The Intersection of Strategies and Lessons Learned in Low-Income Programs

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California Energy Efficiency Strategic Plan

- California is on its way in achieving the 2020 homes treated goal

- Moving forward the Commission will focus on deeper energy savings while creating a balance with non-resource measures, a critical component of the program

The Low-Income Energy Efficiency (LIEE) program started in 1981 as a result of the energy crises in the 1970s.

The objective of the LIEE program was to help income-qualified customers reduce their energy consumption, utility bills, and energy-related hardships.

In 1990, as an endorsement of the CPUC's work, the California State Legislature enacted Public Utilities Code section 2790 directing utilities to provide free home weatherization services to low-income customers while taking into consideration both the cost-effectiveness of the services and the policy of reducing the hardships facing low-income households.

Low-Income Energy Efficiency (LIEE) program Background

Energy Savings Assistance Program (ESA)

- The ESA Program installs weatherization and energy efficiency measures, provides minor home repairs, and energy education at no cost to income eligible program participants.
- The ESA program has a **dual goal** to 1) cost-effectiveness of the services, and 2) increase the health, comfort, and/or safety of the household
- Income eligibility for ESA participation is set at 200% or less of the Federal Poverty Guideline (FPG).
- Customers may enroll through categorical eligibility by providing documentation of participation in one of the approved state or federal public assistance programs, or by proof of household income.

California Energy Efficiency Strategic Plan

The Plan has two primary goals for the low-income sector:

1) by 2020, all willing and eligible customers will be given the opportunity to participate in low-income energy efficiency programs, and

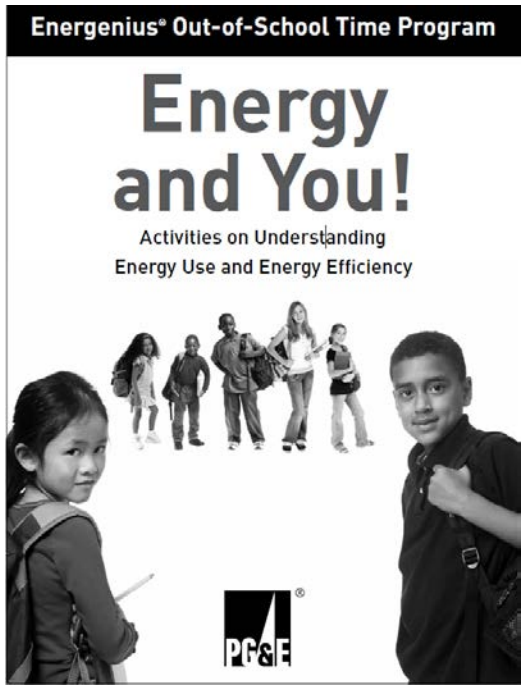
2) the low- income energy efficiency program portfolio will deliver increasingly cost-effective, long-term savings.

First Goal: By 2020, all willing and eligible customers will be given the opportunity to participate in the LIEE/ESA program

Marketing and Outreach

Education

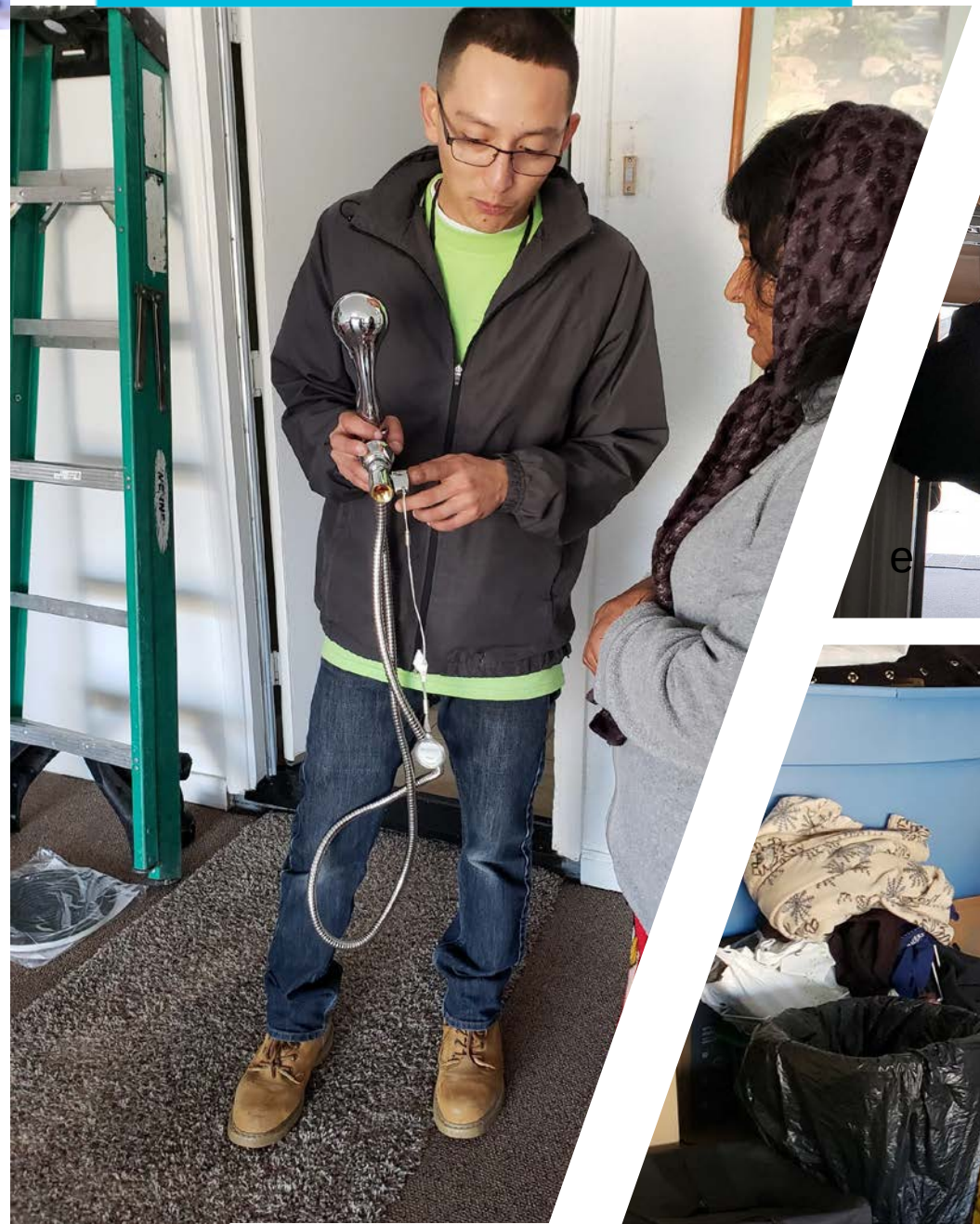
Workforce education and training



Marketing & Outreach

- ESA Program website
- Targeted zip codes to reach specific customer segments
- California School-Age Consortium (CalSAC)

