PG&E’s More Than a Million Program

A fleetwide approach to energy savings

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Acknowledgements

- Peter Turnbull, PG&E; John Reed, Innovologie – ACEEE Summer Study 2008 Presentation
- Duane Larson, PG&E – Congressional Staff Briefing, October 2009
California: Putting Energy Efficiency First

“Energy efficiency is California’s highest-priority resource for meeting its energy needs in a clean, reliable, and low-cost manner.”

California Public Utilities Commission’s 2006 publication, *Energy Efficiency: California’s Highest-Priority Resource*

“Energy efficiency must be a top priority. Improving energy efficiency is one of the lowest cost options for managing growing energy demand, while eliminating greenhouse gas emissions.”

*Peter A. Darbee*, President and Chief Executive Officer, Pacific Gas and Electric Company, *Testimony before the Committee on Environment and Public Works, United States Senate, June 28, 2007*
Commercial Real Estate

- Large Commercial Segment within PG&E
  - Offices – Large and Small
    - Million plus sq.ft. to less than thousand sq.ft.
  - Banks and Financial Institutions
  - Data Centers
  - Call Centers
Traditional Model for Energy Efficiency

- Energy Efficiency as part of Customer Service
  - Individual staff deals with individual property manager/owner/site engineer
  - Multiple staff per customer based on location of property
  - Multiple customers per staff based on territory served by staff
  - Strategic account managers assigned to a few large customers
  - One site at a time
  - One project at a time
- A slow and costly approach
Aggressive energy efficiency goals = hunt for ‘large’ projects

- ‘large’ buildings
  - How many are there?
- ‘Small’ buildings = ‘small’ projects
- Although buildings collectively use a lot of energy,
  - Energy density is relatively low in most buildings
  - Difficult to find “big” projects
- Lessons learned from one project
  - Do they translate to other projects?
  - How are these lessons communicated?
  - How can we improve?
  - How can be accelerate growth of energy efficiency projects?
The $10 Billion Question

Must we sell energy efficiency building by building in the large commercial office sector or is there a better way?
Step 1: Understand The Market

- Starting point: DOE-sponsored research by John Reed on the structure of the commercial building industry (“Who Plays and Who Decides,” 2004)
  - A small number of players control huge amounts of commercial properties and are national/regional firms
  - Supporting organizations (real estate management firms, building operations firms) are likewise large national players which touch many buildings; tenants, too
  - Their interests do not necessarily coincide when it comes to energy efficiency
    - “split incentive” issues in leases, operating contract issues, differing business drivers
“Act with Five Players”

- Sole owners (own and manage)
- Owner/manager (REITs)
- Fee based property managers
- Large institutional investors
- Engineering service/construction firms
Common Theme:
“Fleets” not individual buildings

- A small handful of large national engineering service companies run the chiller and building control systems in 60% of buildings in San Francisco
- A fairly small group of fee-based property management firms are intimately engaged with leasing arrangements for a high percentage of buildings
- Large REITs control huge amounts of square footage from an ownership perspective
- Individual owner/operators routinely use fee-based property managers and engineering service companies to manage and operate their buildings
- There is substantial cross over of fleets
Significant Cross-over Among Players

Slide based on: “Act with Five Players”, Peter Turnbull and John Reed, ACEEE 2008 Summer Study
Solution: Use the Natural Structure of the Market to Create Leverage

- Work with the handful of players that control large chunks of this market
  - How can we leverage their reach to help our energy efficiency goals?
  - Opportunity knocks not with “just” customers,
    - but with REITs, property management firms, building operations firms and others

- Major players in each of these groups represent opportunities to reach large numbers of buildings
  - There are significant aggregation opportunities
Tool: “More Than a Million”

- Core idea: consolidate and streamline services for “players” who commit to deliver large amounts of energy savings by completing projects at many sites (“Million” = “Megawatt” in this sense)
  - Emphasize “fleets” of buildings, “fleet” performance, portfolios of projects—not individual buildings
  - Establish team by bringing all of the players together; clarify roles; develop plans and targets
  - Provide project management support to assist with the myriad details inherent in the process
  - Emphasize ENERGY STAR Portfolio Manager Benchmarking for targeting as well as ongoing management and monitoring of performance
MTM Structure

- Collaborative process through a Dedicated Technical Support Team (DTST)
  - Customer’s Representative
  - PG&E Service and Sales Staff
  - PG&E Customer Energy Efficiency Staff
  - External Consultant

- Performance-based approach
  - DTST establishes goals for energy efficiency
  - and identifies ways of meeting goals
MTM Structure

- DTST drives the process
  - Identify opportunities across the portfolio of buildings
    - Customer feedback
    - Energy Star benchmarking
    - Audits
  - Identify or as needed modify EE program offerings
    - Site aggregation
  - Assist customer with rebate/incentive applications
  - Coordinate to keep projects on schedule
  - Circle back and check on progress!
High-level Results

- Holistic approach to building fleets resonates well with customers and other market players
  - Opens doors at high levels of the customer’s command chain
  - Creates critical mass such that results are meaningful to these people higher up in the command chain
    - Not true of a building-by-building approach
- Opportunities to greatly increase energy savings with target customers
  - Much higher savings overall, although
  - Average project size is smaller, thus
  - MTM approach makes smaller projects feasible and attractive
Example: PG&E and a large financial institution

PG&E’s initial MTM offering dates to early 2007—note the huge increase in all categories post vs. pre MTM

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<tr>
<th>Program Year</th>
<th>Project Sites</th>
<th>MW</th>
<th>GWH</th>
<th>Incentive $ Paid</th>
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<td>2005-06</td>
<td>16</td>
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<td>&quot;Post&quot; MTM</td>
<td>2007-08</td>
<td>270</td>
<td>1.73</td>
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Average Building Size ~ 7000 sf
ENERGY STAR Benchmarking as a Tool

- We have stable ENERGY STAR scores for 65 facilities for this customer.
- The “fleet average” score has gone up from 57 to 60.
  - The “fleet average” energy savings per square foot is 3.7% since the baseline year.
  - ~1% per year
    - Majority of the savings has occurred in the last two years, indicating an accelerated savings trend.
- 60% of portfolio shows improvements in energy performance compared to base year.
  - Shows overall progress.
  - But ~40% show no progress or worse.
    - Shows potential for further improvements.
Change from Baseline: Adjusted Energy Use (%)

Negative Change = Energy Use Reduction Relative to Baseline = Good

(Grey columns represent properties without MTM-affiliated projects)
Change from Baseline: Energy Star Score

Negative Change = Energy Star Score Reduction Relative to Baseline = Bad

- Current Rating
- Baseline Rating
- Change of Rating from Baseline
And the work continues

- This is an ongoing process
  - Continuous improvement
  - Portfolio approach yielding results
  - More savings and successes to come

Thank you!