Sustainable Neighborhoods

New Foundations for Community –Based Energy Efficiency

June 17, 2009

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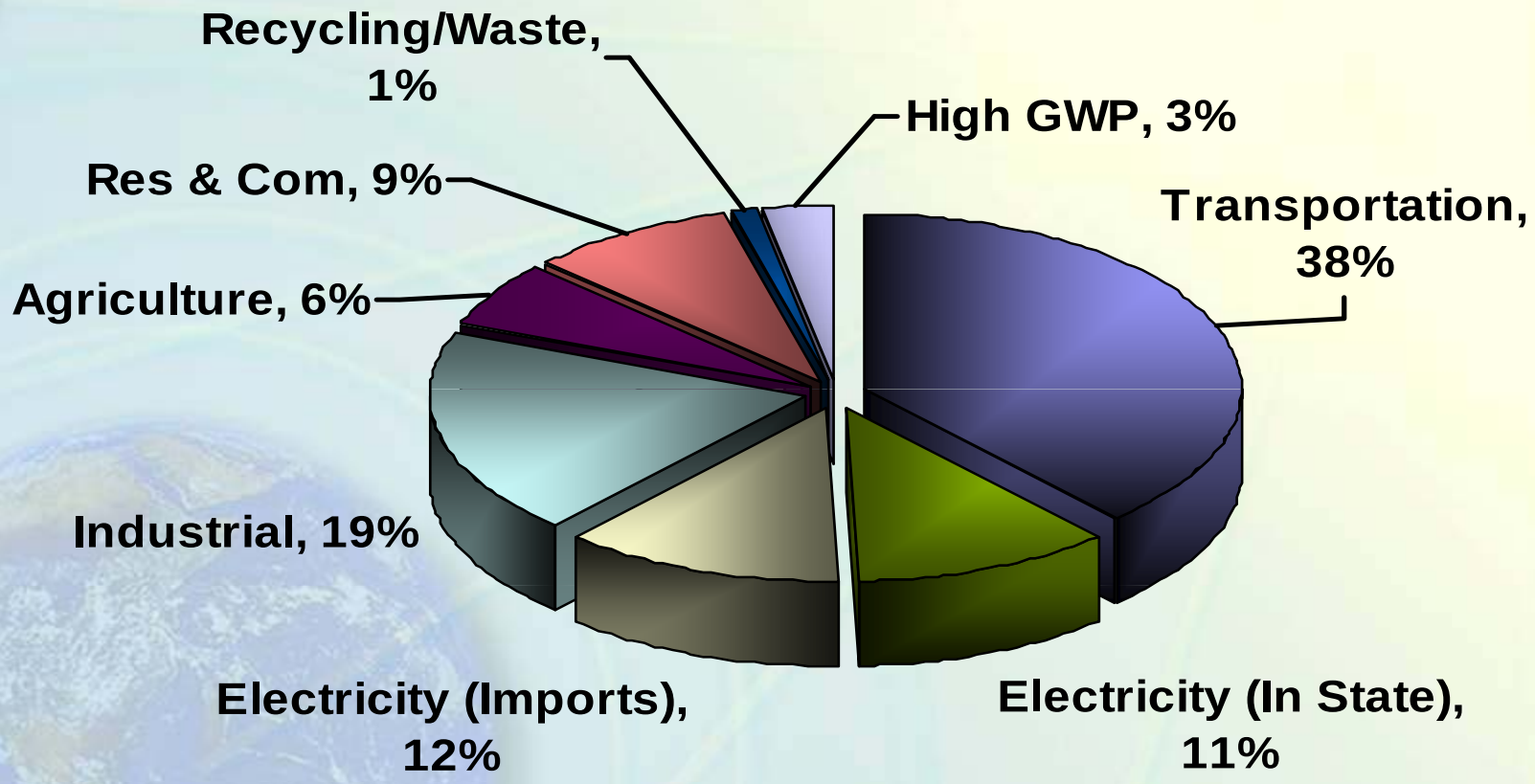
California Air Resources Board

