



# **Energy Efficiency Programs Plan**

**2012-2013**

**Submitted to:**

**The State of Connecticut**

**Energy Efficiency Board**

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## EXECUTIVE SUMMARY

The Connecticut Municipal Electric Energy Cooperative (CMEEC) energy efficiency mission is to reduce emissions, lower energy consumption and peak demand, and offset, to the extent possible, the need to build new generation. CMEEC member utilities fill the role of complete energy managers for customers, helping to reduce costs by reducing and reshaping energy use.

As a cooperative of municipal electric energy utilities, CMEEC maintains a diverse portfolio of products and services to meet the needs of all customers served. Although some aspects of implementation may vary, member utilities are responsive to the respective local constituents and benefit from a collaborative, system-wide approach in support of diverse customer needs. All CMEEC customers can take advantage of available energy efficiency programs, and have direct access to highly trained utility and vendor personnel.

CMEEC also recognizes the advantages of program consistency on a statewide basis; thus ensuring maximum program reach and eliminating potential confusion among customers. CMEEC's programs are designed to be compatible with the Energy Efficiency Board (EEB) programs in all instances where this can be done effectively. Consistency has been achieved with:

- The Home Energy Savings (HES) program
- The Limited Income and Lighting Programs for residential customers
- The Existing Facility Retrofit and Equipment Replacement programs for Commercial and Industrial customers
- Education Programs offered by the Institute for Sustainable Energy, and
- Program Evaluation Studies conducted for Connecticut and the region

CMEEC energy efficiency information is incorporated online into [www.ctsavesenergy.com](http://www.ctsavesenergy.com), the website of the Connecticut Energy Efficiency Fund for citizens, businesses, and state and local governments.

CMEEC energy efficiency offerings are coordinated with the EEB and the Department of Environmental and Energy Policy (DEEP) for any federally funded programs. This ensures that every customer will have access to all programs for which they are eligible, as long as funding is available. Truly localized, customer-driven service is a hallmark of the CMEEC organization, with participating utilities maintaining a high level of accessibility and interaction with customers and constituents. Monthly public meetings with local utility commissioners and interested residents ensure ongoing, two-way communication, and provide opportunities for timely updates and discussions of utility programs.

CMEEC programs will continue to feature local contact and direct one-on-one promotion. Program effectiveness relies upon the many relationships with customers developed through local offices and employees, local utility boards, and many indirect connections through municipal and civic organizations.

Because of the local knowledge and presence, services can be accurately targeted according to key demographic and energy usage profiles, and tailored to discrete customer segments. Additional local benefits are derived from direct access to facilities and decision-makers across the entire spectrum of municipal departments and agencies. Programs also benefit from the ability to combine electric efficiency efforts with like programs in gas, water and wastewater services. Rather than a "one size fits all" approach, CMEEC utilities have a robust cooperative portfolio of localized energy efficiency solutions consistent and compatible with statewide programs.

Stimulus funding from the ARRA will continue to be utilized into 2012 until sources are depleted. Should additional stimulus dollars or other federal or State funding become available they will be utilized to enhance the CMEEC programs.

CMEEC has received over \$1,850,000 to date from the Regional Greenhouse Gas Initiative (RGGI) administered through the Connecticut DEEP. These funds have been used to strengthen the CMEEC programs, particularly in the residential sector. Over \$1,250,000 has been spent in support of customer projects through the end of 2011.

CMEEC participates in program evaluations pertaining to the CMEEC program offerings, through the EEB and the EM&V Forum; both to meet ISO requirements and to inform program design.

