

***Low-Income Programs***

*Exemplary Programs*

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*Low-Income Programs  
Exemplary Program*

***Appliance Management Program and Low Income Services  
National Grid***

**PROGRAM OVERVIEW**

In 1995 National Grid formed a partnership with the local low-income weatherization and fuel assistance network of Community Action Program (CAP) agencies to develop a low-income electric conservation program. The Appliance Management Program (AMP) is very successful in delivering electric savings to low income customers by a combination of home appliance surveys, education about energy used by household appliances, and the installation of energy-savings measures. The program also funds low income weatherization and heating system replacement for homes heating with electricity, oil, propane, and wood. The program funds the innovative Energy Bucks campaign, which encourages customers who are not participating to sign up for low income energy efficiency programs, fuel assistance (LIHEAP), and discount electric and gas rates and includes direct outreach, public relations and TV advertising in Spanish and Portuguese. The program is delivered to National Grid customers by local CAP agencies and state agencies in its service territories in Massachusetts, Rhode Island, and New Hampshire.<sup>1</sup>

In recent years, National Grid has been instrumental in forming and encouraging the “Best Practices Working Group.” The working group has sponsored regular meetings of all the electric utilities, low income representatives, and state agencies to further improve the comprehensiveness of utility energy efficiency programs and the technical capacity of the Low-Income Energy Affordability Network. Recently, local gas utilities have also been included and there is increased collaboration around all activities.

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<sup>1</sup> Local participating community action agencies in Massachusetts and in cooperation with the Low-Income Energy Affordability Network and the Massachusetts Department of Housing and Community Development: Action Inc., Berkshire Community Action Inc., Citizens for Citizens, Community Teamwork, Inc., Franklin Community Action Corp., Greater Lawrence Community Action Council, Lynn Economic Opportunity, Montachusett Opportunity Council, Inc., North Shore Community Action Program, Quincy Community Action, Self Help, Inc., South Shore Community Action Council, Southern Middlesex Opportunity Council, Springfield Partners for Community Action, Tri-City Action Program Inc., and Worcester Community Action Council.

Local participating community action agencies in Rhode Island, administered by the Rhode Island Office of Energy Resources: Blackstone Valley Community Action, Comprehensive Community Action Programs, East Bay Heating Assistance (Self Help), Providence Community Action Program, South County Community Action, Tri Town Community Action, and West Bay Community Action.

In 2002 the AMP program in NH was replaced by a similar joint utility program called Home Energy Assistance including the following agencies and in cooperation with the NH Office of Energy and Planning: Rockingham Community Action, Southern New Hampshire Services, Southwestern Community Services, Inc., and Tri-County Community Action.

In 2000 the program began offering weatherization measures for oil heated homes. Income eligible customers who heat with oil or other deliverable fuels and who meet the typical Department of Energy requirements for weatherization are eligible for weatherization and or heating system replacement measures. Since then the program has weatherized over 3900 homes. The average savings for weatherization is 150 gallons of oil for a total of more than 585,000 annual gallons of oil saved. Also since 2001 the program has offered oil heating system replacements. Since then about 1900 customers received this measure and saved an average of 290 gallons of oil each for a total of 551,000 annual gallons of oil.

The Appliance Management Program (AMP) income eligibility level for customers is 60% of median in Massachusetts and is indexed to the same income criteria as for fuel assistance in Rhode Island and New Hampshire. AMP is available to customers living in 1 to 4 family facilities.

The appliance audit service component of AMP is targeted to income eligible customers who use at least 10 kWh, base load, per day and have a minimum of nine months billing history at that residence. Base load use is determined by kWh usage per day in the most recent May or September billing period.

A third component is called mini-AMP which is piggy backed onto other agency field services and includes refrigerator metering and replacement. It is for customers using less than 10 kWh per day.

## PROGRAM PERFORMANCE

Since 1996, the program has delivered more than 42,000 MWh in cumulative annual savings and 542,000 MWh in lifetime savings, and has served more than 40,000 customers. This activity results in the cumulative carbon savings of over 289,000 tons of Carbon Dioxide over the program lifetime, the equivalent of taking about 159,000 cars off the road in New England.

	96	97	98	99	00	01	02	03	04	05	06	Total
<b>Annual GWh</b>	0.23	1.53	2.70	3.56	4.38	4.93	4.85	4.96	5.63	4.92	4.39	42.07
<b>Lifetime GWh</b>	2.3	16.8	38.2	56.0	71.0	22.9	69.2	72.6	76.6	62.0	54.8	542.4
<b>Households</b>	241	1101	2798	3751	5167	4332	4726	4185	4622	4601	4518	40,042

Average savings by measures are given below, based on an impact evaluation of the 2004 Appliance Management Program completed by Quantec, LLC and the Massachusetts state weatherization study. The program has achieved high and consistent electricity savings (average 863 kWh/household)—which reduces low-income household electricity bills by \$108 per year.

Lighting	64 kWh /year per bulb installed
New Refrigerator	704 kWh/year per replacement
New Freezer	576 kWh /year per replacement
Waterbed Measures	1,230 kWh/year per bed
Refrigerator Removal	325 kWh/ year per removal
Electric Weatherization	297 kWh/year per home
Oil Heat Weatherization	55 kWh/year per home
	150 gallons of oil/year per home
Oil Heating System	91 kWh/year per home
	290 gallons of oil/year per home
Education and Other	272 kWh/year per home

Market research shows that about 25% of the eligible customers have participated in one or more of the low income services available to them. All measures offered by the program are required to have a benefit to cost ratio of greater than 1.0. A past evaluation showed that over 70% of the participants receiving measures reported high satisfaction levels with the installed measures.