AB 32 and the Scoping Plan

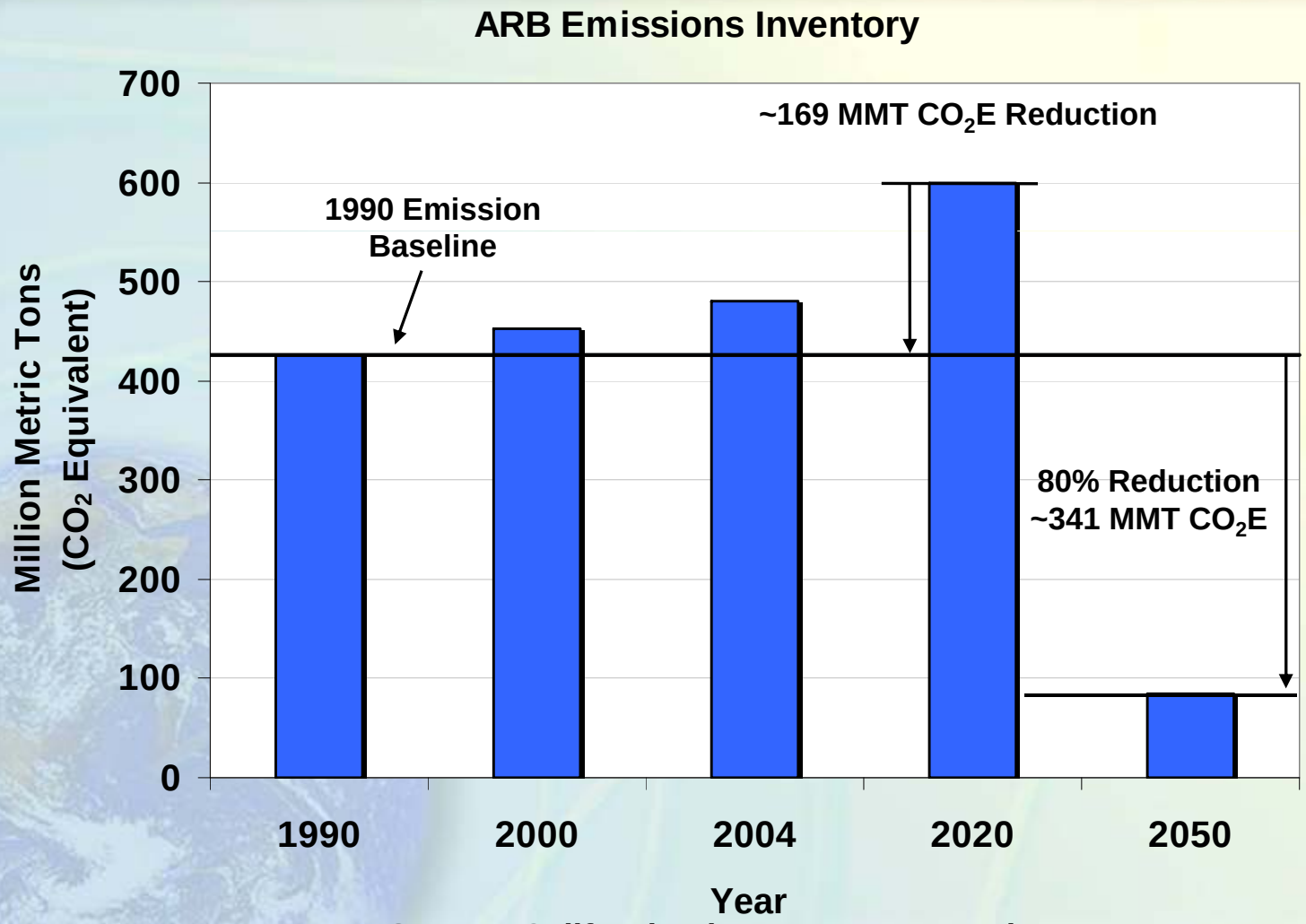
- AB 32 signed by Governor Sept. 27, 2006
- Directed ARB to develop Scoping Plan
- Board Adopted Plan Dec. 12, 2008
- Plan recommends mix of strategies combining market mechanisms, other regulations, voluntary measures, energy efficiency, and fees
- Scoping Plan goals:
  - By 2020 reduce GHGs back to 1990 levels
  - On track to reduce 80% from 1990 level by 2050

2002-2004 GHG Emissions (469 MMTCO2E)



Magnitude of the Challenge

California's GHG Reduction Targets



Source: California Air Resources Board

Adopted To Date

- Have adopted 15 climate change measures
- Have met every AB 32 deadline

Seven Rules Scheduled for 2009

Including at June 25 meeting:

- Landfill methane control
- Cool cars
- Fees and minor changes to reporting rules

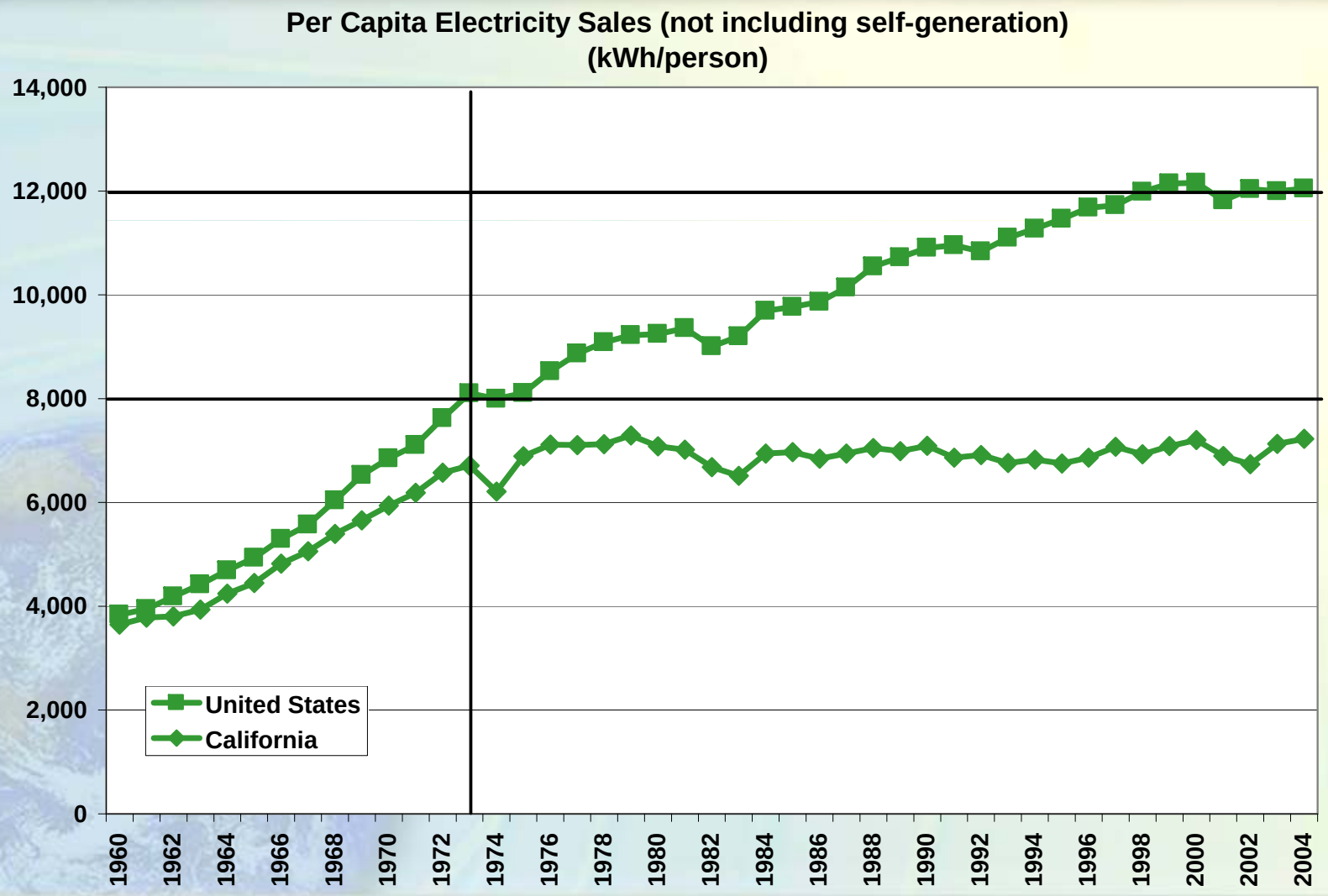
Nine ARB Rules Scheduled for 2010

Energy is #2 Contributor

Electricity and Natural Gas

- Cutting Energy Use Saves Money and Reduces GHG Emissions
- Plan Includes Aggressive Energy Efficiency Goals and Increased Renewable Energy
- Meeting the Goals in the Scoping Plan Requires
  - Expanded Utility-based Energy Efficiency Programs
  - More Stringent Building and Appliance Standards
  - Innovative Strategies that Go Beyond Traditional Approaches
- Plan Relies on Expanded Efforts By the CEC and CPUC

