

Resiliency in Uncertain Times: Making Energy Efficiency Equitable and Accessible for Low-Income Georgians

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ABSTRACT

In 2016, the Low Income Home Energy Assistance Program (LIHEAP) served 129,446 families in need of immediate assistance with their energy bills in Georgia. It is no secret that lower-income families spend a larger percentage of their income on energy bills than higher income families. As a result, struggling families sometimes find themselves forced to choose between electricity and other basic necessities, such as groceries or healthcare. This high energy burden often leaves lasting negative impacts on health and financial well-being, trapping families in a cycle of poverty. With LIHEAP and the Weatherization Assistance Program (WAP) under constant threat from federal budget cuts, it is imperative that policymakers, advocates, utility leaders, and energy efficiency leaders evaluate equitable measures to help low-income families reduce their energy consumption. Accessible energy efficiency programs are especially needed in Georgia, a state with a poverty rate higher than the national average and where many cash-strapped families struggle with high energy costs. Additionally, the U.S. National Climate Assessment predicts Georgians will face an increasing number of extremely hot days due to climate change, putting more pressure on the grid and making energy efficiency even more essential. This paper will discuss four benefits of energy efficiency that can enable families in Georgia to become more resilient: lower energy costs, financial stability, improved individual health, and improved community health. Finally, this paper will discuss how the following best practices can make energy efficiency more equitable and accessible: on-bill financing tariffs, community development block grants, and workforce development.

Introduction

Georgia ranks 41st for the percentage of people falling below the federal poverty line (FPL), meaning the percentage of families in poverty in Georgia is higher than in all but ten other states (Talk Poverty). In particular, 16% of Georgians fall below the poverty line, 1.6 million Georgians out of 10 million (Talk Poverty). For individuals struggling at or below the poverty line, energy bills represent a large chunk of their monthly expenses. According to Inside Energy, Georgians living below 50% of FPL (disproportionately people of color) spend on average at least 27.8% of their monthly income on energy bills; those living below 50% of FPL in the northern half of the state spending at least 30% on average.¹ In Atlanta, the energy burden is especially acute. Nationally, the city has the fourth highest energy burden (falling behind Memphis, Birmingham, and New Orleans) for all households, and the third highest energy burden in the nation among low-income households (Georgia Tech 2018). The high energy burden plays a key role in the persistent poverty in the state, making housing unaffordable, detrimentally impacting community and individual health, increasing financial instability, and trapping many Georgians into a cycle of poverty.

¹ Boyce and Wirfs-Brock note that economists consider an “affordable” energy bill to be no greater than 6% of income.

Breaking this cycle of poverty requires efforts to reduce the household energy burden for low-income families. “Energy burden” refers to proportion of income a household or family spends on energy bills for heating, cooling, refrigeration, appliances, and lighting. When energy expenditures are equal, the lower a family’s household income, the greater percentage of household income a family spends on energy. This means lower income families experience a higher energy burden than higher income families.² Eventually, high energy bills can make housing unaffordable as well as cause families to compromise their health by cutting back on necessary heating and cooling to save money. For example, living in an improperly heated or cooled homes increases cases of asthma, heart disease, and other respiratory conditions (Haby et al. 2016, 200-207). Increases in health problems lead to more emergency room visits and more medical bills, a significant financial burden for already cash-strapped families. Further increasing their financial instability, some families end up seeking predatory short-term loans with high interest rates to pay energy bills and avoid utility disconnections (Drehobl and Ross 2016, 13). In all these ways, high energy burden fuels a cycle of poverty, making families and communities less resilient to economic and climate shocks. By lowering energy usage, energy efficiency can reduce the energy burden of low-income families, providing greater financial stability and improving the health of families and communities in Georgia. See Figure 1.