## LESSONS LEARNED

The program uses a cooperative co-learning approach of adult to adult education, innovatively designed especially for limited income households. The purpose of the in-home visit is to identify mutually beneficial outcomes rather than merely instructing or doing things for customers. This knowledge is used to prioritize savings opportunities and create a workable action plan allowing the customer to use their appliances more efficiently. This program has been able to actually quantify energy savings due to education and consumer action, which has rarely been documented. The local CAP personnel have strong expertise in working with low income customers and are able to tie customers into other energy efficiency and community action programs such as job training, telephone discount rates, and educational programs.

National Grid supported the development of AMPCalc™ as part of the development of this program. This innovative software has a wide array of features for efficient accurate analysis of electrical usage, for educating customers, for data tracking, error checking and for agency billing for program measures. AMP applies the “best practice” of training, testing and measuring and reporting results to create feedback loops that foster quality and continual learning.

Each year National Grid continues to explore new measures and refinements in how measures can be implemented in cooperation with the state-wide Best Practices group in Massachusetts and the State Energy Office in Rhode Island. In late 2005 AMP added infrared scanners and training for each agency on how to ensure that their sub-contractors effectively seal key building leakage junctures and then inspect the results.

In 2006 and 2007 AMP has continued to bring new leading edge training and technology into the program, including a minimum of 12 days of in field hands-on training in insulation, air sealing and infrared scanner work for program sub-contractors and auditors. In 2007 AMP has instituted modified program guidelines to dramatically increase the number of CFLs installed in each home, and in late May will incorporate an enhanced AC timer measure that includes installing specialized material to seal the meeting rail on window air conditioners. Other new testing and

training initiatives address blown-wall insulation machines, CFLs, and consumer electronics plug loads.

Through National Grid's leadership, low income utility energy efficiency programs in its service territory are delivered through the low-income fuel assistance network of existing service providers, largely increasing their capacity and funding resources. National Grid provides significant training and technical support to this network and has supported the network in becoming experts in the delivery of electricity saving appliance management services to low income customers. This has become an on-going community resource at the CAP agencies that partner with the program.

The success of this program in reaching the target audience and creating real energy savings is largely attributable to the close relationships the CAP agencies have with low-income customers. The agencies provide a variety of services to these customers that have helped them gain the respect and trust of customers. This facilitates program marketing and helps in gaining customer cooperation on implementing the energy savings actions recommended in the program.

## PROGRAM AT A GLANCE

**Program Name:** Appliance Management Program and Low Income Services

**Targeted Customer Segment:** Low-income households in 1-4 unit buildings

**Program Start Date:** 1996

**Program Participants:** Since inception AMP has served more than 40,000 customers; an estimated 25% of eligible households have participated. In 2006 the program served 4518 customers.

**Annual Energy Savings Achieved:** 4.4 GWh annual savings (2006); 542 GWh total lifetime savings and 42 GWh annual savings (1996-06)

**Peak Demand (Summer) Savings Achieved:** 352 kW summer, 1243 kW winter and 6251 lifetime kW for 2006. Program to date savings are 4.8 MW summer, 6.7 MW winter (1996-06)

**Other Measures of Program Results to Date:** 70% of participants report "high satisfaction" with the program. Average annual electric bill reduction of \$108.

**Budget:** \$6.8 million spent (2006). \$7.2 million budget (2007).

**Funding Sources:** State legislated system benefits charges

### Best Person to Contact for Information about the Program

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*Low-Income Programs  
Exemplary Program*

***Electric Partnership Program—High Use Program  
Ohio Department of Development, Ohio Energy Office***

**PROGRAM OVERVIEW**

The Electric Partnership Program (EPP) was created under Senate Bill 3, the Ohio Electric Restructuring Act, passed in July 1999. The program was designed by the Ohio Energy Office to reduce the electric consumption of customers in the Ohio Percentage of Income Payment Plan (PIPP) in order to reduce the long-term costs of PIPP to ratepayers and the customers. EPP is paid for by funds collected by the Universal Service Fund rider on the bills of investor-owned utility electric customers. The program began in late 2001.

The program was designed to provide cost-effective usage reduction services to PIPP customers. The High Use Baseload program targeted PIPP customers with high electric baseload (not heating or cooling) usage, originally defined as greater than 8,000 kWh/yr., changed to 6,000 kWh/yr in July 2003. Measures include extensive lighting retrofits, replacement/reduction of inefficient refrigerators and freezers, electric hot water reduction measures, some other miscellaneous measures, and energy education.

The Ohio Energy Office (OEO) was given the responsibility to develop and implement EPP, which was designed to be implemented through a network of local providers throughout the state. The seven current providers have been selected through a competitive bid process for multiple contracting periods. Several of the providers subcontract with local community action agencies and other low-income energy service providers. One lead provider is a for-profit company.

The Ohio Energy Office is also responsible for customer screening and targeting customers into the different Program components. The purpose of the screening is to direct services toward those PIPP customers with the highest usage and who therefore have the greatest potential for achieving cost-effective energy savings. The purpose of targeting is to channel customers into the services that will maximize energy savings. Once customers have been screened and targeted into the different Programs, OEO sends lists of customers to the providers. These lists are provided based upon location, usage characteristics, and building type.

