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Energy Burden and the Need for Integrated Low-Income Housing and Energy Policy

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Abstract

Using detailed sociological and public health qualitative interview data, we demonstrate that energy poverty is more pervasive, and results in a greater energy burden for low-income tenants, than many policymakers would assume. This is due in part to a lack of funding, policy non-coordination, and a lack of understanding of the social and economic benefits of energy conservation, energy education, and flexible utility billing policies. Examining LIHEAP, weatherization, utility, and housing assistance policies, we suggest that a coordinated, regional approach to home energy and housing policy that integrates programs in each area will provide a more coherent policy solution.

Keywords

poverty; energy policy; housing policy; fuel poverty

Mrs. Stone lives in a first floor apartment with direct access to the basement, which makes the apartment especially cold and expensive to heat during cold winter months in Boston. Over time, Mrs. Stone has accumulated a large debt totaling over \$5,000 with the gas and electric company. This is in part due to the fact that her home is not well insulated and the appliances are older and not very energy efficient. Despite making every attempt to pay her utility bills on a limited budget from SSI disability benefits, the gas company eventually shut off Mrs. Stone's services.

Mrs. Stone is among 72 low-income householders (primarily women) living in inner-city Boston who were interviewed for a study concerning housing challenges. She is also one of many low-income families in the United States confronting persistent energy needs with limited resources. With energy costs increasingly on the rise, low-income families are often left to make hard choices about whether to spend their money on food or energy.¹ Poor householders tend to live in less energy-efficient homes; thus, they allocate a greater

¹Jayanta Bhattacharya, Thomas Deleire, Steven Haider, and Janet Currie, "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families," *American Journal of Public Health* 93 (7) (2003): 1149-1154, <http://ajph.aphapublications.org/cgi/content/abstract/93/7/1149>. See also Child Health Impact Working Group, "Unhealthy Consequences: Energy Costs and Child Health," National Center for Medical Legal Partnership, 2007, <http://www.medical-legalpartnership.org/sites/default/files/page/CHIA%20of>

percentage of their household income to energy expenses. Current policy initiatives aimed at low-income energy needs account for a very small percentage of the overall hardship experienced by the poor. At the same time, housing policies that provide subsidies and other forms of assistance to disadvantaged families do not fully account for the economic challenges associated with energy use and utility consumption. Finally, residential energy inefficiency is an additional contributor to environmental concerns over carbon, energy security, and energy use. In order to address this linked economic and environmental issue, innovative policies must be implemented in order to relieve low-income households of their energy burdens on a long-term basis.

Energy Burden among the Poor

Energy is considered a basic need in modern industrialized societies. It plays a crucial role in fulfilling most other human needs, be it through heating, cooling, refrigeration, and basic electricity, which are tied to health needs. For example, an asthmatic who relies on electric-powered nebulizers, or a diabetic who needs to refrigerate his/her insulin, has energy needs related specifically to health conditions. Most households, regardless of health conditions, need access to a home environment that is properly heated or cooled, and increasingly require television, phone, and Internet services for access to information and help.

“Energy burden” reflects the disproportionate allocation of financial resources among low-income households on energy expenditures.² Compared to middle- and upper-income households that spend 5 percent or less of their total household income on energy purchases, low-income householders spend 10 percent or more of their income on energy expenses. The burden is even greater among the very poor, who are likely to spend an upwards of 20 percent on energy purchases.³ Moreover, it is more challenging for low-income households to adapt to large fluctuations in energy pricing, as experienced with oil, gas, and electricity rates in recent years. Further, low-income homes are disproportionately less energy efficient compared to non-poor households, particularly in urban areas where the housing stock is older.⁴ Even further, poverty rates have been increasing. The U.S. government’s official poverty rate in 2008 was 13.2 percent, up from 12.5 percent in 2007, although some argue that U.S. poverty rates are systematically underestimated.⁵

Financial assistance and subsidies for needy families have been chronically underfunded in the home energy sector. Therefore, utilities hardships are a major component of the housing affordability crisis for low-income families with payment accountability. Utilities-related debt, shutoffs, inefficient heating systems, antiquated appliances, and extreme home temperatures have significant health impacts, including respiratory illness, pneumonia, increased fire risk, bronchitis, hunger, and stress among others.⁶ For poor householders,

[%20Energy%20Assistance%204_9_07.pdf](#) (accessed January 29, 2010) and John T. Cook and Deborah A. Frank, “Food Security, Poverty, and Human Development in the United States,” *Annals of the New York Academy of Sciences* (2008): 1-16, http://www.childrenshealthwatch.org/upload/resource/cook_frank_annals_08.pdf.

