

## Five Ways to Drive Demand with \$500 Million

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### ABSTRACT

The American Recovery and Reinvestment Act of 2009 (Recovery Act) supported energy efficiency in homes and buildings in unprecedented ways that allowed for a range of innovation, and produced substantial and ongoing results in the form of lower energy use, cost, emissions, and greater comfort for Americans. The U.S. Department of Energy's Better Buildings Neighborhood Program played a significant role in those achievements with partners' completing over 100,000 residential upgrades.

Neighborhood sweeps in dozens of communities throughout Michigan leveraged trusted intermediaries and "neighborhood readiness" that resulted in more than 6,000 upgrades. An employer-based approach with Grand Valley State University engaged employees to upgrade their homes and leveraged trust, as well as existing and cost-free communications mechanisms that achieved efficiencies of scale at one-third of the cost of traditional methods. Homeowner-hosted house parties with contractors resulted in over 3,700 upgrades in one year, after switching from an ineffective strategy mid-stream. In Connecticut, the Neighbor to Neighbor Energy Challenge used online leader boards to track communities' progress toward completion of upgrades that spurred friendly competition. Portland, OR utilized an intensive data-driven approach to better understand market segmentation that delivered services and achieved more than 3,000 upgrades.

### Introduction

President Barack Obama signed the American Recovery and Reinvestment Act of 2009 (Recovery Act) on February 17, 2009, which allocated appropriations for job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and State and local fiscal stabilization.<sup>1</sup> It is worth noting that in the three months prior to the Recovery Act, the nation lost 2.2 million jobs, financial institutions were on the brink of collapse, and the country was undergoing the most calamitous economic downturn since the Great Depression.<sup>2</sup>

The Recovery Act allocated approximately \$80 billion to projects related to energy and the environment, with much of this money targeted toward improving energy efficiency in homes and buildings.

Using funds from the Recovery Act and annual appropriations, the U.S. Department of Energy's (DOE's) Better Buildings Neighborhood Program provided \$508 million in one-time grants to States and localities in 2010 to upgrade 100,000 homes, test a wide range of program delivery business models to make energy efficiency more accessible, and develop sustainable energy efficiency upgrade programs. Funding of \$1.4 million to \$40 million per program was awarded through the competitive portions of the Energy Efficiency and Conservation Block

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<sup>1</sup> <https://www.govtrack.us/congress/bills/111/hr1>

<sup>2</sup> <http://www.whitehouse.gov/recovery/anniversary/message>

Grant (EECBG) Program (\$482 million in Recovery Act funds) and the State Energy Program (\$26 million in annual appropriations) to 41 governments and nonprofits (Figure 1).<sup>3</sup>

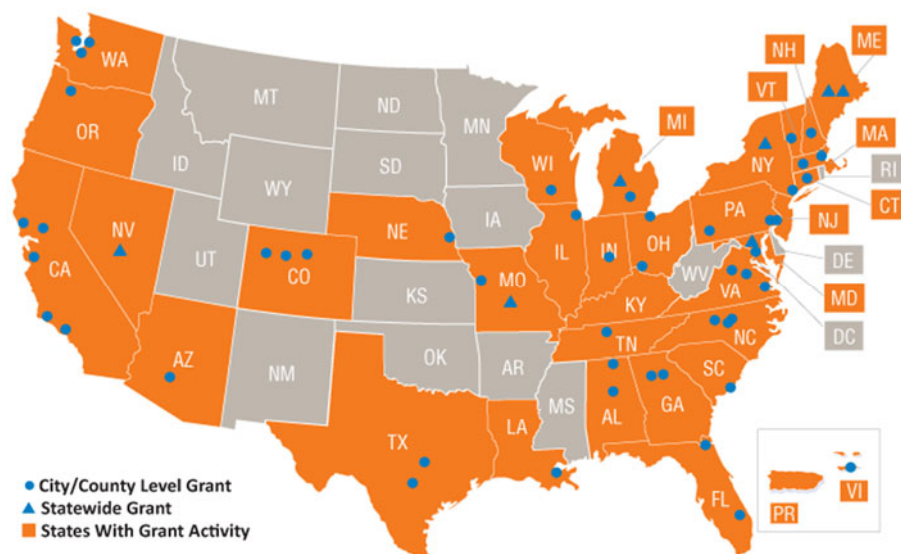


Figure 1. Map of Better Buildings Neighborhood Program grant recipient locations.