The local providers schedule the EPP visit with the customers. Most customers will receive one in-home visit. This visit will include an introduction to the program, an analysis of the customer's usage, an energy tour, energy education and an action plan. Following the visit, all customers will receive at least one follow-up contact. The follow-up contact can be via mail, phone, or in person, based on an assessment of which would be of most benefit to the customers. The purpose of this follow-up is to remind customers of their responsibilities and to review the benefits of the Program.

After agencies have served customers, they send their SMOC~ERS data to OEO. These data provide OEO with all the information needed to determine that cost-effective measures have been installed and to remit payment for the services that the agencies provided. SMOC~ERS reports also allow OEO to perform a limited amount of quality control.

OEO is also responsible for ensuring that training is available for providers and for documenting Program procedures. Additionally, OEO provides in-field monitoring and training, where field staff can determine whether providers are finding all cost-effective opportunities for measures, as well as educating customers on energy saving actions. Where deficiencies are seen, they can provide supplemental training.

## **PROGRAM PERFORMANCE**

A recent program evaluation estimates that the High Use Program produced average net savings of 1650 kWh/yr in the 4789 homes in the analysis sample. The overall program savings are estimated at 1615 kWh/yr due to small differences in the frequency of measure installations between the sample and the population. A statistical analysis of the savings indicated that refrigerator and freezer replacements saved an average of about 766 kWh each in the High Use program (820 kWh/house). Lighting retrofits saved about 43 kWh per bulb (669 kWh/house).

The analysis of bill payment impacts found that approximately 59% of bill savings accrued to ratepayers as a reduction in the costs of PIPP and 41% accrued to the participants as reduced bills in the summer (when PIPP customers are responsible for their full bills).

The \$8.7 million in lifetime bill savings are estimated to reduce the cost of PIPP by \$5.1 million and provide \$3.6 million in out of pocket savings to the participants. Ratepayer benefits are less than program costs because 41% of the benefits are estimated to accrue to the PIPP customers as reduced bills. Reductions in program costs that began in July 2003 are expected to increase the benefit cost ratio by about 11% in future analyses.

For the period November 2001 through June 2006, the EPP distributed over nineteen thousand energy efficient refrigerators, over seven thousand energy efficient freezers and over two hundred and thirty four thousand compact fluorescent light bulbs to the EPP customers. This large volume of appliances and compact fluorescent light bulbs has distributed millions of dollars into the economy of the State of Ohio.

A recent evaluation found that for the 6,194 participants treated by the two programs in the analysis timeframe, the present value of the energy savings are worth \$2.2 million more than the program costs, yielding a benefit cost ratio of 1.34. Customer surveys show high satisfaction with the program. Most customers reported that they were very or somewhat satisfied with measures and education provided by the Program. Between 93 and 97 percent of respondents stated that they were very or somewhat satisfied with each measure received. Ninety-seven percent of respondents reported that they were very or somewhat satisfied with the Program overall.

## LESSONS LEARNED

EPP includes several additional innovative measures that sometimes provide very large savings such as fuel switching--replacing electric water heaters or clothes dryers (and even heating systems) with gas units. EPP also allows for “custom” measures that can address any other savings opportunity not specifically covered elsewhere. Some examples of these custom or “field measures” are timers for window air conditioners, well pump replacements, heating unit repairs or modifications.

The program has incorporated a number of changes to improve its performance, including:

- In 2003 the minimum usage level for the High Usage Program decreased from 8000 kWh annual year to 6000 kWh. This change increased the number of PIPP participants eligible for the program.
- Administrative and oversight procedures have been improved: OEO updated and improved the EPP policies and procedures manual. They created monitoring forms to collect systematic information on agency visits, inspections, and on-site observations.
- Cost ceilings for administrative/audit fees: OEO set cost ceilings for the audit and administrative fees for the third year of the Program. The ceiling for baseload services was set at \$225, as compared to fees that averaged \$343 statewide, and that ranged as high as \$509 for the first two years of the Program. These fees provide an increased cost effectiveness that benefit Ohio ratepayers.
- A new version of SMOC~ERS was released in August 2003. The new version provided fuel switching and custom measure modules, allowed for billing of multiple trips to the customers’ home, and enhanced the method for selecting customers’ actions.
- Tablet PCs have replaced the PDAs which were used when the program started. Agencies reported that it is easier to use and can store information on a much larger number of jobs. Use of the Tablet PC will also eliminate the costs and time of reprogramming the software for the PDA.
- An education notebook has been distributed: A PowerPoint education notebook was provided on disk to providers
- A brochure was developed for the EPP as a marketing tool and distributed to agencies in July 2004. Agencies can mail the brochure to potential customers.
- Systematic procedures for documenting auditor performance have been developed. These standardized reports help to ensure that the OEO EPP monitors are consistent in their evaluations of the performance of the providers’ auditors.



## PROGRAM AT A GLANCE

**Program Name:** Electric Partnership Program – High Use Program

**Targeted Customer Segment:** Low-income households eligible for the Percentage of Income Payment Program and use over 6000 kWh annually.

