

# Energy Efficiency Policy In California

March 20, 2006

Steve McCarty  
Director  
Demand-Side Resources



# Today's Discussion

Who We Are and What We Do

What is Energy Efficiency?

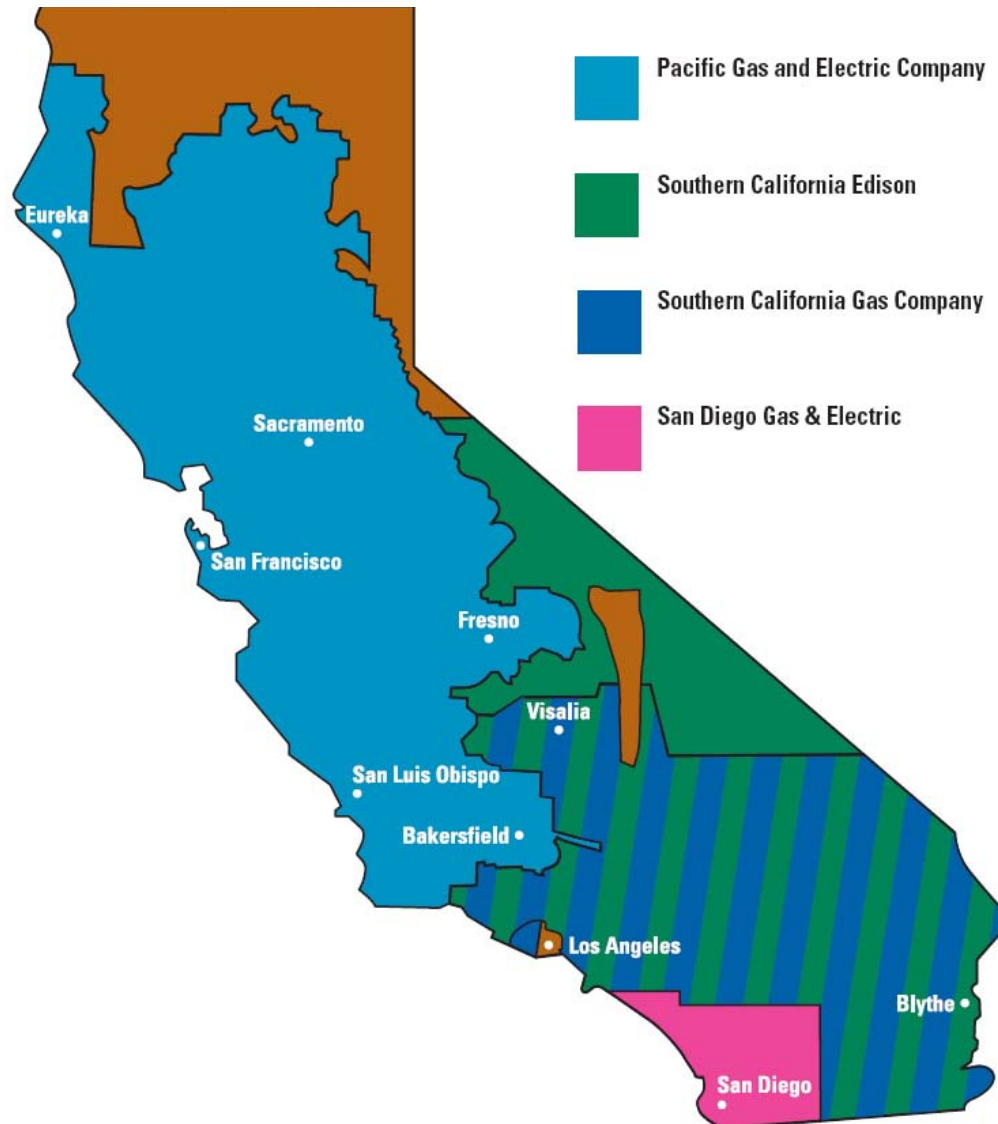
Why We Do Energy Efficiency

How Energy Efficiency Happens

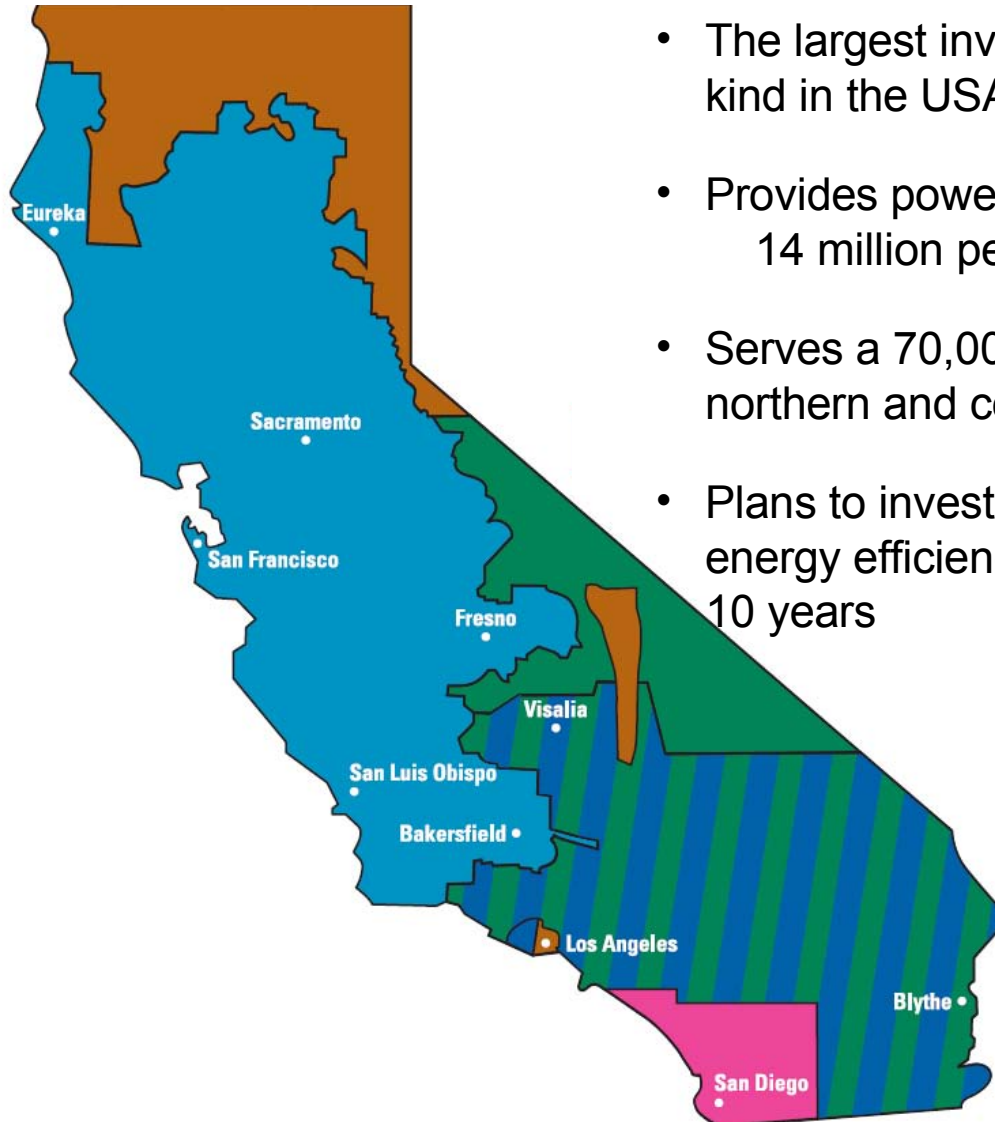
Where We've Been

The Future of Energy Efficiency at PG&E

# California's Investor Owned Utilities (IOUs)



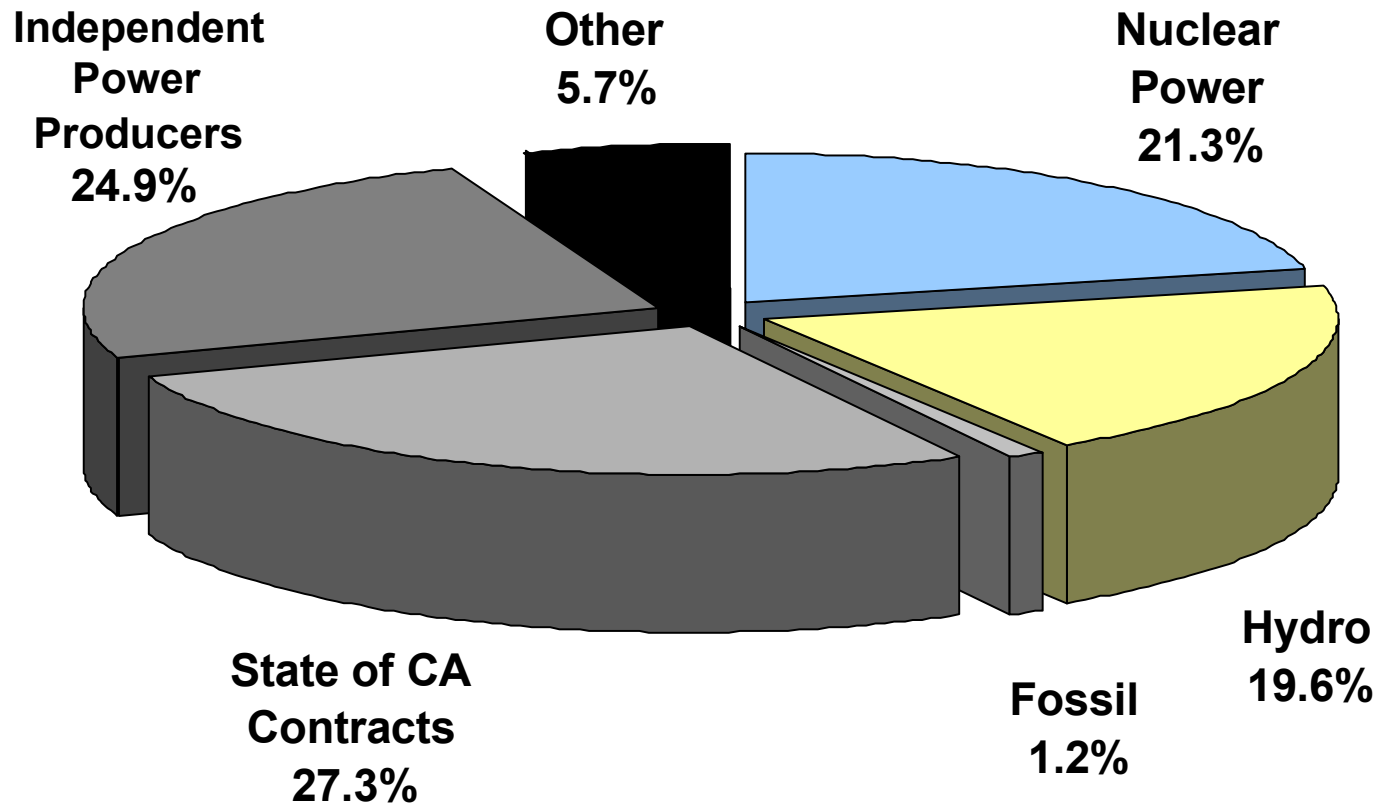
## Who We Are & What We Do



- The largest investor-owned system of its kind in the USA
- Provides power to approximately 14 million people – 1 in 20 Americans
- Serves a 70,000 square-mile area in northern and central California
- Plans to invest more than \$2 billion on energy efficiency initiatives over the next 10 years

# PG&E's Generation Portfolio

2005 Electric Supply  
