

**Energy Efficiency Program Options  
for Local Governments  
under the *American Recovery  
and Reinvestment Act of 2009***

**Sarah Black, Shruti Vaidyanathan, and Michael Sciortino**

**December 2009**

**Report Number E09X**



## Contents

|   |     |
|---|-----|
| About ACEEE.....  | ii  |
| Acknowledgments.....  | ii  |
| Abstract.....   | iii |
| Introduction.....   | 1   |
| Energy Efficiency and Conservation Block Grant Program Guidelines.....            | 3   |
| Eligible Activities from DOE EECBG Guidance.....                                  | 3   |
| I. Development of an Energy Efficiency and Conservation Strategy.....             | 3   |
| II. Technical Consultant Services.....  | 4   |
| III. Residential and Commercial Building Energy Audits.....                       | 5   |
| IV. Financial Incentive Programs.....   | 5   |
| V. Energy Efficiency Retrofits.....   | 14  |
| VI. Energy Efficiency and Conservation Programs for Buildings and Facilities..... | 15  |
| VII. Development and Implementation of Transportation Programs.....               | 16  |
| Summary and Conclusions.....  | 24  |
| Sources for Technical Assistance.....   | 25  |
| References.....   | 27  |

## About ACEEE

The American Council for an Energy-Efficient Economy (ACEEE) is a nonprofit research organization dedicated to advancing energy efficiency as a means of promoting economic prosperity, energy security, and environmental protection. For more information, see [www.aceee.org](http://www.aceee.org). ACEEE fulfills its mission by:

- Conducting in-depth technical and policy assessments
- Advising businesses, policymakers, and program managers
- Working collaboratively with businesses, public interest groups, and other organizations
- Organizing technical conferences and workshops
- Publishing books, conference proceedings, and reports
- Educating consumers and businesses

Projects are carried out by staff and selected energy efficiency experts from universities, national laboratories, and the private sector. Collaboration is the key to ACEEE's ongoing success. We collaborate on projects and initiatives with dozens of organizations including international, federal, and state agencies as well as businesses, utilities, research institutions, and public interest groups.

Support for our work comes from a broad range of foundations, governmental organizations, research institutes, utilities, and corporations.

## Acknowledgments

We gratefully acknowledge the contributions of reviewers Kevin McCarty, Steve Morgan, and William Toffey, who provided invaluable suggestions and insights on every aspect of this report. We would like to also thank the many program implementers who assisted the authors in tracking down data and program specifics and answering questions, including Robb Bossley, Dana Bourland, Stephanie Groll, Dustin Jensen, Joanna Moore, Joanne Quinn, Cara Seiderman, and Linda Wigington. We also extend thanks to our ACEEE colleagues Suzanne Watson and Steven Nadel for their assistance in the shaping of this report, and to ACEEE Editor Renee Nida for her attention to detail and help in bringing this project to fruition.

## Abstract

The *American Recovery and Reinvestment Act of 2009* (ARRA) included several key funding opportunities for energy efficiency projects at the local level, including for the first time monies for the Energy Efficiency and Conservation Block Grant (EECBG) program.<sup>1</sup> Funding was additionally provided for state energy programs, weatherization assistance, and transportation efficiency, among other initiatives. The EECBG program allows cities and counties to fund a range of projects that reduce energy use and greenhouse gas emissions, most notably municipal-level energy efficiency programs. Cities are in many ways ideally suited to advance energy efficiency initiatives, and these block grants represent the first-ever commitment of direct federal resources in support of city and county leaders and their efforts to expand existing locally based initiatives and design and implement new programs. Prior to this level of federal support, many local governments across the country implemented important and innovative energy efficiency programs; this report highlights some of these efforts as examples of programs that could be implemented using EECBG funds.

---

<sup>1</sup> The EECBG was authorized as part of the Energy Independence and Security Act of 2007 (EISA).



## Introduction

The *American Recovery and Reinvestment Act of 2009* (ARRA) was signed into law on February 17, 2009, as a strategic initiative to save and create 3–4 million jobs within two years. This landmark piece of legislation is the single largest investment in energy efficiency in the nation's history, with more than \$20 billion slated to directly fund energy efficiency programs. In addition to the EECBG program, it provided funds for a weatherization program for energy efficiency improvements to more than a million homes, and a retrofit program that will improve the efficiency of federal buildings, as well as other programs providing rebates for energy-efficient appliances, electric grid modernization efforts, and initiatives to expand and improve mass transit. In addition to the various efficiency program funds, a summary of which can be viewed on the ACEEE Web site,<sup>2</sup> ARRA also extended and expanded federal energy efficiency tax incentives, an added benefit to consumers and businesses discussed later in this report. This is not to suggest that prior to the passage of ARRA, municipal-level energy efficiency programs did not exist. In fact, local governments across the country are responsible for a range of successful energy efficiency programs. This report highlights numerous examples of these efforts to illustrate how other cities and counties can create new programs supported by federal EECBG funding.

There are three major federal funding sources of interest for states and local governments: the Weatherization Assistance Program (WAP), the State Energy Program (SEP), and the Energy Efficiency and Conservation Block Grants (EECBG). WAP is the largest of the three, funded at \$5 billion over a two-year period, providing up to \$6,500 per home. This program specifically targets low-income families, and is designed to permanently reduce their energy bills by making energy retrofits to their homes. WAP funding is distributed to the states, which then allocate funds to perform weatherization services, primarily to nonprofit organizations and others including utilities and local governments.

The SEP program was funded at \$3.1 billion for energy efficiency projects and programs. SEP funds are distributed to states, which often direct their energy offices to manage energy efficiency and renewable energy projects. Eligible SEP projects include a suite of statewide initiatives, covering public education to promote energy conservation, transportation projects, development of integrated energy strategies, and the creation of building retrofit standards, among others. The National Association of State Energy Officials (NASEO) has a list of previous SEP projects accessible on their Web site.<sup>3</sup> State allocations under ARRA are listed on the Web at [http://apps1.eere.energy.gov/state\\_energy\\_program/recovery\\_act.cfm](http://apps1.eere.energy.gov/state_energy_program/recovery_act.cfm).

The EECBG program, funded at \$3.2 billion, directs a portion of available funds to formula-eligible cities and counties (i.e., larger cities and counties) with the remaining share allocated to state governments to serve local governments ineligible for direct formula funding. This program covers a variety of initiatives targeted at conservation and energy efficiency projects, including but not limited to: development of comprehensive energy strategies and incentive programs (loans and rebates), retrofits of municipal buildings and infrastructure, and providing energy audits for commercial and residential buildings. The EECBG program additionally allows cities to develop a baseline for their energy use and climate impacts, from which they can begin to measure both energy savings and greenhouse gas emissions reductions.

EECBG funding for municipalities is especially useful, particularly to larger jurisdictions, as they are uniquely situated to manage successful energy programs at the community level for several reasons.

- **Scale.** Geographically, the program administration area is far smaller than that of a state or even a county. Programs that might fail in a rural application would benefit from high population densities in cities.
- **Accountability.** Mayors and county leaders are directly accountable to their constituents. In addition, these officials operate in local media markets that routinely track and report the various decisions and activities of local governments. Given current economic conditions,

<sup>2</sup> [www.aceee.org/energy/national/recovery.htm#summary](http://www.aceee.org/energy/national/recovery.htm#summary)

<sup>3</sup> [www.naseo.org/projects/sep/updates/index.html](http://www.naseo.org/projects/sep/updates/index.html)

local leaders are especially motivated to initiate energy efficiency programs that hold significant potential to boost economic development, reduce energy costs and create green jobs.

- **Authority.** Cities and counties control not only their buildings and facilities, but in some cases own and operate their own energy utilities. Municipal buildings are ideal for pilot or demonstration projects and could also be utilized to illustrate demand response programs. In cities where the water and electric utilities are community-owned, such as the Los Angeles Department of Water & Power or the Sacramento Municipal Utility District, there is the potential for joint water and energy conservation programs.
- **Attitude.** City-dwellers have always had civic pride, which now can encompass the race to reduce greenhouse gas emissions. Over 1,000 cities have signed onto the U.S. Conference of Mayors' Climate Protection Agreement, pledging to meet or beat the Kyoto Protocol targets at home and to encourage climate change mitigation policies and programs at the state and national level.<sup>4</sup> Another option for cities is to join ICLEI's Cities for Climate Protection Campaign. Begun in 1993, the international program now has more than 650 local governments working to mitigate climate change. ICLEI provides technical assistance, software tools, publications, and benchmarking tools to members, empowering cities to be as "green" as possible.

### Beyond EECBG

Under the ARRA programs, there are three additional sources of support applicable to municipal-level programs. Within the EECBG program, the U.S. Department of Energy (DOE) has available over \$450 million that will be awarded through competitive grants for one of two topic areas, "The Retrofit Ramp-Up Program" and "General Innovation Fund for Ineligible Entities." The former is available to the same group of recipients as the formula EECBG program, and the latter available to entities ineligible for direct EECBG funding.<sup>5</sup>

Through the Department of Housing and Urban Development (HUD), the Public Housing Capital Fund was allocated \$4 billion for use by public housing authorities, \$1 billion of which is to be distributed through a competitive process. Recipients can utilize these funds under one of four categories: improvements that address the needs of the elderly or disabled; transformation of public housing; gap financing for financially unstable projects; or the creation of green, energy-efficient communities (HUD 2009a). The Green Retrofit Program, new under ARRA, provides \$250 million in loans and grants specifically for energy and other green retrofits to multifamily assisted housing. Retrofits will address reducing energy costs and water use, and improving the quality of the living environment. It is expected that the program will cover 25,000 units (HUD 2009b).

In this report we discuss pre-ARRA programs and practices that municipalities have implemented to save energy and create jobs. It is not meant to be an exhaustive list of all programs, or a designation of best practices, but a starting point for communities looking for ideas in how to leverage the new EECBG funds to implement substantial energy-saving programs today. At some point in the future we hope to gather information on ARRA-funded best practice programs; however, the program is still too nascent to collect such data. We have listed these existing programs alongside the DOE-issued guidance where appropriate as examples and descriptions of eligible activities that might be quickly ramped up and executed as ARRA-funded programs. In addition, we have included a number of resources and references for each program as well as contact information for municipal technical assistance.

---

<sup>4</sup> For more information on the U.S. Conference of Mayors' Climate Protection Agreement, see <http://usmayors.org/climateprotection/agreement.htm>.

<sup>5</sup> For more information, see <http://doe-iips.pr.doe.gov> and search for Funding Opportunity DE-FOA-0000148-RFI.



## **Energy Efficiency and Conservation Block Grant Program Guidelines**

States, U.S. territories, Indian tribes, and certain local government entities may apply for EECBG funding via DOE. Only cities that have a population of at least 35,000 or that are one of the 10 most populous cities in their respective states may apply for direct funding from the EECBG program. Likewise, county-level applicants must be one of the 10 most populous counties in their state or have a population of at least 200,000 to qualify for direct grants.

The EECBG program aims to reduce fossil fuel emissions, total energy use in states and municipalities and improve energy efficiency and renewable energy primarily in the building and transportation sectors. To qualify, individual projects must provide maximum benefits over the long term and should incorporate energy efficiency efforts into community economic development goals, poverty reduction efforts, and other identified long-term goals.