Highlights of the 2012-2013 Plan:

- CMEEC utilities will offer the following Programs :
  - Home Energy Savings (HES) which will continue to be the primary residential program. HES takes a “whole-house” approach to achieving energy efficiency and will be available in all systems delivered through qualified vendors
  - Limited Income customers participate in the HES program with no co-pay
  - One system is offering a residential loan pilot program that will continue during the plan period. The overall loan program will also be evaluated to determine future direction and how the program may be expanded to other systems
  - The CMEEC systems will continue the distribution of CFLs using a variety of channels. The systems employ direct distribution through local service centers and other available community activities and organizations as well as direct mail offers. The Home Energy Savings program provides direct install CFLs as a major component. Systems will also continue the Negotiated Cooperative Purchase program, utilizing major chain stores and local retailers. CMEEC utilities expect to distribute 250,000 CFLs over the Plan period, bringing the total distribution to over 1 million units since program inception in 2006
  - The Energy Star ® appliance rebate program was phased out at the end of 2011. Appliance rebates will only be offered in conjunction with an HES visit and only for existing units that are significantly below Energy Star ® efficiency levels
  - Local utility websites are linked to Energy Depot ® and provide access to interactive energy tools, self-guided audits and downloadable information
  - Ongoing customer communications will continue to be a major focus for the member utilities
  - Support for new residential construction will continue with a menu of developer incentives
  - Strong one-on-one efforts by the utilities connect Commercial and Industrial customers with prescriptive and custom incentives for both retrofit and new construction projects
  - Member utilities will continue to work with customers on the development of renewable generation resources in collaboration with the Connecticut Clean Energy Finance and Investment Authority (CCEFIA)
  - Specific demand response measures are available for larger customers on a customized basis
  - CMEEC will participate in specific program evaluations through the EEB and the EM&V Forum, both to meet ISO requirements as well as to inform program design
  - Marketing and customer communications for all programs will be undertaken by each local utility through direct mail and newsletters, website resources, outreach to community groups, and by utilizing local utility office employees
  - During the 2012-2013 period, the introduction of electric vehicles into the member systems service territories will be facilitated

## **RESIDENTIAL PROGRAMS**

### **Home Energy Savings**

The Home Energy Savings program (HES) will continue to be the primary residential program. All member systems will participate using BPI trained and certified vendors and/or local utility staff. The program addresses the entire spectrum of energy use including electric efficiency measure, building envelope improvements and space and water heating and cooling efficiency measures.

Program elements include:

- Blower door testing leading to weatherization measures
- Duct testing and sealing
- Installation of CFLs wherever practicable
- Domestic and hot water efficiency devices and pipe insulation installation
- Additional Attic insulation
- Assisting customers with procurement of contractor services and providing quality control
- An expanded and enhanced “kitchen table” discussion

Member utilities are exploring ways to place even greater emphasis on cross-selling of multiple programs and to offer bundled incentives to new and recent HES customers. With every in-home service visit, efforts are made to familiarize customers with the Energy Depot®, how to access this valuable online resource, and to make sure customers know about money-saving offers available through the national Energy Star® program. The importance of saving energy and reduced related costs will continue to be a priority for all customers, especially in the current adverse economic climate. One system is running a low/no interest residential loan program that encourages customers to install more comprehensive measures, such as adding insulation and upgrading HVAC equipment. The pilot will continue and will be evaluated to determine future efforts in this area.

The program targets all residential customers beginning with a focus on single family homes, limited income, and high use customers. Member utility personnel work with Yankee Gas personnel to coordinate available gas company incentives and will coordinate HES with any future programs available for customers with oil heat. Norwich Public Utilities offers an in-house gas equipment change-out program.

### **Limited Income Customers**

The main objective is to reduce energy costs for low-income customers through the direct installation of efficiency measures, primarily weatherization related measures. The Limited Income program will be offered through the Home Energy Savings program for the plan period. The program will be delivered by all municipal systems and will be implemented through a third-party contractor or local utility staff. Efficiency measures include installation of efficient lighting, water heating and pipe insulation, low-flow water devices, blower-door tests and subsequent air sealing, weatherization, and related measures. The utilities cover 100% of the efficiency measure costs for low-income customers, and ensure that bill-payment and assistance plans are utilized when needed.

This effort is targeted to limited-income customers, including those with unpaid bills and higher-than-average energy use. The systems utilize existing community contact networks, including community assistance agencies (e.g., social service or housing authorities), and the utility customer service staff.