(82,936 GWh)



# California's Electric Supply

Supply has been adequate in Northern California

Future adequacy & price of supply remain concerns given growth and generation retirements

Capacity additions, demand response and energy efficiency are all identified and agreed upon components of the “real” resource mix

# What is Energy Efficiency?

Investments in equipment, controls, or facility design that reduce energy use while maintaining a comparable level of service as perceived by the customer.

# What is Energy Efficiency?

## Energy Efficiency:

Cost-effective reductions in a customer's demand for gas and electricity

The least-cost, cleanest and most quickly deployed resource option available to utilities

The preferred resource regardless of what electric industry structure exists

# Why We Do Energy Efficiency

When energy usage is lower, most utility costs drop as long as energy efficiency reduces demand (8-20 years)

Costs that drop:

- Fuel
- Generation plant capital costs
- Distribution upgrades deferred/avoided
- Transmission upgrades deferred/avoided
- Transmission and distribution losses

And societal costs are lower:

- Air and water pollution

# Why We Do Energy Efficiency

It is cost effective

Our customers expect it

It protects the environment

# How Energy Efficiency Happens

Major barriers that contribute to insufficient purchases of cost-effective, energy-efficient goods and services:

Imperfect information

Consumer attitudes

Limited access to capital

Product lifecycles

Electric rate distortions and regulatory uncertainty

Externalities

# How Energy Efficiency Happens

Influence customers' choices through a diverse portfolio offering:

Education and Outreach

Energy Audits

Technical Assistance

Rebates

Loans

Emerging Technologies

# The Eras of Energy Efficiency in California

'70s – Conservation

'80s – Demand-side Management

'90s – Energy Efficiency as a Resource

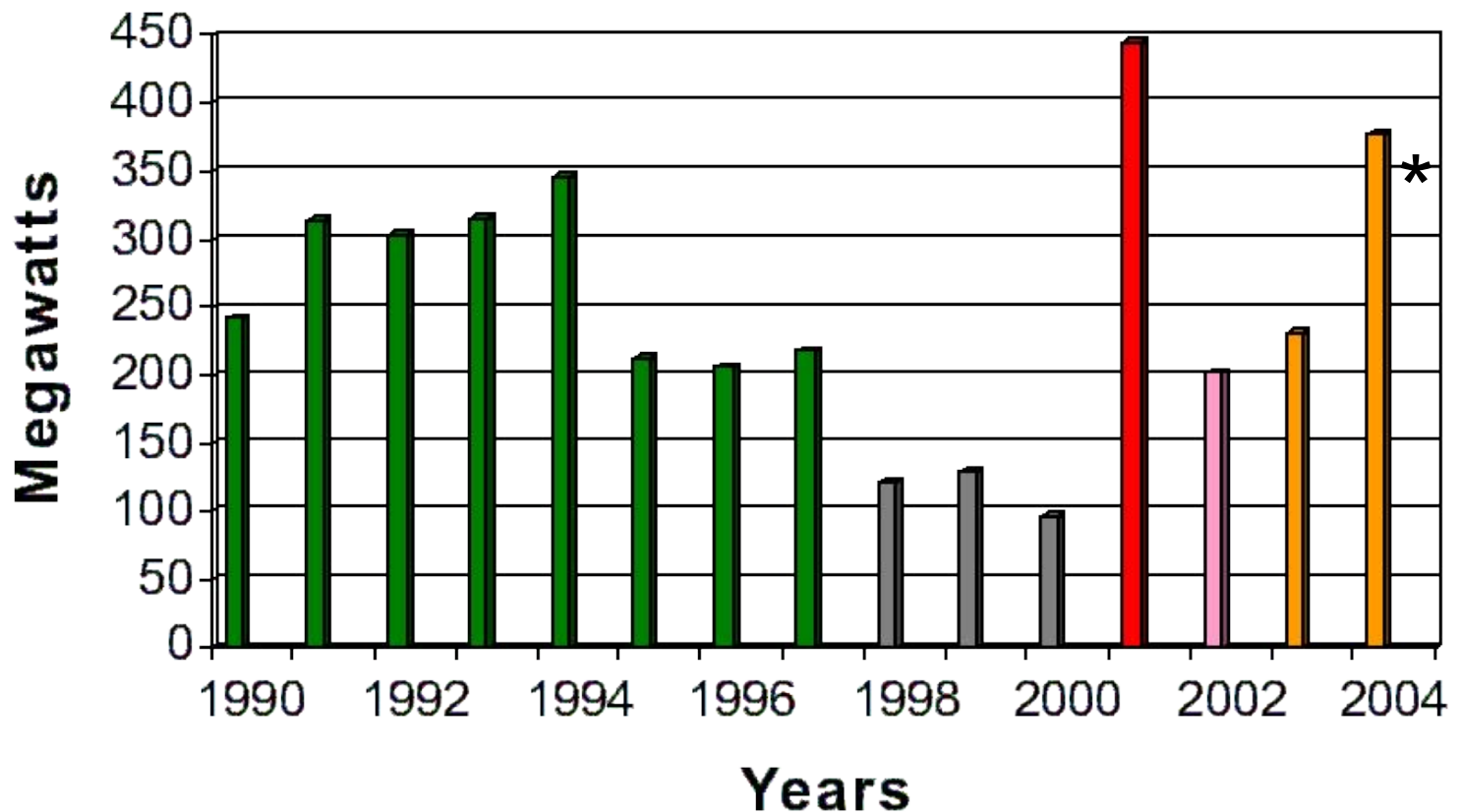
'98-'00 – Energy Efficiency Restructuring

