

BECC 2011: A Summary and ACEEE Perspective

Ben Foster and Susan Mazur-Stommen

March 2012

An ACEEE White Paper

© American Council for an Energy-Efficient Economy
529 14th Street NW, Suite 600, Washington, DC 20045
Phone: (202) 507-4000 • Twitter: @ACEEEDC
Facebook.com/myACEEE • www.aceee.org

Contents

Introduction 1

Results 1

 Attendance..... 1

 Participant Response 1

Insights 3

 Vox Populi 6

Looking Forward 7

Conclusions 8

Appendix: Select Survey Responses (n=195) 9

Introduction

The Behavior, Energy and Climate Change (BECC) conference focuses on understanding the nature of individual and organizational behavior and decision-making, and using that knowledge to accelerate our transition to an energy-efficient and low carbon economy. Now in its fifth year, BECC has become the leading forum for these topics, attracting a broad mix of policymakers; academic researchers; program implementers; and influencers from media, business, and nonprofit groups.

This document has three goals. First, we offer some high-level metrics measuring the outcomes of last year's BECC conference. Second, we attempt to characterize some of the insights that emerged from the three days. Lastly, we propose some modifications for 2012, with the goal of building upon the successes of BECC, while still recognizing the need for further refinement of content, approach, and logistics.

We would like to thank the Overbrook Foundation for their support of the conference and this summary.

Results

ATTENDANCE

Attendance at BECC continues to grow. More than 700 people came to the BECC 2011 conference, held in Washington, D.C. from November 29th to December 2nd. Thirty-eight percent of attendees came from the private sector, 23% from nonprofit organizations, 15% from academia, and 10% from the public sector. Another 3% were individuals and the final 9% were international attendees.¹

2011 broke the record for attendance both overall and at a Washington-based BECC, exceeding the previous all-time high of 657 at BECC 2010 in Sacramento. Approximately half (343) of last year's participants were attending for the first time (up from 169 new attendees in 2010), a signal that the conference is beginning to attract a wider pool of interested researchers and practitioners.

BECC 2011 drew attendees from a wide geographical area. Participants came from 37 U.S. states and from 12 countries. Washington, DC led the states in number of attendees at BECC 2011, followed by California, Virginia, Massachusetts, and New York. In contrast, at BECC 2010 in Sacramento, the largest number of attendees came from California, followed by Washington, D.C., New York, and Oregon. These numbers suggest that a core group of attendees from three states comes to BECC no matter the location, but that alternating the conference site between the West and East Coasts does influence others to come from the region.

