



Current Public Goods Energy Efficiency Programs for Existing Buildings

**CEC IEPR Staff Workshop on
Achieving Energy Savings in California Buildings
July 20, 2011**

**Cathy Fogel, Energy Division
California Public Utilities Commission (CPUC)**



Presentation Overview

- 2012 Programs Background
- Strategic Plan- Groundwork for programs
- Residential and Commercial Buildings Programs
- Related Programs
- Challenges / Opportunities



CPUC Process for Approval / Oversight of IOU Energy Efficiency Programs

- 3-Year Budget Cycle



- Current cycle: 2010-2012
- Next cycle: 2014-2016 (with 2013 “bridge” year)
 - **Portfolio guidance decision: June 2012 (est.)**
 - Budget applications: Q1 2013 (est.)



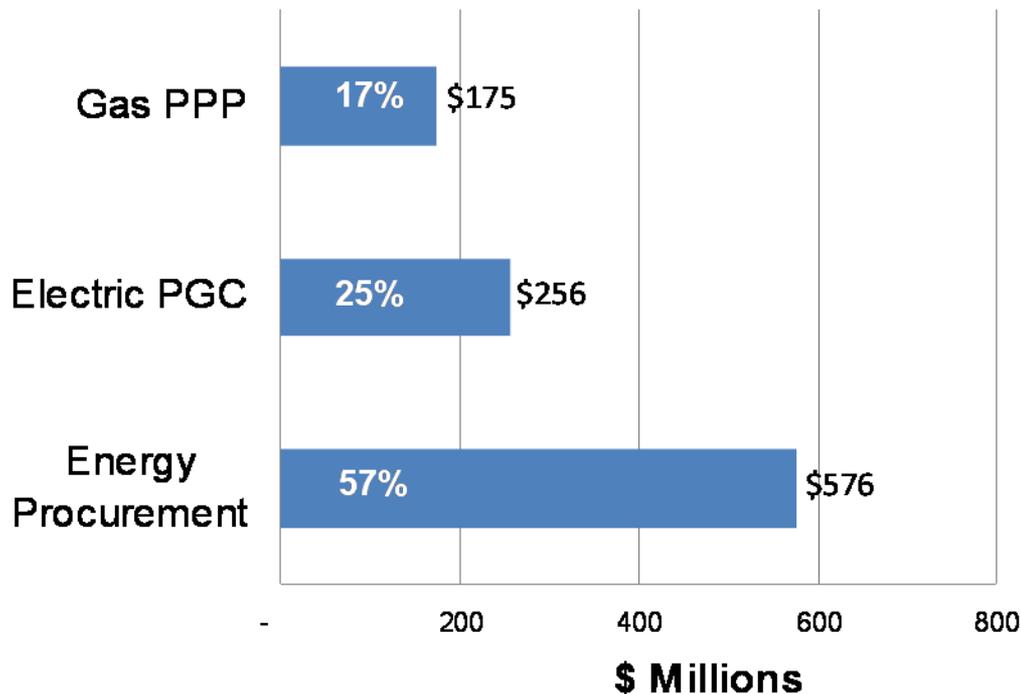
2010-2012 IOU Energy Efficiency Portfolio

- D.09-09-047 approved **\$3.1 billion** in 2010-2012 EE funding:
 - Additional **\$750 million** approved for low income EE programs in separate proceeding
- Three-year combined savings targets:
7,000 GWh / 1,500 MW / 150 MMTherms
 - Equivalent to 3 major power plants
 - Savings incorporated into procurement planning



