
Model Programs



— —

Design and Elements of Successful EE Programs

Featured Programs

1. Pacific Gas and Electric (PG&E) Residential and Commercial Programs
2. New York State Energy Research and Development Authority (NYSERDA) Home Performance with ENERGY STAR (HPwES) Program
3. Bonneville Power Administration (BPA) Weatherization Program
4. Twin Cities One Stop Program
5. Houston Residential Energy Efficiency Program (REEP)
6. Baltimore General Electric (BGE) Demand Side Management
7. South Carolina Solar Program

Conclusion: What Successful Programs Have in Common

Questions and Discussion





***Pacific Gas and
Electric Company***[®]

Rated #1 leader in energy efficiency deployment by Ceres Benchmarking Report

Residential Program Overview:

- Rebates and technical support
- Home Upgrade (statewide)
 - Customer works with a participating Home Upgrade Professional to evaluate heating, cooling, insulation, and water heating systems and recommends upgrades
- Rebates
 - Rebates available for water heaters and washing machines and pool pumps
 - Higher rebates for whole house approach
 - Online savings store where customers can compare EnergyStar products and their associated rebates



HOME MONEY SAVER

Key Feature: Whole House Upgrades

Takes a whole-house, customized approach, incentivising those measures that get more energy savings.

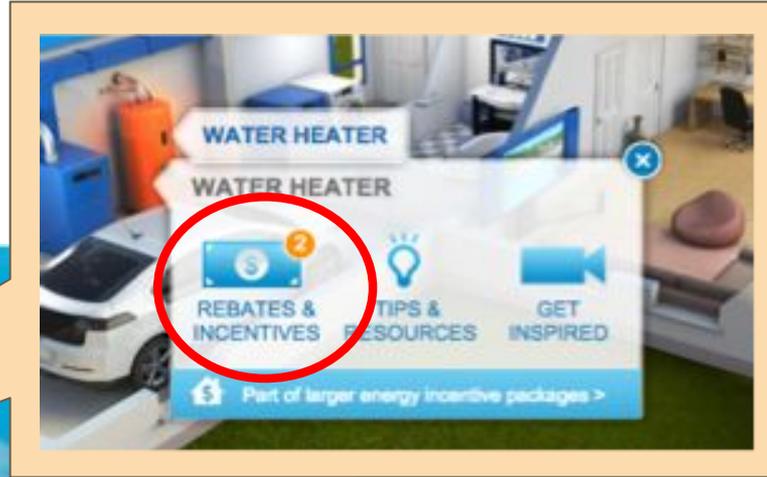
PG&E

- Upgrades are awarded points which equate to dollar amounts: \$3,000 for Home Upgrade and \$6,500 for Advanced Home Upgrade.
- Statewide Marketing is aggressive

DEP

- Maximum residential rebates available from DEP residential rebates, by DEP is \$1,490
- Many individual measure rebates

Key Feature: Ease of Website



ENERGY STAR® Electric Heat Pump Water Heater

\$500
REBATE PER UNIT

Requirements: Must be ENERGY STAR-qualified and have an Energy Factor (EF) of 2.2 or greater. Must be a replacement unit. See the [product list](#) for qualifying models.

Model Code: H242

Learn More >

ENERGY STAR® High-Efficiency Gas Storage Water Heater

\$200
REBATE PER UNIT

Requirements: Must be ENERGY STAR-qualified and have an Energy Factor (EF) of 0.67 or greater. Must be a replacement unit. See the [product list](#) for qualifying models.

Model Code: H243

Learn More >

Commercial Program Overview:

- Commercial rebates offered:
 - Lighting
 - LED and T8/T5 rebates and Occupancy sensors for free
 - Free HVAC tune ups
 - Food service rebates
 - Pumps- water, wastewater
 - VFD- Variable Frequency Drives
 - Demand Response pricing and incentives
 - Subcontractors serve specific sectors: schools, retail, governments, restaurants, agriculture, etc
 - Retrocommissioning



On Bill Financing Overview:

- 0% interest
- Simple credit check
- No collateral needed
- Savings pay off loan over the term of the loan



