

Cape Light Compact, Smart Home Energy Monitoring Pilot

March 4, 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
- Edward Vine, Lawrence Berkeley National Laboratory
- Dan York, ACEEE

This transcript covers a webinar held on Friday March 4, 2011. Additional materials about this program can be found at: <http://www.toolsofchange.com/en/case-studies/detail/651>

Introduction by Jay Kassirer

Welcome everyone to today's webinar, "Cape Light Compact, Smart Home Energy Monitoring Pilot," which was recently awarded a Landmark designation by our peer selection panel. Landmark designation recognizes programs and social marketing approaches considered to be among the most successful in North America. They are selected on the basis of impact, innovation, replicability, and adaptability.

The selection panel noted a number of strengths in the Cape Light Compact, Smart Home Energy Monitoring Pilot. It has well-designed and executed evaluations; there are relatively high individual savings on average, compared to what is seen in other places across North America; there is good incorporation of latest smart energy technologies and behavioral approaches; there is the use of real time feedback and support elements for people to overcome barriers; and there were competitions between various communities.

There were one or two things that the panel wanted to know more about (these will be covered today by Kevin Galligan) such as how long are these savings lasting? What's the long-term persistence? How cost effective is it to use this approach?

This case study illustrates some of the stages of planning a social marketing approach, such as formative research, and piloting with comparison groups to assist with attribution. You'll see, also well-illustrated, the use of partnerships. In terms of the Tools of Change that they were using, there are also good illustrations of *real time individualized feedback* (that is, telling individuals about their own impacts as well as having community feedback, which we see more often), *vivid personalized empowering communications*, and the use of *norm appeals*.

Kevin Galligan, Cape Light Compact

I am the energy-efficiency program manager with Cape Light Compact (<http://www.capelightcompact.org/>). As you can see by the lead-in slide, we are pleased to be exploring energy efficiency in a new way, through innovative technology, but also through the incorporation of behavioral change that many of us learned in school in sociology and psychology courses. Who knew we would meld the engineering disciplines with behavioral science?

Briefly, a bit about Cape Light Compact. [Slide] We are located on Cape Cod and include Martha's Vineyard (Massachusetts). We are a municipal aggregator, that's the statutory name of who we are. We administer a \$24 million (USD) annual energy-efficiency program budget. We serve 21 member towns, which in fact formed us, and all of the customers that make up the residential base of customers, primarily. We also have a good sprinkling of service type industry and businesses.

In all, we have approximately 200,000 electric accounts, 87% of which are primarily residential. Our mix of business and industry is more the service sector (hospital, hospitality, small business, and also a relatively small landlord rental mix). We also are

very seasonal and the predominance of second homes is significant. For your information, our population change-ratio, between summer and winter, is in the order of three to one. In July and August on Cape Cod on the Vineyard, particularly when a certain president and his envoy arrive, it definitely changes the population. It is one of the things that we must look at, particularly when we're incorporating technology that could serve some of these remote homeowners.

How many of you are excited to be part of the increased effort and focus on greater efficiency? [Participants answered] Thank you, great reaction. This is really what we are all a part of. I believe truly that we are the first in terms of a time period to be part of the alignment of not only the knowledge that we all have, and is coming out of the schools, but the public policy is truly aligned and recognizes energy efficiency as our first investment. It is the best path to grow our economy. It certainly, as we all know, helps the climate, and bottom line, for all of us, is it saves us money.

Fortunately, in Massachusetts, we have, through what's referred to as the *Green Communities Act* that was signed into law in July of 2008, a requirement that, is as quoted here [slide], "all electric and natural gas resource needs shall first be met through available energy-efficiency demand reduction resources that are cost effective, or less expensive than supply." That is a mouthful, but it basically says, you should not be budget constrained. You should not be measure constrained, as long as you can identify abilities to serve customers, and do it well. In other words, for every dollar of rate payer funds that we use, we're able to demonstrate that more is able to be returned. We're going after it. It's a very exciting time. Deeper, broader savings is what we're also embarking on.

We certainly continue to do the light bulbs and efficiency improvements in homes, but we're looking for more. That was one of the elements of the *Green Communities Act* in Massachusetts, that we are, in fact encouraged to allocate a certain portion of our budgets to explore pilot programs that may be unique to individual program administrator territories, or in fact, help the broader population of customers.

