

Marketing Home Energy Efficiency: Benefits and Barriers to Adopting a Home Energy Efficiency Program

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Executive Summary

Climate change is one of modern society's greatest challenges (Smalley Institute, 2014). Implementing energy efficiency improvements in the residential, commercial, and industrial sectors is one of the most effective tools to mitigate climate change because it allows for the same outcome to be produced by less inputted energy. According to the EPA, greenhouse gases associated with energy use from the residential sector contributed approximately 17% of total domestic emissions in 2007 (Environmental Protection Agency [EPA], 2015). Academics, policy makers, and companies understand the technological and economic potential of energy efficiency. One of the most important factors in successful energy efficiency uptake in the residential sector is the perception of energy efficiency by homeowners.

This Duke University master's project was conducted in collaboration with the Clinton Climate Initiative (CCI) and Duke University's Carbon Offsets Initiative (DCOI). The study identified perceived benefits of and barriers to energy efficiency and determined if these salient benefits vary by geographic region in the United States.

This research can be leveraged by the CCI's employee-sponsored energy efficiency benefits program: the Home Energy Affordability Loan (HEAL) program. HEAL facilitates energy efficiency retrofits by supporting re-insulation, infiltration reduction, weatherization, increased heating and cooling efficiency, access to financing, education about home energy efficiency, and vetting of home performance contractors. While this study was modeled based on the CCI's HEAL program, the results of the present research are relevant to any organization looking to market a home energy efficiency program.

In this study, two surveys were distributed through Amazon Mechanical Turk (MTurk). Survey 1 was used to identify perceived benefits of and barriers to energy efficiency. Survey 2 was used to determine preferred marketing messages, testimonials, and images for advertising a home energy efficiency program.

The results of the research indicate that there are statistically significant differences in individuals' preferred benefits of energy efficiency by geographic location and demographic characteristics. The top three benefits of energy efficiency were identified as lowering one's energy bill, energy efficiency as a good investment, and increasing the comfort of one's home. Participants in all four geographic areas,

the Northeast, South, Midwest, and West, ranked energy efficiency improvements lowering energy bills as the top benefit. However, the results suggest that beyond the top preferred benefit, there are differences in preferences between geographic regions. Second to lowering energy bills, homeowners located in the Northeast preferred the benefit of energy efficiency increasing the value of their home, while homeowners in the South and Midwest preferred the benefit of energy efficiency improving the comfort of their home. Furthermore, homeowners in the West preferred the environmental benefits of energy efficiency more than homeowners in the Northeast, South, and Midwest. Additionally, differences in preferred messaging and images were found based on geographic region, gender, and political orientation. These findings are valuable in furthering the scientific understanding of perceptions of home energy efficiency.

Furthermore, these results are valuable to organizations that seek to marketing home energy efficiency programs. Three tiers of marketing strategy were developed for organizations to customize their marketing of a home energy efficiency program based on available resources and preference of their internal marketing departments. The tiers are differentiated by level of effort and resources, so that organizations may choose a marketing strategy with a level of depth appropriate to their available resources. Tiers 1 and 2 draw from the conclusions about effective marketing materials presented in this report. Tier 2 recommends tailoring the marketing materials by geographic region. Tier 3 requires the most effort on behalf of the company; nevertheless, Tier 3 is the recommended strategy for maximizing the effectiveness of the marketing materials. It requires a company to send out a survey, presented in the Appendix, to their employees to identify their perceived benefits of energy efficiency, and preferred messages, testimonials, and images. By implementing this survey to all employees, the internal marketing division could obtain sufficient information to tailor their marketing by geographic region and employee preference, likely leading to maximum participation rates. Motivating high participation rates in home energy efficiency programs is a powerful way to increase individuals' wellbeing and the wellbeing of the planet.

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Introduction

Climate change is considered one of modern society's greatest challenges (Smalley Institute, 2014). Energy efficiency is one of the most potent tools to mitigate climate change, because, by definition, it allows for the same outcome to be produced by less energy. Energy efficiency can reduce commercial, residential, and industrial energy usage. For example, homes can be upgraded with more efficient technologies, transportation vessels can be designed to use energy more efficiently, industries can execute their manufacturing and business practices using less energy, and commercial and institutional facilities can be retrofitted to use less energy. Lowering energy use reduces greenhouse gas emissions from each of these sectors to the atmosphere, thereby lessening their contributions to global climate change.

In addition to these significant climate benefits, energy efficiency can provide economic benefits, improve the utility system, promote water conservation, and contribute to risk management (Environmental Protection Agency [EPA], 2015). From a grid perspective, energy efficiency can provide greater stability and flexibility by lowering energy demand. Adding energy efficiency improvements to one's home or business hedges against risks associated with highly volatile and fluctuating energy prices (EPA, 2015). While energy efficiency measures can be capital intensive, they ultimately lower utility bills and some efficiency upgrades have shorter payback periods than many other technologies (Aravena 2016). Energy efficiency is referred to as the "low-hanging fruit" of sustainability because energy savings can be achieved through relatively simple technological retrofits or behavioral changes (International Energy Agency [IEA], 2014). Energy efficiency is defined as achieving the same output with less inputted energy. Behavioral change is a key component in achieving energy efficiency because individuals' decision-making and actions are involved in every step of the process, from designing more energy efficient technologies, to deciding to purchase and install them, to operating them.

Under the directive of the Obama Administration, the federal government recognizes the potential of energy efficiency, and over the past eight years a series of initiatives have been launched to support its dissemination across the country. One such initiative, called the Better Buildings Challenge, was first announced in December 2011, and seeks to improve the efficiency of the United States' commercial, institutional, multifamily buildings, and industrial plants by 20% or more over the next ten years (Department of Energy [DOE], n.d.). Over 250 organizations have committed to this challenge, including

utilities and financial institutions. The goal is to leverage private sector capital to accelerate energy efficiency upgrades by providing a platform for successful energy savings strategies (DOE, n.d). According to the EPA, the initiative has saved \$840 million over the past four years (U.S. White House, 2015). In addition, the U.S. Department of Energy (DOE), in collaboration with the U.S. Department of Housing and Urban Development (HUD), completed energy efficiency upgrades in approximately two million homes and saved most families in these homes approximately \$400 on utility bills in the first year (DOE, 2015). In 2013, the U.S. Department of Agriculture (USDA) announced plans to provide \$250 million to rural electric cooperatives to lend to both businesses and residential consumers with the purpose of supporting the development of energy efficiency retrofit projects (United States Department of Agriculture [USDA], 2013).

However, despite these existing federal initiatives, there remain a vast number of energy inefficient homes in the United States. According to the EPA, greenhouse gases associated with energy use from the residential sector contributed approximately 17 percent of total domestic emissions in 2007 (EPA, 2015). Research suggests that state- and utility-sponsored programs to encourage residential energy efficiency currently reach less than two percent of homes in the United States annually (Palmer et al., 2011).

To motivate action by residential consumers, a number of organizations have sought to aid their employees or customers in the uptake of energy efficiency improvements, often with the aid of government funding. One such organization is the Clinton Climate Initiative (CCI): a branch of the Clinton Foundation that works to mitigate climate change. In 2009, the Clinton Climate Initiative created the Home Energy Affordability Loan (HEAL) program, an innovative employer-sponsored program that seeks to support residential energy efficiency through employee energy benefits. The HEAL program is innovative and has been tested across the United States in companies of varying sizes (Clinton Foundation, 2015). Through HEAL, employers facilitate energy efficiency retrofits for their employees by supporting re-insulation, infiltration reduction, weatherization, increased heating and cooling efficiency, providing access to financing and education about home energy efficiency, and vetting home performance contractors. The benefits of the program include improved employee engagement, a potential increase in an employee's disposable income, stimulation of local economic activity, and the production of verifiable carbon emissions reductions (Clinton Foundation, 2015).

In 2009, HEAL worked with L’Oreal to implement energy efficiency retrofits at its plants, which reduced the plants’ electricity consumption and greenhouse gas emission and saved L’Oreal more than \$80,000 annually. HEAL also educated L’Oreal employees about the importance of environmental responsibility and provided home energy assessments and financing or loans to implement energy efficiency retrofits in their own homes. Employees realized an average of \$416 annual savings and 2.2 tons of greenhouse gas emissions reductions per year (Clinton Foundation, 2013).

In 2007, Duke signed the American College and University Presidents’ Climate Commitment and committed to be carbon neutral by 2024 (Duke University, 2015). In order to achieve this carbon neutrality goal, Duke must eliminate or offset all of its emissions in less than ten years. The DCOI spearheads Duke’s carbon offsets strategy. Energy efficiency improvements in the residences of Duke employees can contribute to this carbon neutrality goal when they generate verifiable carbon emissions reductions. In 2012, the DCOI teamed up with the CCI to implement the HEAL program to Duke University employees.

Since then, the CCI and the DCOI have collaborated to promote, organize, implement, and further develop the HEAL program. One crucial component to this is optimizing the marketing strategy utilized to sell the program to potential stakeholders, including both employers and employees. The present research focuses on expanding and refining the marketing materials for HEAL by exploring benefits of and barriers to energy efficiency improvements that are salient to individuals in varying geographic areas across the country.

Effective marketing messages for the program may differ regionally. For example, the CCI launched the HEAL program in Arkansas with the slogan, “Reduce the Use,” encouraging employees to make investments that would have short-term payback periods. However, when the CCI expanded to companies in northern states, including Michigan and Vermont, these messages about ROI were not as effective. Initial research revealed that home comfort in the winter resonated more with the employees in these locations.

This master’s project addresses the need to further understand how to effectively market the HEAL program, to individuals in varying geographic locations and of varying demographic groups. Other home energy efficiency programs can also benefit from the conclusions of this research. The central research

questions are (1) what the benefits and barriers to home energy efficiency are, and (2) how the benefits and barriers vary by geographic location and other demographic characteristics.

Hypotheses

Two hypothesis were developed for this study:

1. Environmental benefits of energy efficiency are perceived as less important than other benefits (e.g. increased comfort, increased home value, advanced technology).
2. Individuals from the northeastern U.S. value comfort as the most important benefit, while individuals from the southern U.S. value savings on energy bills.

The second hypothesis was based on observations made by CCI in their work implementing the HEAL program thus far.

Literature Review

Past research both on marketing strategies and on the successful implementation of environmental behavior change strategies is valuable in addressing these research questions. Environmental behavior change strategies refer to behavioral interventions that target environmentally-related behaviors such as transportation, energy use, water use, and recycling, among others. Behavior change is crucial in achieving a higher level of environmental sustainability in our society. It is relevant to the present study's examination of marketing a home energy efficiency program because the decision to enroll in an efficiency program is a behavioral change. According to Doug McKenzie-Mohr, "behavior change is the cornerstone of sustainability" (2011). Thomas Dietz and colleagues identify numerous "wedges"; actions that can be taken by society to significantly reduce output of carbon emissions (2009). Among these wedges, the behavioral wedge is credited with the potential to reduce the United States' carbon dioxide emissions by up to 7.4% over the next ten years if behavioral patterns are optimized for energy savings. In addition to significant emissions reductions, behavioral changes can be implemented more quickly on a larger scale than technological upgrades or energy grid changes, further increasing the importance and significance of behavior change in the pursuit of lowering greenhouse gas emissions (Dietz et al., 2009). Furthermore, Asensio and Delmas report that, "Energy conservation through both behavioral and technological change has a savings potential of 123 million metric tons of carbon per year, which is representative of 20 percent of direct emissions from households in the United States" (Asensio & Delmas, 2015).

To address the question of how to achieve these impactful behavior changes, motivations for pro-environmental behavior have been explored in academic literature. Social scientists have examined innate characteristics and situational factors that lead to higher rates of pro-environmental behaviors (Zelezny et al., 2000; Dunlap & Van Liere, 1978; Hirsh & Dolderman, 2007; Markowitz et al., 2012; Hines et al., 1986; Wells & Lekies, 2006; Nisbet et al., 2009). Many types of behavioral interventions have been tested to motivate pro-environmental behavior as well (Allcott & Mullainathan, 2010; Asensio & Delmas, 2015; Baca-Motes et al., 2013; Cialdini & Schultz, 2004; Goldstein et al., 2008; Madrian & Shea, 2001; McKenzie-Mohr, 2011).

The theory of community-based social marketing provides a framework for selecting and evaluating behaviors to change as well as strategies to change them. This method has been illustrated to be effective in motivating positive behavior change for sustainable and other social causes (Lee & Kotler, 2016; McKenzie-Mohr, 2011). This method specifies five steps in effectively executing a behavior-change campaign to promote sustainable behavior:

1. Select behaviors to be changed
2. Identify the benefits and barriers for individuals to changing these behaviors
3. Develop strategies to change these behaviors
4. Pilot the behavior-change strategies
5. Implement the strategies on a large scale and evaluate them (McKenzie-Mohr, 2011).

This master's project draws on past research for all five steps of this process, and contributes to steps 2-4 in marketing a home energy efficiency program.

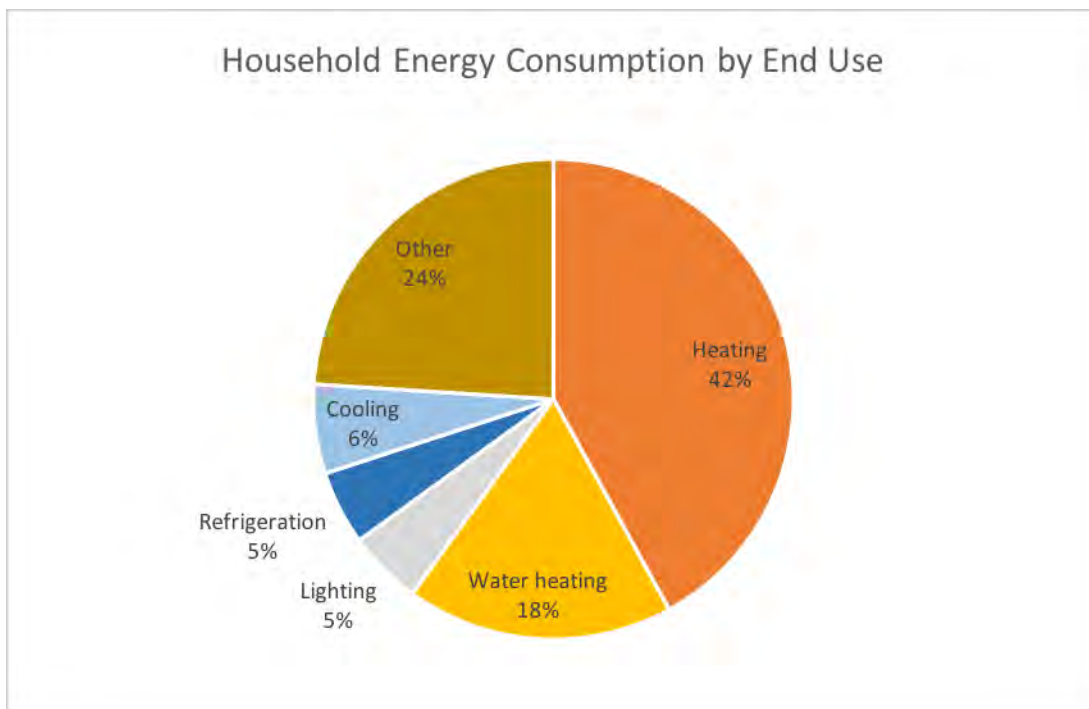
Target Behaviors to Change

To address the needs of the client in this project, the target behavior was pre-determined as enrollment in a home energy efficiency program. By motivating individuals to sign up for the program, the expectation is that this will lead to the implementation of energy efficient upgrades in their homes and carbon emissions reductions in the long-term. This is an assumption that must be made because of the specification of the target behavior by the client. McKenzie-Mohr recommends that target behaviors be end-state and non-reducible, of which enrolling in a home energy efficiency program is neither. However, it is still assumed that the theory of social marketing is valuable in this research and the development of marketing materials to motivate people to enroll in home energy efficiency programs.

McKenzie-Mohr recommends quantifying the impact of the selected behaviors to determine their worthiness as the focus of a behavior-change campaign. Home energy efficiency improvements have a great potential to reduce energy use and greenhouse gas emissions (McKenzie-Mohr, 2011).

In a typical U.S. home, the percentage of energy usage is divided as follows: 42% of home energy is spent on space heating, 18% on water heating, 5% lighting, 5% refrigeration, 6% cooling, and 24% other (DOE, 2015b). This is presented in Figure 1 below.

