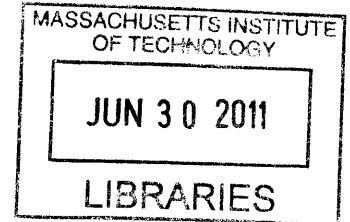


**Driving Equitable Demand:
Early Lessons from the BetterBuildings Program to Access 'Hard-to-Reach' Communities for Energy Efficiency Building Improvements**

by

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SUBMITTED TO THE DEPARTMENT OF URBAN STUDIES AND PLANNING IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER IN CITY PLANNING
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

ARCHIVES

JUNE 2011

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Increasing the energy efficiency of low- to moderate-income and minority-occupied households could significantly reduce energy consumption in the United States. Strategies to access these ‘hard to reach’ households, however, are not well understood. The federal Department of Energy’s \$486 million BetterBuildings program funds 34 grantees to transform regional energy efficiency markets while accessing households occupied by people of many incomes and ethnicities. This thesis assesses how BetterBuildings programs may access hard-to-reach households by conducting a survey of programs nationally, follow-up interviews, and a case study of Greensboro, North Carolina’s program.

The survey and interviews indicate that incorporating hard-to-reach households into large-scale pilot projects may enhance efforts to transform energy efficiency markets. Grantees are using financing and grant programs, geographic targeting strategies, and innovative community outreach strategies to access hard-to-reach households.

Through examining the case of Greensboro, North Carolina, this thesis argues that policymakers and program managers may increase access to hard-to-reach households by partnering, *during program design*, with stakeholders who have local knowledge of hard-to-reach households, technical proficiency, and capacity to implement a program targeting these households. Implementation challenges in Greensboro indicate that political support may be necessary to create and sustain access to hard-to-reach households, and grassroots organizations that partner with public agencies may need to develop alternative organizational structures to remain politically active.

This thesis recommends that analysts and policymakers identify the conditions under which programs could access low- and moderate-income and minority-occupied households, rather than assume these households are inherently hard-to-reach. Finally, this thesis puts forth a Flexible “D.E.E.P.” Equity Framework suggesting that programs could access hard-to-reach households by focusing on the democratic participation of stakeholders with local knowledge, market transformation, economic models, and the importance of place. Programs should evaluate accessibility outcomes, associated energy savings, and the conditions and processes that led to these outcomes.

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Acknowledgements

I am grateful to all who supported me throughout the thesis process, and more generally, over the past two years. To begin, I am grateful to my advisor Karl Seidman for his support, patience, and enthusiasm for this thesis, and during many classes over the past two years. Phil Thompson provided inspiration and helpful feedback as a reader, and has nurtured my interest in urban politics. To Harvey Michaels for also supporting me as a reader, and for building community around energy efficiency at MIT. Thanks also to Frank Levy, my academic advisor, for your guidance, and to Sandy Wellford and Kirsten Greco, DUSP's administrative team, for keeping the department running smoothly. And, to all other faculty and staff at DUSP – thank you for pushing me to become my best.

Thank you to the Beloved Community Center for hosting me last summer, particularly to Joyce and Rev. Nelson Johnson, for leading by example. And, to the many BCC staff and partners with whom I interviewed and interacted.

The Community Innovator's Lab here at MIT supported my summer internship with the Beloved Community Center over the summer of 2010. Thank you particularly to Dayna Cunningham, CoLab Executive Director, and to Amy Stitely, Green Hub Program Director. The MIT Program on Human Rights and Justice funded that internship, thank you for helping me to follow my interests.

To my peers at DUSP – it's been a great ride!

To my family: my mother Elaine, father Mike, and sister Mary Crauderueff, for supporting me. And last but certainly not least, to Eunice Gomes, for your love, patience, and support.

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Chapter 1: Introduction

1.0 Introduction

The Obama Administration and Congress funded ambitious energy efficiency programs with the potential for broadly shared benefits through the American Recovery and Reinvestment Act of 2009 (ARRA) (DoE, 2009b). Within ARRA, the U.S. Department of Energy (DoE) allocated 5 billion dollars for the low-income Weatherization Assistance Program (WAP) and 3.2 billion dollars for the Energy Efficiency and Conservation Block Grant (EECBG) program (EPA, 2009) for locally determined clean energy projects. While the DoE allocated most EECBG funding by formula to municipalities around the country, they also created the competitive EECBG BetterBuildings program, awarding \$486 million to thirty-five city, county, regional, and state grantees (Byrnett, D., 2010).

The DoE seeks to transform regional energy efficiency markets by funding local BetterBuildings programs. Market transformation can advance the Obama Administration's economic development and environmental protection goals by increasing energy independence, mitigating climate change, and creating long-term, middle-class jobs (Middle Class Task Force, 2009; Pollin, Wicks-Lim, & Garret-Peltier, 2009). To this end, grantees are developing long-term financing programs, coupled with marketing and outreach efforts. Grantees must leverage five private dollars for every dollar of grant funding, and verify energy savings through monitoring and verification processes. Nearly all programs strongly emphasize residential building improvements within their target mix of buildings. While designing programs, grantees need to decide whom they will target for building improvements.

The distribution of program benefits merits analysis for multiple reasons. Most directly, BetterBuildings programs can advance Department of Energy goals by reducing the energy consumption of low- to moderate-income households, and households occupied by people of all races and ethnicities. Achieving equity also would help programs to meet the ARRA goal of benefiting those most impacted by the recession (ARRA, 2009), which would link to the notion that publically funded projects should address inequalities. In addition, some advocates assert that all of society benefits by

addressing inequalities, and thus a moral obligation exists for broad-based programs to benefit those least well off (e.g. Green Justice Coalition & Community Labor United, 2008). This thesis focuses on the first justification, in terms of the strategic benefits to BetterBuildings by reducing energy consumption.

Using the BetterBuildings program as an example, this thesis asks: How can policymakers design, implement and evaluate large-scale energy efficiency policies and programs while encouraging equity?

This thesis defines and evaluates equity in terms of the accessibility of energy efficiency building improvements to low- and moderate- income households, and to households occupied by people of color. Low-income households are defined as households who qualify for the Department of Energy's Weatherization Assistance Program below 200% of the federal poverty line (DOE, 2010). Because the DoE does not have a definition for moderate-income households, a clear-cut definition is difficult to develop. Moderate-income households are households at or above 200%¹ of the federal line that: do not qualify for financing due to low credit scores; are housing poor (a household that pays a disproportional amount of its income on rent), or earn near or below their area median income (AMI). As a base of reference, the U.S. Department of Housing and Urban Development defines moderate-income households as households that earn 81% to 95% of AMI, adjusted for family size (HUD, 2011). Other energy efficiency programs have a broader definition of moderate income; for example, the Renew Boston program defines moderate-income households as those from 60% to 120% of AMI; 60% is their threshold for WAP eligibility (Renew Boston, 2011). As bases of reference, the lowest metropolitan area AMIs in Mississippi and Massachusetts are \$48,700 and \$67,400, respectively (eFannieMae.com, 2011). This thesis defines people of color (or minorities) as: African American, Hispanic/Latino, Asian/ Pacific Islander, or other non-white ethnicities. Collectively, low-, moderate- and minority-occupied households are referred to as 'hard to reach' households in this thesis.

1 \$44,700 is 200% the Federal poverty level for a family of four (DHHS, 2011).

1.1 Benefits of Equity to BetterBuildings

This thesis focuses on one specific benefit of reaching low- and moderate-income households, and households occupied by people of color: increasing energy savings. To achieve broad-based, market transforming energy savings, hard-to-reach households need to receive building improvements at a large scale. Low-to-moderate income households consume the vast majority of residential energy in the United States. In 2001, households that earned below \$75,000 comprised 84% of all households and consumed 78% of energy nationally². Using a lower income threshold, households that earned below \$50,000 comprised 64% of all households and consumed 55% of the nation's housing-related energy (Energy Information Administration, 2001). As of 2009, over thirty-five million housing units in the United States were renter-occupied: 32% of all occupied housing units. Minorities occupied 30% of all occupied housing units, a significant share of the nation's units³. Blacks and Hispanics were more likely to occupy rental units than their counterparts: 53% of Blacks and 49% of Hispanics occupied rental units, as opposed to 32% nationwide. However, Black- and Hispanic- occupied rental units represented less than 40% of all rental-occupied units in the country (American Housing Survey, 2009).

1.2 Five Reasons to Study the BetterBuildings Program

The BetterBuildings program merits study for five reasons: its goal of achieving market transformation; its goal of universal accessibility; its consistent approach to funding and administration; its urban focus; and its pilot project status.

First, BetterBuildings programs could create long-term growth in energy efficiency sectors through market transformation. In a report for the DoE, the National Center for Energy Management and Building Technologies defined market transformation as “a strategic effort of government, utility and other organizations to intervene in the market, causing beneficial, lasting changes in the structure or function of the market, leading to

2 Household energy consumption is defined as all appliances, including refrigerators and lighting, and electricity, natural gas, and liquefied petroleum gas.

3 Minority defined as: Hispanics, non-Hispanic Blacks, American Indian or Alaska Native, Asian, Pacific Islander, or two or more races.

increases in the adoption of energy efficient products, services and/or practices” (2007, p. 6). As stated above, achieving market transformation throughout the residential building stock requires accessing low- to moderate-income and minority-occupied households.

Second, along the same lines achieving broadly distributed benefits has been a stated DoE priority since BetterBuildings’ inception. In a September, 2009 press release U.S. Secretary of Energy Steven Chu made accessibility front and center: “The aim of the [BetterBuildings] program is to jump-start an industry that makes energy efficiency savings easy to access and available to everyone” (DOE).

Third, local programs can be compared because of consistencies across program design, implementation, measurement, and evaluation. All BetterBuildings programs were vetted by the DoE through a competitive process based on federally determined criteria, are implemented to meet federal objectives, and have consistent data collection and reporting requirements based on criteria set by the DoE and the U.S. Office of Management and Budget.

Fourth, ARRA, the largest federal direct investment in infrastructure with a focus on cities in over forty years, could provide lessons for furthering equity in urban areas and beyond. The BetterBuildings program, in particular, funds cities to achieve energy efficiency building improvements and to create jobs. At the urging of the U.S. Conference of Mayors, the Energy Efficiency Community Block Grant (EECBG) program was modeled after the Community Development Block Grant program that contains specific urban redevelopment goals (Palmer, 2007). BetterBuildings transcends the city scale, however, with thirty-five grantees implementing programs in cities, counties, regions, and states.

And fifth, lessons learned could shape future energy efficiency programs. In the words of Secretary Chu, the DoE intends for BetterBuildings programs to create “sustainable business models that can be replicated around the country” to retrofit residential, commercial, and public buildings at the neighborhood scale (DoE, 2009). Interest exists well beyond grantees to implement large-scale energy efficiency

programs. Nationwide, 131 applications were submitted for BetterBuildings, requesting \$3.66 billion in funding (Byrnett, 2010).

Lessons from existing energy efficiency policy also could help the Obama administration to advance its long-term energy policy goals. President Obama announced, in his 2011 State of the Union address, that clean energy should provide 80 percent of U.S. electricity by 2035 (Obama, 2011). President Obama emphasized investing in clean energy sources; however, energy *saved* through efficiency can be more cost-effective and clean than alternative energy sources (e.g. Lovins, 1989).

1.3 Prevailing Wisdom for Accessibility

Despite the potential to save energy by advancing equity, some analysts suggest that programs first target wealthier and less diverse communities and then consider reaching out to lower-income and more diverse communities over time. According to the Lawrence Berkeley National Laboratory's influential *Driving Demand* report, "Many [market] studies find that older, wealthier, and less-diverse populations are 'more likely to participate' in energy efficiency programs" (Fuller et al., 2010, p. 40). Therefore, a conflict may exist between equity (in terms of accessing low-moderate income and minority residents) and implementing an energy efficiency program that prioritize reducing energy consumption. The report suggests that programs use focus groups and market studies to identify barriers and effective messages, target early adopters, and recruit community opinion leaders. According to this logic, programs may tend to design energy efficiency for wealthier, non-minority communities during program rollout. In fact, the *Driving Demand* report highlights the WeatherizeDC program, which targets higher-than-median-income households in older buildings as a way to focus on early adopters while scaling up programs (*Ibid.*).

The *Driving Demand* report also recommends five steps to designing and evaluating a building improvement program. First, program designers should select targeted behaviors the program seeks to change; in other words, what steps to achieving building improvements would program administrators like participants to take? Second, a program should identify barriers (such as up-front cost and trust of the

program administrator) and benefits (such as energy savings). Third, a program should develop strategies to address barriers and increase benefits, such as providing financing and technical assistance. Fourth, a program should pilot a project within its target community. And fifth, a program should implement and evaluate outcomes. The report notes that program administrators should develop evaluation metrics based on program goals. As a minimum, the authors recommend collecting the number of participants in each program stage; the conversion rate between stages (such as the ratio of audits to retrofits); the number of households compared with the target audience; and the extent of building improvements per households (*Ibid*). Although those data are important, the authors do not mention whether programs should account for or evaluate the demographic characteristics of participants.