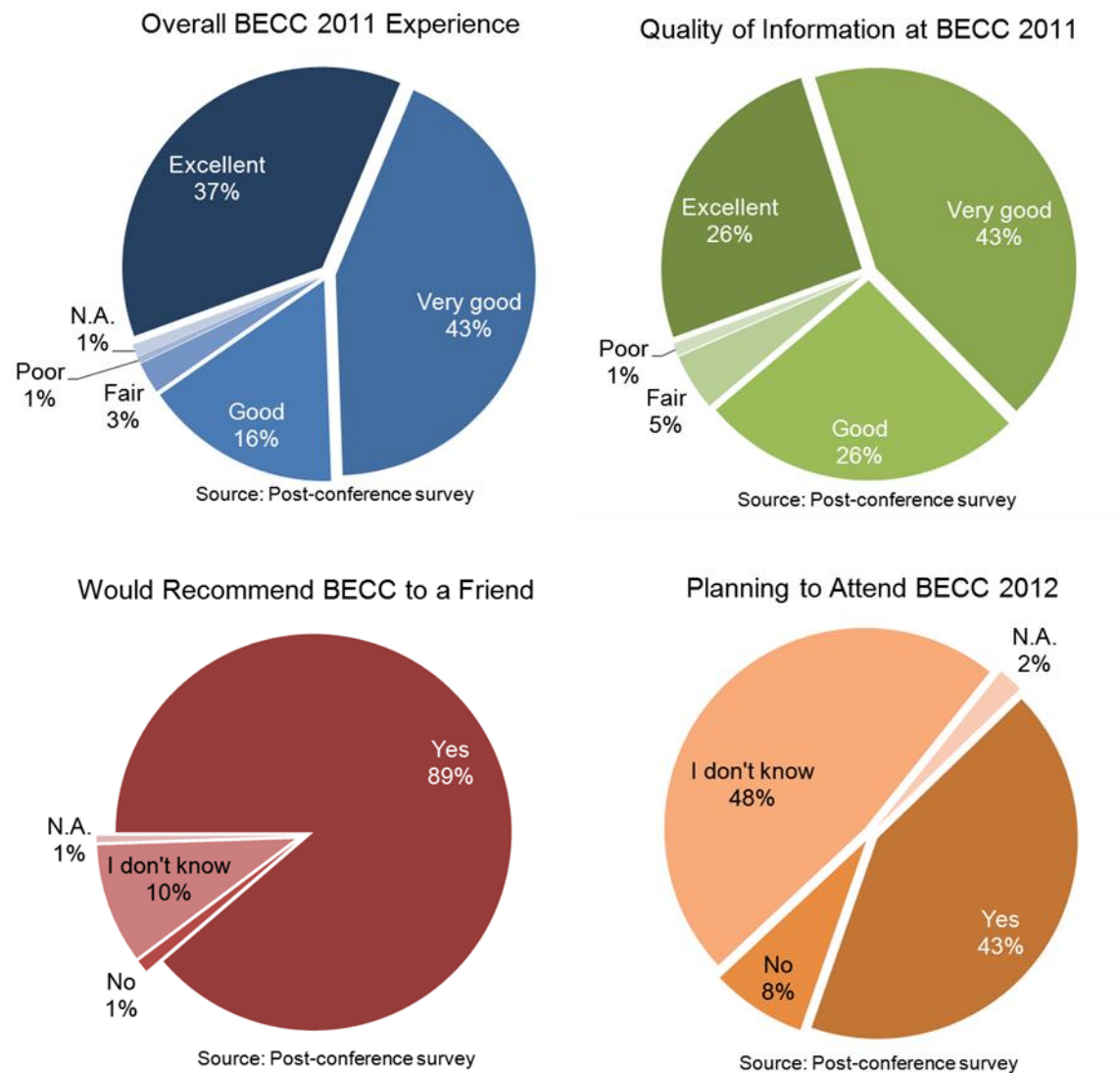
PARTICIPANT RESPONSE

BECC 2011 included more than 260 presentations and posters on a wide range of topics as diverse as behavioral economics, behavioral and social psychology, gamification, social marketing, and local and

¹ Based on the domain of attendees' email addresses.

state greenhouse gas policy. We will cover some of the main insights that emerged from these presentations further below.

As the figures below show, BECC 2011 got very high marks. Eighty percent of post-conference survey² respondents rated the conference experience as very good or excellent overall, and 69% rated the quality of information very good or excellent. Eighty-nine percent indicated they would recommend BECC to a friend, and 43% said that they intended—even a year ahead of time—to attend the BECC 2012 conference in Sacramento, California.



² An online post-conference survey sent to all 632 attendees received 195 responses, a response rate of 31%. “N.A.” means “no answer.” Due to rounding, percentages may sum to more than 100%. See the appendix for a summary of select survey responses.

In addition, speakers in the plenary and breakout sessions were rated as very good or excellent by 63% and 62% of respondents, respectively, and 76% agreed or strongly agreed that the sessions were organized in a cohesive fashion. Networking opportunities were also highly rated, with 73% of respondents saying they were very good or excellent.

The lightning sessions received high marks from respondents who attended them, with 66% rating them as very good or excellent. However, when including responses from all survey respondents, only 74% reported attending a lightning session (a lower attendance rate than in the plenary and breakout sessions), which may point to an unmet need in the execution, content, or number of lightning sessions.