## **New Residential Construction**

A pilot program continues to be offered in one of the systems, providing a menu of incentives, to builders and developers, for new residential construction, primarily in the multi-family sector. This pilot program encourages developers to utilize equipment and construction techniques that exceed code requirements. Incentives levels are considered on a project by project basis and include the following measures:

- Qualifying CFL lighting fixtures, high-efficiency ceiling fans and Energy Star ® listed LED-fixtures
- CFLs for each light and lighting fixture
- Low-flow shower and sink devices
- High-efficiency CFL exterior area lighting with photo sensors or timers as applicable
- Natural gas, instantaneous (tankless) water heaters
- High-efficiency natural gas boilers and furnaces (> 92.5% A.F.U.E.)
- Geothermal and/or high-efficiency air-to-air heat pumps
- Energy Star ® heating system programmable thermostats
- Enhanced building envelope insulation

Program offerings will be revised to meet any new code requirements as promulgated.

The utilities access potential projects through well-developed community contacts such as building officials and new-service utility staff. CMEEC systems will work with Yankee Gas to coordinate the available gas company incentives and will coordinate with any future programs targeting customers with oil heat. Norwich Public Utilities offers a gas equipment upgrade component.

## **Appliances**

The Energy Star ® appliance rebate program was phased out in 2011. Appliance rebates will still be offered in conjunction with an HES visit but only for existing units that are significantly below Energy Star ® efficiency levels. Incentives will continue to be available for the installation of high efficiency residential central air conditioning and for the installation of geothermal systems.

## **Lighting**

Over the past several years CMEEC members have pursued residential lighting measures as a key savings strategy. Since 2006 CMEEC systems have distributed over 750,000 CFLs, averaging over 12 per household. CMEEC utilities will continue to distribute CFLs to their customers using a variety of approaches including:

- No cost distribution of CFLs through local service centers and other municipal organizations
- Continuation of the Negotiated Cooperative Purchase Program operated through major chain stores and local retailers. Online lighting catalogs will provide customers with reduced-cost, efficient lighting fixtures and specialty replacement bulbs
- Direct installation of CFLs which will continue to be an important component of the New residential Construction, HES and Low Income programs
- School-based fundraisers and other innovative partnerships which will continue to be part of community involvement activities
- Honoring any orders from municipal customers who participate in lighting fairs
- Supporting the effort to continue the conversion of the residential customer base from incandescent technology and encourage the market transformation to electronic lighting technologies

# **COMMERCIAL & INDUSTRIAL PROGRAMS**

## **Existing Facility Retrofit – Commercial, Industrial and Municipal**

The Commercial and Industrial (C&I) retrofit program for existing facilities has provided the greatest share of energy and demand savings. The objective of the program is to lower energy use and cost at Commercial and Industrial facilities. The program is also utilized for municipal and other government retrofit projects. The program offers both technical and financial assistance to customers. Many projects result from utility outreach efforts. Frequently, however, customers obtain proposals directly from vendors. Utility staff review proposals for savings claims and cost-effectiveness, and offer financial incentives generally based on a percentage of project cost or a fixed unit rate for energy saved.

Portfolio offerings now include a rooftop HVAC, test, tune, early replacement program as well as demand controls for lighting and HVAC systems. Zero-interest financing is also available with some utilities where incentive payments are used to buy down interest rates and establish loan terms to provide positive cash flow to customers.

## **New Construction**

This program will continue to offer a combination of technical assistance, both through in-house staff and independent technical assistance firms, and through financial incentives for eligible energy-efficient equipment and design practices. Incentives will be offered for equipment and lighting to encourage upgrading to higher than code required efficiency. Incentives will be based on the incremental cost associated with upgrading to higher efficiency products. Prescriptive incentives may be available on the same basis as equipment replacement projects. Financing will be offered on the same basis as retrofit projects.

