



**The Climate Registry**

**Becoming ClimatEEfficient™**

**Dollars & Sense:**

**Making the Case for Energy Efficiency**

**May 26, 2010**

**A presentation by Gene Rodrigues, Director of Customer Energy  
Efficiency & Solar, Southern California Edison  
Hosted by The Climate Registry's Cool Planet Project**



The Climate Registry

# The Climate Registry

- **Non-profit GHG Registry helps organizations measure and reduce their GHG emissions.**
- **The only government endorsed registry in North America.**
- **A community of 420 business, governmental and NGO leaders**
- **Referenced in the US EPA's mandatory reporting rule; SEC financial disclosure guidance; Congressional climate bills; CARB Scoping Plan**





The Climate Registry

# Reducing Energy Usage Reduces Greenhouse Gas Emissions!

**1,400 kWh = One ton of CO<sub>2</sub>e**

**200 therms = One ton of CO<sub>2</sub>e**

**One ton of CO<sub>2</sub>e is emitted when you:**

- Run an average US household for 60 days
- Drive 1,900 miles in a mid-sized car
- Graze one Ugandan dairy cow for eight months

**Step 1: Take Inventory!**

**Measure Your Carbon Footprint**

**Step 2: Set Reductions Goals!**

**The Most Cost Effective & Immediate Solution – Energy Efficiency**





The Climate Registry

# The Cool Planet Project



- ✓ **Energy Efficiency & Climate Change mitigation marketing, education, and outreach program which incentivizes and rewards the installation of large EE projects**
- ✓ **Promotes energy efficiency as the most cost-effective and immediate solution to climate change**
- ✓ **Provides business customers assistance in measuring, verifying, and reporting their GHG emissions profile in exchange for installing energy efficiency (EE) projects**
- ✓ **Educates utility staff and their large commercial and industrial customers about the relationship between energy usage, energy efficiency and greenhouse gas emissions**
- ✓ **Communicates customers' leadership and successes to the public**



The Climate Registry

# For More Information

**Nancy Whalen, Director**

**Tel. 213.785.1231**

**email: [nancy@theclimateregistry.org](mailto:nancy@theclimateregistry.org)**

**Jennifer Kaminski, Outreach Manager**

**Tel. 213.785.1231**

**email: [jkaminski@theclimateregistry.org](mailto:jkaminski@theclimateregistry.org)**

**Zoe Elizabeth, Communications Manager**

**Tel. 213.213.1253**

**email: [zoe@theclimateregistry.org](mailto:zoe@theclimateregistry.org)**

**[www.theclimateregistry.org](http://www.theclimateregistry.org)**



The Climate Registry

# Gene Rodrigues, Director of Customer Energy Efficiency & Solar for Southern California Edison

- Oversees a portfolio of Energy Efficiency, Low Income Energy Efficiency, Low Income Rate Assistance, California Solar Initiative and Self Generation Incentive programs – for one of the country’s largest investor-owned utilities
- Currently serves on the boards of directors of the Consortium for Energy Efficiency, the American Council for an Energy-Efficient Economy, and the China-US Energy Efficiency Alliance
- Served on the Leadership Group for the National Action Plan for Energy Efficiency (an initiative to advance energy efficiency policies and practices in the U.S. co-chaired by the Department of Energy and the Environmental Protection Agency) and on the Executive Group for NAPEE's successor initiative, the State Energy Efficiency Action Network



# **Dollars & Sense: Making the Case for Energy Efficiency**

**Gene Rodrigues**  
*Director of Customer Energy  
Efficiency & Solar  
Southern California Edison*

**Climate Registry Webinar Series**  
*May 26, 2010  
Irwindale, CA*

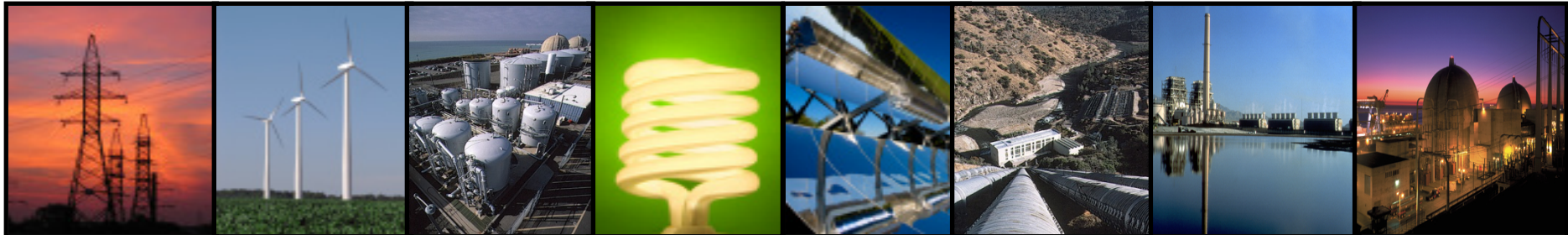


## ***Today's Discussion***

- ❖ About Southern California Edison
- ❖ California Energy Policy
- ❖ California Business Model for Energy Efficiency
- ❖ How to Build and Implement an Effective EE Portfolio
- ❖ The Future of Energy Efficiency



# ***About Southern California Edison***



# Today: About Southern California Edison

- ❖ **One of the Country's Largest Investor-Owned Utilities**
  - 50,000 square miles
  - 13 million customers
  
- ❖ **Environmental Leadership**
  - **2005 – 09 EE Results**
    - ✓ More than 6.8 billion kWh— Enough to power nearly 965,000 homes for an entire year
    - ✓ Resultant greenhouse gas emission reduction = Equivalent of taking 650,000 cars off the road
  
- ❖ **A National Leader in Energy Efficiency**
  - 1<sup>st</sup> or 2<sup>nd</sup> in the nation for electric energy savings in each of the last 10 years
  - Highest electricity savings goals in the country for each of the last six years



✓ **Leading U.S. purchaser of renewable energy**

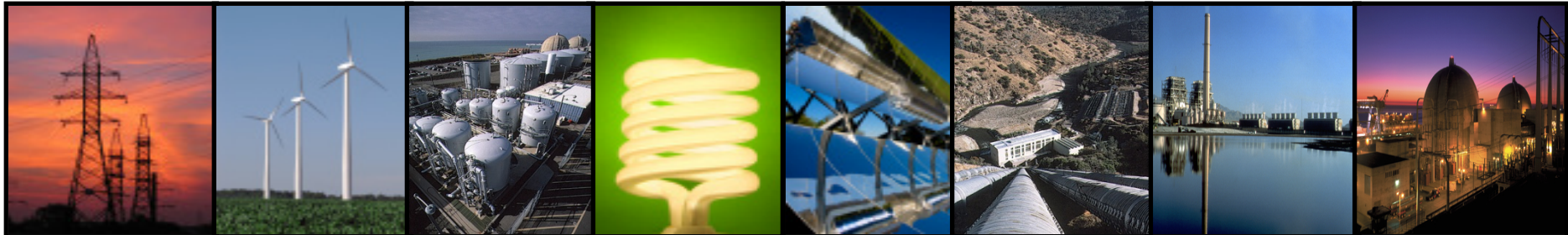
✓ **Largest DR portfolio in California**

