

# Creating Energy Smart Homes

**Residential Retrofits:  
The Whole House Approach**





# Presentation Outlines

1. Introduction
2. Residential Green Retrofits as Part of the Solution
3. Energy Upgrade California
4. PG&E Single and Multi-family Programs
5. Review of Options for Creating Energy Smart Homes



# Demand-Side Management (DSM)

**PG&E has two ways to manage demand for energy:**

- **Supply more energy**
  - Build more power plants
  - Buy additional energy
  - Invest in more renewable projects
- **Manage demand for energy**
- **Help customers reduce amount of energy used:**
  - Energy efficiency
  - Self-generation
  - Demand response



# Integrated Demand Side Management

A single set of comprehensive DSM solutions for customers (not separate programs)

Designed to address unique needs of individual customers

**Integrated solutions include:**

- Energy efficiency
- Demand response
- Time-variable rates
- Customer energy management systems
- Customer generation and storage
- Electric vehicle Smart Charging



# Residential Green Retrofits as Part of the Solution



# Whole House

## Comprehensive home retrofits following proper loading order:

- Air sealing (tighten envelope)
- Insulation (thermal boundary)
- Proper sizing, design and installation of HVAC systems
- Proper sizing, design and installation of insulation of the hot water system
- Efficient lighting, appliances and demand response
- Renewable energy and self generation



# Energy Upgrade California



# Energy Upgrade California

**Through the Energy Upgrade California Program, Federal, State and local utilities offer incentives that make energy-saving house projects affordable.**

- Bring California residence along the smart energy journey.
- Provides solutions to overcome participation barriers with rebates/incentives, financing, education/awareness and contractor training
- Customers and contractors are encouraged to approach the house as a collective savings opportunity rather than a group of individual systems.