However, energy efficiency programs remain out of reach or nonexistent for many low-income families in the state. Energy efficiency retrofits are expensive, and low-income homeowners often lack the creditworthiness to obtain financing to pay for the upfront costs. Additionally, energy efficiency programs that are limited to homeowners often lock out low-income consumers who rent and live in multi-family buildings. Given the current poverty crisis in Georgia, it is crucial that utility leaders, consumer advocates, and clean energy experts work together to develop utility programs that bring energy efficiency within the reach of low-income families. In our increasingly uncertain times, advancing equitable and

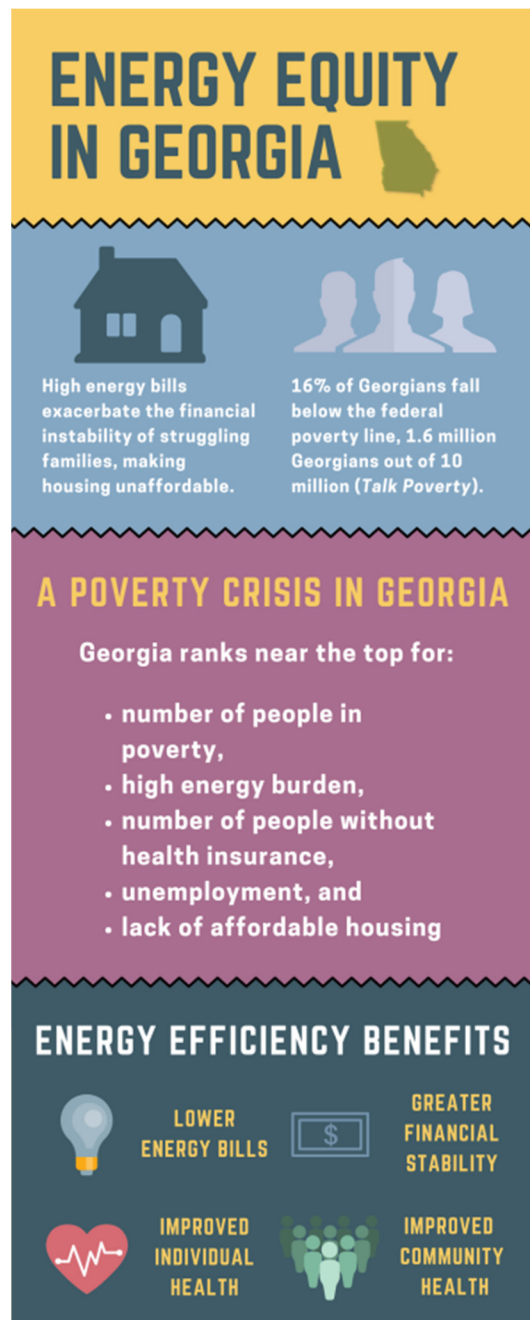


Figure 1. Source: Talk Poverty

² “According to the U.S. Department of Health and Human Services’ most recent report to Congress (2014, with 2009 data), the average LIHEAP recipient home energy burden was 16.4 percent. In comparison, the average home energy burden for all households and non-low income households (those with income greater than the LIHEAP income requirements) were 7.2 percent and 3.6 percent respectively.” See David Honig and Joe Gibbons.

accessible energy efficiency programs means helping families and communities become more stable, healthier, and resilient.

Increasing Resiliency Through Energy Efficiency: Benefits of Energy Efficiency

Lower Energy Bills and Greater Financial Stability

Because low-income families are less likely to have energy-efficient appliances and more likely to live in older, less efficient homes, they often experience burdensomely high energy bills (Berelson 2014). Older, inefficient homes often lack proper insulation and have numerous leaks and drafts, all of which contribute to increased energy usage to meet basic needs. Making matters worse, federal energy assistance programs, like LIHEAP and WAP, are increasingly underfunded and unable to meet the needs of low-income families struggling with high energy bills (Norton et al. 2017). As a result, low-income families often face service disconnection due to inability to keep up with their energy costs. Families who are renting may even find themselves facing eviction when they are unable to pay an energy bill. This leads some families to seek out risky financial alternatives to pay their bills. For example, struggling families in Georgia are more likely than families in all but nine other states to take out short term loans, such as title pawn loans, to make ends meet.³ The high interest rates on these short-term loans make them difficult to repay and can send families into a financial tailspin. In the most basic sense, increasing the energy efficiency of the home can enable families to use less energy to meet their needs, thereby lowering their energy bills and reducing their reliance upon risky financial alternatives.