✓ **Edison SmartConnect™ installing 5 million smart meters**

✓ **Largest private EV fleet in the country**

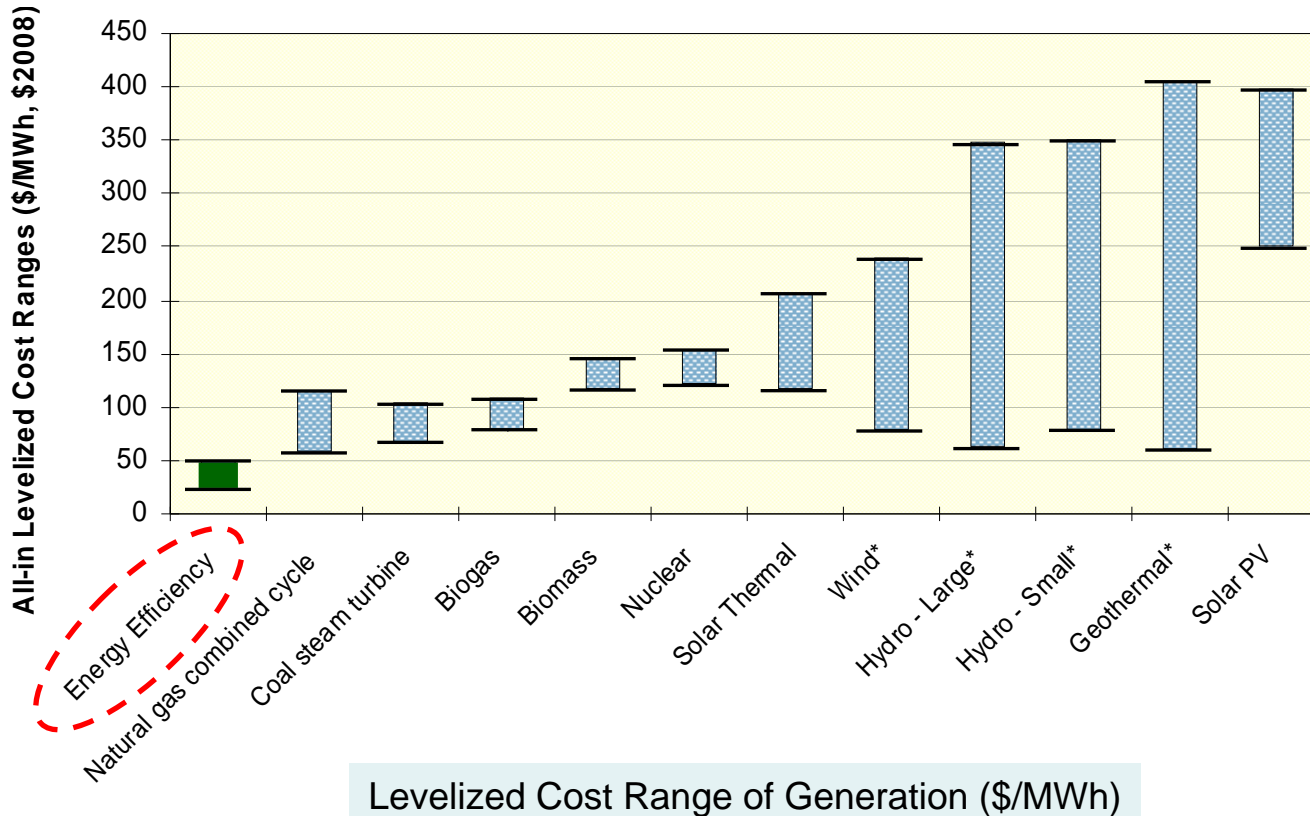


# *California Energy Policy*



# EE is Our Least-Cost Electricity Resource

❖ SCE's EE programs save energy at a levelized cost of \$.03-.05 per kWh<sup>1</sup>



- ✓ **EE does not require transmission lines to serve load centers**
- ✓ **EE operating costs are unaffected by oil / natural gas price fluctuations**

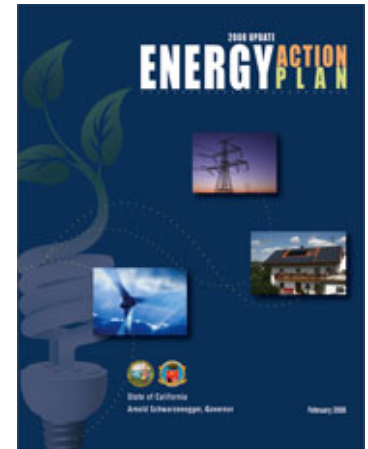
Source: Energy and Environmental Economics Inc. 2008

\*Costs for these resources are highly site-specific and have wide ranges in cost depending on project location

<sup>1</sup>Levelized Cost: The present value of the total cost of building and operating a generating plant over its economic life, converted to equal annual payments. Costs are levelized in real dollars.

# California's Energy Policy Energy Action Plan

- ❖ The California Energy Action Plan, first adopted in 2003, specifies California's energy policies
  - Energy efficiency and demand response are first in the resource loading order
  - Cost-effective energy efficiency and demand response must be pursued before supply-side options
- ❖ EE supports the following objectives:
  - Reduces energy supply costs
  - Stabilizes per capita electricity consumption
  - Reduces air pollution
  - Supports economic development
  - Diversifies California's resource mix



