

# Smart Grid: Consumer Concerns

## The California Experience



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# *Meter Wars*



***Empire***

*Utility Industry*

vs

***Jedi***

*Consumer Champs*

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**TURN**  
THE UTILITY REFORM NETWORK  
Lower bills. Livable planet.



- **Fighting for Small Ratepayers since 1973**
  - Founded by Jedi legend Sylvia Seigel.
- **Largest Utility Consumer Organization in U.S.**
  - 18 staff, including 9 energy/telecom attorneys.
- **Most Green for the Least Green**
  - Cleanest energy at lowest prices to consumers.



# PiG&iE

## Pacific Gas and Electric

- One of Largest Utility Empires in U.S.
  - 5.1 million electric accounts.
  - 4.2 million gas accounts.
- National Leader in Smart Meter Wars
  - Over 2 million electric smart meters installed.
  - Another 2 million gas smart meters installed.
- Smart Meter Installation Blitz.
  - Installing 15,000 smart meters daily.

# Consumer Rebel Forces

- **Consumers have been complaining for two years.**
  - Lois Henry of Bakersfield Californian.
- **State Senator Dean Florez Public Hearings.**
  - 300 Bakersfield residents testified for 5 hours.
  - 200 Fresno residents testified for 4 1/2 hours.
- **Hundreds of Complaints Received at TURN.**
  - Excerpts to proved human side of complaints.
  - Documentation of billing problems.

# Smart Meter Testimonial #1

**We own two houses here in Rio Vista. One house has been vacant since May 2009. The SMART meters were installed in late Oct 2009.**

**When we received our first SMART Meter bills for the month of Nov 2009, the bill for the vacant house tripled. It went from approx \$25 per month to over \$87.00. This is a vacant house with no furniture and no one living there.**

# Smart Meter Testimonial #2

After a new device (SmartMeter) was installed at my home, our monthly usage went from the 700-800's to 2150 kWh last month!

Even on days when I turn off everything possible (except the fridge, water heater, microwave, etc) and run the heater for a total of 2 hours, our usage online still shows about 40-50 kWh per day... multiply that by 30 days = 1200-1500 which is still way too high for having virtually nothing on. Please help us!

# Smart Meter Testimonial #3

Since the installation of a Smart Meter, my electric usage is being read at double the amount compared to last year. There is no reason for an increase of usage. All of my major appliances are less than 10 years old and are labelled energy star rated.

My current bill shows 748 kWh, last year was 359. If PG&E insists that the meters are accurate, am I to believe that for the last 28 years, they've been inaccurate?

# Smart Meter Testimonial #4

After installing the smart meter my bill has increased so drastically that I cannot pay it.

Example. May to June last year, my bill was \$31.40. This year \$141.47. I have called and complained to PG&E many times but was told the meter is correct and I must have increased my use. Nothing has changed in my household. I do not understand.

# Smart Meter Billing Dispute #1

Bill Date	kWh	Elec Bill
5/07/09	442	\$53.82
6/07/09	859	\$117.95
7/07/09	926	\$131.95
8/06/09	1,250	\$230.94
9/06/09	113	\$572.12
10/06/09	865	\$112.36

**Why did September bill double when usage dropped by 90%?**

# Smart Meter Billing Dispute #2

Bill Date	kWh	Elec Bill	Therms	Gas Bill
5/24/09	0	\$0.00	14.0	\$12.75
6/24/09	0	\$0.00	13.0	\$12.70
8/03/09	0	\$0.00	10.0	\$10.35
8/25/09	4,688	\$548.57	10.0	\$10.42

## ACCOUNT SUMMARY

Service	Service Dates	Amount
Gas	07/24/09 to 08/21/09	\$9.66
Electric	08/20/08 to 08/21/09	\$545.47

How was the customer's electric bill recorded as 0 for 12 months?

# Independent Investigation

- **California Public Utilities Commission order.**
  - TURN is providing input into process.
- **Major Areas of Investigation**
  - Do smart meters measure more electricity?
  - Resolving smart meter safety hazards.
  - Problems with data cycle from meter to customer.

