

# Beyond the CFL: Winning Imagery for Energy Efficiency

## Energy Efficiency Imagery Online Focus Groups

### Key Findings and Recommendations



Photo Credit: (top row) Eric Hines; Kristin Lyons/National Renewable Energy Laboratory; (middle row) Google Images; Sujo/Getty Images; Jeremy Portje/Dubuque Telegraph Herald; (bottom row) Shelley M. Shockley/Cleveland Public Power, DIY Network

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### INTRODUCTION

Public opinion research demonstrates widespread support for energy efficiency among Americans. Yet, research also shows that in the context of broader energy issues, energy efficiency emerges as a relatively low priority compared to energy sources like wind, solar, natural gas and more.

Those working to advance energy efficiency policies and practices have struggled to capitalize on positive views of energy efficiency to advance energy efficiency policies. Resource Media commissioned testing of energy efficiency imagery to identify visual strategies that can help bridge from the positive associations Americans have with energy efficiency to support for the bigger picture policy initiatives needed to advance energy efficiency at the scale that’s required.

The testing confirms that visuals have the power to bring energy efficiency home for people in a way that is simply not possible with wind, solar and other types of energy. This is in part because many people have experience doing simple things to make their own homes more efficient, which allows them to relate to energy efficiency personally. The research likewise confirms clear challenges when it comes to translating personal support for energy efficiency improvements in one’s home to support for energy efficiency policies in commercial and residential building sectors. People most often view energy efficiency as a personal responsibility, and not the job of government and regulations.

The research demonstrates that images can inspire visceral, angry responses about energy waste, get people excited about doing things to reduce energy use in their homes, and pique interest in how businesses and institutions are saving energy and money. Ultimately, images that tap into Americans’ very positive and personal experiences with energy efficiency generate the most enthusiasm, creating a constructive context for conversations about programs that drive energy efficiency in homes and businesses.

## METHODOLOGY

In October 2014, Resource Media conducted four-day online focus groups in two major metropolitan areas to test reactions to energy efficiency images and videos, with the goal of identifying the most effective emotional drivers and visuals to inspire people to support energy efficiency, with a specific focus on the building sector.

A total of 76 people participated in sessions in the Pacific Northwest and Midwest (38 per region), ranging in age from 30 to 65. Participants either owned or rented their homes, with 63% living in suburban areas and 27% in urban areas. The breakdown of respondents’ political affiliation was: 34 Democrat, 14 Republican, 1 Tea Party, 22 Independent and 5 unaffiliated. The majority of participants (55%) self-identified as “moderate”, and 26% said they were “liberal” and 18% indicated “conservative.” Participants were shown a total of 21 images and four videos over four days and were asked to provide detailed reactions to each photo, to rate those that made the biggest impression on them, and to read and comment on each other’s responses. A table showing all images tested can be found at the end of this document.

On day one, participants were asked to talk about their general perceptions of energy efficiency and how they visualized energy efficiency, and were shown six images commonly associated with energy efficiency.



Photo Credit: (top row) Jeremy Portje/Dubuque Telegraph Herald, DIY Network, Kristin Lyons/National Renewable Energy Laboratory, (bottom row) Justin Sullivan/Getty Images, Google images, Paul Yao

On day two, participants were shown three sets of three images grouped by messaging themes: money savings, increased comfort, and stopping waste.



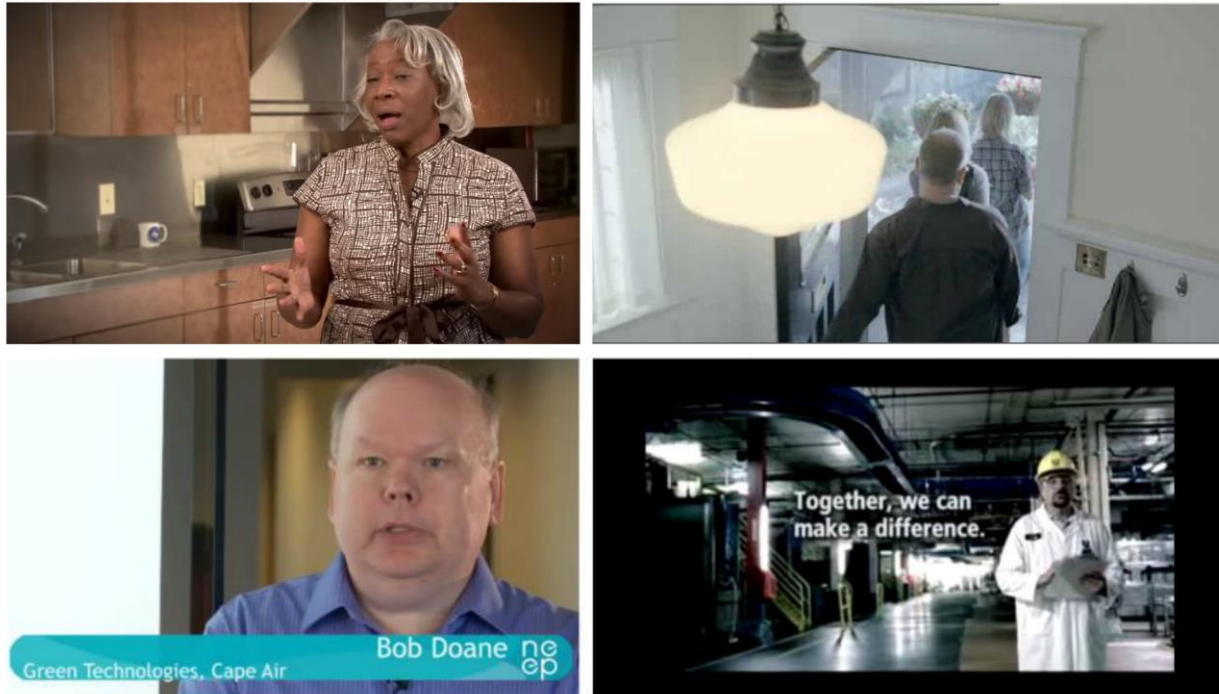
Photo Credit: (top row) Jamelah/Flickr, Russell Davies, Tennessee Valley Authority, (middle, top) UK Daily Mail, (middle, third down) Sujo/Getty Images, (bottom row) romrodinka/Getty Images, Heat Seekers, Jupiterimages/Think Stock, Shelley M. Shockley/Cleveland Public Power

On day three, participants were shown two sets of three images grouped by messaging themes: increased control and broader economic development.