Projects that receive funding from the EECBG program must not only increase energy efficiency and reduce overall energy consumption and costs. These projects must also create new jobs and increase productivity to spur economic growth as well as improve air quality and improve coordination between jurisdictional offices involved in energy efficiency programs.

### **Eligible Activities from DOE EECBG Guidance**

*A list of eligible activities for use of program funds is contained in Sec. 544 of the Energy Independence and Security Act of 2007 (EISA). Additional activities may be eligible pending final approval by DOE. The activities below are therefore not an exhaustive list and should be used as a guide to the intent of the program. DOE encourages each locale to develop a strategy, including its component activities, that is likely to result in maximum energy efficiency improvements, fossil-fuel emission reductions, economic benefits, and total energy use reduction (DOE 2008).*

Below are each of the fourteen DOE-designated categories for EECBG funding, with examples culled from existing programs in cities and towns across America and additional resources where appropriate.

#### ***1. Development of an Energy Efficiency and Conservation Strategy***

Entities may use a grant received under this part to develop and/or implement a strategy for energy efficiency and conservation and to carry out activities to achieve the purposes of the program. All entities receiving direct formula grants from the DOE are required to submit a proposed strategy for approval.

Note: Block Grant funds will be disbursed to each municipality in stages based on the amount of the award and acceptance of the Energy Efficiency and Conservation Strategy (EECS). DOE's EECBG Guidance has a complete description, accessible at [www.aceee.org/energy/national/DOE\\_EECBG\\_Guidance\\_2009.pdf](http://www.aceee.org/energy/national/DOE_EECBG_Guidance_2009.pdf).

#### ***Sustainable St. Paul***

In the early 1990s, St. Paul, Minnesota joined the International Council for Local Environmental Initiatives (ICLEI) as part of the Urban CO<sub>2</sub> Reduction Project. The city's CO<sub>2</sub> Reduction Plan, a 20-year implementation project, includes six strategies with corresponding carbon reduction targets, including a municipal action plan for improving the energy efficiency of city-owned buildings, equipment, and vehicles; diversification of the transportation sector to increase public transit options; and projects to reduce energy use by installing energy-efficient measures such as lighting, air-handling, and insulation in the residential, commercial, and industrial sectors. The city's Conservation Improvement Programs, a joint retrofit and conservation initiative with Xcel Energy, targets city, school district, county, state government, and private sector buildings, and has saved 81,497 tons of CO<sub>2</sub> and \$7,934,000 in energy costs per year (City of St. Paul 2009).

More information on the Sustainable St. Paul initiative can be found on its Web site,<sup>6</sup> along with the 2008 *Annual Report* and information on an innovative green manufacturing initiative.

- *Making It Green in Minneapolis Saint Paul*: <http://ci.stpaul.mn.us/DocumentView.asp?DID=5758>
- *Green Cities, Green Jobs*: <http://ci.stpaul.mn.us/DocumentView.asp?DID=5757>

### *Mission Verde*

San Antonio, Texas is also developing a communitywide energy saving plan, recognizing that “saving energy saves money.” The Mission Verde initiative includes eleven steps toward saving money and creating jobs through reduced energy consumption. The program would develop a new urban energy infrastructure, create financing options through venture capital funds, establish high-performance building codes and retrofit programs for existing building stock, pursue public transportation options, and provide educational outreach to the community. San Antonio estimates that if all of the initiatives are successful, the city will realize millions of dollars in avoided energy costs and thousands of permanent local jobs, and substantially reduce CO<sub>2</sub> emissions. For more information about this program, and to read the Mission Verde plan, go to <http://www.sanantonio.gov/oep/SustainabilityPlan.asp>.

General Resources for Developing Community Energy Efficiency Plans:

- Rocky Mountain Institute’s Community Energy Opportunity Finder: [www.energyfinder.org](http://www.energyfinder.org).
- Minnesota Project Clean Energy Resource Teams: [www.cleanenergyresourceteams.org/publications](http://www.cleanenergyresourceteams.org/publications)

### **RDEE Toolkit**

EPA has developed a Rapid Deployment Energy Efficiency Program Toolkit (RDEE Toolkit), covering ten EPA programs that qualify under EECBG funding. These program types follow the DOE criteria and considerations, and are meant to be sustainable beyond the initial stimulus funding. In addition, they are “tried-and-true” programs with case study examples. The RDEE Toolkit is accessible at [www.epa.gov/cleanenergy/energy-resources/ee\\_toolkit.html](http://www.epa.gov/cleanenergy/energy-resources/ee_toolkit.html).

EPA additionally provides information from a forthcoming publication, *Local Government Clean Energy Strategies*, including best practice program information. See [www.epa.gov/cleanrgy/energy-programs/state-and-local/local-best-practices.html](http://www.epa.gov/cleanrgy/energy-programs/state-and-local/local-best-practices.html) for more information.

## ***II. Technical Consultant Services***

Entities may retain technical consultant services to assist the eligible entity in the development of such a strategy, including formulation of energy efficiency, energy conservation, and energy usage goals; and identification of strategies to achieve those goals through efforts to increase energy efficiency, reduce fossil fuel emissions or reduce energy consumption through investments or by encouraging behavioral changes. Entities may develop methods to measure progress in achieving the goals. Entities may develop and publish annual reports to the population served by the eligible entity describing the strategies and goals and the progress made in achieving them during the preceding calendar year.

### *NYSERDA FlexTech*

The New York State Energy Research and Development Authority (NYSERDA) runs a Flexible Technical Assistance program (FlexTech) for all New York state industrial and commercial facilities, state and local governments, nonprofits and private institutions, public and private K-12 schools, colleges and universities, and healthcare facilities. The program works to implement energy efficiency measures as a

---

<sup>6</sup> <http://ci.stpaul.mn.us/index.asp?NID=429>

way of increasing productivity and economic competitiveness. NYSERDA contracts with engineering firms to provide technical assistance services to the entities listed above, including:

- Engineering feasibility and technical assistance studies,
- Analysis of specific energy efficiency projects,
- Process improvement,
- Energy service aggregation,
- Development of long-term capital budget strategies for upgrade/replacement of equipment, and
- Retro-commissioning of energy efficiency measures in existing buildings, among other projects.

The Flex Tech Technical Assistance program saved 861.8 GWh through 2008 (NYSERDA 2008).

Additional Resources:

- Information on all NYSERDA technical assistance programs can be accessed at [www.nysERDA.org/programs/Technical\\_Assistance/default.asp](http://www.nysERDA.org/programs/Technical_Assistance/default.asp).
- Read more about FlexTech, including success stories, at [www.nysERDA.org/programs/flextech.asp](http://www.nysERDA.org/programs/flextech.asp).

#### *Mentoring Programs: Maine “Environmental Leaders”*

One way to share expertise is to facilitate direct business to business discussions of energy efficiency best practices. Larger or more established companies can act as mentors to smaller or less experienced companies, providing a range of services from advice to energy auditing services. Municipalities should encourage these types of relationships by taking advantage of existing programs at the state level or by developing networks within the county or state.

The Maine Department of Environmental Protection has developed a program in which “Environmental Leaders” share their sustainability and smart growth goals with the greater Maine business community. The program establishes a thorough set of smart production pathways and metrics; for example, the certification of an environmental management system to measure environmental and economic sustainability performance. The mentoring network is a crucial piece of the program that allows Environmental Leaders to share methods of energy- and resource-efficient production and experiences implementing innovative technologies with smaller businesses. For additional details, visit the Environmental Leaders Web site at [www.maine.gov/dep/innovation/elm](http://www.maine.gov/dep/innovation/elm).

### ***III. Residential and Commercial Building Energy Audits***

Entities may support the conduct of residential and commercial building energy audits.

### ***IV. Financial Incentive Programs***

Entities may establish financial incentive programs and mechanisms for energy efficiency improvements such as energy-saving performance contracting, on-bill financing, and revolving loan funds.<sup>7</sup>

#### *Competitive Edge: Commercial Business Initiatives: Louisville*

One path local governments can take is to partner with ENERGY STAR to reduce energy use in public buildings and throughout the community. ENERGY STAR provides a number of options for local governments, from tracking building energy use with EPA’s Portfolio Manager Tool to taking the

<sup>7</sup> DOE suggests audits, retrofits, and incentives as eligible activities. As many programs incorporate multiple elements, we have chosen to present them together.

“ENERGY STAR Challenge,” a pledge to improve energy efficiency in buildings by 10% or more. The ENERGY STAR Challenge Web site explains how communities can participate and describes the current challenge participants: [www.energystar.gov/index.cfm?c=challenge.bus\\_challenge](http://www.energystar.gov/index.cfm?c=challenge.bus_challenge).

The Louisville “Kilowatt Crackdown” is a competition for the business district that encourages building owners and operators to “take energy management to the next level.” The 2008-2009 competition includes 240 buildings that will compete for prizes including most improved and most efficient building using ENERGY STAR’S Portfolio Manager as a means of tracking building efficiency. The contest is a part of Louisville’s larger “Go Green Louisville” initiative. Competing buildings set up an ENERGY STAR Portfolio Manager profile in the fall of 2008, and will be judged at the end of 2009 based on three criteria: best overall performer (within class), most improved (within class), and a special recognition, which would highlight unique challenges faced or hurdles overcome. Although the program has not yet gathered data on actual energy savings, it has increased the number of buildings within the city participating in the Portfolio Manager program. For more details, see [www.louisvilleky.gov/GoGreen/metro\\_go\\_green.htm](http://www.louisvilleky.gov/GoGreen/metro_go_green.htm).

#### *Audits & Direct-Install Programs for Small Businesses: New York City and San Jose*

The Win-Win Campaign, currently operating as a pilot program in New York City, is a novel approach to growing the green workforce while providing services targeted to small businesses. This free not-for-profit initiative is made up of two programs, the Green Entrepreneurship and Energy Consulting Internship and a Small Business Eco Assistance Program. Student interns (18-24) are trained in energy efficiency and weatherization skills, including ASHRAE Level 1 auditing, and associated state and local financial incentives. These “Community Energy Consultants” are then matched with participating small businesses in their neighborhoods, providing energy audits, suggesting priority energy efficiency improvements, and educating community businesses about incentive opportunities. In addition, Win-Win provides a user-friendly online system for program participants to track their energy, carbon, and dollar savings. For more information, see <http://sites.google.com/a/envirolution.org/win-win/>.

The city of San Jose, California partnered with the Pacific Gas & Electric utility to provide incentives and installations of energy efficiency measures to more than 600 small businesses, which saved more than 1,163 kW (U.S. Conference of Mayors 2007). A targeted approach, the RightLights program provides small businesses with free energy assessments, including instant rebates for implementing specific recommendations. These rebates can save 81% of the installed cost for lighting, refrigeration, and vending equipment. The program, which can potentially reduce energy costs for these businesses by 50%, also creates jobs within the community by recommending trained local lighting contractors. See [www.rightlights.org](http://www.rightlights.org) for more information.

