The Community Energy Efficiency Pilot Program in Washington State

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Overview

The Washington State University (WSU) Energy Program was directed by the Washington State Legislature (E2SSB 5649) to identify and fund pilot projects that will provide community-wide urban residential and commercial energy efficiency upgrades. Eight projects were selected for this Community Energy Efficiency Pilot (CEEP) to test innovative approaches for expanding delivery of energy efficiency services in Washington state.

Project development tasks for CEEP began in mid-2009. Most of the projects began delivering services in 2010 and most energy efficiency upgrades were completed by the end of 2011.

Goals of the CEEP Program

- Increase public outreach on energy efficiency.
- Grow the energy efficiency upgrade industry and workforce.
- Expand delivery of energy efficiency services to those with incomes that are immediately above low-income thresholds.
- Test whole-neighborhood approaches and other innovative delivery approaches.
- Provide creative energy efficiency financing options.

The eight projects met the goals of the pilot by delivering energy efficiency upgrades to targeted residences and businesses, and implementing different approaches to reach targeted groups. The Washington State Legislature provided another year of funding for CEEP in 2012.

Grant Amounts and Expenditures

Over $27 million has been invested in the CEEP Program. This investment was built around grants of $14.5 million from the U.S. Department of Energy (DOE) State Energy Program and the American Recovery and Reinvestment Act (ARRA). The WSU Energy Program awarded a total of $13.4 million to eight community projects.

The eight projects expended $13.3 million. The grants awarded to each of the eight projects ranged from $150,000 to $4 million; most projects received between $1 million and $2 million. Total expenditures by the WSU Energy Program to manage, facilitate, support and evaluate the CEEP Program were $1.1 million. This funding leveraged over $13 million in local support, composed primarily of additional consumer spending and utility-provided financial incentives and support.

Investments in Energy Efficiency Projects

The eight projects reported that $18.9 million of the over $27 million total investment went toward direct investments in residential and commercial energy efficiency upgrades and services. Of these direct investments:

- Approximately 33 percent of this investment came from CEEP funding,
- 20 percent came from utilities,

- 40 percent came from participating households[1] and businesses, and the
- Remainder came from in-kind contributions and other sources.

In addition, over $8 million was invested to build or strengthen capacity to deliver energy efficiency services at state and local levels. The investments made to develop and refine marketing and outreach activities, service delivery, information systems, auditor and contractor training, and evaluation to document outcomes will position these pilot projects for future success.

Projected Energy Savings

The energy efficiency upgrades implemented by CEEP projects are estimated to produce about $1.7 million per year in energy cost savings. Over 80 percent of the energy saved is electricity; most of the rest is natural gas.

Outreach

Investments in outreach activities netted over 75,000 person-to-person contacts; two projects accounted for two-thirds of these contacts. All projects leveraged newspaper stories, direct mail/utility bill inserts and neighborhood presentations to connect with their communities. Other common approaches included hosting information tables at community events; reaching out to local leaders; and door-to-door canvassing, which generated the most contacts. All but one project had a dedicated website.

Assessments and Energy Efficiency Upgrades

The eight CEEP projects conducted 15,839 residential assessments and 12,974 residential energy efficiency upgrades. Most of the assessments and upgrades were completed by two projects that conducted prescriptive assessments and direct-install upgrades in mobile homes and multi-family buildings.

The remaining six projects conducted 4,068 assessments and 1,708 upgrades. This is an average conversion rate from audit to upgrade of 42 percent, which is good compared to other energy efficiency upgrade projects.

Six CEEP projects offered services to small businesses; 402 commercial assessments were conducted and 241 businesses installed one or more energy efficiency measures.

Three of the CEEP projects – including the two prescriptive, direct-install projects – targeted lower- to moderate-income neighborhoods. These three projects completed 11,499 residential upgrades and 151 small business upgrades.

While income data from participants was not collected, a significant portion of the households and businesses served in CEEP were likely moderate income or were in moderate-income areas.

