



# Green@Home in Cupertino

*Your Home Energy Efficiency Goals  
and How to Achieve Them*



# Acterra's Mission

Bringing people together for over 40 years to create local solutions for a healthy planet.



**Acterra**

**ACTION FOR A  
HEALTHY PLANET**

# Home Energy IQ Test

Signs that a home is an Energy Hog.

Homes emit 2X CO<sub>2</sub> emissions as passenger cars.

High efficiency furnaces = lower bills.

Hot Water Heater temp° should be set at \_\_\_\_\_.

EnergyStar™ windows guarantee more comfort.

We use more water and energy than our neighbors.



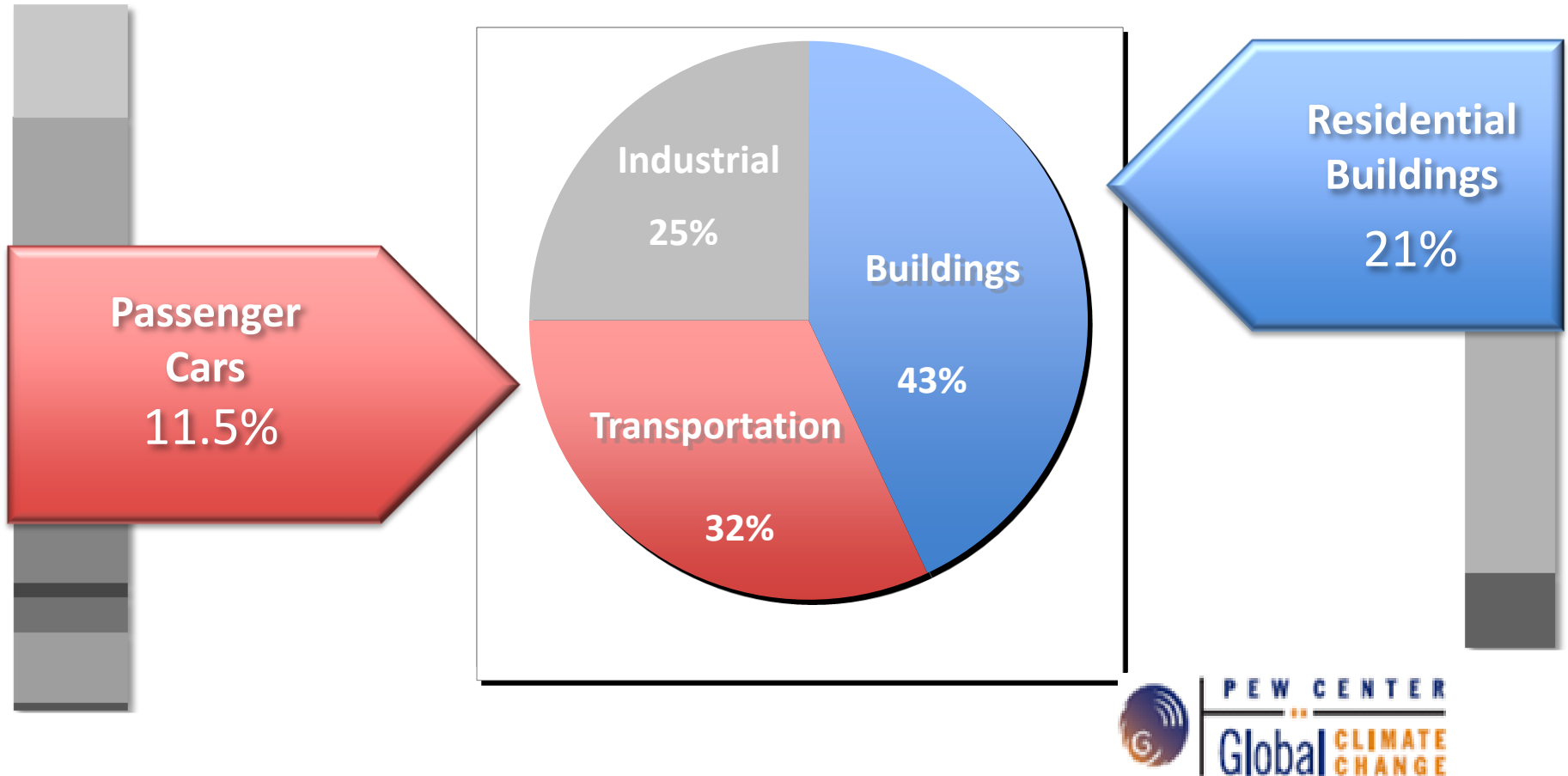
# Agenda

- Defining “Energy Efficiency”
- Homes & Energy
- Saving Energy & Money
  - Taking the First Steps
  - Next Steps in EE
- Top 10 DIY Energy Savers

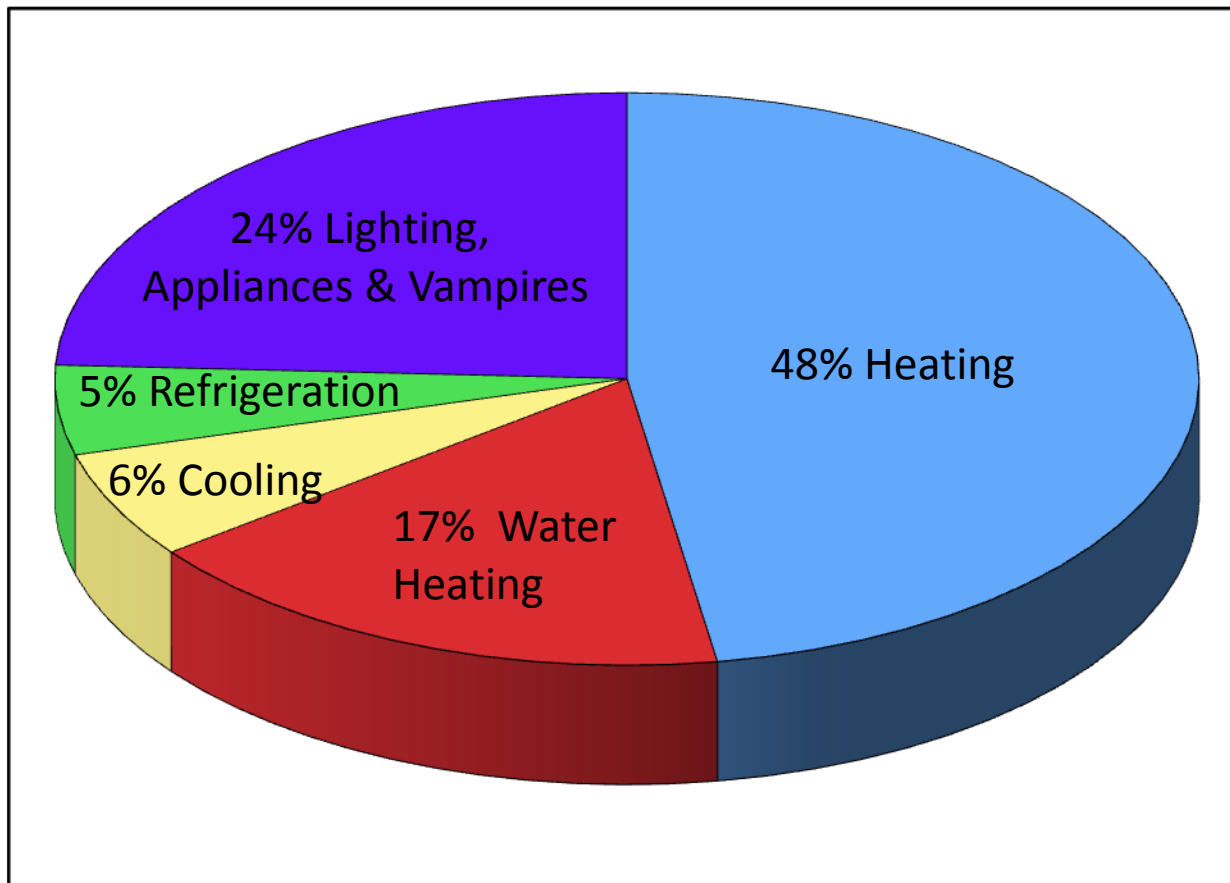
Efficiency is...

