
Climate Protection @ PG&E



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13th Annual Natural Gas STAR Implementation Workshop
Houston Texas

Presentation Agenda

- **PG&E Policies on Climate Change**
- **Methane Emissions & Reductions**
- **Climate Neutral Energy Program**
- **Experience with Decoupling**
- **Conclusions and Discussion**

Recent Quotes by Peter Darbee, CEO

- New York Times: "The evidence in the scientific community is lopsided -- it's not even close. Climate change is a problem."
- Washington Post: "We're supporting [AB 32] because we are convinced that climate change is an urgent problem and action is needed now."
- Wall Street Journal: "From a business perspective, the sooner we begin working on this problem, the less dramatic will be the impact on business."
- CNBC: "Global warming is occurring, mankind is responsible, and the need to take action is now."

PG&E Climate Change Commitment

- “PG&E is committed to leading by example when it comes to climate change. That means more than just minimizing the Greenhouse Gas emissions from our operations. It also means maximizing the opportunity we have to lead on efforts to establish responsible policies and programs to address Global Climate Change.”
 - from PG&E’s Climate Change Policy Framework, 2006 (see handout)

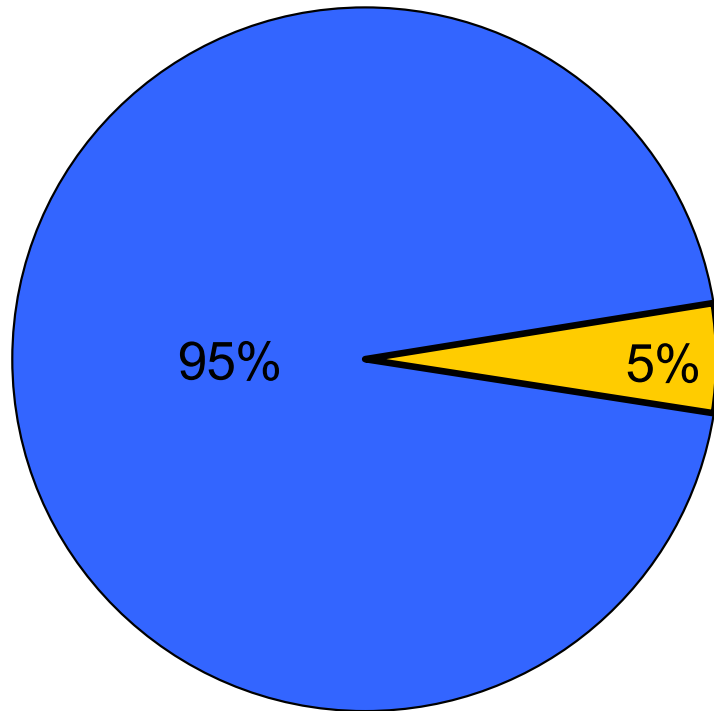
Engaging to Find Responsible Solutions

- **Understanding Emissions Sources and Promoting Transparency**
 - California Climate Action Registry
 - Ceres
 - Climate Disclosure Project
- **Sharing “Best Practice”**
 - U.S. EPA SF6 Reduction Partnership
 - U.S. EPA Natural Gas STAR
 - ENERGY STAR
 - U.S.-China Energy Efficiency Alliance
- **Advancing Public Policy**
 - Clean Energy Group
 - Governor’s Climate Action Team
 - Pew Business Environmental Leadership Council



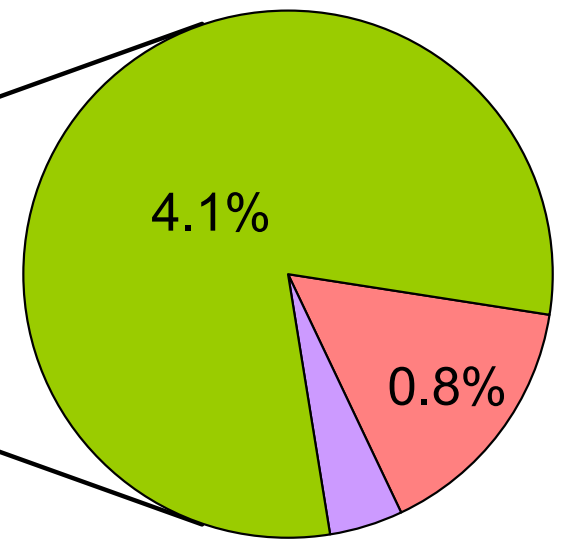
Emissions Inventory Using INGAA/Registry Factor

