

Advancing Energy Efficiency and Building a Sustainable Electric System

ACEEE 30th Anniversary Policy Conference
December 7, 2010





Pacific Gas and Electric Company



Energy services to 15 MM people:

- 5.1 MM Electric customer accounts
- 4.3 MM Natural Gas accounts

70,000 square miles with diverse topography and climate zones

20,000 employees

A regulated investor-owned utility



POWERED BY factual

Ranked the greenest utility in the United States in 2009 and 2010



Forward Thinking Energy Policies

30+ years of energy efficiency programs facilitated by “decoupling”

Renewable Portfolio Standard:

20% by 2010

33% by 2020

Preferred loading order:

1. Demand reductions: energy efficiency, demand response
2. New renewable and distributed generation
3. Clean gas-fired power plants



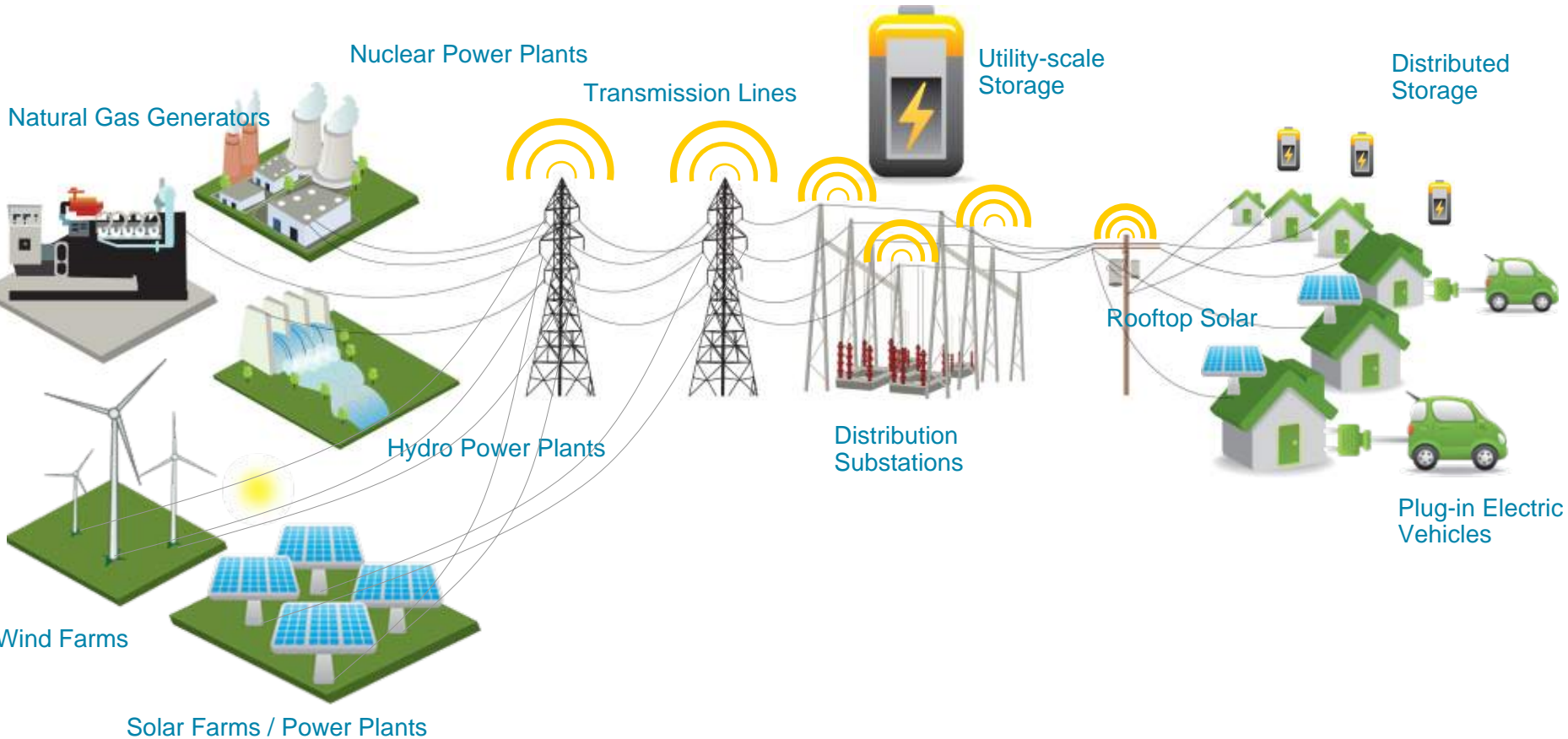


Building A Sustainable Electric System

Power Plants

Electric Grid

Customers





Balancing Competing Priorities



**Environmental
Sustainability**



Reliable Service



**Reasonable
Cost**



Electric Demand is a Balancing Resource

Renewable Resources



Smart Grid

Balancing Resources



Demand-side Resources



Storage



Back-up Generation



Integrated Demand-Side Programs

Advanced Energy Information, Analysis

