

CEE General Session Energy Efficiency – Getting Connected

.....
Harlan Coomes
Principal Engineer
.....

January 24, 2012

Powering forward. Together.





Overview for Session

DOE Smart Grid Investment Grant funding (SGIG)

- \$127 million Grant, 41 sub projects, April 2013 implementation date
 - Primary Objectives
 - Accelerate the transformation of our electric transmission and distribution systems by promoting investments in smarter grid technologies, tools and techniques for immediate commercial use.
 - Add jobs, stimulate the economy
- Commercial Customers
 - Energy Management and Control Systems and AutoDR
- SMUD SmartSacramento Project
 - 6 Partners
 - Energy Management and Control Systems and AutoDR



SMUD Goals from Getting Connected

- Increase energy efficiency and demand response through improved building system control, information, and automation
- Improve interoperability and communication between equipment, systems, and infrastructure
- Develop and deploy Automated Demand Response (AutoDR) capability
- Create the ability for enhanced performance based program design, pricing options, and future service offerings
- Provide additional benefits for program participants and SMUD customers

Program Overview – Energy Management and Control Systems

- Savings opportunity categories based on measure implementation
 - Level 1 – 4%; Level 2 – 9%; Level 3 – 14%
 - Maximum incentive: 30% of project cost or \$100,000
- Categories based on generally-accepted industry standards for energy management control systems
- 50,000 ft² minimum building size
- Incentives for EMCS installation, AutoDR, and Energy Efficiency can all be combined on a project

Program Criteria - Energy Management and Control Systems

- Program is based on a prescriptive methodology
- Improvements in two of four functional categories are required: (1) Scheduling, (2) Economizer optimization, (3) Reset strategies, and (4) Variable flow optimization
- An Automated Demand Response (AutoDR) capability is required
- Three basic building types were considered to develop methodology:
 - Low rise / single level buildings with package HVAC units (single zone systems)
 - Multi level buildings with built – up (multi-zone) DX systems
 - Multi level buildings with (multi-zone) chilled water systems



Getting Connected - AutoDR

- **AutoDR Capable means:** Connected, Able to Communicate, Programmable, Configurable, and Controllable
- **AutoDR Enabled means:** Connected, Equipped, Programmed, Configured, Controlled, and Tested



AutoDR Program

Overall goals for 2011 - 2013

- Build infrastructure
- Educate both customers and SMUD
- Learn
- Engage



AutoDR Program Design Goals

- Integrate Demand Response, Energy Efficiency, and Energy Information
- Create a program platform that allows adapting and integrating new technology and approaches to demand response
- Deliver a program with participation and performance parameters that
 - Offer ease of compliance
 - Encourage maximum performance
 - Provide a manageable and cost-effective high quality settlement
 - Provide reliable and predictable load reduction
 - Provide valuable demand response resource products



AutoDR Program Details

Four program platforms available for the customer

1. Firm Load Reduction Program
 2. Minimum Dependable Load Reduction (MinDLR) Program
 3. Critical Peak Pricing Option
 4. Estimated Load Reduction Program (Voluntary Response)
- Economic or Emergency Dispatch
 - Incentives available for assessment and implementation
 - Capacity, energy payments, or price signals depending on program



The Connected Future.....

Consider New Ways to Look at the Role of the Utility Business

Envision the Utility as a

- Supplier
- Enabler
- Deliverer
- Connector

How would this vision change your business models?



Questions?

Contact Information

Harlan Coomes

Principal Engineer

hcoomes@smud.org