EDUCATION



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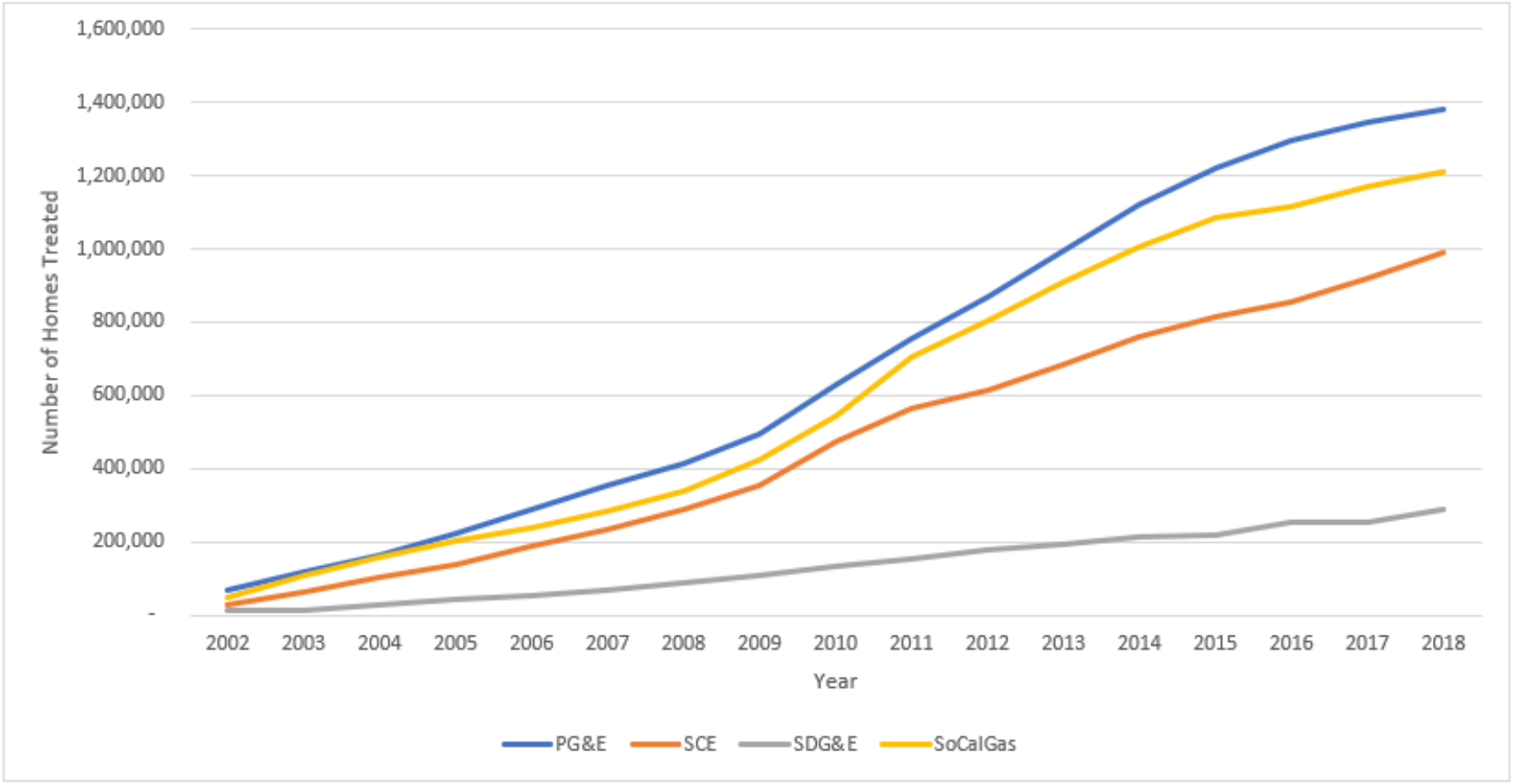
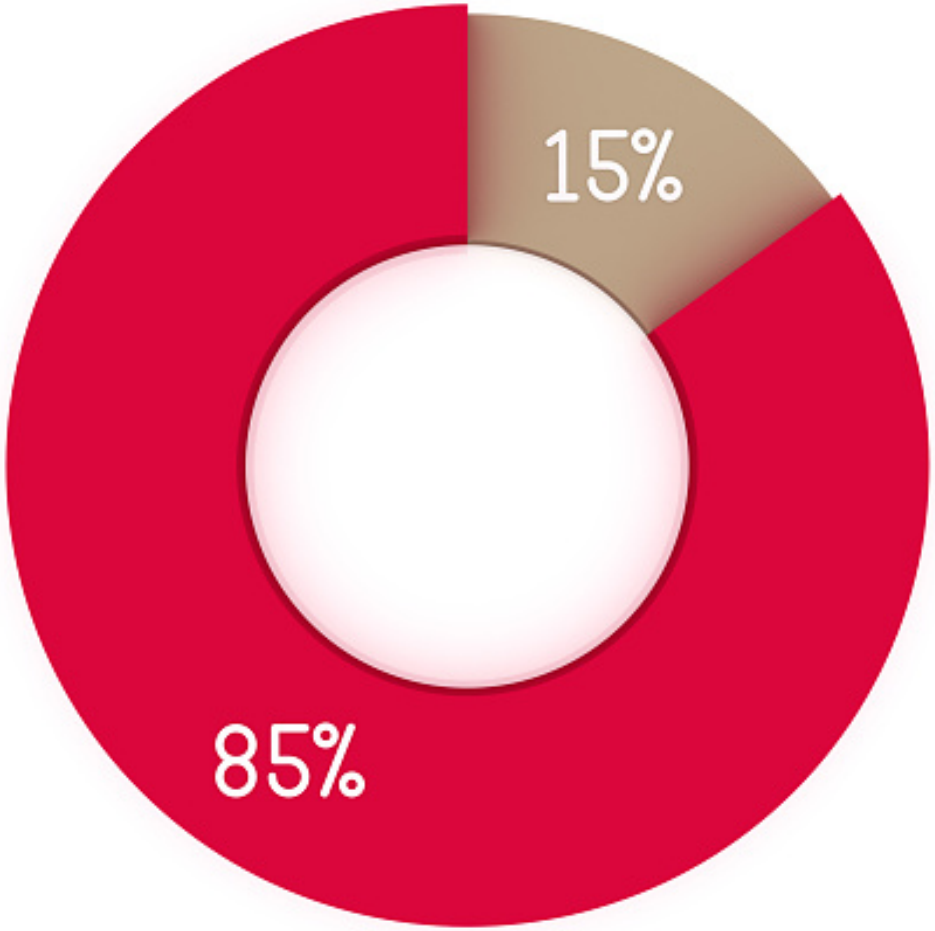
Total Number of Households Treated Through PY by each Investor Owned Utility 2003-2018



