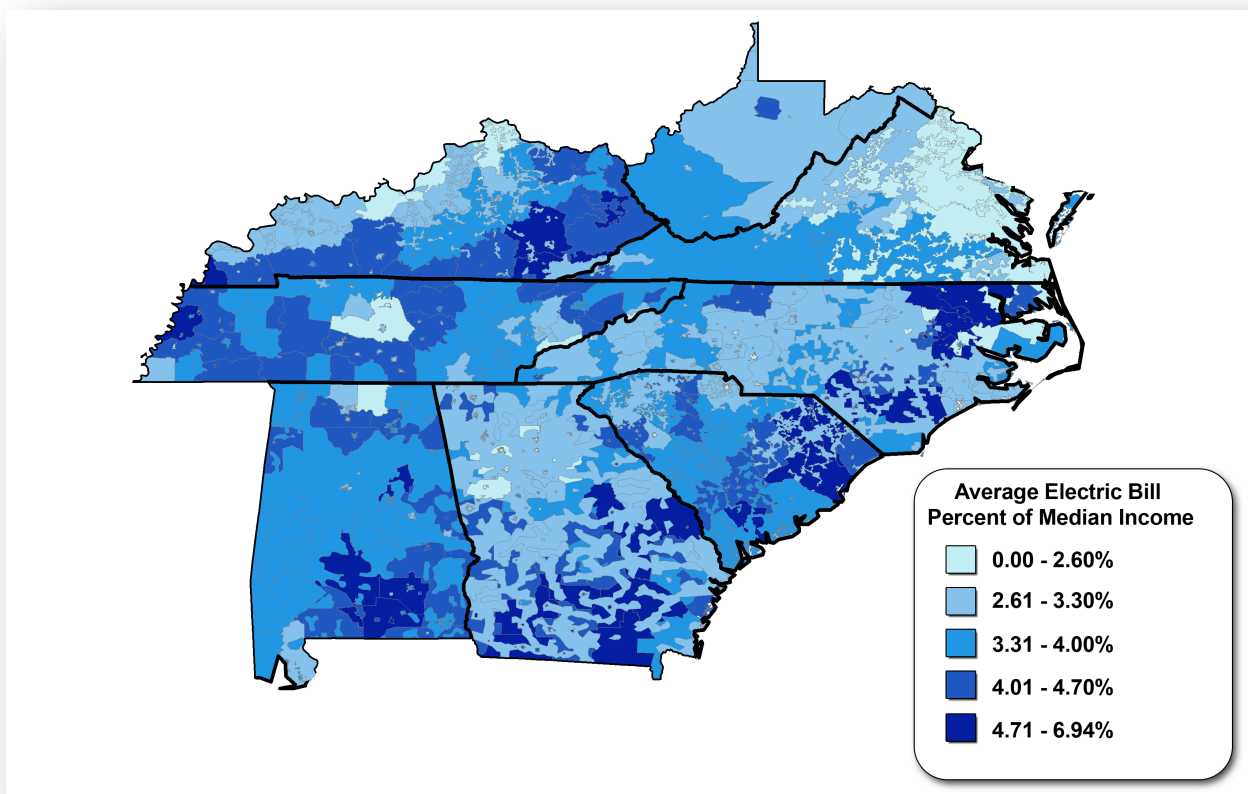


POVERTY AND THE BURDEN OF ELECTRICITY COSTS IN THE SOUTHEAST:

The Case for Utility Home Energy Efficiency Loan and Tariff Programs



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Introduction

The impact of home energy costs on impoverished families in the South has become more severe since the turn of the century. More and more families have fallen into poverty due to steadily declining incomes while also seeing the cost of heating and cooling their homes and operating appliances increase substantially.

After declining to an all-time low of 12.8% in 2000, the average poverty rate in the South has increased steadily, exceeding 16% each year from 2010 to 2012. At the same time, energy costs have also been on the rise. In 2001, the average southern family spent over \$1,500 on energy. By 2009, average energy costs had increased by 33% to over \$2,000.¹ The majority of these costs are due to electricity use, which accounted for 80% of total home energy costs in 2009.

Due to the combination of high energy costs and increased poverty, fewer families can afford to weatherize their homes or purchase energy efficient appliances that will reduce their energy bills. This unnecessary energy waste worsens poverty because it forces families to spend more of their limited budget on energy costs, rather than food or medicine. Over the past few years, this situation has been exacerbated as a result of budget cuts for two key federal programs — the Weatherization Assistance Program and Low-Income Home Energy Assistance Program — that help families deal with high energy costs and make their homes more energy efficient.