Photo Credit: (top row) Deck Monitoring, Eric Hines, Green Car Reports, (middle row) Google images, (bottom row) Dennis Schroeder/National Renewable Energy Laboratory, Plural Photography/Flickr, Nate Adams/Home Energy Performance

On day four, participants were shown four videos – a utility advertisement focused on raising public awareness around energy waste, two testimonials from a homeowner and small business owner, and a corporate commercial.



Video stills credit, clockwise from top left: [EavesVideoProduction/Entergy](#), [BC Hydro](#), [Northeast Energy Efficiency Partnership](#), [Unilever](#)

## KEY FINDINGS

First, the very good news:

### *Energy efficiency inspires good vibes all around*

People think about energy efficiency in positive, aspirational and personal terms. The visual testing confirms that people have a good understanding of what energy efficiency is, and that they believe it is a good thing. Participants demonstrated a basic grasp of the kinds of actions and products that can save energy in a home – like caulking windows, double- or triple-pane windows, attic insulation, ENERGY STAR appliances, and programmable thermostats.

### *Support for energy efficiency spans the political spectrum*

The research demonstrates that people of all political persuasions support energy efficiency and that the conversation around energy efficiency is remarkably un-politicized. Energy efficiency imagery does not elicit the same kind of political and ideological divides that surface almost immediately in comparable studies on fossil and renewable energy imagery.

***Personal experience = increased engagement***

In reacting to a range of visual images, respondents expressed genuine enthusiasm to share their experiences saving energy in their homes, and genuine interest in what others are doing to save energy. Respondents remained enthusiastically engaged throughout the four-day study, which is notable for these kinds of studies.

***Visuals can prompt strong emotions and excitement***

Visuals can be very effective in bringing energy efficiency home for people. Visuals are particularly adept at prompting visceral, angry response about energy waste and getting people excited about doing things to reduce energy use in their own homes, inspiring them to feel smart and in control. Images can also be effective in getting people excited about business leaders who are proactively reducing their energy use, thereby saving money and being more sustainable; and making people curious about ways they can reduce energy in their own homes, and ways businesses and building owners can reduce energy use in larger buildings.

However, the testing revealed some challenges when it comes to connecting with people on questions of energy efficiency policy:

***Personal responsibility, not government***

People think of energy efficiency as a personal responsibility, and not the job of regulations or government (for the most part). Respondents believe everyone has a responsibility to do things to save energy – be they homeowners, business owners or government employees. But they mostly resist the suggestion that government should play an active role in driving efficiency measures through policies and regulations.

***Difficult to bridge personal to bigger picture***

People don't naturally make the connection between their personal interest in energy efficiency and things they might do to make their own homes more efficient, and the larger context of energy use in commercial buildings and the role of policy to drive more efficient practices. This is in part because people don't think all that much about how much energy big buildings use, nor do they feel as though they have any control over how much energy they use.

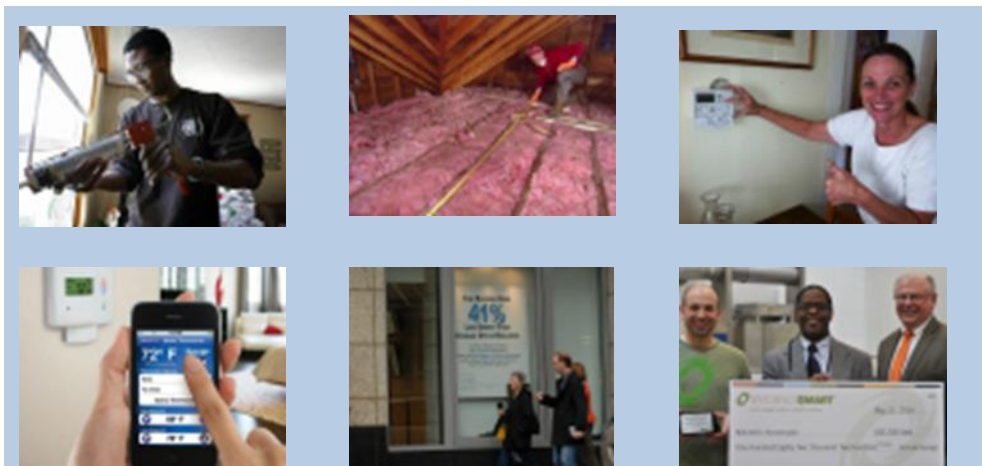
***Skepticism re: institutions and government***

Skepticism about businesses and government entities popped up throughout the study. It was not a strong theme, but in a conversation that was otherwise wildly positive, this skepticism was noticeable and is clearly a vein that opponents to energy efficiency can easily mine. For example, when viewing a digital dashboard in an art gallery with energy use data, respondents suggested they would want to know who was managing that data, and if it was the company, then some wondered if perhaps it wasn't accurate. A few brought up utilities in disparaging terms, wondering if utilities were really interested in lowering energy bills. And of course, almost any mention of government prompted negative and cynical commentary.

This skepticism was countered by very positive reactions to images showing business leaders taking steps to reduce energy. People at some level want to believe in the good story, but are wary about intent, motives and “greenwashing.”

**Top Recommendation:** Smart use of imagery can help us overcome these challenges by focusing people on the practical reality of energy efficiency improvements and the many benefits they provide. This will help “normalize” and make more palatable the policies that drive these innovations. Specifically, we recommend images that show people and businesses actively doing things to reduce energy use in the context of a particular program or regulation, with storytelling focused on the people who are making it happen, the benefits of doing so (money savings, etc.), the emotional benefits (feeling smart, sense of control, etc.), and the specific strategies employed. These images and stories can help soften messaging around a regulatory efficiency program and connect with peoples’ aspirations for saving energy.

Images from our study that fit this description are included in the table below.



