

# Energy Smackdown

May 18, 2011

## Webinar Transcript





## Landmark Designation

The program described in this case study was designated in 2010.

Designation as a Landmark (best practice) case study through our peer selection process recognizes programs and social marketing approaches considered to be among the most successful in the world. They are nominated both by our peer-selection panels and by Tools of Change staff, and are then scored by the selection panels based on impact, innovation, replicability and adaptability.

The panel that designated this program consisted of:

- Melissa Klein, US EPA's ENERGY STAR® Program
- Arien Kortland, BC Hydro
- Clifford Maynes, Green Communities Canada
- Stephanie Thorson, Summerhill
- Devin Causley, Federation of Canadian Municipalities
- Edward Vine, Lawrence Berkeley National Laboratories
- Dan York, ACEEE

*This transcript covers a webinar held on Wednesday May 18, 2011. Additional materials about this program can be found at: <http://webinars.cullbridge.com/course/view.php?id=643>.*

---

## Introduction by Jay Kassirer, Tools of Change

This season, Tools of Change has been offering dozens of social marketing webinars, not only in home and building energy, but also in sustainable transportation and social marketing instruction and review. Starting next season after the summer, we will be having a broader range of case studies, as well, but we will continue in these two topic areas.

This is the last of five energy conservation case study webinars this season. This one is a *Landmark* case study that was designated this past year, and this designation recognizes programs and social marketing approaches that are considered to be among the most successful worldwide. They're rated by a peer selection panel [panel members are listed at the beginning of this transcript]. They look for impact, innovation, replicability, and adaptability, and based on these factors, this case study was selected as a *Landmark* case study.

According to panel members, the strengths of this case study are as follows. There are a wide range of actions in this case study, a wide range of things that people can do to make their lifestyles more energy efficient. These actions are linked directly to carbon dioxide reductions and there have been significant individual impacts recorded through the pilots. The panel wanted to know more about the persistence of these results, i.e., how long you can keep an approach like this going, what portion of the population would actually be willing to do the sorts of things that Donald Kelley will speak talk about today, and what the savings were per household in kilowatt hours.

In terms of what to look for in this case study regarding the planning stages, this is a good example of piloting and refining a program. In terms of the four Ps, there is a good focus on product – particularly how to make your product fun and how to integrate competitions into what you're providing for people – and in terms of place, i.e., the special challenge events that they've organized and how they reach people through those events.

In terms of the *Tools of Change* that we recommend, you'll see good use of building motivation over time, feedback, prompts, norm appeals, incentives, and obtaining a commitment, as well as vivid personalized empowering communications.

Donald Kelley is the founder of the BrainShift Foundation (<http://www.brainfound.org/>) and the creator of the Energy Smackdown (<http://www.energysmackdown.com/>), an innovative program for reducing energy use through game play. His experience is in the design and production of experienced-based learning systems.

He's been featured in the *New York Times*, *Christian Science Monitor*, *Boston Globe*, Yahoo Green, and CNET. Previously, Donald was president of BrainShift.com Inc., a learning technology company that specializes in game-based learning simulations. He

---

received his BA in zoology from the University of New Hampshire and a Master's in education in interactive technology.

***Donald Kelley, Energy Smackdown***

It's a pleasure to have the opportunity to speak with you. It was great to see what the panel thought was especially interesting about the Energy Smackdown. I'm going to tell you what my experience has been, how it got started, and what I see as the potential impact for programs that you have within your own communities. Before we get going, are the participants interested in doing a competition or game-based approach in their community? And is anyone actually doing that? [Participants answered; most indicated their interest, none have, to date, implemented this approach]

What is a game-based approach? In a nutshell, you score points and win prizes or some sort of recognition for achievement. It can be any sort of a friendly competition, but there will always be a scoring method to put the comparison into a game perspective.

[Slide] Energy Smackdown is a community outreach program for reducing carbon emissions. It's an outreach program that has this game or fun approach. The concept came after I had visited many communities and kept hearing the same theme: *How do we get people to take an interest in reducing their energy use? How do we get people to care?* It was a burning question that I kept hearing, and with my background in interactive technology and game-based approaches, I thought that it was a great application for getting people to attend to this critical issue. It started with my experience in the Democratic Republic of Congo.