#### *Building Retrofits: Incentivizing Progress*

There are several different approaches to retrofit projects:

- Elements of equipment incentive programs covering prescriptive and custom measures. Some programs have special features or requirements for comprehensive retrofits; others cover comprehensive projects, but have not included particular features supporting them. In some cases, these programs interact with energy analysis programs that provide financial incentives and/or technical assistance for building energy studies and project feasibility studies.
- Standard performance contracting (or standard offer) programs designed to encourage customers to work with energy efficiency service providers (energy service companies [ESCOs] or others). Like the conventional incentive programs just described, these programs may or may not include specific features or requirements to encourage comprehensiveness.
- Building performance programs that promote a whole building approach to maximize energy savings and non-energy benefits by addressing equipment upgrades, operations and maintenance (O&M) improvements, and retrocommissioning, as appropriate. While these programs tend to concentrate on building O&M, there is room for addressing

comprehensive retrofit opportunities within the whole buildings approach (Amann and Mendelsohn 2005).

It is important to note that these programs are more likely to be successful with a strong utility program to build upon. As discussed below, several municipalities with long-standing utility incentive programs have some of the most successful building retrofit programs.

*Equipment incentives: Cloverdale, Austin, and Seattle.* In 2007 the Cloverdale (California) City Council and Chamber of Commerce approved the Small Business Energy Alliance's Energy Savers Program, and began working to ensure 100% participation among the city's small businesses. Participants received free energy audits and significant incentives toward implementing the recommended energy efficiency improvements. The SBEA uses funds derived from California utility ratepayers under the auspices of PG&E to deliver \$0.13/kWh saved, up to 100% of the installed cost for lighting improvements, and \$0.18/kWh saved, up to 100% of the cost of air conditioning tune-ups.<sup>8</sup> The program has given out \$2.3 million in rebates since 2006, and has decreased energy consumption by 4.5 MW (Halverson 2009). For more information on the program, including success stories for area businesses, see [www.sbeaonline.com](http://www.sbeaonline.com).



The City of Austin works with municipally-owned utility Austin Energy to offer utility customers rebates and incentive packages covering appliances, lighting systems, and envelope improvements for commercial buildings, multi-family properties, small businesses, and others under the Commercial Power Saver™ Program. Austin's success is largely based upon a long-term relationship with the public utility as well as the steady stream of ratepayer-derived funding directed toward energy efficiency incentives and programs, without which progress is difficult to achieve. See [www.austinenergy.com/EnergyEfficiency/commlIndex.htm](http://www.austinenergy.com/EnergyEfficiency/commlIndex.htm) for more information.

Seattle City Light, the city's public power resource since the early 1900s, provides a comprehensive suite of options for commercial and industrial customers interested in making their facilities more energy-efficient. Businesses, manufacturers, institutions, and government facilities can receive incentives of up to 70% of the installed cost of their improvements. City Light's "Energy Smart Services" for large businesses and industrial customers cover audits, rebates and building commissioning. For small businesses, City Light offers educational materials and a "Smart Business Program" which provides rebates for improved lighting efficiency. Overall, Seattle City Light programs have saved 10 million megawatt hours of electricity.<sup>9</sup>

Additional Information about Seattle City Light Programs:

- The Energy Smart Services Program Manual includes an overview of business energy conservation services, specifications, sample forms, instructions and other information. [www.seattle.gov/light/consERVE/business/programmanual](http://www.seattle.gov/light/consERVE/business/programmanual).
- Access Smart Business Program details at [www.seattle.gov/light/consERVE/business/cv5\\_sbiz.htm](http://www.seattle.gov/light/consERVE/business/cv5_sbiz.htm)
- Seattle City Light "Customer Achievements" Case Studies can be viewed at [www.seattle.gov/light/consERVE/business/customerachievements](http://www.seattle.gov/light/consERVE/business/customerachievements)

*Working with Energy Service Companies or ESCOs.* ESCOs can work with municipalities and other entities to develop, design and arrange financing for reasonably sized energy efficiency projects. ESCOs often install, own, and maintain the necessary equipment, assuming in some cases substantial project risks. The performance contracting model utilized by ESCOs guarantees a certain percentage of energy savings for a given project, which the ESCO measures and verifies for the customer. ESCOs invest in

<sup>8</sup> Incentives are based on energy savings calculated over a one-year period.

<sup>9</sup> For information on Seattle City Light customer achievements, see <http://www.seattle.gov/light/consERVE/business/customerachievements>.

providing comprehensive energy efficiency solutions—their compensation is often based on energy saved allowing for a pay off over a given number of years. The customer, therefore, saves money and energy with comparatively little up-front expense.

NAESCO, the National Association of Energy Services Companies, provides a number of municipal case studies on its Web site.<sup>10</sup> For example, the City of Laurel, Montana, is working with Johnson Controls to install new water meters as well as energy efficiency upgrades to twelve city buildings, including efficient lighting and lighting controls, programmable thermostats, improved insulation and an energy management control system (Johnson Controls 2007). NAESCO's Web site also provides basic information about ESCOs, and a search engine to match ESCOs to project requirements: [www.naesco.org/providers/default.aspx](http://www.naesco.org/providers/default.aspx).

Contracts between municipalities and ESCOs are complicated. A well crafted contract covers the necessary areas of risk allocation and defines which entity controls the project. Municipalities should get as much information as possible on the reputation of a given ESCO, and then work with an experienced firm or professional with a track record for developing solid contracts to put together the project contract with the ESCO.

Additional Resources:

- Energy Services Coalition: Provides model RFPs and contracts: [www.energyservicescoalition.org/resources/model/index.html](http://www.energyservicescoalition.org/resources/model/index.html)
- NAESCO Resources: [www.naesco.org/resources/default.htm](http://www.naesco.org/resources/default.htm)

#### **Beyond Energy Efficiency and Conservation Block Grants**

The Real Estate Roundtable and NRDC have developed a proposal to establish a program that would encourage the near term launch of large scale, deep retrofitting of private and publicly owned commercial buildings or portfolios of buildings. The program would provide an incentive to building owners for efficiency improvements based on demonstrated energy savings of no less than 20% with incentives calibrated to encourage 30% savings or greater. The ENERGY STAR Portfolio Manager benchmarking program would be used to document and verify performance and the incentive would take the form of a rebate per square foot. A loan guarantee, proportional to the targeted energy savings level, would be established to enable upfront investment in energy efficiency projects. Partial payment of the incentive would be granted upon completion of the efficiency project and with the remainder of the incentive conditioned on verification of actual performance over a three year period. This would be another program for which initial incentives might come out of stimulus or regular budget funds, with long-term funding incorporated into climate legislation.

Several states and cities are mandating benchmarks as a part of comprehensive energy efficiency programs, including Washington State and New York City. See <http://www.imt.org/benchmarking-and-disclosure.html> for more information.

#### *Energy-Efficient Homes: Kansas City and Austin*

The implementation of new, effective energy efficiency programs does not require state policymakers to re-invent the wheel. The Home Performance with ENERGY STAR Program (HPwES) presents an established system of comprehensive home assessment and energy services currently utilized by 22 states. The program fosters local economic growth and provides typical energy savings of 20 percent or more for consumers. Sponsored nationally by the U.S. EPA, the program provides technical resources and tools to state-level sponsors, which include state energy offices, utility public benefit funds, and nonprofit organizations. State-level sponsors are financially responsible for their programs and oversee the implementation of energy services by third-party contractors. HPwES promotes a comprehensive

---

<sup>10</sup> [www.naesco.org/resources/casestudies/default.aspx](http://www.naesco.org/resources/casestudies/default.aspx)

“house-as-a-system” approach, which increases energy savings and comfort by implementing a range of complementary energy efficiency measures at once. For more on why HPwES is a viable option, see [www.aceee.org/energy/state/current.htm#HPwES](http://www.aceee.org/energy/state/current.htm#HPwES).

The Kansas City (Missouri) Home Performance Network, a Home Performance with ENERGY STAR program sponsored and implemented by the Metropolitan Energy Center, is one example of a city program working to provide residents with the necessary resources to improve home energy efficiency. The program, initially launched on a small scale in 2003, performs home systems analyses for homeowners and provides a list of Building Performance Institute-certified contractors who carry out home audit recommendations.

In 2007 the program was re-launched, using funding from a DOE grant supporting the Tri-State Residential Energy Program (Kansas, Missouri, and Illinois). The following year, Kansas City Power & Light began offering a customer rebate program of \$600 to participating residential accounts that received an energy audit, implemented a recommended improvement, and verified the improvement with a post-installation audit. In September of 2009, Kansas City Power & Light and Missouri Gas Energy partnered with the Metropolitan Energy Center to offer a larger \$1,200 residential account rebate to participating customers, with an emphasis on rewarding substantial home envelope improvements, and the audit was improved to include modeling software and projected savings. Between 2007 and 2009, 405 audits that met the HPwES protocol for a Home Performance Assessment were conducted, and 193 households received improvements. Although energy savings figures are not available at this time, starting in Sept 2009 energy savings data will be collected by the MEC on every participating household (Jensen 2009). For more information on this program, see [www.kcenergy.org/hpeshome.html](http://www.kcenergy.org/hpeshome.html).

The City of Austin and Austin Energy work together to use ENERGY STAR and other programs to help businesses and consumers save energy where they live and work. According to the Austin Energy Web site, *Austin Energy's energy efficiency programs and offerings ... have saved more electricity than the annual output of a 500 megawatt power plant. A 500 megawatt power plant can power 50,000 homes.*<sup>11</sup>

The Power Saver™ Program covers a suite of energy efficiency incentives, beyond residential retrofits:

- The Austin Energy Green Building™ offers consulting, resources, and education to help customers build environmentally-sound homes and workplaces: [www.austinenergy.com/energy%20Efficiency/Programs/Green%20Building/index.htm](http://www.austinenergy.com/energy%20Efficiency/Programs/Green%20Building/index.htm)
- The Residential Power Saver™ Program includes free home improvements for low-income customers, peak demand management through the Power Partner Thermostat initiative, and Home Performance with ENERGY STAR™ rebates and loans for energy-efficient appliances and home envelope improvements: [www.austinenergy.com/Energy%20Efficiency/resIndex.htm](http://www.austinenergy.com/Energy%20Efficiency/resIndex.htm).

<sup>11</sup> For more information on Austin Energy's successes, see <http://www.austinenergy.com/energy/Efficiency/Programs/index.htm>.

### The Thousand Home Challenge: A Systems Approach

A new pilot program is looking beyond the change-a-light-bulb approach to home energy savings to a plan that can achieve deep energy reductions through a whole-house systems approach. The Thousand Home Challenge (THC) program is being developed by Affordable Comfort, Inc. (ACI), a non-profit organization with over 20 years of experience in the building science and home performance industry. The THC seeks to reduce energy use by 75-90% in existing homes in the United States and Canada by developing easy-to-utilize home performance indicators that apply to a range of housing types. The systems approach applies to home improvements, where not only is energy efficiency a consideration, but also factors of thermal comfort, health, safety and air quality. The systems approach applies to the implementation as well. The program creates opportunities for municipalities to save energy across neighborhoods, develop demonstration and training projects, and create jobs in the home energy performance sector. For more information and to find out how a municipality can take the Challenge, visit the ACI Web site: <http://www.affordablecomfort.org/initiatives.php?PageID=16>.