**Program Start Date:** 2001

**Program Participants:** Not available

**Annual Energy Savings Achieved:** Not available

**Peak Demand (Summer) Savings Achieved:** Not available

**Other Measures of Program Results to Date:** \$8.7 million in lifetime bill savings. Benefit to cost ratio of 1.34.

**Budget:** \$14.9 million (2006 budget).

**Funding Sources:** Universal Service fund tariff rider for all electric customers of investor-owned utilities.

**Best Person to Contact for Information about the Program**

- Tom Andrews, Ohio Energy Office
- Phone: 614-466-7400

*Low-Income Programs  
Exemplary Program*

***EmPower New York<sup>SM</sup>***  
***New York State Energy Research and Development Authority***

**PROGRAM OVERVIEW**

The EmPower New York<sup>SM</sup> Program serves low-income customers—those customers below 60% of state median income—of participating utilities in New York’s systems benefits program. Both property owners and tenants are served. The program targets 1-4 unit family homes and small multifamily buildings. Priority is given to:

- Households participating in utility low-income payment assistance programs.
- Referrals by Offices of the Aging due to financial hardship.
- Eligible households receiving services coordinated with the Weatherization Assistance Program (WAP) to create comprehensive work scopes that include appropriate electricity savings measures.
- Eligible households in buildings not eligible for services through WAP.

EmPower New York prioritizes cost-effective electric efficiency measures, particularly lighting and refrigerator replacements. Home performance services, such as insulation, heating system repair and refrigerator replacement, and air sealing are provided in situations where they offer the best means of improving energy affordability. Whenever possible, services are coordinated and cost-shared with WAP.

The design for EmPower New York was developed through a collaborative process involving staff from the utilities, the New York Public Service Commission and NYSERDA. EmPower New York combined the best practices learned in earlier utility and NYSERDA managed low-income programs, particularly the Weatherization Network Initiative (WNI), which delivered electric reduction measures through a statewide network of weatherization agencies in coordination with WAP. When launched in July 2004 EmPower New York provided energy efficiency measures and energy-use management education to participants in the National Grid and New York State Electric and Gas (NYSEG) low-income programs, using both weatherization agencies and private contractors. In fall 2005 EmPower New York was expanded to a statewide program providing consistent services in the territories of all six SBC-participating utilities: National Grid, NYSEG, Consolidated Edison of New York, Orange and Rockland Utilities, Rochester Gas & Electric, and Central Hudson Gas and Electric Corporation.

**PROGRAM PERFORMANCE**

EmPower New York is reviewed annually by the Systems Benefits Charge Advisory Committee, which serves as the independent program evaluator. Program evaluations estimate that the average annual savings to participating households is \$253 for an average investment of \$1,069.

Application of the total resource cost test yields a value of 1.37 (benefits divided by costs). Additional benefits include reduced arrearages, reduced incidents of service terminations due to arrearages, and improved health and safety practices from alleviating carbon monoxide problems and natural gas leaks.

The table below summarizes EmPower New York results from program inception through March 31, 2007.

Measure	Number installed	Annual energy savings (kWh)	Annual energy savings (MMBtu)	Program expenditures	Program savings
Refrigerators and freezers	11,909	11,015,540	—	\$6,770,928	\$1,428,674
ENERGY STAR lighting	187,285	14,425,551	—	\$2,750,143	\$1,868,572
Clothes dryer replacement/conversion	502	889,810	(2,916)	\$332,700	\$51,141
Home performance measures	8,981	3,057,605	83,843	\$5,731,302	\$1,395,264
All other measures	7,559	417,235	2,271	\$551,137	\$89,598
<b>TOTAL</b>	<b>216,236</b>	<b>29,805,759</b>	<b>83,198</b>	<b>\$16,136,210</b>	<b>\$4,833,250</b>

EmPower New York also employs an innovative in-home energy education strategy to help customers learn how to better manage their energy use. The program also funds about 400 energy conservation and financial management workshops annually across New York State. Through March 2007, over 20,000 individuals have benefited from this client education component.

## LESSONS LEARNED

EmPower New York requires that all participating contractors become accredited through the Building Performance Institute (BPI). NYSERDA provides funding to cover 75% of the accreditation fees. This requirement for training and accreditation has improved the overall quality of the statewide contractor network and also has helped establish new contracting businesses qualified to perform this type of work with the program.

Another aspect of EmPower New York that both assures quality and helps develop markets for energy-efficient products is the program requirement that all refrigerators and lighting fixtures used in the program be ENERGY STAR® compliant. This requirement has allowed the program to procure a large number of high-efficiency refrigerators and lighting technologies at low cost, which helps the program serve more families through the associated cost savings.

The program has developed an instrumented auditing tool that includes a strong component dedicated to energy-efficient electric end-uses. This tool has proven easy to use and allows contractors to quickly determine which measures have the best savings-to-investment ratio.

EmPower New York staff work closely with weatherization agencies to coordinate projects whenever possible, keeping costs lower and providing comprehensive services. Web-based project referrals and tracking allows the program implementer and participating contractors to assign and accept jobs. This system also allows them to report measures installed, costs and savings, enabling the program administrator to readily track program results.

The program also includes a third-party quality assurance component, which requires 5% on-site post-installation follow-up for electric reduction measures and 20% phone follow-ups. For the home performance measures, the program requires 20% onsite quality assurance.

Key lessons learned include:

- A collaborative planning process with on-going communications among all key stakeholders has been critical to the program success.
- A focus on cost-effective electric efficiency measures can achieve significant levels of household energy savings.
- The program has helped foster and establish a reliable and qualified network of weatherization agencies and private contractors, which enabled the program to double its annual activity when additional funding opportunities arose.

## PROGRAM AT A GLANCE

**Program Name:** EmPower New York<sup>SM</sup>

**Targeted Customer Segment:** Low-income households

**Program Start Date:** 2004

**Program Participants:** 17,723

**Annual Energy Savings Achieved:** Through March 2007: 29.8 GWh, 83, 198 MMBtu.

**Peak Demand (Summer) Savings Achieved:** 4.1 MW

**Other Measures of Program Results to Date:** Total resource cost test yields ratio of 1.37. Average

annual cost savings to participants of \$253 for program investment of \$1,069.