[1] Approximately 25 percent of the household investment was financed through loans for the three projects that offered financing either directly or through community lending partners.

The most common residential upgrade measures were the low-cost and prescriptive measures favored by the two direct-install pilot projects, including:

- Energy-efficient lighting fixtures and compact fluorescent lights (CFLs),
- Duct sealing,
- Faucet aerators,
- Showerheads,
- Programmable thermostats, and
- Water heater pipe insulation.

Measures installed through the other six projects also included ceiling insulation, air sealing, heating system replacement, weather stripping, and floor and wall insulation.

For small businesses, energy-efficient lighting fixtures were by far the most common measure.

Technical Assistance and Support

The pilot projects provided support to contractors to build their capability to perform energy efficiency work, such as maintaining professional standards, enhancing sales and providing quality assurance.

Lessons Learned

The eight CEEP pilot projects developed and implemented different approaches to provide residential and commercial energy efficiency upgrades. The projects that were new to energy efficiency upgrade management learned that developing and implementing these efforts was harder than they anticipated. Pilot project staff learned to be flexible and adaptable. They found that simpler approaches work better, and had to scale back some ambitious goals.

Each project found ways to succeed. Detailed here are key lessons learned for outreach, implementation and workforce development.

Outreach

- **One size does not fit all**. Approaches that worked well in one community for a particular type of audience may not work well in a different situation. Multiple approaches – general and targeted – were often needed to reach the same community. In some situations, little marketing was necessary.
- **General outreach improves the effectiveness of targeted marketing**. Most people needed to be "touched" several times before they decided to participate in the program. While general outreach to raise awareness about the program may not immediately bring people into the program, it can make them more receptive to subsequent targeted marketing efforts.
- **Use community and business groups and networks to raise general awareness and build trust**.
- **Door-to-door canvassing was most effective as a targeted marketing approach to close the sale** (sign up/schedule an audit). This approach worked best for two pilot projects that paid 100 percent of the project cost. Some of the other projects found door-to-door canvassing to be less effective than expected, partly because it was difficult to train volunteers to do this well.
- **Word of mouth was one of the most effective outreach approaches**.
- **Simple projects require less marketing; complex projects require more marketing and multiple touches**. This realization motivated some pilot projects to simplify their offerings to make outreach easier and reduce the challenge of encouraging people to participate.
- **Build on outreach investment by staying in a neighborhood for an extended period**. Some of the pilot projects initially thought they could roll through one neighborhood and then roll on to the next. While this approach can be effective for direct-install projects, those promoting more comprehensive upgrades found it takes time for people to respond. They realized that they could build on their outreach investment by staying in each neighborhood longer.

Implementation

Most of the pilot projects had fairly high conversion rates from audit to implementation: 30 percent to over 50 percent. The following lessons aim to improve delivery effectiveness or move the interested customer from the initial assessment to installation.

- **Two-tier assessment approach**: Use the initial assessment as a marketing tool to provide education, install a few simple measures and screen for a more detailed audit. Then begin to encourage homeowners who have good opportunities for energy efficiency upgrades to get a more detailed assessment and implement energy efficiency improvements.
- **Statement of work/contractor bid**: To get from the assessment to a contractor bid as quickly and with as few home visits as possible, make sure the assessment includes specifications a contractor can use to develop a bid so the contractor does not need to repeat the work done by the auditor.
- **Decision package**: Provide the homeowner with clear and timely information about recommended measures, costs, benefits, rebates and incentives, and financing.
- **Simple incentive structures**: Incentives should be clear and easy to determine. Encourage action by offering a tiered incentive structure that encourages the building owner to implement measures that offer the greatest benefit first or incentivizes only the most cost-effective measures.
- **Single-person advisor**: Have one person serve as an advisor to the client throughout the process to reduce the risk of delays, communication breakdowns and customer confusion.
- **Deadlines**: Set expiration dates for incentives or offer bonus incentives to prompt customers to make a decision to accept a bid.
- **Conduct in-progress quality assurance during project implementation rather than after-the-fact inspections**: This approach minimizes home visits and scheduling issues, and allows for on-site training and real-time correction.

