National Action Plan for Energy Efficiency

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Sector Collaborative Accomplishments and Next Steps

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Leadership Group Meeting
January 7, 2008

Overview of Presentation

- Sector Collaborative Background
- Key Findings to Date
- Accomplishments
- Sector Commitments
- Next Steps
- Proposed Project: Development of Utility Data Best Practices
- Example: PG&E's Automated Benchmarking Program
- Questions / Comments

Sector Collaborative -- Background

- Key Year Two activity, designed to expand the organizations participating in the Action Plan
- Brings together utilities and end-use sectors around the following objectives:
  - Exploring the barriers to cost-effective energy efficiency;
  - Documenting how energy savings are valuable investments for participating sectors;
  - Identifying tools needed for implementation and evaluation of cost-effective energy efficiency measures;
  - Providing peer exchange opportunities to share approaches to effective energy efficiency programs; and
  - Identifying and pursuing new commitments and partnerships to increase investment in energy efficiency.
- Supported by EPA, DOE, EEI, and AGA

The Design Team Guides Development of Sector Collaborative

- Alliance to Save Energy
- American Council for an Energy-Efficient Economy
- American Gas Association
- City of Austin, Texas
- Cushman & Wakefield
- Duke Energy
- Edison Electric Institute
- Food Lion, LLC
- Great Plains Energy
- Hilton
- Marriott Corporation
- National Association of Regulatory Utility Commissioners
- National Conference of Mayors
- New Jersey Natural Gas
- Pacific Gas and Electric
- Seattle City Light
- Staples, Inc.
- Target Corporation
- Transwestern
- USAA Realty
- Wal-Mart Stores
- Whole Foods Market

Initial Sectors Participating

- Commercial Real Estate
- Hospitality
- Retail
- Grocery
- Municipal

Key Findings to Date

- Opportunities for substantial cost-effective energy savings in all sectors
- Whole building energy use critical to benchmarking, identifying efficiency opportunities, and measuring progress
- Lack of readily available, consistent utility data hinders benchmarking and other energy management efforts
- Focus on O&M a smart, cost-effective first step
- Need for sector forums to share best practices
- Guidelines for procurement and bulk purchasing of energy-efficient products and services would help public and private organizations

Accomplishments: First Sector Collaborative Workshop

- June 27-28, 2007 in Washington, DC
- Over 100 participants from utilities and energy-using organizations
- Presentations on technology, financing, and benchmarking
- Break-out groups:
  - Commercial Real Estate/Hospitality
  - Retail/Grocery
  - Municipality
- Overwhelmingly positive evaluations

Accomplishments: Identified Key Barriers to Energy Efficiency

Barriers Follow 4 Main Themes:

- Lack of corporate commitment
- Lack of information
- Lack of comprehensive measurement tools and methodologies
- Financial barriers

Accomplishments: Documented Substantial Cost-Effective Energy Savings

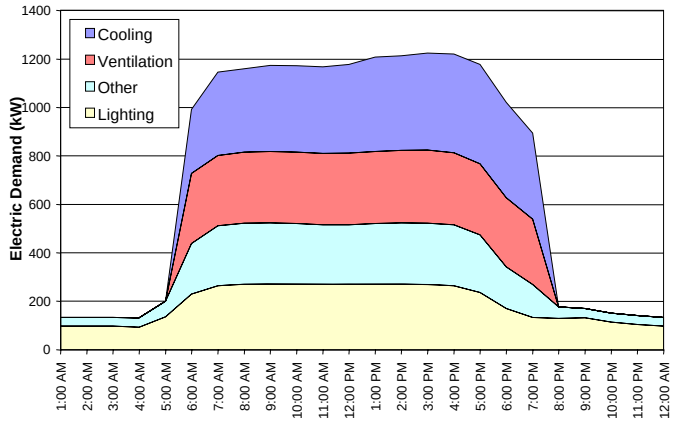
- Created energy use and savings profiles for buildings in each sector
  - Office Building
  - Hotel
  - Supermarket
  - Retail Store
- Designed to help building owners and utilities identify the most promising energy efficiency measures in each sector
- Energy efficiency measures included:
  - Operations and maintenance
  - Lighting
  - HVAC measures
- Assessed impact of measures individually, in total, and sequentially