# PG&E Program



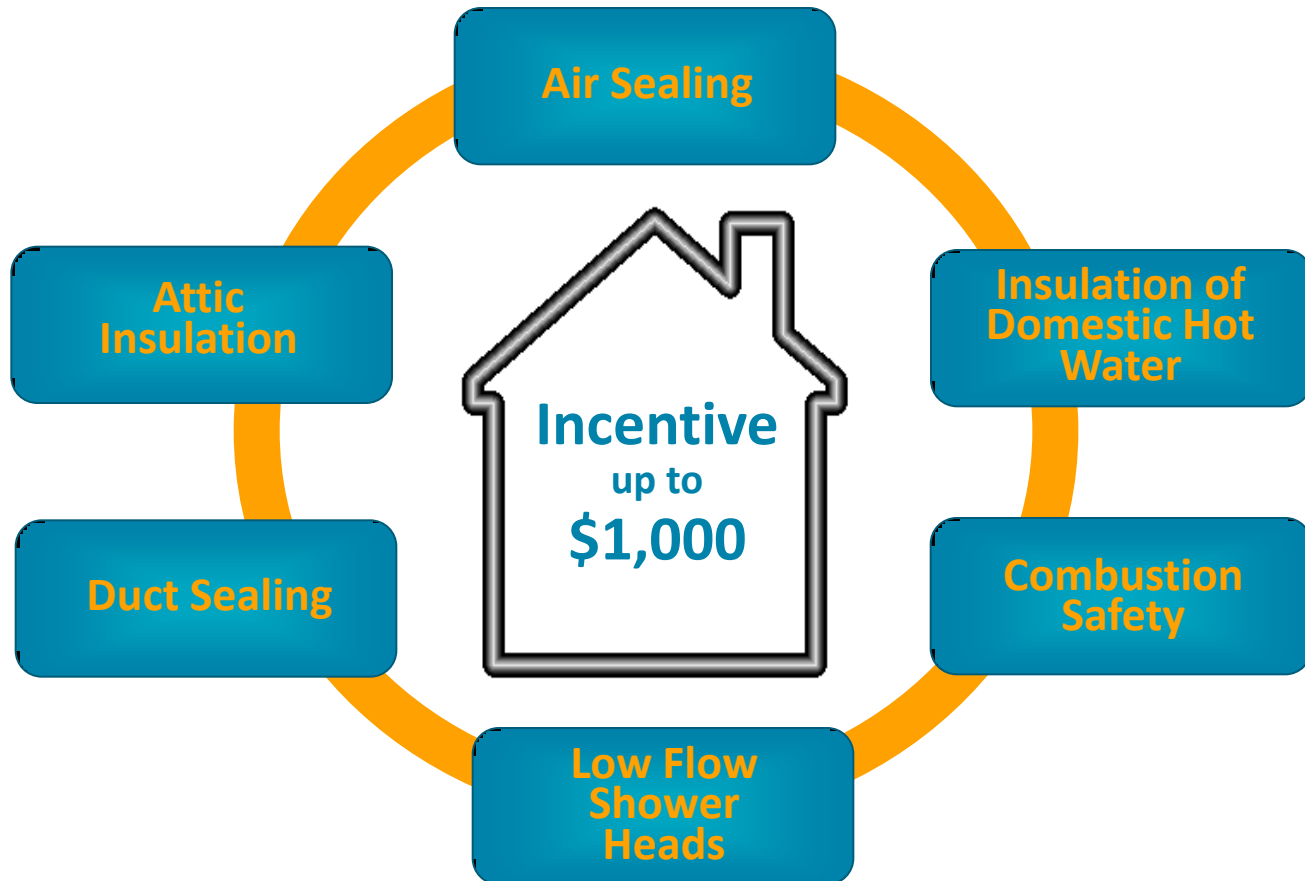
## Basic

- Focus on building shell
- No diagnostic audit required
- “On ramp” for home performance contractors