Technical Assistance and Support

- **Provide on-the-job training for contractor staff.** Much of this training can be informal and occur in the field as part of quality assurance activities or to address specific needs.
- **Provide technical support for contractors to build capacity to do this work.** This is particularly important for new contractors or those who have not done energy efficiency work. This support can also include guidance regarding sales, maintaining professional standards and meeting program reporting requirements.
- **Take advantage of existing training and certification projects.**
- **Offer auditor "shadowing" to identify and train good prospects.** An auditor needs a unique combination of technical and customer relations skills. Shadowing and mentoring can help potential auditors develop these skills.

CEEP Approaches

All eight CEEP projects offered services to residential households. Their approaches – tailored to meet specific goals and funding constraints – can be grouped into four categories:

- Comprehensive upgrades (whole house),
- Customer choice,
- Focused upgrades, and
- Prescriptive upgrades (direct install).

Comprehensive Upgrades

This model was offered by community organizations and municipal governments.

- Requires a high level of marketing and branding, multiple marketing touches and strategies, including neighborhood-based approaches.
- Home improvement projects are managed start to finish using a structured process, a common audit tool and in-person or telephone follow-up, with the goal of achieving comprehensive upgrades.
- Lead organization acts as a general contractor or exerts significant control over the contractor pool.

Customer Choice

This model was offered by utilities and municipal governments.

- Pilot projects focus on intensive outreach and marketing to drive demand for audits and participation in existing utility projects.
- Homeowners are referred to auditors and contractors, select the audit option and measure package, and manage the bid process and contractor selection.
- Lead organization provides support to the homeowner.

Focused Upgrades

This model was offered by community organizations.

- Less reliant on marketing and branding.
- Incentives are targeted to a limited number of measures (such as insulation).
- Lead organization conducts an assessment to screen households, assists with collecting bids, and prepares a project cost offer, including estimates of incentives. Customers are referred to contractors to complete the work.

Prescriptive Upgrades

This model was offered by utilities.

- Marketing is targeted to a particular group or neighborhood.
- Focuses on direct installation of a prescriptive set of low-cost measures.
- Assessment can be used to generate a Statement of Work.
- Lead organization provides management and administration.
- Typically uses one or two competitively bid contractors to install measures.

Comparing Approaches

Each approach has advantages and disadvantages.

The prescriptive upgrade approach resulted in the largest number of completed energy efficiency upgrades, but generated the lowest energy savings per project. The total savings can still be large because of the volume of projects, resulting in low costs per unit of energy saved. Because of the low cost, this approach is effective in reaching low- to moderate-income households. However, some opportunities for energy savings are missed.

The comprehensive upgrade approach strives to capture all the energy-savings opportunities and provides the greatest energy savings per home improvement project and the most benefits to participating households. But this results in higher costs. And because it takes longer to complete each project, fewer projects are done.

The outcomes for the other two approaches tend to fall between the comprehensive and prescriptive upgrades.

Hybrids of these approaches could produce the best option to meet the needs of a particular community and serve different market segments. Public policies and support also have a significant influence. As we gain more experience and continue to improve upon these different approaches, preferred options may begin to emerge.

Outcomes of Different CEEP Program Approaches

Approach	Number of Completed Projects	Energy Savings per Project	Community Penetration Rates	Cost per Unit of Energy Saved	Low /Moderate Income Households Served
Comprehensive Upgrades	Less	Most	Low	Highest	Some – if supported
Customer Choice	Less	Moderate	Low	Moderate – High	Fewest
Focused Upgrades	Less	Moderate	Low	Moderate - Low	Some
Prescriptive Upgrades	Most	Least	Moderate - High	Lowest	Most

For More Information

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