Energy  
Efficiency &  
Demand  
Response

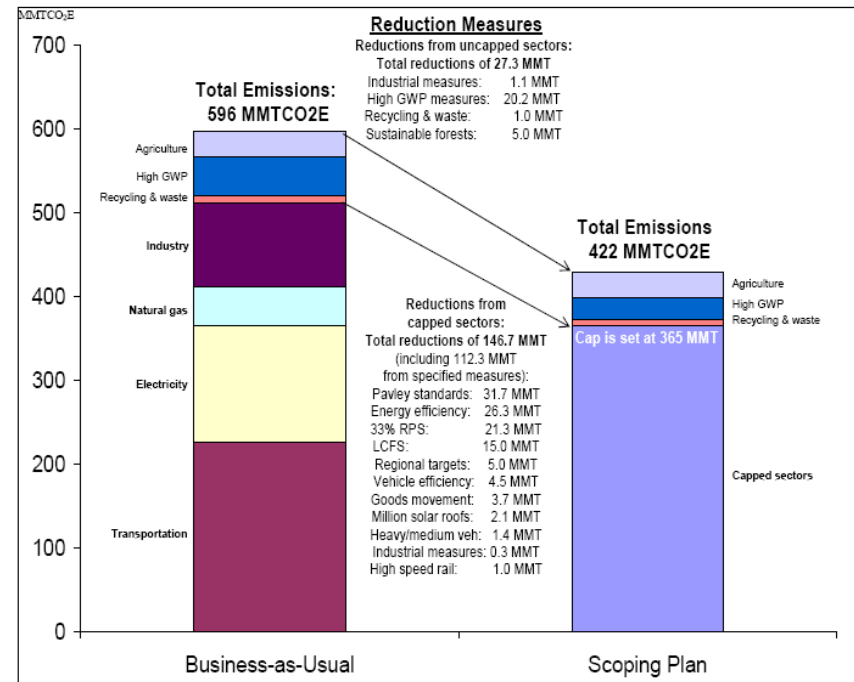
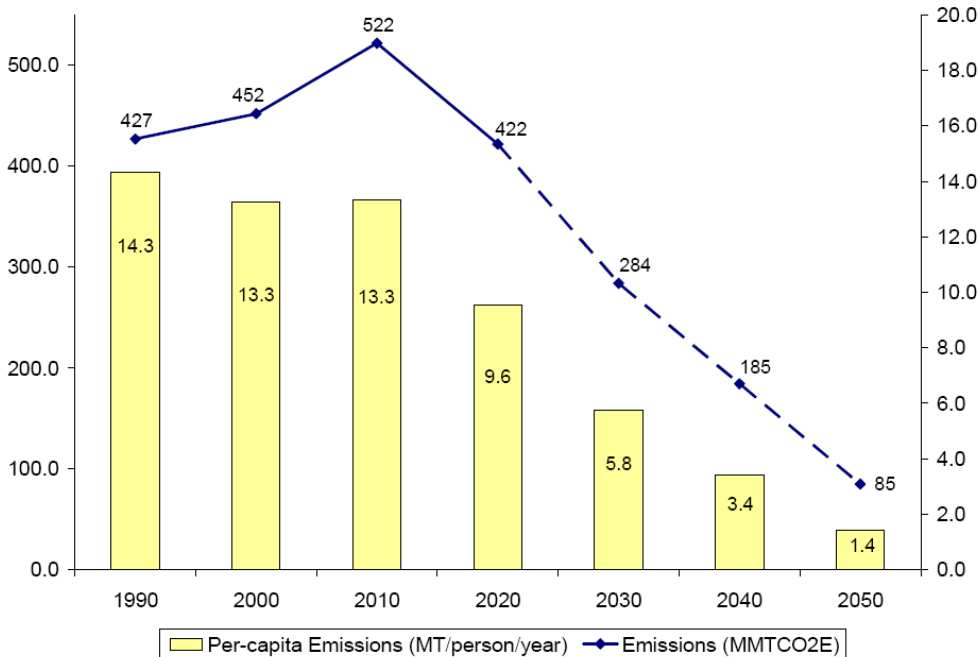
Renewable  
Energy  
Resources

Clean  
Distributed  
Generation

Fossil-Fired  
Generation

# California's Energy Policy Assembly Bill 32

- ❖ California Global Warming Solutions Act (2006) = Reduce California GHG levels to:
  - 1990 level by 2020 (25% below “business as usual”)
- ❖ AB32 Implementation Plan utilizes regulations and market-based systems to lower GHG emissions in CA.
  - Energy Efficiency is the 2<sup>nd</sup> highest source of reductions behind vehicle efficiency