Smart Energy Efficiency

Time-variable Pricing

Demand Response

Voluntary Load Control

Automated Energy Management

On-site Generation and Storage

Electric Vehicle Charging





2010-2012 Energy Efficiency Programs

\$ 1.338 Billion budget for 2010-2012 Electric and Natural Gas Efficiency

Portfolio includes 126 programs delivered through multiple delivery channels to all customer segments:

- Financial Incentives and Rebates
- Training, Education
- Energy Audits
- Emerging Technology projects
- Energy Codes and Standards support

New programs include:

- Zero Net Energy Pilots
- Workforce Education and Training
- Innovator Pilots
- Green Communities

Low Income Energy Efficiency Program

- Funded for \$416.9 Million
- 340,884 homes treated = three year goal



Time Variable Rates: Peak Day Pricing

Overview

New time-variable pricing plan for all customers

Mandatory for most business customers

- May 2010 rollout to largest business customers
- Option to opt out if sign up for DR program or Time-of-Use rate

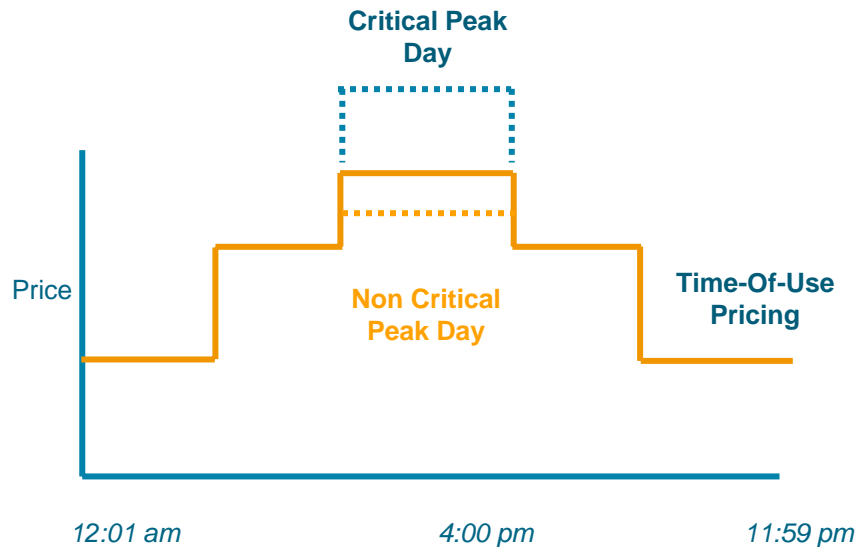
Optional for residential customers beginning one year later, May 2011

How it Works

Time-of-Use pricing all year

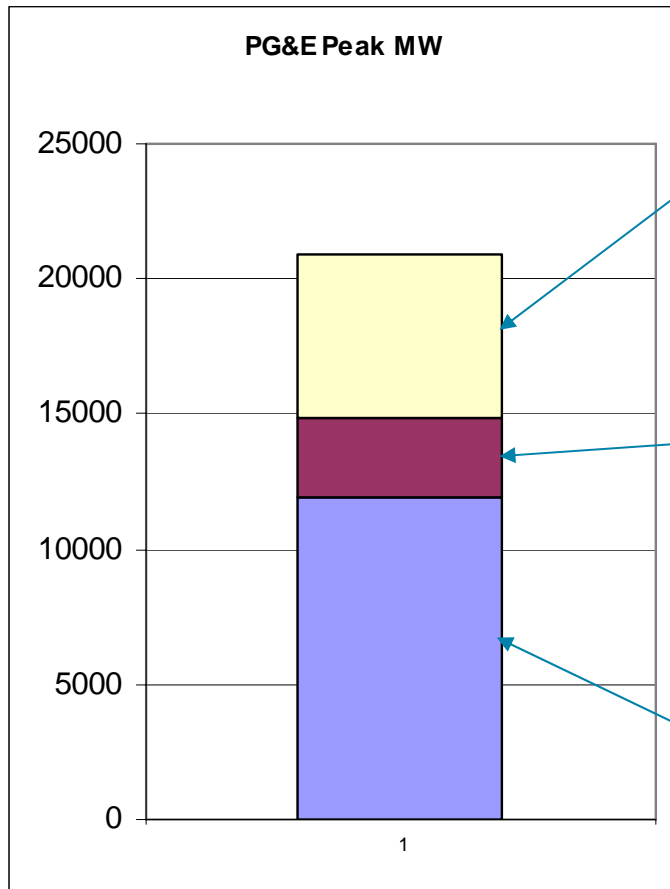
In addition, during May through October summer months