Respondents reacted positively to all of these images; people easily grasped what the first four represented, and these images prompted conversations about things people had done or would like to do to improve energy efficiency in their own homes. Reactions to the last two images (the building with the sign and the men holding the check) prompted positive reactions and many questions. People wanted to know how the businesses were able to achieve energy efficiency savings and whether they could patronize the businesses in order to reward them for their leadership. These images would be improved with more explicit information about the type of business, money saved and energy efficiency improvements utilized.

## ANALYSIS & ADDITIONAL RECOMMENDATIONS

Advocates often bemoan the fact that energy efficiency lacks a singular, compelling visual like wind turbines and solar panels, and that visualizing energy efficiency is hampered due to its complexity and its invisibility. Yet there is a lot working in our favor. Resource Media's image testing research and other opinion research find a widespread, solid foundational understanding of what energy efficiency is and the kinds of activities that can reduce energy use; and people have overwhelmingly positive associations with energy efficiency and with images showing people making energy efficiency improvements in their homes. People respond to these images by wondering what they ought to be doing to improve the efficiency of their own homes and by listing the kinds of things they already do with a fair amount of pride.

Not only do people support energy efficiency, but they are excited to connect with each other, share what they are doing to save energy and learn what others are doing.

While excitement and engagement abound, people resist the idea that government or utilities should play a role in mandating energy efficiency. Good use of imagery can help overcome this challenge.

The kinds of images that do this are included in the table above and explored in the detail below.

### *The power of visuals for inspiring support for energy efficiency*

Visuals can do a couple of things when it comes to building support among Americans for energy efficiency policies:

- They can illustrate the tremendous amount of energy waste in both homes and the commercial sector. Imagery that tested well in this category include a photo of an empty office building at night with all of the lights on; a thermal image showing a home before and after energy efficiency improvements; an advertisement showing dollars blowing out of a home's chimney illustrating the money lost along with the wasted energy; and the "Wasteful" video.
- They can inspire people to want to make energy efficiency improvements in their own homes by evoking the sense of excitement, satisfaction and control that comes from lowering energy use and therefore energy bills. Images that tested well in this category include images and video showing people making or talking about energy efficiency improvements in their homes, such as caulking windows, adding attic insulation and changing out light bulbs; and an image with a smart phone app allowing a homeowner to adjust the home temperature remotely.
- They can also inspire people to want to patronize energy-efficient businesses. Images that tested well in this category include an image of business owners proudly holding a check demonstrating



the amount of Kilowatt hours they had saved; and a downtown Seattle office building with a sign indicating that the building uses 41 percent less energy than comparable buildings.

- They can make people very curious about effective energy saving measures in homes and businesses.

***Positive, personal action speaks loudest***

Image/text combinations and videos that show specific people—whether homeowners or business/building owners—and illustrate the energy efficiency improvements they have made and money they are saving as a result —will be very effective in inspiring very positive associations with energy efficiency and support for programs and policies associated with the improvements.



Photo Credit: Kristin Lyons, National Renewable Energy Laboratory

***Use waste imagery sparingly & strategically***

Waste imagery (e.g. office building with all of the lights on, visual representation of money shooting out of a chimney) can be effective at generating some outrage about how much energy is wasted currently, but it’s unclear from the research how motivating this is in generating support for policies. While people get outraged about the waste, they continue to believe that it’s up to individual homeowners, business owners and building owners to make decisions about energy efficiency upgrades. For these reasons, waste images should be used sparingly and with careful thought. We’ll be most effective if we demonstrate that leading building owners and business owners are benefiting from the energy efficiency upgrades as a way to demonstrate feasibility in association with the policy, and inoculate against abstract arguments against government intervention.



Photo Credit: Russell Davies

***Expand the visual vocabulary for energy efficiency***

Advocates should shy away from expand the visual definition of energy efficiency to include things like energy conservation actions (e.g. adjusting thermostat, turning off lights when not in use, etc.) and clean energy. Advocates often worry when people equate efficiency with things like solar panels and wind turbines. Rather than try to “fix” the tendency to lump energy efficiency with other forms of clean energy, advocates will be better off capitalizing on it. People see energy efficiency, conservation and renewable energy as positive things that they want to be a part of. And, energy efficiency is far more relatable through imagery than clean energy for most people because not everyone can afford or has personal

experience with solar panels or has even seen a wind farm, but nearly everyone has a light switch they can turn off, a thermostat they can adjust, a light bulb they can replace, or a gap that can be sealed.

***Strongest photos are relatable and revealing***

Of all the images we tested, the ones that stood out the most for the most people were ones that were real eye-openers, easily relatable, obviously related to energy efficiency and intriguing (money shooting out the chimney, before and after thermal image of home, iPhone controlling a thermostat). What this tells us is that imagery needs to have a very clear connection to energy efficiency to be understood and relatable. People aren't out there trying to draw connections. In our research, we found that the more abstract the image, the more disconnect for viewers.

***Contextualize imagery around comfort and broader economic benefits***

Our research indicates that increased comfort, control, job creation and broader economic benefits are not top of mind reasons to save energy. To make these connections for people, it will take more visual and contextual prompting with our imagery. Advocates will need to pair strong images with even stronger messages to raise awareness of these additional benefits of energy efficiency.



Photo Credit: Tennessee Valley Authority

***Visuals aren't just for digital communication. Think about signage too.***

Signage at homes, on office buildings, retail stores, new developments, etc. can help bring energy efficiency out of the shadows and into the light and show people that energy-efficiency is happening all around them. They can also help give recognition to individuals and good PR to businesses for their achievements. This will be critical to the social norming of energy efficiency – making it seem that everyone is doing it and are proud of doing it. People responded positively to seeing the sign in the office window showing the building used 41% less energy than typical buildings. It piqued their interest, and they wanted to know more. This could work in the residential space too. Advocates could work with energy service companies to develop signs touting buildings' energy efficiency gains with links to websites with more information and testimonials from owners.



Photo Credit: Paul Yao

## WHERE DO WE GO FROM HERE?

This research represents the first step in gaining a better understanding of what imagery works – and doesn't work - to inspire excitement around energy efficiency. In particular, it sheds light on the kinds of images that can help make the connection for people between the personal responsibility they feel to save energy to the important role that government has to play in helping them do so.