Energy efficiency takes many forms, from using energy-efficient products such as LED light bulbs, unplugging electronic devices when not in use, and sealing up air leaks, to more expensive measures like repairing leaky ducts as well as insulating attics and crawlspaces. All of these measures reduce the amount of energy needed to power a home, whether for powering appliances or for heating and cooling a home. For example, LED light bulbs use at least 75% less energy and last 25 times longer than incandescent lighting (DOE). Because LED bulbs emit very little heat, they use less energy than traditional incandescent bulbs that release 90% of their energy as heat (DOE). Cooler LED bulbs not only require less energy for lighting but also help keep homes cooler in the summer, requiring air conditioners to work less and, therefore, resulting in lower summer energy bills. By lowering monthly energy bills and freeing up more disposable income, energy efficiency helps protect the financial well-being of low-income families, reduces their reliance on cash-strapped energy assistance programs like LIHEAP and WAP, and decreases their risk of eviction (Haynes, Trachtenberg, and Robinson 2018, 3-4).

Improved Individual and Community Health

Energy efficiency benefits individual health by easing financial instability and improving the overall living conditions of the home. Extreme financial instability often triggers anxiety and depression among low-income families.⁴ The threat of utility service disconnections due to non-

³ Talk Poverty noted that in 2017, 10.4% of Georgians used short-term, high interest loans.

⁴ “The experience of energy insecurity triggered mental health disorders such as anxiety and depression. The constant threat of service interruptions due to non-payment fueled parental fear and stigma. Parents felt judged by

payment leaves parents fearing removal of their children by child protective services (Hernandez 2016). All of this produces chronic stress, putting individuals at greater risk of physical illness (Hernandez, Phillips, and Siegel 2016, 916). Cutting back on necessary heating and cooling to save money further worsens existing respiratory conditions like asthma, leading to more emergency room visits. Temperature fluctuations present a particular danger to small children, elderly, and individuals suffering from diabetes and cardiovascular diseases (Balbus, Crimmins, and Gamble 2016, 25-42). Lack of proper ventilation in energy inefficient homes results in poor indoor air quality due to the buildup of pollutants like mold and carbon monoxide, which adversely impacts respiratory health and can trigger asthma attacks (Norton et al. 2017, 36). The confluence of these factors related to inefficient housing can create a perfect storm of health problems. Meanwhile, families living in energy-efficient homes show lower incidences of asthma symptoms, allergic reactions, and respiratory illnesses.⁵ In energy efficient homes, families are better able to manage their energy needs and, as a result, experience lower incidences of anxiety and depression related to financial stress.

Beyond individual health, energy efficiency helps improve air quality and community health. Low-income communities disproportionately tend to be located near polluting power generation facilities like coal plants. In particular, African-Americans are more likely to live within 30 miles of a coal-fired power plant, which produce harmful particulate matter that can cause or worsen respiratory problems (Haynes, Trachtenberg, and Robinson 2018, 5). Lowering home energy usage through energy efficiency enables low-income families to reduce their reliance on polluting power generation facilities and improving the overall air quality communities. But the community health improvements do not stop at air quality. Energy efficiency also spurs local job growth and opportunities, providing exciting economic opportunities for low-income communities, which frequently higher unemployment rates than higher income communities (Yellen 2017).

Demand for energy efficiency jobs are projected to grow in the coming decade, and most of these jobs are and will be local.⁶ Insulation work, for instance, has a projected employment growth rate of 5 percent from 2016 to 2026 with median annual salaries ranging from \$35,660 to \$45,430 in 2016 (BLS 2014).⁷ Local hiring and job training programs, similar to what ComEd has implemented in Chicago, can help tackle the unemployment issues in low-income communities and ensure that these communities have access the job opportunities in the energy efficiency sector (ComEd 2017). Through ComEd's grant of \$3 million to four organizations in Illinois under the state's Future Energy Jobs Act, the company hopes to create a pipeline of solar training programs (ComEd 2017). This pipeline is particularly important for members of low-income communities who have difficulty penetrating the growing solar job market. As the Act notes, the solar pipeline training effort will focus on vulnerable individuals, "individuals who are

persistent surveillance on the part of child protective services and feared losing parenting privileges." See Diana Hernandez.