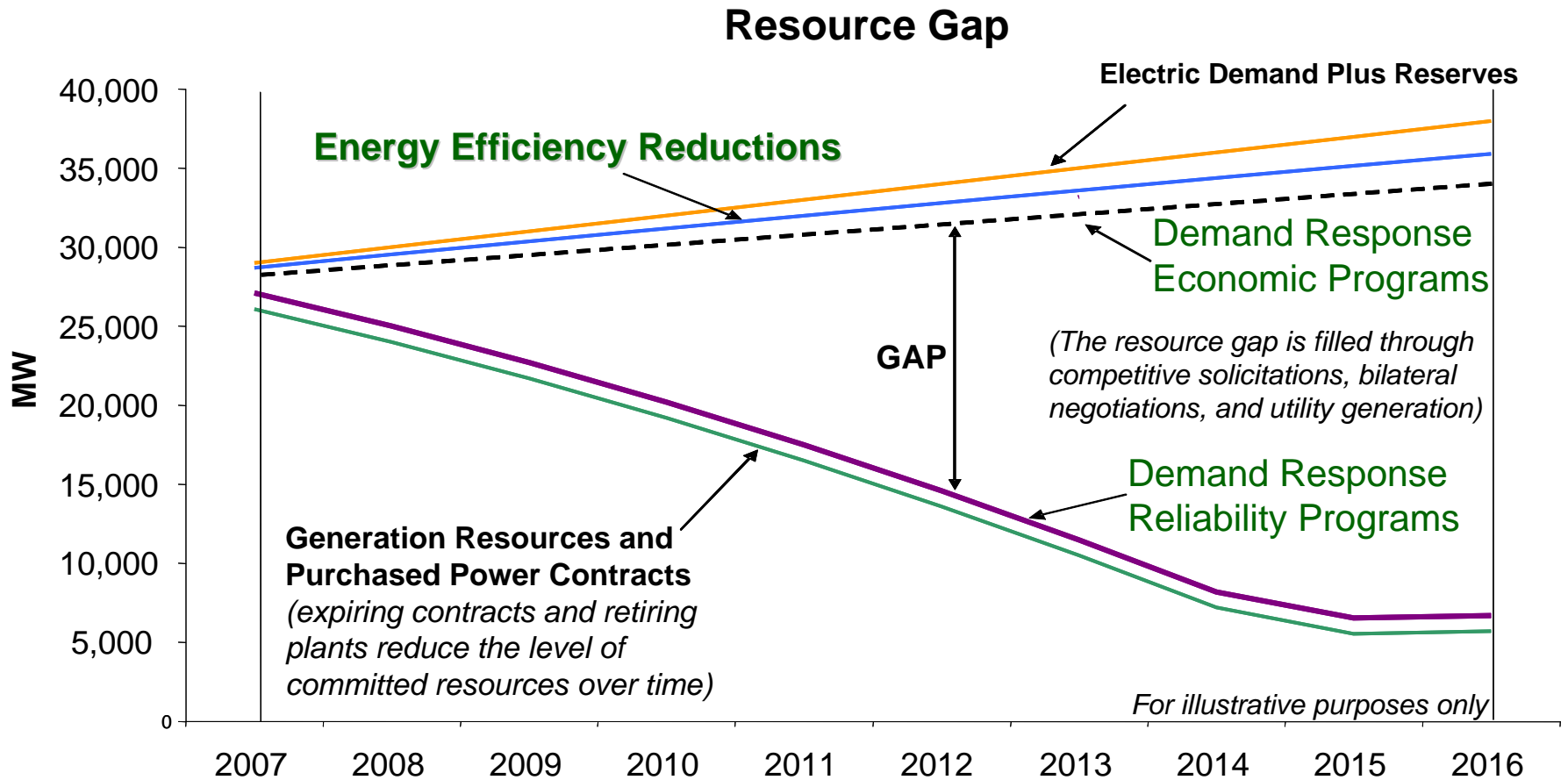
Source: CARB Scoping Plan

# California's Energy Policy

## Integrated Resource Planning

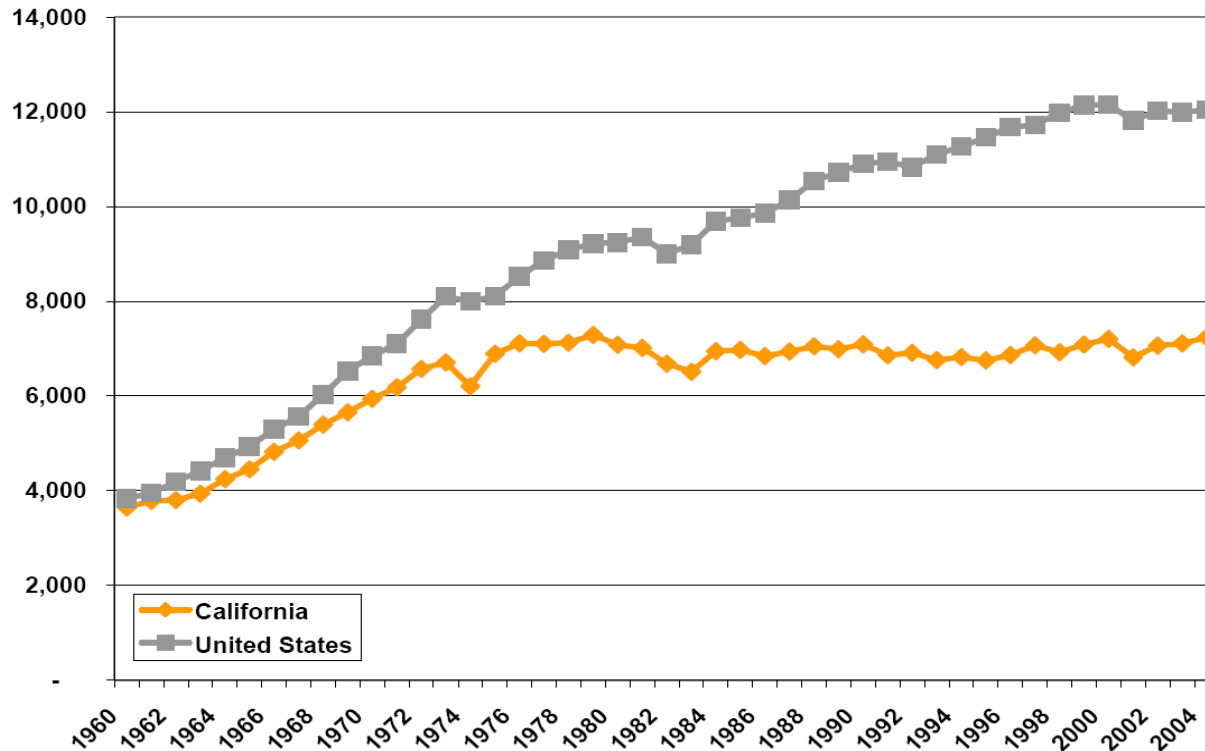


- ❖ EE is incorporated into the utility sales forecast as a reduction to sales
  - EE is forecast to serve approximately 48% of SCE's load growth between 2008 and 2020



# Energy Efficiency Programs Have and Will Continue to Produce Significant Results

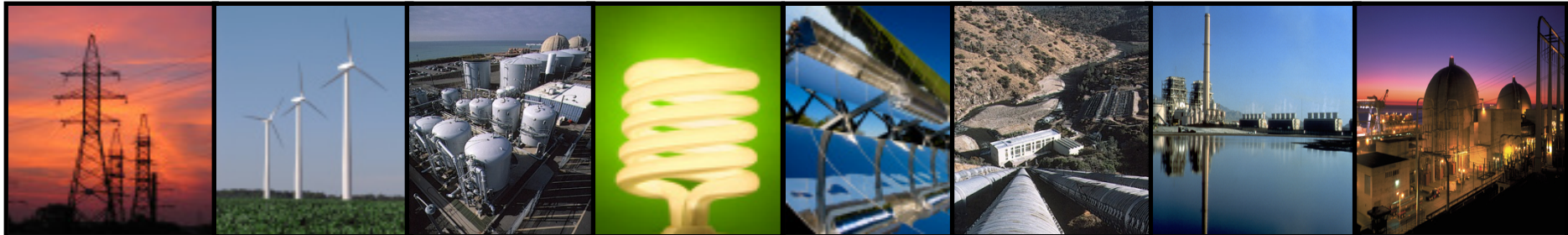
## California Per Capita Electricity Consumption



Source: DOE EIA



# ***California Business Model for Energy Efficiency***





## ***Energy Efficiency Business Model:***

- ❖ There are three key components to SCE's Energy Efficiency Business that make it a sustainable and successful model:
  - ✓ Lost Revenue Mechanism
  - ✓ Energy Efficiency Program Cost Recovery
  - ✓ Opportunity to Earn

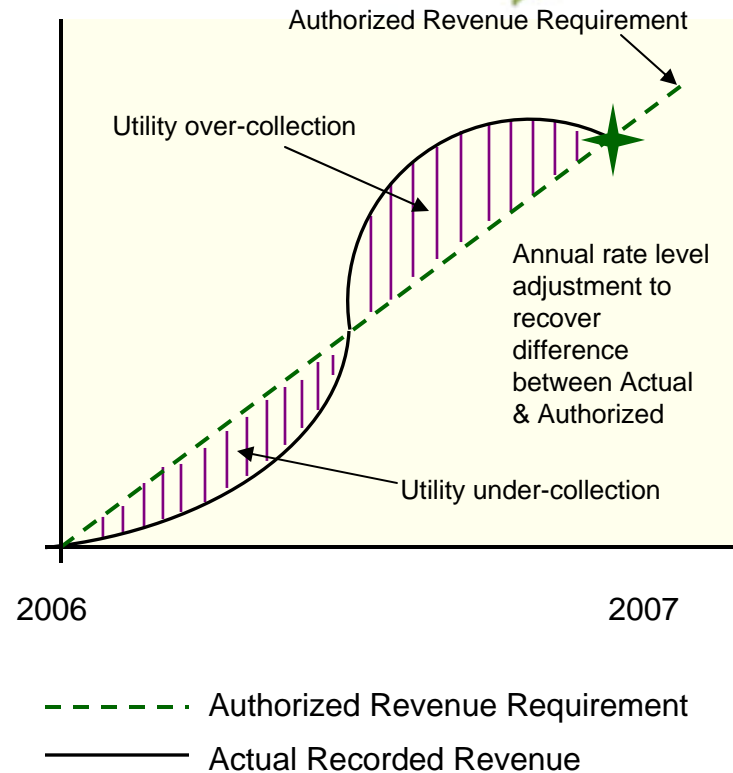
Lost Revenue  
Protection

Cost Recovery

Earnings

# Energy Efficiency Business Model: Lost Revenue Mechanism

- ❖ SCE is protected against lost revenue through decoupling.
  - “Decoupling” mechanism protects utility from lost revenues due to reduction in sales attributed to EE and other factors
  - Rates are adjusted annually to account for differences between forecasted and actual sales
  - “Decoupling” allows utility to recover authorized revenue requirements



