Energy Efficiency as a Resource

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Energy Efficiency as a Resource

- A kilowatt-hour saved from energy efficiency does just as much work as a kilowatt-hour from a power plant

- But a kilowatt-hour from energy efficiency is preferable:
  - Does not produce any greenhouse gases
  - Does not incur transmission, distribution or transformation losses
  - Does not require the permitting or construction of a power plant or transmission lines
  - It is quick to “construct” and begins to “produce” power almost immediately
PG&E’s Energy Efficiency Investments

• Over past 30 years, our customer energy efficiency programs have:
  
  – Achieved life-cycle savings of approximately 118 million MWh of electricity and 10.6 billion therms of natural gas
  – Saved enough electricity to power over 18 million homes for one year
  – Avoided the need to build approximately 24 power plants
  – Saved PG&E’s customer’s approximately $9.9 billion
  – Prevented more than 125 million tons of carbon dioxide emissions from being emitted into the atmosphere

• Energy efficiency played a critical role in helping California manage the electricity crisis:
  
  – Ramped up efforts and programs and reduced demand
  – On a lifecycle basis, PG&E’s energy efficiency cost, on average, 1.6 cents per kWh saved in 2001
Committed to Energy Efficiency
California Energy Action Plan

- Adopted by the CPUC, Energy Commission and Power Authority in Spring 2003
- Establishes a “loading order” of energy resources to guide procurement decisions made by utilities
- Directs utilities to place cost effective energy efficiency first in the loading order of resources used to meet their customers’ energy service needs
- Expects energy efficiency to capture approximately 6 of the 11GWs in demand growth over next decade
- California is investing more than $7 billion in energy efficiency and alternative energy over the next 10 years
• Support upgrades in California codes and standards by showing enhancements:
  – Technical feasibility
  – Market readiness
  – Cost effectiveness
• Supported 2001 & 2005 code changes through studies that led to:
  – 18 new Title 20 appliance efficiency standards
  – 19 new Title 24 building efficiency standards
• Collaborate with stakeholders across the US:
  – NRDC, ACEEE, ASHRAE, NFRC, others
  – Appliance standards adopted by 10 other states through efforts led by the Appliance Standards Awareness Project (ASAP)
# Energy Efficiency Lifecycle Costs per Measure

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Why PG&E Does Energy Efficiency

- It is cost effective
- Provides customers benefits
- Protects the environment
- Provides a “low-risk” resource option
Shareholder Incentive Mechanism

Elements common to NRDC and PG&E proposals

- Performance requirements: Earnings are based on achieving CPUC savings goals
- Shareholders receive a percentage of net savings
- Earnings from energy efficiency have to materially affect earnings to be a real incentive
2006 – 08 Savings Goals by Delivery Channel: Gigawatt-hours (GWH)

Half of PG&E’s load growth is met by energy efficiency
2006 – 08 Savings Goals by Delivery Channel: Million Therms

- Target Market, 16.86
- Mass Market, 7.51
- Third Party Programs, 15.35
- Local Government Partnerships, 5.47
- Low Income, 2.3
Next Generation Energy Efficiency Technologies

• PG&E operates an Emerging Technologies program to accelerate commercialization of new energy-efficient technologies

• The program identifies promising technologies for PG&E to promote to our customers
  – Screen and assess newly-commercialized technologies
  – Connect program outcomes with PG&E development of new energy efficiency solutions for customers
  – Identify channels for energy efficiency marketing programs to deploy our solutions to customers

• With a $3.7 million annual budget, PG&E’s Emerging Technologies program is targeting more than 60 technologies
  – Technology solutions recently deployed include:
    • Dimming light fixtures for commercial building stairwells that go to full brightness when someone enters the stairwell
    • Energy saving cooling systems for computer data centers
    • High-performance lighting for classrooms
Sector Specific Examples
Agricultural & Food Processing
Dairies

- PG&E has worked with more than 30 new and expanding dairies to help them build energy-efficient dairies and improve operational cost-effectiveness
- PG&E offers design assistance and financial incentives up to $75,000
- Energy efficient measures include premium-efficiency motors, fans, refrigeration systems, compressed air systems and lighting
Agricultural & Food Processing
Refrigerated Warehouse

- Design assistance and incentives for energy-efficient measures included evaporative and air condensers, computer controls and high-efficiency lighting and controls
- The combined measure can reduce energy use by 25 – 35% annually

Example
- Stamoules Produce planned a 60,000 square foot expansion of their cold storage facility
- Projected annual energy savings: 937,535 kWh
- Annual utility cost savings: $93,000
- Stamoules Produce received a $75,003 incentive from PG&E