On the whole, responses from conference attendees suggest that BECC 2011 was well executed and well received, and that it continues to generate enthusiasm and to be a high-quality source of information. BECC 2011 added several new features, including a LinkedIn group with over 700 members, a YouTube page featuring presentations from the lightning sessions, and a very active Twitter account. Overall, survey respondents indicated that the two best aspects of the conference were (1) the networking opportunities and (2) the mix of applied and academic insights from the plenary and breakout sessions. At the same time, the post-conference survey also revealed several areas where improvements could be made to the content and execution of the conference. We will cover these in the final section of this document.

Below we discuss the content of BECC 2011 in an attempt to identify emerging themes and trends in the energy-behavior community.

Insights

Data on insights from BECC 2011 comes from several sources: survey responses about outstanding presentations; the Twitter feed of the BECC hashtag (#BECC) from the days surrounding the conference; and the authors' own notes on sessions. At a conference as large and with as many sessions as BECC, it is difficult, if not impossible, to see every presentation. Recognizing this, what we offer here is a specific analytical perspective on the insights presented at BECC 2011, not a final pronouncement.

Several key takeaway messages emerged from the conference presentations. First, efforts to reduce energy consumption and carbon emission need not—and perhaps should not—depend only on “doom and gloom” messages aimed at individuals. There is a place for positive, fun, and community-based approaches such as contests and online games. Secondly, affecting deep and lasting changes in our energy systems requires an integral, layered approach to changing behavior—using multiple methods and means of reaching people both as individuals and as members of groups.

Insights at BECC 2011 fell into several broad categories:

1. New ideas and advances in behavioral sciences (psychology, sociology, anthropology, behavioral economics)

2. Real-world interventions using behavioral techniques (feedback, commitments, rewards, competitions, prompts, social norms, and networks)
3. Application of persuasive messages in public service announcements, branding, and marketing campaigns
4. Program design, evaluation, models, and methods
5. Use of policy to influence behavior at local, state, and federal levels

To illustrate these broad categories, below we provide a summary of a few sessions from this year's conference that survey respondents considered particularly noteworthy:³

- In “Feedback & Behavior: Getting Into Their Heads, Homes and Habits,” Seth Frader-Thompson (Energy Hub), Tom Scaramellino (Efficiency2.0), and Wayne Lin (Opower) provided an overview of the role of energy consumption feedback in energy efficiency, and provided several insights worth mentioning. First, Energy Hub is focused on making better programmable thermostats, which—considering that 90% are not programmed correctly—they believe represents an opportunity for large savings. Second, Efficiency2.0 presented research on the trade-offs between opt-in and opt-out program design on energy savings and program scale. Opt-out programs tend to have a broad reach and shallow savings, while opt-in programs tend to reach a narrow segment, but capture deeper savings. Third, based on their research into the effectiveness of social norms in driving energy savings, Opower presented evidence that increasing the relevance of comparisons leads to greater potential savings (your friends' homes > your neighborhood > anonymous).
- Ed Maibach's (George Mason) highly rated presentations on climate change beliefs and climate communications offered updates on research he has been conducting over the past several years on “Global Warming's ‘Six Americas’.” Specifically, his team found a very strong correlation between a person's belief that he or she has personally experienced the effects of climate change *locally*, and that person's belief that anthropogenic climate change is actually occurring. Personal experience of the effects of climate change appears to strengthen engagement with the issue, no matter one's politics. Maibach connected local experience of climate change to the power of concrete learning, which he says always trumps abstraction. His research suggests that abstract communication about global climate change impacts will tend to fail, while those that point out concrete, local impacts will tend to succeed.
- In “Worldviews, Attitudes, Lifestyles and Pocketbooks,” researchers presented various critiques of what has been called the “physical-technical-economic model (PTEM),” which conceives of individuals as rational actors interested primarily in the economic benefits of energy savings. Nicole Woolsey Biggart (UC Davis) and Loren Lutzenhiser (Portland State) argued that there exist multiple “energy logics” through which people make decisions related to energy efficiency. For example, while some may see a house primarily as an investment, others see it as an expression of personal or social values, or as a space for socializing. Lisa Zaval (Columbia

³ Most presentations are available on the BECC 2011 website: <http://www.beccconference.org>.