Documented Substantial Cost-Effective Energy Savings

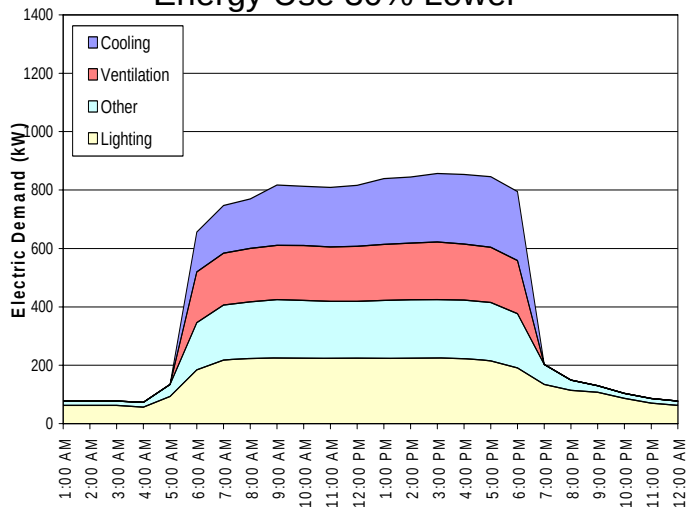
Results

- With all efficiency measures:
  - Cost-effective energy savings: 15-30%
  - Peak demand savings: 21%-42%
  - EPA energy performance ratings increase 16-46 points
- O&M measures alone
  - Cost-effective energy savings: 9-21%
  - Peak demand savings: 3-11%.
- Proper sequencing lowers cooling needs 3-20%, reducing HVAC equipment and install costs while increasing savings

Office Building -- Baseline



Office Building -- With All Measures
Energy Use 30% Lower



Accomplishments: Sector-Based Commitments

- Sector Commitments include one or more of the following action steps:
  - Reduce energy consumption substantially over the coming years (goals range from 10 to 30 percent).
  - Conduct energy benchmarking for all properties above 5000 sq. ft.
  - Implement all cost-effective strategies to improve energy efficiency
  - Create and/or increase energy efficiency education and awareness within and outside each organization
  - Pursue bulk purchasing of energy efficient products and services
  - Support expanded efficiency program offerings across states and utilities
  - Support development of standardized electronic utility billing data access by large customers for benchmarking
  - Explore energy efficiency programs offered by federal, state, and local agencies and sector-based associations.

Commitments from Diverse Organizations Representing Billions of Square Feet

- Municipal
  - Arlington County, Virginia
  - City of Aurora, Colorado
  - City of Denver, Colorado
  - City of Indianapolis, Indiana
  - King County, Washington
  - Louisville Metro Government, Kentucky
  - City of Medford, Massachusetts
  - San Miguel County, Colorado
  - City of Somerville, Massachusetts
  - Town of Mountain Village, Colorado
- Building Owners and Managers Association (BOMA) International
- Grocery/Retail
  - Costco Wholesale
  - Food Lion, LLC
  - Advantage IQ
  - Stop and Shop/Giant Foods
  - Whole Foods Market
- National Association of State Energy Officials (NASEO)

Next Steps

- Leadership Group review of documents submitted today:
  - Report – *Sector Collaborative Accomplishments and Next Steps*
  - Project Proposal – *Establishing Utility Best Practices for Providing Commercial Customers with Standardized Utility Information on Building Energy Use and Cost*
- Engage additional organizations within the initial five sectors
- Design Team and supporting organizations to consider and make recommendations to Leadership Group regarding:
  - Creating working groups, developing materials, and undertaking other actions to help the existing organizations achieve success;
  - Exploring new sectors that could benefit from the Sector Collaborative; and
  - Continuing dialogue between end-users and utilities on programs to advance cost-effective energy efficiency.