Funding Sources for Mainstream IOU Energy Efficiency Programs

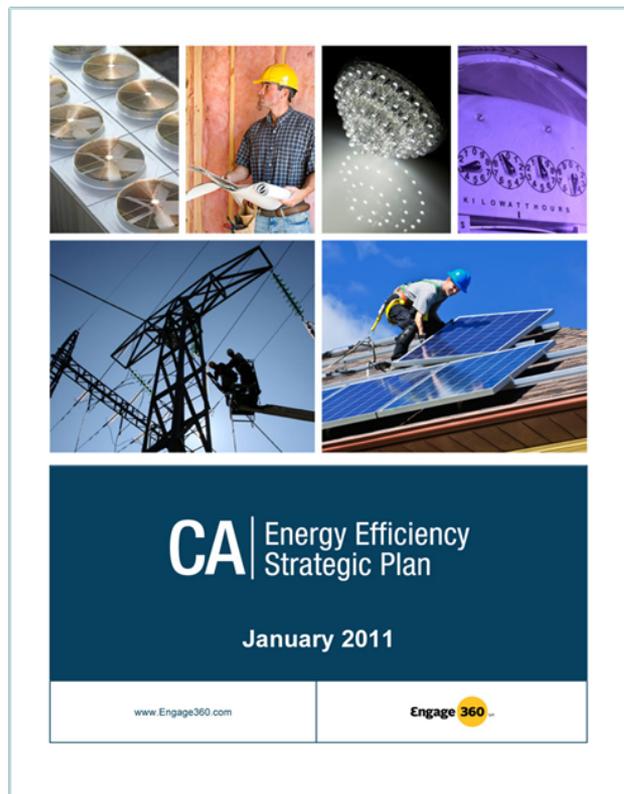
Average Annual EE Budget by Funding Source
(Total ~ \$1 billion)



- CPUC pools all funding sources into one overall (cost-effective) portfolio



California Long-Term Energy Efficiency Strategic Plan



- 2007: CPUC ordered a Strategic Plan to achieve “all cost-effective energy efficiency.”
- 2008: Strategic Plan adopted
 - A roadmap for EE through 2020 and beyond
- Big Bold Energy Efficiency Strategies
 - Existing homes reduce by 40% (2020)
 - 50% Existing Commercial bldgs ZNE by 2030
 - Optimization of HVAC system performance
 - Saturation goals for low income household EE
- Guided review of 2010-'12 IOU Programs
- Momentum via Action Plans



IOU EE Portfolio Organization

Statewide Programs

- Residential
- Commercial
- Industrial
- Agricultural

- Heating, Ventilation, Air Conditioning
- New Construction
- Emerging Technologies
- Codes & Standards

- Marketing, Education & Outreach
- Workforce Education & Training
- Integrated Demand-side Mngment
- Lighting Market Transformation

Utility “Local” Programs

PG&E (7)

SCE (4)

SDG&E (6)

SCG (5)

Third-Party Programs

PG&E (50)

SCE (31)

SDG&E (14)

SCG (18)

State & Local Gov’t Programs

PG&E (25)

SCE (30)

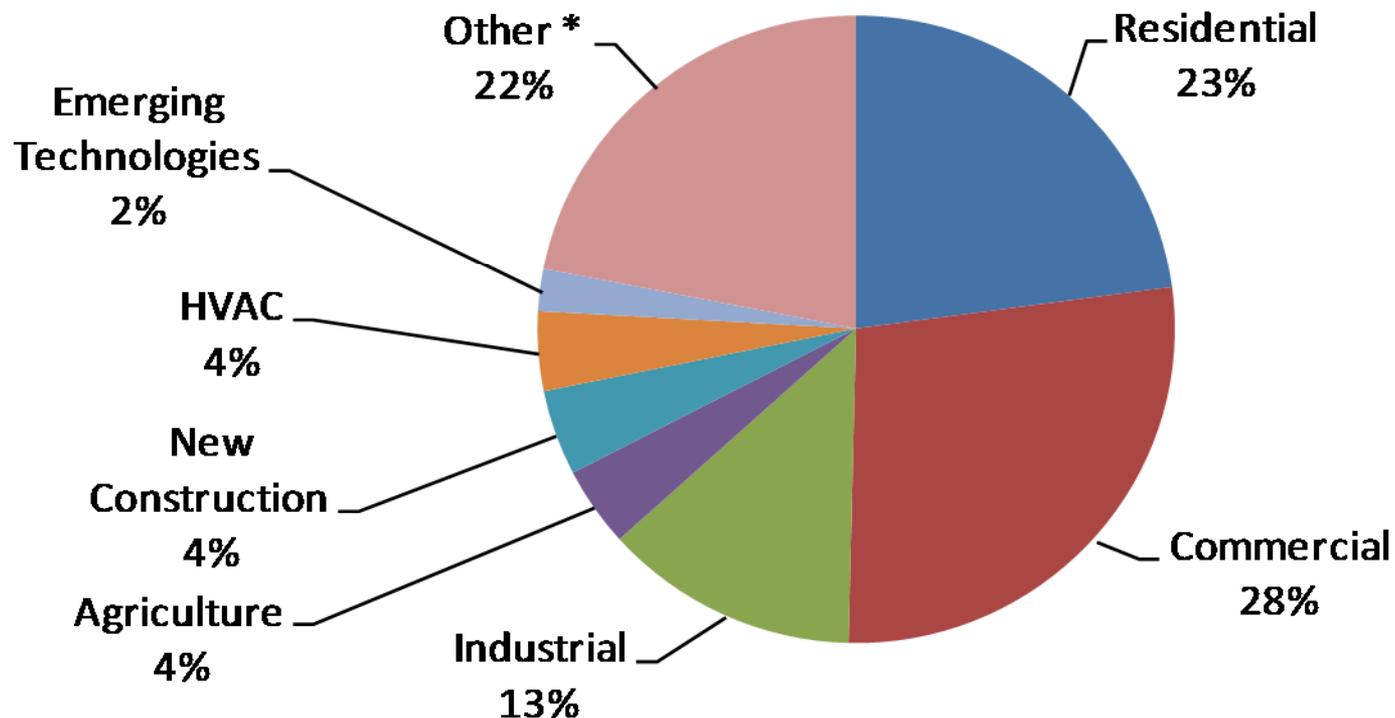
SDG&E (14)