Figure 1. Household Energy Consumption



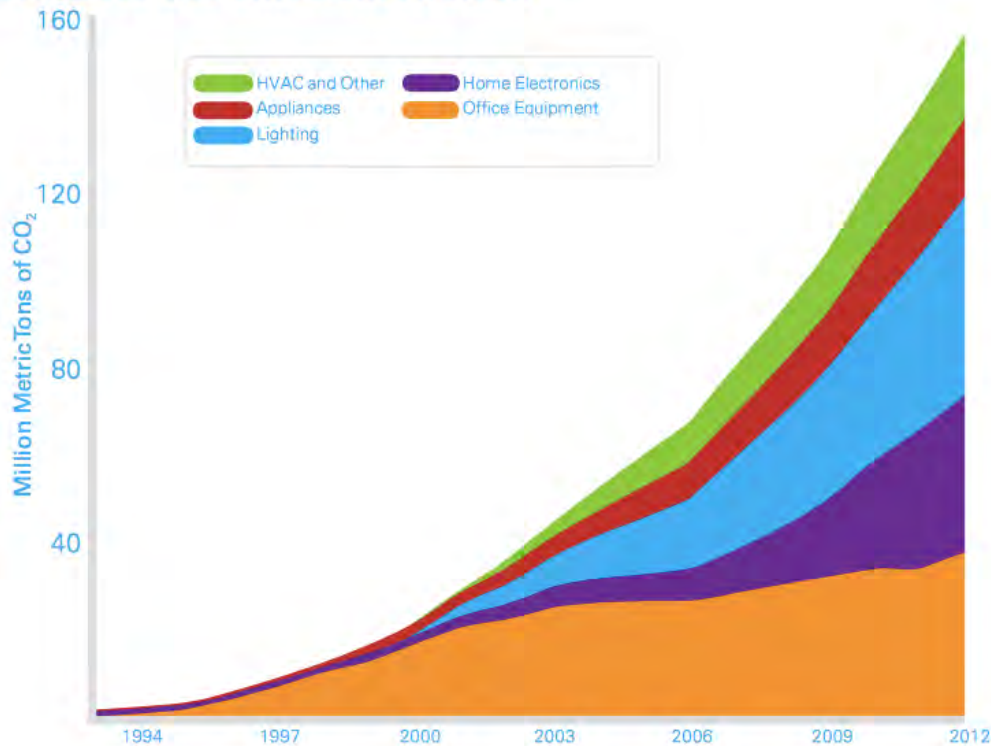
The average U.S. citizen loses between \$200 to \$400 annually on their energy bills due to inefficiencies in the home (DOE, 2015c). According to a research study conducted by Bardhan et al. in 2013, the incremental investment to make 129 million U.S. homes more energy efficient would cost \$229 billion, but result in present value savings of \$395 billion. In order to take advantage of this financial opportunity, research indicates that homeowners should seal the shells of their homes, through insulation and weatherization, and upgrade heating and cooling systems (Bardhan et al., 2013). However, since upgrading heating and cooling systems oftentimes costs more than other retrofits, many energy efficiency advocates also emphasize the importance of upgrading the efficiency of appliances and lighting. Average homes could save close to \$180 or more on an annual basis by switching from

incandescent to compact fluorescent lights (Creys et al., 2010). In addition, programs such as ENERGY STAR®, a voluntary energy efficiency-labeling program created by the EPA and DOE, save consumers money and energy (Creys et al., 2010). Launched in 1992, the ENERGY STAR® program has expanded the number of energy efficiency labeled products to more than 60 categories over the last 20 years. An estimated 300 million ENERGY STAR® products are sold annually and more than 80% of U.S. consumers recognize the energy efficiency ENERGY STAR® label. In 2012, the U.S. EPA estimated that these labeled products prevented more than 150 million metric tons of greenhouse gas emissions annually (EPA, 2012). As seen in Figure 2, the quantity of greenhouse gas emissions avoided from energy efficiency upgrades increased substantially after 2005.

Figure 2. The Potential for Emissions Reductions through Home Energy Efficiency (EPA, 2012)

Environmental Results

Annual Greenhouse Gas Emissions Avoided



By motivating individuals to enroll in home energy efficiency programs, the likelihood of these individuals executing each of the aforementioned behaviors increases, thereby leading to significant energy and emissions savings.

Benefits and Barriers to Home Energy Efficiency

McKenzie-Mohr specifies that determining the benefits and barriers to a desired behavior should happen in four steps:

1. Literature review to ascertain what research has previously been done about that behavior
2. Observations of individuals in the environment where they would choose to perform that behavior or not
3. Focus groups to obtain direct feedback on perceived benefits and barriers to the behavior
4. Surveys to further explore information gathered thus far from a sample representative of the target population (2011)

In this research, literature is explored in this section. Observations were not performed because the researchers did not have access to the environment in which individuals choose to enroll in a home energy efficiency program or not. Focus groups and surveys were performed and are described in the Methods section.

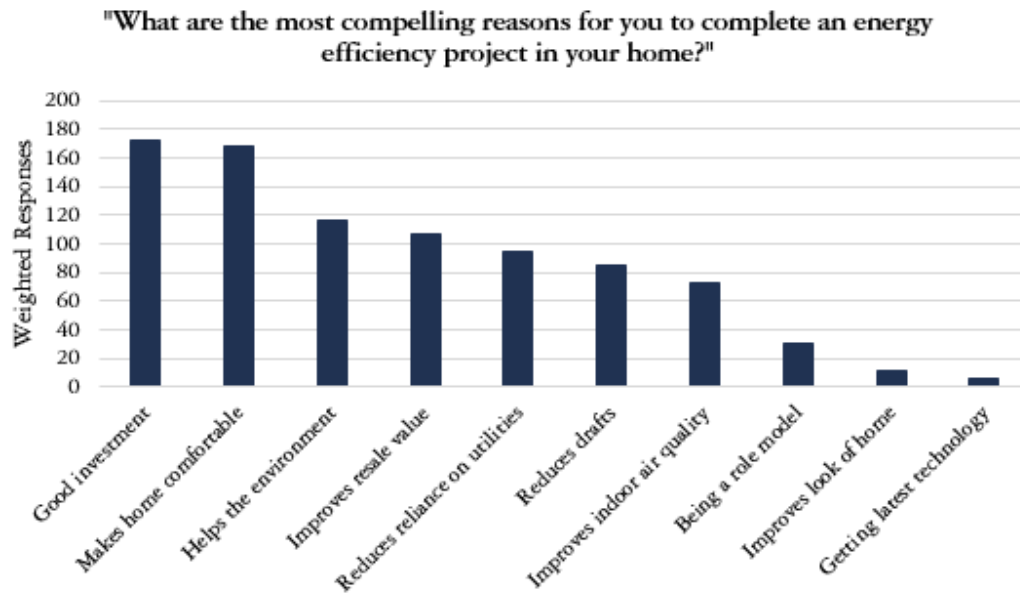
Relevant literature provides insight into perceived benefits of and barriers to home energy efficiency. A recent study in Ireland on motivation to make energy efficiency improvements at home found that the most important motivating factor was monetary or economic gains, followed by increased comfort in the home. Environmental benefits were found to have little importance. These conclusions held true for motivation throughout the decision-making process and for the ultimate decision to invest in energy efficiency measures (Aravena, 2016). Aravena recommends to market energy efficiency investments in terms of their monetary advantages and potential to increase home comfort.

Perceptions of energy efficiency can build barriers to its implementation (Attari et al., 2010). In 2010, Attari et al. carried out a study in which participants were asked to rate the most effective ways to reduce household energy consumption and to predict energy use and potential savings related to various behaviors. An overwhelming number of participants in this study focused on energy conservation and curtailment, such as turning off the lights, rather than energy efficiency improvements. Attari et al. provided the explanation for this is that energy efficiency upgrades involve additional effort, out-of-pocket costs, and research on the part of the resident. Lastly, participants underestimated energy use and savings by a factor of 2.8 for high-energy activities, which could be the result of a lack of clear information regarding residential energy use (Attari et al., 2010).

Research conducted by Resources of the Future investigated the success of energy audits across the United States. Audits can help bridge the previously mentioned information gap for homeowners. A survey of energy auditing companies across the United States revealed that the top barriers to energy audits are: individuals cannot afford upgrades and retrofits that the audit may recommend, individuals do not know what information audits provide, they are unaware that energy audits exist, and the actual or perceived costs of audits may be high. A similar survey distributed to energy auditors revealed that the top motivations for homeowners to implement efficiency improvements were: high savings on utility bills, low upgrade costs, and available financing. Protecting the environment and increasing property values received the lowest number of responses and do not appear to be important incentives for homeowners (Palmer et al., 2011).

A survey implemented by a group of graduate students at Duke University in the spring of 2015 examined perceived benefits and barriers of home energy efficiency. Entitled, "Understanding Perceptions of Home Energy Efficiency: A pilot survey at the University of Arkansas for Medical Services," this survey was distributed by email to 10,900 employees and received 79 responses. The results suggested that investment and comfort were the top two motivators for home energy efficiency projects. The environment was the third most prominent motivator for completing energy efficiency projects. The full results can be seen in Figure 3. This figure presents the weighted responses to a question in which the respondents were asked to pick their top five motivations and rank them from most important (1) to least important (5).

Figure 3. Results of Previous Benefits and Barriers Survey



Additionally, a focus group held by the DCOI in the summer of 2015 built on this research about perceived benefits and barriers to the implementation of home energy efficiency. During the focus group session, the participants were divided into two groups based on their relative knowledge of home energy efficiency. In the group with less awareness of energy efficiency, the environment was the greatest motivator, while cost was the greatest barrier.

The attitude-behavior gap is another relevant theory in examining motivation for pro-environmental behavior. There is often a mismatch between what people say they do and what they actually do. This gap was explored by Asensio and Delmas, who examined cost incentives and messages about health and the environment in motivating reductions in household energy use. In a stated preference survey, consumers stated their strong willingness to change behavior and noted financial savings as a top concern. However, when participants were faced with making decisions in real-world settings, only the environment and health messages had lasting energy reduction impacts (Asensio & Delmas, 2015).

The Home Performance Resource Center further explains this information gap between individuals' understanding of energy efficiency improvements and their actual effects. The Center groups the barriers into four main categories. The first is consumer inertia, attributed to time costs, hassles, and difficulty gathering information. The second is limited access to capital for financing improvements. The

third is a lack of public awareness, and the last is the unavailability of home performance services in many locations (Palmer et al., 2011).

McKenzie-Mohr also posits that enhancing knowledge through the dissemination of information does not reliably lead to behavior change. According to his social marketing work, information is only valuable if it helps remove barriers to action (McKenzie-Mohr, 2011). Recent efforts have begun to couple efficiency information with other benefits of these upgrades, including health, comfort, and energy security, among other things. Research has also found that financial incentives and the provision of financing to execute sustainable behaviors do not always lead to behavior change (Fuller, 2011; McKenzie-Mohr, 2011).

The present research seeks to further expand the scientific understanding of benefits of and barriers to the implementation of home energy efficiency improvements. It is assumed in this study that the benefits of and barriers to enrolling in a home energy efficiency program are the same as those related to the actual implementation of the energy efficiency actions and upgrades.

Strategies to Motivate Home Energy Efficiency

The theory of community-based social marketing utilizes seven mechanisms to motivate behavior change. It is recommended that of these seven mechanisms, the most appropriate one be chosen based on the benefits and barriers to the target behavior, as determined in the previous step. These seven mechanisms are:

1. Commitment
2. Social Norms
3. Social Diffusion
4. Prompts
5. Communication
6. Incentives
7. Convenience

Commitment

Allcott and Mullainathan (2010) demonstrated that personal commitments can be used to promote

environmental behaviors and encourage the dissemination of energy efficiency by motivating individuals to commit themselves to actions that they believe are best and want to take in the future. The researchers showed that commitment devices work against procrastination, and provided one example of this type of device as the act of signing up for a gym class at a specific time rather than generally planning to go at the end of the work day. In the context of financial savings decisions, individuals prefer plans that allow them to commit to saving money over a longer period. Energy efficiency creates long-term savings, appealing to this psychological preference for committing to future savings (Allcott & Mullainathan, 2010). This raises two questions: how many people are aware of savings created by energy efficiency but put it off for any number of reasons, and how many people are unaware that energy efficiency can save them money? Understanding the answers to these two questions is essential to designing successful marketing content for home energy efficiency programs.

Social Norms

Appealing to social norms has also been explored to promote environmentally sustainable behavior. One possible explanation for this is that people believe others may have taken action because they had more information about the benefits of acting. Alternatively, people may follow social norms because they feel uncomfortable when not conforming to the majority (Allcott & Mullainathan, 2010). An iconic study in the field of environmental psychology explored how to motivate towel reuse in a hotel. Guests were provided with signs stating either the environmental message, “Help Save the Environment,” or normative messaging such as, “Join Your Fellow Citizens in Helping to Save the Environment,” or “Join Your Fellow Guests in Helping to Save the Environment.” These normative messages were followed by, “You can join your fellow [guests/citizens] in this program to help save the environment by reusing your towels during your stay.” The study concluded that towel reuse rate increased by 34 percent when descriptive norm messages were used. One explanation for the lack of motivational effect of the environmental messages is that they may rely too heavily on a person identifying as an environmentalist (Goldstein et al., 2008).

Another influential line of research focused on using social norms to motivate environmental behavior was the work done by Cialdini and Schultz, whose work was leveraged to form the behavioral energy efficiency company, Opower (Cialdini & Schultz, 2004). Through a three-year series of studies, Cialdini and Schultz examined reasons that people give for conserving energy, including social norms, tested messaging that targeted these reasons by implementing conservation messaging in hotel rooms, and

then translated this messaging from hotel rooms to energy conservation settings. Their findings on reasons for conserving energy enforced the importance of norms in conservation behaviors. Their hotel study prompted guests to take shorter showers, turn off unnecessary lights, turn off the air conditioning at night, or use fans instead of air conditioning. This was achieved using descriptive norms, financial messaging, environmental messaging, social responsibility messaging, or information without normative themes. They found that normative messaging was the most effective. Their normative message used in the study was:

“Join Your Neighbors in Conserving Energy. Summer is here and most people in your community are finding ways to conserve energy at home. How are San Marcos residents like you conserving this summer? By using fans instead of A/C! Why? In a recent survey of households in your community, researchers at Cal State San Marcos found that _____% of San Marcos residents often use fans instead of air conditioning to keep cool in the summer. Using fans instead of air conditioning – Your Community’s Popular Choice!”

They then applied this to energy conservation settings and found normative messaging to be effective in that context as well (Cialdini & Schultz, 2004).

Katie Baca-Motes built on this research and suggested that specifically asking guests whether they would be interested in joining the hotel’s effort by reusing their towels would increase their likelihood of participating. Guests were asked to commit through a small, paper stand-up slider bar that was placed in hotel rooms and prompted participants to move the slider from the neutral position to declare either that yes, they plan to participate, or no, they do not. In addition, the study predicted that specific messaging would be more effective than general messaging in increasing commitment rates and participation. This was based on a finding of another study, that a general message about vaccinations that was meant to induce fear was less effective alone than when the message was combined with a map to the nearest health center (Baca-Motes et al., 2013).

Convenience

Convenience can be leveraged through the choice of the default option in any decision. People rarely move away from a choice that requires no action; therefore, carefully designing default options can be used to encourage desired behaviors. People tend to remain with what they already know or have because of procrastination, cost, or lack of information regarding the benefits of said change (Allcott & Mullainathan, 2010). Providing socially and environmentally optimal default options can encourage

sustainable and beneficial behavior. For example, one study found that participation rates in a corporate retirement savings plan increased from 65 percent to 98 percent when the default option was changed to enrollment from non-enrollment (Madrian & Shea, 2001). This suggests that default options should be carefully configured when designing programs that prompt departures from normal behavior. This may simply mean acknowledging that no action is easier than any action when individuals are accustomed to not acting on a certain issue, such as home energy efficiency. Therefore, incentives and motivations to act must be made potent and persuasive.

In developing strategies to change behavior through marketing content of energy efficiency programs, effective imagery is also explored. A study completed by Resource Media in 2014 indicates that the strongest images for energy efficiency reflect real people doing things to save energy. The study was conducted over four days and involved focus groups in which approximately 80 participants were shown images and videos advocating for energy efficiency. The research revealed that it is difficult for people to connect their personal interest in energy efficiency and actions they can take to make their homes more energy efficient. However, within the study the majority of participants responded positively to images of money being saved or wasted, images representing the use of technology for control over energy usage, and thermal imagery of an efficient and inefficient home. Photos focusing on the added benefit of increased comfort resulting from energy efficiency upgrades were confusing to participants and therefore less effective. In addition, many participants responded positively to homeowner testimonial videos emphasizing the positive impacts of efficiency retrofits (Resource Media, 2014).