44 million tons CO₂e



Emissions from Delivery and Use

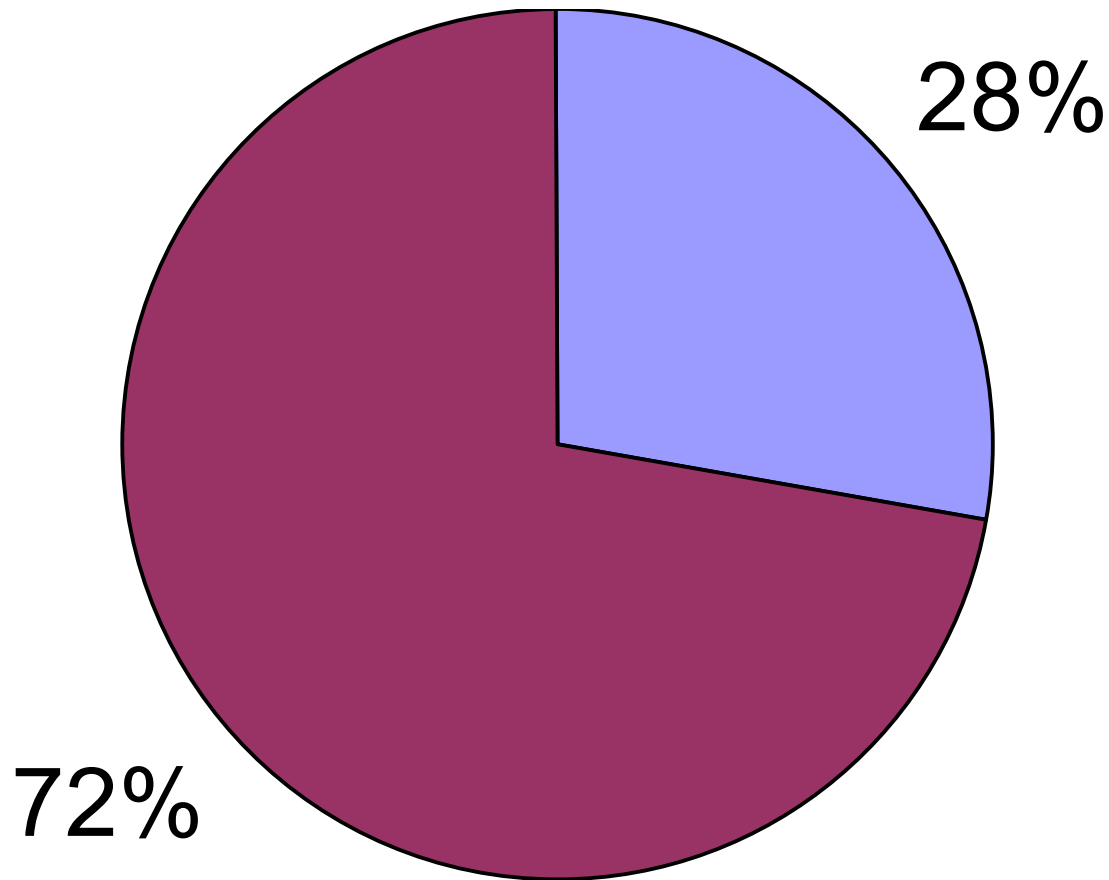
2 million tons CO₂e



Emissions from Delivery of Natural Gas

All Quantities are in CO₂ Equivalents

Estimated Methane Emissions Using California Registry Emission Factors



■ Transmission ■ Distribution

A Sampling of PG&E's Climate Change Programs

- Maintain a Greenhouse Gas emissions profile for our utility's delivery mix that is among the lowest in the nation and certify our emissions data
- Develop and invest in robust customer energy efficiency programs, increasingly gas efficiency
- Identify and pursue renewable energy, clean distributed technologies and alternative energy options
- Employ “cross compression” techniques to reduce methane releases in gas pipeline construction projects
- Partnered with US EPA to reduce the emission of SF₆ by over 70% since 1998
- Proposed a first in the nation climate protection program (tariff)

Proposed Climate Protection Program



CO₂ emissions for a typical residential customer are 68% from natural gas and 32% from electricity

“Climate Neutral” Energy

- Allows customers to make their electricity and natural gas use entirely “climate neutral”
- Customer participation is voluntary
- Available to residential, commercial, and industrial customers
- Premiums invested in California-based greenhouse gas emission reduction projects
- Initial investments will be in forest sequestration projects
- Approval in late 2006, Launch by Earth Day 2007