²Lester Baxter, “Electricity Policies for Low-income Households,” *Energy Policy* 26 (1998): 247-256.

³Mark Kaiser and Allan Pulsipher, “Concerns Over the Allocation Methods Employed in the US Low-Income Home Energy Assistance Program,” *Interfaces* 36 (4) (2006): 344-358.

⁴Rick Nevin, “Energy-Efficient Housing Stimulus That Pays for Itself,” *Energy Policy* 38 (2010): 4-11.

⁵Howard Glennerster, “United States Poverty Studies and Poverty Measurement: The Past Twenty-Five Years,” *Social Service Review* 76 (1) (2002): 83-107.

meeting these basic energy needs can be challenging. Children, in particular, suffer in families experiencing high energy burden.⁷ They have nutritional deficiencies, higher risks of burns from non-conventional heating sources, higher risks for cognitive and developmental behavior deficiencies, and increased incidences of carbon monoxide poisoning.⁸

Fuel poverty is an acknowledged problem.⁹ However, this research reveals additional policy interactions and dynamics that make the energy burden of the poor, especially for low-income renters, far worse than policymakers may realize. This paper has three main objectives. First, it identifies unique dimensions of energy burdens to the poor by drawing on qualitative interview data to uncover health risks, financial challenges, and instability associated with energy burden that include, but also go beyond, utilities hardship and fuel poverty.¹⁰ It documents individual-level strategies that poor householders use to respond to utilities hardship. These are often temporary fixes to persistent problems that are exacerbated by a lack of policy coordination between housing and energy assistance.

Second, it summarizes policy directives at the micro (individual or household) and macro (policy) level and offers ideas for the development of research and policy in three areas: home energy efficiency, energy literacy, and utility rate affordability and relief. While the recommendations generally complement the objectives of existing policies in energy and housing targeted toward the nation's low-income population, they have a goal of increased long-term sustainability, and improved coherence between energy (e.g., LIHEAP), housing, and state utility policies. Third, it concludes with a call for greater scholarly treatment of this topic in areas that include, but also transcend, economics and policy. Therefore, in this paper we contribute to this important issue by providing a richer and more nuanced understanding of energy burden among the poor.

The Energy Housing Disconnect

The two areas of policy most directly linked to this issue are energy and housing policies directed to low-income households. The primary energy policy is the Low-Income Heating Assistance Program (LIHEAP). It was first established in 1981 to provide vital support to families facing difficulty in paying for home energy costs, particularly during times of extreme temperatures such as cold winter months. Despite increased funding over the years, LIHEAP continues to fall short of meeting the overall need. Upwards of 10–15 million

⁶Bianca Pullen, "Energy Clinic: A Toolbox for Helping Families Heat AND Eat," The Medical Legal Partnership for Children, 2008, <http://www.medical-legalpartnership.org/sites/default/files/page/CORRECTED--Energy%20Clinic%20Toolbox%20Final.pdf> (accessed February 3, 2010). See also Y. von Schirmding et al., "Addressing the Impact of Household Energy and Indoor Air Pollution on the Health of the Poor: Implications for Policy Action and Intervention Measures," World Health Organization Commission on Macroeconomics and Health, 2002, http://www.who.int/mediacentre/events/H&SD_Plaq_no9.pdf (accessed February 2010).

⁷Recent research in Massachusetts and four other locations outlined the particular effects of poverty and Low-Income Heating Assistance Program (LIHEAP) declines on children. See Child Health Impact Working Group, "Unhealthy Consequences: Energy Costs and Child Health: A Child Health Impact Assessment of Energy Costs and the Low Income Home Energy Assistance Program," 2007, <http://www.hiaguide.org/sites/default/files/ChildHIAofenergycostsandchildhealth.pdf> (accessed September 2008).

⁸Ibid.

⁹Bhattacharya et al., "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families." See also Simon Roberts, "Energy, Equity and the Future of the Fuel Poor," *Energy Policy* 36 (12) (2008): 4471-4474 and Schirmding et al., "Addressing the Impact of Household Energy and Indoor Air Pollution."

¹⁰Applied Public Policy Research Institute for Study and Evaluation (APPRISE), "LIHEAP Energy Burden Evaluation Study," 2005, http://www.acf.hhs.gov/programs/ocs/liheap/program_stats/study-July_05.doc (accessed September 2010).

households contend with arrearages or potential shut-offs from their electric and natural gas services.¹¹ In 2009, LIHEAP provided assistance to only a portion of needy households, offering aid to approximately 6.8 million households.^{12, 13}

Housing policies create and maintain opportunities for low-income families to live in affordable rental housing units. This is done particularly through subsidies for government-owned housing developments, and in privately owned buildings, as well as housing choice vouchers. In these programs, families allocate approximately 30 percent of their household income to rental fees and the federal government pays the remaining balance. However, combined with utility and fuel expenses where householders have payment accountability, housing costs often account for substantially more than 30 percent of their total income, presenting a significant burden for low-income householders.