Getting to the pilot that we're going to be talking about here today, I give thanks to the Northeast Energy Efficiency Partnership, who, just through a phone call and a reach out, said why don't you sit down with these folks at GroundedPower Inc. (<http://groundedpower.com/>) because they might have a interesting idea that you might be able to learn from or build from. [Slide] This is the suite of energy-efficiency programs that we have today. But we deliver services to all sectors of our customer base – residential, as I mentioned earlier, is a large part of our customer base.

We deliver comprehensive home energy assessments, promote lighting, appliance, consumer products that carry the ENERGY STAR® label, ENERGY STAR® Homes, and major renovations, and as I mentioned, these deeper programs that go after how consumers can really build up their homes through shell improvements, deeper measures that could bring much greater savings, to the tune of more than 50% energy reduction. We actually are seeing some of those occur now. As folks know, General Electric and

Rheem, and other manufacturers have introduced some heat pump water heaters, which we're doing some pilot studying on. Soon we'll be talking about the next phase of the home energy monitoring pilot, which built on Phase 1.

We know that for low-income customers energy is a big component of the bill. It's very challenging. We have specially designed low-income programs for income eligible customers, as well as whole business programs that come under our commercial/industrial programs. The thing that I try to stress with all of our customers is that participation is easy. Just make the call. It's as simple as that. Our 1-800 number brings customers to all of our programs.

For Phase 1 of the Smart Home Energy Monitoring Pilot, as I said, it was suggested that we sit down with the GroundedPower folks, who were the vendors that were working with some ideas at the time back in early 2009, and suggested the concept that we then tossed out to our customer base through a very small news article. We got overwhelming interest, receiving more than 200 calls from customers who said, "Sign me up." At that time, we really didn't even have the product defined, but we were interested in developing something that could build on the behavioral science that the GroundedPower folks brought, along with the technology that they were anxious to prototype.

We then determined to select 100 participants. As a back drop to this, do you remember what was going on in the fossil fuel market at the time? What the price was at the pump? We were coming into the beginning of 2009, after oil prices went up over \$138 a barrel in October 2008. We did have an increased awareness from many, many customers to find more and innovative ways to save energy. We signed them up. We tried to be equitable, in terms of distributing the participants across our base of towns.

We also wanted to be sure that we could strive to find some energy savings through the influence of the initiatives. We set, as a ground rule, annual use of greater than 600 kilowatt hours per month, on average. We really wanted to try to strive to see what we could squeeze out of energy efficiency because there could be those customers that have adopted everything we all support, including on-site generation that would probably not be the best initial look. We provided some screening to see what we could really learn.

[Slide] Systems were installed between July and September 2009. As Jay mentioned in the introduction, early on we kicked off the evaluation study so that we knew at the outset, as we were introducing customers and enrolling them into the program, that the things we were collecting about them would be very useful for the evaluation. We did things in concert, which is not always the case with efficiency programs across the country, and then we quickly got into study results because we started to see some very early indicators of positive performance.

In general, the whole melding of energy efficiency and community-based social marketing, or behavior influencing, is advancing rapidly. We were confident in terms of what our vendor, GroundedPower at the time, had suggested. The technology that they demonstrated on a prototype basis was solid. It worked. There were requirements,

though. We informed customers up front that they would require high-speed Internet connectivity. That could be a barrier.

There were definitely a number of opportunities for customers to be aware of these requirements. As I mentioned, through the *Green Communities Act*, we had funding support from the Department of Public Utilities (DPU) for this. The design protocols for this really were starting to take shape, in terms of others throughout the country who were already exploring this, and we learned from them. I'll put a plug in for the Sacramento Municipal Utility District (see related case study <http://www.toolsofchange.com/en/case-studies/detail/642> because we read and reviewed a lot of what they learned in some of their early ventures in this regard.

We actually did have interest from multiple vendors. Even today, there are standards, given the smart grids that are being funded. We're building a base of how the methodologies take shape to evaluate these. Things are moving pretty rapidly.

[Slide] For a typical customer enrolled in the Smart Energy Monitoring Pilot, once the technical apparatus was installed in the home, he or she logged into what was referred to as the "Dashboard." It's unique to each home. It has a welcome message, their current usage, and the point scores that they are able to see relative to their performance.

It is definitely a profile that the customer can set up in terms of how much information about themselves they wish to share with their peers. It allows them to also communicate what their seeing. For example, if there's a spike in energy use, this customer can type a message to the group to say, "I don't know what's going on here." Or it might say, "I was just waking up in the morning and put on a pot of coffee and put on the electric dryer."