Better Buildings Neighborhood Program (BBNP) partners have tested multiple, innovative and successful approaches for driving demand to upgrade existing homes, and delivered the message to consumers that energy efficiency improvements can make their buildings more comfortable while saving them money.<sup>4</sup>

Following is a subjective sample of five approaches for driving demand to upgrade existing homes from BBNP partners that accelerated energy and financial savings from diverse markets, in a range of climates, from different parts of the country. The different approaches represent innovative program planning that captured the imagination of consumers, the network of BBNP partners, and peers beyond the program, which are listed in no particular order:

1. **Neighborhood Sweeps:** Neighborhood sweeps were employed in dozens of communities throughout Michigan, which leveraged trusted intermediaries and “neighborhood readiness” and resulted in more than 6,000 upgrades.
2. **Employer-Based:** Grand Valley State University engaged employees to upgrade their homes and leveraged trust, as well as existing and cost-free communications mechanisms, to achieve efficiencies of scale at one-third of the cost of traditional methods.
3. **House Parties:** Homeowner-hosted house parties with contractors were organized through intensive grassroots engagement in Chicago by 20 outreach staff, which resulted in over 3,700 upgrades in one year, after switching ineffective strategies mid-stream.

<sup>3</sup> <http://energy.gov/eere/better-buildings-neighborhood-program/better-buildings-neighborhood-program>

<sup>4</sup> Preliminary independent evaluations of the Better Buildings Neighborhood Program were published in 2013, and final evaluations are forthcoming. *Preliminary Energy Savings Impact Evaluation: Better Buildings Neighborhood Program, American Recovery and Reinvestment Act of 2009*, November 4, 2013, [http://www1.eere.energy.gov/analysis/pdfs/energy\\_savings\\_impact\\_bbnp\\_110413.pdf](http://www1.eere.energy.gov/analysis/pdfs/energy_savings_impact_bbnp_110413.pdf)

4. **Competitions:** In Connecticut, the Neighbor to Neighbor Energy Challenge used online leader boards to track communities' progress completing upgrades to spur friendly competition.
5. **Data-Driven Segmentation:** Portland, OR utilized an intensive data-driven approach to better understand market segmentation of their target audience and deliver services with messages that resonated effectively to achieve over 3,000 upgrades.

## Neighborhood Sweeps

The State of Michigan received \$30 million in funding from the Better Buildings Neighborhood Program for residential and commercial energy efficiency, which in turn utilized the nonprofit Michigan Saves as the mechanism to operate the grant program on the ground.

The program was named BetterBuildings for Michigan and employed a political campaign-style "sweep" tactic to target homes in select neighborhoods for residential energy efficiency projects. Neighborhood sweeps were employed in dozens of communities throughout Michigan, which leveraged trusted intermediaries and "neighborhood readiness" to achieve over 6,000 residential energy efficiency upgrades. The program adopted a variation of the national program name and logo for use state-wide, Better Buildings for Michigan (Figure 2).



Figure 2. BetterBuildings for Michigan logo.

The BetterBuildings for Michigan neighborhood sweeps were designed as a series of different mini-experiments to test customer response to different program features, including strategies for marketing and outreach, service delivery, and financing and incentives.

