



Energy Efficiency & Solar:

PG&E's Residential Incentives

GREEN BUILDING SYMPOSIUM

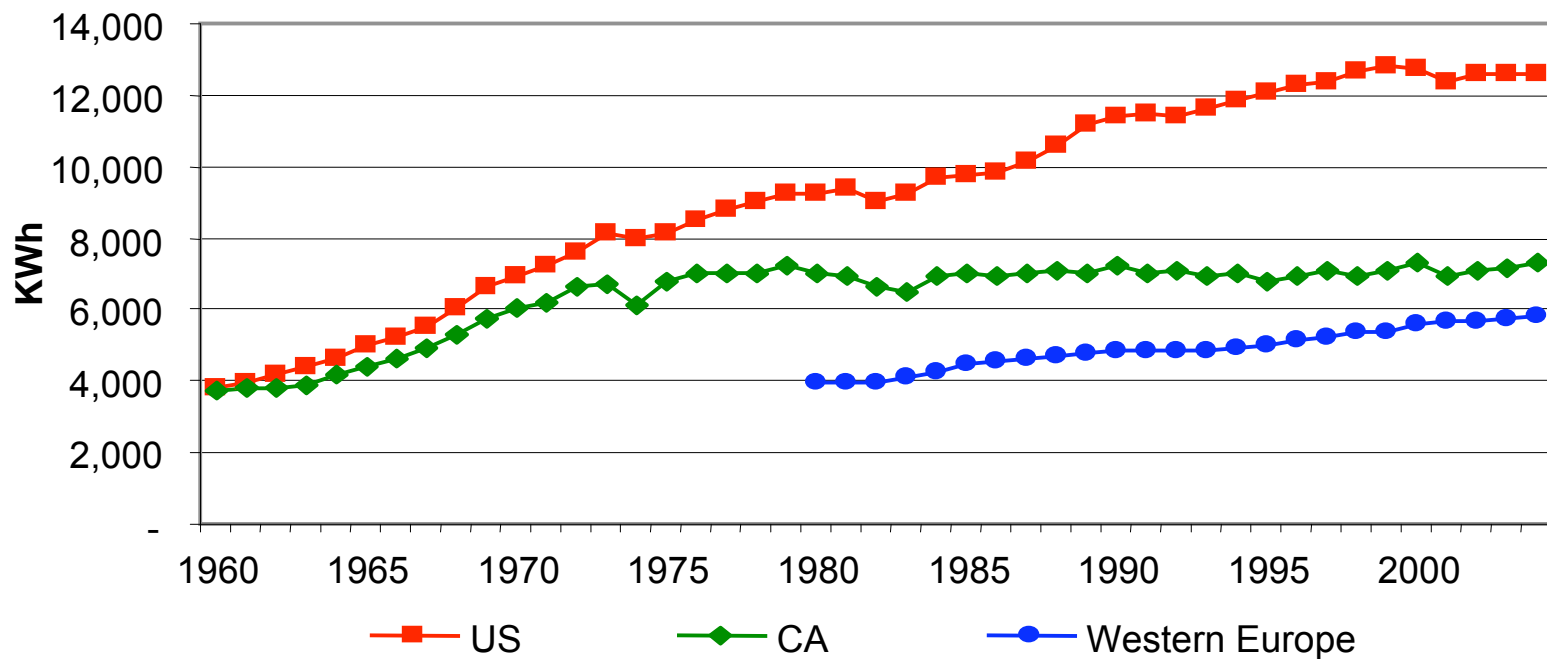
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Energy Efficiency: California's 30 Year Success Story

Energy efficiency programs keep per capita electricity use flat





The rest of the story.....

Since 1976 PG&E's energy efficiency programs have:

- Saved over **118 million MWh** and 10,775 million therms from installed measures (cumulative lifecycle savings)
- Saved enough annual electricity to power over **18 million homes** and enough annual natural gas to heat 15 million homes
- Helped California avoid building **24 large power plants**
- Avoided the emission of over **125 million tons of CO2** into the atmosphere



Zero Net Energy Buildings

A CPUC mandate for high-efficiency buildings that incorporate on-site renewable energy

- **Residential Buildings by 2020**
- **Commercial Buildings by 2030**



All Types of Homes





Green Building

- **LEED – U.S. Green Building Council**
 - **6 Categories**
 - **69 Total Points**
 - **17 Points in Energy**
- **GreenPoints – Build It Green**
 - **5 Categories**
 - **290 Total Points**
 - **108 Points in Energy**





Green Points

- **Exceed state energy code by 15%**
(30 points in the *Energy* category)