SCG (17)

(#) = Number of individual programs



IOU Energy Efficiency Budgets 2010-2012 (Total = \$3.1 Billion)

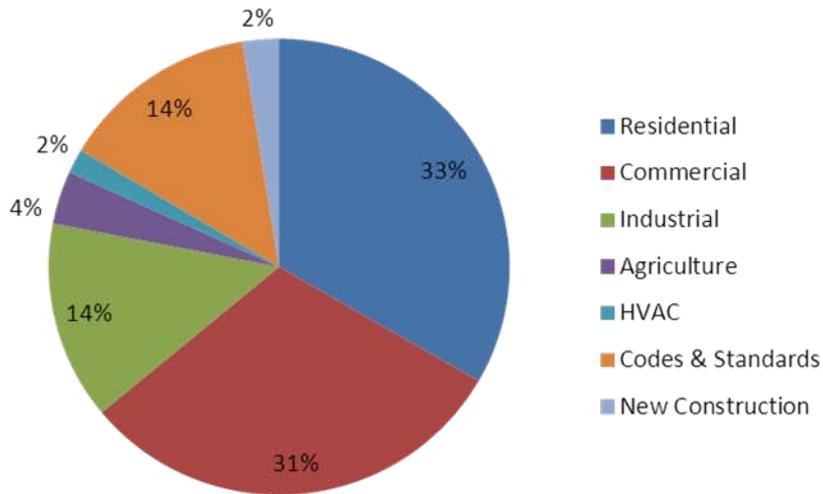


*Other includes Codes & Standards; Institutional; Local Government Partnerships (LGPs); Marketing, Education & Outreach (ME&O); Workforce Education & Training (WE&T); Integrated Demand-side Management (IDSM); Lighting Market Transformation; and Evaluation Measurement & Verification (EM&V)