Trusted community partners started by walking door-to-door to educate homeowners about the benefits of energy efficiency, upgrade options available, and the best ways to finance upgrades. These partners attempted to make contact with a home at least eight times through in-person visits, phone calls, and fliers. Contractors continued to contact homeowners to encourage more invested upgrades even after the sweep ended.<sup>5</sup>

Focusing marketing and outreach efforts on one neighborhood per month, sweeps occurred in different residential zones across the state, such as Detroit, Grand Rapids, Southeast Michigan suburbs, and others chosen through a competitive bidding process. The program chose these areas to reflect a variety of different income distributions, building types, and home ownership levels, and each sweep aimed to reach 420 total homes.

Specific sweep areas within those locations were chosen according to these criteria:

- Presence of leveraging partners including utilities, foundations, and community action agencies

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<sup>5</sup> <http://energy.gov/eere/better-buildings-neighborhood-program/michigan#demand>

- Demographics and income mix—no more than 20% of the homeowners should be eligible for low-income assistance funding
- Neighborhoods with high percentage of homeownership, particularly for initial sweeps
- Presence and strength of neighborhood groups and agencies
- Loan eligibility—at least one in three homes eligible for Michigan Saves financing
- Synergy with other Michigan programs
- Other special considerations unique to the region

On average, 95% of the housing stock in each neighborhood was built prior to 1970. New houses were felt to be unlikely to need major energy improvements, while houses that were too old often contained asbestos or knob-and-tube wiring that prevented improvement work without extensive and expensive retrofitting. Each sweep tested different financing models and marketing and outreach strategies to learn what worked best. For example, the program reported little difference in customer response for interest rates of 1.99 versus 0 percent, but 7 percent seemed too high for most participants.<sup>6</sup>

The program reported learning that messaging must be based on what’s important to the customer. They began by framing messages around energy savings and reducing environmental footprints, but garnered more interest after they talked about improved comfort and lower heating and cooling bills.<sup>7</sup>

## Employer-Based

BetterBuildings for Michigan sought to expand the reach of its residential energy efficiency program in the Grand Rapids area and maximize its marketing resources through a semester-long, employer-assisted partnership with Grand Valley State University (GVSU) to engage their employees to get upgrades in the first half of 2012.

BetterBuildings for Michigan had completed neighborhood sweeps in Grand Rapids, as well as a number of additional sweeps in other parts of the state. The program had educated a lot of people about the benefits of home energy upgrades, but the sweeps were a lot of work and the results were highly variable.

The program chose GVSU as a partner site because sustainability was already ingrained in the school’s culture, and many employees embraced the ethic. GVSU employees were also computer-savvy, and had a reliable income. GVSU was a “controlled” environment in terms of the employees who lived in Grand Rapids and were eligible for the program. The school also allowed the program to tap into its communication networks, which proved to be a very effective and low-cost way of reaching people.<sup>8</sup>

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<sup>6</sup> Better Buildings Neighborhood Program, Case Study, Spotlight on Michigan: Experiment to Find the Right Mix of Incentives, 2012. [http://energy.gov/sites/prod/files/2014/01/f6/michigan\\_incentives\\_case\\_study.pdf](http://energy.gov/sites/prod/files/2014/01/f6/michigan_incentives_case_study.pdf)

<sup>7</sup> BetterBuildings for Michigan, Final Report

<sup>8</sup> Better Buildings Neighborhood Program, Focus Series, *It’s Academic: BetterBuildings for Michigan Partners With University to Reach Employees*, 2013. [http://energy.gov/sites/prod/files/2014/01/f6/gvsu\\_interview\\_formatted\\_1-28-13.pdf](http://energy.gov/sites/prod/files/2014/01/f6/gvsu_interview_formatted_1-28-13.pdf)

GVSU engaged employees to upgrade their homes and leverage trust, as well as existing and cost-free communications mechanisms that achieved efficiencies of scale at one-third of the cost of traditional methods.