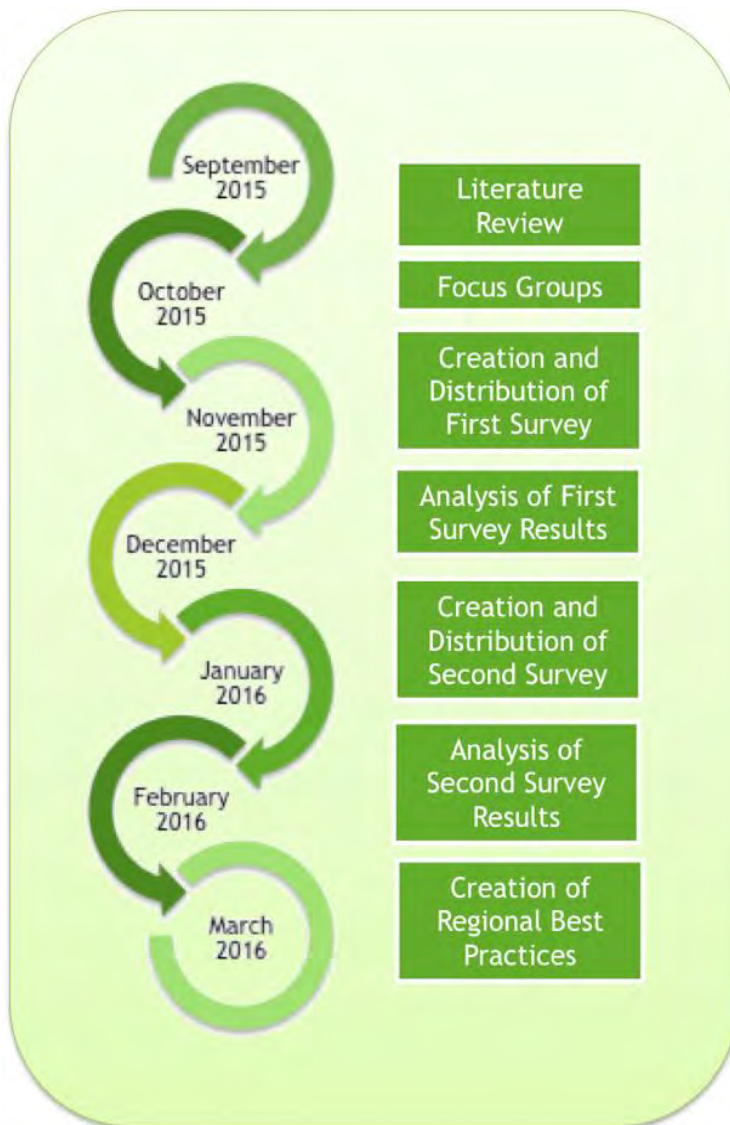
Theories of social psychology contend that behavior-change interventions are most successful when implemented on the community level and when they involve direct contact with the target population. This is the basis for the method of social marketing (McKenzie-Mohr, 2011). This theory of social marketing, combined with the other conclusions presented above about effective and ineffective strategies for inspiring sustainable behavior, form the basis of the present research. This master's project presents recommendations and content for marketing a home energy efficiency program that extends beyond simply the provision of information and financial incentives. In carrying out this research, first, benefits of and barriers to the adoption of home energy efficiency technologies were explored through a survey and a series of focus groups. This information about benefits and barriers was then turned into marketing content, including imagery, messages, and testimonials to market a home energy efficiency program that were evaluated through a second survey. Additionally, best practices for

marketing an energy efficiency program are recommended for organizations that provide such programs.

Timeline of Master's Project Research

The coordination and planning for the current study began between Duke University, the Clinton Climate Initiative, and the Duke Carbon Offsets Initiative in the spring of 2014. The research process, including the literature review, focus groups, surveys, analysis, and creation of regional best practice recommendations, were carried out over seven months from September 2015 to March 2016. A detailed timeline of the execution of the research can be found in Figure 4.

Figure 4. Timeline of Master's Project Research



Methods

Multiple research tools were used in this study. Two surveys were formulated to explore perceived benefits of and barriers to energy efficiency and preferred marketing content, including messages, testimonials and images for a home energy efficiency program.

As described in the Literature Review, Survey 1 was modeled from a previous study conducted by graduate students at Duke University in the spring of 2014, and evaluated perceived benefits of and barriers to a home energy efficiency program. Following Survey 1, the researchers conducted two focus group sessions to evaluate messages, images, and testimonials for residential energy efficiency programs. The results of the focus group sessions were used to design Survey 2, which explored preferred marketing content for a home energy efficiency program.

Both surveys were built in Qualtrics and distributed through Amazon Mechanical Turk (MTurk). Amazon MTurk, Survey 1, the focus group sessions, and Survey 2 are described in further detail below.

Amazon Mechanical Turk

Amazon MTurk is a marketplace for online tasks, through which workers sign up to complete Human Intelligence Tasks or (HIT's), in exchange for small amounts of compensation. The platform gives organizations and businesses access to a diverse, on-demand, and scalable workforce, and the most recent data suggest that there are over 500,000 registered workers from 190 countries on the site (Paolacci & Chandler, 2014). Amazon MTurk allows for the setting of parameters such as location and age of respondents, and to filter for respondents who have successfully completed many previous HIT's.

The majority of workers on MTurk are from the United States and India, and it is estimated that 5,950,000 tasks are performed per week. About 80% of the tasks on the site are performed by the most active 20% of the users (Fort et al., 2011). Typical compensation is between \$.05-\$.10 for five to ten minutes of work, and 20 percent of workers report that MTurk is their main source of income (Buhrmester et al., 2011; Fort et al., 2011). Participants may be younger and more ideologically liberal than the general public, because this is reflective of the population that actively uses the Internet (Berinsky et al., 2012). However, respondents recruited through MTurk are often more representative of

the general public than in-person convenience samples (Berinsky et al., 2012). MTurk respondents may even be more demographically diverse than participants recruited through methods for typical online studies (Berinsky et al., 2012; Casler et al., 2013). A study conducted in 2013 found indistinguishable results between tests administered thorough MTurk, in person, and through social media (Casler et al., 2013). MTurk does not provide a random sample of respondents. However, overall, data collection from MTurk is valid in conducting human subjects research, and many articles have been published based on data collected entirely from the platform (Paolacci & Chandler, 2014).

Survey 1: Benefits of Energy Efficiency

Survey 1 examined the perceived benefits of and barriers to home energy efficiency. The survey text can be found in Appendix A. The order of answer choices for many questions, and the order that some questions themselves appeared, were randomized to decrease bias in answer choices. Randomized questions and answer choices are indicated in the Appendix.

The details regarding the distribution of Survey 1 can be found below in Table 1. Respondents were compensated 10 cents per survey, and 320 responses were obtained within two weeks. The geographic location of respondents was limited to the United States.

Table 1. Amazon MTurk Details for Survey 1

<i>SURVEY 1: ENERGY EFFICIENCY BENEFITS</i>	
<i>PUBLISHED ONLINE</i>	<i>OCTOBER 25TH, 2015</i>
<i>LENGTH OF TIME SURVEY WAS ONLINE</i>	<i>10 DAYS</i>
<i>WORKER COMPENSATION</i>	<i>\$0.10</i>
<i>AVERAGE TIME FOR SURVEY</i>	<i>4 MINUTES 11 SECONDS</i>
<i>TOTAL NUMBER OF SURVEY RESPONDENTS</i>	<i>320</i>

Focus Groups

Focus groups are often used in marketing research to refine marketing content and advertisements prior to quantitative testing through surveys. Focus groups provide companies with access to “live” consumers (Steward, D. & Shamdasani P. 2015). They are used to better understand how individuals feel about issues, ideas, services, or products. They take the form of a guided discussion. Oftentimes, participants are selected based on certain characteristics that relate to the topic of discussion. Typical

focus groups consist of five to eight participants (Krueger, R. & Casey, M., 2015). While focus groups are a widely used tool to gather qualitative data, the results of focus group discussions cannot be generalized to larger populations (Rhea, L. & Parker, R., 2014).

In this study, marketing content for home energy efficiency programs was designed based on the results of Survey 1. This marketing content included messaging, images, and testimonials. The quality of this content was evaluated through two focus groups and compared to results of the previous focus group held by the DCOI, discussed in the Introduction.

Both focus groups followed a script that was written by the DCOI and can be found in Appendix B. Neither focus group covered the entire script in the allotted time; for each session, questions were selected from the script to target topics appropriate for the participants' backgrounds. The full script included 11 questions, covering topics including knowledge of energy efficiency, potential motivations, barriers, sources of information, and wording and formatting of marketing content.

The first focus group was held in September of 2015 and was conducted at Duke University. The second focus group was held in October 2015 at a restaurant in Durham, North Carolina. The first focus group lasted 45 minutes, and the second lasted 60 minutes.

The focus group held in September was conducted as part of a workshop co-hosted by the DCOI and the CCI to review and assess energy efficiency benefits programs. Ten individuals participated, and many of these participants were familiar with one another and with the subject matter of the discussion. Research suggests that this improves participants' willingness to share opinions more freely (Rhea, L. & Parker, R., 2014). The participants were middle-aged or older and three of the ten participants were female.

To diversify participant characteristics, the second focus group was held with community members and Duke students who had less knowledge on the topic of the research. There were five participants total: four students and one community member. None of the participants had in-depth knowledge of energy efficiency. Participants in this session were younger than 35, and two were from countries outside of the United States. Focus group results are discussed in the following section.

Survey 2: Marketing Messages for Energy Efficiency Programs

Survey 2 contained a compilation of marketing content for a home energy efficiency program. These materials were designed based on Survey 1 and the focus groups. Demographic information was collected, and participants were asked about their likelihood to enroll in the HEAL program based on various marketing messages, images, and testimonials. Participants were also asked about their preferred channels and methods to learn about a home energy efficiency program. The full text of Survey 2 can be found in Appendix C.

Table 2 summarizes the implementation of this survey on MTurk. It was distributed to 432 participants. Each MTurk respondent was paid 10 cents for taking the survey, and participants spent an average of five minutes and thirty seconds completing Survey 2. Again, the location of respondents was limited to the United States.

Table 2. Amazon MTurk Details for Survey 2

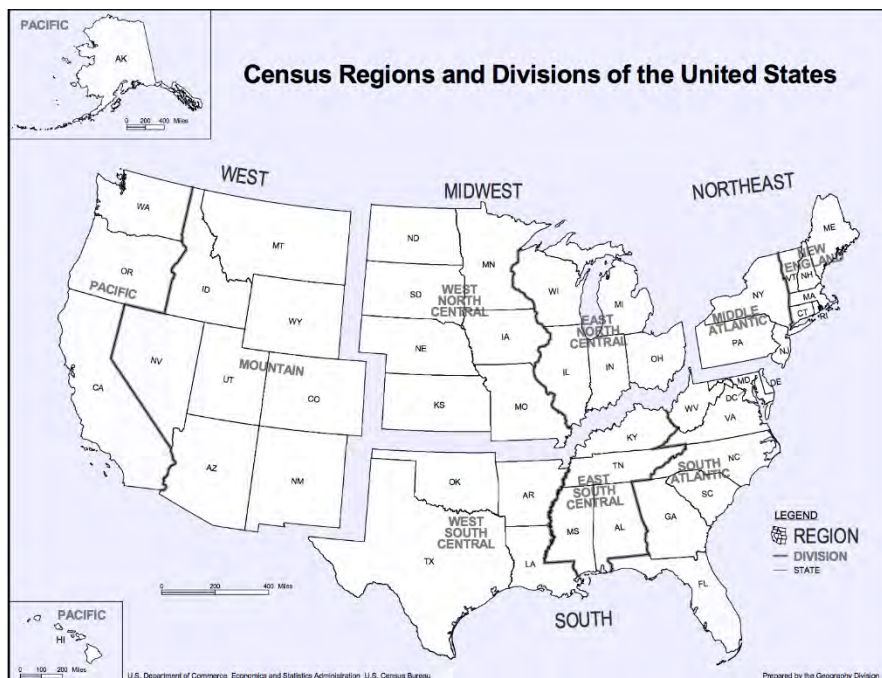
<i>SURVEY 2: MARKETING ENERGY EFFICIENCY</i>	
<i>PUBLISHED ONLINE</i>	<i>JANUARY 4TH, 2016</i>
<i>LENGTH OF TIME SURVEY WAS ONLINE</i>	<i>7 DAYS</i>
<i>WORKER COMPENSATION</i>	<i>\$0.10</i>
<i>AVERAGE TIME FOR SURVEY</i>	<i>5 MINUTES 32 SECONDS</i>
<i>TOTAL NUMBER OF SURVEY RESPONDENTS</i>	<i>432</i>

Results

The results of both surveys were analyzed using Excel and IBM SPSS Statistics. Descriptive statistics and significance tests were evaluated. Additionally, responses to four qualitative questions in Survey 2 were reviewed by evaluating common themes that appeared in the responses.

To examine geographic differences, responses were divided by areas determined by the United States Census Bureau, shown in Figure 5.

Figure 5. Geographic Regions Used in Data Analysis (U.S. Census Bureau, n.d.)



Survey 1 Results

Descriptive Statistics

Of the responses to Survey 1 (n=320), one respondent was under 18 and therefore was not allowed to complete the survey by the Institutional Review Board's age requirement.

Demographic Data

Table 3 displays the frequencies and percentages of gender, age, geographic location, education, and household income brackets for survey respondents. The majority (59.1%) of the survey respondents were female, and 40% of the respondents were between 25-34 years of age. Respondents from the South made up 39.1% of the total participants, and the percentages of respondents from the Northeast, Midwest, and West ranged from 15.9% to 19.7%. "Some college" and "college graduate" were the main (29.1%, 34.7%) education levels reported for the survey participants. The household income bracket of \$50,000-\$74,999 was the mode for the survey participants, accounting for 25.6% of the total responses. Of the remaining respondents, 13% reported earning less than \$20,000, and 10% reported earning more than \$100,000 annually.

Table 3. Demographic Information for Survey 1

Characteristics	n	%
<i>Gender</i>		
Female	189	59.1
Male	114	35.6
No Response	17	5.3
<i>Age range</i>		
18-24 years	55	17.2
25-34 years	128	40.0
35-44 years	54	16.9
45-54 years	31	9.7
55-64 years	26	8.1
More than 65 years	8	2.5
Prefer Not to Answer	1	0.3
No Response	17	5.3
<i>Location</i>		
Northeast	51	15.9
Midwest	60	18.8
South	125	39.1
West	63	19.7
No Response	21	6.6
<i>Education</i>		
Grammar School	2	0.6
High School or Equivalent	33	10.3
Vocational/Technical School (2 year)	21	6.6
Some College	93	29.1
College Graduate	111	34.7
Master's/Professional Degree (MS, MA, JD, etc.)	39	12.2
Doctoral Degree (PhD)	4	1.3
No Response	17	5.3
<i>Household income brackets</i>		
Under \$20,000	44	13.8
\$20,000-\$34,999	53	16.6
\$34,999-\$49,999	60	18.8
\$50,000-\$74,999	82	25.6
\$75,000-\$99,999	30	9.4
\$100,000-\$149,000	21	6.6
\$150,000 or more	11	3.4
No Response	19	5.9

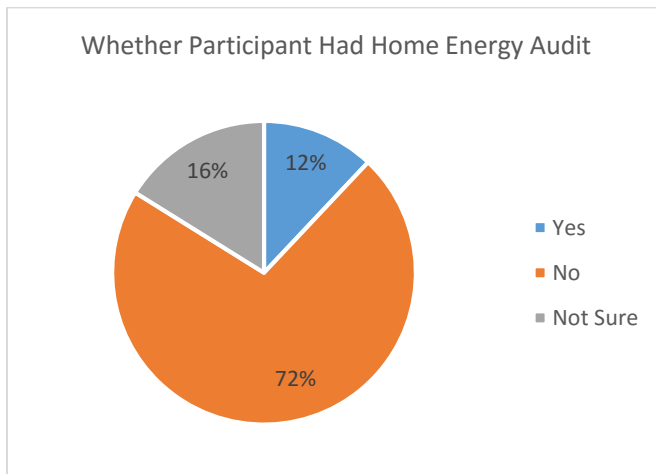
Home Information

Table 4 illustrates the reported home information of survey respondents. More than half (53.1%) of the respondents own their own home. The majority of respondents live with two to three people (51.6%). A quarter of respondents had lived in their current home for 1-3 years at the time of the survey. The majority of the sample lives in single-family houses (58.8%). More than half of the participants live in a home built after 1960 (65.6%).

Home Energy Audit Experience

Figure 6 illustrates that 72% of respondents had not had a home energy audit at the time of the survey, while only 12% of respondents reported having had one.

Figure 6. Home Energy Audit Experience



Attitudes towards Home Energy Efficiency Improvements

Four statements about home energy efficiency improvements were presented to participants in the survey, Question 9 in Appendix A. They were asked how much they agreed with each statement, on a 5-point Likert scale. The results, highlighted in Table 5, show that the average scores of “Increasing the energy efficiency of my home is important to me;” “increasing the energy efficiency of my home is a good investment;” and “I consider home energy efficiency when purchasing new appliances, lighting, and retrofits” were above 4. This matches closest to the rating of, “agree”. The average score of the statement “My home is energy efficient” was 2.99, which is closest to, “Neither agree nor disagree.” The mode for all four statements was, “Agree.”