'01 – Energy Crisis

'02 – Continued Uncertainty

'03 – Energy Efficiency as a Resource

# Megawatts Saved by California's Investor Owned Utilities



\* About one percent of total demand

# After the Energy Crisis: New Framework for Energy Procurement

In 2002, the CPUC adopted a new framework for utility procurement of power:

- Energy efficiency now integrated into utility resource plans

- Utilities are required to consider cost-effective energy efficiency in their procurement plans

- This has led to significantly increased investment

# California Energy Action Plan

Adopted by the California Public Utilities Commission, Energy Commission and Power Authority in Spring 2003

Emphasizes energy conservation and resource efficiency as a first priority for California's energy policy

Recognizes that energy efficiency programs are among the most important tools in meeting California's energy needs

Expects energy efficiency to capture approximately 6 of the 11GWs in demand growth over next decade

# Integrated Resource Plans Follow a “Loading Order” of Resources

The loading order prioritizes the types of resources utilities and other load serving entities must secure:

1. Energy Efficiency
2. Demand Reduction
3. Renewables
4. Distributed Generation
5. Efficient, Clean Fossil-fueled station Generation                      Central-
6. Transmission

# PG&E's 2006-2008 Energy Efficiency Funding & Goals

<b>Year</b>	<b>Current Budget (\$ Millions)</b>	<b>MWs</b>	<b>GWhs</b>	<b>Therms (MMTh/yr)</b>
2006	\$276	180	829	13
2007	\$315	205	944	15
2008	\$384	228	1,053	17
<b>TOTAL</b>	<b>\$975</b>	<b>613</b>	<b>2,826</b>	<b>45</b>

# Energy Efficiency Funding Year by Utility

per

(\$s Million)

	2006	2007	2008	TOTAL
PG&E	\$296	\$350	\$329	\$975
SCE	\$232	\$232	\$232	\$696
SDG&E	\$80	\$91	\$106	\$277
SoCalGas	\$47	\$61	\$74	\$182
TOTAL	\$655	\$734	\$741	\$2,130

# MW Goals per Year by Utility

	2006	2007	2008	TOTAL
PG&E	180	205	228	613
SCE	219	246	249	714
SDG&E	54	54	54	162
TOTAL	453	505	531	1,489

# PG&E's 2006-2008 Energy Efficiency Portfolio Design

Programs will focus on reducing demand during peak periods:

## **Residential**

- More efficient new air conditioners

- Advanced window systems

- Improved efficiency of existing air conditioning systems through better maintenance

## **Commercial and Industrial**

- New lighting systems

- Chillers, motors, maintenance

## **New Construction**

- Improved insulation and air-flow systems

- Automatic daylighting systems

# Energy Efficiency Lessons Learned from Electric Industry Restructuring

## Regulatory and Policy Requirements for Success:

Develop a policy that encourages cooperation and collaboration among industry stakeholders