Program Benefits

- Provides all customers with an opportunity to take action to address climate change
- Helps customers meet their GHG reduction goals (e.g., multinationals and municipalities)
- Creates and enhances California's forests and wildlife habitats
- Financial incentive for fuel switching
- Improves California's air quality
- Helps farmers turn methane emissions into a cash crop

Pipeline Quality Biogas: Interconnection

- PG&E Proposal
 - Take pipeline quality gas into its gas transmission pipelines
 - Provide information on closest viable transmission pipeline
 - Provide standard contract terms and conditions
 - Engineering of meter facility and pipeline tap
- Supplier Responsibility
 - Digesters
 - Scrubbing equipment
 - Pipeline to deliver to PG&E
 - Compression
 - Meter & meter lot
 - Reimburse PG&E for meter installation and pipeline tap

Emerging Opportunities

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PG&E's Experience with Decoupling

- ❑ Decoupling of revenues/sales for non-fuel costs began in 1978 for natural gas; 1982 for electric:

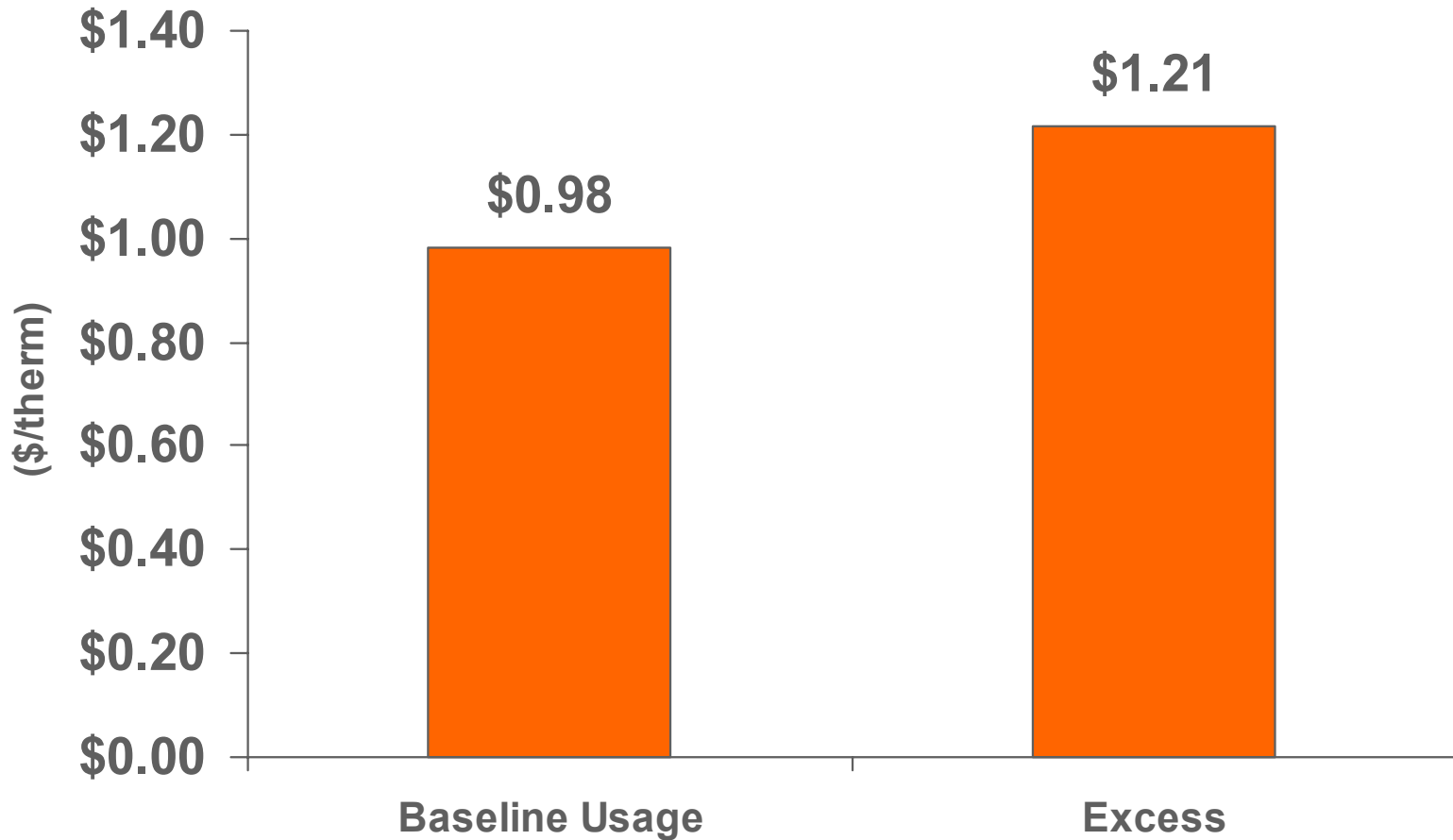
“...the adoption of an ERAM [Electric Revenue Adjustment Mechanism] ... will eliminate any disincentives PG&E may have to promote vigorous conservation measures and also be fair to ratepayers in assuring that PG&E receives no more or no less than the level of revenues intended to be earned.”