Lost Revenue  
Protection



# ***Energy Efficiency Business Model: EE Program Cost Recovery***

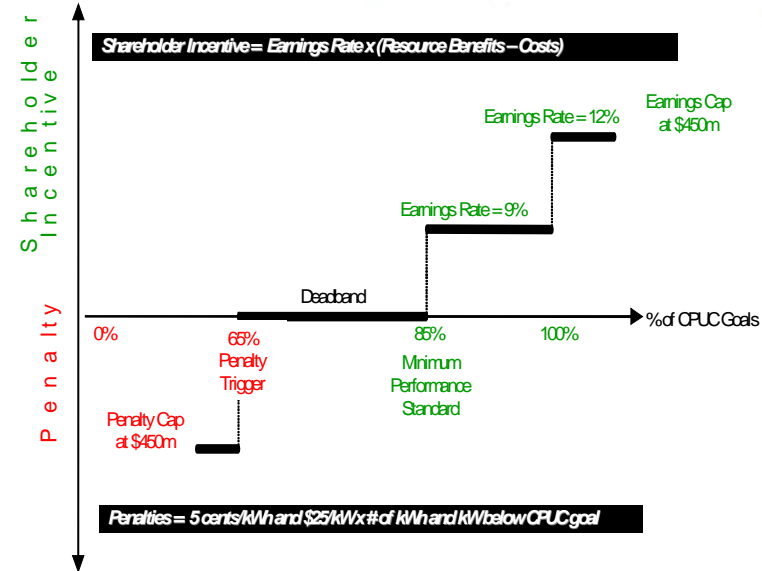
- ❖ SCE recovers its EE program costs through two mediums:
  - EE Public Goods Charge: Legislatively-mandated, non-bypassable surcharge on customer bills
    - Sets “floor” amount for energy efficiency
    - Low income EE levels set on “needs” basis
  - EE Procurement Funding: Goals and amounts established in Long-Term Resource Plan
    - Utilities apply for funding based on ability of EE to meet resource need
    - Amount recovered in rates along with other generation-related expenses
  
- ❖ SCE EE Program Budgets:
  - 2006-08: \$750 Million (\$USD)
  - 2010-12: \$1.2 Billion (\$USD)

Lost Revenue  
Protection

Cost Recovery

# Energy Efficiency Business Model: Opportunity to Earn

- ❖ Shared Savings Incentive Mechanism
  - To encourage EE investments, CA regulators have authorized shareholder incentives. SCE earns when customers see substantial net avoided cost benefits from EE programs.
  - Benefits are based upon avoidance or deferral of costs associated with supply-side resources, transmission and distribution, or environmental compliance.
  
- ❖ The California Public Utilities Commission is reviewing the current mechanism and intends to consider a “more transparent, more streamlined, and less controversial” energy efficiency incentives program.



Lost Revenue  
Protection

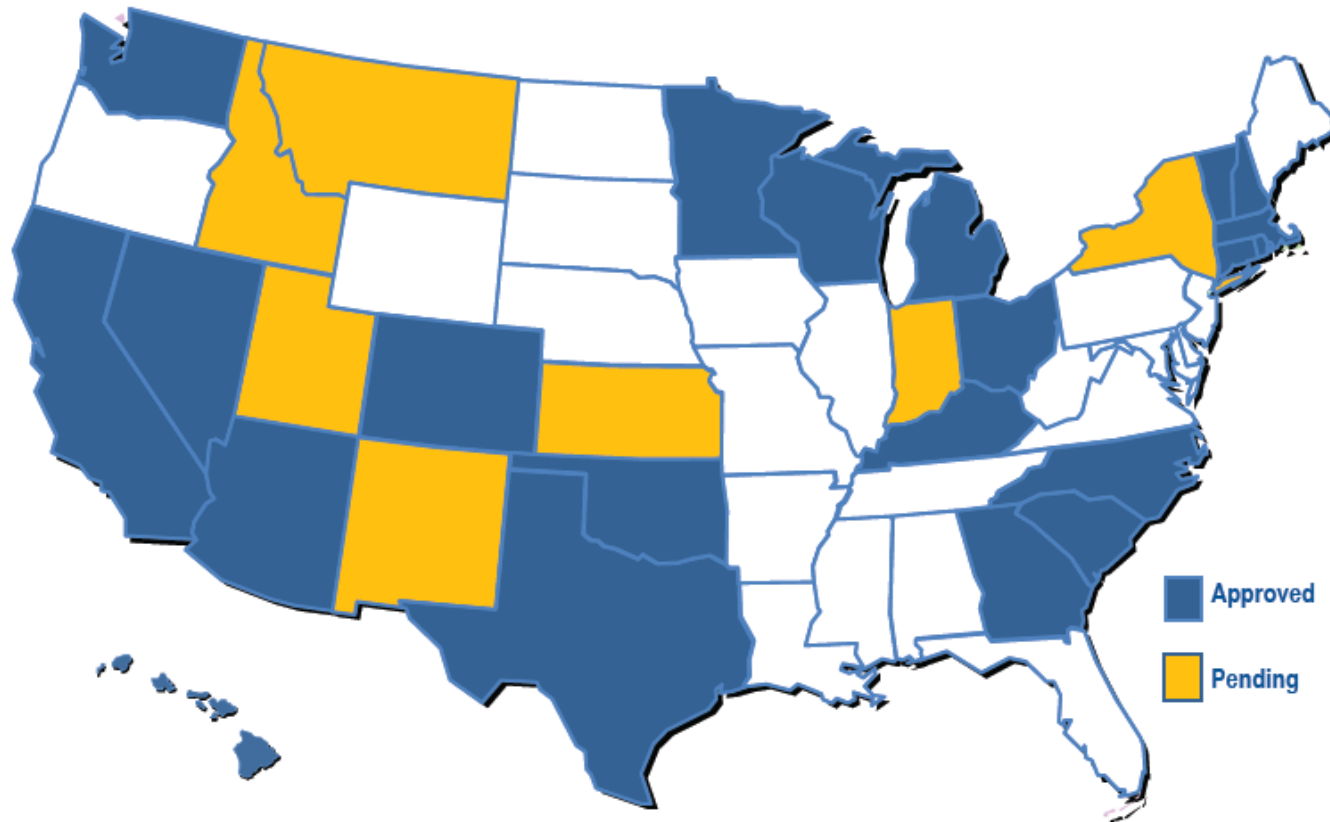
Cost Recovery

Earnings

# EE Incentive Mechanisms in the United States

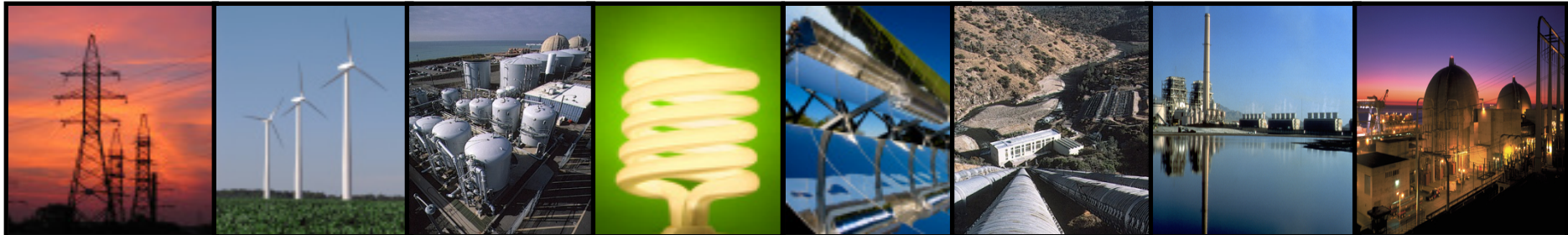
- ❖ Currently 21 states have approved energy efficiency incentive mechanisms

