

# Investing in our Community Using Stimulus Funds to Develop a Home Energy Retrofit Program

May 2009



# Contributing partners for information in this presentation - members of the California Home Energy Retrofit Coordinating Committee

**U.S. Environmental Protection Agency Region IX**

**California Energy Commission**

**California Public Utility Commission**

**California Air Resources Board**

**Build-it-Green**

**California Building Performance Contractors Association**

**Sustainable Spaces, Inc.**

**Bevilacqua-Knight, Inc.**

**StopWaste.Org**

**California Center for Sustainable Energy**

# Presentation Outline

- Why Now? *The Perfect Storm*
- Why Focus on Residential Buildings
- Why Focus on Home Energy Retrofits?
- What is a Comprehensive Home Energy Retrofit?
- How does Funding Solar Energy Alone Compare?
- Would I Need to Devote City Staff to Administer the Program?
- How can I best Position my City to Capitalize on this Opportunity?



# Why Now?

**Energy Efficiency & Conservation Block Grants**

**AB 811**

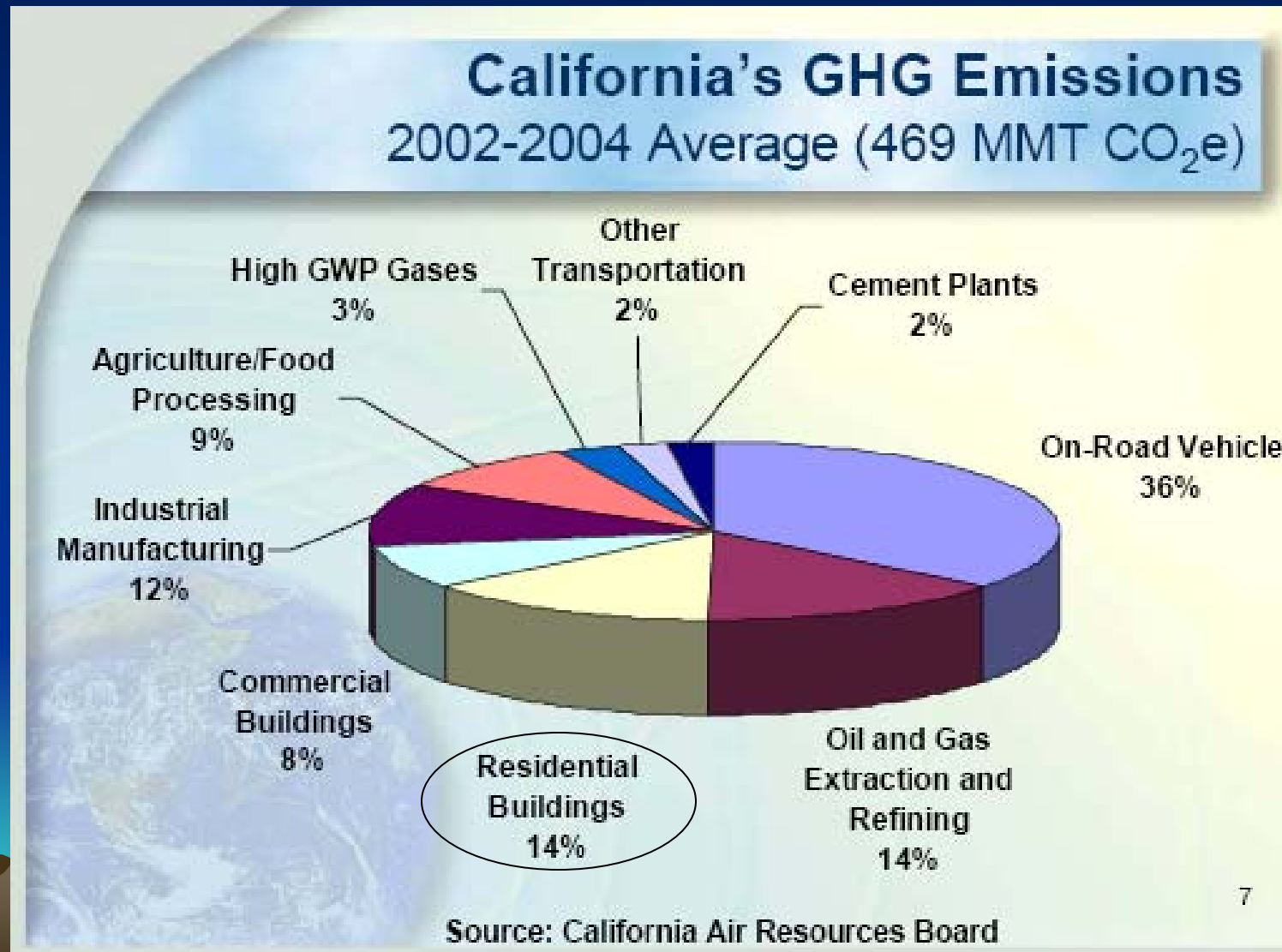
**Enhanced Federal Tax Credits**

***Golden Opportunity for Home Energy Retrofits***

**CPUC Energy Efficiency Strategic Plan**

**AB 32 / City Climate Action Plans**

# Why Focus on Residential Buildings?



# Home Energy use Results in Direct and Indirect Greenhouse Gas Emissions



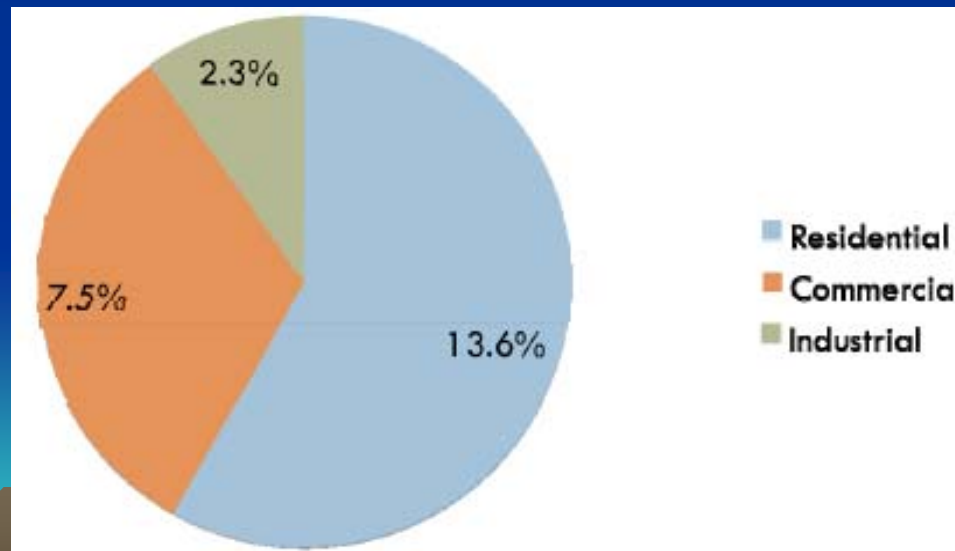
Electricity use in the home causes significant carbon dioxide emissions from electricity-generating power plants that supply the electricity to the home



Natural gas use causes significant carbon emissions directly from the home combustion appliance, e.g. gas stove, gas water heater, or gas clothes dryer

# Why Focus on Residential Buildings?

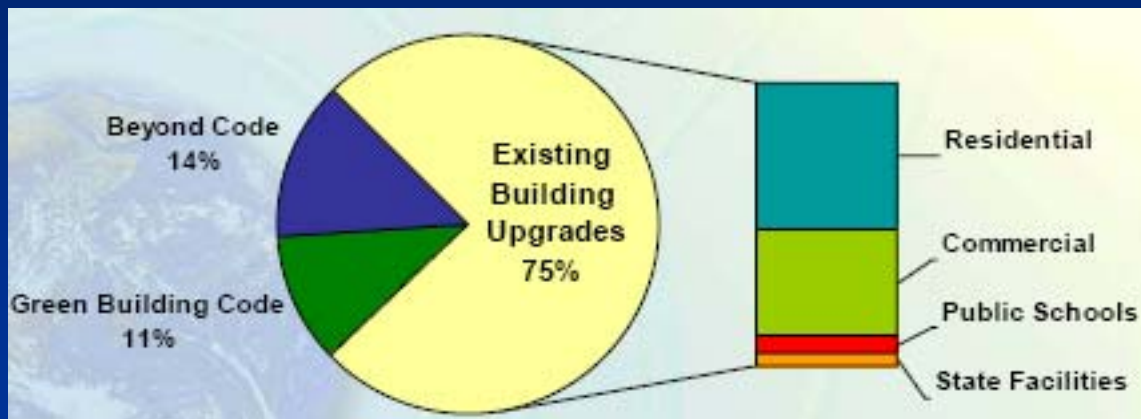
- Good potential for local level influence relative to current on-road vehicle use
- Residences collectively contribute more GHG emissions than other building types