Energy Efficiency: Build on Past Success

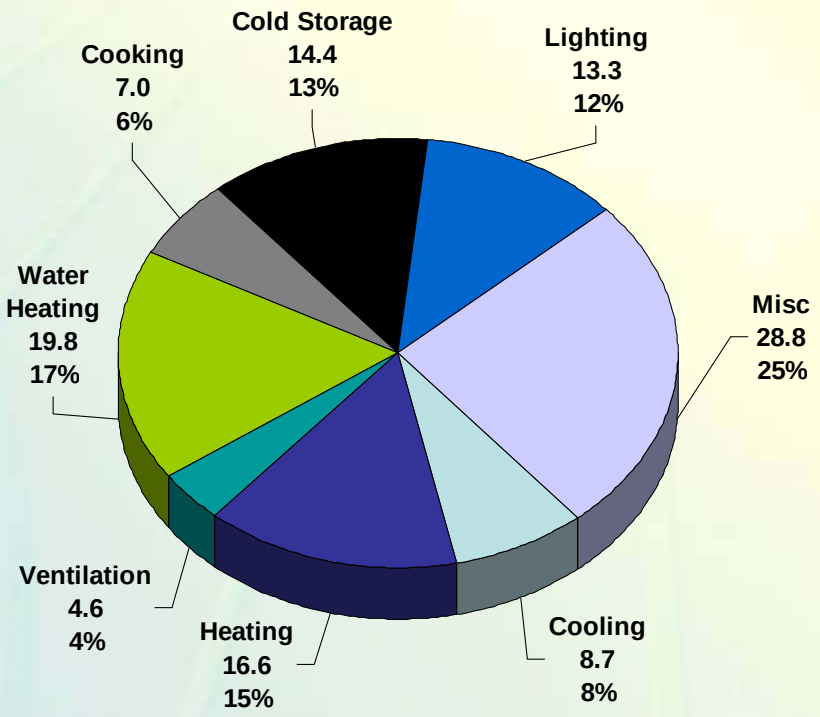


Energy Efficiency

- Energy efficiency standards have saved Californians more than $56 billion
- 24 fewer power plants
- Banned vampire plugs, which draw power to devices even when they're not in use
- Smart lights have sensors and shut off when no one is in the room – helping make energy efficiency effortless

Residential and Commercial
Greening Existing Buildings

- Over 13 Million Existing Homes in California
- More than 7 Million ft^2 Commercial Floorspace
- Energy End-Use Demand
- 2004 Emission Inventory
- Total GHG Emissions
  - 13.6% Residential
  - 7.5% Commercial



Green Building
New Construction and Existing Buildings

- State Buildings
- Public Schools
- Commercial
- Residential

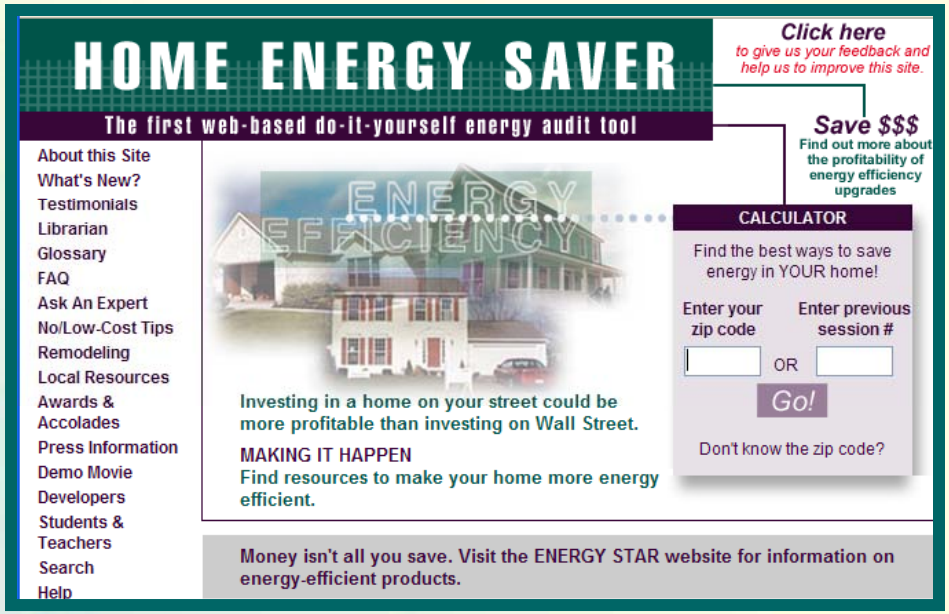
***Existing buildings account for the majority of the potential for GHG reductions.**