The IOUs have achieved approximately 85% towards the 2020 goal from 2002-2018



These equal to approximately 3,873,256 of households treated and a remainder of approximately 681,934

Workforce Education & Training

- **For Southern California Edison many of the ESA Program service providers, are situated in low-income and disadvantaged communities and provide jobs within these communities. As of December 31, 2018, these providers provided approximately 759 jobs**

Second Goal: The LIEE programs will be an energy resource by delivering increasingly cost-effective and longer-term savings

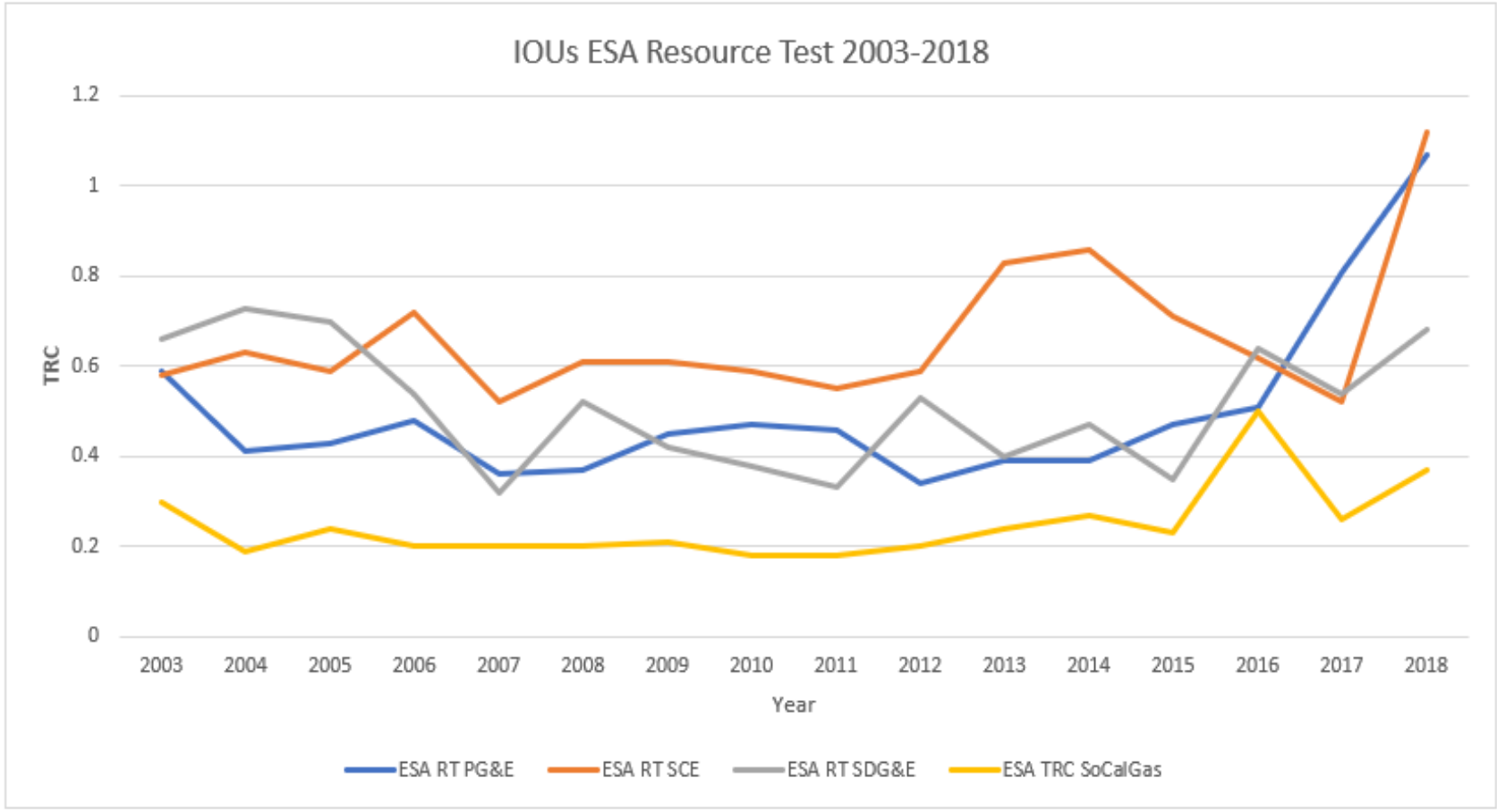
1) Leverage State, Federal and Local Programs