There's definitely a lot of feedback that this tool brought to customers as they were getting much more engaged in their electric bill. We heard a comment from a customer that said that the program had changed his relationship with his energy bill. Who knew a customer even wanted to have a relationship with their electric bill? That's something we're able to do. It's in near real time so it allows you to really see that, if you turn on the air conditioner, or turn a high-use appliance off, you will see those results in real time, right on the screen.

This also goes to the point of bringing these questions to the community, to point out – as this customer did – that the wide spike represents a load of laundry in the washer and then the dryer. This customer also asked a question: "What is the significance of the intense blue, versus the regular blue?" When you peel back the data – and we have a tech expert that responded – it demonstrates the cycling that goes on with an electric resistance coil in a dryer. They come on, they hit a set point, then they turn off, and cycle back and forth. It's interesting to have a signature for an individual appliance!

These are some of the exciting parts of this that we actually may, at some point in the near future, be able to use to identify individual appliances with their use profiles, and

then be able to automatically tell the customer, “Your dryer is running” or “Your air conditioner is running.”

[Slide] The components of the Phase 1 program included a CT real-time monitor. It's a clamp that goes on a customer's main panel and transmits the information through a wireless gateway that goes through the customer's home network and up to the website. It had the availability of an in-home display, but the primary interface vehicle was the website. This is just another graphic depiction of the vendor we selected, GroundedPower.

[Slide] The gateway that sent that information back and forth between the house monitor and the gateway used what's referred to in the industry as the ZigBee Protocol. As the program administrator, we helped supply the cloud, if you will, with customer background usage information, and saw reporting back and forth in terms of what the different props were that we were seeing occur, e.g., whether a customer was taking action or not based upon suggestions we were making, whether it was the availability of a rebate, etc. At times of peak power use we tried to see if real-time demand response actions could be taken.

When we saw, for example, that the power grid might be coming into a challenging time, we rewarded people with additional points if they took action during those times. [Slide] This shows a bit more graphic depiction of the CT clamps that were installed on the meter, as well as the connections I just spoke of.

As I mentioned, we went right into evaluation. We wanted to be sure that the data we were collecting through enrollment was also readily able to be analyzed through the course of the pilot, from a process standpoint. But then also at the conclusion of the pilot, on an impact basis, to really see the savings that might have accrued through it. As Jay mentioned, we set up what we referred to as the “Pilot” participant group. Because we had such interest at the beginning, we couldn't enroll all 200 or 300 people that were interested, but we did enroll up to 100 people, of which 91, I believe, remained with it.

[Slide] We used the other folks that called, but did not get enrolled, as an interested group, so we did have a comparison between the two, to see if there were measurable differences between those that were participating in the pilot, and those that were just engaged in learning more about it. Then we took a blind group, which were similar households, family size, and background. This whole report is available on our website.

You can see that the pilot group, of which, ultimately, there were 86 folks that did remain with us through the pilot. Of the other control groups, we had the interest of 207 people, and then a stratified random sample of about 400 that were in the blind group. That really set up the comparisons that were then able to be done.

We'll go back and give credit to PA Consulting – which is now part of Tetra Tech – which was the evaluation firm that independently reviewed the pilot for us.

[Slide] Overall, the customer response, not only to the program, but to other programs that we offer, was really great. We had increased program awareness of our other efficiency programs. We saw customers willing to share with each other what they were doing and what they were learning. That real-time view of things really did provide powerful information for customers to quickly and effectively see what they were doing to draw up, or bring down their consumption.

Customers did like the peer group comparison. We had only one customer who didn't feel comfortable sharing their points, goals and achievements with others. We were very intent on ensuring good outreach, and informed consent, for customers to know what they were getting into, so having just one person be sensitive to the "Big Brother Effect," was not too bad.

One thing I'll highlight, too, is that customer care really does make a difference. We are a community based group. We live and work in our communities and neighborhoods. Our staff people really did listen to what customers were saying, whether it was about this program, or other programs we do. Customer care really does go a long way. It may or may not be totally related to the pilot, but it is all related to the service that we need to look after when we're delivering energy efficiency.

Behavior technology complements the existing offerings because it increases the customer's overall benefits. Sometimes this is a gateway, or an entry for them to finally hear about all the other things that we've been offering for, frankly, many, many years.