In terms of increasing participation rates, many analysts focus on behavioral science to inform outreach strategies. These strategies may include working through trusted messengers via churches, community centers, neighborhoods groups, and community leaders, while “[allowing] the local community to have some ownership of the program” (Fuller et al., 2010, p. 52). Messages could include environmental benefits, the job creation benefits of energy efficiency, or “hot issues” such as health-related impacts of energy efficiency savings (*Ibid*).

1.4 An Alternative Approach to Accessibility

In contrast, this thesis hypothesizes that programs could achieve substantial energy savings while access low- and moderate-income households and people of color during early program design, implementation, and evaluation. This thesis argues that the prevailing wisdom may over-generalize the difficulty of accessing “hard-to-reach” populations. Alternatively, this thesis suggests that analysts focus on the conditions under which ‘hard-to-reach’ communities are likely to participate at scale. This argument is based on survey and interview data with programs nationally, and a case study of Greensboro, North Carolina’s program.

This thesis assesses four strategies to access hard-to-reach households:

1. Financing and grant programs.

2. Place-based, neighborhood scale implementation efforts in low-income communities and communities of color.
3. Community outreach strategies.
4. Partnership-based program design processes.

1.5 Research Methods

This thesis uses three methods to assess how BetterBuildings programs may be advancing equitable access to building improvements: (1) a review of the program history and objectives; (2) a review of plans and practices among Better Building programs; and (3) a case study of the development of Greensboro's program.

1.5.1 BetterBuildings Program Analysis

Chapter 2 reviews the history and development of the BetterBuildings program. This chapter also incorporates interviews with key program managers and researchers to understand: the program conception; program design; technical support; reporting and monitoring requirements; and evaluation plans. These interviews shed light on DoE's objectives and incentives, in terms of what kinds of outcomes will fulfill agency goals.

1.5.2 National Survey and Interviews

Chapter 3 interprets findings from a survey of program administrators. that identified challenges and trends across programs in terms of equity and overall program design and implementation. The survey asked program administrators and staff to identify activities and challenges with respect to equity, overall program design, implementation, and monitoring. The purposes of the survey were to (1) identify trends that exist across programs, (2) determine what localities may have developed equity goals, strategies and practices, and which may have mostly or entirely omitted considerations of equity; and (3) understand general challenges of administering the BetterBuildings program. The survey was administered by email and telephone.

Follow-up interviews illuminated challenges and best practices to implementing equity while meeting BetterBuildings requirements.

1.5.3 Greensboro Case Study

Chapter 4, using the case of Greensboro, provides a model for community-based program design and collaboration to access supposedly “hard-to-reach” communities. Greensboro’s program design, coordinated by the Beloved Community Center, a civil rights organization, was the *opposite* of what analysts might suggest. Greensboro’s program was designed to reach all residents in East Greensboro, a mixed-income community of color, with a special emphasis on low- and moderate- income households. Their program also was designed to reach higher-income households in East Greensboro, along with commercial and institutional buildings, to serve as a pilot for a citywide program (City of Greensboro, North Carolina, 2009). Greensboro’s program design linked energy savings with community building, employment, and healthy homes initiatives—important activities based on local context and organizational capacities. In addition to modeling a program design, this case study illustrates effective processes for accessing low-, moderate-income, and minority households at the community scale.

The case of Greensboro was selected due to the BCC’s success in influencing the BetterBuildings program, its extensive track records in developing connections between local communities and policymakers, and connections with MIT’s Community Innovators Lab through the Mel King Fellows program. Over the summer I spent two-and-a-half weeks in Greensboro attending staff meetings and interviewing more than a dozen staff members, employers, businesses, policymakers, and academics who worked on BCC’s green development policies. I also attended staff meetings and “Justice Summer” strategy meetings to observe BCC and partners opposing corrupt policing practices in tandem with supporting BetterBuildings. I have maintained communication with BCC and its partners over the past nine months to understand program developments and challenges.

Chapter 5 reviews key findings from this research, and demonstrates the multiple ways in which programs can – and are – designing and implementing programs to achieve equity. This chapter develops a flexible “D.E.E.P.” framework to apply lessons from this thesis to other energy efficiency programs. Finally, this thesis articulates next steps and further research needs.

Chapter 2: The Creation of a BetterBuildings Program

2.0 Introduction

This chapter explains how equity fits within the overall mission and goals of the BetterBuildings program. The central argument of this chapter is that the Department of Energy, through its administration of the BetterBuildings program, minimally incorporates equity; therefore, equity in local programs stems primarily from local initiatives. To illustrate this point, Chapter 2 traces the history of the BetterBuildings program from its conception by the U.S. Conference of Mayors in 2007 to the present.

First, this chapter describes the U.S. Conference of Mayors' initial 2007 proposal for an EECSBG program, in the context of its ten-point federal legislative plan for that year. The Conference of Mayors' proposal provides the founding concept for the program and articulates multiple challenges that mayors were seeking to address at the time. Second, I describe how equity can be consistent with the program's enabling legislation, the Energy Independence and Security Act of 2007.

Next, Chapter 2 explains how the DoE narrowly interpreted the purpose of the BetterBuildings program as achieving large-scale, self-sustaining energy efficiency programs, while limiting social equity objectives. This section describes the conflicting goals of ARRA, which funded the EECSBG program, and relevant ARRA requirements. As Chapter 1 stated, the BetterBuildings program is the competitive component of the EECSBG program; other EECSBG programs were allocated by formula. Chapter 2 then reviews how the DoE minimizes or omits equity through: the goals and evaluation criteria of its Funding Opportunity Announcement; reporting requirements; technical assistance; and program evaluation. This chapter also analyzes key similarities and differences between the thirty-five funded programs and, and identifies implications for monitoring and evaluation.

2.1 U.S. Conference of Mayors and the Energy Independence Security Act of 2007

The U.S. Conference of Mayors advocated for the creation of the EECSBG program as their number one point in their 2007 ten-point federal policy plan. Although they focused

their EECSBG advocacy on climate reduction goals, broader urban redevelopment goals permeated their plan. Other points included creating a competitive workforce by “[connecting] formerly incarcerated adults, along with urban youth, formerly homeless people and/or those with other barriers to employment, with progressive green businesses and clean technology companies”; increasing federal funding for housing; and increasing HUD Community Development Block Grant funding to address economic development needs in entitlement communities (Palmer, 2007). Indicating the Conference of Mayor’s influence on the program, Senator Menendez acknowledged their support for the EECSBG program once the EISA passed Congress (Menendez, 2007).

The EECSBG program, as authorized in the Energy Independence and Security Act of 2007 (EISA), is broad and the Department of Energy could interpret its goals in many ways. However, insofar as reaching low- moderate- income, and minority-occupied households reduces fossil fuel emissions, the DoE could reasonably include reaching these households in its program goals. The EISA stated that its first purpose was to help towns, cities, counties and states to “reduce fossil fuel emissions created as a result of activities within the jurisdiction that (A) is environmentally sustainable; and (B) to the maximum extent practicable, maximizes benefits for local and regional communities” (EISA, Sec 542 (b) (1) (A),(B)). The EISA also explained the purpose of the EECSBG program, provided program eligibility requirements, established the competitive grant program, required review and evaluation, and defined rules for funding (EISA 2007, Title V Part E Sections 541-548).

Role of the Secretary of Energy

The EISA authorized the Secretary of Energy to take additional actions on an as-needed basis. The EISA provided the Secretary of Energy with the flexibility to develop “any other appropriate activity...in consultation with the Administrator of the EPA; the Secretary of Transportation; or the Secretary of Housing and Urban Development (HUD)” (EISA, 2007, Sec 544(14)(A...C)). Thus, the Secretary of Energy could

encourage the DoE to partner with other agencies, such as HUD, that have greater experience reaching low- and moderate-income households and communities of color.

2.2 The American Recovery and Reinvestment Act of 2009

Although the general parameters of the BetterBuildings program were in place when Congress allocated \$3.2 billion to the EECBG in 2009, ARRA required federal agencies to achieve conflicting goals (ARRA, 2009). On the one hand, as stated in the introduction, ARRA funds were supposed to “assist those most impacted by the recession” (*Ibid.*, p.2); on the other hand, federal agencies were supposed to “[commence] expenditures and activities as quickly as possible consistent with prudent management” (*Ibid.*, p. 2).

The focus on expedient, “shovel-ready” projects also was the emphasis of Congress and the Obama administration. According to insiders, on issues of equity, the Department of Energy takes its lead from Congress. Thus, the DoE was not going to actively seek to achieve equity through its programs.

2.3 Program Eligibility

The EISA defines eligibility for formula EECBG grants as:

- A city with a population of at least 35,000 or one of the ten largest cities in its state; or
- A county with a population of at least 200,000, or one of the ten largest counties in its state; or
- An Indian tribe, as defined by the Indian Self-Determination and Education Assistance Act (EISA, Subtitle E Sec. 541)

According to the Federal Register, “DoE’s implementation approach is consistent with the approach developed by the CDBG program administered by HUD....because EECBG addresses similar issues as a [CDBG] formula grant program” (DOE, 2009c). Analysts and program managers could consider applying lessons from the HUD

Community Development Block Grant program, which has explicit urban redevelopment goals, to the EECBG programs due to their similarities.

To gain an understanding of the extent to which the DoE encourages equity, this chapter assesses the DoE's solicitation process for BetterBuildings proposals, and federal influence over program design and implementation, program monitoring, technical assistance, and program evaluation.

2.4 The Funding Opportunity Announcement: Program Solicitation

The BetterBuildings program did not actively support equity in program eligibility requirements, goals, or review criteria as stated in the Funding Opportunity Announcement (FOA). The FOA was the DoE's version of a request for proposals for the BetterBuildings program.

BetterBuildings Program Eligibility

BetterBuildings funded two categories ("topics") of programs for a three-year grant period. Although some crossover existed in eligibility between Topic 1 and Topic 2 entities, Topic 1 entities tended to consist of cities over 35,000, and Topic 2 entities tended to consist of cities fewer than 35,000, including statewide program administering programs in cities under this size (*Ibid.*).

Program Goals

The DoE omitted equity from BetterBuildings program goals. Six main goals for the program are expressed in the FOA for Topic 1:

1. Creating verified building energy savings for residential, commercial, industrial and public buildings;
2. Enabling high levels of market participation and efficiency savings;
3. Highly leveraging grant funds;
4. Maintaining program financial sustainability beyond the 3-year grant period;
5. Piloting a program that achieves economies of scale;

6. Ensuring ability to replicate community-scale energy-efficiency (Ibid. p.8).

Review Criteria

Moreover, the competitive review criteria did not explicitly value equity. The DoE considered four review criteria For Topic 1, each weighted 25 percent:

1. Leveraging and Sustainability: Federal dollars leveraged, and the degree of market transformation beyond the life of the grant;
2. Project Impact: Economies of scale; minimize risk of foreclosure; energy saved and emissions avoided; number of buildings retrofitted in years 1-3 and in subsequent years;
3. Energy savings: Average utility savings; and
4. Ability to replicate project.

Although an alternative set of criteria applied to some programs through a Topic 2 “General Innovation Fund,” these selection criteria also did not include equity goals.

2.5 Description of Program Grantees

The DoE funded 35 of 131 applicants for the BetterBuildings program (Byrnett, D., 2010). This section explains key similarities and differences between the programs, and implications for monitoring and evaluation.

Similarities

Key program similarities are primarily based on federal program requirements. All programs are attempting to:

- Create and document energy efficiency savings;
- Achieve market transformation;
- Leverage five private dollars for every dollar of public investment.

In addition, all programs are receiving technical assistance from federally designated partners.

Differences

Grantees differ in terms of size of grant, type of program administrator, scale, area of focus, funding mechanism, and the role of the funding entity.

- Grant size: Program grants range from \$1.25 million for University Park, Maryland to \$40 million for New York State. The median grant is \$10 million.
- Type of program administrator: Grantees are a mix of state, city, quasi-governmental, and non-profit organizations.
- Scale: Programs are run on the scale of cities counties, and states. In addition, some programs are collaborations between cities, and others are collaborations between counties. Grantees and sub-grantees exist in thirty-one states in every geographic region of the continental United States.
- Area of focus: While most programs focus on residential retrofitting, many also include commercial, public, and educational buildings. In addition, Lowell, Massachusetts focuses specifically on historical preservation buildings, and the state of Missouri's program focuses on improving the efficiency of agricultural buildings and equipment.
- Funding mechanisms: Programs are seeking to set up revolving loan funds, on-bill financing, grant programs, and Property Assessed Clean Energy financing.
- Role of funding entity: Some grantees work directly with community organizations and a broad range of stakeholders, while others limit their involvement to creating financing and marketing programs.

Insufficient information exists publically to understand the extent to which programs are prioritizing social equity. For this reason, the survey and interviews, summarized in chapter three, were necessary to understand how programs were encouraging equity.