LIHEAP
Low-Income Home Energy Assistance Program

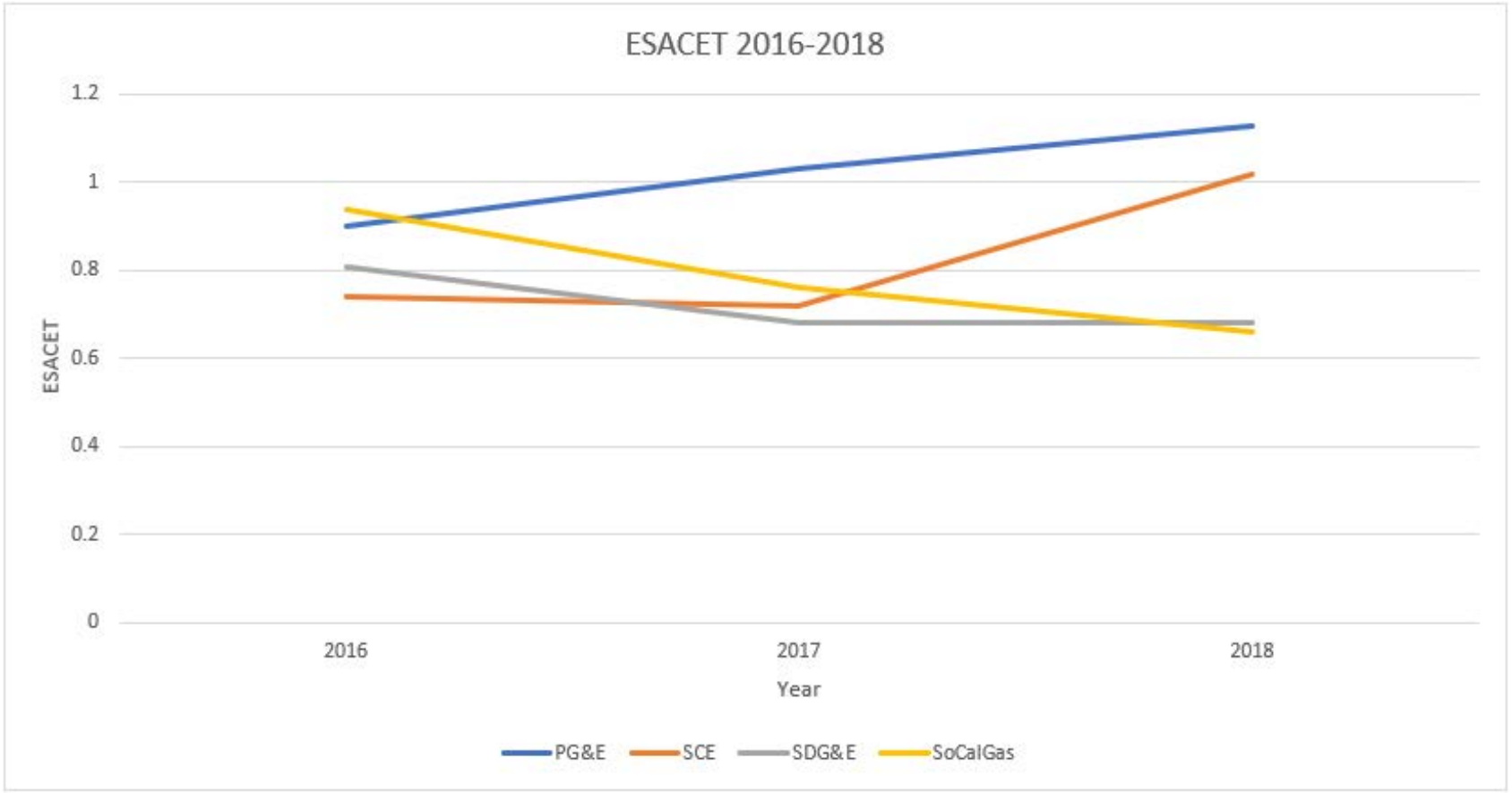
2) Integration with other Energy Efficiency Programs