### Low-Income Initiatives

**Expanded Weatherization.** Every state has existing weatherization programs for low-income families, funded through the federal Weatherization Assistance Program (WAP). The stimulus package provided an additional \$5 billion to this program, allocated by formula. WAP enables low-income families to permanently reduce their energy bills by making their homes more energy efficient—on average, 30.5 MBtu of energy per household is saved as a result of weatherization—a 23% reduction in primary heating fuel use, saving low income families hundreds of dollars (WAP 2009). Under the stimulus legislation, each qualifying home may receive up to \$6,500 in assistance for energy retrofits. WAP directs funds to states, which allocate its share of funding to local governments and jurisdictions.

**Community Outreach.** One of the applications of EECBG funds is a grant to nonprofit organizations for the purpose of performing energy efficiency retrofits. Municipalities may galvanize community groups, religious or interfaith groups, and others to lead the charge in performing energy audits and basic retrofits.

*Washington, D.C.*

For example, the Greater Washington Interfaith Power and Light (GWIPL) organization advocates for its member groups (churches, temples, and other religious groups) to identify low-income or in-need communities in their area that the faith community has or would like to have a relationship with, and determine their interest in participating in a group purchase of efficient light bulbs. GWIPL members can then buy discounted compact fluorescent light bulbs (CFLs) through the Interfaith Power and Light shop and have volunteers perform the physical swap-out of old bulbs. This has the potential to educate both the volunteer and the recipient of the CFL about energy efficiency, while saving energy and money for the recipient.

Additional Information:

- Visit GWIPL's Web site at [www.gwipl.org](http://www.gwipl.org)
- Interfaith Power and Light shop: [www.theregenerationproject.org/shopipl.htm](http://www.theregenerationproject.org/shopipl.htm)

**Green Affordable Housing.** Historically, affordable housing has been characterized by a focus on minimizing construction costs and capital investments. Unfortunately, low-quality materials and systems tend to fail in the long-run, resulting in increased building operating costs that negatively impact both owners and residents. Until recently, there has been little incentive for developers to “go green” when planning for both commercial and residential structures. Green buildings have higher initial costs, and historically the construction materials have been difficult to



Green Affordable Housing Program



source. A further issue is the split-incentive, or principal-agent problem, where the owner of the building makes decisions that affect the tenant's energy bill and living environment. The owner does not reap the reward for increasing a building's efficiency, and the tenant often cannot afford, nor has an incentive, to make a long-term investment in necessary upgrades.

Green buildings, despite their higher up-front costs, have lower operating and maintenance costs, and can lower energy and water bills by 20–50% (Burke, Nelson and Rickerson 2007). The benefits of implementing green building techniques are apparent not only on utility bills—green building elements can result in improved air quality and better health; green construction projects create jobs, and allow developers to learn new building techniques. More businesses and residential developers are building green today than ever before. Many municipalities, however, have a programmatic void in the area of green multifamily housing. Multifamily buildings and manufactured homes account for more than a quarter of all US housing, and 20% of housing energy use. Eighty percent of residents in multifamily buildings are renters, and 71% of multifamily building households are low-income (ACEEE 2009). Considering the large segment of the multifamily building population made up of renters and low-income households, implementing green multifamily building programs would have a significant impact on a municipality's energy use.

For cities without existing programs, there are technical and financial resources to increase a municipality's number of low-income green housing. *Green Communities* is one such project that provides financial support, technical expertise, and other resources to developers, state and local governments. The *Green Communities* program fund, initiated in 2004, has provided \$570 million in equity, loans and grants, preserving or creating 250 green, affordable housing developments, and training 3,000 green housing development professionals in twenty cities and states across the country.<sup>12</sup> *Green Communities* must meet a number of criteria that address aspects of design, development, and operations, including:

- Integrated Design
- Site, Location and Neighborhood Fabric
- Site Improvements
- Water Conservation
- Energy Efficiency
- Materials Beneficial to the Environment
- Healthy Living Environment
- Operations and Maintenance<sup>13</sup>

*Green Communities* has a number of current state and local programs:

- Seattle, WA: The SeaGreen Program (launched in 2002) promotes sustainability and environmental justice by promoting green affordable housing. Read about the program, its rationale and resources at [www.seattle.gov/housing/SeaGreen/Default.htm](http://www.seattle.gov/housing/SeaGreen/Default.htm).
- San Francisco, CA: Mayor Newsom championed children's health in 2005 by mandating that city-financed affordable housing developments must meet Green Communities criteria. Read more about San Francisco's efforts at [www.greencommunitiesonline.org/local/sf.asp](http://www.greencommunitiesonline.org/local/sf.asp).
- Washington, D.C.: The *Green Building Act of 2006* requires new construction to meet U.S. Green Building Council LEED standards for commercial projects, and Green Communities criteria for housing projects. The Act also launched a green building incentive program, fund, and advisory council.<sup>14</sup> For additional details see <http://dslbd.dc.gov/olbd/cwp/view,A,3,Q,639915.asp>, or visit [www.greenhome.org](http://www.greenhome.org).

<sup>12</sup> For more information, see [www.greencommunitiesonline.org/local](http://www.greencommunitiesonline.org/local).

<sup>13</sup> For more information, see: <http://www.greencommunitiesonline.org/tools/criteria>

<sup>14</sup> The Washington Post covered the Council's action in a 2006 article, accessible at [www.washingtonpost.com/wp-dyn/content/article/2006/12/06/AR2006120600165.html](http://www.washingtonpost.com/wp-dyn/content/article/2006/12/06/AR2006120600165.html).

### *Boston, Massachusetts*

Many cities and towns are working to address the green affordable housing issue with innovative strategies and coordinated initiatives including improved building codes, legislative efforts, and incentives. A good example of this is the City of Boston's efforts to reduce energy use associated with buildings. In 2007 Boston became the first major U.S. city to require LEED compliance for privately owned buildings, requiring that buildings over 50,000 square feet be LEED certifiable. Further, Mayor Menino signed an Executive Order to reduce greenhouse gas emissions 7% from 1990 levels by 2012, and 80% by 2050. New city-owned buildings must additionally be certified LEED Silver by the U.S. Green Building Council. At the same time, Governor Deval Patrick signed Executive Order 484 in April 2007, establishing the Leading by Example Program. This initiative targets state government buildings, mandating greenhouse gas emissions reductions of 25% below 2002 levels by 2012, 40% by 2020, and 80% by 2050.

With powerful policy initiatives in effect at the state and local level, the Massachusetts Technology Collaborative launched the Green Affordable Housing Initiative, an integrated plan to promote renewable energy, energy efficiency, and healthy homes for Boston multifamily housing projects. The initiative is a joint effort of the Department of Neighborhood Development, Boston Housing Authority, Boston Redevelopment Authority, Boston Public Health Commission, the Mayor's Office and the Environmental and Energy Services Cabinet.

Additional information:

- Studies of Boston's green affordable housing program: [www.law.nyu.edu/journals/legislation/issues/volume11number1/index.htm](http://www.law.nyu.edu/journals/legislation/issues/volume11number1/index.htm).

#### **Beyond EECBG**

Some green affordable housing owners can leverage ARRA funding through the Department of Housing and Urban Development's Green Retrofit Program for Multifamily Housing. This program provides property owners with grants and loans to invest in energy efficient and green retrofits and maintain energy efficiency technologies. For more information, see <http://portal.hud.gov/portal/page/portal/RECOVERY/programs/GREEN>.

### *Financing Options*

A recent study examined 18 residential efficiency-financing programs in the U.S. and Canada to determine best practices and lessons learned, particularly with regard to the use of on-bill financing. The report also discusses several barriers to improving energy efficiency in homes, including transaction costs, consumer education, uncertainty of energy savings potential, split incentives, initial investment costs and specific issues with regard to low-income housing. The programs discussed include 15 existing programs and 3 terminated programs, with detailed information about each, including the financing mechanism, program goals or results (Fuller 2008). We briefly highlight three programs discussed in the report to illustrate various financing methods.

**Off-Bill Financing.** In 2007, the City of Cambridge, Massachusetts launched the Cambridge Energy Alliance (CEA), a non-profit organization that partners with ESCOs, lenders, and NSTAR to provide the services and financing necessary to upgrade homes, commercial buildings, and city-owned buildings, and to install renewable and combined heat and power systems. The ultimate goal is to reduce the City of Cambridge's energy use by 10% (average) and 15% of peak use over the next few years. The program arranges audits and uses ESCOs and utility vendors to implement retrofit projects, depending on building size. CEA offers financing via loan options based on income level. See [www.cambridgeenergyalliance.org](http://www.cambridgeenergyalliance.org) for more information.

**Clean Energy Municipal Financing.** In 2008, the City of Berkeley, California recently instituted the Berkeley FIRST initiative ("Financing Initiative for Renewable and Sustainable Technology"). The program

works through a Clean Energy Municipal Financing (CEMF) plan, where property owners (both residential and commercial) pay for the cost of installed energy efficiency, solar thermal or photovoltaic measures over a twenty-year period via a line item on their property tax bills. Although only in the pilot stage (currently solar only), eventually the program expects to cover a range of energy efficiency improvements. For more information see <http://berkeleyfirst.renewfund.com>.

**On-Bill Financing.** Manitoba Hydro's Power Smart Residential Loan program has been in place since 2001, and has a high loan volume in comparison to other programs reviewed in this study. Many U.S. on-bill financing programs are for renewables, however Power Smart focuses almost exclusively on energy efficiency improvements. Improvements include: insulation, ventilation, sealing air leaks, replacing windows and doors, lighting, electrical services and wiring, upgrades to heating systems, and installation of heat pumps and water heaters. The program has issued more than 41,000 loans since 2001, a value of \$185 million dollars, mainly for energy-efficient replacement doors and windows (Manitoba Hydro 2009). A sample loan agreement and additional program details can be found on the Manitoba Hydro Web site, at [www.hydro.mb.ca/your\\_home](http://www.hydro.mb.ca/your_home).

### Tax Incentives

As a complementary effort to direct federal stimulus appropriations, a number of federal-level incentives are currently in effect. For existing homes, homeowners can take tax credits of up to 30% of eligible costs (capped at \$1,500) for upgrading windows and other envelope components, and HVAC appliances such as furnaces and water heaters. Commercial building owners can apply for a tax deduction of up to \$1.80/sq foot for reducing energy costs across three building systems—lighting, HVAC and building envelope. In addition, incentives are provided to builders of energy-efficient homes, to manufacturers of energy-efficient equipment, and to installations of residential and commercial solar photovoltaic and hot water systems, small wind systems and geothermal heat pumps. For more information on federal tax incentives, visit the Tax Incentives Assistance Project (TIAP) at [www.energytaxincentives.org](http://www.energytaxincentives.org).

Some states and many utilities also offer incentives. The Database of State Incentives for Renewables and Efficiency (DSIRE) is a good source of information for state, local and utility incentives: [www.dsireusa.org](http://www.dsireusa.org).

### Beyond Rebates: Twist & Save

Seattle City Light has partnered with the ENERGY STAR "Change a Light Change the World" campaign and Seattle Climate Action swapping incandescent for consumers. By working retailers to offer CFLs at Seattle avoids potential rebate programs. The in June of 2007 with 3 retail partners and close to the end of the year. As a City Light has 343,000 (2009). More information about this innovative approach to promoting community lighting efficiency is available online.