Further image testing in conjunction with outreach campaigns will provide even greater insight into the types of imagery that relate best with various audiences, and which inspire the most support for specific policies and programs. To continue to refine our understanding, we will look for opportunities to test different images and image/word combinations via email and Facebook in the context of “live” campaigns to see which images generate the most engagement (clicks, views, comments, surveys completed, petitions signed, etc.).

*These drivers work in concert – people feel very good about saving money, but even better knowing that they are doing so while doing something that reduces waste and benefits society and the environment.*

Areas for further testing include:

- What types of people-oriented photos (e.g. adults vs. kids; workers vs. homeowners; close-ups vs. wide angles; in action vs. static, etc.) and energy-saving actions (e.g. changing light bulbs, weatherizing, getting an audit, etc.) are most appealing?
- What types of photos generate the most digital engagement (e.g. petitions signed, emails sent, surveys completed, etc.) in support of energy-saving policies and programs?
- In what contexts do images of energy waste inspire positive action and/or online advocacy?
- What image/word combos work best to inspire engagement?
- Do people respond better to images showing local businesses vs. larger corporations?

## DETAILED FINDINGS

### ***Personal accountability, monetary gain = core values for saving energy***

The strongest emotional drivers/motivations among all respondents for saving energy are: 1) saving money, 2) stopping waste and 3) personal and social responsibility. These drivers work in concert – people feel very good about saving money, but even better knowing that they are doing so while doing something that reduces waste and benefits society and the environment.

Secondary motivations among respondents were concern for future generations and the environment.

Increasing comfort and control, job creation and broader economic benefits are not top of mind reasons to save energy.

***Energy efficiency helps us do what we already do – but better***

Many respondents think of energy efficiency as conserving energy, using energy wisely or being able to do the same thing with less energy. Words or phrases that came to mind for participants when thinking of the term “energy efficiency” were:

“Using the least amount of energy to get the job done.”

“Innovations that allow us to do things using less energy than before.”

“Use every means possible to use power as little as possible.”

“Efficiency is making something that is done now, work better.”

“Making something run to the best of its ability, using less power.”

“Using less electricity or gas to get the same or similar results.”

“An item that uses less energy for the same purpose.”

“Accomplishing a task satisfactorily while using either fewer resources or more abundant resources than one might normally use.”

***Everyone has a responsibility to save energy...but don't make me do it***

All respondents - no matter their political affiliation, age or sex – believe that saving energy/not wasting energy is important and necessary, and many have already taken action to save energy in their own homes.

“It's important in the sense of a good thing for civilization. Energy efficiency is a no brainer. Even if one is a climate-change denier, it still makes sense to do this. So no matter one's politics or one's science, energy efficiency makes sense.”

Nearly all respondents believe that everyone – individuals, businesses and government agencies – has a role to play in saving energy. However, the impetus to save energy is on the individual and not on the government to mandate saving energy. Energy efficiency is approached through a personal responsibility frame – it's up to each individual to play his or her role, whether we are talking about a homeowner, a business owner or a government employee.

***Government should be a leader & enabler, not enforcer***

When people think about the role of government, they tend to talk about public education, leading by example (i.e. a government agency doing energy efficiency improvements in a government building as a way to demonstrate what is possible) and, in some cases, providing incentives to help homeowners and business owners do energy efficiency retrofits. Respondents are supportive of existing government and utility programs—for example, they have positive associations with ENERGY STAR and many mentioned energy efficiency tax credits and rebates. However, when the conversation focuses on the theoretical role of government in making energy efficiency happen, the prevailing sentiment is that government ought to stay out of it. The most palatable programs will be those that provide incentives or educate people versus those that mandate. The message isn't that government has a role to play, but that we all have a role to play and the program in question will help more people use less energy.

***Energy efficiency is a part of a larger visual vocabulary for sustainability***

Respondents visualize energy efficiency in many different ways and see it as a combination of technology (e.g. LEDs, electric vehicles, ENERGY STAR appliances) and behaviors (e.g. turning down thermostats, carpooling and drying clothes outside.)








Many respondents visualize clean energy sources (wind turbines, solar panels) when they think of energy efficiency. To them, energy efficiency and clean, renewable sources of energy are all in the same visual vocabulary of using energy more wisely and sustainably.

***Personal, relatable photos spark positive feelings and engagement***

Respondents reacted most positively to images showing people taking energy-saving actions or using energy-saving technologies that they could personally relate to – either because they themselves or someone they know has done the same thing, or that they appear to be simple, cost-effective actions that anyone can and should take. Interestingly, when shown these types of images, participants were excited to share their own personal experiences, cheer each other on, and share energy-saving tips and advice.



Photo Credit: Kristin Lyons, National Renewable Energy Laboratory

-  **Brooke L** Mason, MI · Tag  
 Saving energy by setting your thermostat for lower temps when you are at work or sleeping...even if its only a couple degrees lower than average it saves. I always have mine shut down to 60 degrees at night when I sleep. Of course I have two dogs sleeping with me to keep me warm.  
 ☆☆☆☆☆ a month and 22 days ago · Comment
-  **Tina L** Indianapolis, IN · Tag  
 That is a great idea for turning it down at 60 at night, I have a husband and a dog that can keep me warm.  
 ☆☆☆☆☆ a month and 22 days ago
-  **Diana F** Gurnee, IL · Tag  
 Agreed, I do this each night  
 ☆☆☆☆☆ a month and 21 days ago
-  **carl h** kalamazoo · Tag  
 smart programmable thermostats save money & increase comfort level.  
 ☆☆☆☆☆ a month and 22 days ago · Comment
-  **Rebecca N** Chicago, IL · Tag  
 Comfort level is a good point. I set my thermostat down really low at night, but it wouldn't be very fun to jump out of bed to a 59 degree house. So by using the programmable thermostat, I can set it to warm up enough by the time I actually get out of bed so that I don't freeze.  
 ☆☆☆☆☆ a month and 22 days ago
-  **george k** woodstock IL · Tag  
 it is a great feature, as I crank my down at night and turn it up around five am, so it is a bit toastier upon rising  
 ☆☆☆☆☆ a month and 22 days ago
-  **Elyse F** Fox River Grove, IL · Tag  
 Lowering the temperature at night is a good way to cut energy usage and pay less money. Also, not using a lot of energy at peak times helps.  
 ☆☆☆☆☆ a month and 22 days ago

