says PG&E spokesman Jeff Smith. "We quickly realized that for our customers, it was viewed much differently than that. At the beginning, we didn't do a good enough job of listening to our customers and recognizing that they might have a variety of concerns about the SmartMeter program and the upgrade. They weren't viewing it as us replacing a transformer or a pole." Smith says the utility has begun holding a series of customer information meetings as well as other educational efforts.

According to a state health department study conducted in 2000, about 3 percent of Californians show some sign of electrical sensitivity. A 2004 survey in Switzerland found a 5-percent rate of electrical sensitivity among respondents. A 2002 survey in Sweden noted a 1.5 percent prevalence to sensitivity. And in 2007, a survey in the United Kingdom found that 4 percent of 20,000 people surveyed reported that they exhibited symptoms of electrical sensitivity. Although the mainstream medical community doesn't recognize a causal relationship between electrical system like wireless networks and a wide range of non-specific symptoms like migraines, weakness, muscle aches and worse, some researchers have noted that electrical sensitivity, while not an official disease is a syndrome, and one worthy of taking seriously.

Organizations that offer support to those who say they are sensitive to electrical radiation are reporting that the installation of SmartMeters in some cases triggers electrical sensitivity symptoms and in other cases exacerbates them. The wireless SmartMeter system creates a mesh network in a neighborhood, linking meters together. Although an individual meter may transmit data to the utility for only 45 seconds, meters talk to meters, creating an overlay of wireless transmission in a neighborhood. And those 45 seconds pack a powerful electrical punch, say those worried about the effects. Alexander Binik, a Fairfax resident and executive director of DE-Toxics Institute, says the SmartMeter program calls for the Precautionary Principle. He likens the SmartMeter situation to the eventual understanding of the causal relationship of health effects from cigarettes and pesticides. People exhibiting sensitivity now could be canaries in our coalmine. People with electrical sensitivity say all they want is an opportunity to opt out. But utilities hesitate to let people stay off of the smart grid because it dilutes its effusiveness. People who are sensitive counter that their numbers are relatively few, and requiring proof of sensitivity would prevent opt-out abuse.

Last week at a CPUC Thought Leaders meeting, PG&E CEO Peter Darbee was on hand. He acknowledged that the utility had done an inadequate job of educating customers about the benefits of SmartMeters. He vowed to improve efforts to spread the smart grid gospel and improve customer relations.

When asked whether PG&E had investigated possible health effects that could result from a mesh network, he dismissed the idea that any detrimental effects are possible. "A lot of really expert people have looked at this issue," Darbee said, reciting an alphabet soup of health and science agencies. Critics remain skeptical. He noted that vendors for the new meters received licenses from the FCC, and the technology passed federal guidelines.

In responding to a question about whether a SmartMeter network is crackable, Darbee said, "Anything you hang on the grid is an opportunity for terrorists, but we can look in at any time and determine the threat level, and the level of any harmful activity in the system, and we can zoom right in on homes and utility poles in real time and see what's going on. It's pretty amazing."

It's also pretty disconcerting for PG&E critics who still mistrust the utility.

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## Comments

Posted by kevin, a resident of the San Rafael neighborhood, on Aug 19, 2010 at 5:53 pm

Thank you Peter for this thorough article.

There is no harm done in waiting several months for some of the reasonable studies and feedback to roll in regarding the health concerns of smart meters. When I first heard of smart meters it was in the context of PG&E being able to control and limit the amount of power an individual consumes. When smart meters are combined with smart appliances, PG&E could turn off your AC or washers and dryers if they are experiencing more demand than they can supply. That sounds very undesirable and "big brother". On the other hand it's better to have less power than no power at all, as in rolling brown outs. This is one issue I'd like to see more written about, PG&E's future ability to control customers very specific power use.

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Posted by Daniel Holeman, a resident of the San Rafael neighborhood, on Aug 19, 2010 at 6:55 pm

Darbee told me they are doing this in order to reduce costs, increase investor profits, that they do not care about the health factor as it is difficult to prove, and laughed at the idea that the consumers are paying for it all. He thought it was pretty brilliant on his part.

This guy acts like a criminal and gets away with it because he can. No moral compass whatsoever. Meanwhile watch TV and see the millions they are now spending on totally false ads portraying PG&E as a green company. They care nothing about green and have said so directly.

I trust the truth will eventually come out. They spend YOUR money on all these million dollar lying TV PR campaigns to make them look good. Greenwashing at its worst.