# Largest Source of CO2 Emissions

## Carbon Dioxide Emissions From Fossil Fuel Combustion



# Average Household Energy Use



# Saving Energy & Money

## First Steps

- Ready (with your PG&E Bills)
- Aim: Cut Energy by 5%, 10% or 15%
- Fire Up the Watt Meter with Acterra





# Green@Home Free Energy Upgrades



CFLs



Water Temperature



Showerhead



Faucet Aerators



Refrigerator Temperature



Clothesline



Tire Pressure



Outlet gasket



Amos Coal Power and Poca West Virginia • © Gary Braasch • *Earth Under Fire*



# Green@Home Dashboard

Description	Number
Trained HouseCall Volunteers	298
Current Volunteers	205
HouseCalls Completed	591
HouseCall Volunteer Hours	2,916 hours
Total Pounds of CO <sub>2</sub> Reduce/Year	815, 281 lbs
Total Dollars Saved / Year	\$30,000-100,000
Total Gallons Saved / Year	8.87 million

As of June 2010

## What People Are Saying ...

*“It's great to have a new showerhead, insulated light switches and more. We've insulated our pipes, turned off vampire plugs, and now run the dishwasher/washer before noon or after six. Your Green @Home team was really great – many thanks!”*

**~ Cupertino Resident**

# Saving Energy & Money

## Next Steps: “Home Performance”

- Ready with your comfort and air quality concerns
- Aim: 25%, 40% or 50%+ energy reduction
- Fire Up the Blower Door (and other tools)
  - Audit
  - Quantify & Prioritize
  - Retrofit
  - Test Out



# “Recovery through Retrofit”

Market: 130 Million (M) homes

- 1.25 M full-time jobs
- Cut home energy usage (bills) by 40%
- \$21Billion/Yr consumer cost savings
- Footprint: 160 M metric tons CO<sub>2</sub>/Yr by 2020