California Public Utilities Commission
Decision 93887, **12/30/1981**

- ❑ Key goal: encourage conservation
- ❑ Broad stakeholder support at time: PUC staff, Energy Commission, environmentalists, PG&E, other utilities
- ❑ All but about 4.2% of gas revenues are decoupled

Rate Structures Also Require Decoupling

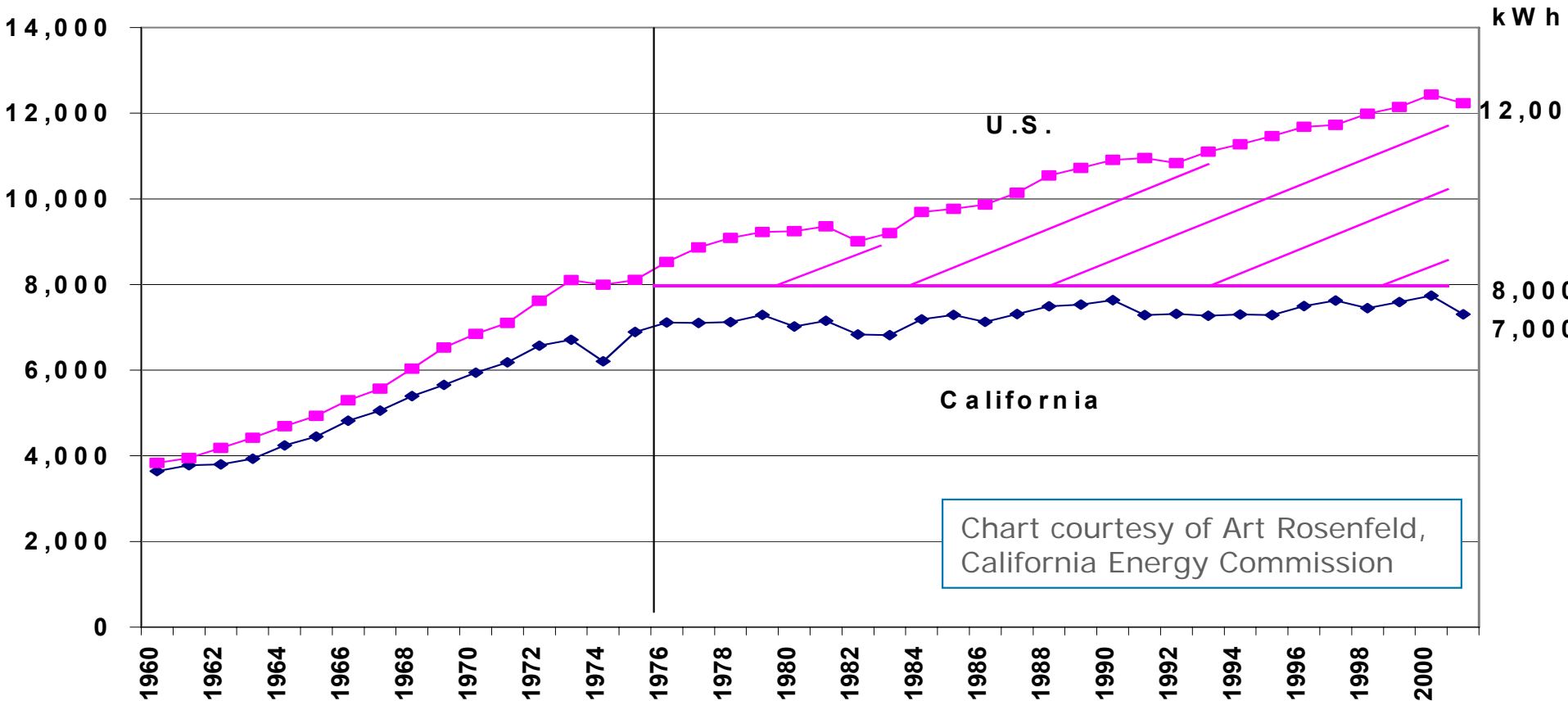
Rates By Tiers



Current Non-Care Rates Effective July 7, 2006 (Bundled – includes transportation and procurement). Does not include Public Purpose Program Surcharge