Table 4. Home Information

Home Information	n	%
<i>Ownership of home</i>		
Yes	170	53.1
No	145	45.3
No Response	5	1.6
<i>Number of people in home</i>		
0	1	0.3
1	59	18.4
2-3	165	51.6
4-6	88	27.5
7 or more	5	1.6
No Response	5	1.6
<i>Years living in current home</i>		
Less than 1 year	62	19.4
1-3 years	82	25.6
3-5 years	49	15.3
5-10 years	52	16.3
10-15 years	26	8.1
15 or more years	43	13.4
No Response	6	1.9
<i>Types of home</i>		
Single Family House	188	58.8
Condo/ Townhouse	33	10.3
Manufactured or Mobile Home	15	4.7
Apartment or Duplex	80	25.0
No Response	4	1.3
<i>Years Current Home was Built</i>		
Before 1920	10	3.1
1920-1039	13	4.1
1940-1959	45	14.1
1960-1979	71	22.2
1980-1999	72	22.5
2000-Present	67	20.9
Not Sure	38	11.9
No Response	4	1.3

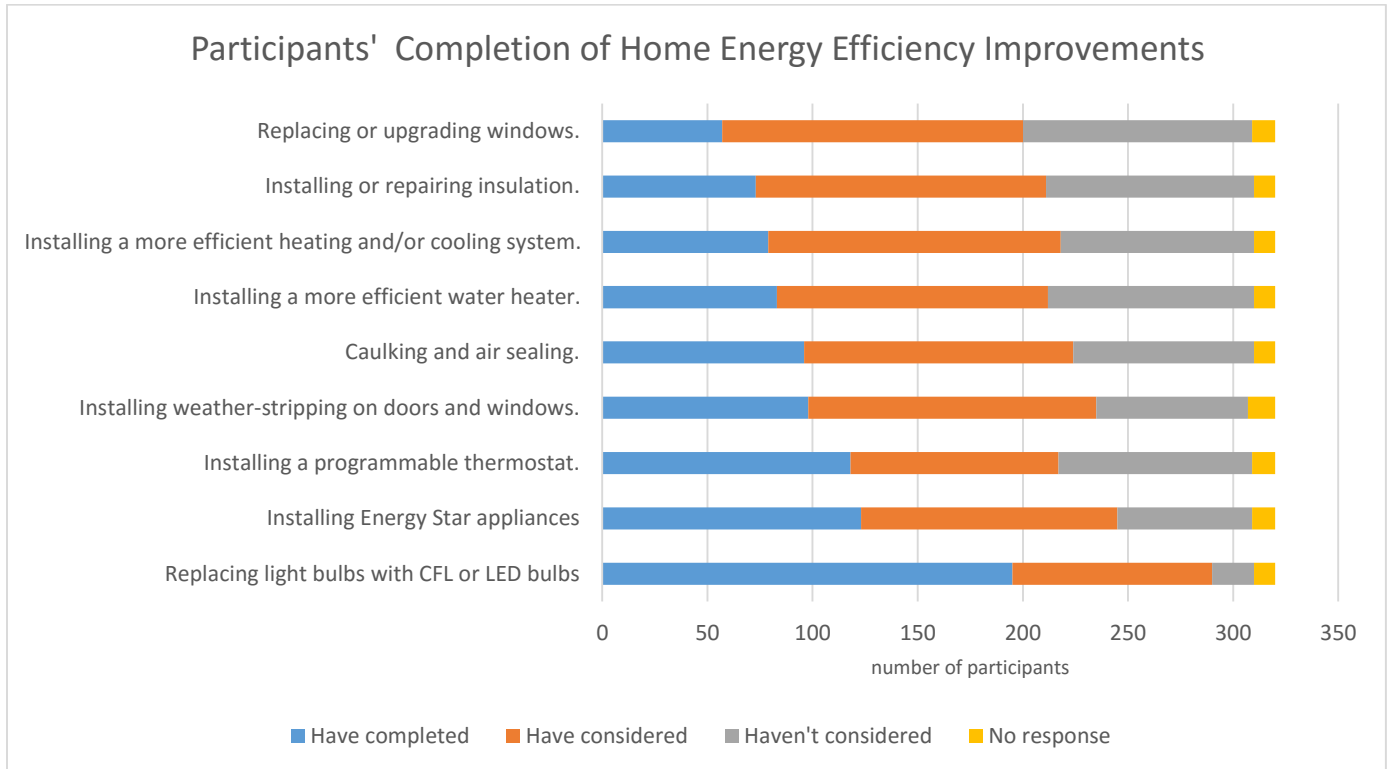
Table 5. Agreement of Home Energy Efficiency Statements

Item No.	Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Average Score
1	Increasing the energy efficiency of my home is a good investment	0	10	30	144	126	4.25
2	I consider home energy efficiency when purchasing new appliances, lighting, retrofits	2	14	34	149	110	4.14
3	Increasing the energy efficiency of my home is important to me	1	11	46	167	85	4.05
4	My home is energy efficient	22	86	87	103	12	2.99

Completion of Home Energy Efficiency Improvements

As presented in Figure 7, respondents reported energy efficiency improvements that they had previously considered or completed, Question 10 in Appendix A. Replacing light bulbs had the highest completion rate (62.9%), followed by installing Energy Star appliances (39.8%). Replacing or upgrading windows and sealing the ductwork were the improvements with the lowest completion rate. However, 46% of respondents reported having considered replacing or upgrading windows.

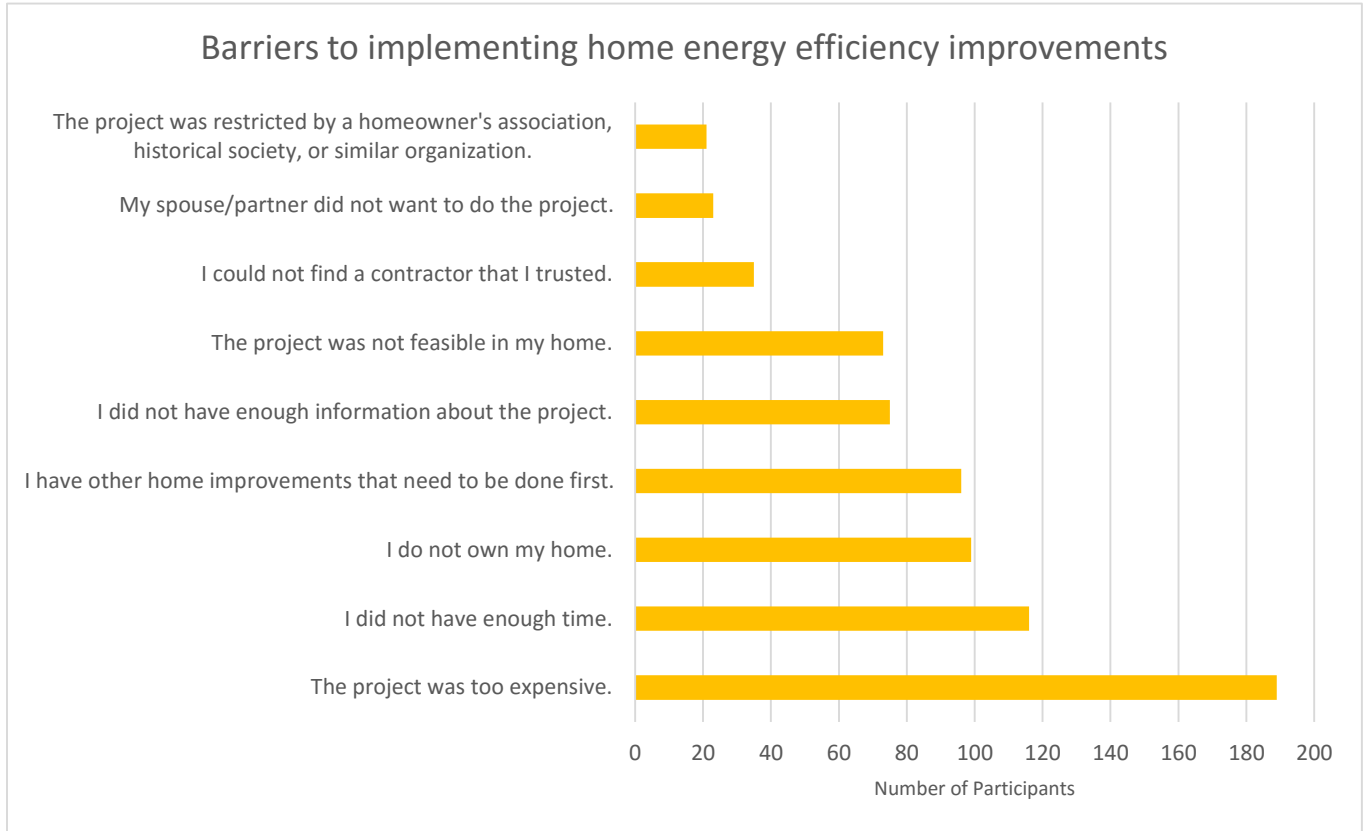
Figure 7. Participants' Completion of Home Energy Efficiency Improvements



Barriers to Implementing Energy Efficiency Improvements

Participants were asked to indicate their perceived barriers preventing them from adopting home energy efficiency improvements, Question 11 in Appendix A. As seen in Figure 8, the expensive cost of energy efficiency projects was the most frequently reported barrier (59.1%), followed by time constraints (36.3%). In contrast, the least chosen barrier for energy efficiency upgrades was a restriction by a homeowner’s association, historical society, or similar association.

Figure 8. Barriers to Implementing Energy Efficiency Improvements



Likelihood to Enroll in Energy Efficiency Programs with Incentives

Participants were asked how likely they would be to enroll in an energy efficiency program that provided certain incentives, Question 12 in Appendix A. Responses are shown in Table 6. The results indicate that an incentive (\$200 or less) that can be used to pay for energy efficiency improvements would make respondents most likely to participate in an energy efficiency program, with an average score of 3.62. The second most highly-rated choice was information on available discounts and rebates for energy efficiency improvements, with an average score of 3.39. Recommendations of highly-qualified contractors and assistance in scheduling audits and energy efficiency improvement were rated as the lowest choices, with average scores equal to 2.67 and 2.66, respectively.

Table 6. Likelihood to Enroll in Energy Efficiency Programs with Incentives

Item #	Incentive	Not at all likely	Slightly likely	Moderately likely	Very likely	Completely likely	Average score
1	An incentive (\$200 or less) that can be used to pay for energy efficiency improvements	22	28	82	91	86	3.62
2	Information on available discounts and rebates for energy efficiency improvements	29	40	80	103	57	3.39
3	Approved time off for undertaking energy efficiency improvements	49	39	83	83	55	3.18
4	Access to a professional who calculates the return on investment for each energy efficiency improvement.	54	53	99	70	33	2.92
5	A discounted home energy audit to help prioritize your home's energy efficiency needs	56	60	86	75	33	2.90
6	An information session on residential energy efficiency that highlights potential costs and benefits of typical energy efficiency improvements	62	74	79	64	28	2.75
7	Access to a low interest rate loan to pay for energy efficiency improvements	78	67	69	67	29	2.68
8	Recommendations of highly-qualified contractors	69	74	84	57	26	2.67
9	Assistance in scheduling audits and energy efficiency improvements.	68	79	81	55	27	2.66

Ranking of Benefits of Home Energy Efficiency Improvements

The respondents were asked to rank what they perceived as the most important benefits of home energy improvements, Question 15 in Appendix A. The choices and answers are presented in Table 7. The choice, “lower my bills,” was has the highest average rank, with a score of 2.26 out of 9. The benefit that energy efficiency improvements “highlight me as a role model for my family and/or community” was chosen as the least important, with an average score of 2.76.

Table 7. Ranking of Energy Efficiency Benefits

Item No.	Benefits	Average Score
1	Energy efficiency improvements lower my energy bills.	2.26
2	Energy efficiency improvements are good investments.	4.39
3	Energy efficiency improvements increase the comfort of my home.	4.53
3	Energy efficiency improvements also improve the indoor air quality of my home.	4.90
5	Energy efficiency improvements reduce my impact on the environment.	4.90
6	Energy efficiency improvements increase the resale value of my home.	5.12
7	Energy efficiency improvements contribute to my energy independence and security.	5.64
8	Energy efficiency improvements bring better technology into my home.	6.06
9	Energy efficiency improvements highlight me as a role model for my family and/or community.	7.24

Table 8 illustrates the average rankings by geographic location. The reported top benefit was the same across all regions. Differences emerged with the second preferred benefit. Participants from the West chose “reduce my environmental impact” as the second most important benefit on average, while those from the Northeast and Midwest selected “good investments” as the second most important benefit. Furthermore, participants from the South indicated that increased home comfort was the second most important benefit. In third place, participants from the South and West selected “energy efficiency improvements are good investments;” those from the Midwest chose “energy efficiency improvements increase the comfort of my home;” and participants from the West chose “energy efficiency improvements are good investments.”

Table 8. Ranking of Energy Efficiency Benefits by Region

Rank	Region	Benefit	Average Score
First Choice	Northeast	Lower my energy bills.	2.25
	South	Lower my energy bills.	2.25
	Midwest	Lower my energy bills.	2.36
	West	Lower my energy bills.	2.15
Second Choice	Northeast	Good investments.	4.06
	South	Increase the comfort of my home.	4.46
	Midwest	Good investments.	4.15
	West	Reduce my impact on the environment.	4.48
Third Choice	Northeast	Increase the resale value of my home.	4.62
	South	Good investments.	4.51
	Midwest	Increase the comfort of my home.	4.39
	West	Good investments.	4.53

Likelihood to Enroll in Energy Efficiency Programs

Participants were asked to report how likely they and their coworkers would be to enroll in an energy efficiency benefits program, such as HEAL, in Question 13 and 14 in Appendix A. Table 9 illustrates the results. Participants reported that they themselves are more likely than their coworkers to participate in a home energy efficiency benefits program.

Table 9. Likelihood to Enroll in Energy Efficiency Programs

	Extremely Unlikely	Unlikely	Neutral	Likely	Extremely Likely	Average Score
Yourself	18	13	68	153	51	3.68
Coworkers	10	20	111	132	37	3.54

Significance Tests

Statistical tests were performed to determine whether there are statistically significant differences in the rankings of benefits and barriers to home energy efficiency, and, according to the hypotheses, whether these rankings varied by geographic region. This analysis was performed using IBM SPSS Statistics.

The Friedman test was used to examine the results for Question 15 in Survey 1, found in Appendix A, that asked participants to rank the potential benefits of an energy efficiency program in order from most important to least important. The test uses listwise deletion (n=293). There was found to be a statistically significant difference between the rankings of the benefits, $\chi^2(8)=574.108, p=0.000$.

A post-hoc Wilcoxon signed-rank test with a Bonferroni adjustment was run to determine which benefits were ranked significantly differently from the other. The Wilcoxon test was run without the adjustment in SPSS, and then the Bonferroni adjustment was taken into account by dividing desired significance level (of $p=0.05$) by the number of tests performed (36), to obtain a new significance level of $p=0.001$. The Z-scores and significant differences found in this test are presented in the following table.

Table 10. Z-Scores for Wilcoxon Signed-Rank Post-Hoc Test of Benefits

	1	2	3	4	5	6	7	8	9
1. Increase the comfort of my home		(2.219)	(1.668)	(11.496)*	(7.224)*	(2.874)	(10.467)	(0.694)	(5.368)*
2. Improve the indoor air quality of my home			(0.024)	(11.101)*	(6.010)*	(0.909)	(10.074)*	(2.568)	(3.817)*
3. Reduce my impact on the environment				(10.491)*	(4.945)*	(0.839)	(9.666)*	(2.194)	(3.902)*
4. Lower my energy bills					(12.960)*	(11.463)*	(13.571)*	(10.095)*	(12.222)*
5. Bring better technology into my home						(4.759)*	(6.162)*	(8.514)*	(2.093)
6. Increase the resale value of my home							(8.672)*	(3.618)*	(2.292)
7. Highlight me as a role model for my family and/or community								(11.027)*	(8.161)*
8. Are good investments									(5.810)*
9. Contribute to my energy independence and security									

Note. *Correlation is significant at the p=0.05 level. This significance level reflects the Bonferroni correction.

These results show whether there are statistically significant differences between the averages rankings that participants gave to each benefit of home energy efficiency. The highest-ranked benefit on average, lowering one's energy bill, is ranked significantly more important than any other benefit. All benefits except for increasing the comfort of one's home were ranked significantly higher than highlighting the homeowner as a role model.

Additionally, a significance test was performed to explore the difference between participants' reported likely to enroll in the program themselves, and their coworkers' likelihood to enroll. On a five-point Likert scale, participants reported that both they and their coworkers were slightly more likely to enroll than not in to program, with a mean of 3.54 for coworkers and 3.67 for themselves. A T-test performed on these means reveals that there is a highly statistically significant difference between these values, $t = -2.765, p = 0.006$.

Focus Group Results

The focus group respondents offered many similar and differing opinions regarding marketing messages for energy efficiency. When asked about what big picture content should be included in marketing materials to convince employees to enroll in the program, several individuals in both focus groups answered that increased comfort and financial savings from energy efficiency upgrades should be emphasized. A few members of the second focus group mentioned that a home energy efficiency program should be marketed as an easy, convenient program.

Similar themes emerged in both focus groups about the quality of testimonials as a desired marketing tool for a home energy efficiency program. During the sessions, participants were asked to give their feedback on several example testimonials. A majority of participants in the first group, in which participants had higher knowledge about energy efficiency, preferred the shorter testimonials. Several members of the second focus group, on the other hand, preferred the longer testimonial because it provided them with a greater understanding of an energy efficiency program.