Now (SeattleCAN) to make bulbs for CFLs even easier directly with participating deeply discounted prices, complications with coupon or Twist & Save program began retail partners, growing to 15 one-half million in sales by point of reference, Seattle residential customers (Ducey

Additional resources:

- ACEEE Fact Sheet on Home Retrofits: [www.aceee.org/energy/national/residentialretrofits.pdf](http://www.aceee.org/energy/national/residentialretrofits.pdf)
- ACEEE Fact Sheet on Buildings Training and Assessment Centers (BTACs): [www.aceee.org/energy/national/btac\\_policy.pdf](http://www.aceee.org/energy/national/btac_policy.pdf)
- ACEEE Fact Sheet on Multifamily Housing: [www.aceee.org/energy/national/multifamily.pdf](http://www.aceee.org/energy/national/multifamily.pdf)

- ACEEE Buildings Program: [www.aceee.org/buildings/index.htm](http://www.aceee.org/buildings/index.htm)
- DOE Building Technologies Program: [www1.eere.energy.gov/buildings](http://www1.eere.energy.gov/buildings)

## ***V. Energy Efficiency Retrofits***

Grants may be made to nonprofit organizations and governmental agencies for the purpose of retrofitting existing facilities to improve energy efficiency.

### *Energy-Efficient Schools*

US public schools average \$250 in energy costs per student, and nearly a third of the energy consumed is used inefficiently.<sup>15</sup> By cutting energy costs, schools could pay for new teachers, new textbooks, and new technology in the classroom. Although traditional funding for the construction and operation of public schools comes from bonds and property taxes, increasingly this is supplemented by state funds. Public school green construction and energy efficiency retrofits are also excellent candidates for stimulus funds. A number of existing programs are available to towns and cities to implement, join or partner with in an effort to improve school energy efficiency. We have highlighted a few useful resources here:

#### **Collaborative for High Performance Schools**

The Collaborative for High Performance Schools (CHPS) is a national effort to impact the design, construction and operation of high performance schools—schools that are energy- and resource-efficient. CHPS was launched in 1999, and offers resources to municipalities, counties, or school districts, including directories of green school building services and products, online trainings, presentations, specifications and fact sheets. Over 300 CHPS school projects are currently underway across the country, with state-specific criteria for California, Massachusetts, New York, Texas, Colorado and Washington. For more information, see [www.chps.net](http://www.chps.net).

#### **Alliance to Save Energy's Green Schools Program**

The Alliance to Save Energy (ASE)'s Green Schools Program works to improve education through hands-on energy efficiency projects, and to strengthen schools by reducing energy-related costs. The program



ALLIANCE TO SAVE ENERGY'S  
**Green Schools Program**  
Empowering Schools through Energy Efficiency

works with school districts of 5-15 schools to develop a customized teaching plan, including topics such as saving energy in school, creating energy awareness, and spreading the word about efficiency in the students' homes and in the community. The Alliance claims that schools can realize up to 25% energy savings through the

program, depending on local energy costs and consumption patterns. Energy savings data from a number of northern California schools can be found on the Web site.<sup>16</sup> The program is currently being implemented in about 200 schools all across the country, and is funded through grants from utilities, state energy offices, private foundations or energy savings performance contracts, depending on the district. For more information, see [www.ase.org/section/program/greenschl](http://www.ase.org/section/program/greenschl).

#### **Schools for Energy Efficiency®**

Schools for Energy Efficiency® (SEE) is another comprehensive K-12 program aimed at helping school districts change their energy behavior to reduce consumption and save money. SEE's goals for school districts include reducing annual energy use by 10%, achieving ENERGY STAR recognition for building improvements, and engaging students and staff. The SEE program, launched in 2002, provides customized plans for schools, energy cost savings, and a multi-year approach for a sustainable program.

---

<sup>15</sup> Schools for Energy Efficiency® [www.seeprograms.com/overview.htm](http://www.seeprograms.com/overview.htm)

<sup>16</sup> For information on energy savings in northern California schools, see <http://ase.org/content/article/detail/2977>.

In addition, SEE provides the benefits of a national award-winning program, as they were awarded ENERGY STAR Partner of the Year for 2007, and many of their school districts have received ENERGY STAR awards of their own. For example, the Austin, Minnesota Independent School District 492<sup>17</sup> was named a Top Performing 2008 ENERGY STAR Leader. This particular school district utilized comprehensive retrofit planning for all buildings increased the focus on energy system and equipment maintenance, upgraded the lighting systems, and upgraded to ENERGY STAR equipment where possible.

SEE has worked with over 600 schools in Minnesota, Louisiana and New Jersey however their program is available to school districts nationwide. The program reports that schools see, on average, energy savings of 13%. Visit them on the web at [www.seeprograms.com](http://www.seeprograms.com) for more information.

### **CEE Information on Energy-Efficient Schools**

The Consortium for Energy Efficiency (CEE) has put together some online resources aimed at allowing program administrators and others to share information about high-performance schools. The resources provide a number of useful links and a fact sheet<sup>18</sup> that make the case for why energy efficiency in K-12 schools is a good investment. CEE also convenes biannual roundtable discussions within its membership to discuss program innovations, challenges and successes. See [www.cee1.org/com/bldgs/schools.php3](http://www.cee1.org/com/bldgs/schools.php3) for additional information.

### **Dollars and Sense**

Lights for Learning<sup>TM</sup> is a program aimed at helping educate students about energy efficiency while serving as a fundraiser. Students sell ENERGY STAR-rated compact fluorescent light bulbs (CFLs), and then use the proceeds for classroom projects or community programs. To date, students have sold 70,000 CFLs for a profit of \$87,500, saving communities nearly \$5 million dollars in energy costs.



The program is currently operating in two states. In Connecticut, it is sponsored by Connecticut Light and Power and the United Illuminating Company, and administered by the Connecticut Energy Efficiency Fund. In Illinois, sponsors include the Illinois Department of Commerce and Economic Opportunity, ComEd, and Ameren Illinois Utilities, and the program is administered by the Midwest Energy Efficiency Alliance. See [www.lights4learning.org](http://www.lights4learning.org) for details.

## ***VI. Energy Efficiency and Conservation Programs for Buildings and Facilities***

Entities may develop and implement energy efficiency and conservation programs for buildings and facilities within the jurisdiction of the entity. The range of activities includes the design and operation of the programs; the identification of the most effective methods for achieving maximum participation and efficiency rates; public education; measurement and verification protocols; and identification of energy efficient technologies.

A number of municipalities have passed ordinances and resolutions mandating LEED certification for new city-owned buildings and green retrofits for existing public buildings. We list a few examples below:

<sup>17</sup> For more information on the Austin, Minnesota public schools and ENERGY STAR, see [http://www.energystar.gov/index.cfm?fuseaction=partner\\_list.showLeadersStory&lds\\_id=981&o\\_id=1046167](http://www.energystar.gov/index.cfm?fuseaction=partner_list.showLeadersStory&lds_id=981&o_id=1046167).

<sup>18</sup> Download CEE's Schools Fact Sheet at <http://cee1.org/com/bldgs/schools-fs.pdf>

### *Durham County, North Carolina*

As part of the county's commitment to cutting greenhouse gas emissions in half by 2030 (2005 baseline), Durham County passed a resolution establishing a new High Performance Building Policy in October of 2008. The resolution mandates that new county buildings meet LEED certification levels: new public buildings of greater than 10,000 sq. feet must meet LEED Gold standards, and new public buildings between 4,000 and 10,000 sq. feet must meet LEED Silver. In addition, building renovations of more than 25% of the existing building or upgrades to two out of three of the major building systems (HVAC, lighting, and plumbing) must also be LEED-certified.

#### Additional Information:

- Durham County Resolution: [www.dsireusa.org/documents/Incentives/NC19R.htm](http://www.dsireusa.org/documents/Incentives/NC19R.htm).
- Durham County Greenhouse Gas Inventory and Local Action Plan information: [www.durhamnc.gov/ghg](http://www.durhamnc.gov/ghg).

### *Los Angeles, California*

Partnering with the Los Angeles chapter of the Apollo Alliance, the LA City Council passed a "Green Building Retrofit Ordinance" in April 2009. The measure requires all city-owned buildings larger than 7,500 square feet or those built prior to 1978 to be retrofitted to achieve LEED-EB Silver certification or higher. The city is planning to prioritize buildings within or connected with low-income communities, such as libraries and recreation centers. In addition, the ordinance requires the city to further invest in urban communities, by establishing training programs for disadvantaged, unemployed or underemployed workers to enter the "green jobs" economy, and then hiring the new green workforce to perform the necessary retrofits. The program will not only save energy and money via the retrofit projects, but will reinvest within the community by emphasizing local purchasing, green manufacturing, and the "training pipeline."

#### Additional Information:

- Overview of the Ordinance: [www.greenerbuildings.com/news/2009/04/09/la-building-retrofit-boost-green-jobs](http://www.greenerbuildings.com/news/2009/04/09/la-building-retrofit-boost-green-jobs)
- Apollo Alliance Fact Sheet: [www.scopela.org/downloads/2009%20Apollo%20factsheet%20-%20ordinance.pdf](http://www.scopela.org/downloads/2009%20Apollo%20factsheet%20-%20ordinance.pdf)

## ***VII. Development and Implementation of Transportation Programs***

Entities may develop and implement programs to conserve energy used in transportation.

States and municipalities are eligible to apply for funding from the ARRA to address a variety of transportation-related needs, including those related to improving energy efficiency. Money is available for distribution through the EECBG Program, the Surface Transportation Program (STP) or the National Clean Diesel Funding Assistance Program. Below is a list of potential projects that qualify for funding under the various programs. For additional details and information on application guidelines for the various funding opportunities, please see:

- Energy Efficiency and Conservation Block Grant Program: [www.eecbg.energy.gov](http://www.eecbg.energy.gov)
- Surface Transportation Program: [www.stimulus.smartgrowthamerica.org/20ways](http://www.stimulus.smartgrowthamerica.org/20ways)
- National Clean Diesel Funding Assistance Program (NCDAP): [www.epa.gov/otaq/eparecovery/prognational.htm#program](http://www.epa.gov/otaq/eparecovery/prognational.htm#program)

### ***Integration of Land-Use and Transportation Planning at the State, Regional, and Local Levels***

#### Funding Sources:

- EECBG: Development of an Energy Efficiency and Conservation Strategy that includes transportation as a component
- STP: Planning in metro areas that connects land use to transportation and transit options as in creation of mixed-use communities around transit nodes
- EECBG/STP: Development and promotion of zoning guidelines that promote energy-efficient development

#### *San Diego Association of Governments (SANDAG)*

The San Diego Association of Governments (SANDAG) developed a regional growth plan in 2004 that integrated land use and transportation decisions in an effort to curb sprawl and focus resources in already developing urban areas and new mixed-use, compact communities. The initiative involved the development of a regional funding program for alternative transportation options and a smart growth concept map to identify potential sites of compact communities. In 2006, 31% of new housing in the region was built within the Smart Growth Opportunity Areas, a 13% increase over 2005. Regional transit ridership numbers are up, growing 2% between 2006 and 2007, when ridership was calculated at 97 million people (SANDAG 2008). For more information, see [www.sandag.cog.ca.us/index.asp?projectid=1&fuseaction=projects.detail](http://www.sandag.cog.ca.us/index.asp?projectid=1&fuseaction=projects.detail).