3) Long-term energy savings while enhancing the quality of life

IOUs ESA Resource Test 2003-2018

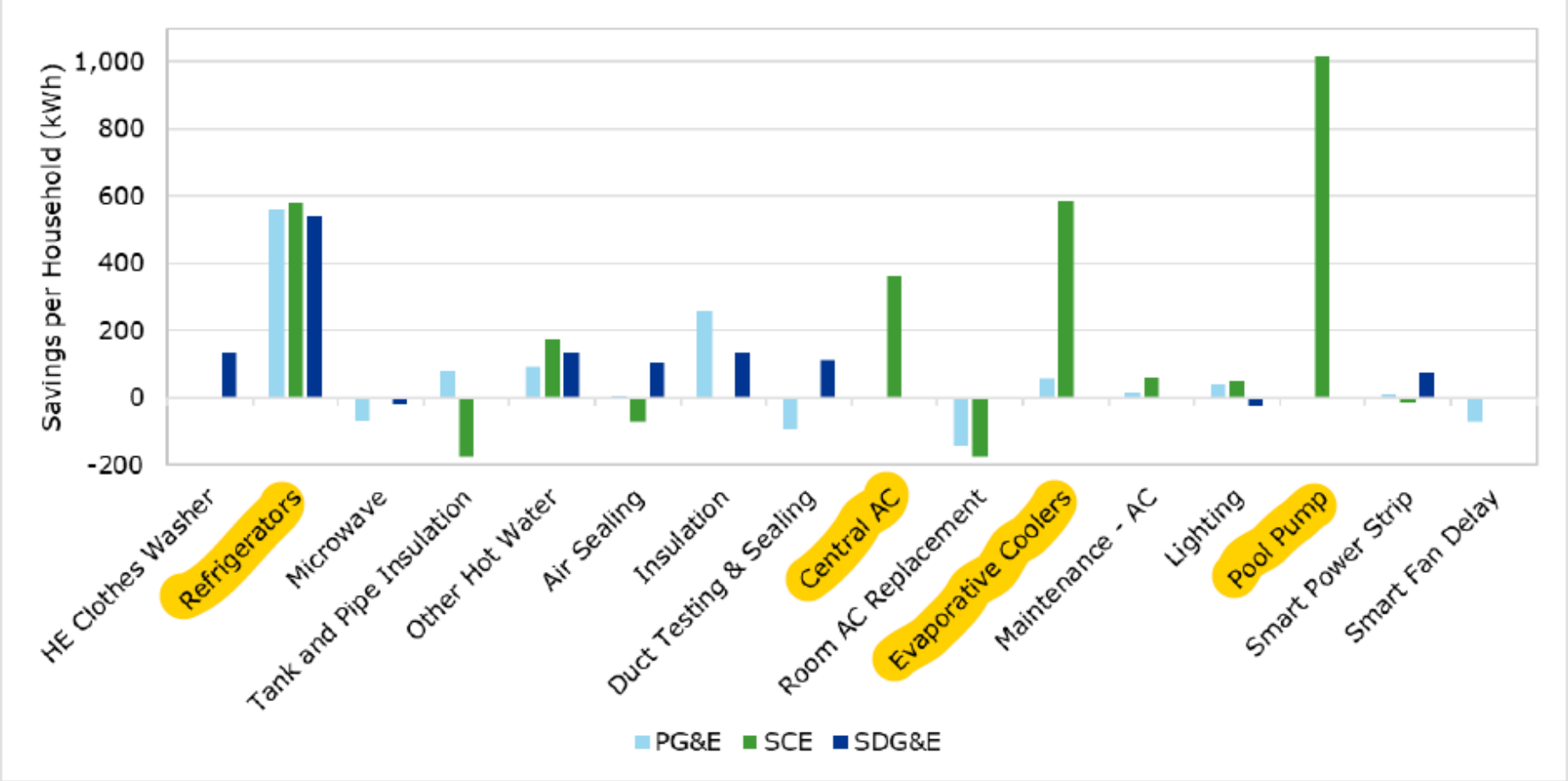


IOU's ESACET 2016-2018



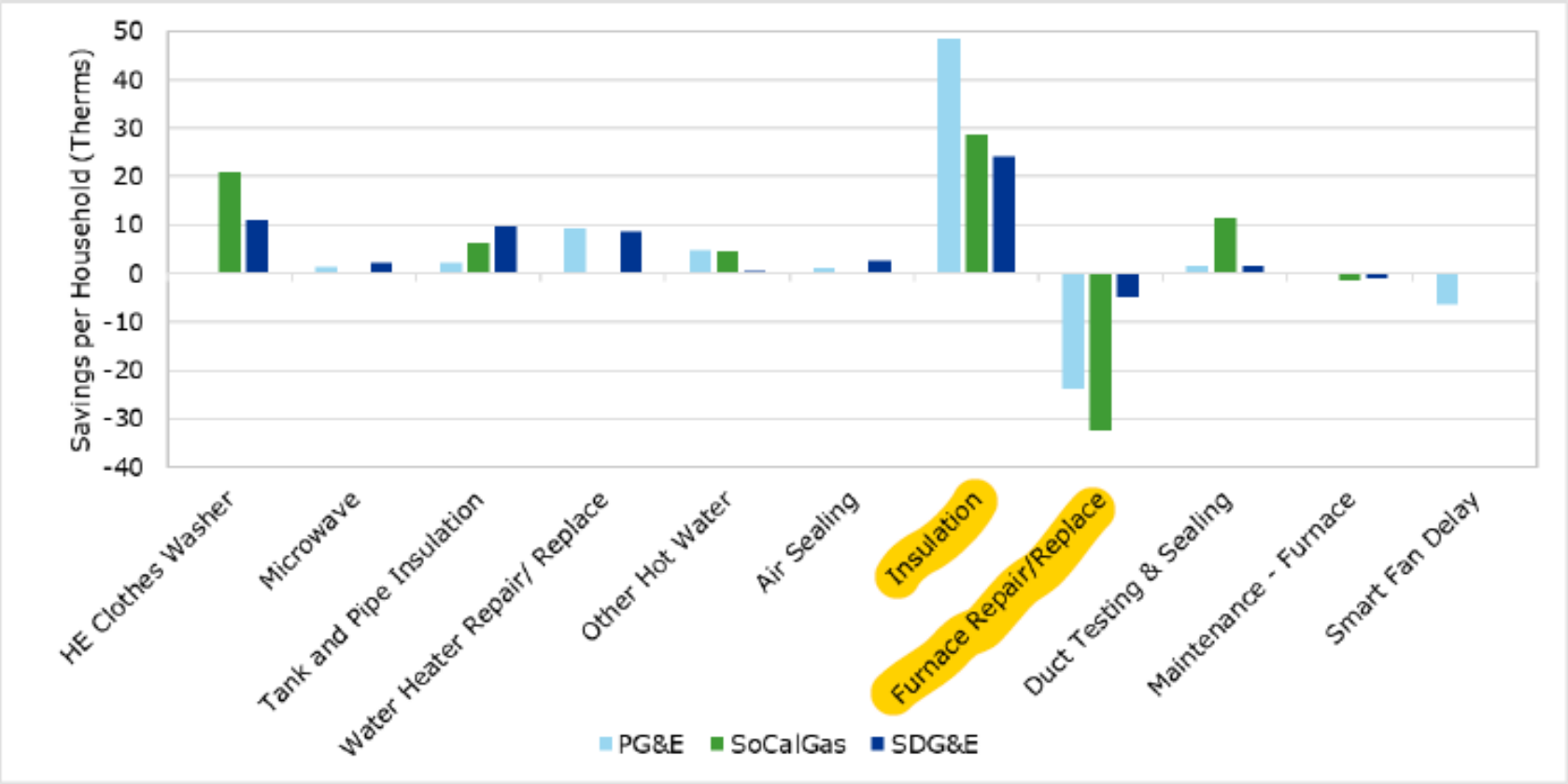
ESA Impact Evaluation 2015-2017

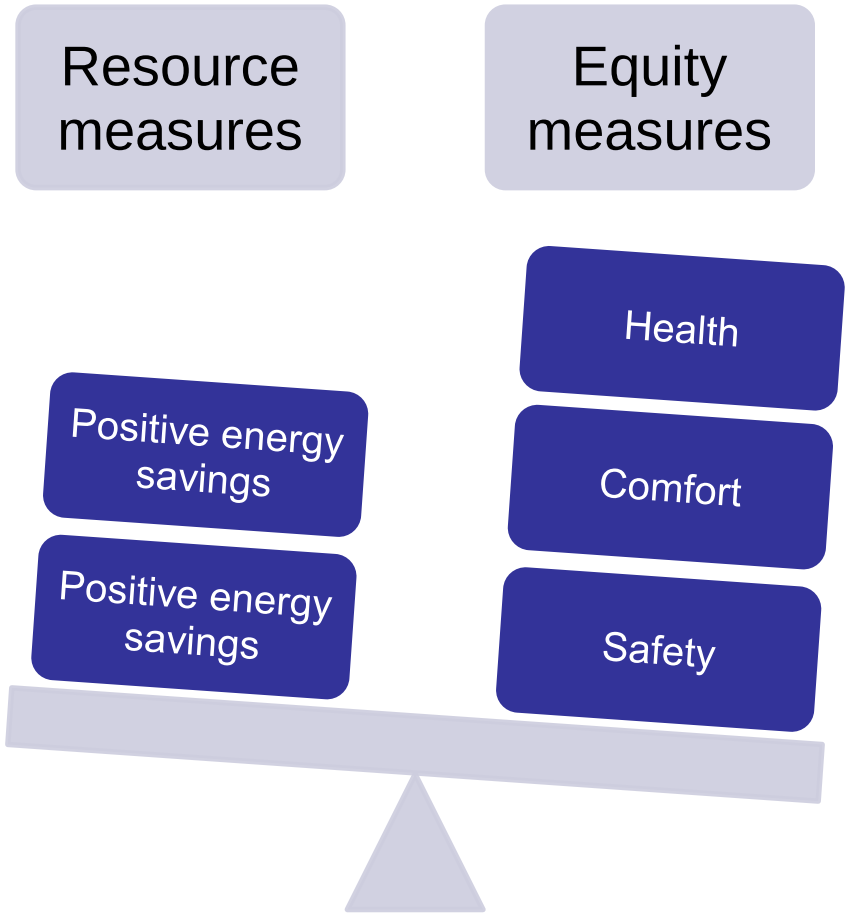
Figure 5-7. Electric measure-level savings per household



ESA Impact Evaluation 2015-2017

Figure 5-16. Gas measure level savings per household





2021-2026 ESA Program Cycle

Questions?