Implications for monitoring and evaluation

Challenges and opportunities arise for monitoring and evaluation based on program diversity. On the one hand, because the BetterBuildings program is piloting many models, effective practices could be determined for many different types of energy-

efficiency programs. On the other hand, developing common monitoring and evaluation metrics could be more difficult because few common factors are required of all programs. Regardless, common monitoring and evaluation criteria could be developed for social equity.

2.6 Current Program Goals

According to Danielle Byrnett, the DoE's program manager, the program's main goal is that programs can function without additional government assistance after the three-year grant period (D. Byrnett, personal communication, February 18th, 2011). The DoE intends that investments create energy efficiency markets that do not require public subsidies.

2.7 DoE Program Reporting & Evaluation Requirements

This section explains existing BetterBuildings reporting and evaluation requirements relevant to this thesis' equity analysis. Although the DoE requires BetterBuildings grantees and sub-grantees to report extensively on program activities, expenditures, and outcomes, programs do not report most demographic—related data to the DoE. This practice is consistent with Office of Management and Budget protocols for ARRA-funded projects (OBM Watch, 2009).

The Department of Energy requires programs to report on the number of retrofits that occur each month. On a quarterly basis, for each residential project, programs have been required to report data from the following four categories as of January 11, 2011 (DoE, 2011):

1. Personal data, including zip code.
2. Financial data, including residential underwriting criteria and loan terms, and whether loans are accepted or declined. Some financial data reported also is personal, such as income.
3. Contractor-specific data, such as total job hours and contractor certification.

4. Building and technology data, such as items installed and removed, utility history and electric provider name, estimated energy savings.

In addition, programs are required to report budget and cost information to ensure that programs obligate all Federal funding no later than eighteen months after receiving the award, and spend all Federal funding three years after the award (*Ibid.*).

2.8 Technical Assistance

DoE has a well-resourced Technical Assistance Program (TAP). ARRA allocated sixty-one million dollars for technical assistance for all EECBG funds (ARRA, 2011b).

Technical assistance exists for: building state and local capacity, including trainings and workshops; reviewing technical specifications for RFP's; designing and implementing programs, including coordinating utility funding with ARRA programs; developing financing programs; and creating performance-based contracts (Jones, P., 2011).

Each type of technical assistance the TAP provides is relevant to the creation of successful energy-efficiency programs. However, none of them directly address the question of *for whom* energy efficiency programs should benefit.

The DoE does not use its resources to provide technical assistance for equity but, instead, refers programs interested in equity to the non-governmental organization Green for All, a national organization that provides technical assistance for equitable energy policy (D. Byrnett, personal communication, February 18th, 2011). However, Green for All does not have the capacity to assist all interested programs. The DoE and its partners have not integrated equity practices into their technical assistance practices (Jones, P., 2011)

In addition, interviews indicated that program administrators are learning from one another while attending quarterly meetings and through conference calls.

2.9 Evaluation

Although the methodology for evaluating the national BetterBuildings program had not been finalized as of March, 2011, interviews suggest that the DoE does not plan to

include equity criteria or outcomes in its evaluation. However, opportunities may still exist for equity to be incorporated into the overall evaluation plan for the program. As will be discussed in Chapter 3, although the DoE is not supporting equity, many programs are advancing equity goals concurrently with achieving DoE and local program goals. In addition, all surveyed local programs either are planning to, or are considering, a professional evaluation (Author's Survey #69). Thus, opportunities also exist for local evaluations to account for equity.

2.9.1 Conclusion

This chapter reviewed the development of the BetterBuildings program from its inception in 2007 to the present. The program's intent, through its enabling legislation and needs put forth by the national Conference of Mayors, could be partially fulfilled by ensuring, for all types of households, accessibility to building improvements. However, ARRA's mandate that agencies prioritize the projects that could be implemented most quickly trumped ARRA's goal of assisting those most affected by the recession.

Accordingly, BetterBuildings' program eligibility and goals have not actively included equity. Application review criteria did not value the potential impact of programs on low- to-moderate income households or communities of color. ARRA and BetterBuildings reporting requirements do not require income-based reporting (the "low income" field for BetterBuildings is optional), and technical assistance is referred to the NGO Green for All rather than being provided from within the DoE's extensive, well-funded, technical assistance program. Although the federal program evaluation protocol was not finalized as of March 6, 2011, insiders do not expect equity to be included in the national evaluation. The DoE also is not encouraging local programs to incorporate equity into their evaluations.

Local BetterBuildings programs share several aspects but differ in numerous ways. All programs are focused on achieving market transformation within the energy efficiency sector, are funded by the DoE, and must meet 5:1 leverage requirements. However, programs differ by size of grant, type of program administrator, scale, area of focus, funding mechanism, and the role of the funding entity. Program differences may

provide additional learning opportunities while presenting challenges to comparing programs.

Because the DoE does not actively encourage equity, this thesis is a study of how local programs are seeking to achieve equity with limited support from the Department of Energy and TAP. Have local BetterBuildings programs incorporated equity into their programs, and if so, how? To understand this question, we turn to chapter 3.

Chapter 3: Strategies and Models for Accessing 'Hard-to-reach' Households

3.0 Introduction

Even though equity is not a stated priority of the BetterBuildings program, this chapter illustrates that many local grantees are incorporating equity into program design and early implementation. This thesis defines equity as the accessibility of building improvements to low- and moderate- income, and minority-occupied (collectively, hard-to-reach) households.

Chapter 3 begins by reviewing this thesis' survey and interview methodology. The Chapter Overview describes challenges of accessing households for energy-efficient building improvements, and explains how these challenges can be greater for hard-to-reach households. This section also explains why program managers believe that accessing hard-to-reach households furthers their ability to save energy and reach market transformation, in contrast to what some analysts might anticipate.

Next, this chapter uses survey and interview data to analyze how programs are employing three strategies to access hard-to-reach households for energy efficient building improvements. This chapter assesses how programs are developing creative financing and grant programs to access low- and moderate-income households. Then, this chapter analyzes how programs link place-based initiatives to immediate community priorities, such as employment opportunities and additional housing quality improvements. Subsequently, this chapter examines how programs are overcoming information, trust, and socio-cultural barriers through community outreach strategies. These outreach strategies build from pre-existing professional and social networks, ensure that households trust community outreach organizations, and align incentives among program administrators, outreach organizers, and program participants. Finally, this chapter assesses why most programs are not collecting demographic data, describes a best practice, and suggests why programs should collect and analyze these data.

3.1 Survey and Interview Methodology

This thesis' survey was informed by a review of existing equity considerations in federal programs. Evaluation criteria for equity were created based on requirements and best practices of these programs. Programs included the Community Development Block Grant program (CDBG); HUD Section 3 requirements; Community Development Finance Institution (CDFI) Fund certification requirements; and Title VI of the Civil Rights Act of 1964. Equity criteria, processes, definitions, and measurements were reviewed, in addition to existing Department of Energy (DoE) reporting requirements, procurement recommendations, and evaluation recommendations for the BetterBuildings program. In addition, comments were received from one program administrator, a civil rights attorney, and Stacia Jenkins, Seattle Emerald Cities Collaborative representative.⁴ Surveys were administered directly to program sub-grantees of the South East Energy Efficiency Alliance in order to understand the particularities of local programs. The survey was conducted with program administrators or designated representatives. To complement the survey, follow-up interviews were conducted with eleven program administrators and policymakers to identify challenges and best practices of advancing equity. Program administrators were asked how the overall program design, criteria, and rules could effectively incorporate equity, and what barriers may exist due to federal program requirements.

Forty-four programs were contacted via email or phone, and twenty-eight (64%) completed the survey. As Table 1 demonstrates, nearly eight in ten surveyed programs are administered at the urban scale (in one city or as a collaboration of cities).

⁴ Business development practices were identified based on strategies identified through the textbook, *Economic Development Finance* (Seidman, 2005), and by reviewing program descriptions from the BetterBuildings website (<http://www1.eere.energy.gov/buildings/betterbuildings/>; December 15, 2010).

Table 1

Scale of Respondent Programs

Scale	Respondents*
One City	10
Multiple Cities	11
One State	3
Other*	4

Source: Author's survey, question #5

**Other* responses were one or multiple counties, and multiple towns in one state.

Each city participating in the South East Energy Efficiency Alliance was classified as "one city." Remaining programs were classified as state level, or were implemented at the county or town scale.

3.2 Chapter Overview

Programs need to overcome several challenges to access households for energy efficient building improvements. These challenges can include:

1. Initial capital costs of energy-efficient building improvements.
2. Split incentives between renters who typically pay energy bills, and landlords who are responsible for the long-term upkeep of buildings.
3. Information. Building occupants and owners need to understand the benefits of energy efficiency, and how grant and financing programs work.
4. Trust of building improvement programs and contractors. Building owners need to trust that programs will provide them with honest information, and that contractors will deliver the proposed energy savings.
5. Social norms and cultural barriers; building occupants and owners may not socially value building improvements.
6. Housing quality barriers, because buildings need to be in adequate condition for energy efficient building improvements to have their intended impact.

Each of the above challenges can be greater for hard-to-reach households. Additional capital may be necessary to design financing and grant programs. Low- and moderate-income households often do not have savings to make upfront energy efficiency investments, and face greater barriers to borrowing funds to finance these investments.

Financial institutions perceive hard-to-reach households as riskier investments (due to lower credit scores and less collateral). Split incentives impact renters, who tend to be less wealthy than homeowners (Fuller et al., 2010). Hard-to-reach households may be difficult to reach due to lower educational attainment (correlated with income) and skepticism toward mainstream authority, such as utility- or publically administered programs. Social and cultural norms may further discourage lower-income and minority households from seeking out building improvements because their peers may not value energy efficiency. Finally, low- and moderate-income households frequently have greater housing quality problems than higher-income households.

Many utility-run energy efficiency programs have struggled to access homeowners (*Ibid.*). Considering the track record of utility-based programs and prevailing research, analysts might anticipate that access to homeowners would present a major barrier to market transformation. Because accessing hard-to-reach households presents additional challenges, analysts might expect programs to begin with “easier to reach” households (*Ibid.*). In particular, one might expect local BetterBuildings programs to target wealthier and non-minority communities due to the DoE’s stringent short-term implementation requirements.

Surprisingly, many local BetterBuildings programs are targeting hard-to-reach households and neighborhoods. Over half of surveyed programs are targeting communities where over 20% of residents are low income, and nearly half of surveyed programs are targeting areas populated by more than 50% minorities.

Programs are attempting to access hard-to-reach households and neighborhoods for various reasons. Interviews indicate that reasons include: the older, less efficient housing stock in these neighborhoods; a strategy of achieving market transformation by reaching multiple income levels, types of buildings, and building uses; relationships with community organizations; and a desire to achieve broader urban redevelopment goals. In each case, however, program administrators believe that targeting ethnically and income-diverse communities *enhances* market transformation and energy savings while providing additional social and economic benefits to their jurisdiction.

Although it is too soon to evaluate program outcomes, the perceptions of program managers, and the strategies they are employing, warrant attention. Understanding the design, implementation, and outcomes of these “equity models” could help future programs to achieve energy savings goals by designing equity into their programs from the start.

Next, Chapter 3 analyzes how the financing, geographic targeting, and community outreach efforts of local BetterBuildings programs advances equitable access to retrofits.

3.3 Models of Financial Accessibility

Surveys and interviews indicate that developing financing programs is the greatest long-term challenge of programs. Despite the additional challenges presented by moderate- income and lower-credit households, some financial institutions offer loan products to these households, in affiliation with BetterBuildings programs. Programs also seek to access these households by enhancing BetterBuildings funding with other federal and local funding sources.

Some programs are using BetterBuildings funding for on-bill financing and revolving loan funds that reach moderate-income households. Portland, Oregon’s program provides a progressive financing model. The city’s \$20 million BetterBuildings award enables the Clean Energy Works (CEW) program to scale up its 500-home pilot project. CEW expects ten thousand households to receive building improvements throughout the city and state this year. (Kulley, M., personal communication, April 4th, 2011). Portland’s CEW program utilizes an on-bill financing structure that considers past bill payment as an underwriting criterion, significantly reducing the importance of other underwriting criteria (such as FICO score). Its program has lower interest rates for households below 250% of the poverty line than higher income households. For CEW’s pilot, interest rates were 7.99% for weatherization packages up to \$4,300 achieving at least 10% energy savings, 5.99% for “deeper” weatherization packages up to \$19,850 achieving at least 30% energy savings, and 3.99% for households below 250% of the federal poverty line. Loans were amortized over a 20-year period (Home Performance

Center, 2010), making them more affordable for low- and moderate- income households. Portland's experience with using past bill payment as an underwriting criterion has been positive, as none of the 500-plus loans originated during its pilot program have defaulted over the past year and a half (Kulley, M., personal communication, April 4th, 2011). Like Portland, Seattle's Community Power Works program offers lower interest rates for moderate-income households through a revolving loan fund backed by a loan loss reserve (Buick, A., personal communication, March 30th, 2011). ShoreBank Enterprise Cascadia, a Community Development Finance Institution (CDFI), funds both Portland's and Seattle's programs (*Ibid.*, Kulley, M., personal communication, April 4th, 2011).