Proposed Project to Address Lack of Consistent, Standardized Utility Data

- Multi-site owners/managers for wide range of industries cite as key challenge
- For example:
  - Marriot, Whole Foods, Costco have difficulty aggregating and comparing utility data from multiple service territories
  - Municipal school districts have limited resources to manually collect and enter bill data

Project Supports Action Plan Goals

- Addressing data needs is a step toward achieving Goal Eight of Action Plan Vision for 2025: Establishing State of the Art Billing Systems
- Access to consistent utility data can facilitate widespread and on-going energy benchmarking
- Benchmarking helps identify cost-effective energy efficiency improvements for both customers and utilities.

Value of Best Practices Guidance

- Reinforce and expand upon related standards
  - North American Energy Standards Board offers model business practices for electronic billing data[1].
- Assist industry in responding to emerging mandates
  - State of California legislation AB 1103 requires utilities to provide specific data for commercial building benchmarking using US EPA system
  - Other states considering similar approach

1. NAESB, Joint Retail Electric and Retail Gas Quadrants Business Practices Subcommittees, "Recommendation for R05016 Customer Billing and Payment Notification via Uniform Electronic Transactions," January 31, 2007.

Recommend Two Tiers of Data/Practices

Tier 1: Minimum required to baseline consumption, support basic energy management activities and enable benchmarking

Tier 1: Data

- Monthly meter readings for at least previous 12 months, with multiple years preferred
- Unique meter identifiers
- Meter reading start and end dates
- Fuel type (electric or gas)
- Unit of measure (kWh, Mcf, etc.)
- Billing demand (Kw)
- Cost: total monthly charges
- Customer / facility identifier
- Utility identifier

Tier 1: Practices

- Electronic access to data in a consistent, national, industry standard format
- Customers to receive the data, even if they do not pay bills electronically

Recommend Two Tiers of Data/Practices

Tier 2: For those utilities with capacity to expand on Tier 1 by offering more data and automated access

Tier 2 Data:

- Wider scope of energy and business information
- Consider interval demand data and load profiles

Tier 2 Practices:

- Additional Practices to increase accessibility, for example:
  - Provide automated electronic access to consumption data for customer's data collection system
  - Develop single data transmissions that consolidate data across multiple accounts and facilities for a given customer

Proposed Approach for Developing Best Practice Guidance

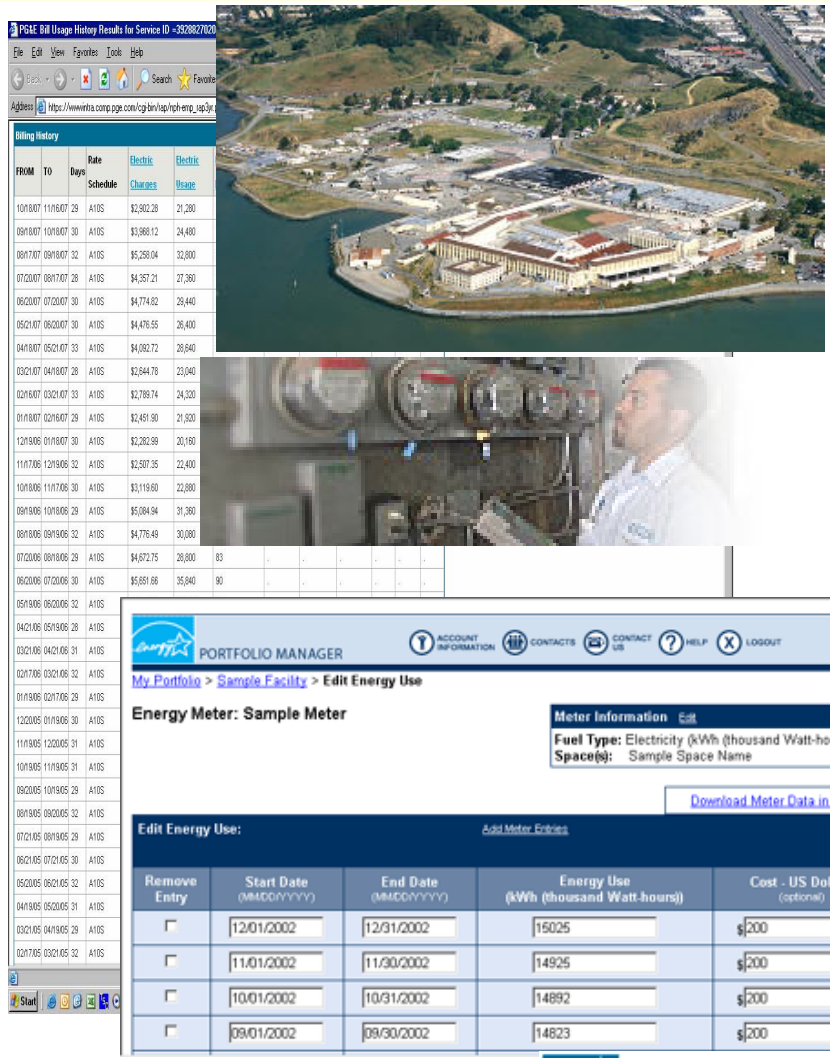
- **January:**
  - Form Advisory Group of Leadership Group members and other key stakeholders
- **February – April**:
  - Scope guidance with Advisory Group
  - Draft, review and revise guidance consulting with Advisory Group
- **May:**
  - Present proposed best practice guidance document to Leadership Group for review
- **June:**
  - Produce final guidance
- **Post-June:**
  - Support adoption of best practice guidance by key stakeholder organizations, such as National Association of Regulatory Utility Commissions (NARUC) and National Association of State Energy Officials (NASEO)