**Budget:** Total budget is \$17.8 million; \$11.6 million from system benefits charges; \$6.2 million from other sources. (Program year 2006-07 budget totals \$12.5)

**Funding Sources:** System benefits charges and other sources.

**Best Person to Contact for Information about the Program**

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*Low-Income Programs  
Exemplary Program*

***Energy Partners  
Pacific Gas and Electric Company***

**PROGRAM OVERVIEW**

The Energy Partners program is Pacific Gas and Electric Company's Low Income Energy Efficiency Program. It provides energy education, home weatherization and installation of energy efficient appliances at no cost to income-qualified customers throughout the 48 counties within its service territory. The Energy Partners program was launched in 1983 with the objective of assisting low-income customers in increasing their comfort while reducing their energy consumption, costs, and economic hardship. Referrals are taken by PG&E's Smarter Energy Line (SEL). Customers also become involved in outreach through word of mouth in communities. In addition, PG&E's California Alternate Rates for Energy (CARE) program spreads the word by its participation in community events (approximately 180 events in 2006 alone).

Energy Partners offers comprehensive services. Energy Partners participants receive energy analysis customized for their home and usage behaviors. At the conclusion of the energy education piece, customers are asked to commit to at least three energy conservation practices to reduce energy usage. Compact fluorescent lights are also installed in the home at that time. Over twenty home weatherization and efficiency measures are available that address all major end-uses, including refrigerator replacement. Energy Partners participants may also be eligible for the repair and replacement program for furnaces, water heaters and central air-conditioners. In 2006 duct testing and sealing were added to the program's measure availability for both single-family homes and mobile homes.

The California Public Utility Commission (CPUC) establishes energy program eligibility annually. The current income guidelines range from \$28,600 for a family of one, to \$54,300 for families of six. The program is available to both renters and owners of single family homes, multi-family units and mobile homes.

Pacific Gas and Electric Company's customer base encompass a wide range of spoken languages. Therefore, PG&E offers program literature in seven languages—English, Spanish, Hmong, Chinese, Vietnamese, Korean and Russian. In 2005 PG&E was the winner of the National Utility Communications Award for Ethnic Marketing Materials, awarded by the Utility Communicators International (UCI). PG&E employees regularly make presentations about the Company's low-income programs to the media and at community events throughout PG&E's service area to educate customers about energy efficiency and inform them about assistance programs and opportunities available to them through PG&E. In 2006 PG&E employees made over 500 presentations and media initiatives about EP's LIEE and CARE (a rate option for low-income customers) in English, Spanish, Cantonese, Mandarin, Vietnamese, Korean, Tagalog, Russian, Hmong and Japanese.

**PROGRAM PERFORMANCE**

In 2006 Energy Partners treated 66,043 homes. The success of Energy Partners is attributed to the collective effort of the utility, an administration contractor, seventeen weatherization contractors and three appliance delivery contractors. PG&E also administers the Appliance Repair and Replacement Program. This program is designed to replace or repair heating appliances and/or water heaters in eligible customers’ homes. This program was achieved by the combined effort of eighteen contractors. Energy Partner’s program also partnered with eight Low Income Home Energy Assistance Program (LIHEAP) providers to leverage the federal and state weatherization programs for the installation of 1,385 refrigerators.

**Direct Energy Savings and Other Benefits:**

**Pacific Gas and Electric**  
2002-2006 Energy Partners  
Annual Energy Reduction

	PY 2002	PY 2003	PY 2004	PY 2005	PY 2006
Electricity savings (GWh)	43.1	20.1	20.1	25.3	24.3
Natural Gas Savings (MTherm (10 <sup>6</sup> therm))	1.25	0.91	0.87	1.11	1.45

**Pacific Gas and Electric**  
2002-2006 Energy Partners  
Summary of Bill Savings

Program Year	Program Costs (\$)	Program Lifecycle Bill Savings (\$)	Program Bill Savings / Cost Ratio	Per Home Average Lifecycle Bill Savings
2002	65,599,306	46,246,749	0.70	\$ 654
2003	52,303,157	24,896,512	0.48	\$ 527
2004	49,967,901	25,023,983	0.50	\$ 516
2005	63,148,667	35,481,982	0.56	\$ 615
2006	88,045,621	45,286,667	0.51	\$ 686

**LESSONS LEARNED**

Over its long history PG&E has changed and improved the program based on evaluation results, changing customer needs and new policy directions. For example in 2003 PG&E developed a web-based application specifically for the Energy Partners program, named Energy Partners Online (EPO). EPO greatly improved data management by centralizing data collection and storage, allowing program collaborators and contractors to access real time data on program participant information, including program referrals, customer contacts, demographic

information, eligible measures for installation, date and times of visits to the customers' homes, post installation verification results and invoicing payment information.

Another example of program adaptation occurred in late 2005, when PG&E created a Winter Initiative Program, which was integrated into the existing Energy Partners program. The Winter Initiative was designed as an extra effort to help low income customers ameliorate the impacts of anticipated high natural gas costs during that winter. The Winter Initiative Program included increased eligibility for central natural gas forced air furnace replacement, increased eligibility for broken or leaky natural gas water heater replacement, removing the cap on the number of refrigerators eligible for replacement, and removing the per home cap on the number of compact fluorescent lights installed.