Of the 38.6 million households who are eligible for federal heating assistance, 79 percent pay utility bills themselves in rented units, not their landlords—thus few landlords have an incentive to upgrade to energy-efficient heating or cooling systems, or other sources of fuel cost.¹⁴ This creates a significant principal-agent problem and dysfunctionality between housing and energy policy for low-income tenants. The primary incentive for the pursuit of efficiency, energy conservation, and weatherization gains in housing comes from the economic benefits (i.e., lower utility and fuel costs) that an owner realizes both short and long term. There are no programs that we are aware of that specifically target this incoherence (also known as the split incentive problem). While it is possible for tenants to pursue weatherization benefits through LIHEAP, they may need to get landlord permission, and they are highly likely not to be in the unit long term, thus reducing the incentive to pursue weatherization programs.

As a major financier in low-income housing, governments at the local, state, and federal levels have much to gain in promoting the reduction of home energy costs in spite of the cost of initial investments. By funding housing projects that require or strongly encourage energy efficiency, the government can make a more sound investment in alleviating the housing and energy burdens of poor householders. Moreover, by reducing home energy costs short and long term, LIHEAP appropriations can materialize into more help for families with smaller utility bills. In addition, appropriately designed policy has the potential to create savings for landlords and/or the government.

Data and Methods

The guiding questions of this research are: (1) What is the nature of energy burden among poor householders? (2) How do low-income householders respond to energy burden? (3)

¹¹Libby Perl, “The LIHEAP Formula: Legislative History and Current Law,” Congressional Research Service, 2008, <http://www.neada.org/publications/2008-11-19.pdf> (accessed April 2009).

¹²Ibid.

¹³Seventy-four percent of Americans support energy assistance to the poor and elderly in the United States for heating, air conditioning, and lighting, suggesting that there is support for benefits and subsidies pertaining to energy assistance for the poor. See Low Income Heating Assistance Program, Americans Want to Help Poor and Elderly with Heating Costs, New Poll Finds, 2006, <http://liheap.org/research/summary061013.html>.

¹⁴U.S. Energy Information Administration, 2005 Residential Energy Consumption Survey—Detailed Tables. 2005 Housing Characteristics Tables, http://www.eia.doe.gov/emeu/recs2005/hc2005_tables/detailed_tables2005.html (accessed February 3, 2010).

How can policy interventions serve to alleviate economic and environmental burdens in a sustainable way? These questions came as a by-product of field observations while conducting a qualitative research project on housing challenges among poor families in an inner-city neighborhood of Boston, Massachusetts. Study participants included 72 low-income heads of households who were at 150 percent of the poverty line (\$20,650 in 2007 for a family of four; 70 of the 72 were women).¹⁵ Nearly 80 percent of respondents (56) commonly reported having problems with utilities that included lack of affordability, arrearages, and shut-offs. The main exceptions were residents of housing projects or other housing units where the utilities were included in the rent. The pervasiveness of reported incidents with high utility bills, inefficient heating systems, and the various trade-offs that study respondents were forced to make led to further investigation. Doing so resulted in over 80 single-spaced pages of quotes describing various dimensions of energy burden, fuel poverty, or utility hardship. The following accounts demonstrate the unique energy challenges that low-income householders face in the United States today.

The research reveals three separate but interrelated consequences of energy burden: (a) illness and stress, (b) financial challenges, and (c) housing instability. Health risks linked to energy burden include stress and mental health issues associated with large bills and arrearages as well as the dwellings being either too cold or hot, which in turn exacerbate other health conditions such as asthma, malnutrition, and heart disease. Financial challenges include high utility bills and utility-related debts/arrearages that affect household members, including minors. Housing instability refers to shut-offs resulting from non-payment or frequent residential mobility stemming from an inability to secure proper housing due to high utility expenses and/or a history of utility debt.

Snapshots of Energy Burden

Managing the pressure of utility payments—which involved prioritizing and juggling between family and household expenses—was often a complicated task for study participants.¹⁶ Keisha was able to reasonably cover household and family expenses, but because the utility bills came in so high, she bluntly stated, “the only difficulty we have is the lights. Other than that, we make it.” Likewise, Myra, a mother of four young children, echoes this sentiment, “My only worry is that they would cut the gas [off] because of the kids, not for me. I’m hoping they don’t cut it.” Myra’s youngest daughter was only a few months old at the time; therefore, the utility company could not, by law, shut off the family’s services, yet this remained a pressing issue and source of concern for her. The inability to pay down mounting utility debt not only stirred up feelings of anxiety and pressure but also often led to a cycle of shut-offs. The introductory story of Mrs. Stone reveals the constant fear and the actual distress associated with utility service shut-offs.