Although this image below of a woman changing out an old light bulb to a CFL got the most positive responses out of the six general energy efficiency images shown on day one, several people were bothered by this photo. To some, the image represented government telling them what to do and forcing them to buy certain products:

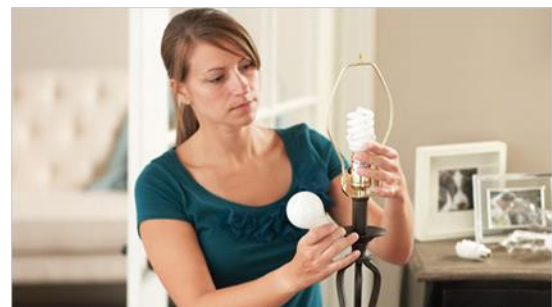


Photo Credit: Google Images

“This image stirs my emotions more than the others. As I explained in my prior response, there is no rational justification for vilifying the standard light bulb. This was simply a way for a major corporation -- GE -- to get a jump on the competition in being able to sell the new light bulbs.”

“This image brings to mind how we as consumers are being treated like a bunch of children. The fact that the standard light bulb has basically been outlawed is something that really infuriates me.”

“The image makes me think of mandated energy efficiency. The light bulbs are more expensive, don’t last as long as they should and worst of all contain mercury.”

***Waste imagery triggers strong emotional response***

Respondents expressed some of the strongest emotional reactions to photos showing energy and money waste. This one with the empty building with the lights on enraged some people:



Photo Credit: Russell Davies

“What a waste of energy, what are they thinking?”

“Makes me think that they should be held accountable for their waste of energy.”

“Such waste makes me angry.”

“It makes me feel sick to see all of our precious resources going to waste for nothing.”

“It makes me think about how wasteful this building owner is. It makes me wonder why they don’t have a set timer to turn off the lights after business hours! It kind of makes me angry that big business would be so wasteful!”

“Fire the building manager.”

The image of the money shooting out the chimney was the image that stood out the most for the most number of participants out of the 21 images viewed (followed by the thermal image of the house before/after retrofit and the iPhone controlling the thermostat). This hit home with participants who did not like to see money being wasted:



Photo Credit: Tennessee Valley Authority

“Failure to conserve energy is like watching your hard earned money go up in smoke. Everything we do is expensive today. Costs are skyrocketing. If I can do something to reduce my energy consumption - I can save money! Money that I can use for other things!”

“I hate wasting money.”

“I would hate to have that happen.”

“It makes me feel that I am losing money everywhere and I need to find a way to stop it.”

“We are giving away too much by not having an energy-efficient home. I'd rather keep this money.”

The image of the Christmas light display elicited a mixed, yet strong emotional response. Most viewed it as a wasteful and distasteful display, but felt that it was the homeowner's prerogative to do whatever he or she wanted – and that person would be the one responsible to pay high energy bills – not them. They didn't seem to make a connection that one person's exorbitant use of energy could drive up the cost of energy for others. Several people actually liked the display and that this one-time overuse of energy was both excusable and entertaining.



Photo Credit: UK Daily Mail

“Good one:) Yes its a bit wasteful, however I don't think most people who do this much decorating turn the lights on all day, they would normally do it just for a few hours at night and only during December. Maybe its worth spending the money just to make some holiday cheer; assuming that the person who's paying the bills is the one who's using all the electricity.”

“To me it is a waste of energy. To the guy who put it up it is his masterpiece. I don't want his electric bill and I also don't want to take from him his right to self- expression. Now it is possible a time may come that frivolous expressions cannot be justified, then we can tear down Las Vegas.”

“This makes me think about a Court I lived on for 10 years were all 17 homes went absolutely crazy with X-mas decorations. Each house had a theme, and literally thousands of people drove and walked by, and had dozens so for over 25 years. While fun for everyone, like the yard in this picture, it was a complete waste of electricity. We averaged an increase of \$300 each X-mas season.”

“It's Christmas, a little over the top but with the right light bulbs and if we conserve all year why can't some people celebrate this way.”

### ***Thermal images pique curiosity & interest***

The thermal image of a home before and after a retrofit was also one of the images that made the biggest impression on participants. This was a real eye-opener for people and made them wonder what their own



homes would look like using the same camera. Not everyone understood what the colors meant, but what was clear to them is that the image was showing energy waste, and that increasing energy efficiency can make a big difference:

“The red home is leaking heat and not energy efficient. As Dad used to say, they're heating the whole outdoors. If I saw this in an ad, I'd wonder if I could get an infrared image of my house so I could see how efficient or non-efficient it is.”

“I think it is showing how much heat is being wasted in the first one, and if I saw this I would flip out and get my house insulated, calked etc.”

“Red means areas that are warm blue means not so much I totally get this it is difficult to keep all your house warm. Houses should be built better.”

“The amount of energy being wasted is so obvious in this picture. It is very thought provoking.”

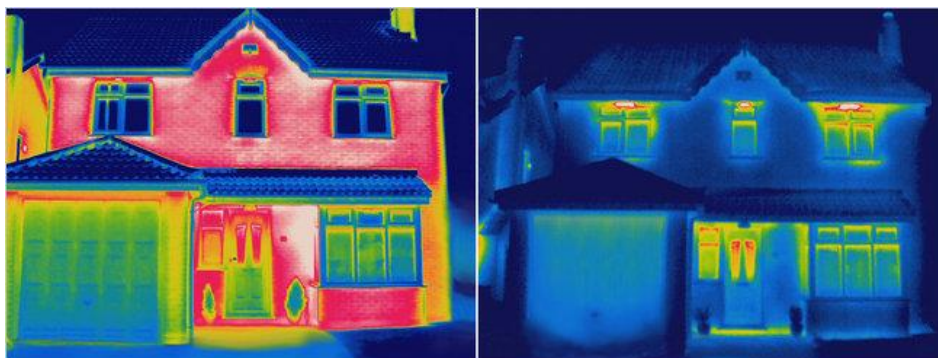


Photo Credit: Heat Seekers

Here are some captions that participants wrote for this photo:

“You work hard for your money, why waste it trying to heat the world?”

“I have money to spend, so I decided to heat the outdoors.”

“Where are your energy costs going?”