I was in the Congo for three years as a Peace Corps volunteer. While I was there, I would hear often from my students and fellow teachers about how great the United States was, and when I drilled down and asked them what was so great about it, they often would talk about Hollywood movies and the strong military. It is true that Americans have a wonderful ability to entertain. We know how to entertain in the United States. It just seemed like a great approach to apply to some of the burning questions of the day, and certainly, energy is one of those questions. In 2007, I formed a non-profit, tax-exempt foundation, the BrainShift Foundation, and then organized a pilot in October 2007.

The pilot involved three households in Medford, Massachusetts. The three households would compete against one another to reduce their energy use. In 2009, the foundation organized a second pilot involving three Boston area communities, Medford, Arlington, and Cambridge, and a total of 120 households that participated. The concept is simple: teams of people compete. Competition is the word that you often hear associated with it, but it's more like collaboration than competition.

The teamwork is an important piece of it. The results are tracked for teams and individuals. We were audited by our local utility for reductions in electricity and natural gas usage. Our results were confirmed by National Grid and NSTAR. We calculated the

---

data as points, which were equivalent to pounds of CO<sub>2</sub> reduced; for 10 pounds of CO<sub>2</sub> reduced the team was awarded 10 points. If you saved 10 pounds of CO<sub>2</sub>, you earned 10 points.

The actuals for the year were measured against a baseline that we measured at the beginning of each season. We measured the baseline based on the previous year's history and then compared the actuals against the prior year's baseline. [Slide] Here are the results. You'll notice that at the start of Season 2, this is where we had three communities competing, we started out at an average of roughly 14,500 pounds of CO<sub>2</sub> per household. That's below the U.S. average of 18,000, so these households were a little greener than the average U.S. household.

By the end of Season 2, which was a full 12 months, they were down to, on average, 12,000 pounds per person – that's per person – and that does not include infrastructure of CO<sub>2</sub>. For example, it would include miles driven in a car, but would not include the CO<sub>2</sub> to create the transportation system to maintain the highways and so forth. By the end of Season 2, the usage was around the target for the Kyoto Accords of 11,000 per person, but it was still well above the world average of 8,000 and 4,500, which some experts say we need to get down to in order to stop global warming.

The core values are a friendly competition. There's no back-biting. It's not like Donald Trump's *The Apprentice*. We didn't want to have that kind of intrigue and negativity going on in our competition. We wanted it to be friendly and collaborative. We looked for diversity in the communities and the organizations that were involved. A big piece of this program was developing a network of support, so my hunch at the beginning was that we could tap into a very powerful network to support energy reductions, and that was neighbours. Just having a teaming approach, I felt, was likely to bear fruit, and I believe the results of the two pilots bore that out.

Another key value was if we didn't find a result that we could measure, we really didn't pay too much attention to it, so measurement and verification were keys for us, in order to keep it real.

[Slide] I want to say a little bit about the context and the rationale of the program. Basically, this is about getting more people to care and we have here in the graphic Stephanie and Rob on the left. They just got married and they've got all sorts of things to pay attention to, apart from energy efficiency.

They're thinking about buying their first place and their next vacation, and for Stephanie and Rob, [slide] like a lot of people, saving energy is gonna either mean changing out a few incandescent for compact florescent bulbs or they have to buy a Prius. What this is set against is the backdrop of our steadily increasing consumption since, really, the end of World War II. We have steadily upped the ante, in terms of our per person consumption, and so our habit is to consume a lot, and there's a lot going on in our lives, so how do we get people to really take an interest and care?

---

The Pew Research Center did a study on issues that were most important, the most important concerns on people's minds, and of 20 concerns, global warming came in last place. Yet there's something about global warming in the news every day, so how can we really engage people? How can we take the situation there on the left—the boiled frog parable that says that if you leave a frog in water and slowly increase the temperature, as our level of consumption has slowly increased over the years, the frog will never jump out of the water and will eventually get boiled—and actually create raving fans?