In total, 215 people (nearly 10% of total employees) signed up through GVSU. The percentage of GVSU employees that participated in the program was right around the average that was seen elsewhere in the state. Of the approximately 600 GVSU employees who live in Grand Rapids, 100 people participated in the program (17%).<sup>9</sup>

The GVSU partnership was described by the program as “tremendously successful as an inexpensive lead generator. We spent one-fourth to one-third as much money per participant for marketing and communications compared to a typical neighborhood sweep.” The program first identified 10 to 15 recognizable, credible faces within the campus community and offered them a free home energy assessment in exchange for putting their photograph and a quote on a postcard (Figure 3). They distributed these testimonial postcards to faculty and staff via intercampus mail. The program found certain departments at GVSU participated at higher rates than others. They found this occurred because certain individuals were willing to attend informational sessions and spread the word about the program to their colleagues.<sup>10</sup>



Figure 3. Grand Valley State University promotional postcard that featured staff.

The program had early buy-in from the sustainability staff at GVSU, and the senior management of the university’s human resources (HR) department was very supportive. Using data that the HR department provided the program, a sophisticated customer relations management (CRM) database was developed to manage services to customers. This was considered crucial from a practical standpoint, as it allowed the program to manage questions and concerns quickly and efficiently.<sup>11</sup>

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

The initiative benefitted GVSU and the Michigan program in several ways. Above all, BetterBuildings for Michigan was an accessible, tested program that required little investment for GVSU compared to the services received, and proved to be an inexpensive lead generator for the program. It was also an opportunity for GVSU to provide a benefit to the entire faculty and staff, including adjunct faculty who are not traditionally eligible. Participating also allowed the university to deepen its commitment to sustainability, and served as a model for future employer-assisted efforts.<sup>12</sup>

## House Parties

The Chicago Metropolitan Agency for Planning (CMAP) received \$25 million in funding from the Better Buildings Neighborhood Program for single-family residential, multi-family, nonprofit, and commercial energy efficiency, which in turn utilized the nonprofit Elevate Energy (formerly CNT Energy) to operate the non-commercial programs.

Working within the context of the 2008 Chicago Climate Action Plan<sup>13</sup> and the longer term GOTO2040 Strategic Plan<sup>14</sup>, CMAP and other partners created Energy Impact Illinois (EI2) to help the region meet those short- and long-term goals.

When EI2 did not achieve the response expected from a mass media advertising campaign for single-family residential, the program attempted a very different strategy—one that relied more on a community-based, boots-on-the-ground outreach campaign. Through a “house party” initiative, EI2 brought Chicago homeowners, neighbors, and friends together to learn about energy efficiency opportunities, while increasing demand for home energy assessments and upgrades.

The program planned a communications strategy that included an advertising campaign that ran for several months, and featured “Big” Energy Bill & “Small” Bill. The “Two Bills”, and were actors from The Second City<sup>15</sup> -- a world famous comedy theatre and school of improvisation that has produced stars such as John Belushi, Mike Myers, Steve Carell, Alan Arkin, and Tina Fey, and won awards for its innovative, humorous take on energy efficiency (Figure 4). A series of webisodes were produced, and a social media approach utilized Facebook, Twitter, and YouTube.<sup>16</sup>

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<sup>12</sup> Ibid.

<sup>13</sup> <http://www.chicagoclimateaction.org/>

<sup>14</sup> <http://www.cmap.illinois.gov/about/2040>

<sup>15</sup> <http://www.secondcity.com/>

<sup>16</sup> <http://www.youtube.com/user/TheEnergyBills>



Figure 4. The “Two Bills” campaign garnered media attention.

The program saw a slight bump in traffic to the website, but the number of people signing up for upgrades was far short of expectations. The realization that mass marketing wasn’t enough to spur people to action led the program to develop a more fined-tuned and personally engaging community outreach campaign. The inspiration behind the house party model was the “neighborhood sweep” approach EI2 heard about from the U.S. DOE and other programs like BetterBuildings for Michigan.<sup>17</sup>

The program quickly hired 20 full-time field organizers, including five regional leads with a background in building science who were Building Performance Institute (BPI) certified and trained in program administration. EI2 field staff were responsible for generating leads for house parties from their personal networks; meeting one-on-one with community leaders; and attending community events.