California's Real-World Success in Decoupling

Total Electricity Use, per capita, 1960 - 2001



Keys to Success:

- Very large scale, sustained energy efficiency effort
- Highly effective codes and standards programs
- Escalating IOU, state effort on solar

Decoupling and Growth

- ❑ California population forecasted to rise from 37.2 million to 42 million (13%) from 2006 to 2016
- ❑ Electric usage forecast to rise from 278,784 GWH to 314,471 GWH (13%) over same period
 - Larger homes in hot valley areas
 - More, higher-use electric devices/household
- ❑ State's peak demand rose 4,000 MW to 50,000 MW in recent heat spell – equal to eight 500-MW plants
- ❑ Efficiency remains lowest cost resource on electric side
- ❑ Challenge: optimize regulatory framework for least-cost resource acquisition

Efficiency Programs' Revenue Impact

- ❑ To address last winter's huge escalation in natural gas costs, PG&E deployed several winter initiatives to encourage conservation
- ❑ Reduced gas demand from conservation resulted in \$47 million decrease in transportation revenues
- ❑ Without decoupling, program would have had negative impact on PG&E's financials – and very likely would not have been proposed

Keys to Decoupling's Success in California

- ❑ Revenue/sales decoupling mechanisms paired with annual attrition rate adjustment mechanism
 - Attrition adjusts annually for customer growth, inflation, replacement of aging infrastructure facilities
- ❑ Sustained, deep commitment by regulators, state lawmakers, utilities, other stakeholders to energy efficiency, conservation, renewables, demand-response
 - California Energy Action Plan, California Solar Initiative (\$2.5 billion 2007-2016, 2,600 MW), Governor's Green Building Initiative, procurement funds for energy efficiency, etc.
- ❑ Growing interest and commitment by public to improve environment and mitigate climate change
- ❑ General agreement utilities are a key player in delivering energy efficiency programs/savings to customers

Natural Gas Decoupling - Current PG&E View

❑ Service for core customers

- Distribution, storage, local transmission, and commodity service all decoupled
- Intrastate backbone transmission partially decoupled (76% of fixed capacity cost decoupled; 24% at risk)

❑ Service for non-core service:

- Distribution partially decoupled (75% decoupled, 25% at risk)
- Storage, local transmission, intrastate transmission all at risk; no commodity service provided

❑ Commission currently considering move to increase non-core service decoupling

Questions and Discussion

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Supplemental Materials - State Legislation

Recent Legislative Actions (AB 32)

- AB 32, California Global Warming Solutions Act of 2006
 - Requires the Air Resources Board to implement the statewide emissions limit by adopting reductions in GHG emissions by certain dates for sources and categories of sources subject to the Act, including IOUs, ESPs and local publicly owned utilities.
 - The state wide emissions limit is to achieve by 2020 the GHG emissions equivalent to the 1990 level.
 - A market- based mechanism to accomplish these reductions may be adopted.
 - Safety valve – if threat of significant economic harm.
 - Coordination between CPUC and CARB is encouraged.

Reactions to Global Warming Solutions Act

- *Wall Street Journal*, (31 August 2006) Editorial page “***the ultimate in political symbolism.***” “***Yet even symbolism can have consequences, and California’s economy will be lucky to escape this unscathed.***”
- “... ***will have a severely negative effect on the affordability and reliability of California’s energy supply, jeopardizing California’s economy and our global competitiveness,***” said Allan Zaremborg, president and chief executive of the California Chamber of Commerce.
- “***We don’t think it looks like a very good deal for business and industry in California,***” said Jack Stewart, president of the California Manufacturers and Technology Association.

Recent Legislative Actions (SB 1368)

- SB 1368 Emissions Performance Standard (EPS) for new long-term financial commitments of all California LSEs with baseload facilities
 - The CPUC will apply the EPS to its jurisdictional entities and the CEC will apply the EPS to the Publicly Owned Utilities.
 - EPS must be no higher than the rate of emissions for a combined-cycle (CC) natural gas baseload facility.
 - EPS applies to long-term financial commitments of 5 years or more (new or renewed contracts).
 - Designed to prevent new investments in conventional coal.