⁵ Norton et al. explain that sealing up leaks and cracks to prevent energy loss or moisture intrusion also cuts down on pests like cockroaches and reduces incidences of asthma attacks, allergy symptoms, etc. related to pest exposure. See Norton et al., at 60 and 65.

⁶ "The majority of workers who spend at least a percentage of their time working on energy efficiency are employed by small companies with 25 or fewer employees and they exist in every city and town across America. Keeping the jobs local has multiplier effects because the less we spend on our energy bills, the more money can be spent on other things, creating even more jobs across the local economy." See Sheryl Carter.

⁷ Almost half of all energy efficiency jobs are held by individuals with a high school diploma or less, and average wages are well above the national median. See ACEEE's *Fact Sheet: Energy Efficiency and Economic Opportunity*.

from economically disadvantaged and environmental justice communities, alumni of the Illinois foster care system and Returning Citizens” (ComEd 2017). Advancing energy equity requires a focus on not only reducing energy burden but also ensuring that disadvantaged and low-income communities have access to the clean energy and energy efficiency jobs sector.

Making Energy Efficiency More Equitable and Accessible

While energy efficiency products like LED light bulbs are now an inexpensive (with purchase prices now at roughly \$2 per standard 60-watt equivalent LED bulbs), costlier, more effective weatherization measures like duct sealing and attic insulation can run upwards of \$1000. This locks many low-income families who lack capital or creditworthiness to finance such expenses out of energy efficiency opportunities. Utility energy efficiency programs often provide generous rebates, such as Georgia Power’s Home Energy Improvement Program, but rebate programs still require customers to pay the upfront costs. Implementing inclusive financing models and focusing on improving energy-burdened communities, based on the following recommendations (see Figure 2), can help ensure that energy efficiency programs reach low-income families and communities:

- On-bill financing. Design and implement an on-bill financing option, based on the Pay As You Save model, to eliminate high upfront costs that prevent low-income families from making energy efficiency upgrades;
- Community development block grants. Use CDBGs to broaden energy efficiency access to entire neighborhoods where families are struggling with energy bills in inefficient homes; and
- Jobs and workforce development. Increase access to the energy efficiency job sector by integrating workforce development into energy efficiency programs for low-income communities.

On-Bill Financing

Small utilities and electric municipal cooperatives have begun implementing Pay As You Save (PAYS), a novel on-bill tariff model that broadens access to low-income families who otherwise would not be able to pay for energy efficiency measures. On-bill refers to programs that enable customers to finance energy efficiency improvements at no upfront cost. Customers pay for the efficiency measures over extended terms on their monthly utility bills, and the savings from efficiency improvements typically exceed the monthly cost, allowing customers to save both energy and money at the offset. Utilities can determine a customer’s eligibility for an on-bill program by looking at the customer’s bill payment history instead of a full credit report. As a result, on-bill programs allow customers with lower credit scores to access financing for energy efficiency measures that can drastically reduce their bills. Tariff-based on-bill programs such as PAYS tie the utility’s cost recovery for the measures to the home’s meter rather than to the property owner, enabling renters as well as homeowners to access energy efficiency measures (ACEEE). Participants in these programs can expect to see significant energy savings due to energy efficiency improvements, thus lowering customers’ bills and reducing the risk of utility disconnections for nonpayment.

The PAYS model has seen a rise in popularity in the last few years (Clean Energy Works). Small utilities like Roanoke Electric Cooperative in Virginia and Ouachita Electric

Cooperative in Arkansas have launched their own programs and become successful case studies throughout the southeast. In 2016, Ouachita completed energy efficiency projects for 91 single-family customers, and 50 multi-family customers, with duct sealing as the most common upgrade (OEC 2017). As of now, no large investor-owned utility in the southeast has established a PAYS program, but these small utility programs show that there is demand and need for the model. In a heavily rural state like Georgia, which has 42 electrical municipal cooperatives, the example from a heavily rural state like Arkansas serves as useful model for broad implementation. Ouachita Electric Cooperative provides a particularly useful example for Georgia because its membership and service territory resemble that of many co-op memberships and territories in Georgia: rural, many residents are low-income, a number of customers rent, and many live in homes over 40 years old (Harvell 2017). Implementing a similar program at Georgia electric cooperatives could go a long way toward lifting the energy burden for struggling families around the state.