¹⁵The data presented here is based on a dissertation project conducted by the lead author, Diana Hernández. The study was based on 72 home-based, ethnographic interviews with low-income mothers residing in an inner-city Boston neighborhood—Dorchester, Massachusetts. The project offered detailed analysis of the home and neighborhood contexts of study participants. The study was nested within a larger program evaluation of the Medical Legal Partnership|Boston (MLP) program administered through Boston Medical Center. Respondents were recruited at six community health centers in Dorchester. While home energy and utilities were not key features of the original project, it became evident in the data collection and analysis processes that this issue was pervasive and had serious impacts on the lives of participants.

¹⁶The names of the study respondents cited in this paper are pseudonyms to protect informants’ privacy in compliance with human subject and institutional review board procedures.

Many study participants felt a strong sense of responsibility toward paying bills. However, the experience of not having enough money to pay down the debt completely was very common. Ms. Cherie, a 72-year-old grandmother, showed a utility bill in the amount of \$1,971.52 and said, “my bills have been high, high, high. I pay like 50 dollars here, 100 dollars there, whatever I can pay... but no matter how much I pay, I’ll never get rid of this bill.” Latanya, a young mother with a newborn, explained, “Our heater was broke for awhile, so it was constantly running, and then I had just had my baby so I needed to be warm in the house too. You [would] turn it off, it [would] still be on, and that ran up the bill ... but there was nothing we could do about it. You just gotta pay it.” Leandre explains, “Right now, my light bill is \$442, but I just paid 100 dollars, and I asked them to put me on a payment plan ’cause it wouldn’t even have got that far if I had the money to pay for it. But, since I can’t pay for it, it keeps getting higher and higher. So, when I got the money for it, then I put that on it, and then I asked them for my payment plan so that could bring it down. So hopefully that works to bring it down so I could pay it off.” These challenges often lead to significant debt accumulation or debt transfers that restrict residential mobility. Ratepayers with excessive debts were not allowed to open new accounts and/or were forced to roll over the debt to their new homes.

Upon moving to a new place after an electrical fire, Quanique found herself in a desperate situation in which she admitted, “I haven’t gotten the lights in my name yet, it’s in my youngest daughter’s name for now.” This intergenerational debt transfer creates involuntary debt traps for minors and other household members in an effort to maintain utility services. However, not doing so would create further instability in the housing conditions of these disadvantaged families.

Often the utility bills are quite expensive because of faulty furnaces and appliances as described by Latanya above. In response to inefficient, broken-down, or frequently malfunctioning heating systems, respondents used non-traditional heating sources such as ovens and space heaters as their main source of heat. Doing so puts householders at a greater risk of fire-related injuries and respiratory illnesses such as asthma and colds. Some also had to choose between eating and heating their homes, but as Elaine explained, “the lights are important, but food is a priority.”

Many families employed energy conservation methods for economic, not environmental reasons. Emilia was very mindful of her monthly bill, which came to \$200–\$300 a month in addition to \$900 arrears from her old residence that she is paying down. As a consequence she says, “I use my gas wisely, you know. Only time it’s on is to cook real quick or hot water for showers. You know, not much... I [also] just manage how I use the electric. I stay on top of that. If you don’t need it, you shut it off. If you’re not in the room, there shouldn’t be a light on.” Katalina used a similar approach, she says, “During the day we keep the lights off and until it starts getting dark, then it’s like, we turn on the lights. If we’re in one room we turn off the lights when we come out if we’re staying out that room, we turn off the light.” These forced conservation efforts are often not enough to reduce the utility expenses by much, but they reflect a personal investment and strategic approach to managing the high costs of energy burden. Moreover, these are short-term responses to a perpetual energy crisis that requires systemic change.

Policy Options

Policy changes in both energy assistance and tighter rules around energy efficiency in subsidized housing are needed to address these issues. This link was clear to Mary Jones who said, “my last apartment was huge, but as far as heating it was awful. The heat would be on and it would shut off, and then it would be on again. It was never constant, consistent heat. It was cold in our kitchen. A lot of the bedrooms were cold. So that basically was the start of my high bills ’cause I had to keep on running that senseless heat.” Later in the interview, she connected this to her experience with Section 8.¹⁷ She notes, “there are disadvantages of having a Section 8 [mobile] voucher because a lot of Section-8 apartments [do not] provide you with heat and hot water. It’s always no utilities. It’s not the best apartments. I’m quite sure it’s not the best heating systems ’cause like I said, I live there. I’m a prime example.”