# Do Smart Meters Record More?

- **PG&E claims that its old meters ran slow.**
  - This is a brand new claim never previously reported.
- **Higher sensitivity to power surges/spikes.**
  - Do smart meters register power spikes, associated with motors turning on, in a manner different from how electro–mechanical meters measure power spikes?
- **Side by side comparisons.**
  - Many customers have requested placing their old meters next to the new meters for comparing measurements.



## Smart Meter Blows Up at Business

– ABC TV 23 in Bakersfield, Mark Christian reporting.

On Wednesday, a PG&E technician was called out to replace the meter after employees found the device burned up and lying on the ground and the face plate was blew off and the whole meter was blackened. Even the breaker box that housed the meter was blackened by what seemed to be an electrical short," said Vernon Nelson, an employee. ABC 23 contacted PG&E who said they are not aware of any smart meters catching fire or blowing up. However the PG&E technician told the employee as he was replacing the meter, that he had replaced at least 15 meters around town due to the same problem they had, said an employee.

# Serious Safety Concerns



- **Smart meters burning up or exploding.**
- **Shorting out appliances or electrical systems.**
- **Interfering with motion detectors/ security systems.**

# Data Cycle: Meter to Customer

- **Communications chip data broadcast.**
  - Interference with other 900 mHz networks.
- **Transmission of data to central processing.**
  - From collection towers to headquarters.
- **Disaggregation of data.**
  - Creation of individual customer data record.
- **Billing software.**
  - PG&E has history of problems with billing software
- **Responding to complaints.**
  - How PG&E handles smart meter complaints.

# Poverty of Smart Meters

- **Most Expensive, Least Cost-Effective Solution.**
  - Far better ways to reduce energy and carbon.
- **Time of Use Pricing is Unreliable.**
  - People seldom behave in their economic self interest.
- **Privacy Concerns are Rising.**
  - Voluntary and involuntary release of customer data.

# Least Cost-Effective Solution

- **Peak Load Shifting.**
  - Peak load is due to residential air conditioning.
  - Air conditioning cycling programs provide instant response
- **Reduce Energy Consumption.**
  - Power strips, clotheslines, white roofs, weatherization.
- **Reduce Carbon Emissions.**
  - Shifting from gas peakers to coal base plants can increase carbon emissions.
  - Only overall reduction in consumption reduces carbon.

# Fallacy of Time of Use Pricing

- **People act in their economic self-interest?**
  - Presumes that people have sufficient math and language skills, technology, and time to calculate their self-interest.
  - Dismisses host of emotional factors that guide human behavior including the virtuous—civic responsibility, leadership, love, and the seven deadly sins.
- **Success of Curbside Recycling Programs.**
  - Convenience (color coded trash bins), appeals to civic responsibility, peer pressure (same collection day).
  - Without *\*new technology\** or *\*price signals\** or *\*economic incentives\** or *\*criminal penalties\**.

# Big Brother is Watching

- **Collection of Highly Individualized Data.**
  - Specific appliance use through energy signatures.
  - Living habits, waking, sleeping, away from home.
- **Access to Individual Household Records.**
  - Ownership of data: Customers or Utility?
  - Restrictions on sale or release to commercial interests.
  - Restrictions on release to law enforcement.
- **Cyber Security of Individual Data Records.**
  - Security of 900 MHz broadcast of data from chips.
  - 179,000 records accessed in Toronto in July 2009.

# Why Utilities Love Smart Meters



- **Highly Profitable: 12% Authorized Rate of Return.**
  - \$4.5 billion approved ratepayer funding in California.
- **Excuse to Reduce Union Workforce.**
  - Elimination of thousands of good paying jobs.
- **Joys of Remote Shutoffs as Collection Weapon.**
  - 75% increase in PG&E shut offs of low-income households.

# Meters Wars: Battle is Not Over



- **Three Possible Outcomes.**
  - 1) Utility Empires prevail, crushing consumer opposition.
  - 2) Consumer Jedi prevail, halting deployment.
  - 3) Utilities and Consumers reach an understanding.
- **Free Thinkers are Invited:**

**Join the Jedi Consumer Champs!**