Programs also increase accessibility by supplementing BetterBuildings funding with other federal resources. For example, the University of Virginia Community Credit Union (UVCCU), which finances projects affiliated with Charlottesville's program, successfully applied to be a HUD PowerSaver community. PowerSaver is a two-year pilot program that provides a federal guaranty for energy efficiency loans, up to 90% of the loan value in event of a default (HUD, 2011). The UVCCU expects to lower interest rates from 9.99% to approximately 5 to 6% (other underwriting terms held equal) with the guaranty. The guaranty also would increase accessibility to low- to moderate-income households, and households with lower credit ratings (Adams, C., personal communication, April 4th, 2011). Eighteen lenders around the country are participating in the PowerSaver program, announced April 21, 2011, including several lenders providing financing for BetterBuildings programs (HUD, 2011).

Programs also would like to coordinate DoE BetterBuildings funding with HUD Community Development Block Grant and New Market Tax Credit resources. For example, the Greater Cincinnati Energy Alliance ("the Alliance") may use CDBG funding to increase rebates from 35% to 70% of program costs for lower-income households. This program, a partnership between seven cities in southern Ohio and northern Kentucky, also may use BetterBuildings funding for major rehabilitation projects partially funded by the New Markets Tax Credit program. The Alliance is working with local CDFIs to determine the incremental value of BetterBuildings-funded energy efficiency

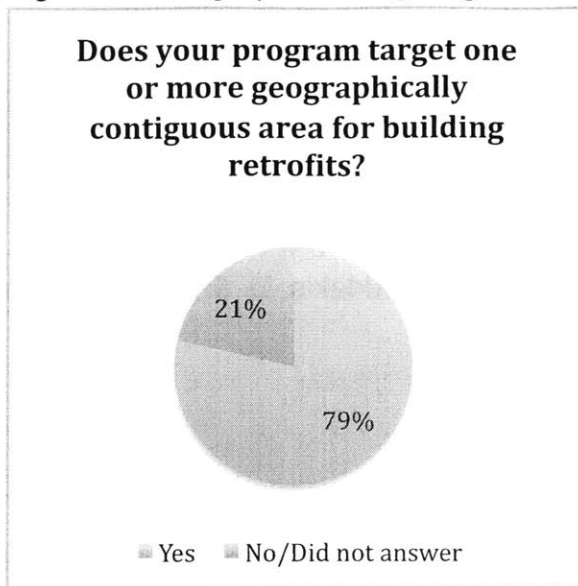
improvements on New Markets Tax Credit projects (Holzhauser, A., personal communication, March 28th, 2011).

Finally, many programs are enhancing the size of local, utility-based incentives and are seeking to increase adoption rates for existing utility programs through marketing and outreach. For example, the City of Phoenix will use BetterBuildings funds to match most electric utility rebates in order to increase program participation, along with marketing and community outreach initiatives (Laloudakis, D. & Hyatt, S., personal communication, March 30, 2011).

3.4 Place-Based Equity Models and Strategies

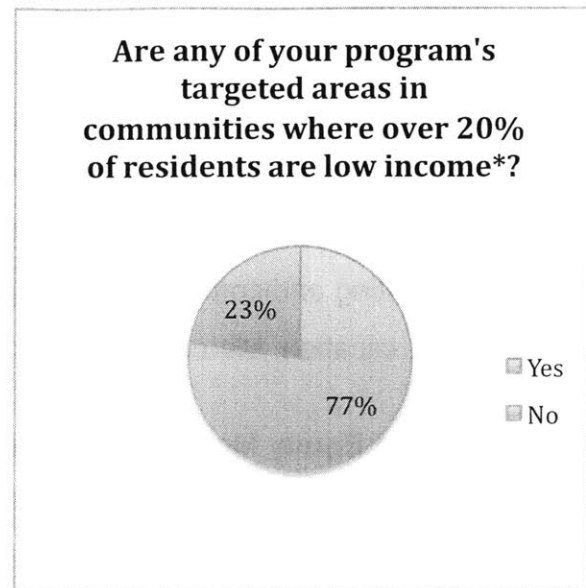
This section explains how programs are using place-based strategies to access hard-to-reach households. As Figure #1 indicates, nearly eight in ten surveyed programs are using place-based strategies. Figure #2 illustrates that nearly eight in ten programs using place-based strategies are targeting low-income communities. Figure #3 demonstrates that half of programs using place-based strategies are targeting areas populated by more than 50% minorities.

Figure #1 Geographical Targeting



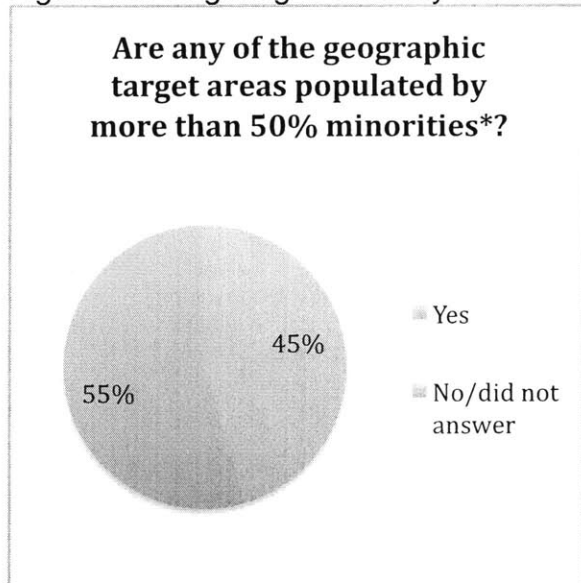
Source: Author's survey, question # 55
n=28

Figure#2: Targeting of Low Income Communities



Source: Author's survey, question # 56⁵
n=22

Figure #3: Targeting of Minority Communities



Source: Author's survey, question # 57⁶
n=22

⁵ Low income defined as 200% of the federal poverty line, consistent with the Department of Energy's definition and WAP eligibility.

⁶ Minorities defined as: African American, Hispanic/Latino, Asian/ Pacific Islander, or other non-white ethnicities.

Grantees are geographically targeting low- to moderate-income communities, and communities of color, to expand existing energy efficiency programs (such as in Indianapolis, Indiana and in Phoenix, Arizona), and to develop new programs (such as in Omaha, Nebraska). Programs are targeting these areas, which have an older building stock, to maximize energy savings and to realize the benefits of reaching many types of buildings and incomes. Grantees also are strengthening relationships with community organizations to use energy efficiency programs as an urban redevelopment opportunity. This section analyzes Kansas City, Missouri's program, which accesses hard-to-reach households in a low-income community by linking energy efficiency benefits to community priorities.

Kansas City uses energy efficiency as an opportunity to access low- and moderate-income households while addressing poverty and blight in its "Green Impact Zone" (Shechter, G., personal communication, March 31, 2011). Kansas City identified seven target areas in six city council districts based on diversity of building type (one target area is an industrial district), diversity of populations (one target neighborhood is 94% African-American, another is 92% white, another is 70% Hispanic), and the presence of staffed neighborhood associations that have working relationships with city government. The Green Impact Zone is a 150-square-block area where 25% of properties are vacant lots and 17% vacant structures; the unemployment rate is near 50%; the owner occupancy rate is below 50%; 20% of all mortgages were delinquent over the past two-and-a-half years; and the average home value is below \$30,000 (Shechter, G., 2010). Gerald Shechter, Sustainability Coordinator for Kansas City, noted that focusing on homogenous building types or demographics "would save energy but we did not feel that would address either workforce development or market transformation" because maximizing workforce development benefits would reach populations in greatest need of work (in the Green Impact Zone and other targeted neighborhoods). He emphasized that achieving market transformation requires effective strategies for implementing energy efficiency in all types of buildings, regardless of income or property value (Shechter, G., personal communication, March 31, 2011).

Kansas City is linking energy efficiency accessibility to employment opportunities based on community priorities in the Green Impact Zone. The City is supporting business development vis-à-vis the creation of a business incubator with a local community development corporation (CDC), and local workforce development by partnering with neighborhood associations. The business incubator, financed with a \$2.2 million forgivable loan, will provide for 7,900 s.f. of office space, material storage space, and a community meeting room. Shechter's description of the business incubator project demonstrates how delivering additional benefits of energy efficiency, based on a community-driven process, can help to gain access to a low-income community of color. He explained,

[the City] had several joint meetings with all the neighborhoods involved [in BetterBuildings] and asked them for their input as to what kinds of projects they would like to see. This particular project, "The Blue Hills Project," floated to the top and was supported across the board from a number of perspectives. One, it is in the Green Impact Zone; two, it is a renovation of an existing, blighting influence on the community in terms of the vacant building; and three, it will make a showcase for energy efficiency and probably renewable energy applications. [The project] will focus on incubating small energy efficiency contractors in the community using labor from the community. That has a lot of appeal to people from the community; the CDC is also going to be providing some neighborhood meeting space and some office space (*Ibid.*).

Addressing employment helps the program to gain credibility and trust within the local community. To facilitate accessible workforce development, particularly for ex-offenders, Kansas City's workforce development providers prepare trainees for "deconstruction" work (as a more energy-efficient alternative to demolition). The City also created a financial incentive for construction companies to cover the incremental cost of demolition versus deconstruction. To complement these efforts, the city is funding asbestos abatement for WAP-eligible households and deconstruction projects. The

business incubation project, asbestos abatement, and deconstruction incentive are all funded by BetterBuildings (*Ibid*).

3.5 Community Outreach

As stated in the introduction of this chapter, utility-based energy efficiency programs have struggled to access households. Low-income, moderate-income, and minority-occupied households are supposed to be the most difficult households to reach. Surprisingly, however, across programs, surveyed grantees perceive access to homeowners as a relatively low challenge. Acquiring data to meet monitoring requirements, staff time to fulfill all program requirements, and quality assurance of contractors all were substantially greater implementation challenges for surveyed programs than access to home owners (Author's survey, question #66). Interviews indicated that programs were relatively less concerned with accessibility because they were working through existing relationships and networks with communities and were implementing various strategies to access these communities.

Three central community outreach strategies emerged from program interviews: (1) working through pre-existing professional and social networks; (2) ensuring that households trust community outreach organizations; and (3) aligning incentives among organizations conducting outreach, participating individuals and communities, and organizations responsible for administering the energy efficiency program. In addition, some programs are "professionalizing" community outreach by funding outreach programs and training paid organizers. From an economic perspective, programs are valuing the social capital of trustworthy organizations and local relationships. By activating their networks, trusted organizations and community leaders reduce the transaction cost of accessing hard-to-reach households. Academic institutions emerged as important intermediaries for gaining the trust of local residents in hard-to-reach communities.

To demonstrate the consistency and ways in which programs are working with community organizations during program design and implementation, this section

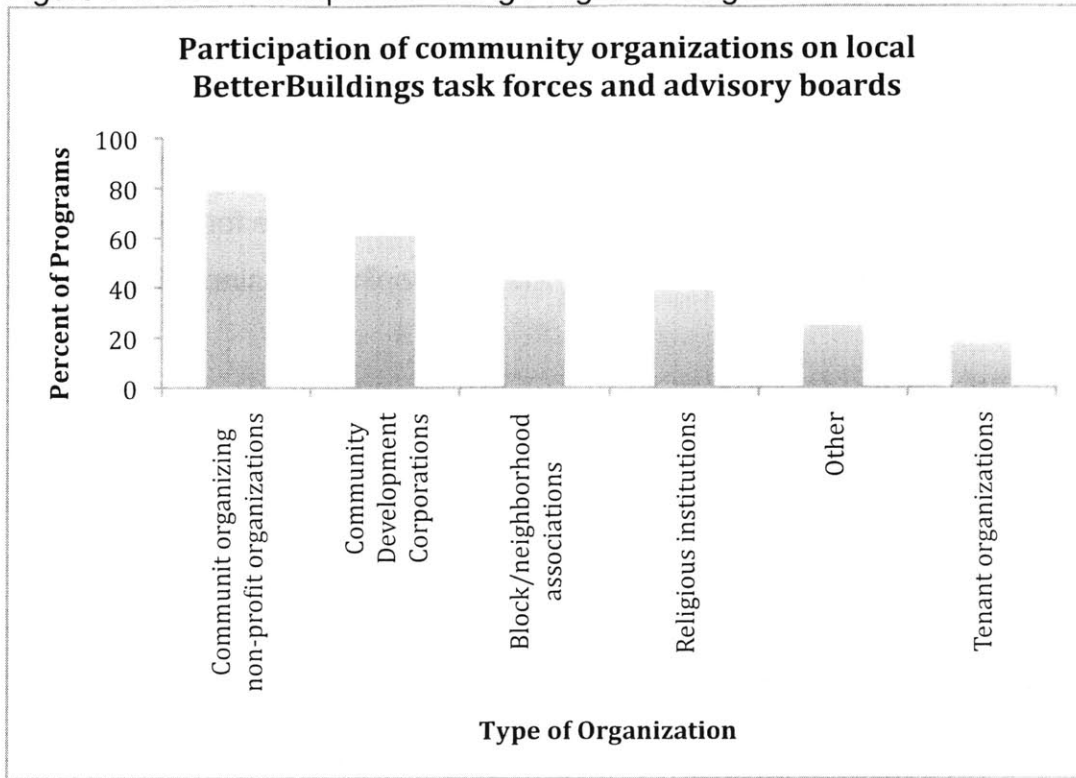
describes survey findings. Then, this section analyzes the outreach strategies of San Antonio, Texas, Phoenix, Arizona, and the state of Connecticut.