- An additional surcharge during peak hours on between 9 and 15 days
- Lower mid-day electric rates





Demand Response Opportunities: Current and Future



Large Commercial and Industrial (>200 kW)

- Air Conditioning
- Lighting
- Refrigeration
- Process

Medium Commercial and Industrial (20 kW-200kW)

- Air Conditioning
- Lighting
- Refrigeration
- Process

Residential and Small Commercial (<20 kW)

- Air Conditioning
- Plug-in EV



Expanding Customer Technologies



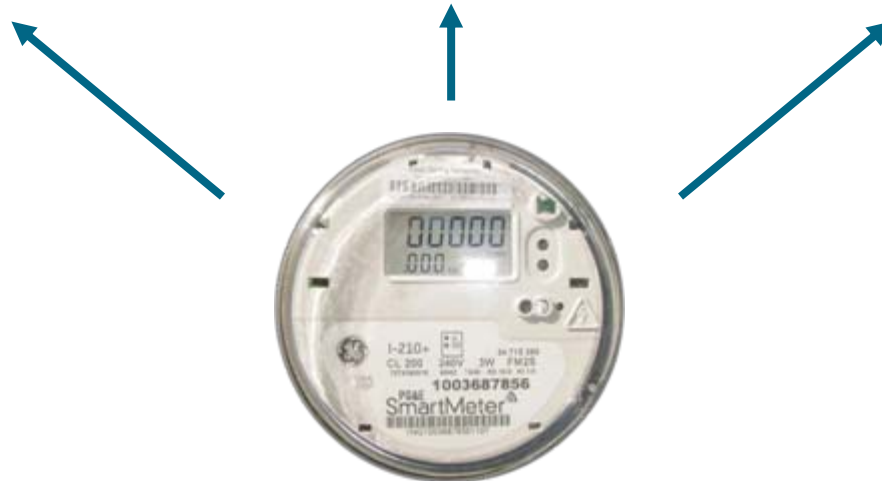
Automated in-premise energy management