## **Equipment Replacement - Prescriptive**

Prescriptive programs are available for replacement of air conditioning equipment. Prescriptive incentives are intended to capture efficiency at the time of investment in new equipment, whether for planned replacement or time-dependent emergency replacement. Qualifying commercial air conditioning products will have efficiency levels consistent with those requirements promoted by energy efficiency programs throughout New England. The program goal is to promote the installation of premium efficiency HVAC equipment. Outreach is affected primarily through ongoing customer contact and directly to contractors operating in the CMEEC system service territories.

## **Equipment Replacement - Custom**

The market for the custom offering is the end-use customer base. The program provides technical assistance, financial incentives, and financing support investment in higher-efficiency equipment and systems. Program incentives are based on the incremental cost for upgrading efficiency for all types of customer equipment.

## **Small Businesses**

The objective of this program is to help small businesses lower energy use and cost. The program focuses on promoting the installation of energy-efficient equipment; primarily lighting and refrigeration technologies. It is designed to overcome barriers to energy efficiency that are unique to the small business market. Utility staff will make small businesses aware of these opportunities through their existing

channels of communication, and will respond to requests for assistance. Prescriptive incentives are generally designed to cover up to 50% of the costs for high-efficiency lighting measures. Custom incentives are the same as those offered under the C&I programs described previously. Funding for the Small Business program is included in the various C&I program budgets.

## **OTHER CUSTOMER INITIATIVES**

### **Energy Efficiency Financing**

CMEEC members developed a financing program offered through local banking institutions offering attractive financing options that encourage customers to undertake efficiency improvements that otherwise would not be completed. The program allows Commercial and Industrial customers to amortize energy efficiency project costs and obtain positive cash flow as one strategy for overcoming the first-cost barrier. The program will continue to be available in certain CMEEC systems. The program offers financing through local banks where utility customers are most likely to have ongoing relationships.

The target market is the larger C&I customer base, although the program is open to all C&I customers. The program provides a zero interest loan for up to 60 months for approved Commercial and Industrial customers. Customer credit is approved by the lender and is supported by a technical and financial analysis developed jointly by the utility and the customer.

### **Energy Education**

The CMEEC systems will continue to collaborate with area educators, school board members, and other municipal officials to support various energy efficiency initiatives in the local communities. The Institute for Sustainable Energy (ISE) at Eastern Connecticut State University delivers a wide spectrum of ISE programs to the member communities. The systems will also continue to offer the “eeSmarts” program to elementary grades in respective communities.

The ISE program components include:

- Energy Star ® Portfolio Manager Benchmarking
- CT Energy Education
- Keep CT Cool: Climate Challenge
- Building code updates and training
- Green Schools
- K-12 school/municipal building operators training

### **Renewable Energy Development**

CMEEC has a contract with CCEFIA to provide technical support and project administration for renewable energy projects in the CMEEC systems service territories. Incentives will be available for photovoltaic as well as solar thermal projects. Residential and Commercial /Industrial projects are included under the agreement. Incentive funding will be provided by the CMEEC systems. Incentive levels are generally consistent with current CCEFIA levels. If the CCEFIA incentives and/or guidelines change, CMEEC will evaluate whether to make the same changes, leave the levels unchanged, or establish new incentive protocols and/or guidelines.

Funding for this effort will come from existing C&LM budgets as well as other sources such as RGGI, ISO - FCM payments and ARRA, (as available and applicable).

## **Smart Grid and Demand Response**

The CMEEC systems provide a vertically integrated source of electric power for customers. This unique market position, in combination with the ongoing ARRA-funded smart grid project led by CMEEC staff, will be leveraged to drive additional customer cost savings through enhanced control and reduction in peak demand. CMEEC systems have adopted a portfolio approach to peak demand reduction and will continue to develop opportunities to bring together conservation, active load management and distributed generation approaches into an integrated whole that optimizes value for the customer. CMEEC will continue its efforts to reduce peak demand and shift and increase off peak energy use by leveraging this smart grid convergence through several pilot programs. The scope of these programs during the program years includes: introduction of customer web presentation of use and demand data (enabled by AMI metering), introduction of voluntary time of use rates, continued deployment of active load control technologies, continued deployment of renewable distributed generation (and net metered) capacity, and continued utilization of distributed generation to reduce the cost impact of peak demand.