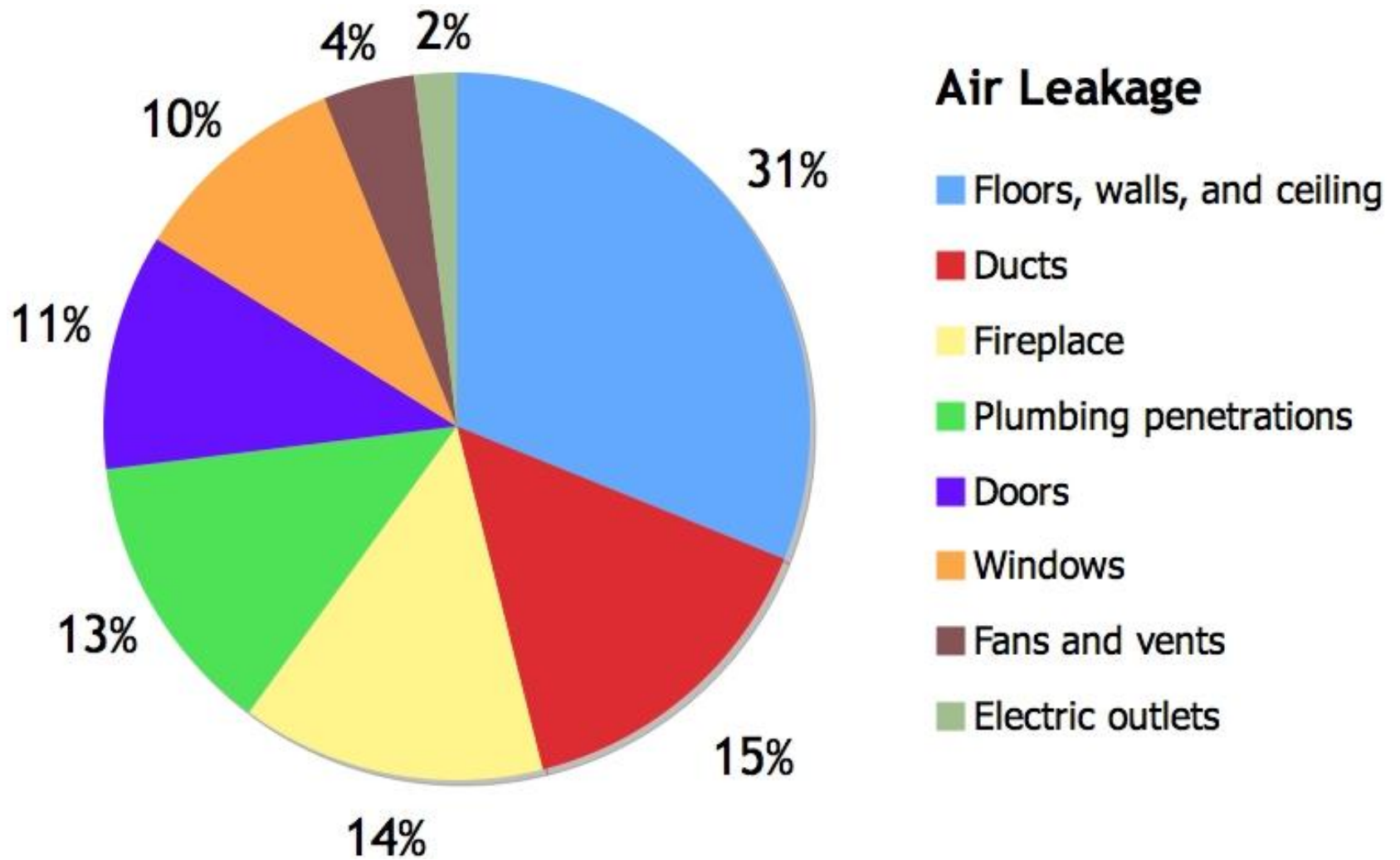
# Sources of Air Leakage...?



Wa\$ted  
25% - 40%  
Energy



# Disappearing Dollar\$



# "Sick" Home Symptoms

**Comfort**

**Health**

**Efficiency**

Too cold in winter

Allergies

High energy bills

Too hot in summer

Mold or Moisture

Carbon footprint



**Interrelated**

# Home Performance Guarantee

**Comfort**



**Health**



**Efficiency**



**Interrelated**

# Every Home is a System



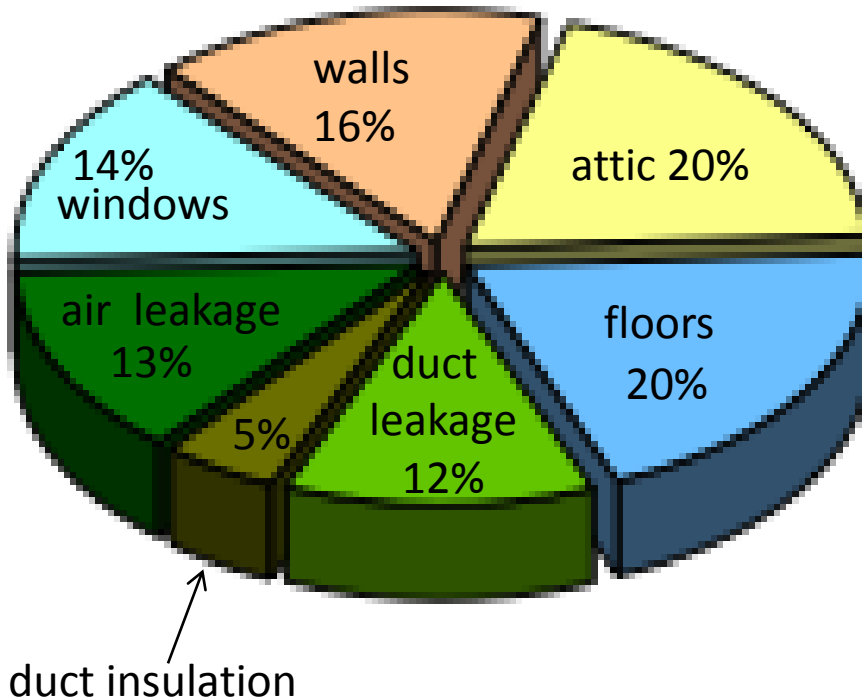
1. Air Flow
1. Heat Flow
1. Moisture Movement