Performance Incentives for Electric Efficiency by State



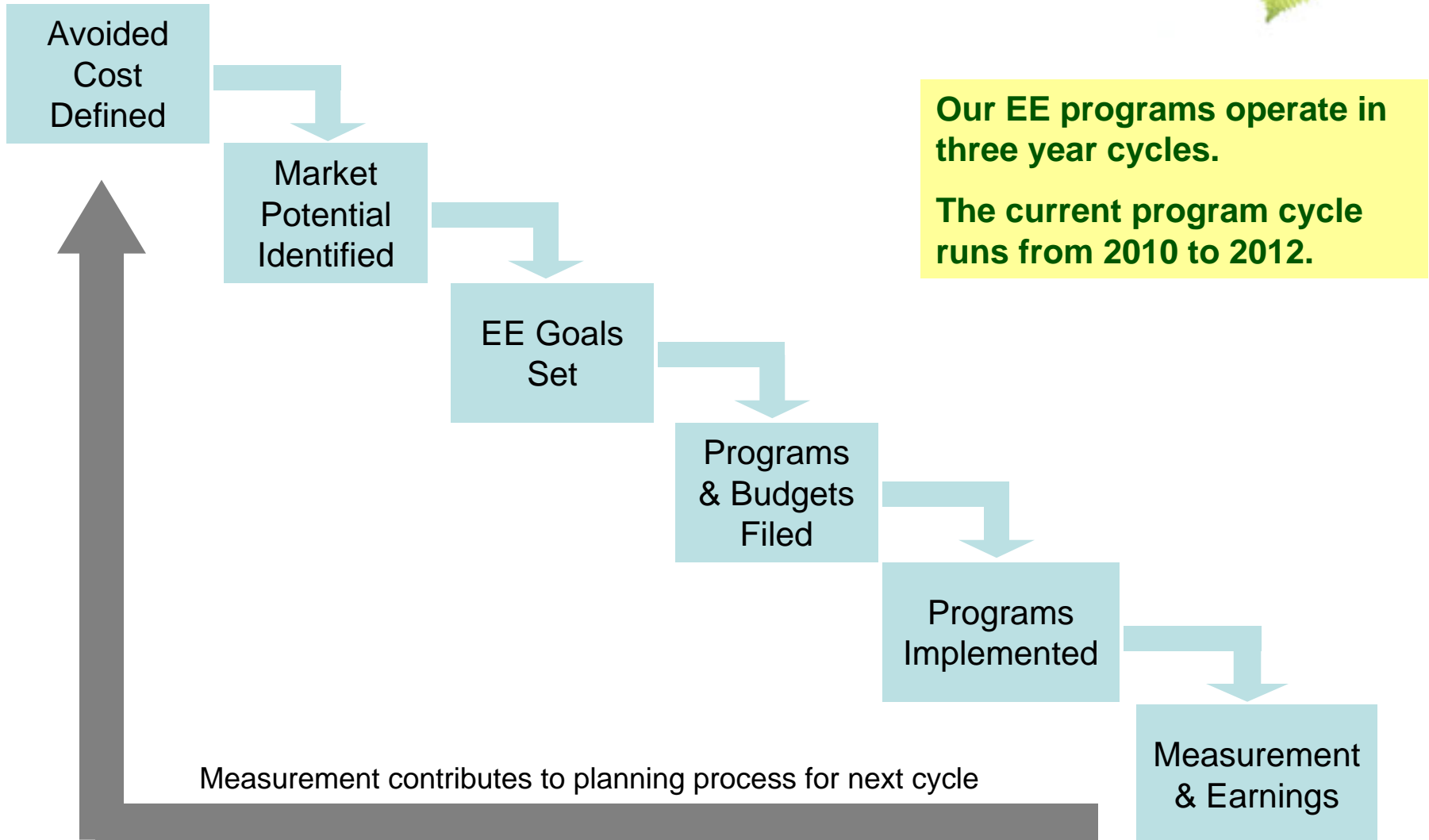


# ***How to Build and Implement an Effective EE Portfolio***





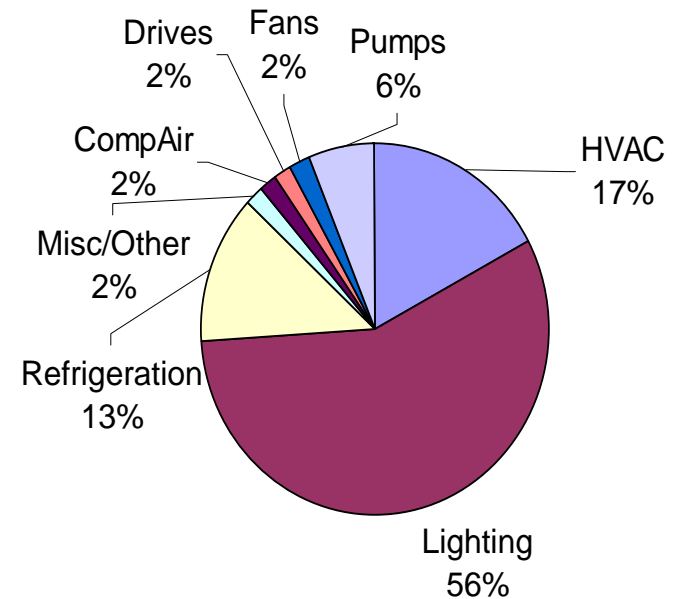
# Overview of the Energy Efficiency Business



# How Goals and Programs Are Established for EE

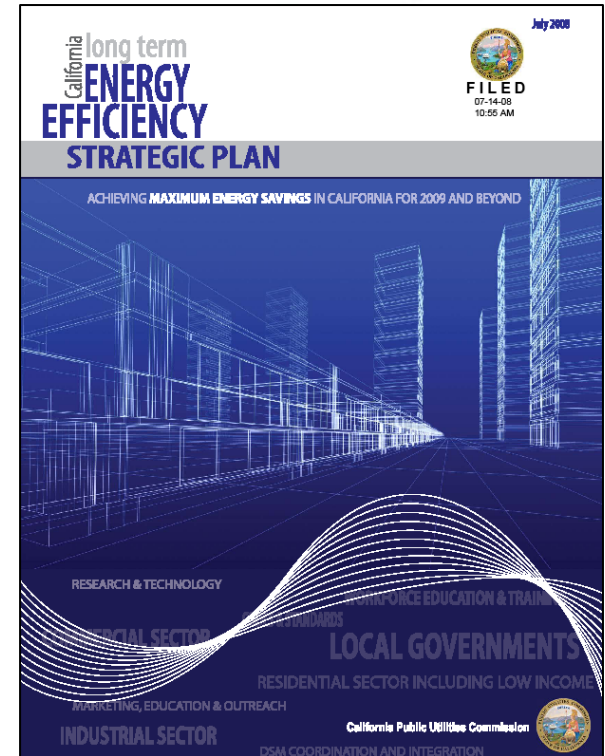
- ❖ Value of EE is assessed in terms of avoided costs. Avoided costs reflect the benefits associated with deferred generation, transmission, and distribution as well as mitigation of externalities such as carbon emissions
- ❖ Value of EE is used to derive both economic (or cost-effective) and technical market potential
- ❖ EE market potential studies analyze market saturation by identifying appliance saturation, building stock, economic growth conditions, customer demographics, and technology assessments
- ❖ Long Term Resource Plan and EE dockets both set goals, programs and budgets in consideration of the technical and economic market potential