The link between low-income energy and housing policies was obvious to Mary Jones based on her personal experience. By raising this issue here, we hope to make it more apparent to policymakers and other stakeholders as well. Existing policies such as LIHEAP and the various housing subsidy programs are not coordinated and, as a result, low-income householders have an increased burden. We offer policy directives in three key areas that can effect change and require harmonization: (1) energy conservation; (2) energy literacy; (3) utility rate affordability and relief.

Emphasizing and Enforcing Energy Efficiency

LIHEAP does allocate part of its funding for weatherization purposes. Weatherization entails heat-loss reduction and also the reduction of other sources of energy waste in the home environment. Measures include caulking and weather stripping around doors and windows and sealing other unnecessary openings to reduce cold or warm air infiltration or exfiltration, installing attic, wall, and floor insulation and wrapping water heaters and pipes with insulating material, as well as installing of low-flow sinks, switching to energy-efficient light bulbs, and other adjustments to reduce energy expenditures in the home. However, greater efforts toward weatherization and retrofitting are needed in order to achieve the goal of reducing home energy expenditures.

This particular approach is not generally targeted to rental tenants, and does not address the “split incentive” problem. Private landlords, especially those who rent to low-income tenants, often have leases in which the tenants pay all direct energy costs. However, energy efficiency in a rental unit is derived by the infrastructure of the unit (windows, caulking, appliances, furnaces, insulation, etc.). The infrastructure is owned and paid for by the landlord who has no incentive to pursue energy savings because those savings would go to the tenant.¹⁸

¹⁷“Section 8” refers to the federal housing subsidy program that governs rental housing for low-income households in the form of a building assignment or a mobile voucher, which renders more freedom with regard to renting units from private landlords.

¹⁸The split incentive issue is even further complicated by differences between low-income and moderate-income tenants, as well as differences in housing policy, and landlord type (government, private/independent, or non-profit). It is discussed to some extent in this paper on energy burden, but will be addressed specifically in a forthcoming paper by the authors.

Schweitzer and Tonn have outlined a variety of non-energy benefits of low-income weatherization activities. These include benefits to ratepayers and households plus societal, environmental, and economic benefits.¹⁹ Low-income householders, in particular, benefit by fewer shut-offs, reduced transaction costs, and more residential stability. They gain greater safety and health as reflected by less fires, fewer illnesses, and improved comfort in the home.²⁰

We've also seen that weatherization programs within LIHEAP provide significant benefits and savings.²¹ However, the research on these efforts only serves to underscore the need for targeted programs focused on landlords. Other policy analysts have strongly advocated for increased efficiency programs within the LIHEAP context, but these do not address the split incentives concern.²²

One approach is to mandate energy efficiency efforts for rental providers of low-income housing that do not pay for utilities. This tactic specifically targets this specific and widespread problem. Preserving rental housing by upgrading and retrofitting is a more sensible environmental option compared to the alternative of energy-intensive new construction. It can ensure the ongoing availability of affordable rental homes. Moreover, increasing home energy efficiency would reduce the overall costs. Most low-income householders simply receive financial assistance with exorbitant utility bills spawned by inefficient home environments. Weatherization inefficiency is rarely addressed. This approach would also include replacing older and/or faulty appliances such as air conditioners, hot water heaters, boilers, refrigerators, and stoves with those rated as Energy Star through trade-in programs. It could also incorporate incentive programs for private landlords that rent to low-income tenants to make homes and appliances more energy efficient. However, these efforts require support and continued funding from both subsidized housing and LIHEAP sources.

European countries face similar problems, and have no distinct programs that address this key dysfunction other than subsidies for landlords, and standards of basic housing quality that do not provide incentives for high performance levels of energy efficiency and/or weatherization. One exception is the city of Brussels, which has specific subsidies for poorer landlords that are not focused on the low-income tenants themselves.²³

Unfortunately, a mandated program can be problematic because it creates further transaction costs, with capital-intensive investments that may not be fully funded for landlords. A

¹⁹Bruce Tonn and M. Schweitzer, "Non-Energy Benefits of the U.S. Weatherization Assistance Program: A Summary of Their Scope and Magnitude," *Applied Energy* 76 (2003): 321-335.

²⁰Schweitzer and Tonn also found (a) environmental benefits, including the reduction of air pollutants such as carbon, sulfur, nitrogen, carbon monoxide, methane, and particulate matter, (b) societal benefits, including that low-income ratepayers were found to avoid unemployment benefits and have stronger feelings of social equity and improvement in community pride through the establishment of better local housing, and (c) economic benefits in that weatherization motivates local job creation and more income tax revenue for government. The money saved in energy costs translates into an infusion of money spent locally or on other household expenses such as rent and food.