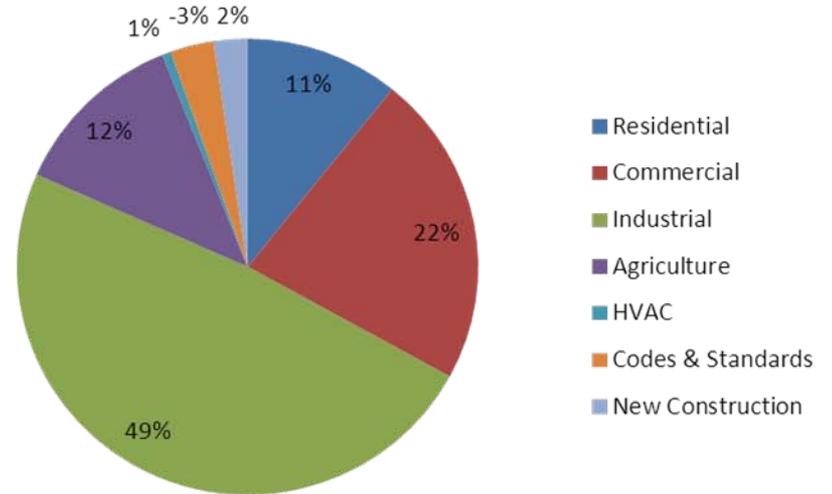


2010-2012 Projected Savings, by Market Sector

Kilowatt Hour Savings



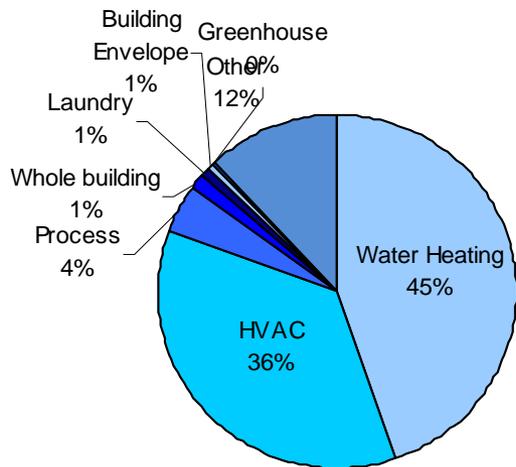
Therm Savings (MMth)



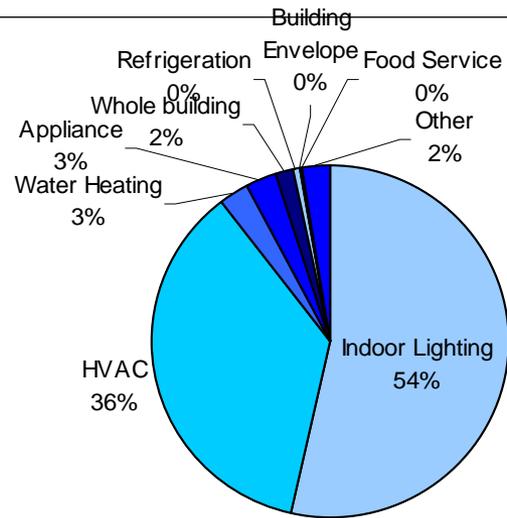


2006-2008 IOU Portfolio Savings, By End Use

Therms (evaluated)



KW (evaluated)





Residential Buildings

- **8 Subprograms:**
 - Appliances (furnaces, windows, etc) rebate program
 - Single-family and Multi-family dwellings
 - Basic CFL and Advanced lighting “upstream” buy-downs
 - Electronics “up/mid- stream” buy-downs
 - Home energy use survey & tools (online, by phone, in person)
 - *Energy Upgrade California*- comprehensive home energy improvement program
- **Additional Third-Party and Local utility programs**
 - e.g. Online Buyers Guide (SCE)
- **32%** of planned electric savings, **11%** of gas savings, and **25%** of portfolio budget



Whole-house Retrofit Subprogram

- *Energy Upgrade California*
 - \$113M program
 - Advanced (performance) and basic (prescriptive) paths
 - Incentives; some marketing & outreach
 - Budgeted for 42,000 homes
 - Single-family launched October 2010
 - MF SDG&E pilot late 2011
 - Partnering with Energy Commission's ARRA-funded home retrofit programs
 - Program to be “consistent” with Home Energy Rating System (HERs)



Reduce energy use. Save money. Create jobs.





Commercial Buildings

- **5 Statewide programs**
 - Non-Residential Audits
 - Deemed Incentives
 - Calculated Incentives
 - Continuous Energy Improvement
 - Direct Install
- **Local utility programs**
- **Third-party administered programs**
 - Targeting hospitals, lodging, schools, office buildings and various other niche markets
- **29%** of planned electric savings, **22%** of gas savings, and **30%** of portfolio budget



HVAC Programs

- **5 Subprograms:**
 - Commercial Quality Installation
 - Energy Star Residential Quality Installation
 - Res & Com Quality Maintenance
 - HVAC Workforce, Education and Training
 - Technologies and Systems Diagnostics Support
- **Additional Third-Party and Local utility programs**
 - e.g. Cool Cash (PG&E)
- **2%** of planned electric savings, **1%** of gas savings, and **4%** of portfolio budget



Codes & Standards Program

- **Analysis /Support activities**
 - Principal audience has been **CEC's** building and appliance standards.
 - Now expanding to influence **US Dept. of Energy** (national standards)
- **Major program activities:**
 - Codes and Standards Enhancement (CASE) studies
 - Compliance Enhancement
 - “Reach Codes”
- **13%** of planned electric savings, **3%** of gas savings, and **1%** of portfolio budget