PG&E employs a third party vendor to administer monthly customer satisfaction telephone surveys to program participants. PG&E receives satisfaction results and customer comments on a monthly basis; these surveys consistently show high customer satisfaction, ranging between 82-85% for the years 2002-2006.

Energy Partners high customer satisfaction results are a direct reflection of PG&E's continued focus on customer safety and satisfaction. The Energy Partners program is supported by an Energy Training Center for the training of both internal and external employees who work on the program. The curriculum not only focuses on the policy and procedures of the program, but also on the expectation of meeting customers' needs. Centralized training allows for adjustment of the curriculum and offers updated training classes if customer-related issues/concerns are identified. A PG&E safety and quality assurance inspection team also support Energy Partners. The inspection program completes a minimum of twenty percent post safety and verification after the contractors install measures in the customer's home. The PG&E inspection team allows the company to evaluate the work being done in the field and to receive direct communication with customers. The Energy Partners EPO application also lends to successful customer service, since all internal and external employees are able to access real time data on a per participant level. Since both internal and external program entities are able to access and view the same information, each entity is able to assist customers on the first contact.

The Energy Partners program collaborates with PG&E on non-low income energy efficiency programs to generate data collection and research for the cost-effectiveness of energy efficient measures. PG&E currently works with LIHEAP agencies and shares measure information with them. The codes and standards that PG&E uses are the same as those used throughout the state. PG&E program staff continually meet with community leaders and contractors on a regular basis to improve the program and the services offered.

## PROGRAM AT A GLANCE

**Program Name:** Energy Partners

**Targeted Customer Segment:** Low-income households (200% of poverty level).

**Program Start Date:** 1983

**Program Participants:** 963,797 total to date. 66,043 homes in 2006. Total eligible population is 1,800,424; to date the program has served 54% of eligible population.

**Annual Energy Savings Achieved:** 24.3 GWh annual energy savings (2006); 1.45 million therms (2006).

**Peak Demand (summer) Savings Achieved:** Not available.

**Other Measures of Program Results to Date:** Lifecycle bill savings per household is \$686 (2006 results). Customer satisfaction is 85% (2006).

**Budget:** \$90.05 million for 2006 program year.

**Funding Sources:** California ratepayers through public goods charge.

**Best Person to Contact for Information about the Program**

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*Low-Income Programs  
Exemplary Program*

***Low Income Usage Reduction Program  
PECO: An Exelon Company***

**PROGRAM OVERVIEW**

The primary objectives of LIURP are to assist low-income customers to conserve energy and reduce residential energy usage. Additional intended program benefits to the customer include a reduction in arrearage, penalty charges and monthly bill.

PECO's LIURP targets low-income residential gas and electric customers consuming base electric in excess of 600 kWh per month, heating electric in excess of 1,400 kWh per month or natural gas in excess of 100 ccf per month. PECO also targets customers who participate in its CAP Rate program and have usage in excess of 500 kWh. PECO's LIURP offers income and usage eligible customers a whole house energy audit that includes energy education and the installation of program measures intended to reduce gas and electric consumption.

PECO's LIURP program was established in 1991. The program is designed to assist residential customers with reducing energy usage through the application of energy efficiency services, in addition to education tailored to the individual household's energy use. The program is available to both homeowners and tenants. The average number of households served by LIURP is 7500. An energy audit is conducted to determine the appropriate weatherization measures to be installed. Following is a partial list of services that may be provided.

- Survey of electric appliances
- Appliance swap- refrigerator/air conditioner
- Collection of household demographic data
- Blower door testing for heating customers
- Gas house heater and gas water heater carbon monoxide and combustion efficiency testing
- Installation of program measures
  - Caulking, weather-stripping, air sealing, insulation, setback timer, heating system repair or replacement, setback thermostat, water heating system repair or replacement, 115V and 230V air conditioner replacement, refrigerator replacement, and energy efficient lighting.
- Energy education session
- Presentation of audit results and educational materials
- Referrals to other programs designed for low-income customers such as, other PECO Universal Services programs, state and local weatherization programs, and community based organizations
- Post treatment monitoring of progress
- Post treatment education

In 1999 a solar water-heating pilot was implemented to determine the feasibility of the technology in low-income residential housing. 210 units were installed.

PECO and its contractor CMC Energy Services manage the LIURP program.

**PROGRAM PERFORMANCE**

Impact evaluations have been performed for each program year, 1999-2005. Energy savings analyses are based upon billing usage data during the pre- and post-treatment periods. Evaluation results show consistent, comparable results each year with some variability. The table below highlights savings impacts over for the period 1999-2004.

	<b>Savings</b>	<b>Percentage savings</b>	<b>Weatherization costs</b>
<b>Baseload electricity (non-heating) use</b>	<b>kWh</b>		
2004	925	9.9%	\$215
Average 1999-2004	1025	10.1	\$235
<b>Electric heating use</b>	<b>kWh</b>		
2004	2301	9.8	\$1782
Average 1999-2004	1863	8.4	\$1706
<b>Natural gas heating use</b>	<b>Ccf</b>		
2004	168	13.9	\$1789
Average 1999-2004	137	10.9	\$1683

**LESSONS LEARNED**

The PECO LIURP program is designed to approach the usage reduction needs of a high-energy user in a holistic manner. The LIURP Program has proven to be not only cost- effective but consumer friendly. A unique provision of the program is its ability to tailor usage reduction education and provide support to the energy consumer for twelve months in the post treatment period. A post treatment monthly usage reduction goal is established for each consumer, which promotes and reinforces the behavioral modifications leading to maintaining usage reduction.