3.6 Participation of Community-Based Organizations

Analysts increasingly emphasize the importance of community-based organizations (CBOs) for implementing building improvement programs due to their networks and legitimacy with homeowners and tenants (e.g. Fuller et al., 2010). CBOs also can further equity by sharing their local knowledge during program design. This thesis defines community-based organizations as: community organizing nonprofit organizations; community development corporations (CDCs); block/neighborhood associations; religious institutions; and tenant organizations. Due to the multiple ways through which CBOs can help to design and implement programs to access hard-to-reach communities, this section analyzes the extent and type of CBO participation across BetterBuildings programs.

The vast majority of surveyed programs are partnering with community organizations during program design and implementation. As Figure #4 illustrates, about eight in ten surveyed programs partnered with community organizations to design their programs. In addition, around nine in ten surveyed programs expected to partner with at least one type of community organization to implement their program. Figure #5 demonstrates that about 80% expected to partner with community organizations for program recruitment; about 50% for job training programs, and about 25% for performing retrofitting services.

Figure #4: CBO Participation During Program Design

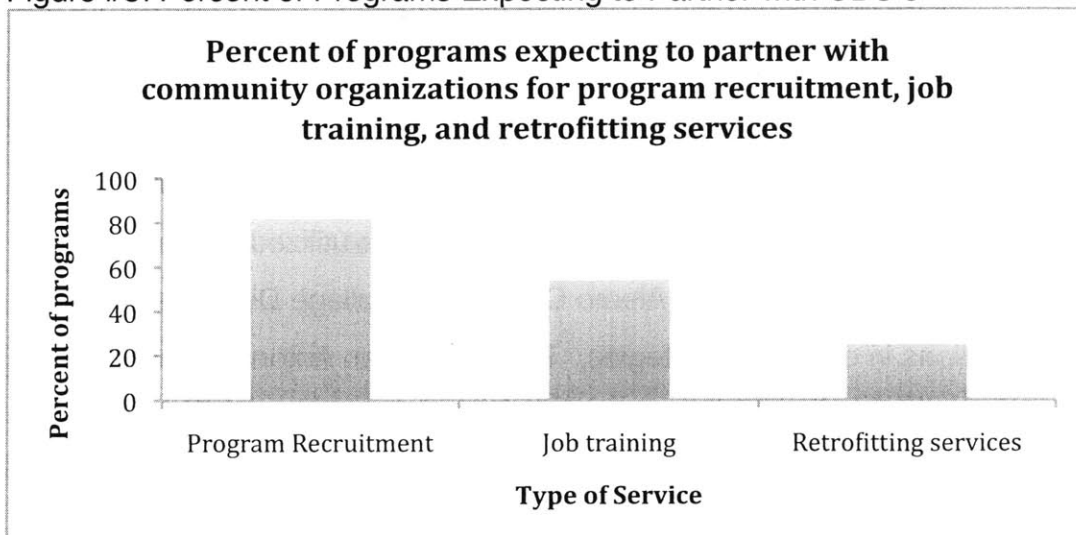


n=28

*Other = community centers, cooperatively owned utility

Source: Author's survey, question # 61

Figure #5: Percent of Programs Expecting to Partner with CBO's



n=28

Source: Author's survey, question #62

One-half of surveyed programs plan to contract with community organizations for a broad range of activities, so long as they respond competitively to Requests for Proposals. Most commonly, programs anticipate contracting with CBOs to recruit program participants through grassroots marketing efforts (such as going door-to-door and hosting town meetings). Programs also plan to contract with CBOs for healthy homes assessments, financing (through a CDFI), and developing a business incubator (with a CDC).

3.7 Community Outreach Models

The City of San Antonio's program provides an outreach model of working through existing, trustworthy networks that hold legitimacy with a hard-to-reach community. To gain initial access into households, the City of San Antonio is contracting with the Alamo Community College District (ACCD). The ACCD will function as an intermediary with community organizations due to the trust and legitimacy they hold with the city's Latino community. According to Liza Meyer, Special Project Manager for the City of San Antonio, "The Alamo Community College District is extremely well respected in San Antonio as an educator, and we want to utilize that status... they will help in providing training to these community oriented entities, making sure that they go out and reach the Hispanic population because that is the main demographic that we would like to [reach] (Meyer, L., personal communication, March 24, 2011)."

To conduct outreach services, the City will contract with "community-oriented organizations," including CBOs and small and historically under-utilized businesses with strong relationships in communities. The Alamo Community College District will train community organizations in outreach strategies. The City of San Antonio's budget to fund community-oriented entities totals \$110,000 per year (*Ibid.*). The City may compensate CBOs according to the following draft schedule:

Table 2

San Antonio Draft Compensation Schedule for "Community Oriented Entities"	
Activity	Compensation (dollars)
Monthly Administration Fee	800
Workshops, 3-6 hours	200
Workshops, 1hr-2:59 hours	100
Attendance, 11-20 people	50
Attendance, 1-10 people	25

Source: City of San Antonio, 2011.

The State of Connecticut’s program, administered by EarthMarkets, provides another outreach approach based on individual, collective, and organizational incentives. EarthMarkets is a social venture that sells verified energy savings through the state’s Energy Efficiency Renewable Portfolio Standard program. Targeting fourteen towns with populations under 35,000, EarthMarkets promotes collective action and behavioral change throughout its program design (Garcia, 2011). Because selling energy efficiency credits through the Energy Efficiency Renewable Portfolio Standard supports EarthMarkets’ bottom line, incentives are aligned among the organization’s funding stream, effective outreach strategies, and verified energy savings.

Working through trusted messengers and existing networks also are key aspects of EarthMarket’s outreach strategy. EarthMarkets works through town-based Clean Energy Task Forces, developed about seven years ago through the Connecticut Clean Energy Fund, to support program implementation. Towns compete with one another for awards based on collective energy efficiency achievements. Each Clean Energy Task Force selects awards connected to clean energy, including thermal imaging assessments of buildings in a town, “dashboard” thermostats, and Solar LED street lighting. Awards are worth a total of \$250,000 and will be distributed over a three-year timeframe. Awards also are based on individual participation achievements (Garcia, B., personal communication, March 28, 2011). Massachusetts Institute of Technology researcher Kat Donnelly provides technical assistance for developing and evaluating their outreach strategy (Garcia, 2011).

In addition, EarthMarkets trains fourteen Clean Energy Corp (CEC) members (recent college graduates participating in the AmeriCorps program) for outreach. CEC

members earn approximately \$19,000/year (\$400/week) to work directly with the program's designated towns (Garcia, 2011). EarthMarkets is applying this outreach strategy to higher-income and lower-income towns; two of their fourteen targeted towns are lower income (Garcia, B., personal communication, March 28, 2011).

The city of Phoenix, Arizona's program exemplifies how government agencies can directly coordinate community outreach, facilitated by geographically targeting an area that includes hard-to-reach households. Focused in a five to ten-square mile,⁷ geographically bound corridor along a new light rail line, the program targets a mix of older residential, small commercial, and commercial high-rise properties. The area also includes the largest Central Business District in Arizona, and industrial and government buildings that could participate in the program. The majority of residents in the corridor are ethnic minorities: 53% of residents are Hispanic, 34% are White, 7% are African American, 3% are American Indian, and 1% are Asian (based on 2000 census data) (Hyatt, S., personal communication, March 30, 2011). Thirty-five percent of the corridor's residents are below the federal poverty line, 33% are homeowner occupied, and 61% reside in multi-family housing, which includes condominiums, town houses, and apartment complexes. The geographically bound region facilitates community outreach. According to Susan Hyatt, Project Manager for the City of Phoenix, "The city's Neighborhood Services Department [has] long-standing relationships with many of these neighborhoods in our corridor...because we are looking at a finite area...we are focused on [reaching] these neighborhoods and going door to door to sell the program." (*Ibid.*).

Phoenix also is leveraging relationships for technical assistance and behavioral research with Arizona State University (ASU), which recently completed a new campus within the Corridor. The City of Phoenix is contracting with ASU for technical assistance in terms of data collection, reporting, and energy analysis, which reduces the administrative burden on program managers. ASU is helping to develop the program's

⁷ The corridor area is one to two percent of the city's 550-square-mile area (Laloudakis & Hyatt, personal communication, March 30, 2011).

marketing strategy, with the assistance of an outside public relations and marketing firm. They also will conduct a variety of applied research projects, including piloting two hundred Blackberry-size “dashboards” that show residential energy consumption in real time. ASU researchers will evaluate the extent to which education impacts energy-consumption behavior, including comparisons between dashboard recipients who receive education and those who don't. ASU also will write case studies of multiple projects implemented through BetterBuildings (Laloudakis & Hyatt, personal communication, March 30, 2011). These efforts, funded through Phoenix's BetterBuildings grant, could help to popularize dashboard technology and inform policymakers of the extent to which behavioral changes can reduce energy consumption. Although not presently a focus, ASU's research could provide lessons on how to effectively reach the diverse mix of households in Phoenix, and what types of messaging can be effective while targeting an ethnically mixed population.

3.8 Measurement and Evaluation of Accessibility

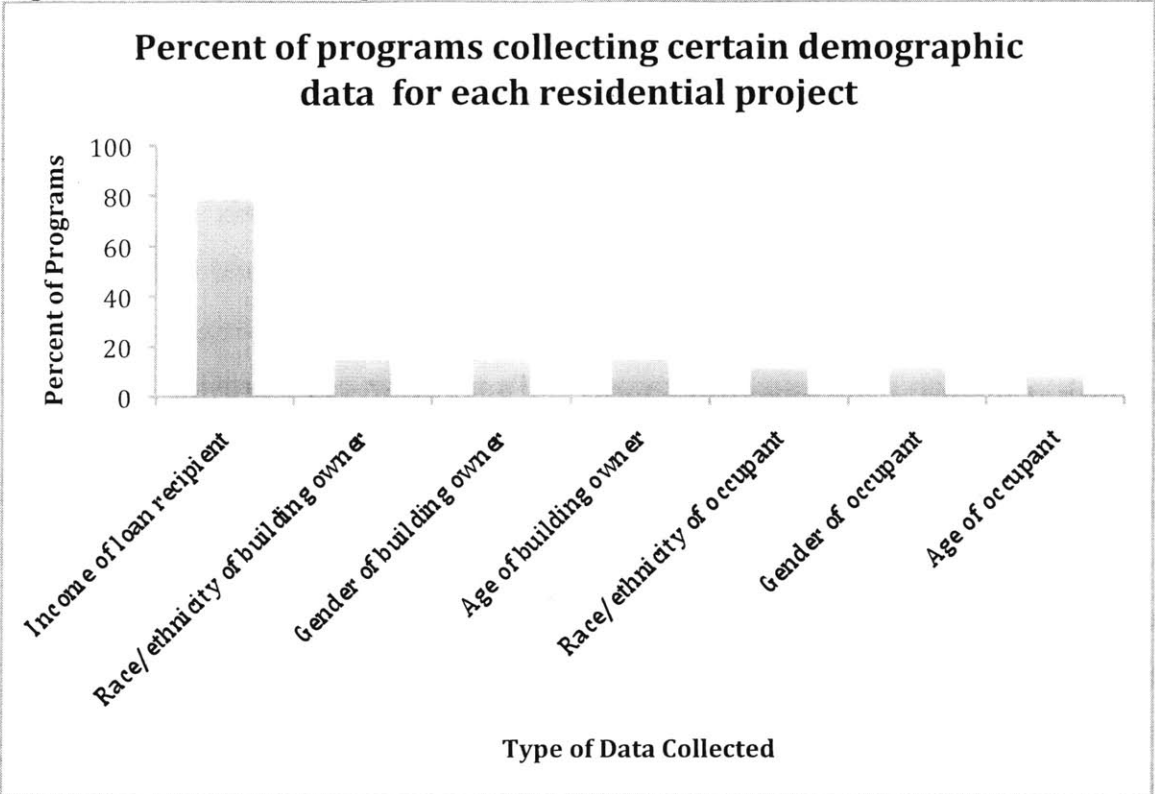
This section analyzes the extent to which programs are collecting demographic data of residential building improvement recipients. This section also highlights Portland, Oregon's data collection and analysis as an emerging best practice. Acquiring data to meet monitoring requirements was the greatest short-term implementation challenge for programs (Author's survey, question #66).