This thermal image resonated more strongly than the image of a hand-held thermal camera recording the heat registry of just a single home, although both piqued people’s interest. The before and after thermal image of the home, which showed such a vast difference in coloration, was more effective illuminating in people’s



Photo Credit: Suljo/Getty Images

minds energy waste and the difference that increasing efficiency can make.

### ***Personal technology = smart & in control***

Along with the money shooting out the chimney and before/after thermal image of the home, another image that stood out was of a smart phone controlling a thermostat. People liked the idea of being able to control their energy use and costs from anywhere. Words and phrases that came to mind when they saw this image were: “smart”, “in control”, “in control anywhere”, “easy”, “modern”, “convenient”, “practicality”, “productivity” and “connected”. While some expressed concerns over security, and whether an app like this would be useful or even necessary (thermostats are already programmable anyway), most thought this looked pretty cool and something they’d like to do:



Photo Credit: Google Images

“Smart tech for today’s world. This adds value to your home in several ways. Ease of control for your home from almost anywhere and adds security and peace of mind knowing you can keep track of your home and what’s going on in it. These types of apps can be used for just your electrics or your entire home. From appliances to your alarm system, doors, windows etc. Regulating with apps such as this is a great energy efficient way to go. Many times we leave our homes and forget to turn the temp down. Coming home to your home and being able to turn the temp up to a more comfortable level is great. You can program for different times and different temps so you don’t have to think about it, which will definitely save money.”

“I love what technology can do for us. It provides so many luxuries.”

“This is a practical use of technology. Makes me happy we can do productive things with modern applications.”

### ***Unfamiliar technology draws confusion & skepticism***

Images that did not resonate as well with participants were images of people viewing or using energy-use dashboards and complicated controls. With the case of the tablet lighting control app, it was unclear to participants what they were looking at – many thought the person was shopping for lights, not controlling lights via the tablet. In the case of the energy dashboard display at the art gallery, people generally like the idea of a business displaying its energy use, and that showed corporate responsibility, but it was unclear to viewers how the company was saving energy and how their actions compared to other companies. Some even



Photo Credit: Dennis Schroeder/National Renewable Energy Laboratory

questioned the energy-efficiency of using an LCD TV screen to display energy use. It also made people question the integrity of the information - that the business owner could be manipulating the data to make the business look good.

Responses to these photos indicate that people respond better to images showing familiar technologies (iPhone, programmable thermostats, etc.) that help control energy use, and that showing personal technology is a more relatable way to communicate control than unfamiliar or more complicated technologies.



Photo Credit: Deck Monitoring

***Business imagery gets positive vibes, but also raises questions***

Images showing businesses saving energy generated qualified enthusiasm from participants. The image of the small business owner with the oversized check showing energy savings made people feel good and want to patronize the business and wonder if other businesses were also saving energy.

It also raised questions as to how much money was saved, how the savings were used (did they hire new workers, lower their prices?), if the savings were significant and how they compared to other businesses.

Similar questions were raised with the image of a downtown building with energy-saving signage in the window. People liked the idea of businesses saving energy, and liked that the building owner was displaying the accomplishment, but wanted to know more – how did they do it? How did they pay for it? What are they doing with their savings? What are other buildings doing?



Photo Credit: Shelley M. Shockley/Cleveland Public Power

“In order to get others in the community to reduce their energy consumption other than set penalties for overuse, is to give incentives for careful use. For a business, free good publicity comes with an award and positive recognition of any kind. You can expand it from there with any type of incentive, reduced rates rebates etc.”



Photo Credit: Paul Yao

“It makes me feel as though this business is a responsible member of my community and someone I would want to support. It reinforces to me that when we spend money with companies/businesses we are essentially voting with our dollars. These are the types of companies I’d like to spend my dollars with.”

“I love the fact that the poster tells how much energy they have saved, and it lets us know that this may start at home, but we all need to be concerned with usage, and we all can do something to save it.”

“If we can make energy saving, efficiency and environmental protection both a smart and admirable decision, we’ll have a great start in achieving real saving/climate protection.”

“If more buildings would do the same, then it would really start to make a difference.”

One could imagine a placard like the one shown above that also includes a side-bar indicating the major energy saving measures that were implemented to provide specificity (and therefore counter skepticism) and inspire people to patronize these businesses and make them wonder what they might be able to do in their own homes and communities. One could also imagine utility outreach programs that include case studies of individuals who’ve done energy retrofits of their homes with pictures and videos of people in their homes sharing their stories. Personal anecdotes appear to be very inspiring.

The testing also suggests that images featuring a business that people know and are familiar with will have a much greater impact.

### ***Comfort images fail to connect with viewers***

Reactions to images designed to convey the comfort benefits of energy efficiency and the discomfort associated with energy waste by and large failed to connect and instead prompted a range of questions and reactions that had little to do with energy efficiency.

The photo of the woman bundled up inside her home did not elicit much emotion or empathy. Many participants assumed that her heater must be broken or that she hadn’t insulated her home well enough. They put the responsibility to stay warm and comfortable back on the woman, not on builders, utilities or society as a whole:

“This woman is all bundled up to keep warm because she has not done anything to insulate her home to keep herself warm from the cold winter.”



Photo Credit: jamelah/Flickr

“It looks like the lady’s furnace is not working or perhaps she is trying to save money and keeping it set low inside the house. I think that whatever is going on needs to be addressed. If her furnace is not working she should get it fixed. If she is behind on her bills she should try to make payment arrangements with her utility company.”

Many participants indicated they would not allow themselves to get that uncomfortable, and that they would pay the price to crank up the heat. Some people sympathized with the woman, saying that no one should have to be cold in their own home:

“I think the women either doesn't have heat or she has to keep the thermostat really low because she can't afford her utility bill. I feel sorry for the woman. This makes me think of all the people who can't afford to pay their utilities.”

“She's either too poor to pay for heat, or extreme in saving energy. It makes me feel bad either way.”

The image of the boy inside on a snowy day made people feel nostalgic, cozy and curious about what the boy might be thinking or wanting, even a little sad for the boy who some said looks he wants to get outside and play. Overall, responses to the image had less to do with energy efficiency, and more to do with their connection with the child. People felt much more empathy for this child than for the woman bundled up:



Photo Credit: romrodinka/Getty Images

“I think that no kid should have to worry about staying warm. Glad to see that this little child is warm an happy.”