In 2006 a customer survey conducted by a third party evaluator indicated that participants of the LIURP program maintain and practice the recommended behavioral changes. Administratively, the program has checks and balances that ensure quality control and meet the established payback period consistently. Less than 8% of the program budget is allocated to administrative costs.

Annual independent evaluations are utilized to review program processes as well as application of installed measures for continued improvement. The program continues to produce monthly energy savings.

## PROGRAM AT A GLANCE

**Program Name:** Low Income Usage Reduction Program

**Targeted Customer Segment:** Low income residential customers in Pennsylvania at or below 200% of federal poverty guidelines.

**Program Start Date:** 1999

**Program Participants (if possible, include data on eligible population and participant rates):** Average number of households served annually is 7500

**Annual Energy Savings Achieved:** 1999-2004 average annual savings per household achieved:

- Electric baseload (non-heating) 1025 kWh
- Electric heating 1863 kWh
- Natural gas heating 137 ccf

**Peak Demand (Summer) Savings Achieved:** Not available.

**Other Measures of Program Results to Date:** 1999-2004 average annual savings per household achieved as percentage of baseline use:

- Electric baseload (non-heating) 10.1%
- Electric heating 8.4%
- Natural gas heating 10.9%

**Budget:** \$6.475 million (2007)

**Funding Sources:** Funds collected via electric and natural gas rates

**Best Person to Contact for Information about the Program**

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*Low-Income Programs  
Honorable Mention*

***Non-Profit Affordable Housing Project  
CenterPoint Energy***

**PROGRAM OVERVIEW**

The Non-Profit Affordable Housing Project creates a partnership with area non-profit agencies to provide energy efficient affordable housing for the low income community while meeting or exceeding the requirements of the Minnesota Energy Code. Primary objectives are: 1) to help reduce natural gas heating costs for prospective homeowners; 2) educate prospective homeowners about energy efficiency and home maintenance; and 3) improve indoor air quality.

Financial incentives are provided to cover the incremental cost of installing high efficiency natural gas furnaces and water heaters. Additional incentives are provided for the installation of high efficiency heat recovery ventilation equipment to facilitate energy efficient fresh air exchange in homes, and for the installation of low flow showerheads to help reduce water flow and reduce water heating costs.

High efficiency natural gas furnace (>92% AFUE)	\$ 380
High efficiency natural gas water heater (>.62 EF)	\$ 230
High efficiency heat recovery ventilator (HRV)	\$ 650
Low flow showerhead	\$ 10
Total	\$1,270

Training and education are provided in the form of a *Homeowners Guide* and informational calendar produced by CenterPoint Energy, both of which include comprehensive information and seasonal schedules for home maintenance, equipment care, energy efficiency and safety tips.

CenterPoint Energy administers the program, processing and disseminating rebates to non-profit partners for qualifying equipment installed in homes within our service territory. Agency partners secure sites for development, construct homes and submit required information to CenterPoint Energy, and work directly with prospective homeowners. CenterPoint Energy also produces and mails the educational materials for new homeowners. Agency partners currently include: Greater Metropolitan Housing Corp., Habitat for Humanity, Project for Pride in Living, Central Community Housing Fund, Twin Cities Neighborhood Housing Services, and CommonBond Communities.

**PROGRAM PERFORMANCE**

Since 2001, CenterPoint Energy has provided \$391,894 in financial incentives to our non-profit agency partners for 451 homes constructed within our service territory. This reflects an increase of more than 3-1/2 times the number of homes that were completed during the program's initial

two-year period. CenterPoint Energy estimates that the average homeowner saves approximately 28% on an average natural gas bill, which equates to a savings of approximately \$255 annually for the homeowner.

The program is easily transferable, as influenced by CenterPoint Energy's continued addition of new agency partners. It has also influenced the construction practices of non-profit agencies beyond the homes built within CenterPoint Energy's service territory by heightening the awareness of energy usage, the impact of installing high efficiency equipment on homeowners' costs, and the importance of high efficiency equipment on the long-term affordability of the home for low income customers.

All of the Non-Profit program's non-profit agency partners have educational components to their new home ownership efforts. The printed materials provided by CenterPoint Energy are an important facet of these initiatives. They are periodically updated to include current material. Also, in an effort to reach homeowners who are not native English-speakers, the *Homeowners Guide* contains a significant number of illustrations and photographs to help overcome language barriers and provide the same helpful tips and information to the customer.

## **LESSONS LEARNED**

Before this program was launched in 2001, CenterPoint Energy's primary vehicle for meeting the needs of low income customers had been through its Low Income Weatherization program. Because the primary goal of non-profit housing organizations is to make their homes affordable, they typically install the lowest-cost mechanical equipment in the homes they construct. So the Non-Profit Affordable Housing Project was designed to offset the incremental costs of installing higher efficiency equipment that would reduce costs for the new homeowners, and further, to educate them how to care for it and operate their homes in the most energy efficient way possible.

For the first two years, CenterPoint Energy partnered with two area non-profit organizations, Habitat for Humanity and Greater Metropolitan Housing Corp. In 2003, another prominent area non-profit, Project for Pride in Living, was added, and for 2005-2006, several others. Interest in the program and outreach by CenterPoint Energy continues to expand.

In recent years, some area non-profit housing agencies have faced challenges in acquiring and developing residential properties in communities within CenterPoint Energy's service territory, especially major metropolitan and suburban areas. To counter this trend, CenterPoint Energy is working closely with its non-profit partners this year and with its local government liaisons to help facilitate expanded opportunities for development of affordable housing properties and continue to extend the benefits of this program.