Furthermore, the second focus group regarded the environmental benefit of energy efficiency more highly than the first focus group participants, and encouraged the use of environmental related images for messaging in place of money-related images.

Survey 2 Results

Descriptive Statistics

Two responses for Survey 2 were excluded as the participants were younger than 18 years old.

Demographic characteristics are summarized in the following table.

Table 11. Demographic Information for Survey 2

Characteristics	n	%
Gender		
Female	263	60.9
Male	158	36.6
Other	2	0.5
Age range		
18-24 years	67	15.5
25-34 years	182	42.1
35-44 years	86	19.9
45-54 years	41	9.5
55-64 years	36	8.3
More than 65 years	8	9
Prefer not to answer	1	2
Location		
Northeast	79	18.7
Midwest	87	20.6
South	165	39.0
West	91	21.5
Out of the US	1	0.2
Education		
Grammar School	1	0.2
High School or Equivalent	41	9.5
Vocational/Technical School (2 year)	25	5.8
Some College	133	30.8
College Graduate	158	36.6
Master's/Professional Degree (MS, MA, JD, etc.)	60	13.9
Doctoral Degree (PhD)	5	1.2
Household income brackets		
Under \$20,000	62	14.4
\$20,000-\$34,999	81	18.8
\$34,999-\$49,999	83	19.2
\$50,000-\$74,999	92	21.3
\$75,000-\$99,999	52	12.0

\$100,000-\$149,000	36	8.3
\$150,000 or more	17	3.9
Political affiliation		
Very conservative	15	3.5
Conservative	60	14.2
Slightly conservative	49	11.6
Moderate	115	27.2
Slightly liberal	66	15.6
Liberal	77	18.2
Very liberal	41	9.7
Job level		
Intern	15	3.5
Entry level	114	27.0
Maintenance/Housekeeping	16	3.8
Analyst/ Associate	98	23.2
Manager	65	15.4
Senior Manager	10	2.4
Director	4	0.9
Vice President	1	0.2
Senior Vice President	0	0.0
C level executive (CEO, CIO, CTO, COO, CMO, etc.)	0	0.0
Owner	29	6.9
Other (Please specify)	71	16.8

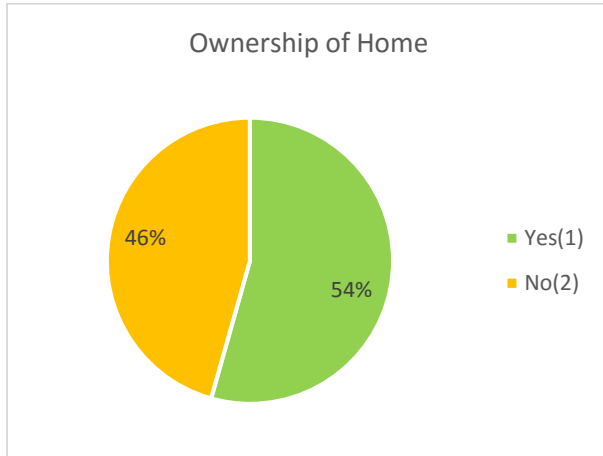
Demographic Data

Of all Survey 2 respondents, 60.9% were female. The majority of the respondent population was 25-44 years of age. In terms of geographic location, 39% of participants were from the South, and the percentages of the participants from the Northeast, Midwest, and West ranged from 18.7% to 21.5%. “Some college” and “college graduate” were the most common reported education levels, with the frequencies of 30.8% and 36.6%, respectively. The mode household income bracket was \$50,000-\$74,999 (21.3%). Regarding political affiliation, “moderate” was the main affiliation for participants, selected by 27% of participants. More than half of the participants indicated “entry level” or “analyst/ associate” closely match their job levels. “Homemaker”, “housewife”, “nurse”, “retired”, and “student” were some of the job types filled in for the “Other” category.

Home Information

More than half (54%) of the respondents indicated that they owned their own home, as seen in Figure 9.

Figure 9. Ownership of Home



Preferred Marketing Channels for the HEAL Program

Participants were surveyed about their preferred channel through which to learn about a home energy efficiency program, in Question 10 in Appendix C. Results are summarized in Table 12. More than half of the participants indicate that they would prefer to learn about the HEAL program from their employers (55.8%). The second most preferred channel was the government (28.1%). A homeowner's association was the least preferred channel. For the "Other" category, participants reported that they would prefer channels such as local utility companies and local media outlets. Responses to this question may have been biased by the order of answer choices, as employer was first in the list and the choices of this question were not randomized. In addition, the HEAL program, which is an employer-run program, was described at the beginning of the survey and this may have introduced additional bias.

Table 12. Preferred Channels for HEAL Program

Channels	Number of Responses
Employer	236
Government	119
Home improvement store	112
Local non-profit	104
Homeowner's association	82
Other	18

Preferred Mediums for the HEAL Program

Participants were also asked through which medium they would prefer learning about HEAL, in Question 11 in Appendix C. The most chosen options were email, lunch and learn or optional meeting, and email newsletter. The least preferred mediums included text messages, phone calls, and a video conference. Results are presented in Table 13.

Table 13. Preferred Mediums for the HEAL Program

Mediums	Number of Responses
Email	207
Lunch and learn or other optional meeting	142
Email newsletter	117
Program materials mailed to your home	106
Mandatory meeting	79
Print newsletter	69
Flyers	58
Social media announcements	47
Video	39
Text messages	18
Phone calls	14
Video conferencing	11
Other	1

Important Marketing Content for the HEAL Program

Participants were asked what types of marketing content they would desire to make enrollment decisions, Question 12 in Appendix C. Facts and statistics about the program was the most selected choice (80.1%), followed by links to obtain more information about the program. Catch phrases or messages that succinctly summarize the program were the least chosen type of marketing content. Results are summarized in Table 14.

Table 14. Important Marketing Content for the HEAL Program

Content	Number of Responses
Facts and statistics about the program	339
Links to obtain more information about the program	189
Testimonials of others who have enrolled in the program	178
Photos of energy efficiency upgrades done through the program	153
Catch phrases or messages, succinctly summarizing the program	33

Feeling Towards Testimonials, Messages and Images

Testimonials

The survey included six testimonials, in Question 14 in Appendix C. Each participant was randomly presented one testimonial and asked how likely or unlikely they would be to enroll in the HEAL program based on that specific testimonial.

Highest Scoring Testimonial (Mean = 3.85)

I never knew how I could save on my electric bills by implementing simple energy efficiency improvements in my home! After I got my ducts sealed and new insulation the change in my bill was dramatic. I'm definitely going to pursue more energy efficiency projects in the near future.

Lowest Scoring Testimonial (Mean = 3.53)

Participating in this employee benefits program was an excellent experience! The entire process was managed efficiently and the staff made sure the home energy assessment fit with my busy work schedule.

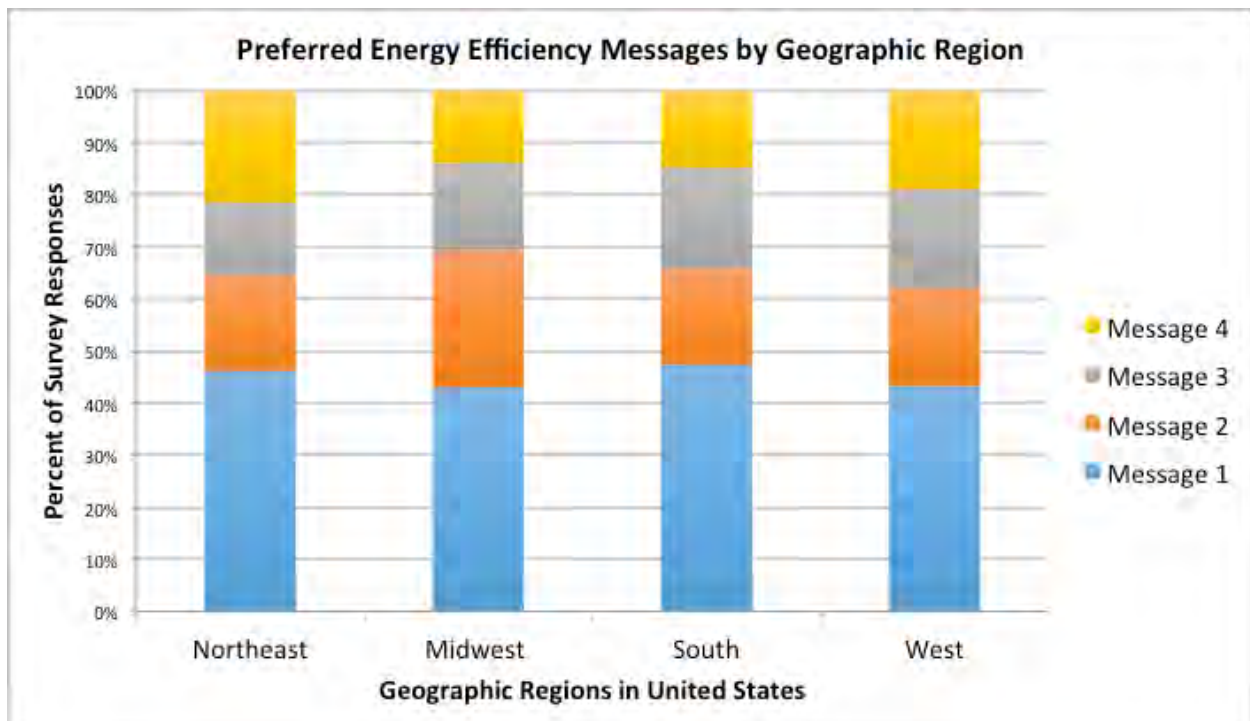
Messages

Participants were also asked to choose one message from a set of six messages, in Question 16 in Appendix C, which would make them most likely to enroll. “The newest energy efficiency technologies are now just within your reach and will save you money for years to come,” was chosen by 157 respondents, becoming the first choice message followed by “Let us help you increase your home’s values by investing in home energy efficiency improvements,” which was selected by 74 respondents. The preferred messages subdivided into geographic region are shown in Figure 10. The Figure represents the top chosen messages in the following order:

- Message 1: “The newest energy efficiency technologies are now just within your reach and will save you money for years to come.”

- Message 2: “Let us help you increase your home’s values by investing in home energy efficiency improvements.”
- Message 3: “Investing in energy efficiency improvements can reduce your impact on the environment while making your home even more comfortable.”
- Message 4: “Have you heard? There are a wide variety of energy efficiency technologies available at a low cost to you to improve your home comfort and reduce your carbon footprint!”

Figure 10. Energy Efficiency Messages by Region



As seen in Figure 10, Message 1 was chosen most frequently by participants located across all geographic regions. Message 2, which mentions home value and support with implementing energy efficiency improvements, was the second most popular message for survey participants from the South, and Midwest, and the third most popular response in the Northeast. The second most popular message chosen by survey respondents from the Northeast was Message 4, which bundles the benefit of improved home comfort with the benefits of cost savings and protecting the environment. Message 3, which also mentions increasing comfort and protecting the environment, was the third most popular response for participants living in the Midwest and South. While responses to this question were

randomized to avoid first-option bias, responses from survey participants in the West only showed a preference for Message 1.

Images

Participants were asked to select one of six photos, in Question 18 in Appendix C, that would best convince them to enroll in the HEAL program, if included in marketing materials. The order of the images was randomized. Sixty-two percent of total responses selected the photo with physical money depicted.

Table 15. Preferred Images for the HEAL Program
 (Bigstock.com, 2016; Clinton Climate Initiative, n.d.)

Photo	n	%
	134	32
	129	30
	66	16
	56	13
	22	5
	16	4

Figure 11. Energy Efficiency Images by Region

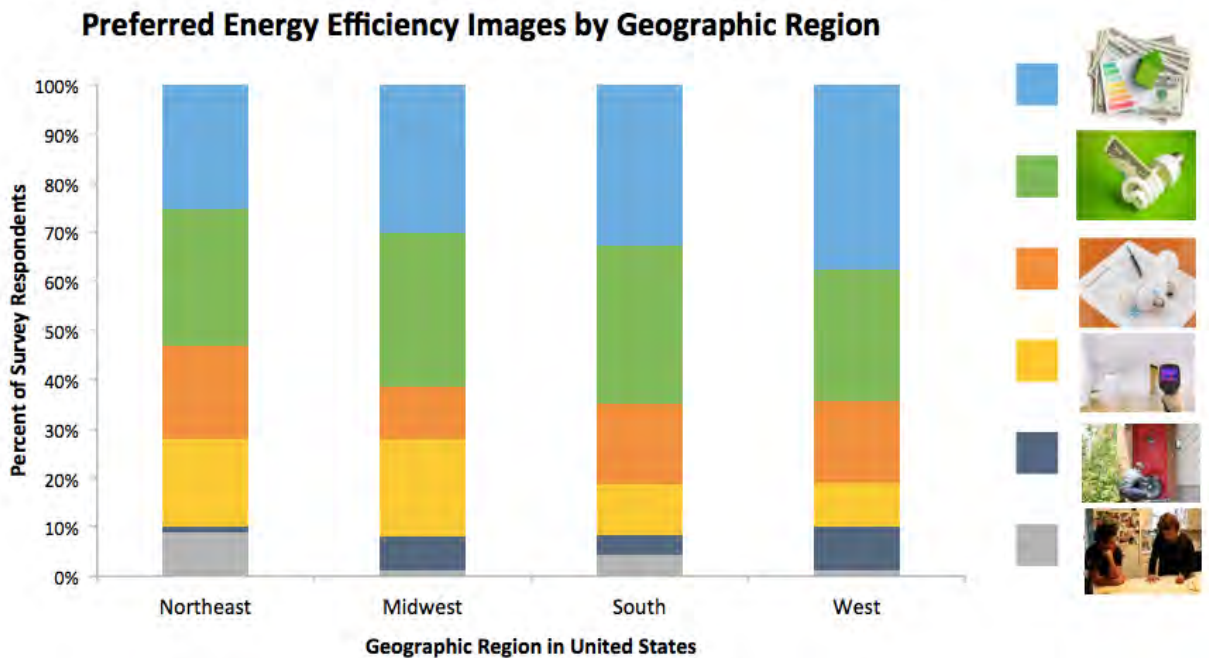


Figure 11 illustrates the preferred images chosen by Survey 2 participants, subdivided by the 4 geographic regions in the United States. As seen in this graphic, the two preferred images across all geographic regions were Images 1 and 2, which relate to the monetary benefits of energy efficiency. The third most widely selected image for the West, South, and Northeast was Image 3. Survey respondents in the Midwest preferred Image 4, one aspect of an energy audit, compared to Image 3. Overall, survey participants preferred the stock photos from Bigstock, a stock photo website. This stands in contrast to energy efficiency imagery research conducted by Resource Media in 2014, as discussed in the Literature Review. The researchers hypothesized that Images 5 and 6 would be more effective than the stock photos because these images show real people in a home setting.

Significance Tests

Chi-squared tests were performed to determine which demographic variables significantly affected participants' choice of messaging and images for the HEAL program. Geographic region, age, gender, ownership of home, education level, income level, job level, and political orientation were examined in relation to choices of messages and images. Significant correlations at the $p = 0.05$ level that were found are presented in the table below. All other correlations were found to be insignificant.

Table 16. Significant Correlations in Survey 2

Variables	χ^2	p
Images by Geographic Region	25.358	0.045
Messages by Gender	23.367	0.009
Images by Political Orientation	43.880	0.049

The image preferences of respondents in the Northeast, South, and Midwest were split about equally between Images 1 and 3 in Figure 11 above. Respondents from the West strongly preferred Image 1. The second choice of image for respondents from the South and West was Image 2, the second choice for the Midwest was Image 3, and responses from the Northeast were split about equally between Images 2 and 3.

Respondents of both genders preferred the following message as their first choice: “The newest energy efficiency technologies are now just within your reach and will save you money for years to come.” The second choice message for males was, “Let us help you increase your home’s value by investing in home energy efficiency improvements.” The second choice for females was, “Have you heard? There are a wide variety of energy efficiency technologies available at a low cost to you to improve your home comfort and reduce your carbon footprint!”

Respondents who reported conservative or moderate political affiliation preferred Image 1, while liberals preferred Image 3.

Qualitative Analysis

Survey 2 included four qualitative questions: Questions 13, 15, 17, and 19 in Appendix C. These questions asked respondents to elaborate on their chosen answers for preferred marketing content, messaging, testimonials, and images. Recurring themes of these responses were analyzed.