**“Test -- don’t  
just guess.”**

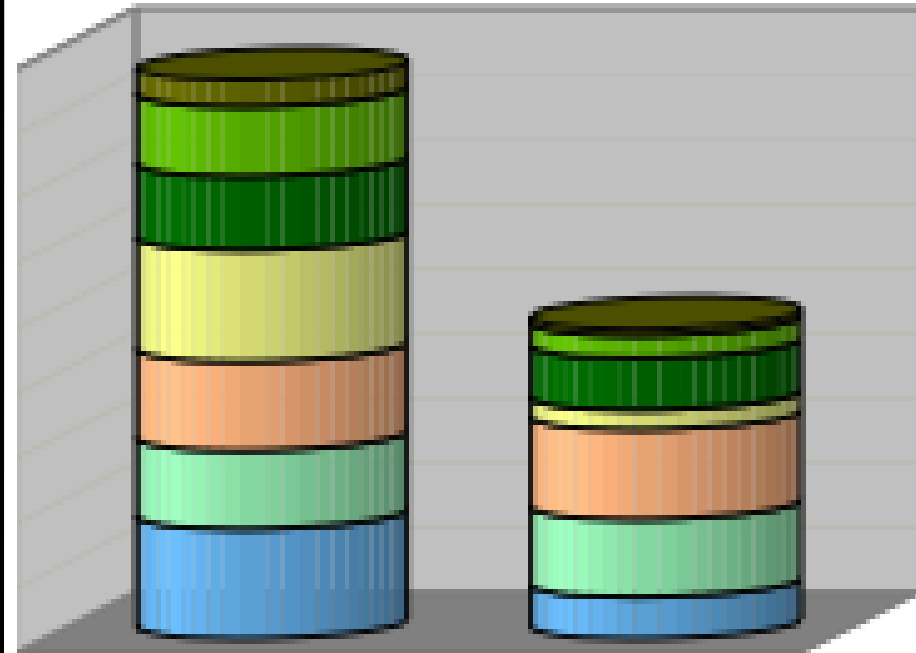


# Quantify & Prioritize

*Energy Losses by Area*



**Heating Load Before & After  
(BTU Scale: 0 to 90,000)**



**Today**

**Improvement  
Target**

# Retrofit Loading Order

## Fundamentals

- ***Insulation***
- ***Air Sealing***
- ***Duct Sealing***
- ***Lighting***
- ***Appliances***
- ***Plug Loads***
- ***Behavior***

## Major Systems

- ***Space Heating***
- ***Air Conditioning***
- ***Ventilation***
- ***Water Heating***

## Renewables

- ***Solar PV***
- ***Solar Thermal***
- ***Wind***
- ***Water Catchment***

# Top 10 DIY Energy Savers

## *Annual Savings*

Turn Down Thermostat 1-2°	\$19 to \$39
Cut Water Use by 10-20%	\$21 to \$107
Eliminate Vampire Loads	\$39 to \$131
Clean Furnace Filter	\$12 to \$145
Remove/Recycle 2 <sup>nd</sup> Fridge	\$55 to \$509



# Top 10 DIY Energy Savers cont'd

## *Annual Savings*

Replace Incandescents with CFLs	\$16 to \$210
Install Timer on Recirc. Pump	\$96 to \$270
Weatherstrip Doors to Outside	\$32 to \$308
Install Programmable Thermostat	\$36 to \$464
Insulate & Seal Ducts	\$60 to \$869

# Start Today!

## Sign Up (for FREE services)

- Green@Home Energy Upgrade House Call
- Recurve Phone Consultation

Go hog wild  
with your energy  
efficiency  
projects!