Impact

- PG&E is ranked 1st in cumulative annual energy efficiency savings totalling 14,917,724 MWh of annual savings, or 17.18% of total retail electric sales
- Duke Energy is ranked 22nd in EE savings, or 2.68% of total retail electric sales.
- In 2014, PG&E Customer EE Programs avoided emissions of more than 776,850 metric tons of CO2





Leveraging Contractor's Ability to Sell Home Energy Upgrades

Program Overview

- NYSERDA created network of local contractors to offer education and financing for EE upgrades with Energy Star products
- The Home Performance with Energy Star (HPwES) program trained contractors helped with marketing and outreach
- NYSERDA compiled a list of approved contractors that are available as all-in-one services for energy upgrades



Key Feature: Advertising

- General awareness of Energy Star and benefits of upgrade
- Contractors as marketing tool
 - Program trains contractors in sales and marketing
 - Ensures city has infrastructure of contractors to meet demand for upgrades
 - Contractors are rewarded with discounts on BPI certification, subsidies for equipment, promotion on website, referrals, and co-operative reimbursements.
- Most marketing focuses on getting homeowners to pick up the phone and request upgrades



Impact

- 32,000 homes were upgraded since the program began in 2001
- More contractors in New York received their BPI certification through financial support offered by the program
- Energy upgrades have saved over 22 million kWh



B O N N E V I L L E
POWER ADMINISTRATION



— *Weatherization Program* —

Program Overview

- Program targeted electrically heated homes, particularly single-family residents, across the Pacific Northwest
- Three different levels of weatherization programs were carried out in a 10-20 year period to establish long term energy saving measures and gather data about the efficiency and usefulness of energy upgrades





Key Feature: Incentives

- Rebates: Participating homeowners received free energy assessments and paid as little as 15% for the total EE upgrades - Other costs were funded by BPA through a Federal Treasury loan
- Building Trust: Utilities helped homeowners choose a contractor for the upgrades and followed up with inspections to ensure that the measures were properly installed
 - BPA rigorously trained contractors and only let approved contractors perform upgrades
 - *Participation decreased when homeowners were not guided through the process by BPA*



Impact

- Completed 900,000 energy improvements in a 10 year period, reaching more than half of eligible customers
- Trial ended in the creation of the Long-Term Residential Weatherization Program designed to reach 3-5% of eligible homes in the region each year
- Participating households saved an average of 3,300 kWh/year (\$330 @ \$.10/kwh)

Community Energy Services (Twin Cities) One Stop Program



Program Overview



- The goal of the program was to upgrade 50% of the buildings in the two cities in 10 years. Efforts were directed at residential energy savings.
 - Funded by two utilities (Xcel Energy and CenterPoint Energy) and the state lottery
- Program measured success in the rate of conversions from home visits into major EE upgrades
- Steps in upgrade:
 1. Invite homeowners to a free workshop about energy efficiency upgrades
 2. Attendees qualify for a subsidized home visit by “Home Energy Squad”
 3. After basic upgrades and tests, squad suggests further steps
 4. City of Minneapolis offers 0% financing for upgrades

Key Features



- Target neighborhoods systematically
 - Motivate entire neighborhoods to upgrade at the same time to cut down on time/expenses
 - Neighborhoods require unique outreach strategies
- Focus on *motivating* homeowners
 - Information ≠ Action
 - Focus on behavioral strategies
- Do as much as possible in “One Stop”
 - Accomplish multiple tasks in one visit: diagnostics, installations, education, recommendation - all for subsidized low fee (\$30-\$50)
- Separate technical assistance from pitch
 - Program provided both an “energy technician” and an “energy counselor”
 - Counselor focused on personal relations and recommendations for high-impact improvements

Impact



- After the first year, pilot program reached 28 neighborhood organizations and 2,000 homes
- 95% of workshop attendees requested a home visit
- CEE estimates that the program will reduce energy use in participating homes by 10 to 15% on average
- Success translates to an energy savings of \$762,000 annually, a CO₂ emissions reduction of more than 5,000 tons per year, and 34 new jobs.