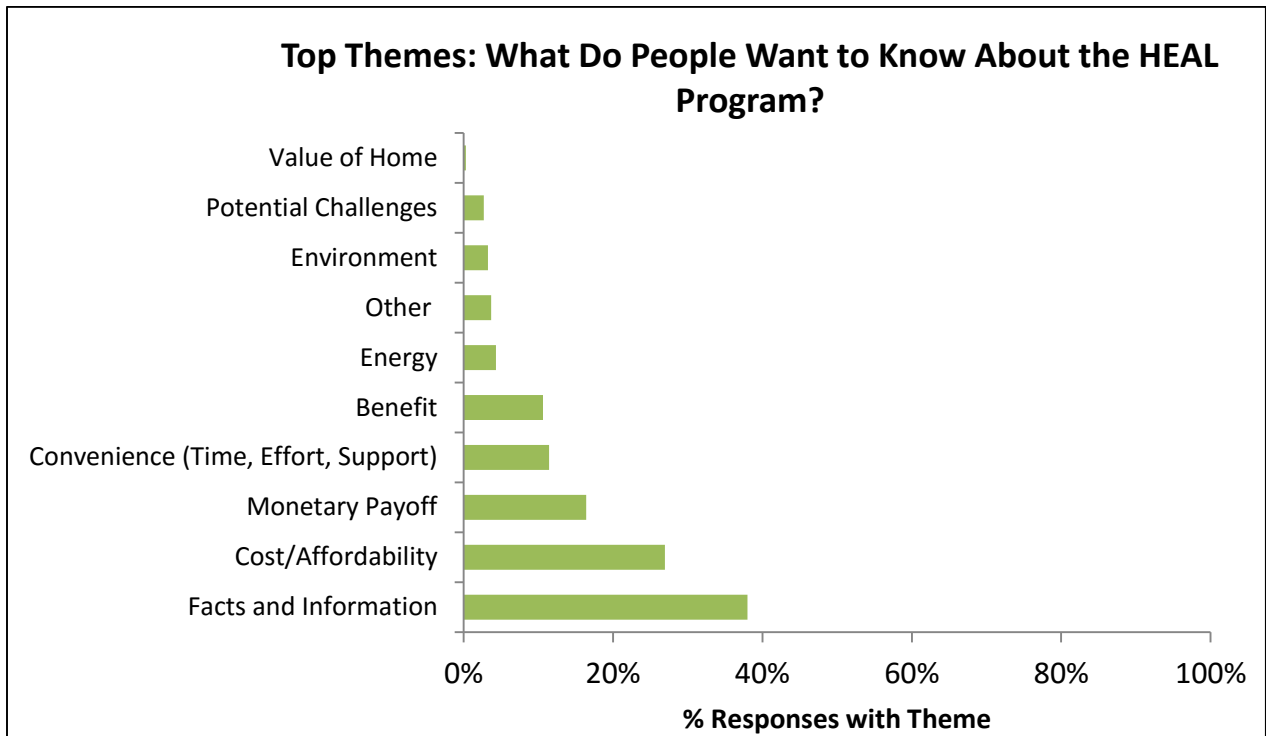
The first qualitative question asked participants to “Please list the three most important things you would want to know about the HEAL program to decide whether to enroll.” As seen in Table 17 and Figure 12, the responses focused on ten common themes. Of all responses, 38% were related to desiring more information about the program, including facts and statistics, 27% of survey participants’ responses mentioned concerns about the cost of energy efficiency upgrades, and 16% of the responses

had to do with saving money. In addition, a large number of responses involved understanding the convenience and the benefits of the program.

Table 17. What Do People Want to Know About HEAL?

Themes	Percent of Responses
Facts and Information about the Program and Process	38%
Cost/Affordability	27%
Monetary Payoff	16%
Convenience (Time, Effort, Support)	11%
Benefit	11%
Energy	4%
Other	4%
Environment	3%
Potential Challenges	3%
Value of Home	0%

Figure 12. Top Themes of What People Want to Know About HEAL



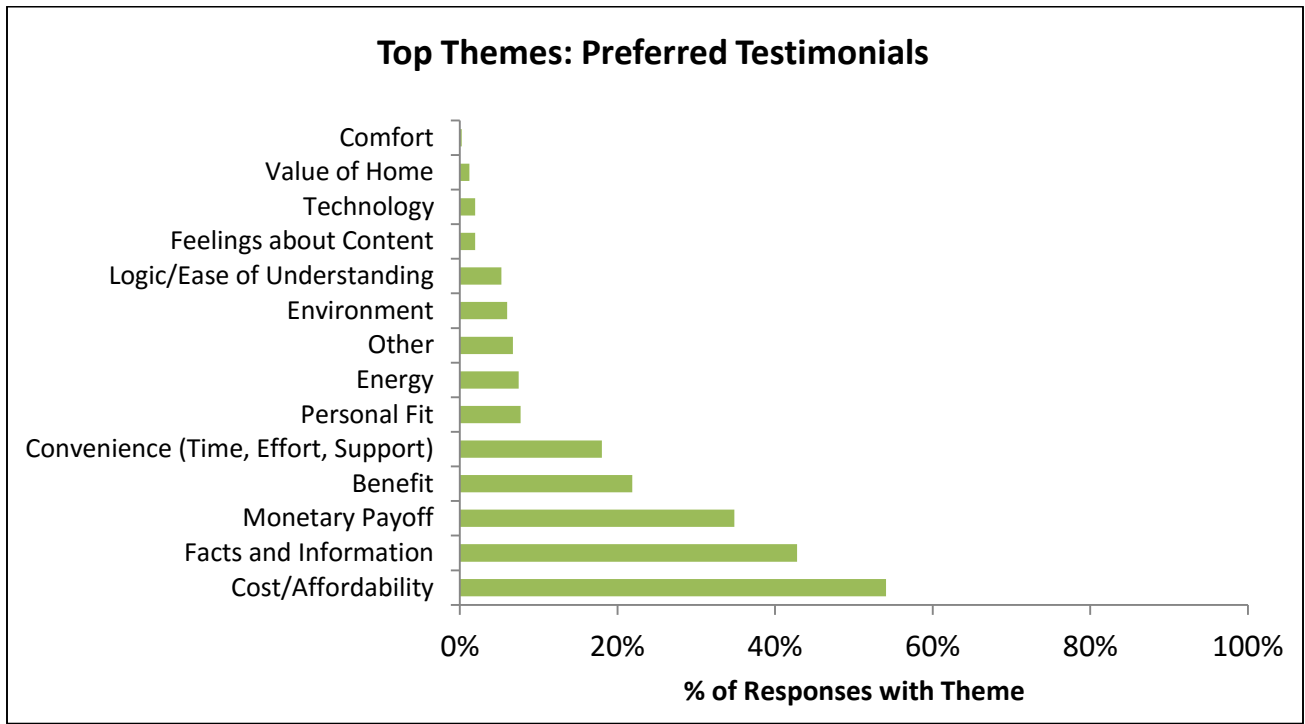
Three questions asked respondents to elaborate on their choices of preferred testimonials, messages, and images. Thirteen themes recurred frequently in these responses: cost/affordability, facts and information, monetary payoff, benefits, convenience (e.g. time, effort, support), personal fit, energy, environment, logic/ease of understanding, feelings about content, technology, value of home, and comfort.

Of the responses to the question about testimonial preference, cost and affordability were referenced in 54%. This was closely followed by facts and information, mentioned in 43% of the responses, monetary payoff, in 35%, benefits, in 22%, and convenience, in 18%, as seen in Table 18. These top themes for testimonials are highlighted in Figure 13.

Table 18. Themes for Preferred Testimonials

Themes	Percent of Responses (n=416)
Cost/Affordability	54%
Facts and Information	43%
Monetary Payoff	35%
Benefits	22%
Convenience (Time, Effort, Support)	18%
Personal Fit	8%
Energy	7%
Other	7%
Environment	6%
Logic/Ease of Understanding	5%
Feelings about Content	2%
Technology	2%
Value of Home	1%
Comfort	0%

Figure 13. Top Themes in Responses to Preferred Testimonials



When asked to explain why they chosen a particular message, 39% of respondents mentioned monetary payoffs, and 31% mentioned the environmental benefits of energy efficiency. Many responses also referred to low cost and affordability. A full list of the percentage of responses in each theme can be found in Table 19. Figure 14 illustrates the top themes for preferred messages.

Figure 14. Top Themes in Responses to Preferred Messages

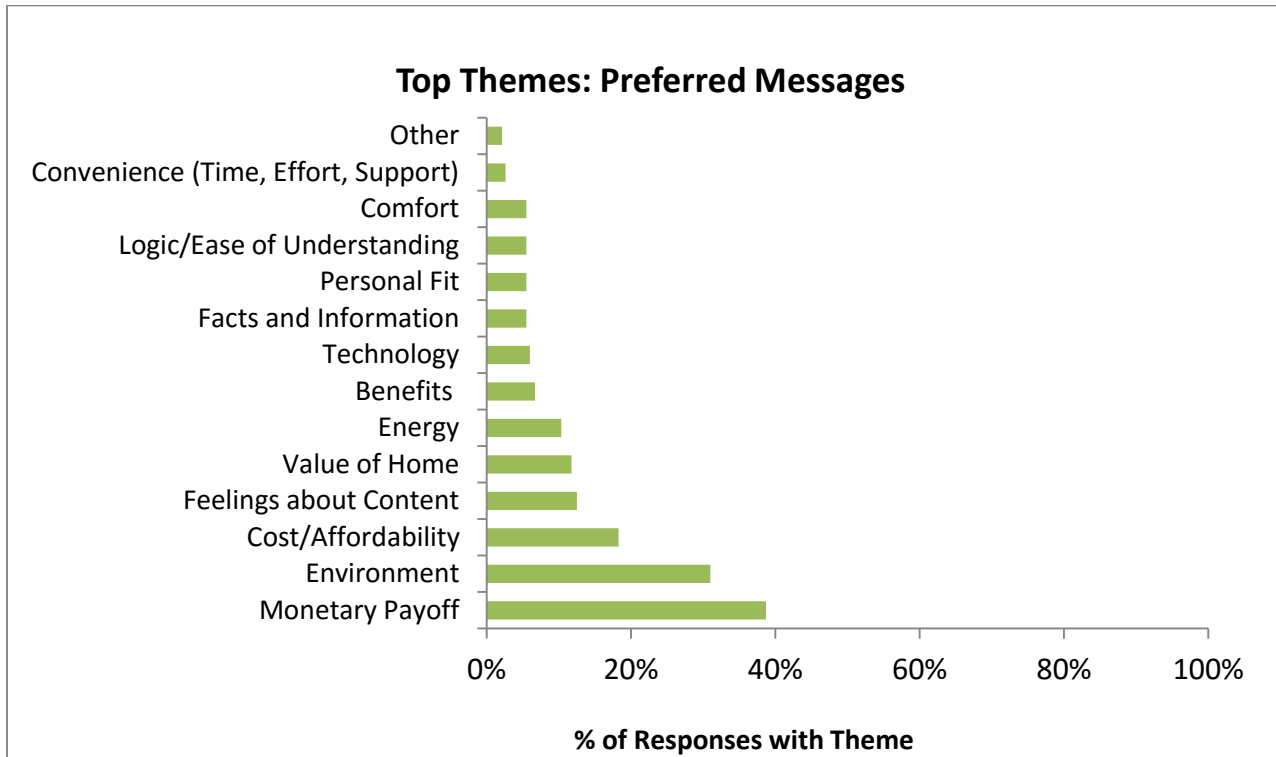


Table 19. Themes for Preferred Messages

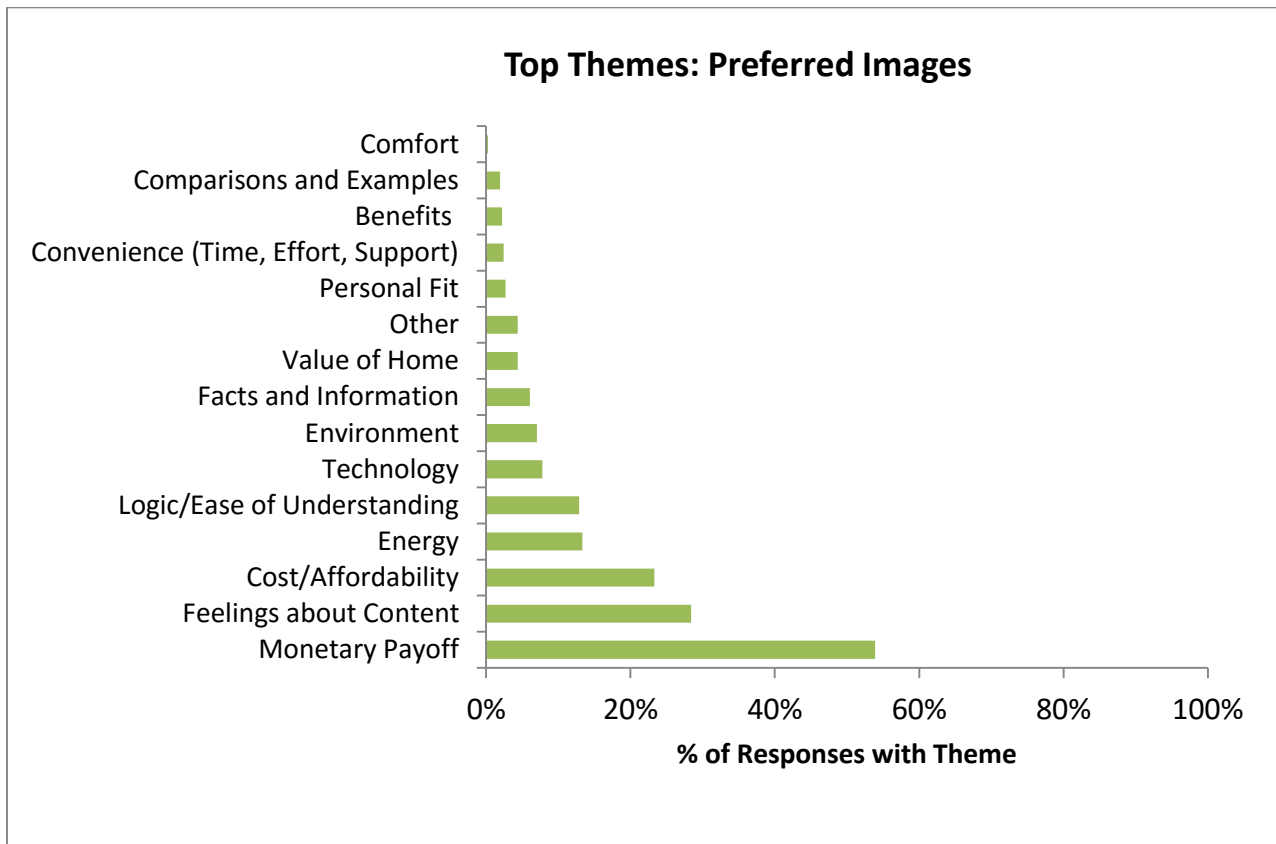
Themes	Percent of Responses (n=416)
Monetary Payoff	39%
Environment	31%
Cost/Affordability	18%
Feelings about Content	13%
Value of Home	12%
Energy	10%
Benefits	7%
Technology	6%
Facts and Information	6%
Personal Fit	6%
Logic/Ease of Understanding	6%
Comfort	6%
Convenience (Time, Effort, Support)	3%
Other	2%

Top themes in responses about images were similar to responses about messages. In 54% of responses there was a reference to or mention of the monetary payoff of energy efficiency. The second most common theme was “Feeling About Content,” and the third was “Cost and Affordability.” The full list of themes and the percent of responses in each theme can be found in Table 20. The top themes for chosen images are shown in Figure 15.

Table 20. Themes for Preferred Images

Themes	Percent of Responses (n=412)
Monetary Payoff	54%
Feelings About Content	28%
Cost/Affordability	23%
Energy	13%
Logic/Ease of Understanding	13%
Technology	8%
Environment	7%
Facts and Information	6%
Value of Home	4%
Other	4%
Personal Fit	3%
Convenience (Time, Effort, Support)	2%
Benefits	2%
Comparisons and Examples	2%
Comfort	0%

Figure 15. Top Themes in Responses to Preferred Images



Discussion

Confirmation of Hypotheses

The results of Survey 1 confirmed Hypothesis 1, that environmental benefits of energy efficiency are less valued than other benefits. Environmental benefits of energy efficiency were ranked, on average, and the fourth most important benefit of nine. Moreover, the differences in average rankings of the benefits were found to be statistically significant, further strengthening the support for this hypothesis.

The second hypothesis, that there are geographic differences in perceived benefits of and barriers to energy efficiency, and individuals from the Northeast value improved comfort, while respondents from southern states would prioritize savings on energy bills, was not confirmed. There were no statistically significant differences in the rankings of benefits by geographic region. Participants from all four geographic regions ranked lowering energy bills as the top benefit. The second top ranked benefit for the Northeast and Midwest was energy efficiency improvements as good investments. Participants located in the South ranked increasing home comfort above energy efficiency being a good investment. Survey participants from the West ranked environmental benefits over energy efficiency as a good investment. These results do not align with Hypothesis 2.

Table 21. Ranking of Energy Efficiency Benefits by Region

Rank	Region	Benefits
First Choice	Northeast	Lower my energy bills.
	South	Lower my energy bills.
	Midwest	Lower my energy bills
	West	Lower my energy bills
Second Choice	Northeast	Good investments.
	South	Increase the comfort of my home.
	Midwest	Good investments.
	West	Reduce my impact on the environment.
Third Choice	Northeast	Increase the resale value of my home.
	South	Good investments.
	Midwest	Increase the comfort of my home.
	West	Good investments.