[Slide] The results were pretty phenomenal. We were quite surprised to see how high the reduced electricity consumption was on an annual basis (9.3%). I'll also make mention that this does shake out, or removes, any other program participation effects. That was one thing that we took care to look at, i.e., if any of the customers that saw reduced electric consumption had replaced an appliance or participated in a home energy audit. We removed those other program effects so these are truly consumption reductions as a result of this pilot. There's the value – 997 kilowatt hours. You can see our typical average use is around 500 or 600 per month on the residential side.

These results have been used to inform Phase 2 of the pilot, which we are in the stages of rolling out. Based on the feedback we've received, we are going to increase the offering to some small businesses, who had expressed interest, as well as ramping it up to serve additional residential customers. An important part that we're going to be learning in Phase 2 is to determine cost effectiveness and persistence. We want to be sure to factor that in as we come out of Phase 2 because ultimately, we'd like to make this, or what we do learn about this, able to be a full-fledged program.

[Slide] The launch of Phase 2 is planned in a matter of a couple months. We are going to be enrolling 500 homeowners. And we have contracted with Tendril Energize to use their energized platform. This is a web-based interactive interface but it also brings into play some advances that have occurred in this technology. [Slide] One of the key elements of Phase 2 is that there is no need to access a customer's electric panel. We will

not need an electrician to put their hands in a live electric panel to put the CT clamp on. The interface with the meters today has advanced, so that barrier has gone away. It will include very similar things that we included before, in terms of customer goal setting, and sharing accomplishments and knowledge with their peers, and we're very anxious to get this underway.

[Slide] This is the translate meter bridge that talks to the existing electric meters. The gateway is this device. We're introducing an in-home display as well as the new web-based suite of interactions for customers to log-in, set their goals, track their progress, and compare themselves to their peers.

[Slide] I'd like to wrap up now because I'm very anxious to get questions. But a big thank you to our staff folks here: Briana Kane was our residential program coordinator and the lead on this program; without her assistance, I wouldn't be presenting these results; Paul Cole and Pat Milner, who originally were with Grounded Power; at the end of 2010, GroundedPower was acquired by Tendril; I also want to thank the folks at Tetra Tech, formerly PA Consulting, who did an awesome job on the evaluation. Thanks also to all the pilot program participants who, because of their engagement and feedback, gave us such great results. Perhaps this is odd but I do want to thank our regulators because without their support and funding for pilots like this, we wouldn't be doing this. Thanks to our governing board. We're locally governed. They've been very supportive of the efforts of staff.

One last thing I wanted to mention. More than nine years ago I attended a workshop out in North Hampton held by the noted author in community based social marketing, Doug McKenzie Moore. It took us a few years, but many of the design elements that he had suggested back then, we were able to finally implement, and we'll keep it up. The last thing he always suggested is to share your results, so I'd also like to give thanks to Jay, for letting us share this information.

Q&A

Q: Any idea how much of the reductions that you got were due to the real-time monitoring, as compared to the peer group comparisons? Are you able to tease out those two factors?

A: I am glad you asked it because a lot of those things, if you look at the report on the study, you'll see some of the challenges were really tying the actions discreetly to the savings. We really do need to do more. That's part of the reason why, upfront, you want to set your customer profile and data collection so that you do have a chance, as you're going through the progress of the pilot, to tie those together.

So long winded answer, but no we did not. It is a difficult thing to do. For example, in the report, you'll see a lot of people answered a question on efficient light fixtures. Well, we really delved into a few customer responses, and said, "But you really didn't install

new light fixtures.” It really is a point that is deserving of a lot more research and detail and it takes shape in terms of how you collect your data right from the get go.

Q: The people who are participating expressed strong interest in being part of the pilot. You've had an unusually high impact with them. Is that because they're a more interested group? How do you think this will shake out as you start doing this with a broader population?

A: Exactly the point. Yes, we do believe that because at the initial roll out oil prices were high and there was a lot of price anxiety. We're now at a different point in time. Frankly, we're back to high oil costs, surprisingly. By broadening the enrollment to over 500 customers – and we are no longer putting that constraint, if you will, on the 600 kWh average per month – we are looking to open this up and let all comers come in, so that we do get after or perhaps even exclude that early adopter effect. We don't want to bias the outcome. We're very much aware of that and want to try to exclude that bias.

Q: How does the meter bridge collect information from your analog meter?