Raving fans are insanely involved, they're insanely committed, they're like this guy in the slide. They care so much about their team that that they'll paint their faces. How do we get people who are living normal lives in the U.S. and Canada to pay close attention to a key issue of the day? For an example of how this has been done successfully, you don't have to look any further than *American Idol*.

[Slide] The numbers on the right show the numbers of people who will pay their own way to fly or take a train or drive to get to San Diego, Dallas, Omaha, for a chance that they might be on TV and get a chance to sing along with Stevie Wonder. It's amazing. The response that this television program gets—a program that many people think is empty and pointless—is impressive. Thirty million viewers will vote in *American Idol*. You have to admire what the show's producers have been able to do in terms of getting people to be raving fans.

[Slide] This slide here talks a little bit about the fusion of innovation theory that was first created at the turn of the 20<sup>th</sup> Century, in the 1890s. It basically says that people adopt new ideas and technology in a step-wise way, according to the type of person. The innovators are adventuresome and daring, those are the ones on the left side of the slide, 2.5% of the population. The early adopters are opinion leaders, but they are more careful about adopting new ideas, and so on, all the way over to the laggards.

Right now, we're seeing people who are innovators and, I think, early adopters, who are paying attention to and putting effort into and spending money on energy efficiency because they're concerned about the environment. But there's this whole other group, even the early majority, the late minority, certainly, who have not really tapped into this. My question is how do we get the "NASCAR race crowd," the people who show up at stockcar racing, to become raving fans in terms of caring deeply about energy efficiency?

The phases of the Energy Smackdown started with this Medford pilot. We did an expanded pilot in Phase 2 and now we're planning a third phase. We're targeting 1,000 households in five different cities.

[Slide] Phase 1 was done over a five-month period with three households. We measured electricity, natural gas, auto travel, air travel and waste. We asked people only to make changes that they could sustain for a year. We specifically asked them not to pick up on

---

something just to game the system. I believe they cooperated on that. I say that because they repeated it back to us. They said back to us that we decided not to do that because we didn't think we could sustain it for a year.

Then we evaluated the savings in CO<sub>2</sub>. We looked at kilowatt hours reduction, at sterns of gas reductions, at miles of auto travel reductions, and pounds of waste sent to the landfill. We were also interested in how many people the pilot households could get involved. We gave them two weeks to invite their friends and neighbors and they responded in a big way. In two weeks, one of the households brought 25 other households into the contest.

[Slide] I love this quote by Churchill, "However beautiful the strategy, you should occasionally look at the results." As I said earlier, measurement and verification were key parts of the program. Overall, this is what we got with those three households. [Slide] On the left is the household that won the five-month competition. They went from 18,692 pounds of CO<sub>2</sub>, or we called those points, down to 6,850, a 63% reduction in five months. The family next to them lives in a 4,000 square foot house. They were above the U.S. average, in terms of per person CO<sub>2</sub> production. They thought that they were not doing well at all, yet, they still reduced by 36%.

[Slide] This slide shows how one of the households, the one that reduced overall energy use by 63%, did it. You can see their gas usage. You would expect their gas usage to reduce, since they were coming into the summer season, so naturally, that went down. But take a look at this one. This is their second car. By the time they get to a year, they're hardly even using that second car. The family decided to take the train to visit relatives in Portland, Maine, rather than drive, but here are the trips in the car when they decided to drive, rather than take the train. You can also see electricity usage went down from the beginning, even though they were into the summer air conditioning season. That gives you a sense of how they were able to do it.

[Slide] What did the households have to say about this? I think this really pertains to even the second phase, as well. These themes played out throughout our experience with this. First of all, they said it was challenging.

They gave us examples. They were timing their showers, for example, bicycle riding on cold days, so forth. But they also said that it wasn't hard. The participants felt that they truly underestimated the opportunities, meaning that, except for one family, they thought they were doing all they could do to reduce energy. Once they got going, they found out that that wasn't the case. We organized challenge events to keep things fun and to make it interesting for video, and they felt the challenge events were very important.