University) presented research on the impact that weather has on perceptions of global warming. Susan Ledlow (Arizona State) argued that blanket education campaigns aimed at changing attitudes (and, through that, behaviors) do not work. Rather, messages, programs, and policies will be more effective if they recognize the role of kinship, status, social norms, and gender. Finally, Stephen Bickel (D&R International) argued for the translation of academic research into an actionable, science-based approach for applied practitioners by comparing the work of four prominent researchers.

- In “Key Lessons from Behavioral Economics,” Neil Strachan (University College London) talked about approaches for better integrating behavioral, psychological, and sociological parameters into energy systems modeling. Megan Wibberly (University of Maine) and her team proposed a new theoretical model for measuring willingness to pay for environmental benefits, based on the idea of “economic stress,” which includes psychological variables as well as traditional income constraints. Jack Davis (JDM Associates) described Carbon4Square, a program in Portland that integrates insights from behavioral economics to reduce the environmental impacts of energy, water, waste, and transportation decisions by commercial real-estate owners. Finally, surveys conducted by Shahzeen Attari (Indiana University) and his team found that people tended to think of curtailment of energy use as the most effective means of saving energy, as opposed to investing in energy efficiency. Furthermore, of these curtailment actions, people tend to expect *others* to take significant curtailment actions (e.g., drive less), while leaving easier actions (e.g., turning off the lights) for themselves.
- In the session “Gov’t Rebates and Investment: Why Some Programs Work and Others Don’t,” Susan Mazur-Stommen (ACEEE) presented research on the ethnography of cool roof retrofits, finding that rebates offered by the utility played little role in encouraging customers to choose cool materials. In all cases, the rebate was discovered after the fact and was seen as a nice bonus—and perhaps as a way to signal that the project was completed with due diligence. In addition, Marjorie Isaacson (CNT Energy) described ways of selling energy efficiency improvements to a skeptical public; Lani McRae (DOE) provided a summary of the results from the State Energy Efficiency Appliance Rebate Program; and Elizabeth Stuart (LBNL) provided insights on the relationship between ARRA and utility-funded energy efficiency programs.
- In a session on savings persistence and enabling technologies/policies for long-term behavior change, Max Wei (LBNL) presented research on the potential of behavioral changes to meet California’s 2050 emissions reduction goals. Wei and colleagues found a reduction potential of 10-15% based on historical behaviors such as changing driving habits, increasing public transit miles, telecommuting, changing thermostat settings, etc. Summer Goodwin (Bonneville Power Administration) drew distinctions between traditional and behavioral energy efficiency programs in terms of the measurement of cost-effectiveness and persistence. She argued that while the unknown life of behavioral measures can be a risk for supply-side planning, the focus on measuring persistence may overlook the benefits of customer engagement and program uptake. Finally, Peter Erickson (Stockholm Environment Institute) presented research and a case study on the potential of behavior changes to meet global GHG emissions reduction goals. In particular,

he focused on measures that had an indirect connection to energy production, such as shifts in diet, reductions in home size, and changes in product life.

- From “The Importance of Messaging”: Sho Hirayama (Jyukankyo) presented research on the ways in which the Japanese government and the artistic community supported large-scale shifts in social awareness of electricity savings as a response to severe supply shortages after the tsunami and nuclear accident of March 2011. Helena Paulin (SCE) discussed a case study of Southern California Edison’s experience with using graphic media (cartoon houses) to proactively communicate with customers in a simple, concrete way about the benefits and realities of smart meters. Finally, Sarah Davis outlined the role that community organizers and PR professionals have in driving the adoption of energy-efficient technologies and behaviors.