As the Marin County supervisors and they will tell you all this as well.

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Posted by Pseudhonym, a resident of the Tiburon neighborhood, on Aug 19, 2010 at 8:11 pm

1. It is about charging us more for our electricity.....

unless we do our dishes at midnight!

2. Is it right for an electric company to charge us more for electricity used at a particular time?

3. Is this invasive....? To know when we are using our electricity....

I think PG&E should not have this information about the time we are using electricity..... It would be possible to know when people are on vacation.....

I know, I am sure they will keep this secure.....

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Posted by kevin, a resident of the San Rafael neighborhood, on Aug 19, 2010 at 10:48 pm

Satellite TV, Comcast, AT&T, Verizon, etc., all have access to what we are watching and when, who we are talking to, for how long and when, who calls us, and also exactly where we are when we are doing all of the above. Cell and land-line phone companies have been charging us different rates for peak and off peak hours for decades. Credit Card companies know where we are and what we are purchasing when we swipe our cards. PG&E will eventually get their way so long as there are no significant health issues with the new meters. The smart meters will help them manage our antiquated power grid with more efficiency. Their roll out of the meters has been a PR disaster and their customer service is lame. Hopefully the PUC will place adequate restrictions on the use of the meters.

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Posted by John Snell, a resident of the San Geronimo neighborhood, on Aug 20, 2010 at 12:08 pm

Electromagnetism and Life is a helpful book on the health effects of RF radiation by two doctors, available for FREE on the Internet at

[Web Link](#)

The references are excellent and an abbreviated table of contents serves as an overview for this quickly evolving field:

Part One: Historical Developments

1. Origins of Electrobiolgy

Part Two: The Role of Electromagnetic Energy in the Regulation of Life Processes

2. Physiological Function of Intrinsic Electromagnetic Energy

The Nervous System

Growth Control

Bone

3. Control of Living Organisms by Natural and Simulated Environmental Electromagnetic Energy

Evolution of Life

Biological Cycles

Positional and Navigational Aids

Part Three: Laboratory Studies of Adaptability of Organisms to Electromagnetic Energy

4. Electrical Properties of Biological Tissue

Energy Bands

Piezoelectricity

Superconductivity

Techniques of Application of Electromagnetic Fields

5. Effects of Electromagnetic Energy on Nervous System

Direct Effects

Behavioral Effects

6. Effects of Electromagnetic Energy on Endocrine System

Adrenal Cortex

Thyroid

Adrenal Medulla and Pancreatic Islets

7. Effects of Electromagnetic Energy on Cardiovascular and Hematological Systems

Cardiovascular System

Blood

Immune Response

8. Effects of Electromagnetic Energy on Biological Functions

Intermediary Metabolism

Reproduction, Growth and Healing

Mutagenesis

Uncontrolled Variables

9. Mechanisms of Biological Effects of Electromagnetic Energy

Cybernetic Approach

Analytic Approach

Part Four: Applied Electromagnetic Energy: Risks and Benefits

10. Health Risks Due to Artificial Electromagnetic Energy in Environment

Levels in Environment

Epidemiological Studies and Surveys

Analysis

11. Special Topics Concerning Electromagnetic Energy

Therapeutic Applications

Acupuncture

Impacts on Natural Ecological Systems

Summary

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Posted by Sea, a resident of another community, on Aug 20, 2010 at 3:21 pm

I'm dead serious. Electricity is gonna kill everyone. The smart people will stop using it and the rest will follow. This movement will begin in Marin county.

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Posted by Suzi, a resident of the Novato neighborhood, on Aug 20, 2010 at 5:14 pm

When PG&E came out to install our "smart" meter, the PG&E tech turned off the power to our building without warning, causing my laptop to hard crash while it was processing. It hasn't booted since. The meters may or may not be so smart, but the PG&E employee who trashed my computer wasn't smart at all.

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Posted by Smoogie, a resident of the San Rafael neighborhood, on Aug 20, 2010 at 10:26 pm

So much hilarious hippie crap on here. I hear Mercury is in retrograde right now. You probably don't want to be making flash judgments like this. Join the real world. It makes perfect sense to charge more for power when the most power is being used. It costs them the most at that point. We are spoiled into getting what we want when we want it. I see so many bumper stickers around here promoting peace and treating others with respect, but when it comes down to it I have found that the most selfish people I have met are right here in Marin. Start practice what you preach.

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