Automated Benchmarking Program using ENERGY STAR™ Portfolio Manager

PG&E Pacific Gas and Electric Company™

Automated Benchmarking Program (ABP)

- PG&E developed ABP for California's Green Building Initiative (GBI); can be adopted by others.
- GBI: mandates 20% energy reduction for state facilities by 2015 (using 2004 as a base year)
- ENERGY STAR *Portfolio Manager* needs 12 mos. of utility energy usage data to determine *building performance score* (0-100).
- Issues include system requirement to *manually* enter *each meter's monthly data* to get a score. (Significant barrier for large "fleet" owners)
- The ABP solution automatically adds new energy usage data for an updated score every month.



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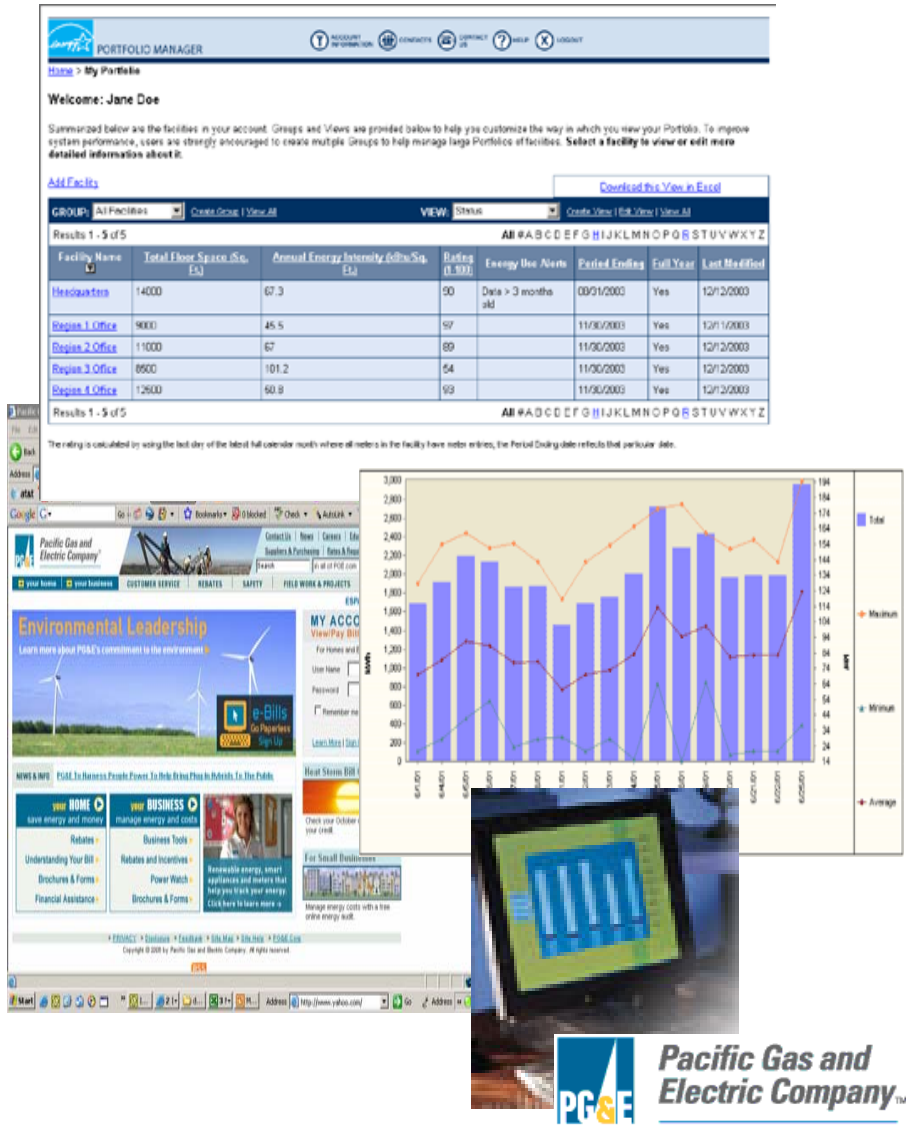
Automated Benchmarking Program