Grantees are investing substantial resources to design, market, and implement their programs. While all programs target households based on income, many also have considered ethnicity during program design, marketing, and outreach. Tracking and analyzing the demographics of program participants would help administrators to understand the efficacy of their program design and implementation strategies.

However, as established in Chapter 2, the DoE does not require grantees to collect or report demographic data. Local programs are following suit. As Figure #6 demonstrates, although about eight in ten survey respondents were collecting data on income, less than fifteen percent were collecting the race/ethnicity, gender, or age of

building owners or occupants. This trend indicates a missed opportunity to track and evaluate program effectiveness.

Figure #6: Percent of Programs Collecting Residential Demographic Data



n=28
source: Author’s survey, question # 68

Interviews suggest two reasons programs may not be collecting demographic data. First, because the DoE’s program reporting requirements focused on the number of buildings retrofitted and not the types of occupants, many programs are concerned about the overall number of houses they retrofit, rather the characteristics of participants. Second, programs are burdened with time consuming, complex, and constantly changing reporting requirements, reducing their capacity to set up protocols for collecting demographic data.

3.9 Measurement and Evaluation Model

However, some best practices are emerging for collecting and analyzing demographic data to reduce program participation barriers. For example, the City of Portland is collecting and analyzing income- and credit history-related data for building improvement recipients. Homeowners, in an online application, enter demographic, building, and utility information (Home Performance Center, 2010). The City of Portland is analyzing how differences in credit ratings may impact program participation rates, based on who accesses financing. Results from their research may help program administrators to increase accessibility of financing, potentially increasing program participation (Kulley, M., personal communication, April 4, 2011).

As the City of Portland's efforts demonstrate, program managers could increase accessibility by identifying barriers to participation based on income. Moreover, as many BetterBuildings programs are targeting a diverse range of households, collecting and analyzing demographic data of participating building owners and occupants also could help program managers understand what strategies effectively reach diverse households.

3.9.1 Conclusion

Alternative approaches for reaching, designing, and implementing energy efficiency programs are emerging through local BetterBuildings programs. Rather than targeting the highest-income and non-minority households, program administrators perceive equity as a way to achieve substantial energy savings while furthering the process of market transformation.

Approaches for achieving equity are taking form through financing, geographic targeting, and community outreach strategies. Programs are structuring financing programs to access a broader range of households through revolving loan fund and on-bill financing mechanisms. Programs also are enhancing federal and local grant programs through the use of BetterBuildings funding. Geographic targeting helps to reach low-income communities and communities of color, based on energy efficiency (targeting the oldest building stock) and urban redevelopment goals. Programs are

linking community priorities, such as employment, with place-based initiatives. And, surprisingly, program administrators do not perceive community outreach to low-moderate income and minority-occupied households as a substantial barrier. By working through trusted networks, partnering with trustworthy organizations, and aligning individual, collective, and organizational incentives, programs are developing approaches that promise to expand access to “hard-to-reach” households early in the implementation process. Community-based organizations are involved in most surveyed programs’ design, as they may be for implementation.

Variability exists among programs with respect to how community organizations, government agencies, and academic institutions facilitate access to households. The City of San Antonio is by working with a trusted community college district; EarthMarkets in Connecticut is partnering with established town councils, and Phoenix is accessing communities directly through a city agency focused on housing and community development. These different models suggest avoiding a “one size fits all” outreach strategy from outside or within government but instead, building from organizational strengths and existing relationships specific to each program’s context.

However, most programs are not collecting demographic data for each project, a missed opportunity to understand program impact and barriers. Nonetheless, some programs, such as Portland, are collecting these data to determine how to increase the accessibility of financing. Further research is necessary to understand what data collection and evaluation models are most effective to further equity.

Chapter 4

Transforming Communities, Transforming Markets: Lessons from Greensboro

4.0 Introduction

Stakeholders in Greensboro, North Carolina modeled a process for designing a program to access “hard-to-reach” households. Their *process* of program design differed from what analysts might suggest. Greensboro’s program design was based on community stakeholders deeply engaging one another, technical experts, and government officials to determine how a program could access all East Greensboro households. Their design process contrasts with design methods suggested by the Lawrence Berkeley National Laboratory’s *Driving Demand*, which recommends focus groups and marketing studies to determine a target market (Fuller et al., 2010). Although *Driving Demand* suggests that communities take some ownership over energy efficiency programs (*Ibid.*), it does not specify what that ownership might look like. This case study analyzes how a program with certain types of community participation and ownership could increase access to hard-to-reach communities.

Given the extent of access anticipated by program designers, this case warrants analysis. The City proposed to reach 100% of households in East Greensboro, a mixed-income community of color, with a special emphasis on accessing low- and moderate- income households. The City’s program also proposed to reach commercial and institutional buildings in East Greensboro; the three-year program planned to pilot a model that could be applied citywide. The City and its partners expected to maximize energy savings through accessing the oldest and least efficient households in the city (City of Greensboro, North Carolina, 2009). This chapter refers to the City’s proposal to the DoE interchangeably with program design, due to the degree of specificity provided in the City’s proposal.

This case holds particular significance due to the coordinating role of the Beloved Community Center (BCC), a community organizing non-profit organization, and the contributions of its partners. BCC belongs to an informal network of CBOs that are

seeking to further social justice through green economic development policy and programs. This chapter sheds light on how program managers can partner with CBOs and local stakeholders to access harder-to-reach communities.

Specifically, this chapter argues that policymakers and program managers may increase access to harder-to-reach communities by meaningfully incorporating stakeholders with local knowledge, technically proficient professionals, and organizations capable of implementation *during the process of program design*. By conceiving Greensboro's program through a community lens, program designers identified common barriers, assets, and opportunities in order to increase access during implementation. This chapter defines community as: "a social group of any size whose members reside in a specific locality, share government, and often have a common cultural and historical heritage" (Dictionary.com, 2011).

Chapter 4 begins by describing the importance of accessing East Greensboro in order to save energy. Next, this chapter describes the Beloved Community Center, and relevant historical context. The subsequent section analyzes the strengths of Beloved Community Center partners, collectively referred to as the BCC Collaborative ("the Collaborative"). This section also analyzes why the Collaborative sought to package energy efficiency benefits with three additional measures: (1) workforce development; (2) community-wide healthy homes interventions; and (3) community building. Then, this section analyzes how a partnership formed between the Collaborative and the City of Greensboro, resulting in a proposal intended to reach 100% of East Greensboro residents. Elements of the proposed design are then described.

Finally, this chapter briefly analyzes implementation challenges because equity goals have diminished as the program has neared implementation.

4.1 The Importance of Accessing Hard-to-Reach Communities

Greensboro's BetterBuildings program needs to access "hard to reach" communities in order to maximize energy savings. In Greensboro, a city of 242,000, 53% of the Greensboro housing stock is homeowner occupied, while 47% is renter occupied (ACS 2006-2008), indicating the importance of retrofitting rental properties. In addition,

Greensboro is 51% white and 49% non-white, indicating that access to non-white populations is critical to achieving citywide energy savings (*Ibid.*). Moreover, East Greensboro has the oldest building stock in the city; over half were built before 1980, suggesting that substantial efficiency savings could be achieved by targeting that community (City of Greensboro, 2009).

4.2 Background: The Beloved Community Center

The Beloved Community Center (BCC) is a non-profit civil rights organization based in Greensboro, North Carolina with the mission of “standing up for the dignity and worth of all persons” (BCC, 2010). Founded in 1991 to address the need for community building, BCC builds from the history and relationships of the Civil Rights Movement through diverse programs. Reflecting BCC’s successes, co-founders Joyce and Rev. Nelson Johnson have received numerous awards for their work, including the Ford Foundation’s *Leadership for a Changing World* award, the Faith & Politics Institute’s *Community Award*, and the National NAACP’s *Democracy & Civil Rights* award (BCC, 2011c).

In many ways, BCC’s green jobs agenda extended from its previous work. Like many multi-issue social justice organizations, BCC connects seemingly disparate challenges through its projects and programs, which include homeless hospitality, history and storytelling of civil rights, and political advocacy. The history of BCC’s programs informs its approach toward developing an energy efficiency program.

4.2.1 Historical Context: Economic Justice

BCC has actively worked for labor rights and workforce development opportunities in Greensboro, reflecting residents’ need for fair, well-paying jobs. For example, BCC held a critical role in the public discourse over a local employees’ labor dispute with a new K-Mart distribution facility, re-framing it from a business/worker conflict to a citywide issue. They protested with progressive African American clergy, held discussions with local business leaders, and built partnerships with local white clergy, in tandem with traditional labor organizing strategies (Johnson, N., 2000; Hestler, B., 2000; Johnson, N.

& Laurizen, J., 1996). Negotiations resulted in collective bargaining rights for the workers, a pay increase of \$2.50 per hour, and a better understanding by city leadership of economic challenges facing working class Greensboro residents (Hair, P., 2000).

More recently, BCC and the Greensboro Pulpit Forum brokered a peace treaty between the Almighty Latin King and Queen Nation (ALKQN) and other street groups (gangs) in Greensboro (ALKQN et al., 2008; BCC & Pulpit Forum, 2009). Although ALKQN members sought to engage with the Greensboro community through legitimate employment opportunities, the Greensboro police department was illegally harassing and arresting ALKQN members, which caused several members to lose their jobs (*Yes! Weekly*, December 23, 2009). In the eyes of BCC, the need for socially marginalized ALKQN members to access career pathways illustrates the connection between accessible economic development and community transformation, and informed their goals while developing plans for the Greensboro BetterBuildings program.

4.2.2 Historical Context: Community Building

BCC has built community to address historic injustices. In 2001, BCC developed a Truth and Reconciliation Commission with partners to encourage Greensboro residents to share their knowledge of the Greensboro Massacre, when a KKK/Nazi caravan murdered labor organizers on November 3, 1979. This event had been covered up with lies and misinformation by the police, elected officials, and was misrepresented in the mainstream media. BCC worked with family members of November 3, 1979 victims to develop a truth-seeking process, based on South Africa's Truth and Reconciliation model. This process, which began in 2001 and concluded in 2006, was intended to reveal what actually happened on November 3, 1979, why the events occurred, and what impact from those events remains in the Greensboro community. The resulting Truth and Reconciliation Commission provided extensive public outreach—more than 67 nominations were provided for commission members. The commission held three public hearings, received statements, and completed a 210-page report. The report described what happened, explained the role of public and non-governmental institutions in the events, and recommended steps toward reconciliation

(Magarell & Wesley, 2008). The Truth and Reconciliation process exemplifies how BCC creates transformative change while building community.

BCC views energy efficiency as way to build community around a positive program that also could address historic inequalities. The BCC developed a workforce development program through an earlier round of ARRA funding to train and build community among disconnected youth, ex-offenders, and other people with barriers to employment. With respect to BetterBuildings, the BCC held three important roles in designing the energy efficiency proposal: Identifying key partners, sharing information through a collaborative learning process, and partnering with the City to write the grant. The next three sections detail these aspects of BCC's program.

4.3 The Creation of a BCC Collaborative

BCC's success lay in identifying and coordinating organizations with local knowledge and technical capacity to design and implement a program that could access 100% of East Greensboro households. The BCC developed a collaborative with partners to urge the City of Greensboro to apply for a federal BetterBuildings competitive Energy Efficiency Community Block Grant (EECBG). BCC's large, broad, and authentic network enabled it to convene the Collaborative and leverage local knowledge, technical expertise, and the capacity to implement a building improvement program. BCC's network was broad, in the sense that the Collaborative incorporated professionals with relevant technical expertise. "Authentic" community building, according to the Beloved Community Center, means partnering with the most vulnerable members of society to make their concerns the concerns of the whole Greensboro community. Partners from all sectors – private, non-profit, academic, religious, and governmental – held "authentic" values. Partners met every one to two weeks over the summer of 2009 to develop a white paper, and ultimately a proposal with the City.

Key partners in the BCC Collaborative, and the expertise they brought to the table, included:

- North Carolina Agricultural and Technical University (A&T University), which provided energy efficiency technical assistance to the collaborative, and was capable of implementing and evaluating numerous program components. A&T University's Center for Energy Research and Technology (CERT) program is state-renowned for implementing energy efficiency technology in communities, due to its strong understanding of the Greensboro community (N. Dyess, Personal Communication, February 22, 2011). A&T University's knowledge of the East Greensboro community, where the university is situated, is particularly strong. More generally, A&T University has trained professionals, fostered leaders for social change, and attracted talented faculty, resulting in a strong network of students and alumni.
- The Greensboro Housing Coalition, a non-profit organization that has developed housing policy and programs to address housing quality problems for home owners and renters. Past initiatives have included building code enforcement for rental properties, and it maintains Healthy Homes inspectors on staff. Its staff has a first-hand understanding of housing conditions and challenges of building occupants in East Greensboro. It focuses on reducing citywide health disparities.
- The Greensboro Pulpit Forum, a network of African American ministers, provided the Collaborative with a large political base. Importantly, the ministers' relationships with their congregations helped to provide an understanding of local context and needs, and could help with gaining access to households during implementation.
- Self-Help Credit Union, a community lending institution with a history of assisting low-income households to access capital and prevent foreclosures, provided financial expertise. This national credit union, based in nearby Durham, North Carolina, had previous experience working in East Greensboro.
- Enpulse Energy Conservation, a minority-owned building auditing and engineering firm, provided assistance to identify how to access hard-to-reach households. Enpulse hires local and minority residents, and provides on-the-job training to provide upward mobility for employees within the firm.