#### *Largo, Florida*

The City of Largo, Florida, recently modified its zoning to encourage the development of denser, mixed land-use projects. Zoning relief is provided if certain compact growth aspects of development are established and met. The city eventually hopes to establish a firm set of performance measures in its zoning packages that will shift the focus from sprawl to smart growth. For more information, see *Getting to Smart Growth II: 100 More Policies for Implementation* at [www.smartgrowth.org/pdf/gettosg2.pdf](http://www.smartgrowth.org/pdf/gettosg2.pdf).

### **Expansion of Public Transit and Multi-Modal Transportation Options**

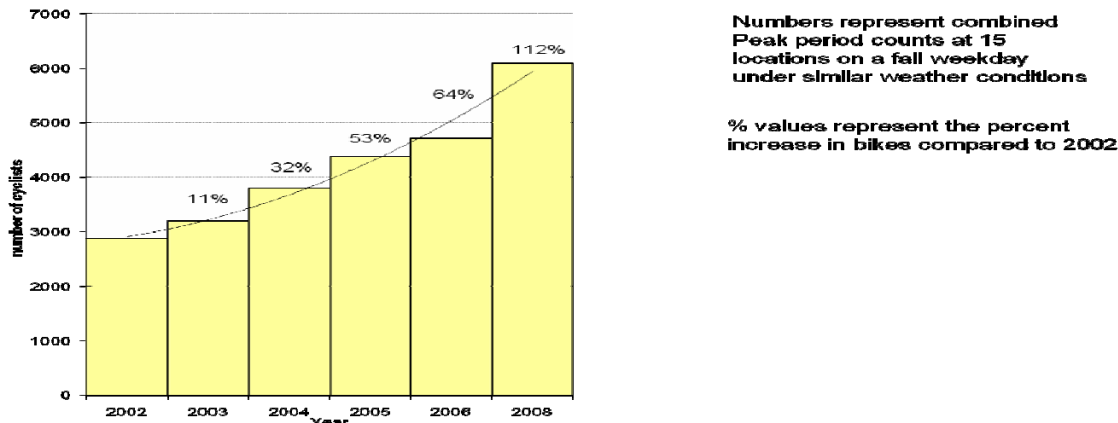
#### Funding Sources:

- STP: Monetary support of local and regional transit services to meet increased demand; increased road-based transit in urban centers through investments in streetcar and bus services and busways; expansion of commuter rail service base and frequency of trips; creation of streets that support diverse transportation options such as cars, buses, bicycles and pedestrians
- EECBG/STP: Maintenance of existing bike and pedestrian routes as well as creation of new, safe routes

#### *Cambridge, Massachusetts*

The Vehicle Trip Reduction Ordinance enacted by the Cambridge City Council in 1992 called for the creation of more livable communities in the greater Cambridge area. At the time, there were 6 miles of off-road bike paths. As a result of the ordinance, the city established a Bicycle and Pedestrian Mobility Program to encourage greater use of bicycles instead of single-occupancy vehicles as a primary mode of transport. Bike lanes are regularly created and rehabilitated to promote safe cycling throughout the city, and as of 2009 there are 37 miles of bike facilities including both off-road paths and bike lanes. For more information, see [www.cambridgema.gov/~CDD/et/bike/bike\\_lanes.html#imlanes](http://www.cambridgema.gov/~CDD/et/bike/bike_lanes.html#imlanes).

### CAMBRIDGE BICYCLE COUNTS 2002-2008



Source: Cambridge Community Development Department (2009)

### Freight Efficiency

#### Funding Sources:

- STP: Improvement of freight connections between air, rail and water freight movement options. Such projects can reduce diesel consumption by facilitating use of less energy-intensive modes of transport.
- EECBG/NCDAP: Anti-idling programs that conserve energy, reduce harmful pollution and greenhouse gas emissions from freight transport
- NCDAP: Reduction of diesel emissions through engine repowering or use of verified emissions control technologies: retrofit devices, cleaner fuels, engine upgrades low rolling resistance tires, and anti-idling technology.

#### *Pittsburgh, Pennsylvania*

The Port of Pittsburgh Container on Barge project facilitates improved connections between road and water freight movement. The program provides a water alternative to trucking for heavier, high-value shipments through the inland waterway system of the Appalachian and Gulf Coast Region. For more information, please see: [www.arc.gov/images/reports/interopp/ebinteropp.pdf](http://www.arc.gov/images/reports/interopp/ebinteropp.pdf).

#### *Beaumont, Texas*

The city of Beaumont, Texas, successfully implemented a freight truck anti-idling program in collaboration with the South East Texas Regional Planning commission to address their non-attainment status in the Beaumont Port Arthur Ozone non-attainment area. Five hundred and thirty-two truck-stop electrification units were set up to reduce freight diesel consumption and the consequent emission of carbon monoxide, nitrous oxides, particulate matter and hydrocarbons. For more information and examples of other anti-idling programs, see [www.michigan.gov/documents/deq/deq-ess-tas-micdi-workshop-CMAQ-ProgramOverviewHandout\\_269007\\_7.pdf](http://www.michigan.gov/documents/deq/deq-ess-tas-micdi-workshop-CMAQ-ProgramOverviewHandout_269007_7.pdf).

### Congestion Management

- Funding of programs that encourage ride-sharing, carpooling
- Urban congestion pricing programs
- Provision of more routing options to dissipate traffic throughout the transportation system



## Efficient Vehicle Purchase: Diesel Initiatives

Funding Source:

- NCDAP: Replacement of existing medium- to heavy-duty conventional fleets with efficient, clean diesel options.

The NCDAP supports the expanded use of advanced vehicle technologies, as well as alternative fuels, in light- and heavy-duty vehicles. Funding will also be available for projects that include the installation or creation of new infrastructure to support these vehicles. The following medium and heavy duty diesel emission reduction projects are eligible:

- Implementation of verified emission control technologies including retrofit devices, clean fuels and engine upgrades
- Implementation of idle reduction technologies
- Vehicle or equipment replacement

For more information on this opportunity, see [www.afdc.energy.gov/cleancities/progs/solicitations.php#recovery](http://www.afdc.energy.gov/cleancities/progs/solicitations.php#recovery).

Additional transportation initiatives that could be funded via the EECBG include employee flex time programs, promoting the use of satellite work centers, developing incentive programs to reduce the use of single-occupancy vehicles, and improvements to a transportation system's operational and overall system efficiency.

### *Cambridge, Massachusetts*

The Department of Cambridge Community Development adopted a Parking and Transportation Demand Management (PTDM) program to reduce the use of single-occupancy vehicles (SOVs) via marketing and incentives. The program, enabled through the PTDM Ordinance within the Cambridge municipal code and made permanent in 2006, encourages alternative modes of transportation, including public transit, bicycling, walking and ride sharing by requiring commercial parking facilities to file PTDM plans. The goals of the program are to reduce congestion and air pollution and to increase safety and mobility. The City of Cambridge has calculated that as of 2007 the PTDM Ordinance had reduced VMT 24% below 1990 numbers. You can learn more about the program at [www.cambridgema.gov/cdd/et/tdm/index.html](http://www.cambridgema.gov/cdd/et/tdm/index.html).

Additional Information:

ICLEI Guide to Sustainable Transportation Options (PDF): [www.iclei.org/documents/Global/Programs/CCP/Sust\\_Trans\\_Options.pdf](http://www.iclei.org/documents/Global/Programs/CCP/Sust_Trans_Options.pdf).

## **VIII. Building Codes and Inspections**

Entities may develop and implement building codes and inspection services to promote building energy efficiency.

- A number of towns and counties have established efficient energy building codes to improve on state-wide standards. There are several places to find information on municipal "best practice" building code news.
- The Building Codes Assistance Project (BCAP) provides a Policy Action Tool on their Web site, <http://bcap-energy.org/node/156>, which includes several steps to strengthen local energy building codes and examples of best practices.
- The Database of State Incentives for Renewables & Efficiency (DSIRE) lists pertinent municipality building codes under each state, at [www.dsireusa.org](http://www.dsireusa.org), under Summary Tables, Rules, Regulations & Policies (Energy Efficiency), under the Building Codes table header.

- The Southwest Energy Efficiency Project (SWEET) has developed a guide to developing “Beyond Code” programs for the southwest region. SWEET also provides a number of case studies, including the City of Albuquerque’s Energy Conservation Code, and information on building code best practices for Arizona and the southwest region. For details visit the SWEET Web site: [www.swenergy.org/buildingefficiency/codes/commercial/index.html](http://www.swenergy.org/buildingefficiency/codes/commercial/index.html).

#### Additional Information

ACEEE Building Codes information [www.aceee.org/buildings/codes.htm](http://www.aceee.org/buildings/codes.htm)

#### ENERGY STAR Towns

Some towns are fully embracing ENERGY STAR, by passing legislation mandating ENERGY STAR standards for all new homes. Montgomery County, Maryland, will require this of new homes starting in 2010, and a cluster of towns on Long Island passed this legislation starting in 2006. The town of Babylon, New York, went a step further in 2008, creating the “Long Island Green Homes Program” which provides financial help to Babylon residents interested in increasing efficiency in their existing homes. The program was made possible through an innovative city action changing the solid waste code to include energy waste (as measured by carbon content), which enabled them to appropriate \$2 million dollars from the solid-waste reserve fund to kick-start their activities. Currently more than 50 homeowners a month call the program seeking audits.

#### Additional Information:

- Long Island ENERGY STAR towns: [www.longislandnn.org/energy/eshomes.htm](http://www.longislandnn.org/energy/eshomes.htm)
- New York Times Article: Where Energy Efficiency Is the Law: [www.nytimes.com/2006/09/10/realestate/10lizo.html](http://www.nytimes.com/2006/09/10/realestate/10lizo.html)
- Long Island Green Homes Program: [www.ligreenhomes.com](http://www.ligreenhomes.com)
- Montgomery County, Maryland:
- Announcement of code change: [www.bcap-energy.org/node/221](http://www.bcap-energy.org/node/221)
- Washington Post article: [www.montgomerycountymd.gov/Content/infocentral/ClipFTP/01/2008/04.23.08-wp.pdf](http://www.montgomerycountymd.gov/Content/infocentral/ClipFTP/01/2008/04.23.08-wp.pdf)

### **IX. Energy Distribution:**

Entities may implement distributed energy resource technologies that significantly increase energy efficiency.

#### *St. Paul, Minnesota*

District Energy St. Paul is the largest biomass-fueled hot water district heating system in North America. Originally developed in 1983 as a pilot project to combat the energy crises of the 1970s, today District Energy provides heating to over 180 buildings and 300 single-family homes, equaling 31.1 million square feet of building space, or 80% of commercial, residential and industrial buildings in downtown St. Paul.<sup>19</sup> District Cooling St. Paul, the affiliate founded a decade later, serves approximately 60% of downtown buildings. Most of the hot water for District Energy comes from a biomass-fueled Combined Heat and Power (CHP) power plant, using 100% wood waste from the Twin Cities metro area. The CHP plant has reduced District Energy’s coal consumption by 70% (City of St. Paul 2009).