## **Electric Vehicles**

Work will begin during this plan period to facilitate the introduction of Electric Vehicles into the systems. CMEEC is a member of the Regional Electric Vehicle Initiative (REVI) to coordinate infrastructure and policy development to make electric vehicles a viable option for Connecticut. In addition, CMEEC will evaluate appropriate rebates or other financial means to encourage customers to adopt this technology. Special “charging rates” will likely be needed to ensure the best use of EV technology.

## **Program Evaluations**

CMEEC will continue to participate in specific program evaluations relevant to the CMEEC program offerings, through the EEB and the EM&V Forum. This collaboration will help CMEEC meet ISO requirements and inform future program design.

## **Communicating with Customers**

The CMEEC systems will continue to use a variety of direct customer contact methods for the planning period. These proven communication vehicles will keep attention focused on energy efficiency and further increase awareness of available programs. All of the systems employ targeted tools that are frequently updated to communicate with specific customer groups. Examples include:

- Monthly or quarterly newsletters with informative articles on energy efficiency and direct mail promoting energy efficiency strategies and products
- On-hold messages for callers
- Lobby signage and brochures on display at customer service centers and other municipal buildings
- Information and custom answers provided in-person by utility staff

All utilities have websites with dedicated energy efficiency sections. In addition, systems provide customers with unlimited website access to Energy Depot®, where customers have access to free, state-of-the-art tools, such as Energy Profile, Energy Calculator, Energy Library, Energy Advisor, and more. CMEEC also provides a link for customers to the statewide WISE-USE telephone number, directly connecting municipal utility customers to the CMEEC energy efficiency help line. The CMEEC website with additional energy efficiency information is under construction, slated for delivery in the second quarter of 2012. Working with the EEB and other organizations, the goal is to help ensure seamless informational resources for all Connecticut citizens regardless of whom their electricity provider. CMEEC staff members regularly visit medium and large customers, and will continue to use drop-off and direct install efforts to connect with small business and residential customers.



# PROGRAM DATA

## BUDGETS

The following two tables outline the planned spending by utility and by program for 2012 and 2013. Total budgets are \$4,781,000 and \$4,705,000 for the two years, respectively, including a line item for renewables. In both program years, approximately 60% of spending is in the Commercial and Industrial (C&I) programs and 40% is in residential programs. This breakdown is consistent with budgets from prior years. The program budgets are considered guidelines for the member utilities. The utilities have ample flexibility to choose the programs on which they wish to focus. The budgets include the costs of planning and evaluation activities.

Program Budgets by Municipality for 2012

Program	2012 Budget Forecast	BLP	GU	JCDPU	NPU	SNEW	TTD	WED
<b>Residential</b>								
Home Energy Savings Program	\$1,472,500	\$38,200	\$434,000	\$20,600	\$313,400	\$83,100	\$54,500	\$528,700
<b>Efficient Products</b>								
Lighting	\$207,300	\$5,400	\$61,100	\$2,900	\$44,100	\$11,700	\$7,700	\$74,400
Appliances	\$92,600	\$2,400	\$27,300	\$1,300	\$19,700	\$5,200	\$3,400	\$33,300
<b>Subtotal - Residential</b>	<b>\$1,772,400</b>	<b>\$46,000</b>	<b>\$522,400</b>	<b>\$24,800</b>	<b>\$377,200</b>	<b>\$100,000</b>	<b>\$65,600</b>	<b>\$636,400</b>
<b>Commercial</b>								
Commercial New Construction	\$5,200	\$0	\$1,600	\$0	\$1,200	\$400	\$0	\$2,000
<b>Commercial Equipment Replacement</b>								
Prescriptive	\$40,800	\$1,200	\$12,000	\$600	\$8,600	\$2,200	\$1,600	\$14,600
Custom	\$269,800	\$7,000	\$79,500	\$3,800	\$57,400	\$15,200	\$10,100	\$96,800
C&I Existing Facility Retrofit	\$2,342,800	\$60,800	\$690,500	\$32,800	\$498,600	\$132,200	\$86,700	\$841,200
<b>Subtotal - Commercial</b>	<b>\$2,658,600</b>	<b>\$69,000</b>	<b>\$783,600</b>	<b>\$37,200</b>	<b>\$565,800</b>	<b>\$150,000</b>	<b>\$98,400</b>	<b>\$954,600</b>
<b>Renewables</b>	<b>\$350,000</b>	<b>\$9,000</b>	<b>\$104,000</b>	<b>\$5,000</b>	<b>\$73,000</b>	<b>\$21,000</b>	<b>\$13,000</b>	<b>\$125,000</b>
<b>Total - All Programs</b>	<b>\$4,781,000</b>	<b>\$124,000</b>	<b>\$1,410,000</b>	<b>\$67,000</b>	<b>\$1,016,000</b>	<b>\$271,000</b>	<b>\$177,000</b>	<b>\$1,716,000</b>