## Energy Savings Potential



# California Long-Term EE Strategic Plan

- ❖ Establishes far reaching aspirational goals for California's energy future
- ❖ Sets key DSM policy direction for the State
- ❖ Influences the IOUs' DSM portfolios
- ❖ Shapes the development of new program and technology research
- ❖ Influences the overall portfolio cost effectiveness





# ***Portfolio Planning is a Collaborative and Iterative Process***

- ❖ SCE developed its 2010 – 2012 EE portfolio with input from the CPUC, other CA IOUs, intervenors, government agencies, institutions, local communities and businesses, and others.
- ❖ SCE’s EE portfolio balances the need for resource acquisition with the need for non-resource activities such as workforce education and training, energy information services, and progress towards CA Strategic Plan objectives.
- ❖ We develop and implement over 100 programs and sub-programs and utilize every available delivery channel to reach our customers including direct contact, on-line services, and relationships with manufacturers, retailers, 3rd party vendors, and community partners.





# SCE's Programs Partner With All Customers to Reduce Bills, Energy Use & GHG

<b>Core</b>	<ul style="list-style-type: none"> <li>• Residential Lighting</li> <li>• Multifamily EE Rebates</li> <li>• Home Efficiency Rebates</li> <li>• Appliance Recycling</li> <li>• Plug Load/Consumer Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial EE</li> <li>• Small Business Direct Installation</li> <li>• Agricultural EE</li> <li>• Industrial EE</li> <li>• Comprehensive HVAC</li> </ul>	<ul style="list-style-type: none"> <li>• New Construction</li> <li>• Data Center EE</li> <li>• Healthcare EE</li> <li>• Financial Solutions</li> <li>• Education &amp; Training</li> </ul>
<b>Third Party Targeted</b>	<ul style="list-style-type: none"> <li>• Lodging EE</li> <li>• Industrial Gases</li> <li>• Comprehensive Petroleum Refining</li> <li>• Cool Schools</li> </ul>	<ul style="list-style-type: none"> <li>• Efficient Affordable Housing</li> <li>• Food &amp; Kindred Products</li> <li>• Primary &amp; Fabricated Metals</li> <li>• 25+ others</li> </ul>	
<b>Partnership</b>	<p><u>Energy Leader Partnership Program</u></p> <ul style="list-style-type: none"> <li>• Palm Desert</li> <li>• City of Beaumont</li> <li>• South Bay</li> </ul>	<p><u>Institutional &amp; Government Partnerships</u></p> <ul style="list-style-type: none"> <li>• UC/CSU</li> <li>• CA Community Colleges</li> <li>• CA Department of Corrections &amp; Rehabilitatio</li> </ul>	
<b>Low Income</b>	<ul style="list-style-type: none"> <li>• Energy Management Assistance</li> <li>• CARE</li> <li>• FERA</li> </ul>		
<b>Emerging Technology</b>	<ul style="list-style-type: none"> <li>• Technology Assessments</li> <li>• Scaled Field Placements</li> <li>• Demonstration Showcases</li> <li>• Market and Behavioral Studies</li> </ul>	<ul style="list-style-type: none"> <li>• Technology Development Support</li> <li>• Business Incubation Support</li> <li>• Technology Test Centers</li> <li>• Codes &amp; Standards</li> </ul>	





# ***New Strategies in SCE's Residential Efficiency Portfolio***

## **❖ Advanced Consumer Lighting Program:**

- Provides upstream incentives to lighting manufacturers who supply advanced lighting technologies such as specialty CFLs, LEDs, cold cathode, and high efficiency incandescent bulbs.

## **❖ Whole House Retrofit Programs:**

- Designed to provide customers with a one-stop resource for whole-house energy efficiency improvements.
- Whole-house retrofit projects depart from the practice of single-measure installation and burn-out replacement projects by proactively delivering a customized and holistic home solution to customers to lower electricity use and live more comfortably.
- Recently passed in the US House of Representatives, the Home Star Energy Retrofit Act mirrors the Whole House Programs currently being implemented in CA.



# ***New Strategies in SCE's Business Energy Efficiency Portfolio***

## ❖ **Building Benchmarking**

- Aggregation of energy use data from business, government, and institutional customers to inventory energy use in our community, provide leads for account representatives, and set up an easy comparison among buildings.

## ❖ **On-Bill Financing**

- Provides businesses and local governments with a revolving loan pool to help reduce the upfront capital costs required of efficiency projects.

## ❖ **New Construction Programs**

- Advances Strategic Plan's big, bold strategies of all new residential construction to be zero net energy by 2020 and all new commercial construction to be zero net energy by 2030.

## ❖ **25+ Targeted Third-Party Programs**

- Contracted programs designed to overcome barriers to entry in hard-to-reach markets and target customers in this class with tailored energy solutions.





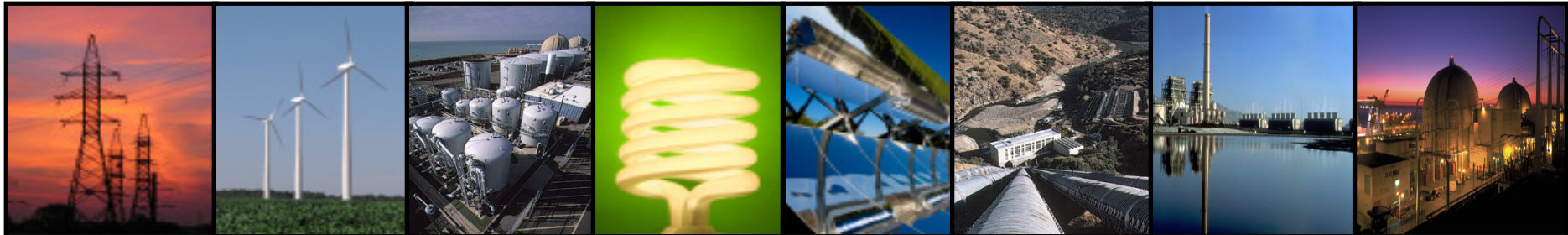
## ***Ex-Post Evaluation, Measurement & Verification and Shareholder Earnings***

- ❖ Energy efficiency achievements should be evaluated, measured, and verified by independent evaluators.
- ❖ Review allows for measure savings updates for subsequent energy efficiency program cycles.
- ❖ Earnings should be awarded to utilities for achievement of energy savings targets and for the delivery of substantial avoided cost benefits to customers.
- ❖ In January 2009 the CPUC opened a rulemaking to modify the current Risk/Reward Incentive Mechanism with the intention of creating a more transparent, more streamlined, and less controversial earnings mechanism. A decision is expected later this year.