“Makes me think about when my kids were little and how important it was to me that they be warm and it makes me realize that they to are doing the same thing for their children. Making sure their homes are well insulated.”

Although the image of the child elicited more positive emotions, the image of the woman bundled up made a bigger impact on respondents when asked to compare them to each other.

### ***Economic benefit images need context***

Other images that did not speak to viewers about the benefits of energy efficiency were the lit up cityscapes and group shot of happy Tesla factory workers. In both cases, although prompted to think about the images in the context that companies and cities



Photo Credit: Green Car Reports

are innovating, generating economic activity and creating jobs while using less energy thanks to energy efficiency, respondents didn't see the connection in the photos to energy efficiency gains. The lit up cityscapes made people think more about energy waste than economic vitality, and the Tesla workers made people feel happy, triumphant & proud – but they weren't sure why.

“This image looks like a nice place to work. I am not sure what these people are happy to have accomplished because I can't read their sign. Hopefully, businesses in all sectors are improving their operations and producing better products.”

“I can't read the sign but they appear to have reached a big productivity goal and worked as a team to do it, and are showing their pride in their work. Are some of these people there because the business saved money on energy and could use the money to hire new staff? That would be a great benefit. I'd consider buying from this business if I knew they used their money that wisely. Save energy, save money, and put the savings back into the community.”

“This image makes me think these workers made this vehicle and are very proud of their accomplishments, celebrating with a group picture. I don't think this conveys anything about energy efficiency because it's not clear this car is focused on saving energy, so I'm confused. Ambiguous and unclear.”

### ***Energy efficiency worker images have potential***

An image of four energy efficiency workers and work truck outside a home prompted mixed reactions. Some respondents indicated the image made them feel “nothing in particular,” and a few—mostly men—were more cynical, questioning why such a large crew and large van was needed for the job.

“I don't find this image to be particularly compelling, just a bunch of guys standing around. I do like that they have a business dedicated to energy savings and performance.” (man)

“Looks like this is a crew that would help my house become energy efficient. Takes 4 guys to do this? How much does this cost?” (man)

Many raised questions about how expensive the service might be, indicating it would be nice if you could afford it.

However, for some respondents, the photo prompted positive comments about hiring a crew to come to their homes to assess their energy use and make upgrades to save them money and energy.



Photo Credit: Nate Adams/Home Energy Performance

“Makes me think about having my house checked for energy loss. Makes me feel happy there are people out there who can check homes, heat loss, conservation.”

“This company is going to make this home an energy efficient home. It makes me think this is a huge part of our future. This will be a standard service. Update your home and save money at the same time.”

“This is a group from an in home energy insulation business that is going to make this older house more energy efficient. It makes me feel good and "Energy Efficiency" are the words that come to mind.”

“This makes me think that this home is getting some sort of consultation on ways to save energy. This image makes me happy. The team looks cheerful and ready to help.”

And this was one of the few images that prompted a comment about the role government can play in helping homeowners to afford it:

“It looks like the man just up-dated his home with energy saving materials, he looks happy now that he is saving money. I think the government should do this to every home to save the energy we have now and just maybe there will be energy for the future.”

Future testing would be helpful in determining if changes to the image – i.e. showing the crew actually doing energy efficiency improvements and text indicating the energy audit is part of a utility program— inoculate against the skepticism voiced by some respondents and prompt additional positive responses to the concept of government playing a role in helping homeowners save energy.

Responses to the cityscape and worker images indicate that images designed to communicate large-scale economic benefits of energy efficiency – e.g. thriving cityscapes, workers, etc. – must be accompanied by clear messages or text overlays that help people make the connection between improving energy efficiency and broader economic benefits like job creation and increased economic productivity.

***Showing frustration makes people – well, frustrated***

An image of a couple paying their bills prompted questions about what they were doing, and comments about how energy bills can be confusing and how important it is to pay attention and read them closely. The image made people feel frustrated and confused for the couple, and evoked their own dislike of paying bills. But, it prompted few comments about the importance of



Photo Credit: Jupiterimages/Think Stock

energy efficiency.

***Wasteful and testimonial videos were most appealing***

On the last day of the focus group, participants watched four videos and shared their impressions. The first was a public service video from BC Hydro, [“Wasteful”](#), showing people engaged in ridiculous, socially-unacceptable wasteful behaviors – like leaving the water running all day, using up an entire box of tin foil to wrap one sandwich, and eating one bite out of an apple and throwing it away (and then another, and then another). At the end, a family leaves home (during the day) with the hall light on and the narrator says, “The most ridiculous thing about wasting energy is that we don’t think it’s ridiculous.”

Two other videos were testimonials – one from a [homeowner](#) and another from a [small business owner](#), and last video was a [corporate commercial](#). While the “Wasteful” video elicited the strongest response with participants, it might have worked to send the wrong message. People hate waste, so this one really got under participants’ skins. They also liked that it was amusing and wasn’t preachy. But some of the comments indicated that perhaps the video was working to remind people how wasteful human beings are, rather than prompt thinking about what could be done via policy or regulations to address waste. It also made people think about how they are wasting more than just energy – water, food, plastic – just like the people in the video. Here are some of the comments:

“They are trying to tell us we waste more than just energy in our lives and that we do not think it is a big deal. It did speak to me because I know I am a tiny bit guilty of some of those things. It made me tell myself to think more about wasting energy, food, everyday items.”

“Made me think about how wasteful we can be at times with water, electric and other things. They were telling us we need to be smarter and do our part in saving.”

“The video showed that people waste power, food, water etc. They are not power-using smart. This video did speak to me in some ways. For instance, sometimes I forget to turn lights off when left my home.”

“Interesting video! As a society we don't just waste power, we waste EVERYTHING! If we get into the habit of saving energy - we could save on everything! Saving power is just the first step. And we have lots of steps to take to curb our wasteful habits.”

The [homeowner testimonial](#) video also generated lots of positive responses from participants, though a few noted that it lacked the entertainment value and memorability of the “Wasteful” video:









“The video says it all! "The Power of People" to make Changes! The small energy conservation steps undertaken in this video saved the homeowner here real CASH! If we could each save










\$50.00 a month on our heating and cooling bills it would be fantastic! The best thing about this video is that the savings are REAL.”