Program Budgets by Municipality for 2013

Program	2013 Budget Forecast	BLP	GU	JCDPU	NPU	SNEW	TTD	WED
<b>Residential</b>								
Home Energy Savings Program	\$1,464,000	\$37,900	\$431,400	\$20,300	\$312,100	\$82,400	\$54,500	\$525,400
<b>Efficient Products</b>								
Lighting	\$206,000	\$5,300	\$60,700	\$2,800	\$43,900	\$11,600	\$7,700	\$74,000
Appliances	\$92,000	\$2,400	\$27,100	\$1,300	\$19,600	\$5,200	\$3,400	\$33,000
<b>Subtotal - Residential</b>	<b>\$1,762,000</b>	<b>\$45,600</b>	<b>\$519,200</b>	<b>\$24,400</b>	<b>\$375,600</b>	<b>\$99,200</b>	<b>\$65,600</b>	<b>\$632,400</b>
<b>Commercial</b>								
Commercial New Construction	\$5,100	\$0	\$1,600	\$0	\$1,200	\$300	\$0	\$2,000
<b>Commercial Equipment Replacement</b>								
Prescriptive	\$40,800	\$1,200	\$12,000	\$600	\$8,700	\$2,300	\$1,500	\$14,500
Custom	\$268,000	\$6,900	\$79,000	\$3,700	\$57,100	\$15,100	\$10,000	\$96,200
C&I Existing Facility Retrofit	\$2,329,100	\$60,300	\$686,200	\$32,300	\$496,400	\$131,100	\$86,900	\$835,900
<b>Subtotal - Commercial</b>	<b>\$2,643,000</b>	<b>\$68,400</b>	<b>\$778,800</b>	<b>\$36,600</b>	<b>\$563,400</b>	<b>\$148,800</b>	<b>\$98,400</b>	<b>\$948,600</b>
<b>Renewables</b>	<b>\$300,000</b>	<b>\$8,000</b>	<b>\$89,000</b>	<b>\$5,000</b>	<b>\$62,000</b>	<b>\$18,000</b>	<b>\$11,000</b>	<b>\$107,000</b>
<b>Total - All Programs</b>	<b>\$4,705,000</b>	<b>\$122,000</b>	<b>\$1,387,000</b>	<b>\$66,000</b>	<b>\$1,001,000</b>	<b>\$266,000</b>	<b>\$175,000</b>	<b>\$1,688,000</b>

## PROJECTED SAVINGS BY PROGRAM

The projected savings for each program are shown below. Total annualized energy savings are 15,356 and 15,264 MWh, respectively, for the two years. Total demand reduction is about 6.4 and 6.3 MW. All energy and demand savings are at the customer meter.