²¹Bruce Tonn, S. Wagner, and R. Schroyer, "Weatherizing the Homes of Low-Income Home Energy Assistance Program Clients: A Programmatic Assessment," *Energy Policy* 31 (2003): 735-744.

²²Nevin, "Energy-Efficient Housing Stimulus That Pays for Itself."

²³European Fuel Poverty and Energy Efficiency, "Detailed Report on the Different Types of Existing Mechanisms to Tackle Fuel Poverty," European Commission Intelligent Energy Branch, 20108, http://www.fuel-poverty.org/files/WP3_D8_final.pdf.

mandate will elicit extensive political opposition from landlords, realty groups, and homebuilder associations. This in an environment in which landlords already have few incentives to take on low-income tenants, and in which state agencies have difficulty recruiting landlords for low-income housing programs.

One approach would be to allow for a small proportion of benefits from efficiency investments to accrue to the landlord. For instance, a weatherization program that upgraded a low-income rental unit could include a small payment—say \$100–\$200—to be credited to the landlord. However, the Department of Energy’s (DOE) Weatherization Assistance Program (WAP) requires virtually all benefits from the weatherization programs to accrue to the low-income tenants.

A second approach is simply to allow landlords to take advantage of weatherization programs that are free or highly reduced in cost, and to ensure there are more of them. The principal state strategy in such cases is to create specialized leases that protect low-income tenants from eviction or rent increases so that efficiency benefits accrue to the tenants. This is done because the “enhanced value of the weatherized property creates an incentive for a landlord to raise the rent, evict the tenant, and/or sell the improved property for a profit, at the expense of the WAP and in contravention of WAP goals.”²⁴ The National Consumer Law Center has analyzed a variety of these leases.²⁵ Unfortunately, they create a further disincentive for landlords to invest in weatherization, despite the fact that they are getting free or significantly discounted upgrades on their property. One way to reduce the landlord disincentive is to ensure that these leases are simple and straightforward.

The third approach used by some states has been a weatherization loan program in which the upfront capital for weatherization is paid back via additional amortized payments that are “piggybacked” on the utility bill to be paid by the low-income tenant. Presumably, the additional payments are “paid back” to the tenants because their actual energy costs are lessened. However, it’s not clear that the energy savings in these sorts of programs outweigh the additional loan costs that burden the low-income tenant. This kind of program requires much less financial involvement by the landlord. Further, states find it appealing because the financial outlay provides greater coverage, and costs less per residence covered. However, low-income consumer advocates remain leery of such programs. Their concerns include a general suspicion of bank-led financing programs given past histories of consumer manipulation by some financial institutions. Further, such programs may undermine more direct programs that do not require tenant contributions, and may complicate legal protections for low-income tenants.²⁶

Overall, the LIHEAP Weatherization Assistance Program has upgraded approximately 100,000 residences nationwide per year from 2003 to 2006.²⁷ As one can imagine, this is

²⁴National Consumer Law Center, *Energy, Utility and Telecommunications*, http://www.consumerlaw.org/issues/energy_and_utility/ (accessed February 10, 2010).

²⁵Amanda Howell, “Memorandum: State Weatherization Landlord Tenant Agreements,” National Consumer Law Center, 2009, http://www.consumerlaw.org/issues/energy_and_utility/content/T-agreement-Memo.pdf (accessed July 2010).

²⁶John Howat, Personal Communication, National Consumer Law Center, Boston, February 7, 2010.

²⁷Weatherization Assistance Program Technical Assistance Center, Welcome to the Weatherization Assistance Program Technical Assistance Center, <http://www.waptac.org> (accessed February 2010).

incompatible with the total need. While it is clear that the total scope of weatherization programming needs to be significantly increased, there are also programmatic deficiencies in the current approaches, along with some encouraging trends. To examine typical concerns we focus on differences between programs in Massachusetts and Iowa.

The Massachusetts program assisted over 6,500 households in 2006. The program is split between fuel assistance and weatherization. Weatherization programs only address a small proportion of total energy efficiency needs: primarily insulation (ducts, walls, floors, sidewall, entrances) and sealing, and limited furnace repair (a complete heating system assessment is conducted however). Their Heating Emergency Assistance Retrofit Task Weatherization Assistance Program (HEARTWAP) primarily conducts emergency repairs and rare replacements of nonfunctioning heating systems through the heating season. Not included in the Massachusetts program are window replacements, appliance (e.g., stoves, air conditioners, refrigerators) upgrades, or furnace upgrades. There is no energy education program (although separate utility programs offer this service). However, in 2009 the stimulus program brought significant additional funds to the Massachusetts WAP; over \$122 million in weatherization funding was granted, with specific outreach to tenants who pay their own energy costs.