Using CDBGs to Improve Energy-Burdened Communities

Community development block grants (CDBG) could further broaden access to entire neighborhoods where families are struggling with energy bills in inefficient homes. These funds enable grantees to address issues affecting an entire neighborhood rather than just home-by-home. The U.S. Department of Housing and Development distributes CDBG funds to state and local governments according to their population size, poverty level, and key housing factors. States and local governments must use the funds to help communities address housing affordability and economic opportunity, among other community development issues. Home energy inefficiency is a housing issue that, when left unaddressed, decreases housing affordability. As such, cities often use CDBGs to weatherize homes and install energy efficiency retrofits to preserve affordable housing (Ross 2014). Generally, grantees spend around a quarter of their CDBG funding on housing, particularly on rehabilitating owner-occupied homes as well as homes occupied by renters (Ross 2014). Using CDBGs in conjunction the federal HOME Grant,⁸ cities can create robust, targeted programs to reduce the energy burden in low-income communities (HUD).

Increasing Access to Energy Efficiency and Clean Energy Jobs

In addition to reducing the energy burden, increasing access to the energy efficiency job sector should be part of any strategy to address energy equity and resiliency in low-income communities. To this effect, CDBGs can be used to fund workforce development programs for communities (Ross 2014). Advocates and cities seeking to reduce energy burden should consider how to align CDBG funds with efforts to integrate job creation, workforce development, and economic opportunity into energy efficiency projects. Another simple way to integrate economic opportunity into energy efficiency projects involves requiring utility-based energy efficiency programs to hire local, small contractors to complete energy efficiency audits and retrofits. Georgia Power employs this approach, hiring local contractors to complete most of the energy

⁸ “The HOME Investment Partnerships Program (HOME) provides formula grants to States and localities that communities use - often in partnership with local nonprofit groups - to fund a wide range of activities including building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income people.” See *United States Department of Housing and Urban Development (HUD)*.

efficiency retrofits for participants of their low-income and general energy efficiency programs. Building upon this strategy, energy efficiency program managers should consider partnering with local contractors to create a localized jobs pipeline that targets low-income communities and communities of color being served by the programs. The pipeline could involve working with local community colleges, which are tuition-free in Atlanta, to create courses and certifications required for basic energy efficiency work and paid on-the-job training with a specified local contractor upon completion of the coursework.

POLICY RECOMMENDATIONS

- **On-bill financing.** Design and implement an on-bill financing option, based on the Pay As You Save model, to eliminate high upfront costs that prevent low-income families from making energy efficiency upgrades and installing rooftop solar;
- **Community development block grants.** Use CDBGs to further broaden energy efficiency access to entire neighborhoods where families are struggling with energy bills in inefficient homes; and
- **Jobs and workforce development.** Increase access to the energy efficiency job sector by integrating workforce development into energy efficiency programs for low-income communities.

Figure 2

Energy Equity And Access For All

Addressing the high energy burden in low-income communities requires an understanding of the myriad ways high energy bills trap whole families into poverty. Effective and equitable solutions to the energy burden in low-income communities center on ensuring the fair distribution of the benefits and burdens of the ways we consume energy. In other words, equitable energy efficiency solutions should help reduce mounting energy costs so that families do not have to choose between groceries and the light bill, help make homes and communities healthier, and increase access to the energy efficiency jobs sector for members of these communities. When families do not have to worry about whether they will be able to keep the lights on, they are more resilient and able to handle shocks. When communities have access to economic opportunities, they are more resilient and able to handle shocks. Resiliency requires a focus on equity and access, which means reducing the barriers that block struggling families from tapping into energy efficiency.

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