High-level view of Cost-Effectiveness

$$\frac{\text{Benefits}}{\text{Costs}} = \begin{cases} \geq 1 \text{ then Cost-Effective} \\ < 1 \text{ then not Cost-Effective} \end{cases}$$

ESA Cost-Effectiveness Test (ESACET)

☺ **Benefits**
- Avoided costs of supplying electricity
- Participant Non-Energy Benefits (NEBs)
- Utility NEBs

☹ **Costs**
- Capital (measure) costs to utility
- Capital (measure) costs to landlords/ 3rd parties
- Administrative costs

ESACET is estimated for the entire IOU ESA program

ESA Resource Test

Benefits

- Avoided costs of supplying electricity
- ~~Participant non-energy benefits~~
- ~~Utility non-energy benefits~~

Costs

- Capital (measure) costs to utility
- ~~Capital (measure) costs to landlords/ 3rd parties~~
- ~~Administrative costs~~

Resource Test is estimated for each resource (energy saving) measure

Figure 5-2. Electric savings as a percent of household consumption

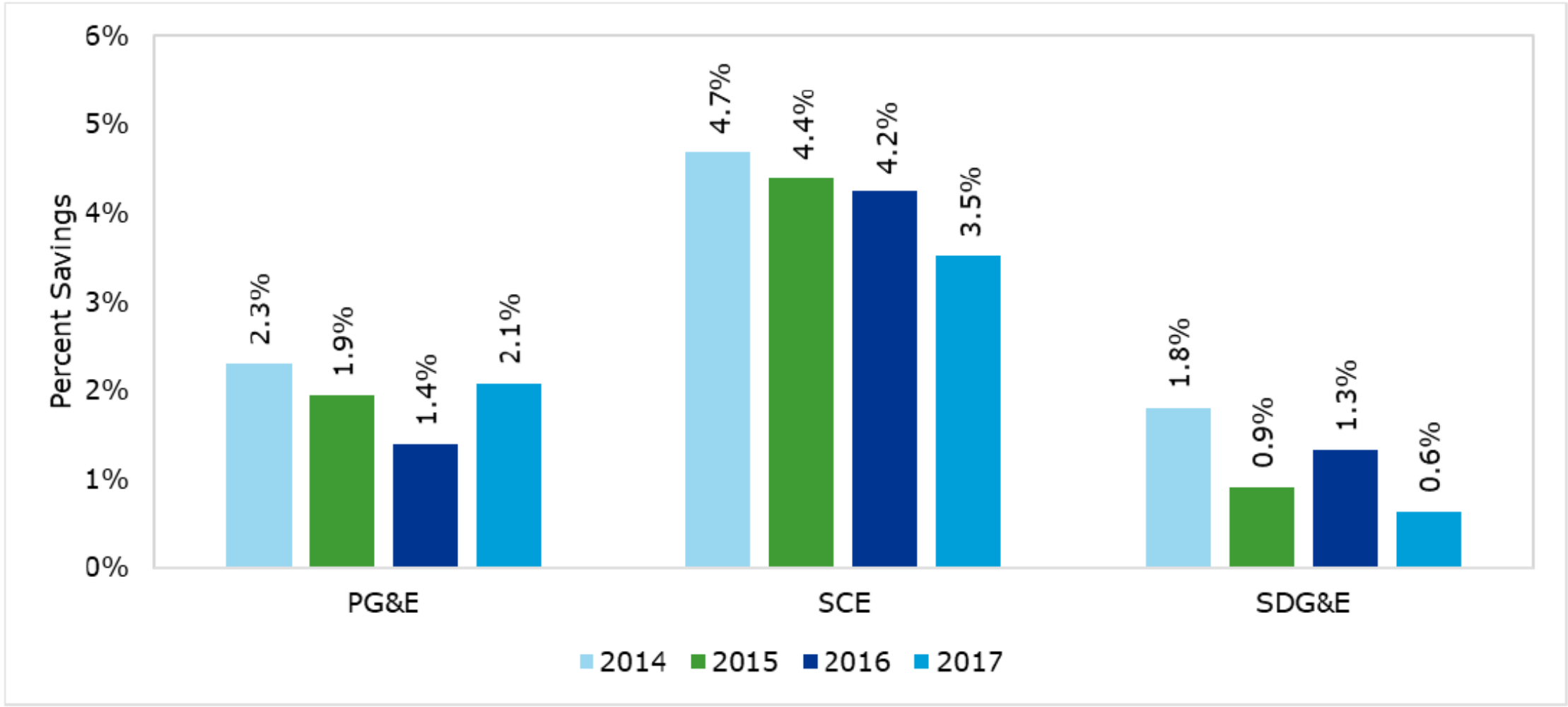
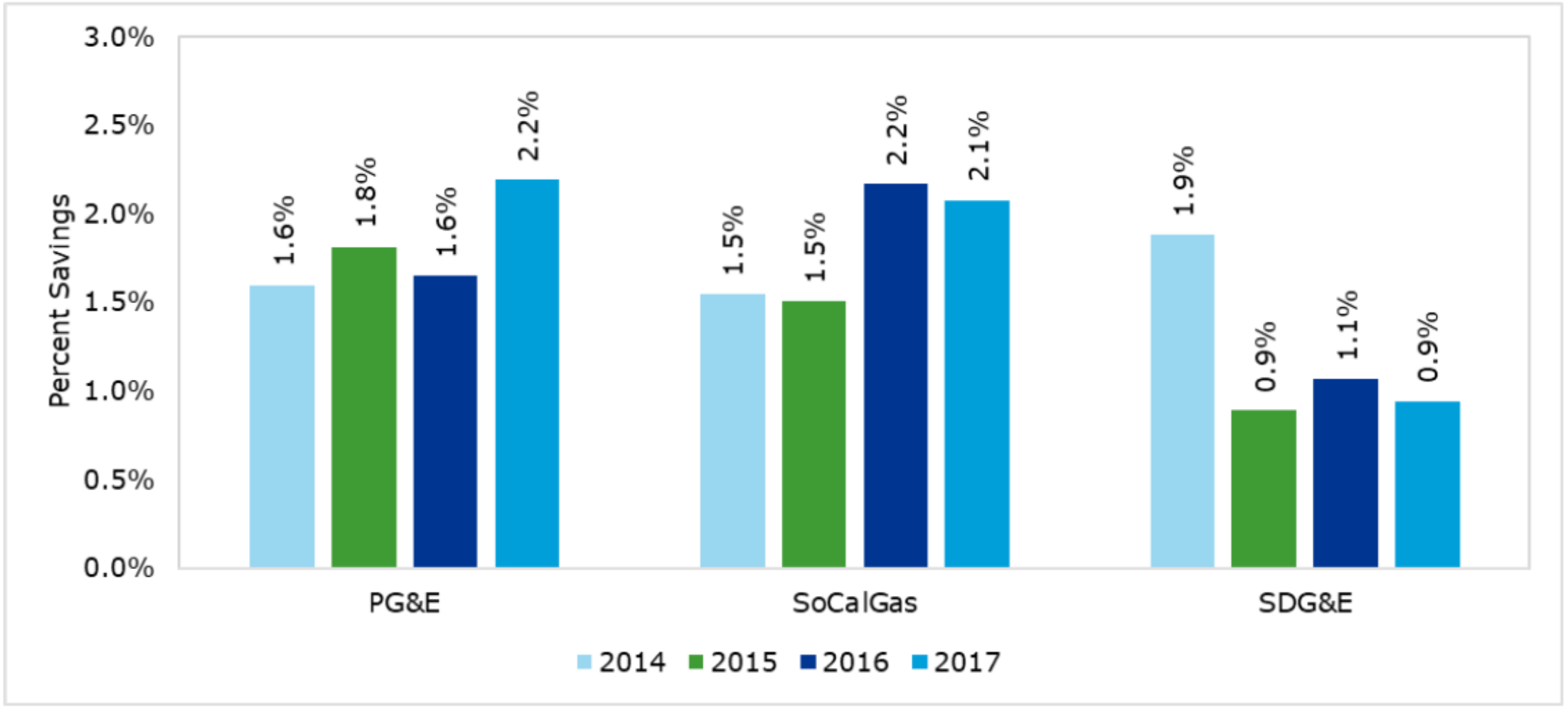
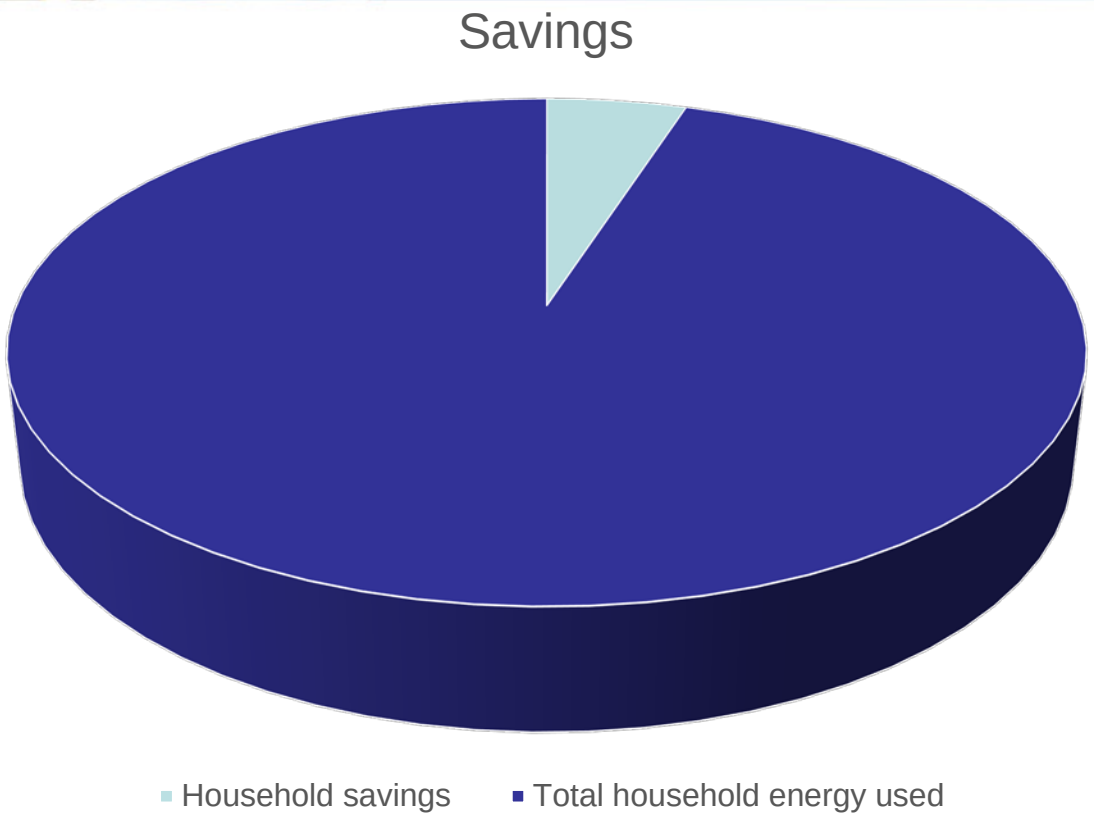