The objective with house parties was to bring single-family homeowners closer to contractors and the process of energy efficiency. For attendees, the positive social environment of the house parties helped demystify the complex topics of home energy losses and building upgrades. Other than bringing five to 10 guests to the party, the only requirement for the hosts was allowing the contractors to do a walkthrough of their homes and demonstrate blower door tests and infrared camera equipment to identify opportunities for energy-saving upgrades. EI2 supplied the staff and the necessary equipment and materials.<sup>18</sup>

House party attendees could sign up on the spot for a \$99 energy assessment for their homes, or volunteer to host a house party and thereby receive a free energy assessment. Including EI2’s payment to the contractor for the host’s \$99 assessment plus outreach staff time, the estimate of per-party cost to the program averaged out to \$200 to \$300.<sup>19</sup>

Over the course of a year, 652 house parties took place with 3,110 people in attendance. More than 2,000 attendees signed up for assessments at the house parties, and an additional 540 attendees contacted the call center to sign up to host a house party—a conversion rate of 82% for house party attendance to assessment sign-up.<sup>20</sup> The momentum generated by the grassroots outreach resulted in the single family residential program achieving over 3,700 upgrades in the

<sup>17</sup> [http://energy.gov/sites/prod/files/2014/01/f6/focus\\_series\\_chicago\\_house\\_parties\\_12-18-13.pdf](http://energy.gov/sites/prod/files/2014/01/f6/focus_series_chicago_house_parties_12-18-13.pdf)

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> Ibid.

end.<sup>21</sup> This demonstrated that helping people see and understand—showing homeowners specific areas of their homes that are losing heat—and giving them a chance to ask questions, can really drive up conversion rates.

## Competitions

The Connecticut Clean Energy Fund was awarded \$4.2 million to implement a program named the Neighbor to Neighbor Energy Challenge – A Community Energy Savings Project. The program was managed by Earth Markets and drew resources and experience from several partner organizations, including the Connecticut Energy Efficiency Fund, Celtic Energy, Clean Water Fund, EMpower Devices/MIT, Mobile Genius, SmartPower, Snugg Home, and the Student Conservation Association.



#	Town	Points
1.	Westport	897,250
2.	Wethersfield	265,200
3.	Wilton	209,550
4.	Ridgefield	196,950
5.	Cheshire	193,950
6.	Portland	163,450
7.	Glastonbury	171,050
8.	Lebanon	116,000
9.	East Hampton	111,500
10.	Bethany	93,900
11.	Mansfield	91,950
12.	Windham	90,900
13.	Weston	87,250
14.	East Haddam	53,650

Figure 5. Neighbor to neighbor energy challenge leader board.

The Neighbor to Neighbor Energy Challenge (The Challenge) used an online leader board to track communities' progress completing upgrades and spur friendly competition (Figure 5).

Those who completed home energy assessments and home energy upgrades earned points toward a town's point total that were redeemed for community energy projects. Towns chose from a selection of prizes, such as smart thermostats, an infrared heat gun, \$2000 toward an insulation lottery for homeowners, and LED bulbs for future promotions.

The Challenge used innovative community organizing techniques, performance-based rewards for municipalities and leveraged community organizations, and a range of other program offerings to help households in 14 target communities across Connecticut achieve more than 3,100 residential assessments.

Drawing from a group of environmentally minded young professionals, Neighbor to Neighbor Energy Challenge created an on-the-ground team—the "Clean Energy Corps"—to educate homeowners on energy efficiency measures, promote online tools available for their use, and provide instant energy efficiency improvements. This Corps worked with community groups

<sup>21</sup> Energy Impact Illinois, Final Technical Report



and civic leaders to help homeowners as they moved through a range of energy efficiency improvements.<sup>22</sup>

Team partners encouraged residents to participate by working through certified professionals under contract with the program and enroll in state ratepayer funded programs with subsidized assessment, rebates, and financing offerings.