- Ignite Greensboro, a student-led initiative focused on energy and carbon reduction by installing compact florescent light bulbs through grassroots door-to-door efforts.
- East Greensboro neighborhood organizations with local knowledge of how to access this community.

4.4 The BCC Collaborative Articulates Community Priorities

By working with local partners outside of government – churches, contractors, financial institutions, non-profit housing experts and academic institutions – BCC was able to put forth a white paper that framed the issue in ways relevant to the Department of Energy and East Greensboro. Thirteen professionals from business, community, and neighborhood groups, collaborated to write the memo: *A Local Community Building Approach for the American Recovery and Investment Act (2009)*, while communicating with city and state government.

The Collaborative urged the three following priorities for a BetterBuildings program in the white paper:

- Housing quality, particularly healthy homes interventions;
- Economic development, focusing on local and MBE participation and workforce development; and
- Community building among East Greensboro residents, and citywide using East Greensboro as a model for collective action.

This white paper provided the basis for the proposal submitted by the City to the Department of Energy.

4.5 Early Partnerships Between Hard-to-Reach Communities and Government

By first identifying funding, developing a policy proposal, and organizing partners who could implement the program, the BCC Collaborative increased its standing and influence with the City. BCC's capacity in terms of staffing helped them to seek out ARRA funding opportunities and develop a roundtable. By subsequently approaching

City leaders as potential implementers, the BCC Collaborative was a natural partner for developing the grant proposal, which was submitted to the Department of Energy in December, 2009.

BCC Collaborative members helped City officials to write the successful BetterBuildings grant to ensure a focus on economic development, community building and outreach, and healthy homes (McKee-Huger, B., Personal Communication, March 2, 2011). At the time, the City was interested in partnering with organizations capable of implementing the grant. BCC and its partners had a strong relationship with the (now former) Mayor of Greensboro. Yvonne Johnson, the first African American mayor in the City's history, was a strong supporter of community economic development initiatives. Moreover the City's Housing and Community Development department had a positive working relationship with BCC and other members of the collaborative.

4.6 Program Design

The City and the BCC Collaborative wrote the BetterBuildings proposal based on East Greensboro community priorities, and the capacities of organizations dedicated to improving this community. This section explains the place-based design ensuring: 100% accessibility; shared employment benefits; the healthy homes interventions; and community building.

4.6.1 A Place-Based Strategy to Access 100% of Hard-to-Reach Households

Greensboro's proposal targeted East Greensboro due to "its inclusion in the City defined Economic Recovery Zone for ARRA projects, its concentration of older housing stock, minority and low income populations in need of community building and job opportunities; and ongoing housing and service delivery programs" (City of Greensboro, 2009, pp. 2).

4.6.2 Financial Accessibility and Community Organizing

Greensboro's proposal featured two main financing and outreach strategies to reach all households. Outreach was designed for the needs of a mixed-income

neighborhood with a sizable low- and low-to-moderate income population, including many renters. First, they intended to hand out freebies and install “low-hanging fruit” measures, such as compact fluorescent light bulbs and programmable thermostats, during community outreach before a homeowner would commit to an audit (City of Greensboro, 2009). By providing freebies, all occupants would benefit regardless of household income. Renters would benefit from this program feature because the “freebies” do not require outlays by landlords. The proposal allocated \$1,000,000 for community outreach and \$330,000 for job training out of a \$6.04 million grant proposal, later pro-rated for the actual \$5 million award. The City proposed to work with A&T University’s CERT staff and students to create energy audit standards and monitoring standards, and to train community organizers for outreach work. Every household in East Greensboro would be contacted through grassroots outreach. Program designers anticipated that one in three contacted households would receive an energy efficiency building improvement.

Second, the proposal identified how the City might develop a tiered financing structure to ensure accessibility for market and below-market rate households, and to build from the federal Weatherization Assistance Program (WAP) and local utility programs. BetterBuildings funding would cover the full cost of building assessments (audits) for all projects, reducing a participation barrier for lower income households. Homeowners who earn less than 50% of the area median income would receive deferred and forgivable loans from the City, supported by HUD Community Development Block Grant and state funding sources. Homeowners who earn less than 50% of AMI also could receive grants and forgivable loans through Housing Greensboro, a nonprofit leveraging state and private funds, for major rehabilitation and pre-weatherization services. Self-Help Credit Union would offer, to homeowners who qualify for home rehabilitation loans, reduced- interest energy efficiency loans up to \$2,000. These households also would receive 10% rebates of the cost of energy improvements, funded by BetterBuildings, upon completion of post-improvement audits. For rental units, in addition to coordinating with the WAP program for eligible buildings,

landlords would receive a 10% rebate for energy efficiency measures. Lending institutions would offer low-interest financing to complement these measures.

Third, the proposal suggested coordinating outreach and energy efficiency financing with re-financing opportunities for households at risk of losing their housing due to the subprime lending crisis, a situation worsened by increasing unemployment. The proposal recommended a formal partnership between outreach workers and certified homeownership counselors, including counselors from Self-Help Credit Union, to assist homeowners at risk of foreclosure (City of Greensboro, 2009).

4.6.3 Linking Workforce Development with a Place-Based Strategy

Greensboro's program was designed to train East Greensboro residents in weatherization to reduce poverty and increase economic self-sufficiency. Organizations involved in the design envisioned working with locally trained workers to conduct community outreach for building improvements, helping to increase the number of buildings retrofitted. Consistent with the BCC Collaborative's priorities, the proposal recommended focusing on Greensboro's most vulnerable populations for employment opportunities, and to develop necessary support services to help them secure jobs and stay employed:

“To the maximum extent possible, training will be provided to residents of the affected neighborhoods to do the various jobs related to increasing the energy efficiency of their homes and neighborhoods. In this regard, special emphasis will be placed upon youth, ex-offenders, physically and mentally challenged, veterans, and others with employment challenges. These challenges will require special and sustained emphasis on training and supportive services” (Ibid., p. 12).

Training entities are supposed to focus “on recruitment within the target area. The grant funds will be used to train seventy-five unemployed and underemployed residents who can enter the green workforce” (Ibid., p. 6). Here, the Beloved Community Center's

workforce development program could help to achieve program objectives, because it maintained the only workforce development program in the region focused on bringing marginalized populations into the green economy (McKee-Huger, B., Personal Communication, March 2, 2011). Considering the BCC's close relationships with street groups including the Almighty Latin King and Queen Nation, even the most socially disconnected and hard-to-reach households would have the opportunity to access workforce development and building improvements under this program design.

4.6.4 Healthy Homes and Pre-Retrofit Work

The city proposed that partners would conduct healthy homes inspections at the community scale, addressing the fact that East Greensboro has the highest rates of asthma in the city. As previously mentioned, the Greensboro Housing Coalition holds community relationships and maintains healthy homes inspectors who can go into homes and identify challenges. All community organizers and volunteers conducting outreach would learn how to conduct initial healthy homes scans and, when appropriate, refer occupants to Healthy Homes Specialists for lead abatement, integrated pest management, and other healthy homes improvements. The Guilford County Department of Public Health would train nurses, social workers, and other home care workers others to identify health hazards. Community organizers and volunteers would be trained to identify health risks and refer residents to Healthy Home Specialists, who would work with residents to improve the health of their home. Integrated Pest Management would be taught to residents, while special care would be taken to include immigrant and other vulnerable populations in this process (*Ibid*; City of Greensboro, 2009.). Greensboro's BetterBuildings program was going to integrate healthy home interventions and weatherization to the greatest extent feasible.

When necessary, homeowners would be referred to Housing Greensboro, a non-profit outgrowth of Habitat for Humanity that provides pre-weatherization and major rehabilitation services for low-income households. Housing Greensboro has coordinated with the local Community Action Program agency through the DoE's Weatherization Assistance Program for many years.

4.6.5 Community Building

The proposal also intended to integrate community building into the program. The proposal read:

“This [program] will model for the city the wisdom of communities working together toward energy efficiency and a better quality of life and demonstrate the benefits of gaining economy of scale. It will build an infrastructure and culture of democracy and empowerment that will transcend the life of the Recovery Act. And, it will reduce the tension and conflict between various quarters of our community based on actual as well as perceived racial and other social inequities.” (City of Greensboro, 2009)

As previously stated, the BetterBuildings program would have provided an opportunity to build community around a positive initiative. East Greensboro could have been a model for solving societal problems, and provided an opportunity for East Greensboro residents to build community among one another.

4.7 Implementation Challenges

Unfortunately, three key changes at the point of implementation changed the program in a manner that has reduced the social and economic benefits of the program. First, the program no longer targets East Greensboro; instead it targets neighborhoods citywide. Second, whereas Greensboro’s proposal intended to reach as many income levels as possible, its current program design will only reach Greensboro’s wealthier middle and upper-middle class residents through market-rate loans and modest grants. And third, program outreach may not effectively access hard-to-reach communities, as the city has changed to a marketing firm without specialized knowledge of the Greensboro community (City of Greensboro, 2010).

These changes primarily arose due to local opposition from conservative city council members who were elected after the City submitted its grant to the DoE. Because the city council controls city expenditures above \$20,000, city officials had

limited discretion over the use of BetterBuildings funds (City of Greensboro, n.d.). Ultimately council members agreed to accept funding from the DoE so long as the program benefits their districts. The DoE's policy requiring rapid implementation made it difficult for community organizations to respond to political opposition because the City had to spend the money in a short timeframe.

In addition, conflict-of-interest rules prohibiting certain communications with organizations that want to submit a bid for a public contract meant that community leaders could not communicate with city officials as political challenges arose. They also could not communicate about how RFP's could be designed because they were interested in submitting bids.

Finally, the Beloved Community Center's capacity was reduced because they had to respond to an external crisis. Sparked by the inappropriate suspension of A.J. Blake, an Hispanic police officer in the Greensboro Police Department's gang unit, and the violation of the citizen rights of Latin Kings by the city's gang unit, BCC quickly pulled together an inter-racial, city-wide coalition of concerned ministry and citizens to address police corruption. This crisis diverted BBC's resources away from advocating for the city to stick with its original program design.

Presently, BCC and partners are organizing a campaign focused on the City Council for the misuse of BetterBuildings funding (BCC, 2011b). The political climate, rules governing local expenditures, conflict- of-interest rules, and organizational capacity challenges have left BCC and partners without any other option.

4.8 Conclusion

Though this program is not being implemented as conceived, the process of designing the program identified the *conditions under which* hard to reach households could be accessed. To begin, identifying organizations with local knowledge and technical expertise was an important condition for designing a program that could access 100% of hard-to-reach households. The program connected the activities required to implement energy efficiency programs with context-specific needs of East Greensboro. These needs were identified through dialogue and partnerships among

BCC Collaborative participants, who shared their local knowledge and technical expertise. Four key needs emerged: a community outreach program with paid, trained organizers who understand how to work in East Greensboro; employment opportunities, reflecting the desire of residents to share in the full benefits of the energy efficiency program; healthy homes improvements to link energy efficiency investments with other housing improvements; and community building by using community outreach to achieve additional community goals.

Although these additional benefits may seem tangential to energy efficiency, they are necessary to gain access to the hard-to-reach community of East Greensboro. These additional benefits would give legitimacy and meaning to a building improvement program that energy efficiency improvements alone would not provide, in turn increasing support for energy efficiency measures. The program design focused on delivering services and benefits that reflect the values of East Greensboro residents. The City of Greensboro's willingness to partner with community organizations indicated their commitment to maximizing energy efficiency in the city, along with achieving broader urban redevelopment and community goals.

Greensboro's experience suggests that programs may benefit from partnering with community organizations to design their programs, as well as continuing these partnerships during implementation.

The challenges that arose during implementation indicate that even a good program design requires political support to be implemented. The conflict-of-interest barrier and the diminished organizational capacity of BCC present challenges that need to be addressed by Greensboro community organizations, and potentially by other community organizations involved in designing and implementing energy efficiency programs. Energy efficiency programs can benefit from partnering with community organizations during program design and implementation. However, CBOs need ways to remain meaningfully involved throughout both program phases. Likewise, external challenges and crises arise over the course of work for all community organizations; this, too, presents a challenge for community organizations seeking to influence energy efficiency programs and policies.

Chapter 5: Conclusion

5.0 Introduction

Chapter 5 begins with a review of this thesis' research question, methodology, and key findings. The next section summarizes findings from Chapters 3 and 4, demonstrating the multiple ways in which programs can – and are – designing and implementing programs to achieve equity. Finally, a flexible “D.E.E.P.” framework is developed to apply lessons from this thesis to other energy efficiency programs. The concluding section articulates next steps and further research needs.