2012 Projected Savings by Program

	Program Budget	Projected Annual Savings (MWh)	Projected Lifetime Savings (MWh)	Projected kW Impact	\$/kW	\$/Annual kWh	\$/Lifetime kWh
<b>Residential</b>							
Home Energy Savings	\$1,472,500	2,184	21,063	1,473	\$1,000	\$0.67	\$0.070
<b>Efficient Products</b>							
Lighting	\$207,300	2,108	10,539	2,562	\$81	\$0.10	\$0.020
Appliances	\$92,600	37	877	33	\$2,820	\$2.50	\$0.106
<b>Subtotal - Residential</b>	<b>\$1,772,400</b>	<b>4,329</b>	<b>32,479</b>	<b>4,068</b>	<b>\$436</b>	<b>\$0.41</b>	<b>\$0.055</b>
<b>Commercial</b>							
Lost Opportunity	\$315,800	1,711	31,397	169	\$1,870	\$0.18	\$0.010
Existing Facility Retrofit	\$2,342,800	9,316	170,170	2,142	\$1,094	\$0.25	\$0.019
<b>Subtotal - Commercial</b>	<b>\$2,658,600</b>	<b>11,027</b>	<b>151,567</b>	<b>2,311</b>	<b>\$1,151</b>	<b>\$0.24</b>	<b>\$0.018</b>
Renewables	\$350,000						
<b>Total - All Programs</b>	<b>\$4,781,000</b>	<b>15,356</b>	<b>184,046</b>	<b>6,379</b>	<b>\$750</b>	<b>\$0.31</b>	<b>\$0.026</b>

2013 Projected Savings by Program

	Program Budget	Projected Annual Savings (MWh)	Projected Lifetime Savings (MWh)	Projected kW Impact	\$/kW	\$/Annual kWh	\$/Lifetime kWh
<b>Residential</b>							
Home Energy Savings	\$1,464,000	2,172	20,942	1,465	\$1,000	\$0.67	\$0.070
<b>Efficient Products</b>							
Lighting	\$206,000	2,095	10,473	2,546	\$81	\$0.10	\$0.020
Appliances	\$92,000	37	871	33	\$2,820	\$2.50	\$0.106
<b>Subtotal - Residential</b>	<b>\$1,762,000</b>	<b>4,303</b>	<b>32,285</b>	<b>4,043</b>	<b>\$436</b>	<b>\$0.41</b>	<b>\$0.055</b>
<b>Commercial</b>							
Lost Opportunity	\$313,900	1,700	31,195	168	\$1,868	\$0.18	\$0.010
Existing Facility Retrofit	\$2,329,100	9,261	119,467	2,129	\$1,094	\$0.25	\$0.019
<b>Subtotal - Commercial</b>	<b>\$2,643,000</b>	<b>10,961</b>	<b>150,662</b>	<b>2,297</b>	<b>\$1,150</b>	<b>\$0.24</b>	<b>\$0.018</b>
Renewables	\$300,000						
<b>Total - All Programs</b>	<b>\$4,705,000</b>	<b>15,264</b>	<b>182,948</b>	<b>6,341</b>	<b>\$742</b>	<b>\$0.31</b>	<b>\$0.026</b>

## COST-EFFECTIVENESS

The following tables show the projected cost-effectiveness of the 2012 and 2013 programs. All programs are cost-effective from a total resource (or societal) perspective, with total net benefits of approximately \$15 million and a BCR of 1.8. These cost-effectiveness targets are similar to those achieved in 2010 and projected for 2011. All programs are also cost-effective for the Electric System (i.e., for the utilities) meaning that each dollar spent will result in nearly \$4 in utility-system benefits. Commercial programs have higher BCRs, in general. This is because these programs offer lower incentives than residential programs. In addition, commercial programs tend to capture predominantly lighting savings, which result in high peak demand savings. This increases the benefits derived per dollar spent. The lowest BCR is for the appliance programs. This is to be expected, because many of the measures rebated garner few kWh savings and no kW savings due to recent evaluations of measure performance. This greatly reduces the overall benefits, both from the societal as well as utility perspectives.