The Neighbor to Neighbor Energy Challenge provided energy workshops, an on-line do-it-yourself energy assessment tool and energy tracker, and information that helped guide homeowners. A free CFL install program provided lead-generation as well. The program also partnered with a local university to host an educational session with residents on how to save energy in their homes.

The Challenge program design was structured to ensure that no participant was portrayed as, or considered themselves, a loser in the context of the competition. Some earned more points or rewards than others, but everybody benefited with greater energy efficiency.

### **Data-Driven Segmentation**

The City of Portland, Oregon received \$20 million in funding from the Better Buildings Neighborhood Program for residential and commercial energy efficiency, which in turn utilized the nonprofit Clean Energy Works Oregon (CEWO) as the vehicle to operate the residential program on the ground.

CEWO was born out of a successful pilot project in Portland, Oregon, that tested whether residents would be more likely to adopt energy efficiency upgrades if they were offered a comprehensive package of services and benefits. That comprehensive package included: low-cost, long-term financing to cover the upfront costs; assistance from an independent energy advisor throughout the process and follow-up with a quality assurance review once the work was complete; and the convenience of repaying monthly loan obligations through utility bills.

CEWO utilized an intensive data-driven approach to better understand market segmentation and deliver services that resonated effectively and achieved over 3,000 upgrades.

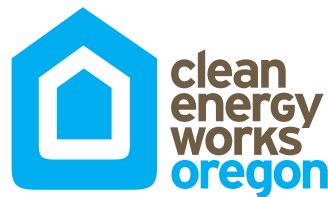


Figure 6. Clean Energy Works Oregon logo.

CEWO invested heavily in market research, as well as customer feedback surveys that were completed by more than 2,000 participants. Message drivers based on surveys and quantitative study included the following.<sup>23</sup>

- Homeowners more likely to participate are also more likely to mistrust contractors and to be concerned about investing in upgrades that do not result in lower energy bills.

<sup>22</sup> <http://energy.gov/eere/better-buildings-neighborhood-program/connecticut>

<sup>23</sup> CEWO Marketing Learnings, as submitted to the U.S. Department of Energy.

- Certified contractors are the most valued program feature among homeowners most likely to participate in CEWO, followed closely by one-stop convenience and financing.
- Upfront costs were the highest barrier to action with 93% of respondents very or somewhat concerned about upfront costs.
- Uncertainty was a barrier with 20% reporting they didn't know where to begin, 11% unsure which contractor to trust and 9% unsure how to find a certified contractor.
- High heating/cooling costs (rational) and helping the environment (values) were the most popular drivers of interest (multiple responses were allowed).

Target audience survey and data responses showed the following:<sup>24</sup>

- Applicants in the 30-40 year old age range were more likely to complete a project, perhaps because they were more likely to be first time homeowners.
- Applicants with homes older than 50 years were more likely to complete a project.
- Female applicants were more likely to complete a project.
- Homeowners with self-reported incomes below \$100,000 appeared more likely to complete a project, perhaps because they were more likely to need program financing.
- Market research suggests homeowners with children were more likely to be interested.

Customer experience data, surveys and social media showed the following:<sup>25</sup>

- Only 2% of homeowners paired with a CEWO contractor opted to change their contractor
- Providing an online project dashboard reduced contact center inquiries compared to the pilot when no dashboard was available.
- Most surveyed participants used the online project dashboard at least once (86%), and almost 20% used it more than once a week.
- Better expectation setting through a clear explanation of the upgrade process improved customer satisfaction with the CEWO Energy Advisors

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<sup>24</sup> Ibid.

<sup>25</sup> Ibid.

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