Figure 5-11. Gas savings as a percent of household consumption





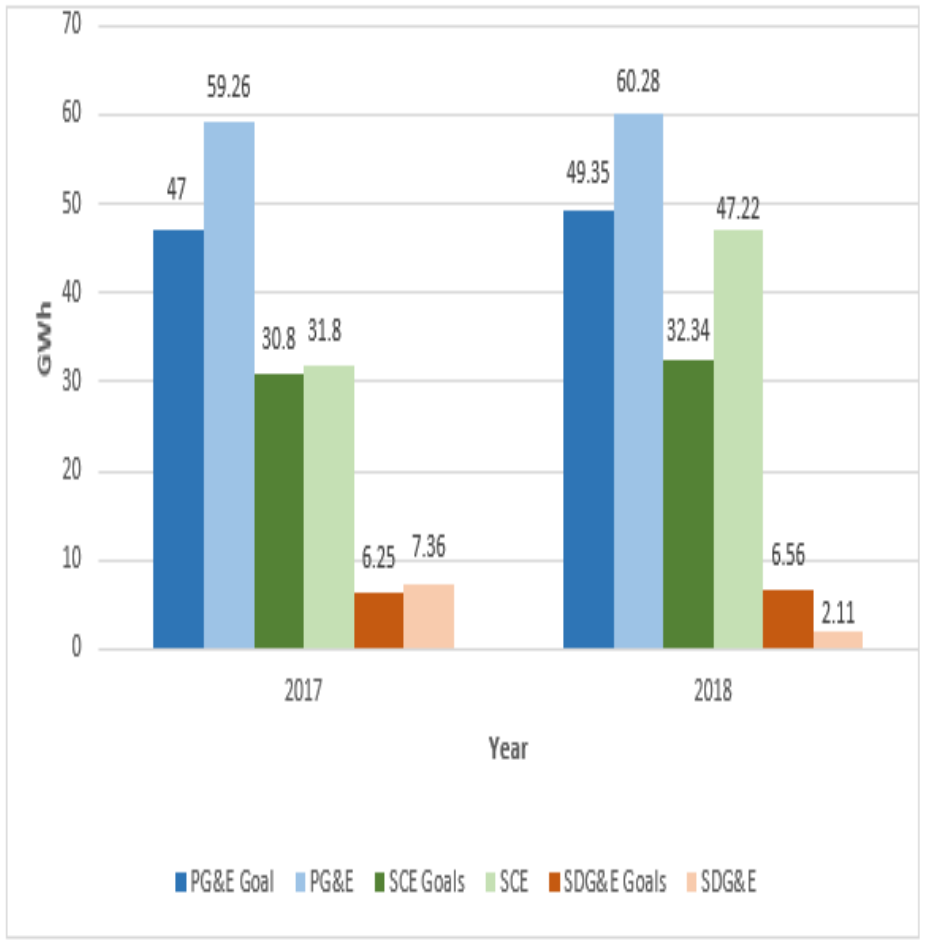
Expected ESA household savings are less than 5% of total household consumption