The city of Boston has recently begun a test pilot program in conjunction with Next Step Living and other groups to provide a significantly more comprehensive weatherization and efficiency process. This free service is aimed at those “stuck in-between”: low-income residents who do not qualify for LIHEAP or WAP. It provides an extensive and comprehensive energy assessment, but as with Massachusetts overall, does not provide significant appliance, window, or furnace upgrades. Nonetheless, the program does provide a more significant efficiency assessment than the other programs.

Alternately, Iowa has a broader program, incorporating education, appliance upgrades and replacements (heating systems, refrigerators, air conditioners, freezers, water heaters). Essential insulation and sealing measures are also included. In 2006, over 56 percent of the treated households had their heating systems upgraded.²⁸ In all, 2,145 households were treated, at a cost of \$7,009 per household and an average first-year savings of \$435. Iowa is also the recipient of significant stimulus weatherization funds in 2009, over \$80 million.

Energy Literacy Promotion

Low-income tenants can be more proactive if they have an expanded knowledge base regarding energy conservation efforts at home. Policies that promote greater energy literacy and teach methods to conserve energy at home and reduce utility expenses would presumably strongly improve a transition to higher energy efficiency and less energy burden. Such a program would also provide coinciding tools and materials. In addition, exposing low-income householders to household budgeting techniques could be useful in avoiding shut-offs due to non-payment. These efforts can be facilitated with the help of non-profit and

²⁸Dalhoff Associates, “Report on the Impacts and Costs of Iowa’s Low Income Weatherization Program: Calendar Year 2006,” Iowa Community Action Agencies, 2007, <http://www.waptac.org/si.asp?id=1143> (accessed February 10, 2010).

community-based agencies, or from the utility companies that offer discounted rates and other services/benefits for those experiencing hardship.

Critics argue that energy literacy and strategic consumer decisions are less likely for low-income energy consumers, but that argument is countered by the qualitative evidence discussed previously that showed how respondents made smart, careful energy decisions. Further, some non-profits have experienced success in pilot programs that put consumers (low-income and/or less educated customers in particular) in a position to make more informed energy consumer decisions. CNT Energy, a Chicago non-profit, ran a 5-year-long pilot program for real-time electricity pricing that resulted in less electricity use, particularly during periods of high demand and cost. These results counter arguments that residential consumers can't or won't be price responsive in a real-time environment. A component of CNT's program was a strong focus on consumer outreach and education, which presumably led to the increased savings. In particular, "lower income households were more responsive to price signals than higher income households" during the CNT pilot.²⁹ Some weatherization programs incorporate a degree of consumer energy literacy teaching as a component of their program but whether, and to what extent, such instruction is included varies among different states. Comprehensive low-income consumer outreach and education is essential to help address energy burden.

Rate Affordability and Other Relief from Utility Companies

Utility companies can be instrumental in reducing energy burdens among low-income households if they implement programs that base rates on "real" income plus total household expenditures to establish an affordable rate. They can also standardize hardship subsidies by making enrollment easy or automatic for ratepayers with an established hardship. Utility companies can promote enrollment in other eligibility benefit programs (e.g., food stamps or Earned Income Tax Credit), which would offset the effects of utilities hardship by increasing household income.

Utility companies can also help low-income ratepayers by (a) strongly promoting budget or level billing³⁰ to reduce spikes in utility bills that create burdens in extreme weather, (b) eliminating late fees and interest, (c) implementing debt forgiveness programs to ratepayers that honor payment plan schedules, (d) instituting flexible deferred payment arrangements with no or limited penalties, and (e) implementing shut-off alternatives and long-term shut-off protections. These financial relief solutions, perhaps considered generous gestures on behalf of utility companies, can provide incentives for low-income ratepayers to remain up-to-date on their utility bills. The utility companies benefit because they can reduce the costs associated with shut-offs and reconnections. Further, state residents often end up paying greater state costs in healthcare assistance to low-income residents because of the health liabilities associated with energy burden.

²⁹Summit Blue Consulting, "2006 ESPP Annual Report," CNT Energy, 2007, <http://www.cntenergy.org/download/19/> (accessed February 2010).

³⁰Some environmentalists have concerns for level billing because there is little incentive to reduce use during times of high demand. Therefore, they advocate budget billing for low-income clients, so that demand-response incentives still exist, albeit at a reduced rate.