5.1 Review of Research Question, Methodology, and Background of Program

This thesis investigated how policymakers and program managers can design, implement and evaluate large-scale energy efficiency policies and programs while encouraging equity, using the Department of Energy's (DoE's) BetterBuildings program as an example. Equity is defined in terms of the accessibility of energy efficiency building improvements to low- and moderate-income households, and to households occupied by people of color. These households are collectively referred to as 'hard-to-reach'. This thesis used a survey and follow-up interviews with grantees and sub-grantees to identify trends, best practices and challenges of advancing equity. A case study of Greensboro, North Carolina's program complemented the surveys and interviews.

Equity serves a strategic purpose for the BetterBuildings program by saving energy, the program's primary measurable goal. Hard-to-reach households represent a majority of household energy consumption nationwide; therefore accessing these households is critical to advancing the DoE's goal.

However, Chapter 2 found that the program does not actively promote equity through its eligibility criteria, goals, review criteria, monitoring and evaluation requirements, or technical assistance program. The lack of emphasis on equity from the federal level means that this thesis is predominately a study of how local energy efficiency programs choose to advance equity.

5.2 Chapter 3 Summary

Chapter 3 concluded that local energy efficiency programs see a close alignment between achieving energy savings and targeting hard-to-reach communities. Programs are advancing an equity agenda through: financing and grant programs; place-based programs; and community outreach strategies. Some analysts suggest that a trade-off exists between programs advancing equity while piloting and scaling up programs. However, program administrators do not perceive trade-offs in the process of achieving equity because activities that advance equity also save energy and advance market transformation, while creating additional urban development benefits.

Grantees are using a variety of strategies to provide the financing needed to expand access to energy efficiency investment among hard to access communities. Cities such as Portland, Oregon and Seattle, Washington are encouraging equity through low-interest on-bill-finance and revolving loan fund programs; Charlottesville, Virginia's program is one of several whose participating credit unions will benefit from the Department of Housing and Urban Development's PowerSaver loan guaranty program. And, programs such as the Greater Cincinnati Energy Alliance are encouraging equity by seeking opportunities to pair BetterBuildings funding with HUD Community Development Block Grant and New Markets Tax Credit funding, including for urban redevelopment projects. Still other grantees, such as Phoenix, Arizona, are enhancing the size of utility-based programs and bolstering their marketing and outreach efforts.

Table #3 Financial Incentives for Equity

Location	Equity Measure	Impact
Portland, OR and statewide	On-bill financing with specialized revolving loan fund (RLF).	On-bill financing enables use of credit bill history, reducing reliance on credit history and scores. RLF provides reduced interest rates for households up to 250% of federal poverty level.
Indianapolis, IN	\$3 million loan loss reserve targeting low - moderate income families.	Reduce interest rates of loans.
Charlottesville, VA	Local credit union participates as HUD PowerSaver community.	Lower interest rates and increase accessibility for lower income and lower credit households.
Greater Cincinnati region (a collaboration between seven cities in southern Ohio and Northern Kentucky)	CDBG funding may enhance building improvement grant from 35% to appx. 70% of project cost.	Increase accessibility of program for low-moderate income households.
Same	Energy efficiency funding for New Market Tax Credit projects.	Increase energy efficiency for urban redevelopment projects.
City of Phoenix	Match most utility rebates.	Increase participation rates.

Many grantees are using place-based strategies to access households in hard-to-reach communities: eight in ten surveyed programs are using geographic targeting strategies, and nearly eight in ten of those programs are targeting areas where over 20% of residents are low income. In addition, about half program target areas are populated by at least 50% minorities. Grantees are targeting these areas to maximize energy savings due to the older building stock in these neighborhoods; to access multiple types of building types in an effort to transform the market for all building types; to build from relationships with community organizations; and to advance urban redevelopment goals. For example, Kansas City, Missouri’s program was detailed in order to understand the link between energy efficiency benefits, market transformation, and urban redevelopment goals through a community-based process.

Table #4 Place-based Strategies

Location	Equity Measure	Impact
Kansas City	\$2.2 million forgivable loan to CDC for business incubation center on blighted property.	Encourage business development in low-income "Green Impact Zone" and surrounding area; advance urban redevelopment; increase community support for energy efficiency.
Same	Financial incentive covering incremental cost of deconstruction (vs. demolition) work.	Creates workforce development opportunities for populations with barriers to employment.
Greensboro, NC	Proposed to train workforce from target neighborhood.	Increase legitimacy of program by delivering valued benefits to local community.

Moreover, grantees do not perceive access to households as a significant barrier to implementation – an unexpected finding – because they have developed creative community outreach efforts. Grantees were utilizing three key strategies to implement their programs: working through pre-existing professional and social networks; ensuring that households trust community outreach organizations; and aligning incentives among outreach organizations, participating individuals and communities, and organizations administering energy efficiency programs. To illustrate these strategies, Chapter 3 analyzed San Antonio, Texas, Phoenix, Arizona, and the state of Connecticut's programs. Outreach strategies were developed based on the organizational strengths and relationships specific to each program's context.

Table #5 Community Outreach Strategies

Location	Outreach Method	Impact
San Antonio, TX	Contracting with community colleges as intermediary; compensating 'community oriented entities' for outreach services.	Increase legitimacy of program; Provide incentive for CBOs to participate.
Phoenix, AZ	Working through city's Neighborhood Services Department.	Facilitates outreach by building from existing relationships.
Connecticut, 14 towns	Provide individual participation awards; Provide awards to Clean Energy Task Forces for community participation; Program sells verified energy savings on Renewable Energy Efficiency Portfolio Standard marketplace.	Align individual, collective, and programmatic incentives for participation.
Greensboro, NC	Proposed to train community organizers in energy efficiency and healthy homes outreach through A&T University.	Increase trust with community; increase community healthy.

Along the same lines, programs are consistently partnering with community based organizations (CBOs) for program design and implementation: about eight in ten surveyed programs responded that CBOs participated on a local task force or advisory board, and about nine in ten surveyed programs anticipate partnering with at least one CBO during implementation.

However, few surveyed programs are monitoring demographics of program participants. Monitoring program participation and outcomes could help programs understand the impacts of program design and implementation efforts. Portland, Oregon's monitoring and evaluation program is highlighted as an emerging model. The City of Portland is evaluating how differences in income may impact access to program financing, with the goal of identifying what strategies they may need to utilize to increase accessibility for moderate- income households.

5.3 Chapter 4 Summary

Chapter 4 asserted that policymakers could increase access to hard-to-reach communities by partnering with organizations that have local knowledge, technically proficient professionals that support local goals, the capability to implement the program. The Beloved Community Center (BCC) Collaborative proposed accessing 100% of households in East Greensboro, a mixed-income community of color, with a special focus on low- and moderate- income households. The Collaborative was comprised of financial, business, academic, housing, religious, youth, and neighborhood organizations. The Collaborative worked with the city to design a program based on the history, conditions, and capacities of the East Greensboro community and supportive organizations. The City's proposal packaged a community-wide healthy homes assessment initiative, targeted workforce development, and community building with energy efficiency building improvements. Though these additional benefits may not seem relevant to energy efficiency, they are critical to gaining access to this 'hard-to-reach' community by delivering services and providing activities that meet community needs. These efforts go beyond marketing and communications efforts by ensuring that communities actually receive program benefits they value.

Although this case was grassroots-driven with partnership from government, policymakers and program administrators could initiate similar partnerships based on their organizational self-interest, in order to increase access to hard-to-reach communities. Community groups, meanwhile, can continue to strategically position themselves and the hard-to-reach communities that they represent to benefit from energy efficiency programs.

Implementation challenges arose based on political challenges, the reduced capacity of the BCC, and conflict-of-interest rules. The BCC and partners could consider formalizing their partnership through a separate association that focuses on advocating for benefits, allowing partners to act separately to submit bids for RFP's.

This chapter concluded by recommending that analysts and program designers not consider low-, moderate- income, and minority-occupied households *necessarily*

'hard-to-reach'. Alternatively, this chapter suggested that analysts and program designers identify *the conditions under which these households can become accessible*.

For Greensboro, conditions go beyond providing contextual messaging and working with community organizations for the purpose of implementation, as analysts suggest. In addition, programs can (1) actively partner with community organizations to design their programs in ways that can access "hard-to-reach" communities; and (2) deliver additional benefits that provide greater meaning and legitimacy to the energy efficiency program in the eyes of community organizations and their stakeholders in target communities. These benefits, based on local context, should not be limited to rhetoric through marketing campaigns but should deliver tangible benefits valued by these communities. Benefits may need to be delivered to hard-to-reach communities to increase access to 'hard-to-reach' households.

5.4 A Flexible D.E.E.P. Equity Framework

This section puts forth a flexible framework for achieving equity in energy efficiency programs, learning from BetterBuildings programs and the Greensboro experience. This framework is comprised of four components: democratic participation; energy efficiency transformation; economic models; and the importance of place. The acronym D.E.E.P. refers to programs achieving greater energy savings through achieving equity, and the process of developing and maintaining trustworthy, reciprocal relationships with hard-to-reach communities. Underlying all four aspects is the importance of identifying the conditions under which hard-to-reach households will participate.

1. Democratic Participation

- Partnering with organizations and leaders from hard-to-reach communities during the program design phase can increase accessibility to households due their knowledge of the local community. This requires building from existing organizational capacities and relationships that exist within these neighborhoods.

- Allowing communities with hard-to-reach households to define problems, and to identify strategies to overcome implementation barriers, may increase accessibility.
- Delivering additional, related benefits of energy efficiency programs, not just marketing them, may increase community ownership over a program. Equity may need to go beyond accessing homes for energy efficiency improvements, because of the value that hard-to-reach communities may place on additional benefits, such as employment.

2. Energy Efficiency Market Transformation

- Achieving market transformation requires accessing all types of buildings and households. BetterBuildings grantees are targeting hard-to-reach households due to their energy savings potential. Market transformation may be a goal that interests both energy efficiency programs and communities.
- Collecting and analyzing demographic data enhances how programs understand accessibility outcomes and barriers, and supports on-going program improvements to achieve this goal. Programs should collect and use these data accordingly.

3. Economic Models

- Financing and grant programs need to be developed that can allow moderate-income households to afford energy efficiency improvements.
- Leveraging private dollars can enable public grant dollars to be spent on outreach and other activities that expand access and advance equity goals.
- Providing programs with a leverage requirement can enable administrators to balance accessing easier-to-reach and harder-to-reach communities. For example, the City of Indianapolis is creating a \$3 million loan loss reserve fund to increase access to low- and moderate- income households, leveraging two private dollars for every one dollar of public investment. The City can spend BetterBuildings funding for this program because they are exceeding

BetterBuildings' 5:1 leverage requirement through other program-related investments.

- Overcoming barriers to WAP-eligible household participation, due to poor building conditions, can increase accessibility. This may require offering major rehabilitation, asbestos abatement, and healthy homes services in tandem with energy efficiency building improvements.

4. Consider the Importance of Place

- Targeting areas with the oldest, least energy efficient building stock may coincide with needing to access harder-to-reach communities. Programs would benefit by identifying areas with the least efficient building stock in their communities.
- Linking energy efficiency with urban redevelopment goals, such as building rehabilitation and business incubation, could increase accessibility. For example, Kansas City's program gained legitimacy with community members in the impoverished "Green Impact Zone" by providing them with employment opportunities. In turn, the community's interest in energy efficiency building improvements increased.
- Designing programs based on the community, rather than the household, could increase accessibility. Program designers in Greensboro identified common barriers, assets, and opportunities to increase participation by conceiving of Greensboro's program through a community lens. For example, in Greensboro, North Carolina, the Beloved Community Center and partners proposed specific community outreach and community building approaches that would build trust and legitimacy with households. In this sense, connections exist between place-based implementation and the democratic participation of local community organizations during program design.

This framework is intended as a starting point only. Frameworks can be misleading, by appearing to provide a step-by-step guide. This thesis does not make such a bold assertion. Applied universally, a framework could be misapplied and result in

unanticipated, potentially harmful outcomes. For this reason, programs should complement this framework with a process of organizational and community learning through dialogue among stakeholders, program evaluation, and modification.

5.5 Further Research & Next Steps

This thesis questions prevailing wisdom on strategies and processes for piloting large-scale energy efficiency programs. However, this thesis assessed programs in the design and early implementation phases and thus their ultimate effectiveness to achieving equity goals is uncertain. Proven models, based on actual processes and outcomes, need to be developed to understand how programs can be successful in reducing energy consumption and in achieving equity. Programs should undertake an intentional effort to evaluate accessibility outcomes, associated energy savings, and the conditions and processes that led to these outcomes. Practically, the Federal BetterBuildings program could coordinate local evaluators to determine how to evaluate accessibility, building from the D.E.E.P. framework.

Lessons also should be applied to utility-based programs, which may be the main source of energy efficiency program administration and funding in the near future. Utilities could show leadership by seeking to achieve equity through program design processes and implementation.

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