“This YouTube video is a much more realistic approach that provide actual things homeowners can do. The first one was more funny and entertaining but this one with actual testimonials speak loudly as well and makes me realize that I can always improve on my energy efficient habits.”

APPENDIX

Day 1: Photo #1	Day 1: Photo #2	Day 1: Photo #3	Day 1: Photo #4
 <p>Photo credit: Google Images</p>	 <p>Photo credit: Jeremy Portje/Dubuque Telegraph Herald</p>	 <p>Photo credit: Justin Sullivan/Getty Images</p>	 <p>Photo credit: Kristin Lyons/National Renewable Energy Laboratory</p>
<p>While this image was relatable and inspiring to most, for some it prompted negative reactions due to associations with government treating people “like children.”</p>	<p>This photo was understandable and relatable. It made people think and talk about energy efficiency improvements in their own homes.</p>	<p>Respondents expressed mostly positive associations with ENERGY STAR, with many indicating they always look for the label when they shop.</p>	<p>People understood this is an image of a woman using a programmable thermostat, and it made them think about saving money and energy.</p>
Day 1: Photo #5	Day 1: Photo #6	Day 2: Photo #1	Day 2: Photo #2
 <p>Photo credit: DIY Network</p>	 <p>Photo credit: Paul Yao</p>	 <p>Photo credit: jamelah/Flickr</p>	 <p>Photo credit: romrodinka/Getty Images</p>
<p>This photo was understandable and relatable; many mentioned wanting to double check their insulation to make sure it is sufficient. Multiple people mentioned the concept “it will pay for itself.”</p>	<p>This photo impressed many participants, but also prompted questions. People wondered where the building is and what kinds of improvements were made to save that much energy—in part to find out whether any of the techniques could be used in their own homes.</p>	<p>This image prompted questions about why the woman is bundled up, with some suggesting keeping the heat low and bundling up is a great way to save money, and others suggesting they would turn the heat up before letting their home get so cold.</p>	<p>Respondents connected with the boy in the image, but it did not prompt them to think about energy efficiency.</p>

<p>Day 2: Photo #3</p>  <p>Photo credit: Heat Seekers</p>		<p>Day 2: Photo #4</p>  <p>Photo credit: Russell Davies</p>	<p>Day 2: Photo #5</p>  <p>Photo credit: Shutterstock</p>
<p>While respondents didn't necessarily understand what the different colors meant, they got the message that one home is energy efficient and the other is not, and the image prompted people to wonder what their home would look like with thermal imaging, and what kinds of improvements were made to make the home more energy efficient.</p>		<p>Respondents had a visceral reaction to this image. It made them angry that this building is wasting so much energy. But, comments placed the blame squarely on the building owner.</p>	<p>This image made people think about heat loss, but was less effective than the compare/contrast thermal image (Day 2: Photo 3) in conveying the value of energy efficiency.</p>
<p>Day 2: Photo #6</p>  <p>Photo credit: UK Daily Mail</p>	<p>Day 2: Photo #7</p>  <p>Photo credit: Tennessee Valley Authority</p>	<p>Day 2: Photo #8</p>  <p>Photo credit: Jupiterimages/Think Stock</p>	<p>Day 2: Photo #9</p>  <p>Photo credit: Shelley M. Shockley/Cleveland Public Power</p>
<p>While this image made many people think about energy waste, respondents mostly indicated homeowners should be free to express themselves—and pay higher energy bills.</p>	<p>This image stood out the most for the most number of participants out of the 21 images viewed. It hit home with participants who did not like to see money being wasted.</p>	<p>This image prompted comments about how energy bills can be confusing and made people feel frustrated and confused. It evoked their own dislike of paying bills. But, it prompted few comments about energy efficiency.</p>	<p>This image prompted mostly positive reactions along with questions about the business and how it managed to save so much energy. It could be improved with more explicit information about energy saving strategies and money saved.</p>

Day 3: Photo #1	Day 3: Photo #2	Day 3: Photo #3	Day 3: Photo #4
 <p>Photo credit: Google Images</p>	 <p>Photo credit: Deck Monitoring</p>	 <p>Photo credit: Dennis Schroeder/National Renewable Energy Laboratory</p>	 <p>Photo credit: Nate Adams/Home Energy Performance</p>
<p>This image stood out the most of all the technology-focused images (Day 3, images 1-3) shown. People could easily relate to having an app on their smart phone to control their thermostats. People described this as “smart”, “convenient”, “in control” and “easy”.</p>	<p>People generally liked seeing this dashboard display of the art gallery’s energy use, but questioned the validity of the information and wondered if the business was performing well or not. The image did not clearly convey energy savings.</p>	<p>This image of a lighting control device was confusing for most who thought they might be looking at a shopping app. Unlike the smart phone (Day 3, Photo 1), people could not relate to this device, what was being displayed on screen or the context in which it was being used.</p>	<p>This image of the energy workers outside the home got a mixed response, some thinking this was going to be an expensive job, and others desperately wanting a crew like this to come to their homes. This image could be improved with information about the number of people employed by the local energy efficiency industry.</p>
<p>Day 3: Photo #5</p>	<p>Day 3: Photo #6 (PNW)</p>	<p>Day 3: Photo #6 (Midwest)</p>	
 <p>Photo credit: Green Car Reports</p>	 <p>Photo credit: Plural Photography</p>	 <p>Photo credit: Eric Hines</p>	
<p>This image of happy Tesla factory workers made people feel happy and proud, but not sure why because it wasn’t clear what the workers were celebrating. This image could be improved with a text overlay of a specific fact on the economic benefits of EE, e.g. the number of workers employed today in the clean car industry, thanks to clean energy policies.</p>	<p>Most people viewing this image of the Seattle skyline at night thought it was wasteful to have all those lights on. Images showing vibrant cityscapes need clear messaging about how cities are working to save energy and money.</p>	<p>Likewise, most people viewing this Chicago skyline thought of energy waste, not about energy productivity. This could be improved with explicit messaging that the city is generating more economic activity using less energy, thanks to energy efficiency.</p>	