Case Study: Boston Metropolitan Area

Energy Smackdown: Driving Participation through Friendly Competition

The Model

Energy Smackdown is a community-based program that pits neighborhood teams against one another in a competition to reduce CO_2 emissions. Donald Kelley, Executive Director of the BrainShift Foundation, conceived the initiative as a way of using play and friendly competition to encourage energy reduction measures and behavior change. "We call this a competition, but it's really a 'competition, wink wink,'" says Kelley. "Setting it up in a fun way is the key to helping people make changes."

The basic concept is simple: bringing people together to play a game is more likely to encourage meaningful action than simply making energy efficiency information available. By joining the competition, participants try to reduce their own energy consumption, and help members of their communities do the same. The idea is to help families and communities think about energy use holistically, taking into account both behavior and physical living space. Tracking the different ways people use energy compared with their neighbors helps guide participants in that process. The game, in other words, operates both at the individual and the public levels, as participants perform simple, energy saving actions in their homes, and engage others on the issues of energy use and climate change.

> "Boiled down to its essence, Energy Smackdown is a party. It's going to be fun, and we want everyone to come. We're going to play some games, and people are going to walk away with new friends and some rewards. Only we're doing it on a larger scale out in communities, and it's a game of reducing energy."
>
> *— Donald Kelley, BrainShift Foundation Executive Director*

In its most recent pilot phase, Energy Smackdown brought together three teams from the Boston-area neighborhoods of Arlington, Cambridge, and Medford. The teams each formed a leadership council and recruited a total of approximately 100 households. Each household received a free, professional energy usage and lifestyle audit at the program's outset, provided by MassSave in cooperation with partner utilities, National Grid and NSTAR. The audit gave teams a baseline of energy usage and helped the participants identify some energy saving ideas.

The teams engaged in two different types of year-long competitions, which combine to make up Energy Smackdown: the household challenge and the team challenge. In the household challenge, the object of the game is to reduce CO_2 emissions as much as possible on a per person basis. Reductions were measured in six areas: electricity; heating fuel; pounds of landfill-bound waste (as opposed to compost or recycling); air travel; auto travel; and servings of meat (which is more carbon intensive than other food choices). The challenge also included increasingly difficult levels of emission targets for families to pursue—to reach the top level (Level 10) meant emitting less than 1,000 pounds of CO_2 emissions per person, per year.

In the broader team competition, the object of the game was to earn points, based on performing specific energy saving actions in homes—installing low-flow aerators on showerheads, for example. Teams also worked together during special "challenge events," such as replacing incandescent bulbs with CFLs throughout the community, to earn even more points. Each individual action, termed "nugget" in Energy Smackdown parlance, could then be recorded online, allowing participants to track their team's progress and the progress of their opponents.

The Air Sealing Challenge event saw the three teams compete to reduce the amount of air leaking from one home in each community.

"This is a proactive approach to energy conservation," said Cambridge Mayor Denise Simmons during her team's first meeting. "When we're finished we'll not only have done something fun, interesting, and important, but we will have brought a larger community into the conversation. What more can you ask for?"

Lessons for Increasing Participation

Energy Smackdown, though still in its formative stages, appears to be working, as participants are retrofitting their homes and making smarter energy choices. The program offers a number of lessons for motivating community participation and reducing energy consumption in the residential sector.

Friendly Competition

Turning energy reduction into a contest distinguishes Energy Smackdown from other residential efficiency programs. By translating the often ambiguous notion of energy efficiency into something quantifiable—I can earn X points for my team by insulating my attic, for example—Energy Smackdown makes energy savings easier to understand, and guides people to smart energy choices. "It really raises awareness among people who participate," says Annie Lacourt, a Selectman in Arlington. "All of a sudden people have solutions and action steps that make it easier to assess their lifestyle."

> "Saving money and saving the environment are important messages, and are imbedded in everything we do. But a third key message we lean on, and one that doesn't get heard enough, is that you can have a good time doing it."
>
> *— Donald Kelley*

Sponsors have donated a number of awards and incentives—free dinners, bicycles, theater and sports tickets—which help reinforce the competition. Organizers hope to offer bigger prizes as the program expands, but view the rewards as primarily a motivational tool. "The prizes are nice," says David Rabkin, captain of the Cambridge Team, "but the friendly competition is really what's important. We like to talk in team meetings about beating those damn Arlington folks, but the competition is really an excuse for us to try harder ourselves."

Building on Program Momentum to Increase Awareness

Energy Smackdown tries to use the excitement around the head-to-head competition to raise awareness about energy efficiency throughout the community.

Kelley sees television as one key strategy to engaging a wider audience. Energy Smackdown has produced a video series on each of the first two pilot phases, which aired in theaters and on local television in the target communities. The shows have also attracted thousands of viewers on the Energy Smackdown website, and have drawn interest from other New England television stations.

> "It's not that we didn't care about the issue of greenhouse gases before, we just didn't have the tools to be able to do something about it."
>
> — *David Rabkin*

Episodes profiled competitors, featured home energy audits, and captured the festivities that are built into the year-long competitions. Citing the immense popularity of reality TV, Kelley believes that viewers can be drawn in by the excitement of competition, and learn from the steps that neighbors are taking to reduce their emissions. "People saving electricity in their home, that's like watching moss grow, but entire teams in head-to-head competition, now that is exciting television!" says Kelley.

