



**Update on February 16, 2006  
PCT Workshop  
(Programmable Communicating Thermostat)**

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## **PIER 2/16/06 Workshop**

- \* Third in a series of PIER workshops on system integration (SI) issues related to AMI (Advanced Metering Infrastructure) & PCT (Programmable Communicating Thermostats) interfaces (I/Fs)**
- \* Focus is on defining conceptual models to allow interoperability between devices through seamless information exchange**



# PIER's Roles

- ★ **R&D to support policy**
  - ◆ EAP, IEPR, WG 2, WG 3, etc.
  - ◆ Title 24
- ★ **R&D to inform policy**
  - ◆ Evaluate technology, costs, concepts
  - ◆ Create proof-of-concept test beds
  - ◆ Create cross-cutting dialogs



# **WHAT Do Policy Makers Want**

- ★ **One PCT SI I/F for all of CA (US)**
  - ◆ Retail purchased at Home Depot, etc.
  - ◆ Consumer owned, installed, maintained
- ★ **Common signaling throughout CA (US)**
- ★ **Works with any minimum AMI system**
  - ◆ Signals synched with AMI resolution
- ★ **Compatible with legacy technologies**
  - ◆ Preserve richness of thermostat options



# Industry Determines **HOW**

## ★ **A Straw Man Concept (R&D)**

- ◆ Common signaling (broadcast packets)
- ◆ Plug-in HVAC connection (plug & work)
- ◆ Expansion port (evolutionary features)
- ◆ Additional human information (override)

## ★ **Title 24 Standards**

- ◆ Industry works it out with CEC



# February 16, 2006 Agenda

- ★ **Welcoming remarks**
- ★ **Building and appliance standards process**
- ★ **Policy drivers**
- ★ **Review of November 29, 2005 workshop**
- ★ **Industry panels**
- ★ **Public discussion**



## Panel Members

### ★ **Thermostat Manufacturers**

- ◆ Dan O'Donnell, Honeywell
- ◆ Jeff Edgar, White Rodgers

### ★ **Investor owned utilities (IOUs)**

- ◆ Tim Vahlstrom, PG&E
- ◆ Carlos, Haiad, SCE
- ◆ Terry Mohn, SDG&E



# Other Industry Stakeholders

## ★ **Thermostat manufacturers**

- ◆ Carrier
- ◆ Lightstat
- ◆ RCS

## ★ **Municipal utilities**

- ◆ SMUD



# Honeywell's Comments



- ★ **Supports the initiative in concept and looks forward to participating**
- ★ **HVAC evolving to communicating systems, it's not about the “thermostat”**
- ★ **Focus is on ease-of-use for customer (homeowner and contractor)**
- ★ **HVAC distribution is very slow to implement change**



# HW Conceptual Issue

- \* **Communicating HVAC System** - A **Communicating HVAC System** capable of receiving demand response signals including price and emergency signals by at least one public method. Upon receiving a demand response signal, the **HVAC System** shall be capable of setting up the set point in the electric cooling mode and setting down the set point in electric or gas heating modes. The **HVAC System** must have the capability to “lock out” any customer override of the heating and cooling setpoints during the emergency broadcast signals.



# Example of Language Changes

The **HVAC System** shall have the following minimum features:

- \* **A receiver capable of receiving** emergency and economic price signal broadcast signals from the state's Emergency Alert System (EAS,), Independent System Operator (ISO), and the utilities. Upon receiving an emergency or price signal, **the HVAC System shall be able to** adjust the heating and cooling setpoint in 2 degrees increments, up or down) during the demand response period
- \* **Must be capable of providing low-cost remote method for** diagnosing and augmenting the basic device without two-way communication.
- \* **The HVAC System will communicate to the user** when an action or event is in effect



## **WR Position Statement**

- \* Supports the CEC strawman design presented at the last workshop except for the USB port. They do however support the concept of an expansion capability**



# Joint Utilities Presentation

## ★ Pacific Gas & Electric

- ◆ Michael Alexander, Steve Blanc, Patrick L Eilert, Belvin Louie

## ★ Southern California Edison Company

- ◆ Paul DeMartini, Jennifer Hasbrouck, Gregg Ander, Gary Porter, Carlos Haiad

## ★ San Diego Gas & Electric

- ◆ Lance DeLaura, Jerine Ahmed, Austen D'Lima, Vicki Thompson, Terry Mohn



## **IOU Position (slide 1)**

- \* The Joint Utilities are committed to working with all pertinent stakeholders during the first and second quarters of 2006 to fully address the communications requirements, options, costs and risks to facilitate the development of the Title 24 PCT requirements**



## **IOU Position (slide 2)**

- \* Toward this commitment, the Joint Utilities have scheduled a planning session later this month to prepare a work plan that is intended to be compatible with the overall Title 24 timeline for the PCT**

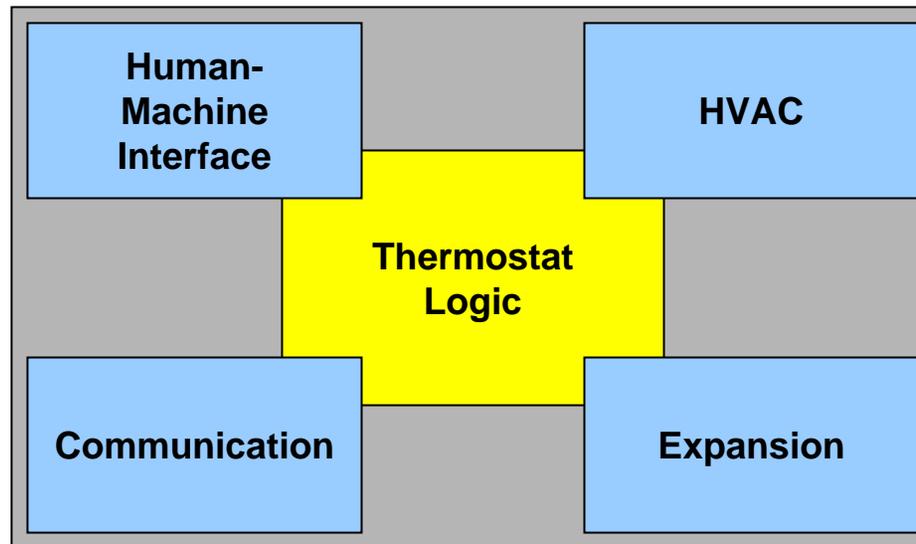


# **PIER Support for Title 24 Process**

- ★ **System integration**
- ★ **Controls & communications**
- ★ **Stranded assets**
- ★ **Customer choice**
- ★ **Open systems**
- ★ **Etc.**



# Inform the Title 24 Process





# Proof-of Concept Prototype