One of the challenge events we planned was a travel challenge. We challenged them to get from one point to another using a low-energy method of transportation. They were very creative in how they wanted to do that. They stepped up to the plate and truly enjoyed it. The feedback we got from that was that the challenge events were actually

---

quite a bit of work, but they felt that they were very important. We felt that the collaboration really needed to be fostered, that getting them to work together was something that they were looking for our guidance on. They weren't going to do that on their own.

Aside from calling each other on the rare occasions, the collaboration would not happen, them interacting with the other households, unless we made it a part of the program. That became even more important in Phase 2, in our second pilot.

[Slide] The Phase 2 pilot involved three communities. We tracked and analyzed the results of 10 households in each community, but we had about 40 households in each community, just slightly over 120, participating. We measured over a 12-month, four-season cycle. We measured electricity, gas, oil, auto travel, air travel, waste, and servings of meat, believe it or not. We asked people to report how many servings of meat they ate. In the review, I think one of the things that people appreciated about the program was that it was comprehensive. We felt that it was important to be comprehensive because people really are interested in the big picture.

We organized four challenge events, including a "locavore" event where we had the teams competing to serve meals that were grown from locally sourced produce and food products. We have that on video. The tracking was done on the web. We created a tracking site, a web tracking tool, and this screen [slide] here shows how we tracked, in this case, electricity. The categories are in the upper right: auto travel, electricity is highlighted, meats, heating, air travel, and waste. The red shows the amount of pounds of carbon over the baseline.

The green shows where the teams did well, compared to the baseline the previous year. In Phase 2, we got a reduction of 17% in greenhouse gases, on average. We had some people actually increase their usage. One of the funny stories was of a family, very green, actually, but they decided to buy their daughter a gecko, and the gecko required a heat lamp in the terrarium. The heat lamp was on 24/7 and it caused an increase in their electric usage. Another family was in the process of doing construction on their house so they had a huge increase in electricity from all the power tools.

You can imagine that air travel would increase, depending on what their travel plans were for the year. Overall, we got a reduction in electricity of 14%. Some reduced by more than 60%. We got a strong reduction of 17% in gas and oil use. The burning question now is: Can we scale this up and do it for a much larger population? I believe we can.

[Slide] This shows Phase 2 Results and the sort of participation. We had 77% of the people choose to reduce their hot water temperature. About 40% of the people chose to purchase green power. In the U.S., you pay a little bit more if you choose to purchase green power, so that alone I felt was a great promotional tool for purchasing green power. Thirty-eight percent replaced major appliances, and that would include refrigerator, washer, dryer, or heating system.

---



[Slide] This is a summary of the results. You can see that the average per person household usage production of CO<sub>2</sub> went from 14,599 down to 12,000 over the 12 months. The per person reduction in CO<sub>2</sub> was 2,599, less than 2.5 tons. In terms of participation in the challenge events, we got 65% participation (out of the 120 participants). We had three corporate partners, including two of the utilities in the Boston area, 18 prize sponsors, and the program was featured on many TV stories, and web and print articles, including an article in the *New York Times*.

[Slide] As for the lessons from Phase 2, one was that the data collection really needs to be more streamlined. People were very forgiving and they went along with our request to get their data entered in correctly. We had glitches with the web-based tool for tracking their usage, but it really needs to be streamlined. People are very busy. I would like the data entry to be like doing your taxes a second time. There's a lot of data entry at the level of tracking that we did here. That needs to be made easier for people to participate. We had churches, schools, businesses all willing to participate.

Many other organizations wanted to be involved, but we had no capacity to support their involvement. That is a big focus right now and we don't want to launch Phase 3 until we have the support structure, the infrastructure to support wider participation. Local media was very enthusiastic. It's a great approach, a fun approach, and great for news stories. The sponsors were all enthusiastic. It was a win/win in that way. The goals for Phase 3 are to scale up, and in doing so, to work with the local environmental committees and the local utilities and so forth to make it work with local efficiency programs. That's key.

Obviously, we want to maximize the energy savings per household but also help respond to that concern that so many community organizers have about how to get people paying attention to this stuff. Many of these communities in the Boston area have action plans, environmental action plans, but now they've got the challenge of getting people to act. That's a key goal for us in Phase 3.

[Slide] The framework for Phase 3 is, again, 12 months, a four-season cycle, five communities, with 1,000 households per community. That's our challenge.