Marketing, Education & Outreach

- New demand-side clean energy brand
- Based on ethnographic consumer research and a social marketing platform
- Join at www.engage360.com





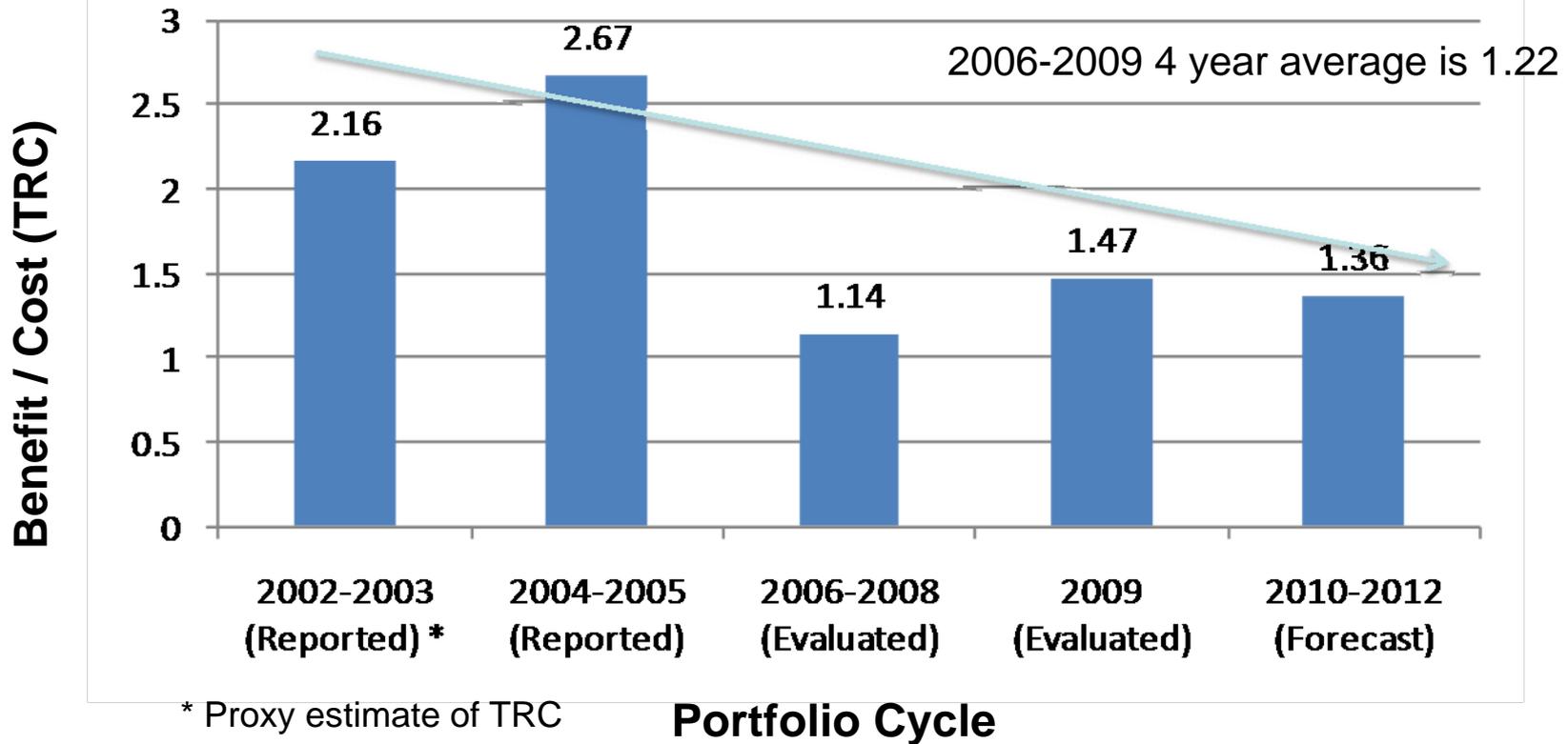
Market Transformation Strategies: Strategic Plan (examples)