- PG&E took opportunity to use *Portfolio Manager* to develop prospects and engage customers by tracking energy efficiency trends.
- Our Information Protection team reviewed and accepted EPA's database security setup and procedures.
- Our Information Technology team worked with EPA's team to develop a new XML solution to upload each meter's new data every month.
- PG&E is providing ABP to >1000 buildings thus far, including many State of CA buildings, those of a major bank and of property management firms.



Automated Benchmarking Program

Overview of ABP Process (Customer View)

- Utility Customer registers on *Portfolio Manager* Web site and creates “building account (s)”.
- Customer enters basic building data and participating utility’s unique meter identifier on Web site.
- Customer selects participating utility from drop down list to initiate ABP process.
- Customer signs participating utility’s “Permission to Release Utility Data” agreement.
- Utility receives customer and EPA requests, validates request, initiates automatic data feed to *Portfolio Manager* and notifies customer of service initiation.
- Utility and customer can view scores immediately

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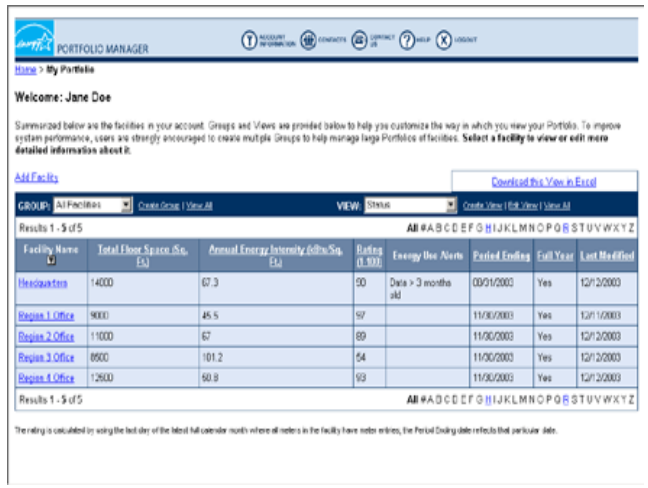
Automated Benchmarking Program

Overview of ABP Process (Utility View)

- Utility decides to participate (a decision to transmit confidential customer data via Internet to EPA database).
- Utility contacts EPA to arrange set up of automated application and obtain sample XML code.
- Utility develops, tests and launches software application with EPA over the Internet. (Straightforward but non-trivial.)
- Utility sets up in-house process to manage EUO requests and maintain application.