In summary, I think you've probably got the gist of what this is about, but I want to say it in just a nutshell. It's a community outreach program to reduce energy use and greenhouse gas emissions, but it's also education. There's an educational component to this, and it's experienced-based, it's learning by actually doing, so the idea is to get people actually doing it, and they're gonna learn about it while they're doing it. So many people think they know about this stuff already, but they really don't know until they get into it and they do it, and then they really learn. It is social marketing, of course.

You guys are all very, very conversant on social marketing and there's certainly a social marketing aspect to this. We created a video series. Many people know of the Energy Smackdown as a reality TV show, and we have plans to move that into more of a national

---

level broadcast. Then it's a system of support, and as I mentioned, support comes in no small part through neighbors and friends.

Jay Kassirer: Thank you, Donald. We have quite a few questions and we'll do our best to take them in the time we have, but any that aren't answered, Donald has agreed to give us the answers in writing afterwards.

## Q&A

Q: How did you keep people engaged in the program? Did you promote this to other communities and audiences or stakeholders? What tactics did you use?

A: A key element to keep people engaged, we felt, was to engage the citizens, the leaders in the community and then support them to organize the contest so that it was fun for people and so they saw real rewards. To keep them engaged, 1) recruit strong leaders in the community, 2) make sure that it stays fun, and then 3) provide rewards.

Q: Can you give us a little more detail of what you mean by typical prizes or incentives?

A: The prizes ranged from dinners at local restaurants to bicycles from the local bike shop. A lot of people think that you need to have a big prize, like a trip to Hawaii or a Prius, but we didn't have big prizes. But we definitely made a big deal out of the prizes that we did offer. As for promoting it to other communities, we really didn't. They came to us and we've had communities from around the country come to us, so we didn't do anything to promote it.

Q: I noticed on the graph with the three households that the third house with the low baseline reduced to the same amount as House 1 with the high baseline, but obviously didn't get the high reduction percentage. Did you get feedback from the "good households" that a reduction challenge was difficult for them to win, and therefore, less engaging?

A: Great point. Yes, for that reason – and that was a concern, actually, from that household that you're talking about, the third one on the right on that graph. Right at the beginning, they said, well, we're never gonna win this because we're already starting out pretty low. And we said, yeah, but we're gonna measure you in percent reduction, so that was really the way we awarded the first, second, and third place. On a percentage reduction.

Q: Have you determined whether any demographic is more receptive than others to this approach?

A: Yes, I would put kids at the very top of the list because they get it right away. They've been raised in this game culture and they play games, so it connects with them right away. I would say working young professionals are most engaged. I would say the

---

ones that were a little more challenging to get on board were the folks over 65, who are elderly. In some cases, they needed more explanation as to how this fit in their lives and why we were taking this approach. Let me just say one other thing. That's age demographics. In terms of other demographics, I didn't see so much.

We had people from all income brackets, all educational brackets, and all levels of CO<sub>2</sub> production or energy usage, some that were real energy hogs and some that were very green, so it went across the board in other respects, but in terms of age, we felt that the older folks were a little harder to get on board.

Q: Aside from the competition element, can you give some examples of what else you did to put the fun into this?

A: The quick answer to that was to listen and respond to the participants. The participants, the team members, had their ideas on what would make, for example, the light bulb challenge that we did really fun. We took their ideas and incorporated them, and lo and behold, it was a great experience for all of us. They had a great time, wonderful results, and I think that theme sort of played throughout the whole experience.

We listened to them and incorporated their ideas. Of course, you have to start with something, a framework that is fun in the first place, and a lot of that came, initially, from me. It's been part of my upbringing to see the world from that perspective, as a fun, game-type approach.

Jay Kassirer: We have some other questions, but we've run out of time, so we'll pass those on to you, Donald, and we'll get the answers back to folks who are participating. Thanks very much for being willing to share your experience with us and we very much look forward to seeing what happens in Phase 3 when you branch out to quite a few more people. It'll be interesting to see whether you can keep this level of change and engagement going. That will be something we look forward to in the future as we update this case study. Thanks very much, Donald.

---