#### Additional Information:

- International District Energy Association
  - What Is District Energy: [www.districtenergy.org/what\\_is.htm](http://www.districtenergy.org/what_is.htm)

---

<sup>19</sup> See [www.districtenergy.com/services/heatingfacts.html](http://www.districtenergy.com/services/heatingfacts.html) for more information on St. Paul’s district heating system.

- Best Practices Guide Table of Contents:  
[www.districtenergy.org/Best\\_Practice\\_Guide/Contents\\_pages.pdf](http://www.districtenergy.org/Best_Practice_Guide/Contents_pages.pdf)
- For information on CHP systems, see [www.aceee.org/chp](http://www.aceee.org/chp).

## **X. Material Conservation Programs**

Entities may implement activities to increase participation and efficiency rates for material conservation programs, including source reduction, recycling, and recycled content procurement programs that lead to increases in energy efficiency.

One way for communities to encourage recycling is by instituting a “pay-as-you-throw” program. Generally, these programs charge residents for the amount of trash they put out on the curb, either by the bag/can or by weight. The EPA describes it thusly:



*Traditionally, residents pay for waste collection through property taxes or a fixed fee, regardless of how much—or how little—trash they generate. Pay-As-You-Throw (PAYT) breaks with tradition by treating trash services just like electricity, gas, and other utilities. Households pay a variable rate depending on the amount of service they use.<sup>20</sup>*

This program provides a different incentive for recycling. Wallet-conscious residents think twice about putting recyclable materials in with non-recyclable refuse. The EPA provides a breakdown of states with participating communities here: [www.epa.gov/epawaste/consERVE/tools/payt/states/06comm.htm](http://www.epa.gov/epawaste/consERVE/tools/payt/states/06comm.htm).

More specifically, a number of Massachusetts communities have PAYT programs already underway. One municipality, the town of Ashland, implemented a PAYT program in 2007. The town found that trash decreased by 38% (1,986 tons) and recycling increased by 98% (957 tons), saving the town \$139,000 in disposal costs (MA DEQ 2009). For more information on Massachusetts towns with PAYT programs, see [www.mass.gov/dep/recycle/reduce/paytfact.htm](http://www.mass.gov/dep/recycle/reduce/paytfact.htm). For basics on the program, including an implementation guide, see [www.mass.gov/dep/recycle/reduce/paytmuni.htm](http://www.mass.gov/dep/recycle/reduce/paytmuni.htm).

EPA has additional resources and ideas for communities to ramp up their recycling efforts at [www.epa.gov/osw/consERVE/tools/localgov/sectors/index.htm](http://www.epa.gov/osw/consERVE/tools/localgov/sectors/index.htm).

### **Innovative Ideas: RecycleBank**

RecycleBank helps municipalities increase recycling by rewarding households for the amount they recycle. The company identifies which households recycle and in what amounts by providing every household with a recycling container embedded with a chip that is read by the mechanical arm retrofitted onto the city's recycling truck. Households can then log onto the Web site ([www.recyclebank.com](http://www.recyclebank.com)) and see each week how much they recycled and how many points they have earned. Points can be redeemed at local and national stores, or for specific brands.

Program participants can also see how many trees and gallons of oil were saved through their recycling efforts. According to the company, households benefit because they are rewarded for recycling, and participating towns and cities save money because they pay less to landfills. RecycleBank's 2008 report notes that the program has diverted over 46,000 tons of recyclables from the waste stream (RecycleBank 2009).

For information about RecycleBank and success stories from participating communities, visit [corporate.recyclebank.com/municipalities](http://corporate.recyclebank.com/municipalities).

<sup>20</sup> [www.epa.gov/epawaste/consERVE/tools/payt/index.htm](http://www.epa.gov/epawaste/consERVE/tools/payt/index.htm)

More Information on Materials Conservation:

- Container Recycling Institute: [www.container-recycling.org](http://www.container-recycling.org)
- Institute for Local Self-Reliance “Waste to Wealth” information: [www.ilsr.org/recycling/recordsetters/index.html](http://www.ilsr.org/recycling/recordsetters/index.html)
- Municipal Composting, Yard Waste Recycling
  - Berkeley, CA: [www.ci.berkeley.ca.us/ContentDisplay.aspx?id=5606](http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=5606)
  - Scituate, MA: [www.earth911.com/blog/2009/04/08/mass-town-launches-yard-waste-recycling-program](http://www.earth911.com/blog/2009/04/08/mass-town-launches-yard-waste-recycling-program)

## ***XI. Reduction and Capture of Methane and Greenhouse Gases***

Entities may use grant funds to purchase and implement technologies to reduce, capture, and, to the maximum extent practicable, use methane and other greenhouse gases generated by landfills or similar waste-related sources, such as wastewater treatment plants, operations producing food waste, dairy farms and other animal operations.

There are a number of cities already using methane capture technologies to reduce landfill emissions. ICLEI’s Local Governments for Sustainability Web site<sup>21</sup> lists a number of communities in the United States which are improving waste water treatment efficiency and utilizing landfill gases.

Albuquerque, New Mexico, reduced city operations-related emissions by two-thirds from 2000-2005 in large part by capturing methane landfill gas. Sacramento County, California, uses its captured methane to power nearly 9,000 homes. The county of Lexington-Fayette, Kentucky, has upgraded several treatment plants, installing low flow pumps at its water plants and using biogas produced at its wastewater plants to heat boilers, shrinking its costs and emissions by reducing its dependence on fossil fuels.

Another useful resource for information on reducing emissions via landfill gas can be found on the EPA’s Landfill Methane Outreach Program (LMOP) Web site, at [www.epa.gov/lmop/overview.htm](http://www.epa.gov/lmop/overview.htm). A voluntary assistance program for communities and others, the program helps overcome barriers to landfill methane projects, providing technical expertise, economic feasibility advice, educational materials, networking opportunities, and information on financing options.

## ***XII. Traffic Signals and Street Lighting***

Entities may use grant funds to replace traffic signals and street lighting with energy efficient lighting technologies, including light emitting diodes; and any other technology of equal or greater energy efficiency.

The *Energy Policy Act of 2005* set new efficiency levels for traffic signals, paving the way for LED (light-emitting diode) traffic lights to be implemented in towns and cities across the country. As an example, Louisville, Kentucky, has installed more than 300 signals, saving \$250,000 and 7.5 million kWh annually, and Medford, Massachusetts, has converted all of their traffic lights to LEDs as part of a broader initiative under the Cities for Climate Protection Campaign. Medford estimates that since the switch to LEDs, it has saved \$15,000 on annual energy costs (U.S. Conference of Mayors 2007).

For more information on LEDs, see the Institute of Transportation Engineers Web site: [www.ite.org/standards/Led.asp](http://www.ite.org/standards/Led.asp).

---

<sup>21</sup> [www.icleiusa.org/success-stories/cool-infrastructure](http://www.icleiusa.org/success-stories/cool-infrastructure)

### DOE Municipal Solid-State Street Lighting Consortium

In September 2009, DOE will launch a Consortium to address municipal interest in solid-state street lighting. The Consortium will collect, analyze, and share technical information and experiences culled from LED street lighting demonstration projects across the country. As this type of street lighting is still relatively new, and as a great deal of interest has been shown by cities to use ARRA funds for demonstration projects through the DOE GATEWAY program, the Consortium will help coordinate information and efforts between participating cities, power providers, and government entities. This will accelerate the learning curve and advancing this technology for the benefit of all municipalities. For more information visit [www1.eere.energy.gov/buildings/ssl/gatewaydemos\\_consortium.html](http://www1.eere.energy.gov/buildings/ssl/gatewaydemos_consortium.html).

### XIII. Renewable Energy Technologies on Government Buildings

Entities may use grant funds to develop, implement, and install on or in any government building of the eligible entity onsite renewable energy technology that generates electricity from renewable resources, including solar energy; wind energy; fuel cells; and biomass.

The following are sources of information for renewable energy technologies, projects and programs:

- DOE's Solar America Initiative: Solar Cities: [www.solaramericacities.energy.gov](http://www.solaramericacities.energy.gov)
- DOE's Wind Powering America: [www.windpoweringamerica.gov](http://www.windpoweringamerica.gov)
- DOE's Clean Cities program: [www1.eere.energy.gov/cleancities](http://www1.eere.energy.gov/cleancities)
- Database of State Incentives for Renewables & Efficiency (DSIRE): [www.dsireusa.org](http://www.dsireusa.org)

### XIV. Any Other Appropriate Activity

Entities may submit any other appropriate activity for approval in the Energy Efficiency and Conservation Strategy.

*Community College Training Programs: Hudson Valley Community College and Central Carolina Community College*

The Workforce Development Institute of the Hudson Valley Community College offers valuable training through their Center for Energy Efficiency and Building Science (CEEBS), one of seven CEEBS-managed Energy Smart training centers throughout the State of New York. Partnering with the Building Performance Institute (BPI), the New York State Builders Association, and the New York State Energy Research and Development Authority (NYSERDA), the center offers a variety of training classes specializing in building science and focusing on whole-house diagnostics and performance. Participants are ultimately prepared for BPI certification through the Building Performance Institute, which sets the national technical standards for contractors in the performance contracting field. Jobs are provided for BPI-certified contractors through NYSERDA's Home Performance with ENERGY STAR program.

Additional Information:

- Center for Energy Efficiency and Building Science overview: [www.dps.state.ny.us/07M0548/workgroups/WGVII\\_The\\_Center\\_for\\_Energy\\_Efficiency\\_and\\_Building\\_Science.pdf](http://www.dps.state.ny.us/07M0548/workgroups/WGVII_The_Center_for_Energy_Efficiency_and_Building_Science.pdf)
- Hudson Valley Community College: [www.hvcc.edu/wdi/index.html](http://www.hvcc.edu/wdi/index.html)
- NYSERDA: [www.getenergysmart.org](http://www.getenergysmart.org)
- BPI Training information: [www.bpi.org/content/contractors/training.php](http://www.bpi.org/content/contractors/training.php)

Central Carolina Community College has offered a Green Building and Renewable Energy program<sup>22</sup> since 2002 as part of the effort to train "a new workforce for the green economy." The college is also offering a continuing education program for 2009 specifically focusing on sustainable, green programs.

<sup>22</sup> <http://cccc.edu/green/>

Classes cover green building, energy-efficient home construction, renewable energy technology, and sustainable communities. See [www.cccc.edu/ce/schedule/schedules/summer2009](http://www.cccc.edu/ce/schedule/schedules/summer2009) for class specifics.

Additional Information:

- The U.S. Department of Labor's Employment and Training Administration provides resources for workforce development and job training through the Green Jobs Initiative. For more information see [www.doleta.gov](http://www.doleta.gov).