VOX POPULI

We also reviewed the Twitter feed⁴ at the conference in an attempt to further assess the impact of BECC and the kinds of insights generated there. Following are a selection of the more than 700 tweets generated by BECC participants, organized loosely into themes:

- Marketing & recruitment
 - Insight: EE marketers need to get consumers to change their behavior, not just buy a product. This requires a savvier approach. #BECC
- Goal-setting
 - Matthew Harding at #becc: Choosing realistic goals for energy efficiency (1 to 15%) allows people to more likely achieve their goals.
- Making EE fun and social makes it effective
 - Interesting comment by Kathy Kuntz this eve at #becc: "Games tell you 'how you did' more effectively than many other forms of feedback."
 - Insight 2: groups work, classes don't. Groups mean support, accountability, bigger picture than just "improving my house". #BECC
- Technology + people:
 - Buildings don't use energy, people do. Great lighting round at #becc.
 - Refreshing to hear from @SimpleEnergy "Data geeks are the outliers"—we need to include a wide range of people when designing systems. #BECC
- Behavioral insights reshape policy
 - The secret to the Danish success? Danes feel that there is "something in it for me." Find the opportunity for the ind. #BECC
- Program design & metrics
 - Tom Scaramellino of Efficiency 2.0 talks about opt-in and opt-out efficiency programs at #becc, one allows greater scale the other savings.

⁴ While the survey responses included many very positive as well as a few critical comments, the Twitter feed tended to be extremely enthusiastic about BECC. There were 139 unique Twitter handles out of a total of 706 tweets, with a skewed distribution of tweet frequency. Therefore, the tweets may be less representative of overall opinion about the conference than the survey, and so should be interpreted with caution.

- Peter Noland: "Get data at every point. Get the opportunity to get in the house or the business of your consumer." #BECC @BECCconference
- Turning lemons into lemonade
 - I don't want to be a stuck record, but how about treating bounded rationality as an opportunity rather than a problem? #becc
 - Can you present information to match people's mental models - correcting people's misconceptions is important. (@danlockton) #BECC
- Unconventional approaches
 - Smart meters with a face? @Oberlin's Cindy Frantz & John Petersen telling #BECC that anthropomorphic energy feedback systems more effective.

Looking Forward

The response to BECC in the academic and applied communities continues, on the whole, to be very positive. There is a wave of enthusiasm for bringing insights from the behavioral sciences into areas where they have been traditionally downplayed. Books such as *Nudge*, *The Tipping Point*, and *Freakonomics* have received wide attention in recent years, and BECC's popularity is likely part of the surge in interest in all things "behavioral" that has made these works bestsellers.

The promise of BECC is that it provides a venue for ideas from multiple perspectives, creating links between the academy, program implementers, and the wider public that can strengthen the research, development, and deployment of behavioral interventions along the lines of a traditional technology continuum. On the other hand, the danger of a multi-disciplinary conference like BECC is that it can become a Tower of Babel, where lack of a common language or framework can get in the way of valid insights becoming viable programs.

Realizing the promise of the BECC approach while avoiding its pitfalls requires recognizing that a successful, lasting program to address energy use or GHG emissions relies upon an integrated, multi-layered approach. As much of the research this year showed, energy or financial savings by themselves do not necessarily motivate a large portion of the population to take action to save energy or to reduce their greenhouse gas emissions. BECC provides a wealth of information, but it is becoming clear that those insights need to be integrated into actionable programs for deployment. We might describe this need as a movement from providing "heaps" of information to "wholes" of integrated programs.

We propose several potential modifications to the execution and content of the conference that we believe could serve this integrative effort. First, while moderators at BECC 2011 received high marks for their ability to manage their sessions, there is a clear desire from participants that moderators attempt to offer a synthesis of—or at least to pull out common themes from—the various presentations. In other words, moderators should perhaps be less *moderate* and more *provocative* in guiding the breakout sessions, with the aim of providing attendees with a fairly cohesive set of insights from each session.

Secondly, the fact that the lightning sessions had lower attendance than other types of content suggests that BECC attendees may be self-selecting into two tracks according to time preference or learning style: those seeking to dive more deeply into some topics, and those who enjoy the quick overviews from lightning sessions. BECC 2012 could address the former through longer, more interactive “double sessions” that are tightly crafted around a particular theme. In addition, lightning sessions could benefit from the same type of proactive moderation described above, with fewer, slightly longer presentations (e.g., seven minutes instead of five) and chances for the audience to ask brief clarifying questions between speakers.

