PG&E Automated Demand Response Program

Update and Participant Forum

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Presentation Overview

- Team Introductions
- Program Summary
- Accomplishments to Date
- Testimonials
- Participant’s Forum
Auto-DR Program – Core Team

Global Energy Partners, LLC
- Program administrator and prime contractor to recruitment and technical coordinator firms
- Primary research, technical advisor, training, quality assurance, system validation and evaluation

Akuacom
- Auto-DR system architecture and hardware design and production

EPRI
- Technical training, qualification, quality assurance and system validation

C&C Building Automation Company, Inc.
- Technical training and coordination of legacy participants
Auto-DR Program – Technical Coordinator Team

- ACCO Engineered Systems
- Applied Power Technologies
- C&C Building Automation
- Energy and Power Solutions
- L&H Airco
- RTP Controls
- Site Controls
Auto-DR 2007 Program Summary

- Program Goals:
  - Achieve peak demand reduction of 15 MW
  - Improve PG&E’s demand response program effectiveness through automation
  - Commercialize Auto-DR program delivery

- 2007 Auto-DR program open to customers on Critical Peak Pricing (CPP) and/or Demand Bidding (DBP) programs
Accomplishments to Date

- Program Procedures Development
- Training and Technical Transfer
  - Recruitment and technical coordination
  - Auto-DR system operations
  - Load assessment and settlement
- Over 16 MW recruited and 12.5 MW tested and ready for program deployment
- 5 CPP events held this summer; no DBP events
Auto-DR Participant Makeup

Program Participants by Industry Type

- Biotechnology: 47.6%
- Data Center: 30.2%
- High Tech: 6.3%
- Industrial Process: 4.8%
- Municipal Government: 3.2%
- Museum: 1.6%
- Retail: 1.6%
- School District: 1.6%
Auto-DR Participant Makeup (cont.)

KW Demand Reductions by Industry Type

- Biotechnology: 0.2%
- Data Center: 1.1%
- Industrial Process: 9.9%
- High Tech: 21.4%
- Municipal Government: 0.2%
- Museum: 3.1%
- Retail: 1.7%
- School District: 62.5%

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Auto-DR Participant Makeup (cont.)

kW Demand Reductions by DR Program Type

- Critical Peak Pricing: 12.4%
- Demand Bidding: 87.6%
Auto-DR Participant Makeup (cont.)

**kW Demand Reductions by Type of DR Measure**

- Temperature Adjustments: 13.7%
- Temperature Adjustments and Lighting Reductions: 23.8%
- Process System Adjustments: 62.5%
Results to Date – CPP Events

- 17 facilities participated in 5 events this year
- 1.1 MW of actual shed using the 3/10 baseline method for the 5 CPP held events this summer
- 1.4 MW using the 3/10 baseline with a morning adjustment (MA) to account for weather differences
- 1.2 MW using the temperature adjusted (OAT) baseline method
Results to Date – 6/13 CPP Event

6/13/2007

Whole Building Power (kW)

- CPP Baseline
- CPP MA Baseline
- OAT Baseline

OAT Baseline

CPP MA Baseline

CPP Baseline

12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Results to Date – 7/3 CPP Event

7/3/2007

Whole Building Power (kW)

CPP Baseline
CPP MA Baseline
OAT Baseline
Results to Date – 7/5 CPP Event

7/5/2007

Whole Building Power (kW)

CPP Baseline
CPP MA Baseline
OAT Baseline
Results to Date – 7/6 CPP Event

7/6/2007

Whole Building Power

QAT Baseline
CPP Baseline
CPP MA Baseline
Results to Date – 7/9 CPP Event

7/9/2007

12:00 AM 1:00 AM 2:00 AM 3:00 AM 4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM 5:00 PM 6:00 PM 7:00 PM 8:00 PM 9:00 PM 10:00 PM 11:00 PM

Whole Building Power

CPP Baseline
CPP MA Baseline

0 2000 4000 6000 8000 10000 12000
Participant’s Forum

- Challenges during installation stages
- DRAS communication issues
- Demand bidding flexibility
- Effects of load sheds – feedback from building occupants
Testimonial Video

Produced by Tech Closeup TV

www.techcloseup.com
Thank You!

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