On-site generation and storage



Smart charging for electric vehicles



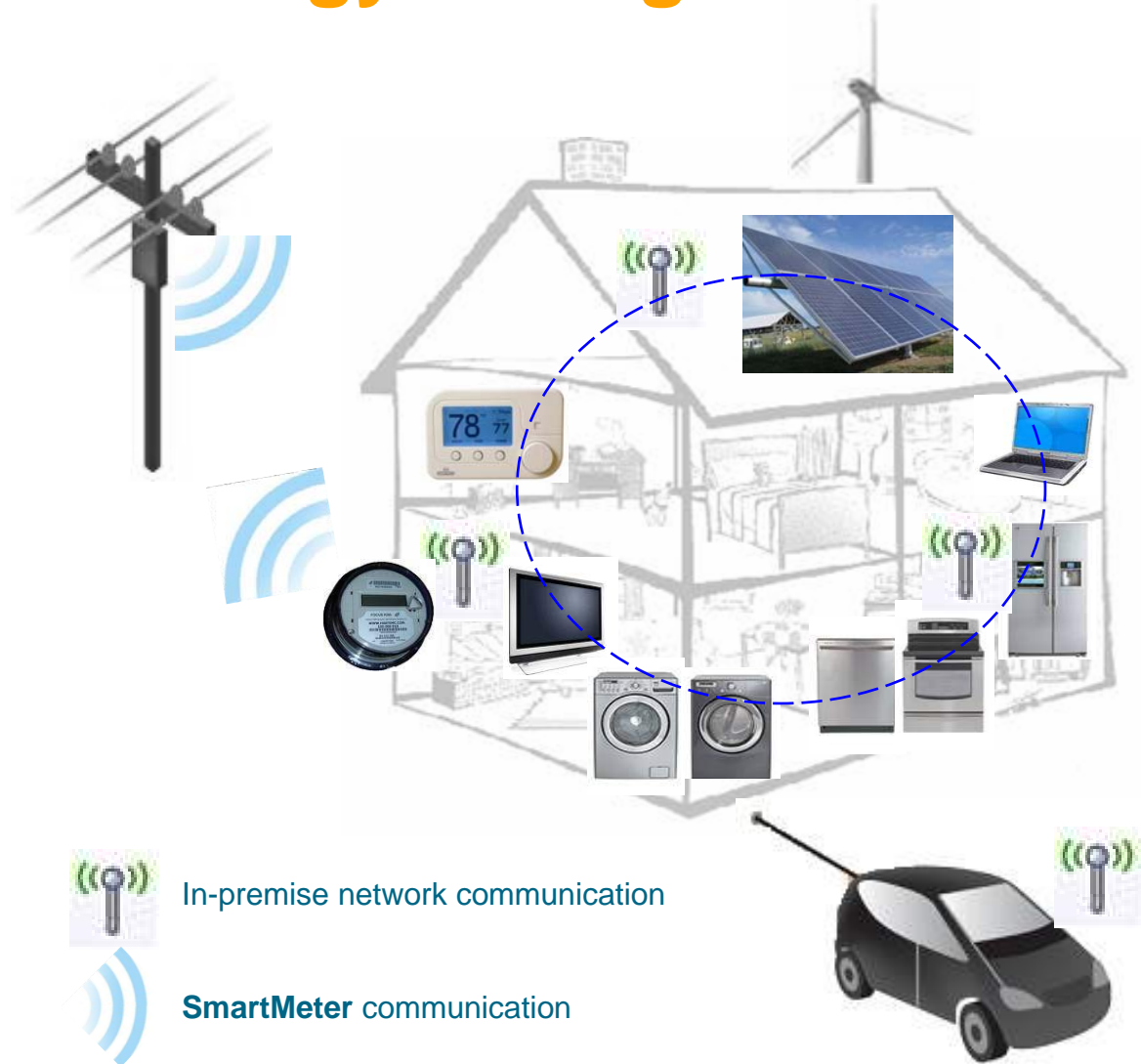


In-Premise Networks Enhance Customer Energy Management

SmartMeter electric meter will serve as gateway to in-premise networks

Standards-based solutions to drive down costs, increase availability

Significant opportunities for demand response and energy conservation



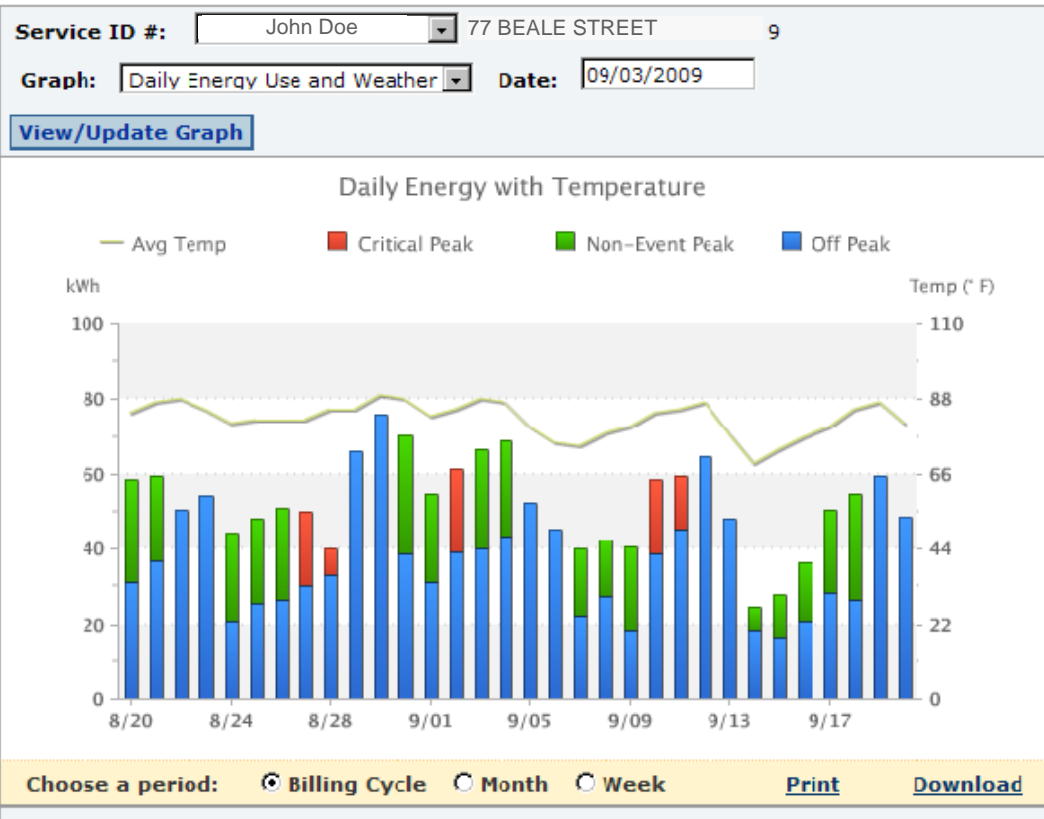


Customers Can View Their Energy Use

SmartMeter™ Usage

Please note that SmartMeter™ usage for today will be available tomorrow between 3-10 pm.