A: A couple of years ago – and again, this is due to the advances that have occurred in the market – our electric distribution company, NSTAR Electric, changed out all of the meters across our territory to digital meters. If you go to our website, one of the carousel images is an image of one of our current electric meters in the field. Up to that point, we had the challenge of dealing with the analog meters, which would have put us back to those CT clamps up the incoming customer panel. Because we are digital, we're able to talk to them.

Q: So a community that has analog meters can still do a similar type of program, using that old C-Clamp technology?

A: Correct.

Q: Were savings proportional to energy usage levels across different customers?

A: I can give a general answer to that, but I'd definitely like to delve into a little bit more detail because we do have that data. Generally, we were surprised that a number of participants actually increased their energy use. Not all savings were proportional.

Q: What will be the budget for that Phase 2?

A: We were pleased to receive DPU approval to increase the budget so Phase 2 is expected to be able to enroll about 500 customers at a total cost of around \$323,000.

Q: Can you go back to the slide that you had showing us the report and talk a little bit more about that because that went by pretty quickly for folks. Just show us what information people get on their reports.

A: The report is at the website, the impact evaluation study. Is that the report you were referring to?

Q: Can you sort of guide us through again what gets shown where, and how people interact with it? [Question refers to the two screen shot slides of the web-based interface]

A: There is no report sent in the mail to customers. Some folks may be aware of other interventions that are out there. Ours is not a paper report. It is this near real-time web-based dashboard display that allows a customer to set their energy savings goals.

At the time that a customer enrolled in the program, we would go through the informed consent, and get them to acknowledge the high-speed interconnectivity that they need, and disclaimers that we don't warrant things. All the usual things. But at the initial time of enrollment, we would collect information about their energy use – number of bedrooms, how many folks in the home, have they ever adopted energy saving measures, etc? There's quite an in depth pre-enrollment survey.

We also ask them – and they can update this as they go – what they would like to set as their annual or monthly energy reduction goal. This is what this dashboard is for – comparing their use as it goes along, on a day-to-day, month-to-month basis against their self-committed engagement that they are setting – they can change that. In effect, we're asking them for a commitment.

Q: Once they've done that, can walk us through a little bit more because it's hard to see those bars and what they're saying. What information are you giving them here?

A: What we're giving them is what they are instantly seeing in terms of their power consumption, e.g., if the rate schedule is in an off-peak mode or a peak mode. One of the things that we don't yet have – although, again, in Massachusetts, we are working with some dynamic pricing pilots that we are anxious to learn from – is dynamic pricing. The tool is capable of giving customers that information, as to whether or not dynamic pricing may come through in the future and it will do the calculations. It's giving them current weather status. It's all tailorable by us with Tendril.

In the next few weeks, we're going to be working on getting these things tailored for us. It'll have our logo. The vendor is very happy to work with us in terms of how we want the look and feel of this to be. You can see that this is the initial dashboard. The other links are those actions that the customer has committed to, whether it be fully replacing all of their CFLs, if they have not done so, or other simple things like putting shades down at night in the cold weather. We have over 100 different prompts for actions.

Over time, they can see how those actions are being used by other people. The system will let users see how many people actually said, “Yes, I'm going to replace every CFL in my house with efficient CFLs or LEDs.” That sort of thing. On the back end, on a monthly basis, will be uploading the actual utility bill usage so they can compare their use with their actual billing information.

There is some interoperability between the customer's feed of the system, through the gateway, and then our influence on the back end in terms of updated information. We also have sections of the website that will have current offerings. For example, as we come into the cooling season, we'll be promoting high-efficiency cooling incentives, whether they be split systems, or central AC systems. We also want to track if customers have implemented those things through actual rebate fulfillment, or if they've just said that they would like to take advantage of them. There's measurable goals for the customer, but for also us as a program administrator to track progress.

Q: Will you be evaluating the results of the pilot again?

A: We are right in the scoping, already, for evaluating Phase 2. In addition, all the customers that were enrolled in Phase 1 are going to be given the option to re-enroll in Phase 2. They'll see the new platform and we'll merge the two groups together.

The other thing about the Phase 1 group is that, by this time next year, we'll have nearly two years of continuous participation. That goes to the question about evaluating the results. We will also have a lot richer data set to get after this question on persistence and measure life. We also have a more current representative cost for this type of technology so we can determine what, if any, segments are most cost effective.