The differences between public and private utilities have an impact on the implementation of these kinds of programs. Private utilities are usually regulated and make profits based on a standard percentage of their costs under oversight from a state utility commission. They have little incentive to pursue such programs, even if they do have cost savings associated with them, unless mandated by the state commission. Alternately, states may also have public utilities such as regional electrical coops or municipal electric utilities that are usually exempt from utility commission regulation. Willingness and/or incentives for rate affordability programs in public utilities vary widely. Since most states have both public and private utilities, coordination of these kinds of programs and mandates would have to be overseen by the State Public Utility Commission and/or the state legislature, depending on jurisdiction.

Coordinated, Comprehensive Low-Income Heating and Housing Policy

In the United States, the 2.3 billion dollars furnished by the weatherization and efficiency programs in the federal stimulus package provide a unique opportunity to improve the provision of these services to low-income residents.³¹ To start, these programs need to be comprehensive and coordinated. An optimal, low-income heating and housing policy could involve the following characteristics:

1. A single point-of-contact outreach organization that brings together various components of home energy and housing policy. This organization would function in essence as an all-embracing low-income housing and home energy “broker.”
2. A home inspection program with a comprehensive energy assessment of all aspects of home heating, cooling, appliances, and other energy needs.
3. A proactive educational and outreach program to improve energy usage, budgeting, and decisions for consumers.
4. A *comprehensive* Weatherization Assistance Program. This would include thorough insulation, heat wrap, pipe wrap, entry sealing, and other heat-loss mitigation. It would also include heat system upgrade and/or repair. Appliance replacement (i.e., water heaters, air conditioners and refrigerators) would be a useful component. Window upgrades could be assessed.³² Large ticket items could be assessed for replacement on a cost-benefit basis as Iowa does. Small energy components would also be included, such as CFLs, programmable thermostats, low-flow showerheads, etc.
5. While the split incentive problem remains, recent outreach in Massachusetts has prioritized low-income tenants who pay their own energy costs, and this could be a clear goal for other programs.
6. Utility rate design can be implemented, which addresses real income and includes some or all of the provisions discussed in the section directly above.

³¹U.S. Congress, House, American Recovery and Reinvestment Act of 2009, In H. R. 1, ed. 111th Congress: Congressional Record, 2009.

³²Nevin, “Energy-Efficient Housing Stimulus That Pays for Itself.”

The potential effects from a comprehensive program are far-reaching, and can include substantial savings over the long term. While the costs of an optimal, comprehensive program as just described would certainly be higher, these would be offset by savings in various areas. Health improvements can be substantial, and may include savings for government agencies in state Medicaid or emergency room costs. Stress and other circular poverty concerns may be reduced, allowing for low-income residents to break the poverty cycle and move on. Government housing agencies in cases where residents do not pay their own energy costs will see reductions in their housing energy costs. Families not facing concerns of “heat vs. eat” or significant debt accumulation will be in an improved situation for pursuing employment or job skills. The United States currently lacks experience with such a coordinated program at the national level. Pilot programs are needed to demonstrate the feasibility, impact, and costs of such an integrated policy.

Conclusion

Reducing the energy burden of the poor requires a joint effort. The detailed sociological and public health data from a housing study conducted in Boston provides evidence of relatively unexplored areas of energy burden among the poor related to illness and stress, financial challenges, and housing instability. We demonstrate the facets of the “policy disconnect” geared toward low-income householders, namely LIHEAP, housing policy, and utility rate-setting, that need to be coordinated to tackle this issue. Ultimately, the situation of those receiving LIHEAP and other assistance is worse than policymakers might presume. We suggest a comprehensive policy directive in three areas (energy conservation; energy literacy; utility rate affordability) that can improve the conditions of low-income families but requires the concerted efforts of LIHEAP, subsidized housing, and utility policy. LIHEAP and WAP are coordinated at the federal level by the Department of Health and Human Services (HHS) and the Department of Energy (DOE), but implemented by individual agencies at the state level. HHS and DOE could implement LIHEAP and WAP policy directives that encourage state-level coordination to address this problem. At the state level, one would look for coordination by state housing agencies (in coordination with city/county-level housing programs), utility direction from the state public utility commission, and the state energy agency. Coordinated approaches could be implemented at the state level or at the regional level according to different utility footprints.

This paper is an initial attempt to underscore the nature and pervasiveness of the problem of energy burden among poor householders. It is, however, based on limited evidence. More studies and empirical evidence are needed to further document the utilities hardship phenomenon, particularly quantitative research with cost-benefit analysis of programs. Further, the concern for the split incentive among tenants and landlords requires significant problem-solving. In addition, greater public awareness of this problem is needed along with a better understanding of the linkages between policies. This can motivate more, and better, funding allocations for policy initiatives that target this issue, and ultimately improve the energy burden faced by low-income families in the United States.

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