Residential and Commercial
Greening Existing Buildings

- Environmental Performance Testing
  - Benchmark Energy and Water Usage
  - Carbon Footprint
- Voluntary and Mandatory Retrofits
- 3rd-party Certification
- Funding Mechanisms
- ZNE

Greening Existing Homes
Cost-Effective Energy Efficiency Upgrades

- Fluorescent Lamps & Fixtures
- Duct Sealing
- Energy Star Appliances
- Water Heater Tank Wrap
- Air Sealing to 0.5 Air Changes per hour
- Increase Wall and Attic Insulation



http://HomeEnergySaver.lbl.gov

Funding Mechanisms

- On-Bill Financing
- Energy Efficiency Service Arrangements
- Grants
- Loans
- Tax Credits
- Rebates
- Energy Efficiency Mortgages
- Appraisers Placing Value on Green Homes

Berkeley

- Energy retrofits to all city-owned buildings
- Saving 2.1 million kilowatt hours of electricity
- Saving 37,520 therms of natural gas
- Saving taxpayers $370,000 annually
- Expected to cut about 1,200 tons of CO2 annually.

Sacramento

- Estimates upfront cost of retrofitting city buildings would be about $5 million.
- Return on investment would total $500,000 annually.
- Payback period of 10 years.

San Francisco

- Plans to:
  - Increase incentives and technical assistance
  - Expand education and outreach
  - Strengthening legislation, codes, and standards
- Anticipates annual CO2 emission reduction of 801,000 tons.

Town of Windsor

- Claims savings of about 275 million gallons of drinking water a year by irrigating 400 acres of golf course, vineyard, parks, pasture and fodder croplands with recycled water.

- Estimates 1,057 tons of CO2 is avoided annually through this effort.

Santa Monica

- City staff purchases must be the “lowest and most responsible bid.”
- In addition to price staff may consider:
  - “The quality of the material or services offered”
  - And “the 16 character, integrity, reputation, judgment, training, experience, and efficiency of the bidder.”
  - This gives City purchasers wide latitude to engage in sustainable procurement.

(Landscape rebates)

City of Davis

- Residential sector contributes approximately 23% of city's GHG emissions.
- Late 2008 Pilot program asked residents to go on "low carbon diet."
- City workbook helps residents measure GHG emissions and develop action plans.
- The low-carbon diet challenge is an opportunity to significantly reduce GHGs.

Marin County

- Go to Marin County Web Page
  - Click on “Living Here”
  - Click on “Environment”

Local Government Toolkit

www.CoolCalifornia.org

CoolCalifornia.org

- Small Business Toolkit
- Local Government Toolkit
- Individual Tools

Role of Local Government

Achieving the Goals of AB 32

- Local Governments are Essential Partners
- Influence and Exclusive Authority Over Significant Emission Sources
  - Implementing Local Programs
  - Passing Ordinances, Standards, and Codes
- Adopt Targets Consist with the State's Goal to Reduce GHG Emissions by 15% Below Today's Levels by 2020

Individual Citizen's L.A. Home With Energy Changes

- 1700 square foot home in Santa Clarita
- New energy efficient heating-air conditioning
- Energy efficient florescent light bulbs
- Computers and televisions to "on-off" switches
- Join SCE Summer Discount Program
- Cold water laundry
- Solar clothes dryer

Energy Bills With Changes & Edison Summer Discount Plan*

	June	July	Aug	Sept	Oct
2006	32.10	69.80	75.53	36.48	31.53
2007	19.23	10.79	9.37	25.15	6.58
2008	22.25	10.12	6.05	6.63	8.43

(* 2006 is without changes; 2007- 08 with changes & Edison Summer Discount Plan)

Additional Information

- ARB Climate Change Web Site – list serve
  - www.arb.ca.gov/cc/cc.htm

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