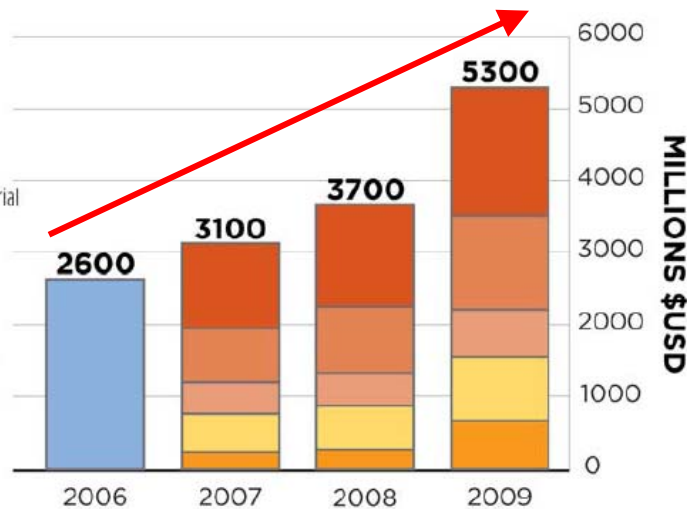
# ***The Future of Energy Efficiency***



# DSM Expansion Will Continue Into This Decade

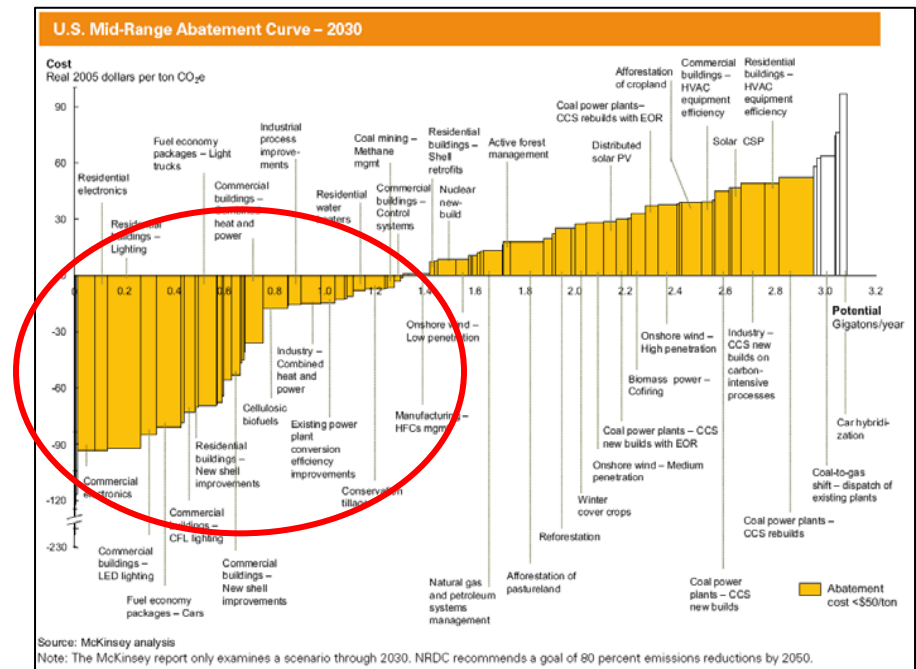
- ❖ In the last three years, DSM budgets have more than doubled in the U.S.
- ❖ DSM will play a critical role in a new carbon-based economy

## National DSM Budgets



Source: Consortium for Energy Efficiency, 2010  
(Includes Electric and Natural Gas Program Budgets)

## GHG Abatement



# The Future of Demand-Side Management Edison SmartConnect™

- ❖ SCE is building a new energy future on the foundation of a new smart metering system.
- ❖ Through the deployment of smart meters, SCE will leverage a 2-way communications infrastructure with 5 million homes on our distribution network to create lasting value for our customers and our operations.
- ❖ Edison SmartConnect™ will:

- **Empower Customers**

- Rate choices are available to manage costs
- Energy information and analysis

- **Improve Load Management**

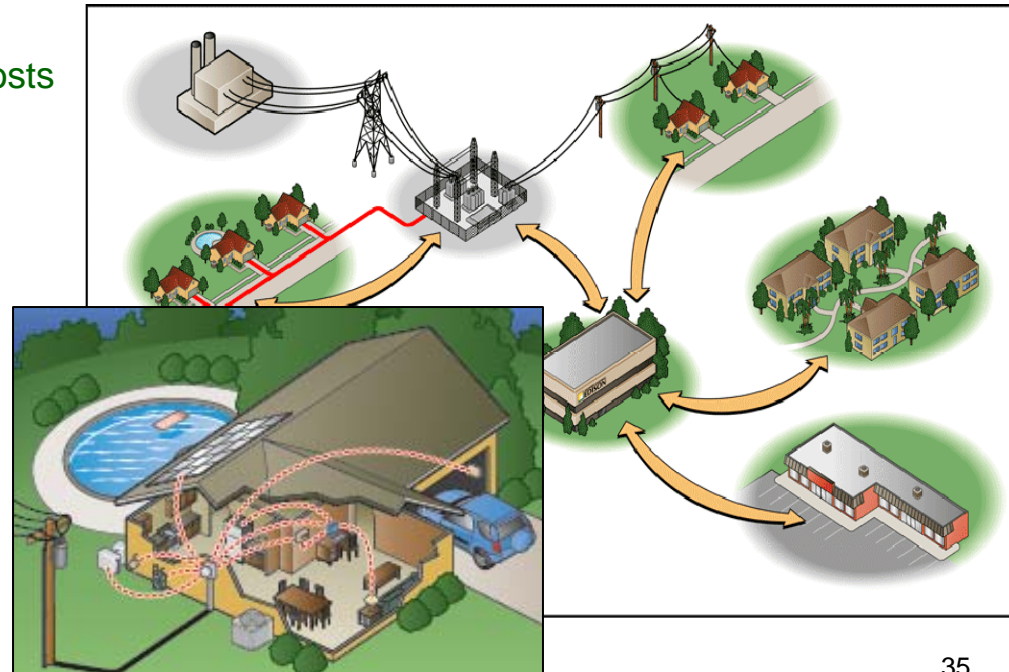
- Economic dispatch of load control

- **Increase Operational Efficiencies**

- Improved field operations
- Outage & service condition information

- **Expand Opportunities in the Future**

- Leverage open design principles
- Future customer service offerings





# Thank You!!

**Gene Rodrigues**  
Director of Customer Energy Efficiency & Solar  
Southern California Edison  
[gene.rodriguez@sce.com](mailto:gene.rodriguez@sce.com)

Additional information about energy efficiency in California available at:

**Southern California Edison**  
[www.sce.com/](http://www.sce.com/)

**California Public Utilities Commission**  
[www.cpuc.ca.gov/](http://www.cpuc.ca.gov/)

**California Energy Commission**  
[www.energy.ca.gov/](http://www.energy.ca.gov/)

**Flex Your Power**  
[www.fypower.org/](http://www.fypower.org/)



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