Recommendations for Marketing Home Energy Efficiency Programs

This research can be used by organizations that offer home energy efficiency programs to design their marketing strategies for such programs. Tailoring marketing content according to individuals' perceived benefits of and barriers to home energy efficiency will likely increase enrollment in energy efficiency programs.

A three-tier strategy is proposed, of which organizations can choose one tier to use to develop its marketing strategy, based on the level of resources available for program marketing. Tier 1 calls for the least amount of marketing resources, and Tier 3 calls for the most.

Tier Approach for Organizations

Tier 1

This tier should be utilized if an organization's marketing department has limited resources or interest to create a unique, tailored marketing campaign for its energy efficiency program. Here, an organization should use the results of the present research and focus on the top perceived benefits and barriers based on Survey 1. These results can be used without differentiating the marketing strategy based on geographic location. Saving money on energy bills was the top perceived benefit across all regions, followed by energy efficiency as a good investment. In addition, comfort was one of the top four benefits for all geographic regions. Therefore, messaging content that is not differentiated by geographic region should relate to reducing the costs of energy efficiency upgrades, saving money through lowering energy bills, and increasing comfort of one's home. By not differentiating marketing content by geographic region, an organization with limited resources can save time and money.

A messaging campaign for an energy efficiency program across all geographic areas should reflect elements of the two most preferred messages:

1. "The newest energy efficiency technologies are now just within your reach and will save you money for years to come."
2. "Let us help you increase your home's value by investing in home energy efficiency improvements."

The present research suggests that images depicting money resonate with individuals across all geographic regions. This can be leveraged in a marketing campaign.

Tier 2

This tier should be utilized if the company has sufficient resources and interest to tailor its marketing strategy by geographic location of its target audience. Similar to Tier 1, messaging content should include information on the upfront costs and monetary savings of energy efficiency. Beyond this benefits, marketing content can focus on the secondary preferred benefits of the specific targeted geographic regions, which include: improving home comfort, increasing the resale value of the home, and decreasing one's impact on the environment vary by geographic location.

When marketing home energy efficiency to homeowners in Western states, messaging should include environmental benefits. For homeowners in the Northeast, messaging should emphasize how energy efficiency upgrades increase the resale value of one's home. Information related to increasing the comfort of one's home can be included in marketing content in all areas, because it was one of the top four perceived benefits for all regions.

Tier 3

This tier should be utilized if an organization has sufficient resources to research their target audience's specific perceived benefits of and barriers to energy efficiency. A survey, entitled Survey 3 and found in Appendix D, can be given to a target audience to determine its perceptions of home energy efficiency. This survey was constructed with the most important questions from Surveys 1 and 2 used in the present research. This survey also helps an organization's marketing department determine preferred marketing content of its target audience, and how individuals prefer to receive information about their efficiency program. Results from Survey 3 can be analyzed and utilized by an organization's marketing department to design a campaign specific to its audience.

Marketing Materials

This research also provides information about the preferred channels for individuals to receive information about a home energy efficiency program, and which types of marketing materials they prefer to receive. The results of Survey 2 suggest that information should be provided to a target

audience through email. Focus group participants expressed a preference to obtain information about a home energy efficiency program through a lunch and learn. A lunch and learn was also the preferred medium mentioned by participants in both focus groups. Interestingly, the preferred medium by each group was the medium that they used to report the information to us; those taking the survey on the internet via Amazon MTurk preferred to obtain information about HEAL through the internet, and those participating in our focus groups over dinner or snacks preferred to obtain information about HEAL in an in-person setting with food provided. Organizations that provide information about their home energy efficiency programs through multiple preferred channels will likely be most successful.

The analysis of qualitative responses in Survey 2 revealed that individuals value facts and statistics when evaluating a home energy efficiency program. Additionally, individuals value real life examples of energy efficiency programs working successfully for others.

Limitations and Directions for Future Research

This study provides an analysis of individuals' top perceived benefits of energy efficiency and outlines best practices for the marketing of residential energy efficiency programs across the United States. While the present research enhances understanding of how best to structure messaging for energy efficiency, the study presents several areas that could benefit from further research.

As described in the Literature Review, the marketing content that was developed in this study should be tested in real-world settings. Its success at increasing enrollment in home energy efficiency programs should be measured and the materials should be revised accordingly.

Statistical analyses revealed a significant difference between preferred messages based on gender, and a significant difference between preferred images based on both political orientation and geographic region. Further research into how these demographic variables affect perceptions of energy efficiency would be valuable.

The present research was limited by the characteristics of the survey participants on MTurk; the lack of random sampling prevented generalizability of the results, and the demographic biases of respondents on MTurk may have affected the content of responses. Repeating the present research with other survey populations could provide more clarity into perceptions of energy efficiency across the country.

Lastly, the idea of loss aversion could be explored; whether individuals are more likely to enroll in a home energy efficiency program when it is framed as a method to avoid financial loss on energy bills.

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Appendix A

Survey 1

Note: Answer choices for questions marked with asterisks () were randomized to prevent bias in responses.*

The Clinton Climate Initiative (CCI) and the Duke University Carbon Offsets Initiative (DCOI) have partnered to research the benefits of energy efficiency. The CCI and the DCOI are interested in identifying the benefits that are important to homeowners when they are considering energy efficiency improvements to their home.

The survey should not take longer than 15 minutes to complete. Your responses will be used to help improve the CCI's and the DCOI's employee-based energy efficiency programs. Your responses are anonymous and no identifying information will be collected in this survey. Please feel free to skip any question that you do not wish to answer.

If you have any questions or thoughts that you would like to share, please email Jason Elliott, program coordinator of the Duke Carbon Offsets Initiative, at Jason.Elliott@duke.edu. Thank you for your willingness to participate in this survey. Please click the "Next" button below to begin.

1. In order to participate in this survey, you must be at least 18 years old. Are you at least 18 years old?
 - Yes
 - No
2. Do you own your home?
 - Yes
 - No
3. Including yourself, how many people live in your home for at least 6 months out of the year?
4. What type of home do you live in currently?
 - Single Family House
 - Condo/Townhouse
 - Manufactured or Mobile Home
 - Apartment or Duplex

5. How many years have you been living in your current home?
- Less than 1 year
 - 1-3 years
 - 3-5 years
 - 5-10 years
 - 10-15 years
 - 15 or more years
6. In what year was your home built?
- Before 1920
 - 1920-1939
 - 1940-1959
 - 1960-1979
 - 1980-1999
 - 2000-Present
 - Not sure
7. At your current home, have you had a home energy assessment or audit?
- Yes
 - No
 - Not sure

Energy efficiency is similar to, but not the same as energy conservation. **Energy efficiency is using less energy to provide the same service or function.** A home can become more energy efficient in many different ways. For example:

- Replacing older appliances with Energy Star certified appliances
- Increasing the amount of insulation in a home's attic/crawlspace
- Sealing leaks in and around ducts, windows, and doors

Energy conservation is making a personal behavioral choice to reduce energy use or to not use a particular service. You can conserve energy by taking shorter showers, shutting off lights when you leave the room, or changing the temperature on your thermostat.

This survey will focus on energy efficiency and not energy conservation.

8. To what degree do you agree with the following statements?

	Strongly Disagree	Disagree	Agree nor Disagree	Agree	Strongly Agree
My home is energy efficient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing the energy efficiency of my home is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing the energy efficiency of my home is a good investment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider energy efficiency when purchasing new appliances, lighting, or other retrofits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Which types of energy efficiency improvements have you considered or completed in your home?

	I have not considered this project.	I have considered this project.	I have completed this project.
Replacing light bulbs with CFL or LED bulbs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing Energy Star appliances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing a more efficient water heater.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing a more efficient heating and/or cooling system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing or repairing insulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing weather-stripping on doors and windows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installing a programmable thermostat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Replacing or upgrading windows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caulking and air sealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sealing the ductwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. For energy efficiency improvements that you have not completed, what has prevented you from completing it? (Check all that apply.)

- The project was too expensive
- I did not have enough information about the project
- I did not have enough time
- I could not find a contractor that I trusted
- The project was not feasible in my home
- My spouse/partner did not want to do the project
- I do not own my home
- The project was restricted by a homeowner’s association, historical society, or similar organization
- I have other home improvements that need to be done first
- Other: _____

11. How likely would you be to complete an energy efficiency improvement if the following benefits were provided?

	Not at all likely	Slightly likely	Moderately likely	Very likely	Completely likely
Access to a low interest rate loan to pay for energy efficiency improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A discounted home energy audit to help prioritize your home's energy efficiency needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendations of highly-qualified contractors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on available discounts and rebates for energy efficiency improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assistance in scheduling audits and energy efficiency improvements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to a professional who calculates the return on investment for each energy efficiency improvement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An incentive (\$200 or less) that can be used to pay for energy efficiency improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An information session on residential energy efficiency that highlights potential costs and benefits of typical energy efficiency improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Approved time off for undertaking energy efficiency improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Likelihood to Enroll

Potential benefits of a home energy efficiency program are listed below for your reference.

- Access to a low interest rate loan to pay for energy efficiency improvements
- A discounted home energy audit to help prioritize your home's energy efficiency needs
- Recommendations of highly-qualified contractors
- Information on available discounts and rebates for energy efficiency improvements
- Assistance in scheduling audits and energy efficiency improvements
- Access to a professional who calculates the return on investment for each energy efficiency improvement
- An incentive (\$200 or less) that can be used to pay for energy efficiency improvements
- An information session on residential energy efficiency that highlights potential costs and benefits of typical energy efficiency improvements
- Approved time off for undertaking energy efficiency improvements

Note: The order of the following two questions was randomized to prevent bias in responses.

12. How likely would your coworkers be to participate in a program that offered one or more of these benefits?

- Extremely unlikely
- Unlikely
- Neutral
- Likely
- Extremely likely

13. How likely would you be to participate in a program that offered one or more of these benefits?

- Extremely unlikely
- Unlikely
- Neutral
- Likely
- Extremely likely

14. *Below are potential benefits of increasing the energy efficiency of your home. In your opinion, please rank the following benefits with the benefit at the top being the most important to you and the benefit at the bottom being the least important to you.

Click and drag the items below and organize them from 1 (most important) to 9 (least important)

- Energy efficiency improvements bring better technology into my home
- Energy efficiency improvements increase the comfort of my home
- Energy efficiency improvements also improve the indoor air quality of my home
- Energy efficiency improvements contribute to my energy independence and security
- Energy efficiency improvements are good investments
- Energy efficiency improvements lower my energy bills
- Energy efficiency improvements reduce my impact on the environment
- Energy efficiency improvements increase the resale value of my home
- Energy efficiency improvements highlight me as a role model for my family and/or community

15. What is your gender?

- Female
- Male
- Other

16. What is your current age?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 and over
- Prefer not to answer

17. What is your zip code?

18. What is the highest level of education you have completed?

- Grammar school
- High school or equivalent
- Vocational/technical school (2 year)
- Some college

- College graduate (4 year)
- Masters/professional degree (MS, MA, JD, etc.)
- Doctoral degree (PhD)

19. What is your combined annual household income?

- Under \$20,000
- \$20,000-\$34,999
- \$35,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$149,999
- \$150,000 or more

Appendix B

Focus Group Script

Terminology used:

PL: Program Leaders (overall head of Focus Group)

GLs: Group Leaders (assistants to Program Leaders, provides leadership in small group settings if applicable)

EE: Energy Efficiency

The DCOI: The Duke Carbon Offsets Initiative

The CCI: The Clinton Climate Initiative

The CCI-HEAL program: The Clinton Climate Initiative's Home Energy Affordability Loan program

Goals:

- Understand the effects of word choice on participants' opinion of the CCI-HEAL program
- Understand participants' motivations for EE improvements and how that translates to advertising statements
- Determine the type of compartmentalization favored for EE web pages and flyers
- Understand the effects of testimonials, technology spotlights, and statistics in EE advertisements
- Evaluate the effectiveness of different types of images when attached to testimonials and when inserted unattached into advertisements
- Determine if color schemes affect participants perceptions of advertising content

Time Table:

00:00-00:10 Introduction

00:10-00:20 Question 1: What is EE?

00:20-00:30 Questions 2-3: Focusing in on motivations, barriers, and sources of information

00:30-00:50 Questions 4-6: Focusing on the most compelling informative content

00:50-00:57 Question 7: Question on visuals

00:57-00:70 Questions 8-9: Questions on customization by company and employee benefits programs

00:70-00:80 Question 10: Question on testimonials

00:80-00:90 Other questions, comments, wrap-up

Detailed Procedure:

00:00-00:10: Introduction

Participants take seats. PL leads with "Welcome to our focus group on Energy Efficiency advertising! I'm so glad you all decided to participate. During the next 90 minutes, we'll be exploring conceptions

about home energy efficiency as well as testing out some advertising wording and techniques. Before we begin though, I'd like to take a moment to introduce myself and my colleagues and for you to have a chance to introduce yourself!"

Short introductions take place. GL's note names and affiliations of participants.

00:10-00:20: Question 1: What is EE?

PL continues, "Well, now that introductions are out of the way, let's begin. When I say the phrase, 'energy efficiency,' what do you think of?" GLs continue to take notes.

Follow-ups:

Does that definition change when I say "home energy efficiency" instead of just "energy efficiency?"
What types of technologies do you think of in regards to (the definition that the CCI uses)?

If needed: For instance, I think of the Nest, which is a futuristic-looking programmable thermostat.

00:20-00:30: Questions 2-3: Focusing in on motivations, barriers, and sources of information

PL continues, "Great answers, everyone. It's really fascinating to see everyone's pre-conceptions of energy efficiency. So, quick show of hands, have any of you seriously thought about pursuing energy efficiency improvements in your home?" PL pauses, GLs note which participants raised hands.

"Interesting! Keep your hands up if you made those improvements on your home." PL pauses, GLs note whose hands are raised, if any.

PL continues, "Okay. For the next few questions, we are going to split up based off of your experience level with home energy efficiency." Depending on the split in the group, either split into two or three smaller groups based on the question above.

Question set A applies to participants that have not thought about pursuing EE improvements.

Question Set A: What has kept you from looking into implementing EE improvements in your home?

What would you need before feeling comfortable pursuing energy efficiency improvements in your home?

Follow-ups:

What would be the best way to get that information/support to you? Who would be the best source of information or support for this?

Question set B applies to participants that have thought about pursuing EE improvements but have not implemented improvements.

Question Set B: What has kept you from implementing EE improvements in your home? Or are you waiting? What would you need before feeling comfortable pursuing energy efficiency improvements in your home?

Follow-ups:

What would be the best way to get that information/support to you? Who would be the best source of information or support for this?

Finally, if there are people that have made energy efficiency improvements in their homes, PL continues, “Wonderful. The next set of questions is for the final group of you, those that have implemented energy efficiency improvements in your homes.”

Question set C applies to participants that have implemented energy efficiency improvements in their home.

Question Set C: What was/were your motivations for looking into or proceeding with energy efficiency improvements? Did you face barriers or interesting circumstances while pursuing energy efficiency retrofits?

Follow-ups:

Where did you first hear about energy efficiency improvements? What made the idea of energy efficiency improvements salient to you? If you faced barriers, what were they? If not, what were you anxious about during the process, if anything?

PL should give a **2-minute warning** before continuing on to the next section. If it is obviously taking less time than allotted, allow the conversation to move to the next section.

00:30-00:50: Questions 4-6: Focusing on the most compelling informative content

PL continues to the split groups, “Thank you. Now, into the meat of this focus group. The next set of questions uses our case study, the Clinton Climate Initiative’s HEAL program. Your facilitator will hand out a fact sheet on the program shortly, but I’ll give a brief introduction. The HEAL program, short for Home Energy Affordability Loan program, is an employee-benefit program, like employer-provided healthcare. The employer provides services, such as a payroll deduction option for energy efficiency loans, free energy audits, time off for audits and contracting, or interest rate buy-downs, to make it cheaper and easier for employees to make energy efficiency improvements. Now, I’ll give some time for you to skim the fact sheets and ask your facilitator any questions you might have.”

GLs pass around fact sheets (Appendix 1) and after a minute answers questions. GLs should set a cap of three questions for brevity’s sake.

GLs continue pull out butcher paper pad and a sharpie and continues, “This next segment is going to be a broad brainstorming session on marketing this program.

Question 4: If you were a Clinton Climate Initiative employee and were trying to convince an employee at a client company to go through the program, what “big-picture” content would you make sure to include? By “big picture,” I mean that instead of talking specific facts or testimonials, we are talking in

general Facts about Energy Savings, Testimonials showing trust, which then could be broadened even farther to simply Financial Incentives or Things that build Trust. Don't worry; we'll get to specific ideas in a bit."

Follow-up:

"What makes you think that _____ is important?"

For GLs: Try to group suggestions into broader categories with them in order to make a web of thoughts about the potential advertisement. Many types of things could fall into this: types of motivations, types of persuasive techniques (appeals to logic, emotion, similarity to the employee), visuals, normative slogans, types of story-telling devices (tech spotlight, testimonials of different kinds, stories, statistics). GL's should use their discretion in grouping the ideas listed into bigger themes on their butcher paper to create a web of ideas. If they fall into only talking about one of the categories above, guide them out of it by providing ideas from this list above.