Energy Smackdown also organized five challenge events that helped introduce the program to a wider audience. The challenges included a reality show-like Smart Transit Challenge, in which teams had to minimize CO_2 emissions while covering 25 miles and five checkpoints in four hours; a Light Bulb Challenge, where teams switched out nearly 1000 incandescent bulbs for CFLs in four hours; and a Localvore Banquet, where teams prepared and served full-course meals from local ingredients. "The challenge events were really important community learning experiences," says Rabkin. "Once you've helped people do the thinking on saving energy, it makes actually doing it seem much more accessible."

Engaging Stakeholders

Energy Smackdown has been successful because it has involved a wide variety of community stakeholders in the competitions. The program begins each new pilot phase by forming a leadership council in each community, often comprising the mayor, other elected officials, volunteer team captains, and representatives of community organizations. The leadership councils identify and recruit participants, guide challenge events, and provide teams with support ranging from public meeting space to publicity and outreach. This kind of engagement allows local officials to lead in ways that that are beyond the traditional scope of government. "We can't have town managers harassing citizens to turn down their thermostats," says Lacourt, "but we can do something personally, and use our platform to get others involved."

A MassSave auditor discusses potential energy improvements to a house in Arlington.

Utilities have also been key supporters of the program, offering free home energy audits, data monitoring, prizes and incentives. Utility staff have served as Energy Guides, educating participants about home energy upgrades and existing incentive

programs. "One of the program's strengths is that it put me in touch with people who think about this stuff all the time," says Lacourt. "We're thinking about installing solar panels now, and even financing them was something I didn't know anything about before."

Developing Community to Sustain Participation

Energy Smackdown works to complement physical home energy upgrades by developing a community that supports behavior change among participants. The program conducts social team events—kickoff, halftime, and finale celebrations, as well as the five community challenge events—to cultivate a community spirit of energy efficiency, which helps sustain energy savings beyond the competition. The next pilot phase will also include "buddy evaluations," in which some participants will be trained to walk with teammates through their homes and help document next steps.

"What continues to hold us together is the community that was brought closer by Energy Smackdown," says Rabkin. "Sharing ideas and teaching one another continues to be really satisfying."

Since completing the competition, several families have hosted unofficial events, such as a combination barbecue and solar hot water demonstration in Arlington, that continue to reinforce energy reduction. Team members have also formed networks to help each other renovate their homes to be more energy efficient. "We want to have a program where there is support from fellow team members. They become each other's biggest motivators," says Kelley.

Impact and Evaluation

Results of Energy Smackdown, Phase 2

Participants made the following home improvements:

- 77% reduced hot water temperature
- 69% replaced incandescent light bulbs with CFLs
- 54% air sealed and/or insulated their homes
- 46% installed low-flow aerators
- 38% purchased green power
- 38% replaced at least one major appliance with an Energy Star model

CO_2 emissions

- Average annual reduction was 20%, or 3000 pounds, per person
- Winning household: 54% reduction
- 1st runner-up: 47% reduction
- 2nd runner-up: 44% reduction

Heating fuel consumption

- Average annual reduction of 17%
- Winning household: 66% reduction
- 1st runner-up: 51% reduction
- 2nd runner-up: 44% reduction

Electricity usage

- Average annual reduction of 14%
- Winning household: 73% reduction
- 1st runner-up: 37% reduction
- 2nd runner-up: 28% reduction

Challenges

Staffing levels, the team structure, and data management have all been challenging areas for Energy Smackdown. Kelley was the program's only full-time employee, which meant that the program relied heavily on volunteers. Because the number of competing households was higher than anticipated, the program was unable to provide as much support as was needed to participants, sponsors, and the media. The budget for the next pilot phase includes funding for six full-time positions.

Each team will also have a more formal governing structure, with captains and co-captains, supported by a paid staff member. Organizations will be called upon to help coordinate their members, and former competitors will help guide new participants in their neighborhoods, easing the workload for program staff and team leaders.

The program is also working on streamlining data collection, and improving the data entry process is one of the main goals of Energy Smackdown's third pilot phase. "Data entry was a pain," says Rabkin. "One of the reasons the Cambridge team lost is that we weren't good about entering our data." The program is creating a single web portal that will make data entry easier, and provide real-time feedback on individual and team results, as well as information about competitors' progress. The website will also feature a social networking component, helping to reinforce the community building that drives the program's sustainability.

Next Phase

Phase three of Energy Smackdown's pilot is set to begin by the fall of 2010. The competition will involve five communities, including Arlington, Cambridge, and Medford, with a minimum goal of 1000 competing households in each community. Competition requirements will be less stringent in order to encourage wider participation. "If they want to come in and just simply replace some bulbs to help get points for their teams, they can play that way," says Kelley.

Kelley has received nationwide requests from communities looking to start their own Energy Smackdown programs. Though he wants to refine the program model before rolling it out on a broader scale, he believes that it can be replicated in major cities, and even around the world.

"I'm very excited to ramp up. Eventually we want to be able to have a competition where we can look and say, 'How are the Danes doing it? Versus how are the Bostonians doing it? Versus the Vermonters?' Because this is real life drama we're talking about. And what could be more dramatic than competing to save the planet?"

For More Information

Enery Smackdown homepage:
http://www.energysmackdown.com

MassSave homepage:
http://www.masssave.com/

This case study was produced for the Climate Leadership Academy Network for the Green Boot Camp, coordinated by the Institute for Sustainable Communities in partnership with Living Cities. The purpose of the CLA Network is to provide peer-to-peer learning opportunities and technical assistance, helping network members advance their work in building energy retrofitting and green job creation. For more CLA Network resources, visit www.iscvt.org/clanetwork. For more about the Institute for Sustainable Communities, visit www.iscvt.org. For more about Living Cities, visit www.livingcities.org.