Houston's Residential Energy Efficiency Program



Funded by the U.S. Department of Energy's
Weatherization Assistance Program

REEP

RESIDENTIAL ENERGY EFFICIENCY PROGRAM

Program Overview

- The City of Houston received a \$23 million grant from the DOE for program implementation
- REEP qualified residents based on their income - they only had to fill out a simple form to become enrolled
 - Income 200% below federal poverty line, eligible for: weather stripping, window caulking, attic insulation, energy-efficient light bulbs, and ductwork
 - Income 125% below of the federal poverty line, adds: EnergyStar refrigerator, EnergyStar ceiling fans, EnergyStar window air-conditioning units, and shade screens
- Contractor assesses needs of home, performs requested upgrades, and gets paid by REEP once the work has been inspected and approved

Key Feature: Building Trust

- Free government- run program built up suspicion from low-income neighborhood residents
- REEP partnered with civic and religious leaders to gain support and trust in the neighborhoods
- REEP also reached residents through person-to-person interactions at neighborhood community centers and program hosted block parties



Impact

- Between 2006 and 2010, the program weatherized more than 8,300 homes in twelve different neighborhoods (36% of eligible homes)
- 90-95% of participating households reported satisfaction with program

*Quantitative estimates of energy savings are not yet available



Home Energy Score



National Coverage Partners: ASHI, BPI, InterNACHI

- Many utilities run these DOE programs throughout the country and provide incentives for installations
- 42,625 homes throughout the US have received a simple 1-10 score of their home's efficiency with recommendations on how to improve it
- WNCGBC is the partner for NC and partners with local contractors to offer this service through Green Gauge
- Duke Energy Progress could utilize this program for ratepayers.

Demand Side Management



Baltimore Gas and Electric (BGE)



- Through Peak Reward, customers get a \$1.25 rebate for each kWh they save during peak events
 - Average savings of \$9/house during events
- Provided Incentives and thermostat controls for:
 - Air conditioners
 - Water heaters
 - Multi-family units
- Trade Allies who help customers cut demand and earn incentives
- During summer, BGE sent out millions of electronic personalized messages asking customers to reduce energy use during peaks
 - Found that customers enjoyed communications and trust their utility's EE advice more with increased digital engagement
 - Saw a 5% drop in peak demand

South Carolina Solar Program



- Program Features
 - Rebates for customers installing small-scale solar facilities
 - A Shared Solar Program for those who often are unable to participate in renewable energy options (2017)
 - Partnerships with developers to provide large-scale solar facilities, which would significantly expand the availability of solar for all customers
- In South Carolina, Duke Energy has contributed \$2 million to Palmetto Clean Energy (PaCE), a nonprofit organization that promotes the development of renewable energy resources
- Through PaCE, Duke funds a pilot program that provides matching grants to K-12 schools and not-for-profit educational institutions interested in installing rooftop solar systems.

What Successful Programs Have in Common



Residential

1. Set bold and achievable goals
2. Aggressive marketing (print, web, events, etc)
3. Well trained one-stop-shop contractors to do all EE upgrades.
4. Conversion rate between assessment and upgrade is high due to a simplified user-friendly process
5. Weatherization measures encourage the pursuit of further energy efficiency upgrades
6. Financing (On-bill, Low interest, and/or PACE) availability
7. Community leaders and contractors promote the program
8. Program participants speak highly of their experience with peers



Commercial/Industrial

1. Set bold and achievable goals
2. Are marketed through multiple outlets
(door to door, bill inserts, conferences, trade journals, etc.)
3. Contractors service their clients with multiple EE measures, technical assistance, rebates and financing
4. Unique client types are served by contractors who specialize in that sector (i. e., schools, office, retail, agriculture, manufacturing)
5. Provide incentives for design, construction, and operations
6. Utilize low-interest financing or on-bill financing



Demand Side Management



1. Pricing, Tech Assistance, and Incentives
2. Customer control
 - a. voluntary engagement *encourages* consumers with incentives to use less use during peak
3. Electronic Communication
 - a. By alerting residents during times of peak demand, utilities can build trust with customers and keep them mindful of their energy use
4. Savings measures
 - a. Provide a goal for the commercial client, with suggestions on how to reduce demand

Solar

1. Community Solar
2. Power Purchase Agreements
3. Quick turnaround on interconnection
4. Utilities support incentives on the local, state and federal levels
5. Use local contractors for large and small projects



Questions and Discussion

Sam Ruark-Eastes

sam@wncgbc.org

828-254-1995