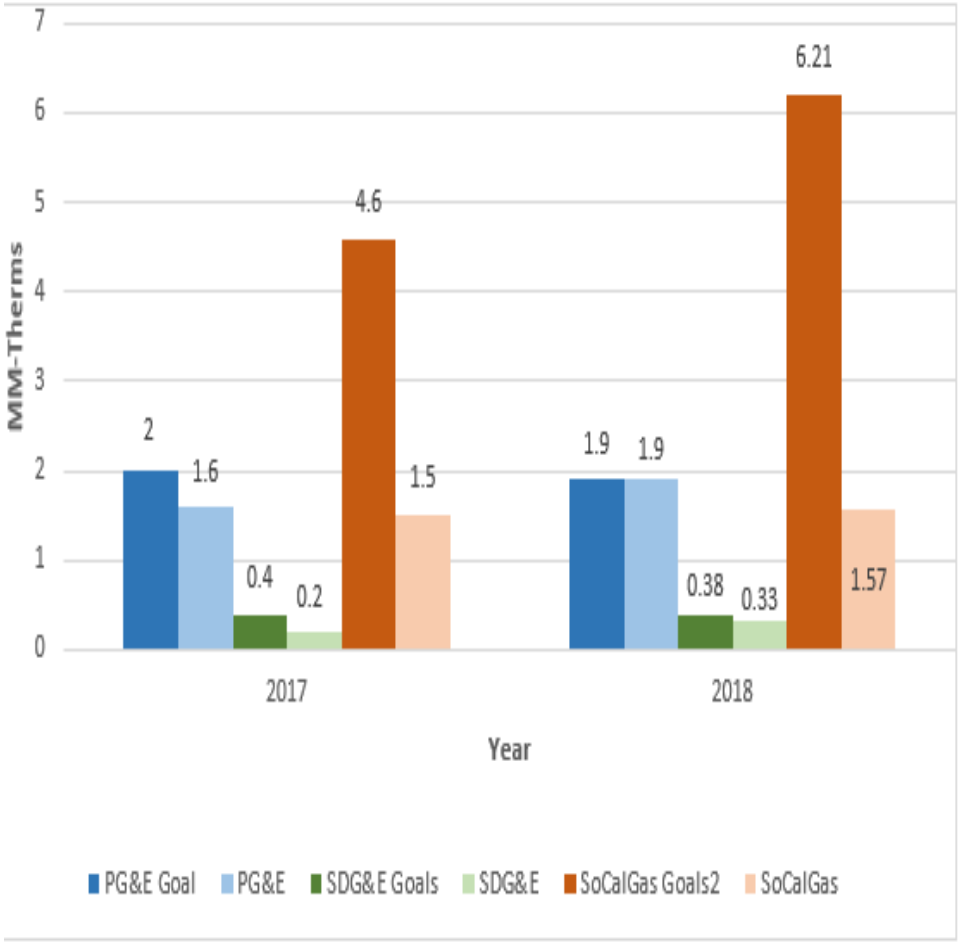
The Navigant team focused on collecting data for measures in order of priority. Highest priority measures were initially determined as those that have collectively contributed to the top 80% of historic ESA program savings though additional measures that were added contribute large potential savings to nonlow income programs.[76] Medium and low priority measures were those that were historically part of ESA but at lower savings/participation levels.

Table 5-6. Low Income Measure – Data Collection Prioritization

High Priority	Medium Priority	Low Priority
Air Conditioners	Clothes Dryers	Attic Duct Insulation
Ceiling/Roof Insulation	Clothes Washers	Crawlspace Duct Insulation
Faucet Aerators	Lighting Fixtures	Elec Water Heaters
Furnaces	Reflector Lamps	Freezers
Gas Water Heaters	Windows	Linear Fixtures
HVAC Quality Maintenance	Room AC	Lamps – Outdoor
Refrigerators	Specialty Lamps	
Screw-In Lamps – Indoor	Water Heating Controls	
Showerheads		
Wall Insulation		

2017-2018 Utility Portfolio Targets vs Claimed Savings (GWh-MM Therms)





Equity Evaluation: Health, Comfort and Safety Criteria

Eliminates combustion-related safety threat

Eliminates fire safety threat / improves home security (crime prevention) or building integrity

Reduces/eliminates extreme temperatures inside the home / increases customer ability to manage temperatures

Improves air quality, ventilation and/or air flow (reduces drafts and leakage)

NEBs Currently Included in the ESA Program Cost-Effectiveness Tests (ESACET)

Participant NEBs:

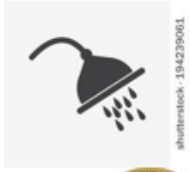
- Water/sewer savings
- Fewer shutoffs
- Fewer calls to utility
- Fewer reconnects
- Property value benefits
- Fewer fires
- Moving costs / mobility
- Fewer illnesses and lost days from work/school
- Net benefits for comfort & noise
- Net benefits for additional hardship

Utility NEBs:

- Reduced arrearage cost
- Reduced bad debt written off
- Fewer shutoffs
- Fewer reconnects
- Fewer notices
- Fewer customer calls
- Fewer emergency gas service calls
- CARE subsidy avoided

ESA Measure Offerings

- Air sealing measures including Weatherstripping, Caulking and Minor Home Repair;
- Attic Insulation;
- Repair and replacement of Furnace and Water Heater;
- Water Heater Pipe Insulation;
- Low-flow Showerhead;
- Faucet Aerator;
- Thermostatic Shower Valve;
- Pilot Retrofit Kit
- Furnace clean and Tune.
- High Efficiency Forced Air Unit Furnace
- Thermostatic Tub Spout.
- High Efficiency Clothes Washer
- Refrigerators
- Microwaves
- Water Heater Blanket
- Heat Pump Water Heater
- Tub Diverter
- Energy Efficient Fan Control
- Room A/C Replacement
- Duct Testing and Sealing
- Central A/C Tune-up
- Compact Fluorescent Lights (CFLs)
- LED Diffuse Bulb (60W Replace)
- Interior Hard wired CFL fixtures
- LED Reflector Bulb (BR30 Recessed Can)
- Exterior Hard wired CFL fixtures
- Torchiere
- LED Night Lights
- Smart Strips
- Evaporative Coolers
- Occupancy Sensors



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