Please be aware that the energy usage data presented here may differ slightly from the energy usage data reflected on your monthly bill. Be assured that prior to your monthly bill date, your energy usage data is validated to ensure you receive an accurate bill.



Secure customer access through PGE.com

Energy use by hour or day

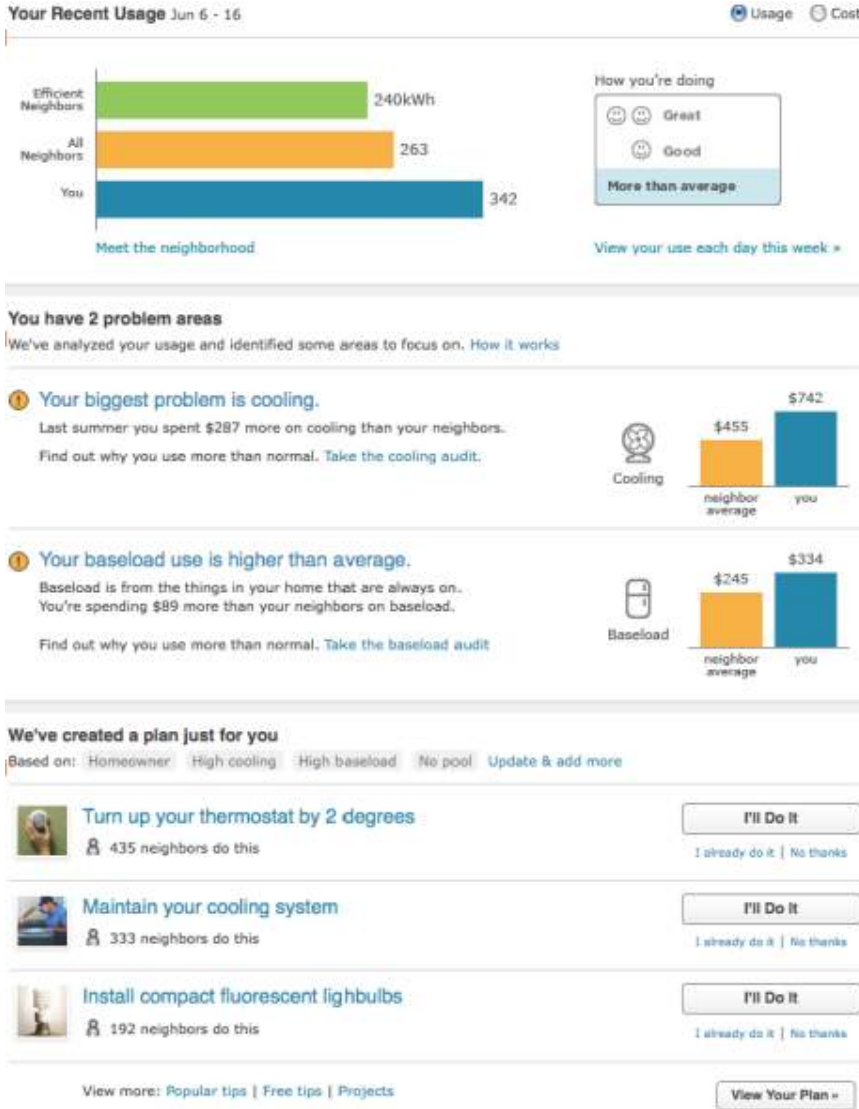
View by billing cycle, month, or week

For SmartRate customers, colors designate critical peak, peak, and off-peak

Temperature overlay



Future: Personalized Energy Advice



Comparative Norms

- Help customers understand their usage in the context of a bigger picture
- “What does one kWh mean?”

Deep Dive into Usage

- Interval usage patterns lead to insights on customer behavior
- Educate customers on how they use energy daily
- Incent customers to change their behavior and proactively manage their energy usage

Relevant, actionable tips

- Insights generated from interval usage can lead to personalized and actionable tips for the customer



A Smart Grid

Overlay with intelligence and automation

Sense



Communicate



Compute



Control



**Power
Plants**



**Transmission
Networks**



Substations



**Distribution
Networks**



Consumers



At PG&E, We Are Committed To Sustainability