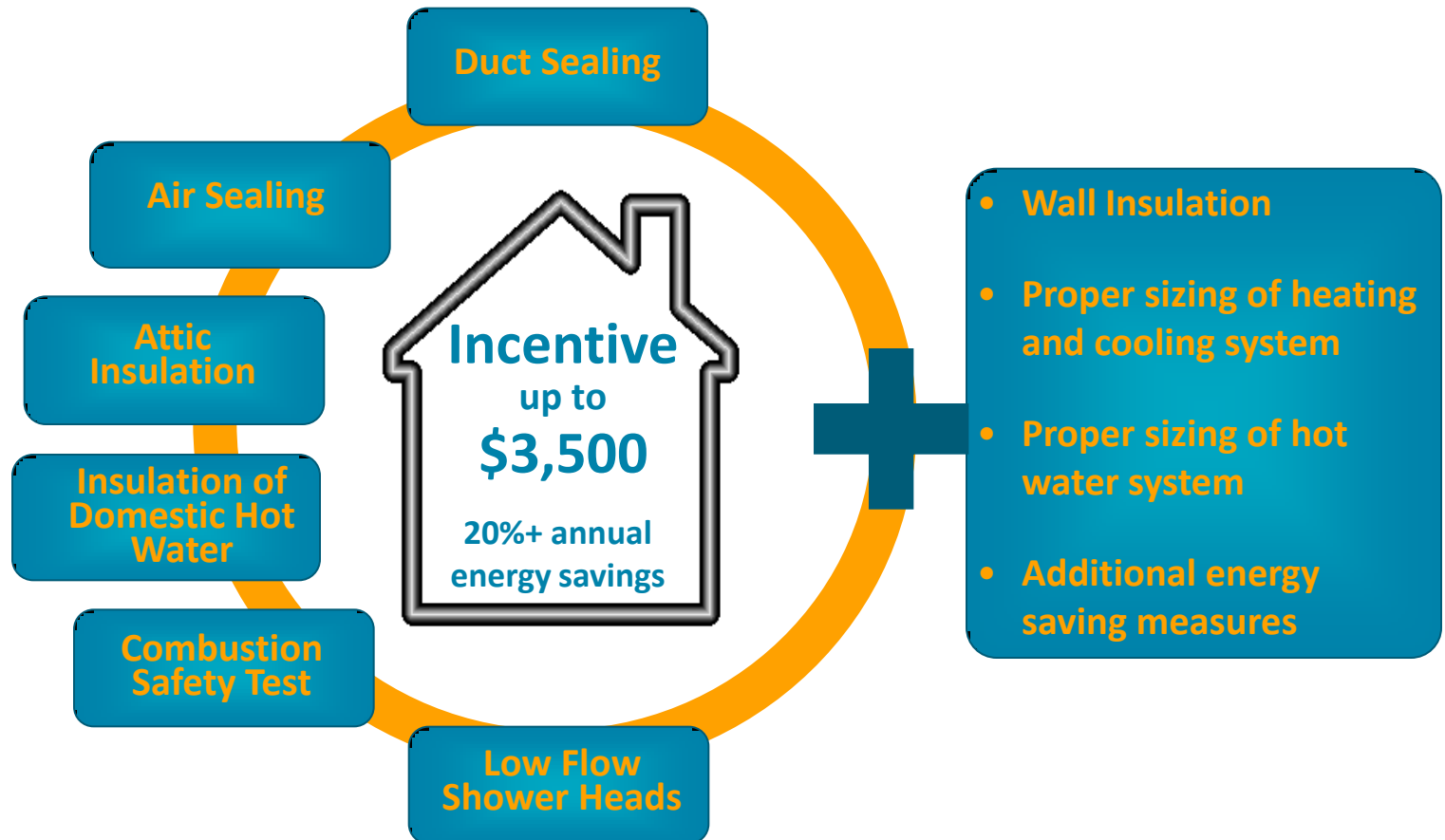
## Advanced

- Requires diagnostic audit (HERS Phase II compliant)
- Comprehensive scope of work
- Larger incentives and savings

# Basic Measures



# Advanced Package





# PG&E Program Benefits

- **Coordinated messages from PG&E, local government, and contractors**
- **Benefits:**
  - Increased comfort
  - Lower utility bills
  - Energy savings
- **A customer rebate check from PG&E**
- **Quality assurance and inspections**

Savings		Rebate
Basic		\$1,000
A d v a n c e d	20-24.9%	\$2,000
	25-29.9%	\$2,375
	30-35%	\$2,750
	35-40%	\$3,125
	40% +	\$3,500



# Current Status

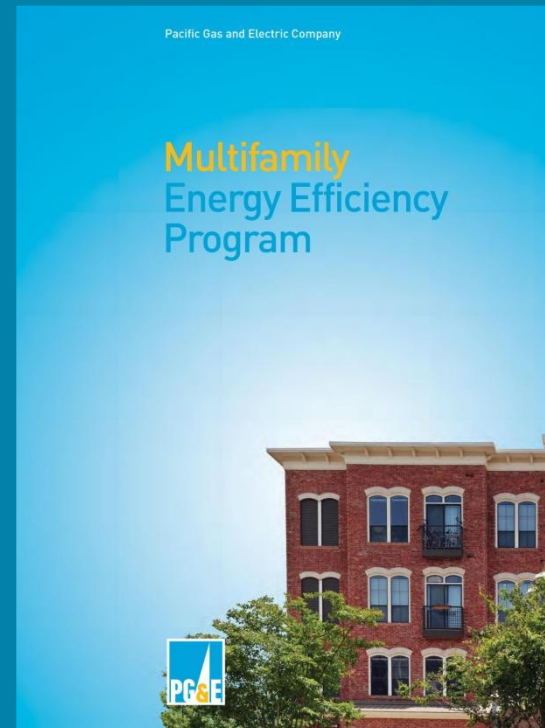
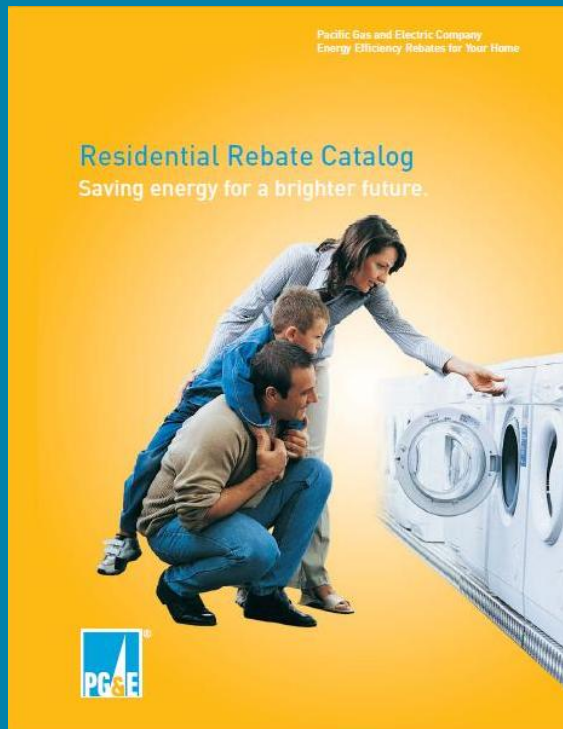
## PG&E Launches Pilot August 2010