- **Residential-**
 - Whole house programs
 - Create consumer demand
 - Behavior change, home labeling, education
 - Local govt RECOs
 - Develop financial products *(CPUC finance report just released)*
 - T24 compliance
 - Plug loads
 - **Commercial**
 - Codes and Standards improvements
 - Benchmarking and building labeling
 - Develop financial products
 - Reward comprehensive retrofits
- Strong basis for AB758 activities**



The Cost-Effectiveness Challenge

IOU EE Portfolio Cost-effectiveness





Challenges / Opportunities

- Keep IOU portfolio cost effective
 - Savings based on Energy Division evaluations
 - DEER establishes savings values
- Procedural requirements
 - Portfolio guidance decision in less than a year
- CEC- CPUC coordination
- AB758 – (some) resources, focus
- Momentum and stakeholder innovation



Thanks for Your Attention!

Cathleen Fogel, Ph.D.

Residential Programs, Senior Analyst

Demand Side Programs, Energy Division

California Public Utilities Commission

- Cathleen.fogel@cpuc.ca.gov



Appendices



2010-2012 EE Portfolio Highlights

- 12 statewide programs implemented consistently across 4 IOUs

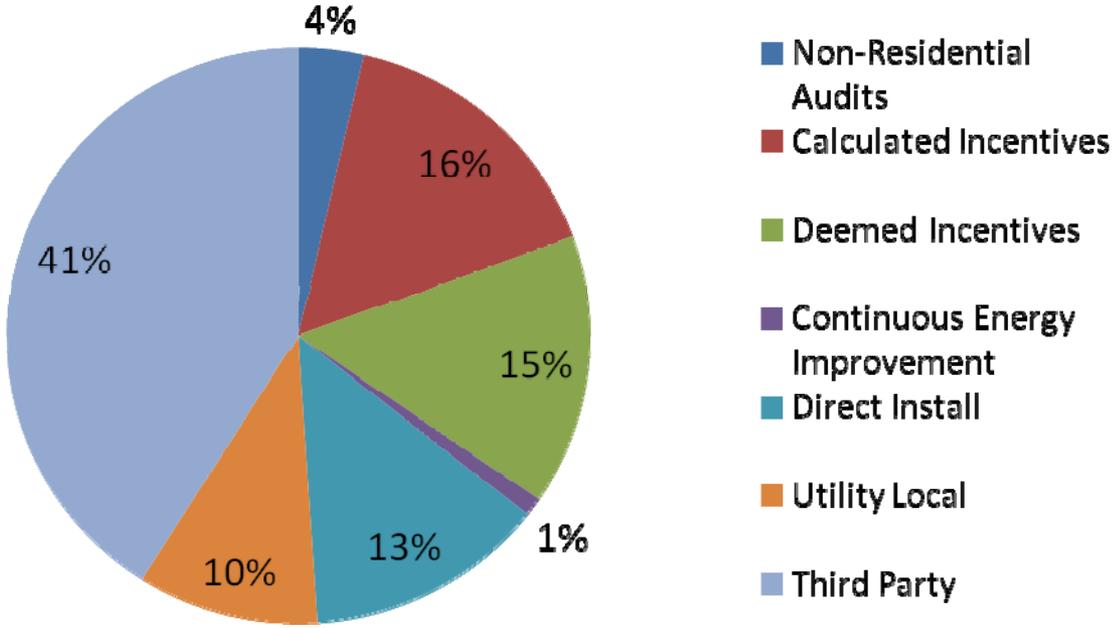
Program	Budget	Program	Budget
Residential	\$718 M	Emerging Technologies	\$68 M
Commercial	\$863 M	Codes & Standards	\$30 M
Industrial	\$405 M	Integrated DSM	\$11 M
Agricultural	\$128 M	Workforce Education & Training	\$102 M
New Construction	\$ 137 M	Marketing Education & Outreach	\$ 80 M
HVAC	\$128 M	Lighting Market Transformation	\$1.5 M

- Local government partnerships (\$233M); institutional partnerships (\$95M)
- Third-party programs + Local Government Partnerships:
 - ~ 1/3 of portfolio spending by non-utility entities



Commercial Subprogram Budgets

**2010-2012 IOU EE Portfolio
Commercial Budgets (\$944 M total)**





Residential Subprogram Budgets

**2010-2012 IOU EE Portfolio
Residential Budgets (\$732 M total)**