2012 Program Benefits and Cost-Effectiveness

	Utility Costs	% of Budget	Electric System Benefits	Electric System Net Benefits	Electric System BCR	Total Resource Cost	Total Resource Benefits	Total Resource Net Benefits	Total Resource BCR
<b>Residential</b>									
Home Energy Savings	\$1,472,500	33%	\$1,503,655	\$31,155	1.0	\$2,792,399	\$3,162,833	\$370,434	1.1
<b>Efficient Products</b>									
Lighting	\$207,300	5%	\$798,615	\$591,315	3.9	\$285,661	\$649,402	\$363,741	2.3
Appliances	\$92,600	2%	\$131,534	\$38,934	1.4	\$74,652	\$110,435	\$35,784	1.5
<b>Subtotal - Residential</b>	<b>\$1,772,400</b>	<b>40%</b>	<b>\$2,433,804</b>	<b>\$661,404</b>	<b>1.4</b>	<b>\$3,152,712</b>	<b>\$3,922,671</b>	<b>\$769,959</b>	<b>1.2</b>
<b>Commercial</b>									
Lost Opportunity	\$315,800	7%	\$2,535,692	\$2,219,892	8.0	\$591,959	\$2,187,408	\$1,595,448	3.7
Existing Facility Retrofit	\$2,342,800	53%	\$10,725,321	\$8,382,521	4.6	\$5,276,958	\$8,617,768	\$3,340,810	1.6
<b>Subtotal - Commercial</b>	<b>\$2,658,600</b>	<b>60%</b>	<b>\$13,261,013</b>	<b>\$10,602,413</b>	<b>5.0</b>	<b>\$5,868,917</b>	<b>\$10,805,175</b>	<b>\$4,936,258</b>	<b>1.8</b>
<b>Renewables</b>									
<b>Total - All Programs</b>	<b>\$4,431,000</b>		<b>\$15,694,817</b>	<b>\$11,263,817</b>	<b>3.5</b>	<b>\$9,021,629</b>	<b>\$14,727,846</b>	<b>\$5,706,217</b>	<b>1.6</b>

2013 Program Benefits and Cost-Effectiveness

	Utility Costs	% of Budget	Electric System Benefits	Electric System Net Benefits	Electric System BCR	Total Resource Cost	Total Resource Benefits	Total Resource Net Benefits	Total Resource BCR
<b>Residential</b>									
Home Energy Savings	\$1,464,000	33%	\$1,774,809	\$310,809	1.2	\$2,776,280	\$3,646,284	\$870,004	1.3
<b>Efficient Products</b>									
Lighting	\$206,000	5%	\$900,063	\$694,063	4.4	\$283,870	\$714,735	\$430,865	2.5
Appliances	\$92,000	2%	\$134,629	\$42,629	1.5	\$74,168	\$112,695	\$38,527	1.5
<b>Subtotal - Residential</b>	<b>\$1,762,000</b>	<b>40%</b>	<b>\$2,809,500</b>	<b>\$1,047,500</b>	<b>1.6</b>	<b>\$3,134,318</b>	<b>\$4,473,714</b>	<b>\$1,339,396</b>	<b>1.4</b>
<b>Commercial</b>									
Lost Opportunity	\$313,900	7%	\$3,396,755	\$3,082,855	10.8	\$588,519	\$2,971,060	\$2,382,541	5.0
Existing Facility Retrofit	\$2,329,100	53%	\$13,350,420	\$11,021,320	5.7	\$5,246,100	\$10,830,746	\$5,584,646	2.1
<b>Subtotal - Commercial</b>	<b>\$2,643,000</b>	<b>60%</b>	<b>\$16,747,176</b>	<b>\$14,104,176</b>	<b>6.3</b>	<b>\$5,834,619</b>	<b>\$13,801,806</b>	<b>\$7,967,187</b>	<b>2.4</b>
<b>Renewables</b>									
<b>Total - All Programs</b>	<b>\$4,405,000</b>		<b>\$19,556,676</b>	<b>\$15,151,676</b>	<b>4.4</b>	<b>\$8,968,937</b>	<b>\$18,275,520</b>	<b>\$9,306,583</b>	<b>2.0</b>