Clearly define roles and responsibilities

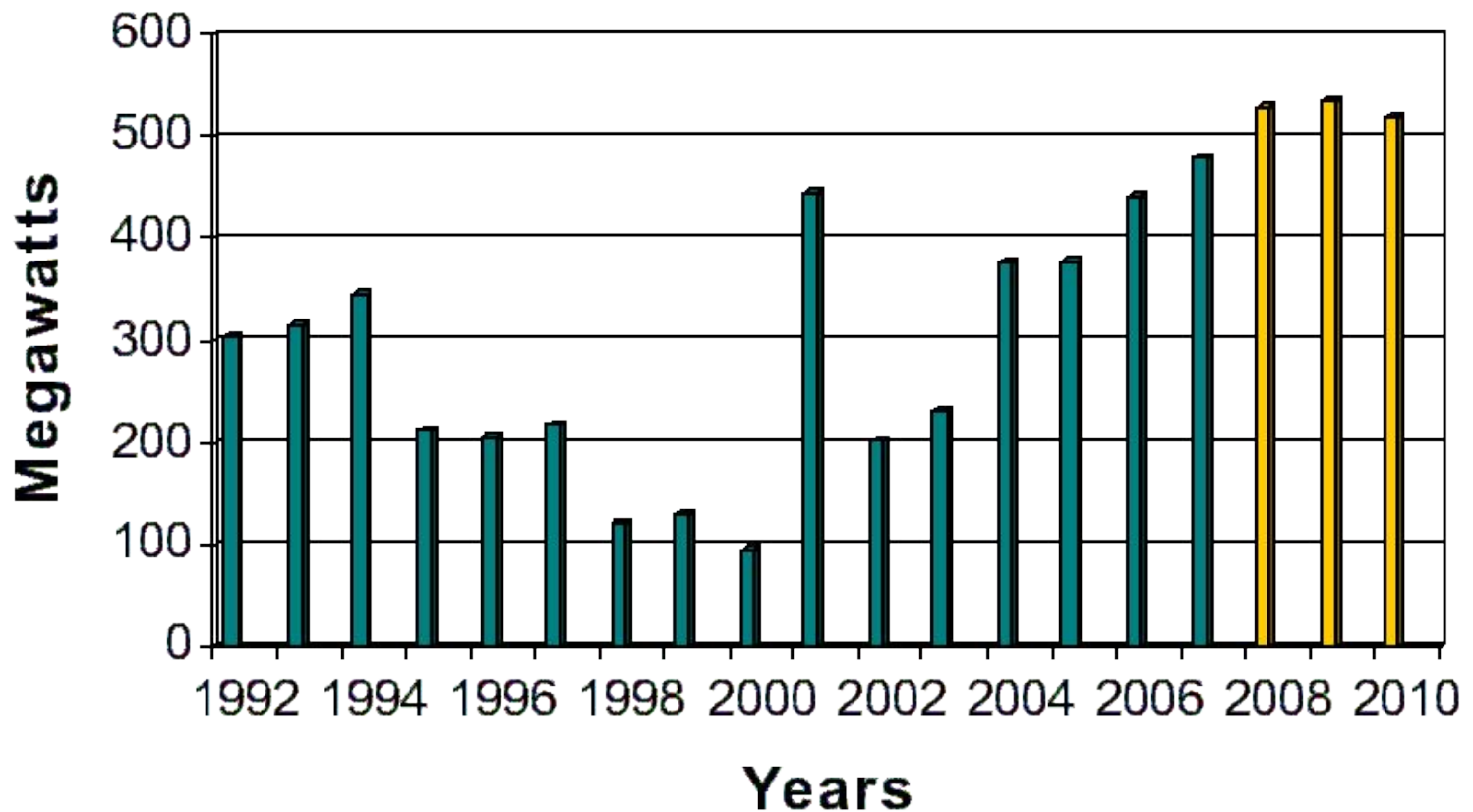
Maintain consistent policy direction and goals, and ensure goals are aligned with policy objectives

Plan multiple-year program cycles and ensure approval timely

Establish clear, simple and meaningful reporting requirements

Allow administrative flexibility to respond to market conditions and make necessary program adjustments

# Megawatts Saved by California's Investor Owned Utilities and Future Goals



# Energy Efficiency Web Sites and Resources

CA Energy Commission

<http://www.energy.ca.gov>

Research, Codes, Training and Reference Materials

CA Public Utilities Commission, EE Rulemaking

<http://www.cpuc.ca.gov>

[/static/industry/electric/](#)

[energy+efficiency/rulemaking/index.htm](#)

Commission energy efficiency policies, decisions, and related publications

Pacific Gas & Electric Company (PG&E)

<http://www.pge.com>

Training, Resource Library, Programs, Rebates

Demand Response Research Center

<http://drrc.lbl.gov/>

Research, Reference Materials

ACEEE

<http://www.aceee.org>

EE Publications, Conferences

EPA EnergyStar

<http://www.energystar.gov>

Product Listings, Technical Specifications, Reference Materials

Energy Design Resources

<http://www.energydesignresources.com>

Training, Reference Materials

Alameda County Waste Management Authority (ACWMA)

<http://www.stopwaste.org>

Green Building Information, Remodeling Guidelines, New Homes

Green Resource Center

<http://www.greenresourcecenter.org>

Green Building Information, Materials, Retailers

CA Lighting Technology Center

<http://cltc.ucdavis.edu/cltc/>

Lighting-related Research

CALMAC

<http://www.calmac.org>

Energy Efficiency Program Evaluations and Related Publications

Association of Energy Engineers

<http://www.aeecenter.org>

(Professional Organization, Training, Publications, References)

Database for Energy Efficiency Resources (DEER)

<http://eega.cpuc.ca.gov/deer/>

Measure-level energy-savings data

Energy Efficiency Best Practices Studies [http://](http://www.eebestpractices.com)

[www.eebestpractices.com](http://www.eebestpractices.com)

Publications by program and customer type documenting best practices