Further modifications deal with the content of the conference. The vision of BECC is one of inclusion, drawing ideas and insights from unexpected sources, which can and should include artists, military personnel, and faith-based communities, just to name a few examples of contributors we would like to see present at BECC. In addition, BECC is about behavior-change across all sectors of the economy, and so always needs a robust amount of content directed towards business leaders—enhancing their understanding of, and engagement with, the kinds of decision-making processes that support greater energy efficiency and reduced carbon emissions. Further, 2011 was the first year that a post-conference webinar was offered to employees of federal agencies and others who may not have been able to attend. It was well-received, and has since been repeated at the request of the EPA/DOE, and our goal will be to expand upon the ‘reach’ of the BECC brand.

For 2012, the co-chairs, Susan Mazur-Stommen (ACEEE), Chris Jones (Berkeley), and Frances Sprei (Stanford), intend to honor this diversity through a more curated panel development process. The goal is to flesh out some of the areas where submissions have traditionally been lacking, through personal collaboration with potential panel leaders on design. We are actively soliciting ideas from the BECC constituency as to new workshop offerings and ice-breakers (immediately prior to the conference); additions to popular activities such as the Film Fest and attendee-generated sessions (during the conference); and extending invitations to agencies and organizations that might wish to host post-conference events (as the National Science Foundation did in 2011).

Conclusions

Overall, the 2011 Behavior, Energy and Climate Change conference was a success. It was well received, well executed, and provided a host of insights about the continued progress of research and implementation of behavior-based programs. In 2012, BECC will move back to the West Coast. Next year we will continue those things that have worked well—good networking opportunities, breakout sessions, the film festival, insightful plenary speakers—while strategically applying lessons from this year’s conference to a few areas needing improvement. Specifically, there is a need to begin defining a set of common metrics for behavior-based programs, as well as a need for moderators and speakers to try to make the connections between the various presentations in the breakout and lightning sessions. We believe these kinds of modifications can improve the impact of BECC and lay the groundwork for better integration of the insights from the behavioral sciences that are offered there.

We would like to again thank the Overbrook Foundation for their support of BECC 2011 and this summary.

Appendix: Select Survey Responses (n=195)

Note: Percentages are based on the number of respondents who attended each type of session. In three cases, this total is less than the survey sample size. Due to rounding, percentages may sum to more than 100%.

	<i>Overall conference experience</i>		<i>Overall quality/usefulness of information</i>		<i>Quality of speakers—plenary</i>		<i>Quality of speakers—breakout sessions</i>		<i>Quality of lightning sessions</i>		<i>Networking opportunities</i>	
Excellent	72	37%	50	26%	43	23%	26	14%	38	26%	63	32%
Very good	84	43%	83	43%	73	39%	88	49%	57	40%	79	41%
Good	31	16%	51	26%	48	26%	48	27%	40	28%	44	23%
Fair	5	3%	9	5%	20	11%	15	8%	6	4%	9	5%
Poor	1	1%	2	1%	1	1%	1	1%	1	1%	--	--
No answer	2	1%	--	--	2	1%	2	1%	2	1%	--	--
Total Attending	195		195		187		180		144		195	
Did not attend	--		--		8		15		51		--	

	<i>The sessions were put together in a cohesive fashion.</i>		<i>The moderators did a good job of managing their sessions.</i>		<i>Do you plan to attend this conference again next year on the West Coast?</i>		<i>Would you recommend this conference to a friend?</i>		
Strongly agree	38	19%	90	46%	Yes	83	43%	173	89%
Agree	111	57%	87	45%	No	15	8%	2	1%
Neither agree nor disagree	33	17%	11	6%	I don't know	93	48%	19	10%
Disagree	9	5%	2	1%	No answer	4	2%	1	1%
Strongly disagree	--	--	--	--	Total	195		195	
No answer	4	2%	5	3%					
Total	195		195						