Question 5: "How would you take these "big-picture" ideas and turn them into specific pieces of informative content?"

For GLs: In this question, there are at least two ways this question could be immediately interpreted. The participants could start combining pieces of the web (testimonials with trust, stats with money, etc.) or they could start listing rhetorical techniques if those haven't already been listed above (using 2nd person, appealing to authority, using positive vs. negative language, normative vs. descriptive language), which would either stand alone or branch off of the existing web. Try to make sure that they try to do both of those during this time unless the conversation is being very productive.

Question 6: "What if there are some employees that are completely not motivated by ____? What would you do then? Is there a way to organize the content in a way that works for both the audience that cares and the audience that doesn't care?"

PL should give a **2-minute warning** before continuing on to the next section. If it is obviously taking less time than allotted, allow the conversation to move to the next section.

00:50-00:57 Question 7: Question on visuals.

PL gets the attention of all of groups and continues, "Thank you for all of your thoughts on the informative content of advertisements for HEAL. Now, we want to take a view minutes and talk about a different side to promotional materials; visuals."

Question 7: "GL continues, "First, we're going to talk about visuals. What visuals do you think would be most compelling to go with an advertisement for HEAL? To get your mind rolling, you can attach visuals to specific ideas brainstormed in the last session."

Follow-ups:

What makes that visual compelling? Are there more details to the visual that would make it more or less compelling?"

For GLs: Appendix D is a photo bank of CCI and DCOI photos. If the group gets entirely stuck, have them look over the pictures and use them to refresh the conversation. PL should give a **3-minute warning** before **bringing the group back together for the next section with 1 minute left**. If it is obviously taking less time than allotted, allow the conversation to move to the next section.

00:57-00:70 Questions 8-9: Questions on customization by company and employee benefits programs

PL continues, “Now, we have a lot of visuals and a lot of informative content. However, the best promotion materials to promote home energy efficiency improvements for one company’s employees may look completely different than another company’s materials.”

Question 8: “How might the visual and informative content you use in promotion materials differ by company?”

Follow-ups:

“Is there any info you’d like to collect from employees first? If you were given a representative survey, what would you ask them?”

Question 9: “What are aspects of employee benefits programs that you like or dislike?”

Follow-ups: “Which communications methods and mediums worked well for employee benefits programs? Which didn’t?”

Follow-ups:

“If you were trying to create materials for a new HEAL program as a consultant for a company you didn’t work at, what information about the company’s existing employee benefits program or sustainability program would you want to know to format and market these advertisements?”

00:70-00:80 Question 10: Questions on testimonials

PL passes out Appendix 2 and continues, “Now, we are heading to the end of our focus group with a few prepared pieces for you to judge and critique. There are a series of 6 testimonials on the page I just handed out. Read them, note what you like or dislike about each, and pick a favorite and a least favorite. I’ll give you about three minutes for this.”

Question 10: Which testimonial did you like the most? What aspects did you like? (and vice versa)

Things that could be mentioned: position of power or not, length, authenticity, etc.

Follow-ups:

Would you use different testimonials in different advertising situations? Can you give a specific example?

00:80-00:90 Other questions, comments, wrap-up

PL concludes, “Thank you all so much for your time. Before you leave, do you have any questions or

comments that have come up over the course of the morning/afternoon/evening? We (may/will) also be sending out a brief follow-up survey for feedback on the focus group that will give you one more chance to ask questions and give opinions.”

Fact Sheet on HEAL: Appendix 1

The HEAL program, short for Home Energy Affordability Loan program, is an employee-benefit program, like employer-provided healthcare. The employer provides services, such as a payroll deduction option for energy efficiency loans, free energy audits, time off for audits and contracting, or low interest loans, to make it cheaper and easier for employees to make energy efficiency improvements.

Here are some of the results of the first companies, cities, universities, and hospitals to implement the program:

Financially:

HEAL participants save on average \$447 on their annual utility bill

23% annual return on investment is average, so the bill is paid off after slightly more than 4 years.

Improvements usually last for 10-15 years, although the average homeowner only lives in a home for 10 years.

Home Comfort:

Studies have shown that energy efficiency improvements better indoor air quality, leading to reduced rates in child asthma

Home energy efficiency improvements can lower the humidity in a home by over 30% as well as providing more constant temperature control

Environmentally:

On average, a household that does energy efficiency improvements emits 2 tons less carbon dioxide than it did previously. This number is skewed slightly because several of the programs based acceptance into the program on how much impact it would make (based on knowing house age, square footage, etc.)

Feedback:

Organizations that have implemented HEAL- Duke University, L'Oreal USA, Johnson Controls, Inc., the City of Little Rock, and others- have a 94% satisfaction rate with the program.

82% of employee respondents said that offering HEAL makes for a better workplace

Testimonials: Appendix 2

Testimonial A: “[My employer] offers various benefits to the employees, but this benefit is just awesome. This benefit is right up there with health insurance!” - Shirley Stokes, University of Arkansas for Medical Sciences

Testimonial B: “Working with [my employer’s HEAL staff] and the recommended energy audit contractor was an excellent experience! The entire process was managed efficiently and I learned a significant amount about my home.” - Arwen Buchholz, Duke University

Testimonial C: “I’m just realizing how little I knew about my house before HEAL. I didn’t know that I could take my house, which seemed like a pretty solid, unchanging thing, and save fifty dollars a month and make it more comfortable year-round.” - Filip Hueckel, City of Ann Arbor

Testimonial D: “I can’t stop now. Because I was fairly uncomfortable with the idea of energy efficiency improvements, I only got my ducts sealed and some new insulation the first time I did the program. But the change on the bill was dramatic. Now, I’m doing a third project with the same contractor, and I’m even thinking about installing solar!” - Charles Goldblatt, Hendrix College

Testimonial E: “In the present economy ... we’re on a very tight budget. If we do give a raise, it’s not like it was six or seven years ago; it’s a very small percentage. [HEAL] is a way of putting money in an employee’s pocket, not just for this year, but on an ongoing basis.” - Tom Butler, VP of Governmental Affairs, University of Arkansas for Medical Sciences

Long Testimonial: “It was just a great experience every step of the way. [My employer] set aside a week for all of the employees that wanted to go through the program to get the audit, and I got paid leave for the four hours that the auditors were at my home. Within the week, I got an e-mail with my results from the audit and was able to schedule a lunch meeting with HEAL program staff to discuss what I should actually do in my home. We decided that I should get a new HVAC system and seal my windows to get the most bang for my buck and make it so that I could pay back my 5.5% loan within two years just using the energy savings. The contractors that were recommended were, for once, very polite and thorough workers and they were in and out in a blink of an eye. It’s been a year since then, and my loan is already mostly paid off. In a month or two, it’ll be gone, and the next ten years of savings will just be like a bonus to my paycheck. Now that’s a real benefit I can use.” – Barbara Frey, Arlington Hotel

Appendix 3: Photo bank



Appendix C

Survey 2

Note: Answer choices for questions marked with asterisks () were randomized to prevent bias in responses.*

The Clinton Climate Initiative and the Duke Carbon Offsets Initiative have partnered together to investigate consumer perception of the value of residential energy efficiency. With support from students at the Nicholas School of the Environment at Duke University, the group developed a survey that examines what marketing content is most effective in promoting energy efficiency programs to individuals in varying geographic areas and demographic groups. The survey will take less than 20 minutes and all responses will be anonymous.

Your participation is completely optional and will help benefit the dissemination of energy efficiency in homes across the country. Responses to the survey are anonymous. The information collected will be used to inform communication strategies for the Clinton Foundation's Employee Energy Benefit program. To begin the survey, please click below.

1. Are you at least 18 years of age?

- Yes
- No

2. Do you own your own home?

- Yes
- No

3. What is your gender?

- Male
- Female
- Other

4. What is your current age?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 and over
- Prefer not to answer

5. What state do you live in?

- Alabama

- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas

- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

6. What is the highest level of education you have completed?

- Grammar school
- High school or equivalent
- Vocational/technical school (2 year)
- Some college
- College graduate (4 year)
- Master's/Professional degree (MS, MA, JD, etc.)
- Doctoral degree (PhD)

7. What is your combined annual household income?

- Under \$20,000
- \$20,000-\$34,999
- \$35,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$149,999
- \$150,000 or more

8. Which of the following most closely matches your job level?

- Intern
- Entry Level
- Maintenance/Housekeeping
- Analyst/Associate
- Manager
- Senior Manager
- Director
- Vice President
- Senior Vice President
- C level executive (CIO, CTO, COO, CMO, etc)
- President or CEO
- Owner
- Other (Please specify): _____

9. On the whole, do you consider your political orientation to be conservative or liberal?

- Very conservative

- Conservative
- Slightly conservative
- Moderate
- Slightly liberal
- Liberal
- Very liberal

The HEAL program, short for Home Energy Affordability Loan program, is an employee-benefit program, that provides assistance to employees interested in increasing their home's energy efficiency. The employer will provide services that make it cheaper and easier for employees to make energy efficiency improvements in their homes. Some of these services could include a payroll deduction option for loans for home energy efficiency upgrades, free energy audits, paid time off for audits, or information about the best ways to increase the energy efficiency of an employee's home. Please answer the following questions about the HEAL program.

10. If you were offered a home energy efficiency program such as HEAL, through which of the following channels would you prefer to learn about it? Please select all that apply.

- Employer
- Homeowner's association
- Local non-profit
- Government
- Friends
- Colleagues
- Relatives
- Other (Please specify): _____

11. If your employer provided the HEAL program, through which medium would you prefer to learn about it? Please select all that apply.

- Mandatory meeting
- Lunch and Learn or other optional meeting
- Email
- Email newsletter
- Print newsletter
- Program materials mailed to your home
- Flyers
- Social media announcements
- Text messages
- Phone calls
- Video conferencing
- Video
- Other (Please specify): _____

12. What type of content would be most helpful for you to make a decision about whether to enroll in the program?

- Testimonials of others who have enrolled in the program
- Photos of energy efficiency upgrades done through the program
- Catch phrases or taglines, succinctly summarizing the program
- Facts and statistics about the program
- Links to obtain more information about the program

13. Please list the three most important things you would want to know about the HEAL program to decide whether to enroll.

- 1.
- 2.
- 3.

14. We're interested in your feelings towards certain messages. If presented with the following testimonial, how likely or unlikely would you be to enroll in the HEAL program? (Note: Each participant was shown *one* of the following testimonials.)

1. *[My employer] offers a wide variety of benefits to employees, but the energy efficiency program is one of the best! This program will keep providing benefits for years to come.*
2. *Participating in this employee benefits program was an excellent experience! The entire process was managed efficiently and the staff made sure the home energy assessment fit with my busy work schedule.*
3. *The HEAL program was the key to unlocking my home's energy saving potential. I didn't know that I could take my house, which seemed like a pretty solid, unchanging thing, and save fifty dollars a month and make it feel more comfortable year-round.*
4. *I never knew how I could save on my electric bills by implementing simple energy efficiency improvements in my home! After I got my ducts sealed and new insulation the change in my bill was dramatic. I'm definitely going to pursue more energy efficiency projects in the near future.*
5. *In the present economy, we're on a very tight budget. If we do give a raise, it's not like it was six or seven years ago; it's a very small percentage. [HEAL] is a way of putting money in an employee's pocket, not just for this year, but on an ongoing basis.*
6. *It was just a great experience every step of the way. [My employer] set aside a week for all of the employees that wanted to go through the program to get the audit, and I got paid leave for the four hours that the auditors were at my home. Within a few weeks, I got an e-mail with my results from the audit and was able to schedule a lunch meeting with HEAL program staff to discuss what I could do to increase the energy efficiency of my home. Based on the information provided at the meeting, I decided to install a new HVAC system and seal my windows. It's been a year since then, and my loan will be paid off in a month or two with just the energy savings from the retrofits! The next ten years of savings will just be like a bonus to my paycheck. Now that's a real benefit I can use.*

- Very unlikely
- Somewhat unlikely
- Neutral

- Somewhat likely
- Very likely

15. Please briefly explain (1-2 sentences) your answer to the above question.

16. *If included in marketing materials, which of the following messages would make you most likely to enroll in the HEAL program?

- Have you heard? There are a wide variety of energy efficiency technologies available at a low cost to you to improve your home comfort and reduce your carbon footprint!
- Let us help you increase your home’s values by investing in home energy efficiency improvements.
- Investing in energy efficiency improvements can reduce your impact on the environment while making your home even more comfortable.
- The newest energy efficiency technologies are now just within your reach and will save you money for years to come.
- Did you know? Small and affordable energy efficiency improvements in your home can have a large positive impact for the environment.
- With the new energy efficiency technologies you can add to the comfort of your home and do your part to protect the environment!

17. Please briefly explain (1-2 sentences) your answer to the above question.

18. *If included in marketing materials, which of following images would make you most likely to enroll in the HEAL program?





19. Please briefly explain (1-2 sentences) your answer to the above question.

Thank you for your participation.

Appendix D

Survey 3

Note: Answer choices for questions marked with asterisks () should be randomized to prevent bias in responses.*

1. *Below are potential benefits of increasing the energy efficiency of your home. In your opinion, please rank the following benefits with the benefit at the top being the most important to you and the benefit at the bottom being the least important to you.

Click and drag the items below and organize them from 1 (most important) to 9 (least important)

- Energy efficiency improvements bring better technology into my home
- Energy efficiency improvements increase the comfort of my home
- Energy efficiency improvements also improve the indoor air quality of my home
- Energy efficiency improvements contribute to my energy independence and security
- Energy efficiency improvements are good investments
- Energy efficiency improvements lower my energy bills
- Energy efficiency improvements reduce my impact on the environment
- Energy efficiency improvements increase the resale value of my home
- Energy efficiency improvements highlight me as a role model for my family and/or community

2. What is your zip code?

3. *If your employer provided the HEAL program, through which medium would you prefer to learn about it? Please select all that apply.

- Mandatory meeting
- Lunch and Learn or other optional meeting
- Email
- Email newsletter
- Print newsletter
- Program materials mailed to your home
- Flyers
- Social media announcements
- Text messages
- Phone calls
- Video conferencing
- Video
- Other (Please specify): _____

4. *What type of content would be most helpful for you to make a decision about whether to enroll in the program?
 - Testimonials of others who have enrolled in the program
 - Photos of energy efficiency upgrades done through the program
 - Catch phrases or taglines, succinctly summarizing the program
 - Facts and statistics about the program
 - Links to obtain more information about the program

5. We're interested in your feelings towards certain messages. If presented with the following testimonial, how likely or unlikely would you be to enroll in the HEAL program? (Note: Each participant should be shown *one* of the following testimonials.)
 1. *[My employer] offers a wide variety of benefits to employees, but the energy efficiency program is one of the best! This program will keep providing benefits for years to come.*
 2. *Participating in this employee benefits program was an excellent experience! The entire process was managed efficiently and the staff made sure the home energy assessment fit with my busy work schedule.*
 3. *The HEAL program was the key to unlocking my home's energy saving potential. I didn't know that I could take my house, which seemed like a pretty solid, unchanging thing, and save fifty dollars a month and make it feel more comfortable year-round.*
 4. *I never knew how I could save on my electric bills by implementing simple energy efficiency improvements in my home! After I got my ducts sealed and new insulation the change in my bill was dramatic. I'm definitely going to pursue more energy efficiency projects in the near future.*
 5. *In the present economy, we're on a very tight budget. If we do give a raise, it's not like it was six or seven years ago; it's a very small percentage. [HEAL] is a way of putting money in an employee's pocket, not just for this year, but on an ongoing basis.*
 6. *It was just a great experience every step of the way. [My employer] set aside a week for all of the employees that wanted to go through the program to get the audit, and I got paid leave for the four hours that the auditors were at my home. Within a few weeks, I got an e-mail with my results from the audit and was able to schedule a lunch meeting with HEAL program staff to discuss what I could do to increase the energy efficiency of my home. Based on the information provided at the meeting, I decided to install a new HVAC system and seal my windows. It's been a year since then, and my loan will be paid off in a month or two with just the energy savings from the retrofits! The next ten years of savings will just be like a bonus to my paycheck. Now that's a real benefit I can use.*
 - Very unlikely
 - Somewhat unlikely
 - Neutral
 - Somewhat likely
 - Very likely

6. *If included in marketing materials, which of the following messages would make you most likely to enroll in the HEAL program?
 - Have you heard? There are a wide variety of energy efficiency technologies available at a low

cost to you to improve your home comfort and reduce your carbon footprint!

- Let us help you increase your home's values by investing in home energy efficiency improvements.
- Investing in energy efficiency improvements can reduce your impact on the environment while making your home even more comfortable.
- The newest energy efficiency technologies are now just within your reach and will save you money for years to come.
- Did you know? Small and affordable energy efficiency improvements in your home can have a large positive impact for the environment.
- With the new energy efficiency technologies you can add to the comfort of your home and do your part to protect the environment!

7. *If included in marketing materials, which of following images would make you most likely to enroll in the HEAL program?