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Screenshot, *Portfolio Manager* for Selected State of CA buildings

AUTOMATED BENCHMARKING SYSTEM

ACCOUNT INFORMATION | CONTACT US | HELP | LOGOUT

Home > Energy Service Provider Portfolio

Welcome, Pacific Gas & Electric

Search Facility Name: SEARCH

ACCOUNT: Primary (PACIFICGASELECTRIC) **ORGANIZATION:** CA_LWD_EDD Copy to Test

Results **1** - **13** of 13

All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Facility Name (ID)	Organization (ID)	Total Floor Space (sq. ft.)	Actual Annual Energy Intensity (kBtu/Sq. Ft.)	Weather Normalized Energy Intensity (kBtu/Sq. Ft.)	Rating (1-100)	Period Ending	Last Modified
CHICO (1268038)	Employment Development Department (CA_LWD_EDD)	6,121	52.7	52.6	39	06/30/2007	09/28/2007
EUREKA (1268020)	Employment Development Department (CA_LWD_EDD)	15,135	78.8	78.9	55	06/30/2007	09/28/2007
FRESNO (1268044)	Employment Development Department (CA_LWD_EDD)	14,000	62.4	60.1	53	06/30/2007	09/28/2007
MERCED (1268030)	Employment Development Department (CA_LWD_EDD)	11,930	71.4	70.6	40	06/30/2007	09/28/2007
MODESTO (1268006)	Employment Development Department (CA_LWD_EDD)	21,695	74.1	65.7	48	06/30/2007	11/01/2007
OAKLAND (1268050)	Employment Development Department (CA_LWD_EDD)	25,688	115.2	114.1	24	06/30/2007	09/28/2007
OROVILLE (1268022)	Employment Development Department (CA_LWD_EDD)	5,121	82.7	82.8	14	06/30/2007	09/28/2007
REDDING (1268008)	Employment Development Department (CA_LWD_EDD)	11,133	55.7	47.6	74	06/30/2007	11/09/2007
SAN FRANCISCO (1268034)	Employment Development Department (CA_LWD_EDD)	59,761	45.7	46.8	86	06/30/2007	09/28/2007
SAN JOSE (1268036)	Employment Development Department (CA_LWD_EDD)	23,387	109.3	107.9	48	06/30/2007	09/28/2007
SANTA ROSA (1268056)	Employment Development Department (CA_LWD_EDD)	12,996	65.8	62.1	64	07/31/2007	09/28/2007
STOCKTON (1268014)	Employment Development Department (CA_LWD_EDD)	27,211	69.1	68.4	54	06/30/2007	09/28/2007
VALLEJO (1268016)	Employment Development Department (CA_LWD_EDD)	13,760	77.4	75.5	43	06/30/2007	09/28/2007

Results **1** - **13** of 13

All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Search Facility Name: SEARCH

Pacific Gas and Electric Company

How will the State of California use the system?

- Based on the “weather normalized” column, State can track progress toward the 20% savings mandate from the GBI
- Based on the “building performance score” column, State can
  - Identify and target buildings for improvement’ track improvement over time
  - Partner with utility to develop specific projects (using audit, retrocommissioning and incentive programs)
  - Recognize and reward high performers
- Many customers are highly motivated to get the “ENERGY STAR” designation for their building (s) – requires validated building performance score of 75 or better

Selected State of California Buildings

AUTOMATED BENCHMARKING SYSTEM

ACCOUNT INFORMATION | CONTACT US | HELP | LOGOUT

Home > Energy Service Provider Portfolio

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Results 1 - 13 of 13

All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

"Raw" data

Weather- normalized data

Building performance score

Search Facility Name: SEARCH

Pacific Gas and Electric Company

Questions for Leadership Group

- Any comments / questions on Sector Collaborative report?
  - Comments requested by January 31
- Any comments / questions on development of utility data best practices?
  - 2-Tier approach?
  - Suggestions for members of Advisory Group for best practices guidance project?
- Suggestions for other next steps for the Sector Collaborative?