California Energy Star: Single Family New Homes

- Primary Residence
- Gas and/or electricity from PG&E
- 15% more efficient than 2005 Title 24
- ENERGY STAR Participation Agreement
- Meet EPA QII/TBC and A/C Requirements
- **\$400** per unit, Climate Zones 1 – 7
- **\$500** per unit, Climate Zones 8 – 16
- Additional Incentives for Selected Appliances and Lighting



New Solar Homes Partnership – Tier I: Single Family New Homes

- 15% more efficient than 2005 Title 24
- ENERGY STAR Appliances
- **\$400** per unit, Climate Zones 1 – 7
- **\$500** per unit, Climate Zones 8 – 16



New Solar Homes Partnership - Tier II: Single Family New Homes

- 35% more efficient than 2005 Title 24
 - 40% Reduction in Cooling
 - ENERGY STAR Appliances
 - PG&E Electric Service
 - Must Offer Solar as an Option
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- **\$2,000** per unit in All Climate Zones



California Energy Star: Multi Family New Construction

- 15% more efficient than 2005 Title 24
- QII/TBC required
- **\$150** per unit, Climate Zones 1 – 7
- **\$200** per unit, Climate Zones 8 – 16
- Energy Consultant Incentive, \$50 per unit – max \$10,000
- HERS Rater Incentive, \$60 per unit – max \$12,000
- Additional Incentives for Selected Appliances and Lighting



Existing Home - Single Family

Appliances

- **Clothes Washers: \$35 - 75**
- **Dishwashers: \$30 - 50**
- **Room Air Conditioner: \$50**
- **Storage Water Heater: \$30**

General Improvements

- **Insulation: \$0.15 / square ft.**
- **Cool Roofs: \$0.10 – 0.20 / square ft**



Existing Home - Single Family

Heating & Cooling

- **Whole House Fan: \$100**
- **Central Furnace: \$200 – 300**
- **Variable Speed Motor: \$50**
- **Duct Sealing: \$200 – 400**
- **Central Water & Space Heating: \$500-\$1500**



Existing Home - Multi-Family

Appliances

- **Clothes Washers: \$35 - 150**
- **Dishwashers: \$30 - 50**
- **Room Air Conditioner: \$50**
- **Storage Water Heater: \$30**

General Improvements

- **Insulation: \$0.15 / square foot**
- **Cool Roofs: \$0.10 – 0.20/square ft**
- **Windows: \$0.75/square foot**



Existing Home - Multi-Family

Heating & Cooling

- **Whole House Fan: \$100**
- **Central Furnace: \$200 – 300**
- **Variable Speed Motor: \$50**
- **Evaporative Cooling - \$300 - 600**



Solar Incentives: Residential New Construction

- **Timeline:** Program started January, 2007 – ends 2016
- **Purpose:** Provide incentives for installing eligible solar electric (photovoltaic) systems on new homes

- **Goals:** 400 MW; \$400 Million

Create a self-sustaining market for solar homes where builders incorporate high levels of energy efficiency and solar electric systems

- **Administration:**

California Energy Commission, January 2007 – June 2008

PG&E took over June 2008 and will be accepting only new applications



Solar Incentives: Residential New Construction

- One time, up-front, expected performance incentive
- Incentive levels decline to zero over 10 years
- As of 01/22/2009
- Market Rate Housing: \$2.50/watt (option)
- Market Rate Housing: \$2.60/watt (standard)
- Affordable Housing: \$3.50/watt for residences
- Affordable Housing: \$3.30/watt for common areas



Solar Incentives: System Requirements

- **10 Year Warranty**
- **Grid Connected**
- **1 kW or larger** (over 5 kW requires justification)
- **Third-party Field Verification**



2008 Title 24: ***What is different?***

- 15% more efficiency required in 2008 code homes compared to 2005 code homes
- Effective August 1, 2009
- What is required to build a tier one home today will be the basic home next year



2008 Title 24: What is different?

- Windows (lower U-values & SHGC)
- Quality Insulation Installation
- Higher EER ratings for mechanical equipment
- Tankless Water Heating
- Duct Design & Tight Ducts (<6% leakage)
- Higher Ventilation Requirements (Exhaust, Supply & Balanced Ventilation)



Online Resources

- **Pacific Gas and Electric Company**
www.pge.com
- **Builder New Construction Center (877) 743-7782**
www.pge.com/builder
- **New Solar Homes Partnership**
www.gosolarcalifornia.com
- **Solar Interconnection Hotline – (415) 972-5676**
- **Solar Customer Contact Center: (877) 743-4112**
Email: solar@pge.com



Thank you !

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