- Available to any PG&E single family customer
- 500 homes
- Focus on Advanced package
- Implemented by California Building Performance Contractors Association (CBPCA)
  - Visit the website at [www.cbpca.org](http://www.cbpca.org)
  - Or call toll free at 1 (888) 352-2722

## Full Program Set to Launch Fall 2010

- Available to any PG&E single family customer
- Includes Basic and Advanced packages
- Runs through the end of 2012
- Will include multi-family in late 2011
- Implementer TBD

# Single Family and Multi-Family Rebate Programs





# Single Family and Multi-Family Rebates

- **A PG&E Residential account holders may be eligible for a rebate for installation of qualified energy efficiency products**
- **Eligible Products must be purchased and installed to qualify**
- **Home owners associations may qualify for common area installations for eligible products under the Multifamily program**



# Residential Rebates: Appliances

- **High Efficiency Dishwashers - \$30-\$50**
- **High Efficiency Clothes Washers - \$50**
- **ENERGY STAR ® Room Air Conditioners - \$50**
- **Water Heaters**
  - Natural Gas Storage - \$30-\$50
  - Electric Storage - \$30
- **Pool Filtration Pump (with controller) - \$100**
- **Refrigerator Recycling - \$35**
  - Room AC Recycling additional - \$25



# Residential Rebates (continued): General Improvements

- **Insulation (climate zone restrictions apply)**
  - Attic Insulation - \$0.15/sq. ft.
  - Wall Insulation - \$0.50/sq. ft.
- **Whole House Fans - \$50/unit**
- **Cool Roofs (climate zone restrictions apply) - \$0.10-\$0.20/sq ft.**
- **Variable Speed Motor (VSM) - \$50/unit**
- **Central Natural Gas Furnaces**
  - AFUE  $\geq$  94% < 96% - \$150 rebate
  - AFUE  $\geq$  96% - \$250 rebate
  - Climate zones 11, 12 & 13 may be eligible for additional incentives if VSM is included



# Multifamily Rebates (HOA Common Areas)

- **Common Area Lighting**

- LED Exit Signs \$35/Fixture
- Occupancy Sensor \$10/Unit
- Photocells \$10/Unit
- Screw-In Compact Fluorescent (CF) Reflector Bulbs - R30 and R40 \$8 - \$10/Unit
- T8 or T5 Linear Fluorescent Lamps with Electronic Ballasts \$32 - \$45/Unit
- Time Clocks \$36/Time Clock

- **Pools**

- Commercial Pool and Spa Heater - \$2.00/MBtu



# Review of Options for Creating Energy Smart Homes





# Reminders

- **Review loading order and available options prior to making a retrofit decision (regardless of size)**
- **Get multiple bids from licensed and participating contractors (when applicable)**
- **Check rebate qualifications before purchasing equipment or make sure it is specified in your contract**

# Thank You

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# Resources and Information

**PG&E Smarter Energy Line** - [www.pge.com](http://www.pge.com) or call **1-800-933-9555**.

**ENERGY STAR®** - [www.energystar.gov](http://www.energystar.gov) or call  
**1-888-STAR-YES** or **1-888-782-7937**

**Flex Your Power** - [www.flexyourpower.com](http://www.flexyourpower.com).

**Cash for Appliances** - [www.cash4appliances.org](http://www.cash4appliances.org) or call **1-888-390-4034**

**Energy Efficiency and Title 24 Building & Appliance** - **1-800-772-3300**.

**California Energy Commission** - [www.energy.ca.gov/efficiency/appliances](http://www.energy.ca.gov/efficiency/appliances)  
or call **1-800-772-3300**.

**Contractors State License Board** - [www.cslb.ca.gov](http://www.cslb.ca.gov)  
or call **1-800-321-2752**.