## PROGRAM AT A GLANCE

**Program Name:** CenterPoint Energy Non-Profit Affordable Housing Project

**Targeted Customer Segment:** Non-profit agencies working with low-income households for new housing.

**Program Start Date:** 2001

**Program Participants:** 451 homes received financial incentives for energy-efficient space heating and water heating technologies through the program since 2001.

**Annual Energy Savings Achieved:** CenterPoint estimates that the measures will save new homeowners about 28% on their average annual natural gas bill.

**Peak Demand:** Not applicable (natural gas savings only)

**Other Measures of Program Results to Date:** CenterPoint Energy estimates that participating customers will save \$255 annually on their natural gas heating costs.

**Budget:** \$171,000 annually for the biennial period 2007-08.

**Funding Sources:** Customer rates.

### **Best Person to Contact for Information about the Program**

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*Low-Income Programs  
Honorable Mention*

***The Neighborhood Energy Saver  
Progress Energy Florida***

**PROGRAM OVERVIEW**

Progress Energy Florida created the Neighborhood Energy Saver (NES) in 2006 to assist low-income families with escalating energy costs. The goal of the NES program is to implement a comprehensive package of electric conservation measures at no cost to the customer. In addition to the installation of the conservation measures, an important component of this program is educating families on energy efficiency techniques and the promotion of behavioral changes to help customers control their energy usage and thereby sustain these savings.

The comprehensive package of electric conservation measures consists of the following items:

- Compact fluorescent lighting
- Water heater insulation wrap and insulation for water pipes
- Water conservation shower head and faucet aerators
- Water heater temperature check and adjustment
- A year supply of HVAC filters
- Refrigeration brush for cleaning condenser coils
- Clear tape to repair broken glass
- Caulking for doors, vinyl weather-stripping and door sweeps
- Indoor wall thermometer
- HVAC window unit cover
- Foam insulation for small gaps/cracks

NES uses a door-to-door implementation strategy that targets entire neighborhoods. This canvassing is supported by a parallel informational and educational communications campaign. The canvassing technique is for one team to perform the initial assessment and a second team to follow up and install the appropriate energy efficiency measures from the list above. NES takes advantage of every opportunity, from the initial communication through the installation of the energy efficiency measures, to educate customers on lowering their energy bills.

Progress Energy Florida (PEF) worked with the Florida Department of Community Affairs (FDCA) and State officials to identify a Florida designated low-income neighborhood and to develop communications to promote the initial program pilot in 2006. Based on the success of the initial pilot, the Florida Public Service approved full-scale implementation of NES as part of PEF's DSM portfolio of programs. The program was implemented across all four PEF regions with a targeted goal of 2,000 completions per year.

## **PROGRAM PERFORMANCE**

Progress Energy Florida's Neighborhood Energy Saver program provides PEF with demand reductions while improving the customers comfort level during the hot summer months or cold winter months, while also decreasing the customers utility cost. The cost to implement the program is approximately \$300 per participant. The savings per participant is estimated at approximately \$300 per year.

Progress Energy estimates that total program savings by 2014 will be 33.2 GWh and peak demand reductions from 7.6 MW to 11.8 MW.

## **LESSONS LEARNED**

The NES Program improved on the efficiency of implementing energy efficiency measures by successfully reaching out to an entire neighborhood rather than one customer at a time. This program illustrated the cost savings of a successful collaboration effort which came together through the partnership of private, governmental and non-profit sectors. Progress Energy Florida, Florida Department of Community Affairs, St. Petersburg Water Department and the Pinellas County Urban League were each able to offer / affect conservation and other measures through the NES program. The collaboration was beneficial and its model will be used for the implementation of DSM program offerings throughout the country.

The NES Program exceeded expectations with its ease of enrollment and customer service.:

- Nearly all (96%) of survey participants stated that it was easy to participate in the program.
- All (100%) of survey participants were extremely satisfied overall with the service provided by the contractor.

The program educated families on energy efficiency techniques and encouraged behavioral changes to help customers control their energy usage. The program developed a unique program implementation strategy and information campaign that informs and encourages the customer to participate in the program.

This program's canvassing approach is innovative by effectively reaching out to an entire neighborhood. This technique not only makes the program more cost effective and efficient but it gets the entire mindset of the neighborhood thinking about energy efficiency.

The vision for the Neighborhood Energy Saver program was forged on the concept of market transformation. Working with the Florida Department of Community Affairs, St. Petersburg Water Department and the Pinellas County Urban League; Progress Energy developed a program that demonstrated the cost benefits of combing energy efficiency and education to an entire neighborhood rather than one customer at a time.



Additionally, the successful collaboration effort which came together through the partnership of private, governmental and non-profit sectors, increased efficiencies making this program more cost effective and possibly result in market transformation.

## **PROGRAM AT A GLANCE**

**Program Name:** The Neighborhood Energy Saver

**Targeted Customer Segment:** Low-income households

**Program Start Date:** 2006 for pilot program. 2007 for full program.

**Program Participants:** Target is to serve 2000 households per year.

**Annual Energy Savings Achieved:** Not available

**Peak Demand (Summer) Savings Achieved:** Not available

**Other Measures of Program Results to Date:** Savings per customer estimated to be \$300/year.

**Budget:** \$500,000 for 2007

**Funding Sources:** Progress Energy Florida, Energy Conservation Cost Recovery charge (ECCR)

**Best Person to Contact for Information about the Program**

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