Evaluation is so key to getting started right from the get go and learn from it. I say to my staff, "Don't think that just because we think this is great, it's all going to be wonderful at the end, as far as what we're able to offer." There may be segments of this that are cost effective, and there may be others that go out to the free market. There may be products like this that customers will be able to afford at their local home store, and we'll just provide a small rebate for. We're very much aware of how rapid this technology is evolving. At the same time, I firmly believe that there's a direct tie-in to energy efficiency, and even more that we can do.

Q: Is the information aggregated or not? Do you get that information on an appliance-specific level within a house? What is it that you're actually monitoring the use of? Is it by appliance within that house? What's then done with that information?

A: We are not at the appliance level yet, although the capability does exist. We're doing it on a household level, so it is of the entire home. There are some home automation elements that can be added onto this and we're taking a look at those.

This goes to the point I tried to highlight when we were looking at that snapshot that showed the "signature" of an electric clothes dryer. We may be able to get that signature just by tracking the use, rather than by having to put a device on the appliance. It's very exciting! The more we can get down at the appliance level, I think the better people can connect their behavior to make changes, if they desire, to shift their use to cheaper times of the day, or to use an alternative.

Q: Can you be a little more precise about what you mean by “near real time.” Is this within a few minutes, within a few hours, within a few seconds?

A: It depends. As you might imagine, if you have very high-speed bandwidth, you are going to see it almost instantly, within seconds. But if your Internet is slow, your computer could have some challenges in terms of memory size to actually see things. It may be in the cloud, i.e., the data may be there, but you may not be able to see it. We're seeing “near real time” is within a minute, but no longer than that. The range is between seconds a minute.

Q: Were any customers upset that they did not qualify for the program because of either low electric use or because they had no high-speed Internet?

A: Before we even rolled out the details, we were most concerned about the negative feedback, if any. We were very clear upfront to let folks know. With the customers, you need to explain to them what you're doing and why you're doing it. We emphasized, over and over, that this is just a pilot. That we were looking to get a small group of customers engaged to learn from them.

We also told them that, just because they did not participate in the first 100, we would keep them on the list for a future offering. We were able to follow through on that commitment and will include them in the outreach we'll do for Phase 2. In general, no one was really upset, but we were very cautious to be sensitive to that potential.

Q: How will the system be financed, or billed to the user? And what is a typical average cost?

A: Because our energy-efficiency programs are ratepayer funded, through a system benefit charge and some other funding sources that we have available to us, there is no cost to the customer to participate, other than needing a high-speed Internet connect a little of their personal time into being engaged in intervention.

On the typical average cost, that is one of the learning outcomes we want to get from Phase 2 of the pilot. Once we have everyone up and running we'll know the total number of users. We'll know what we actually incurred for costs, including evaluation. We'll have a better answer for that in about 12 months.

Q: Do you have plans to install smart meters? Or would you consider relying on these Tendril devices instead?

A: Smart meters are really the call of our electric distribution company, NSTAR Electric, but we coordinate and share what we're learning with them. Interestingly enough, the dynamic pricing initiative that I mentioned, and smart grid efforts that they are working on, they are also using Tendril. There is a lot of cross-pollination going on. Presently, we do not have plans to install smart meters but if we need we would need to coordinate with NSTAR on that.

Q: What about customers being able to control their appliances, and heating and cooling systems throughout all of this? Any impact there?

A: Yes, that would be an optional feature that we are not building in for the Phase 2 of the pilot. We are certainly aware that there are technologies out there, some that are very complementary and could be added on to this. I use an iPhone and I would love to see the day that I can see my electricity use, as well as control my appliances, right from my handheld. That day is coming, but is not part of the scope of this pilot. We have enough to handle on this one. However, if we hear customer feedback and interest on that, it will definitely be something that we will look to include, perhaps as a fee-based add-on.

Q: Did any participants have solar photo voltaic systems?

A: We did have some. In Massachusetts, and across the country, there is a great push is on for photo voltaic systems. They're very effective. That was one of the options that we sought for proposals to the RFP that we put out for Phase 2. We have learned that, due to some of the complications of the net metering that occurs in our state, we're not able to offer Phase 2 to those that have a net metered solar PV system, or for that matter, any on-site generation. It's disappointing. I have a PV system, so I can't even have this device because it wouldn't really give you the total usage in the home because of that netting effect of on-site generation versus use.

I would just like to say thanks to Jay and everyone at Tools of Change and Cullbridge Marketing for this recognition. It's much appreciated. My contact information is here and I'm happy to follow up and take any direct questions afterward.

Jay Kassirer: Thank you so much for sharing your experience with us, Kevin.