#### *Land-Use Policies: Urban Infill*

Brownfields are defined as vacant properties that have been abandoned due to contamination, whether real or perceived. Brownfield reclamation has long been a concern of many cities, as a solution to sprawl and a means of revitalizing downtowns and other areas through community development. The redevelopment of brownfields can also result in significant energy benefits by reducing vehicle miles traveled (VMT) due to shorter work trips, shorter shopping trips, and higher non-SOV means of travel. Further energy and climate benefits can be realized in communities utilizing cutting-edge green building technologies. The Northeast-Midwest Institute has researched and published guides to the best redevelopment practices, covering aspects from underground petroleum storage tanks to residential redevelopment options and community issues. Its comprehensive resource of best practices and toolkits can be accessed at [www.nemw.org](http://www.nemw.org), under the Policy Areas tab.

The EPA also has useful information regarding how some municipalities have redeveloped area brownfields. One use for these spaces is the creation of local food systems, either development of a community garden or a farmers' market. The city of Somerville, MA, utilized an EPA Brownfields Assessment Grant in 2007 to repurpose a residential plot into the Allen Street Community Garden. A vacant property since the 1950s, the property is now home to 15 garden plots planted by members of the community. For more information on EPA's funding opportunities for municipal brownfield redevelopment, see [www.epa.gov/brownfields/](http://www.epa.gov/brownfields/).

## **Summary and Conclusions**

Cities and towns across America have designed and implemented programs targeted toward improving the energy efficiency of community buildings, infrastructure, and transit systems for many years. In this report we have gathered a variety of municipal energy efficiency programs as a sample of existing local initiatives. In some areas, these programs have been put in place through partnerships with a municipal or local utility, nonprofit energy center, or other grassroots level entity. Elsewhere, programs have come about through the hard work of the mayor or local council, mandating energy saving targets or other efficiency goals. Other municipalities have relied on nationwide organizations to provide assistance with their local programs. Many cities and counties have lacked the resources or necessary leadership to implement these types of programs. However, with the passage of the *American Recovery and Reinvestment Act of 2009* (ARRA), these cities and towns have been given the opportunity to receive unprecedented funding to join the top tier of energy-efficient municipalities.

Now is the time for these communities to take action and implement meaningful programs to improve local energy efficiency. Federal dollars have already begun to be dispensed to many local governments. Through the Energy Efficiency and Conservation Block Grant program included in ARRA, cities can implement recovery plans that they designed, to enhance or initiate programs of their choosing, saving energy and taxpayer dollars while creating local green jobs. For those municipalities without existing programs, this report should act as starting point for exploring the range of program possibilities for communities large and small across the country.

## Sources for Technical Assistance

In addition to ACEEE's online Recovery Guide,<sup>23</sup> the following are organizations providing technical assistance to municipalities.

### ICLEI – Local Governments for Sustainability

- Economic Recovery Funding Updates:  
[www.icleiusa.org/action-center/financing-staffing/stimulus-funding-updates](http://www.icleiusa.org/action-center/financing-staffing/stimulus-funding-updates)
- Municipal Clean Energy Toolkit:  
[www.icleiusa.org/action-center/tools/municipal-clean-energy-toolkit](http://www.icleiusa.org/action-center/tools/municipal-clean-energy-toolkit)

### Institute for Sustainable Communities

[www.iscvt.org](http://www.iscvt.org)

### Living Cities

Stockton Williams, Senior Advisor, Director, Green Economy Initiatives  
(646) 442-2200  
[swilliams@livingcities.org](mailto:swilliams@livingcities.org)  
[www.livingcities.org](http://www.livingcities.org)

### National Association of Counties

Michael Belarmino, Special Projects Coordinator, Recovery Act  
(202) 661-8840  
[mbelarmino@naco.org](mailto:mbelarmino@naco.org)  
[www.naco.org](http://www.naco.org)

### National Association of Regional Councils

Economic Recovery Information and Materials: <http://narc.org/news/218.html>  
Shannon Menard, NARC Policy Manager  
(202) 986-1032 x217  
[Shannon@narc.org](mailto:Shannon@narc.org)

### National League of Cities

[info@nlc.org](mailto:info@nlc.org)  
[www.nlc.org/recovery](http://www.nlc.org/recovery)

### Regional Energy Alliances

#### Midwest Energy Efficiency Alliance

The Midwest Energy Efficiency Alliance (MEEA) is a collaborative network advancing energy efficiency in the Midwest to support sustainable economic development and environmental preservation.  
[www.mwalliance.org](http://www.mwalliance.org)

#### Northeast Energy Efficiency Partnerships

NEEP's mission is to promote the efficient use of energy in homes, buildings, and industry in the Northeast U.S. through regionally coordinated programs and policies that increase the use of energy efficient products, services and practices, and that help achieve a cleaner environment and a more reliable and affordable energy system.  
[www.neep.org](http://www.neep.org)

#### Northwest Energy Efficiency Alliance

The Northwest Energy Efficiency Alliance (NEEA) is a private nonprofit organization funded by Northwest utilities, the Energy Trust of Oregon and the Bonneville Power Administration. NEEA works in

<sup>23</sup> [aceee.org/energy/national/recovery.htm](http://aceee.org/energy/national/recovery.htm)

collaboration with its stakeholders and strategic market partners to accelerate the sustained market adoption of energy-efficient products, technologies and practices.

[www.nwalliance.org](http://www.nwalliance.org)

#### **Northwest Energy Efficiency Council**

The Northwest Energy Efficiency Council (NEEC) is a business association of the energy efficiency industry. NEEC's mission is to promote policies and programs that enhance market opportunities for energy efficiency.

[www.neec.net](http://www.neec.net)

#### **Southeast Energy Efficiency Alliance**

Southeast Energy Efficiency Alliance (SEEA) is a 501(c)(3) non-profit that brings together businesses, utilities, governments, public utility commissions, energy service companies, manufacturers, retailers, energy and environmental organizations, low-income energy advocates, large energy consumers, and universities to promote energy-efficient policies and practices. SEEA's mission is to promote and achieve energy efficiency through networking, program activities, and education. The results of increased energy efficiency will be a cleaner environment, a more prosperous economy, and a higher quality of life in the Southeastern United States.

[www.seealliance.org](http://www.seealliance.org)

#### **Southwest Energy Efficiency Project**

The Southwest Energy Efficiency Project (SWEET) is promoting greater energy efficiency in a six-state region that includes Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming.

[www.swenergy.org](http://www.swenergy.org)

#### **The United States Conference of Mayors**

Information on funding and deadlines, news from cities around the country, best practices, and other tracking and implementation assistance is available at:

[info@usmayors.org](mailto:info@usmayors.org)

[www.usmayors.org/recovery](http://www.usmayors.org/recovery)



## References

- [ACEEE] American Council for an Energy-Efficient Economy. 2009. *Multifamily and Manufactured Housing Energy Efficiency Program*. <http://aceee.org/energy/national/multifamily.pdf>. Washington, D.C.: American Council for an Energy-Efficient Economy.
- Amann, J. and E. Mendelsohn. 2005. *Comprehensive Commercial Retrofit Programs: A Review of Activity and Opportunities*. Washington, D.C.: American Council for an Energy-Efficient Economy.
- Burke, P., G. Nelson and W. Rickerson. 2007. "Boston's Green Affordable Housing Program: Challenges and Opportunities." *Journal of Legislation and Public Policy*. 11 (1). <http://www.law.nyu.edu/journals/legislation/issues/volume11number1/index.htm>.
- City of St. Paul. 2009. *Overview of Sustainable St. Paul*. <http://mnstpaul.civicplus.com/DocumentView.asp?DID=1494>.
- [DOE] Department of Energy. 2008. *Financial Assistance Funding Opportunity Announcement*. [http://aceee.org/energy/national/DOE\\_EECBG\\_Guidance\\_2009.pdf](http://aceee.org/energy/national/DOE_EECBG_Guidance_2009.pdf).
- Ducey, Anne. 2009. Personal Communication. Seattle City Light.
- Fuller, M. 2008. *Enabling Investments in Energy Efficiency: A Study of Energy Efficiency Programs that Reduce First-Cost Barriers in the Residential Sector*. Oakland, Calif.: Energy and Resources Group, UC Berkeley for California Institute for Energy and Environment. [www.ucop.edu/ciee/energyeff/documents/CA\\_ResiFinancing.pdf](http://www.ucop.edu/ciee/energyeff/documents/CA_ResiFinancing.pdf).
- Halverson, N. 2009. "'Smart' Device Saves Energy When No One's There." *The Press Democrat*. [www.pressdemocrat.com/article/20090409/NEWS/904091039](http://www.pressdemocrat.com/article/20090409/NEWS/904091039).
- [HUD] Department of Housing and Urban Development. 2009. *Recovery Programs: Public Housing Capital Fund*. [http://portal.hud.gov/portal/page/portal/RECOVERY/programs/CAPITAL\\_STIMULUS](http://portal.hud.gov/portal/page/portal/RECOVERY/programs/CAPITAL_STIMULUS)
- \_\_\_\_\_. 2009. *Recovery Programs: Green Retrofit Program for Multifamily Housing*. <http://portal.hud.gov/portal/page/portal/RECOVERY/programs/GREEN>.
- Jensen, Dustin. 2009. Personal Communication. Metropolitan Energy Center.
- Johnson Controls. 2007. *Project Profile: City of Laurel, Montana*. [www.naesco.org/resources/casestudies/documents/City\\_of\\_Laurel.pdf](http://www.naesco.org/resources/casestudies/documents/City_of_Laurel.pdf).
- [MA DEQ] Massachusetts Department of Environmental Quality. 2009. *Case Study: Town of Ashland Pay-As-You-Throw (PAYT) Program*. <http://www.mass.gov/dep/recycle/reduce/ashlandpayt.pdf>.
- Manitoba Hydro. 2009. *Manitoba Hydro-Electric Board 58th Annual Report 2008-2009*. [www.hydro.mb.ca/corporate/ar/2008/ar\\_0809.pdf](http://www.hydro.mb.ca/corporate/ar/2008/ar_0809.pdf).
- [NYSERDA] New York State Energy Research and Development Authority. 2008. *2008 Annual Report*. [www.nyserda.org/publications/SBC%20March%202009%20Annual%20Report-Rev%208-09.pdf](http://www.nyserda.org/publications/SBC%20March%202009%20Annual%20Report-Rev%208-09.pdf).
- RecycleBank. 2009. *2008 Second Nature Sustainability Report*. [http://corporate.recyclebank.com/images/stories/pdf/2008\\_RecycleBank-Second-Nature.pdf](http://corporate.recyclebank.com/images/stories/pdf/2008_RecycleBank-Second-Nature.pdf).
- [SANDAG] San Diego Association of Governments. 2008. *The Regional Comprehensive Plan: 2008 Annual Performance Monitoring Report*. [http://www.sandag.org/uploads/publicationid/publicationid\\_1409\\_9076.pdf](http://www.sandag.org/uploads/publicationid/publicationid_1409_9076.pdf).

U.S. Conference of Mayors. 2007. *US Conference of Mayors Best Practices Guide*.  
<http://usmayors.org/bestpractices/EandEBP07.pdf>.

[WAP] Weatherization Assistance Program. 2009. *Weatherization Assistance Program Overview*.  
[www.waptac.org/sp.asp?id=1437](http://www.waptac.org/sp.asp?id=1437).