California CO2  
emissions by  
building type

# Why Focus on Existing Residences?

- Over 13 million existing homes in CA
- **#1 GHG reduction potential**



Source: California Air Resources Board

← Municipal buildings represent a fraction of commercial buildings

- 2/3 of all buildings that will exist in 2050 have already been built
  - New home energy efficiency standards can only limit future GHG growth, not reduce emissions, as upgrades to existing homes can

# Why Focus on Home Energy Retrofits?

- **Good Potential for Jobs Creation & Tax Revenues**

- 1.1 jobs and \$30,200 in tax revenues for every \$100,000 spent on residential remodeling

*National Association of Home Builders*

- 110,000 jobs for every 1 million homes retrofitted per year

*Sustainable Spaces Inc.*

- **Opportunity to Re-employ Local Workers**

- Home energy retrofits are labor-intensive jobs involving a locally trained construction workforce



# Why Focus on Home Energy Retrofits?

- Leverages private investment to develop a new, long-term industry
  - Opportunity for rapid and sustained growth of jobs that can't be outsourced
- Cost Effective
  - “Approximately 75 percent of the total abatement potential in the buildings sector shows **net economic benefits**, with the remainder at very low cost.”

*McKinsey&Company*



# What is a Comprehensive Home Energy Retrofit?



# What is a Comprehensive Home Energy Retrofit?

## A Comprehensive Retrofit Fixes the Right Things First

- Reduces a home's energy demand (through better insulating and air sealing) to lessen energy supply needed by other systems
  - Lowers the necessary size and cost of heating, cooling, and renewable energy equipment
  - Can achieve 30 to 40% energy savings at low cost
  - The money saved by doing Energy Efficiency first actually pays for the high cost of solar!



# What's the Current Approach?

- Piecemeal incentives for homeowners to replace individual energy-consuming products
  - 20% energy savings is very rare with single product replacements
- The full cost savings potential for more efficient houses is not being realized
- Incentives favor only piecemeal approach
- Energy Efficiency needs a level of incentives comparable to solar - it's a more cost effective investment



# How Does Funding Solar Energy Alone Compare?

Example – analysis of future options to reduce GHGs in San Francisco

**Expand solar PV incentives for municipal or private installations**

**OR**

**Create a loan program to finance comprehensive energy efficiency services**

**Would reduce 30-60 times more carbon**

**AND BE**

**50 times more cost effective  
(\$ spent per ton carbon reduced)**

# Looking to the Future

- Local comprehensive home energy retrofit programs could have a market-transforming impact
  - “**enact policies that transform markets**” a core principle for EECBG (DOE Stimulus funding) guidance
- Why? A comprehensive energy retrofit offers multiple benefits to homeowners that can generate market demand
  - **Comfort** (room temperature, air circulation)
  - **Health** (less mold, better indoor air)
  - **Durability** (by preventing moisture buildup)
  - **Savings** (lower energy bills)

# Would I Need to Devote City Staff to Administer the Program?

- We can save City staff resources by joining a **county- or regionally-administered program**
- Pooling stimulus funds with other cities also makes our dollars go farther
  - One entity to develop a regional program
    - Joint powers authority or other
  - Higher-volume capital to buy down bonds for homeowner loans



# Meeting Stimulus Fund Objectives

## Energy Efficiency & Conservation Block Grant Application

- We need to specifically show how our City...
  - Has goals and objectives that maximize stimulus funding benefits community-wide
  - Has a plan for sustained benefits beyond the EECBG funding period
  - Is working with adjacent units of local governments also receiving funds

Answer? These objectives are met with our contribution of stimulus funds to a County or Regional Home Energy Retrofit Program

# Summary

## A Home Energy Retrofit Program will:

- Train and reemploy local construction workers
- Benefit local economy
- Provide a tangible and highly visible service to homeowners facilitated by their local government:
  - Significantly reduce energy use in existing homes
  - Save homeowners money
  - Improve comfort and indoor air quality
- Address a significant source of GHG emissions in City Climate Action Plans

# How can I best Position my City to Capitalize on this Opportunity?

- Identify internal champion
- Prioritize a portion of stimulus funds, e.g., 10-20%, towards home energy retrofit program development
- Coordinate at the County or Regional level to pool resources & leverage additional funds
- Seek expertise to support program development
- Assess & select financing district options