Given the uncertainty over future funding for these two programs, and the need for a broader focus on residential energy efficiency, a more stable source of support for investing in energy efficiency is needed. Electric utilities across the U.S., particularly in southeastern states, can and should play a more central role by financing comprehensive home energy efficiency improvements. In turn, the utilities will be helping families reduce the burden of energy costs substantially, thereby alleviating the impacts of poverty. Greater investments in energy efficiency will have the added benefit of promoting economic development and creating jobs in the energy services industry in this especially impoverished region.

Background

The purpose of this analysis is to make the connection between poverty and electricity costs in the Southeast, and to argue for stronger investment in residential energy efficiency on the part of the region's electric utilities. As described above, Southeast residents face extremely high rates of poverty and a higher-than-average burden of electricity costs. This is especially true in areas served by public power utilities — rural electric membership cooperatives and municipal utilities — than for areas served by large investor-owned utilities (IOUs). Areas served by public power utilities typically have a higher poverty rate and electricity cost burden than areas served by IOUs, and are therefore in even greater need for new or expanded investments in residential energy efficiency. Unfortunately, despite the significant potential for improving energy efficiency across the region, there are few utility programs available to help families overcome the upfront cost of making substantial home energy efficiency improvements.

¹ Average energy costs for homes in the South were approximately the same in 2012 as they were in 2009. See <http://www.eia.gov/todayinenergy/detail.cfm?id=10891>.

One of the most proven and cost-effective models being adopted by utilities throughout the U.S. is known as “on-bill financing (OBF).” With OBF, a utility finances the full cost of home energy efficiency improvements, and the customer repays the utility through an extra charge on their monthly electric bill using all or a portion of the savings that are achieved as a result of the efficiency upgrades. The intention of these programs is for the savings to exceed the payments, so that the customer immediately sees a reduction in their electricity costs.

To date, only a handful of OBF programs exist in the region, and even many of these are new and/or in need of additional funding in order to be developed to scale. Fortunately, new federal loan programs are developing that will provide funding to public power utilities for the purpose of developing residential energy efficiency programs, including OBF loan or tariff programs. The most notable of these is the U.S. Department of Agriculture’s new Energy Efficiency and Conservation Loan Program. However, it remains up to the utility to take advantage of this funding (or to use other sources of capital).

For this reason, we hope that this report helps strengthen the argument for the development of OBF home energy efficiency loan programs throughout the Southeast, especially by rural electric cooperatives, which serve many of the areas and families that are most in need of such programs. To support this effort, Appalachian Voices created the Energy Savings Action Center,² an online tool designed to educate the public about energy efficiency and any programs their electric utility may already offer, help residents encourage their utilities to develop OBF programs, and help them find energy savings businesses in their area.

To supplement this report, we have published three maps that illustrate the need for comprehensive home energy efficiency investments throughout the Southeast. The maps portray the average poverty rate and burden of electricity costs by electric utility service territory and the location of utility OBF programs.³

Poverty Rates by Electric Utility Service Territory

Of the 22 states with poverty rates above the national average in 2011, ten of them are in the Southeast.⁴ One of the largest expenditures for families in the region, particularly for low-income residents, is the cost of electricity. However, strong investments in energy efficiency by electric utilities in the form of comprehensive home energy efficiency loan programs can significantly lower residential energy bills, thereby helping to alleviate poverty. By increasing demand for energy services, these programs would also promote local economic development.

To understand the relationship between poverty and the burden of electricity costs for families served by different types of electric utilities, Appalachian Voices calculated a weighted average poverty rate for each category of electric utility in the Southeast: rural electric cooperatives, municipal utilities, and IOUs.⁵

² Visit the Energy Savings Action Center at <http://www.appvoices.org/saveenergy>.

³ These maps can be viewed through Google’s new Maps Gallery at <http://maps.google.com/gallery/publisher?pub=Appalachian+Voices&hl=en>.

⁴ See: <http://www.ers.usda.gov/data-products/county-level-data-sets/poverty.aspx#.Uw6kWvRdUQZ>.

⁵ To calculate the weighted average poverty rate, we used U.S. Census Bureau county-level poverty data and population data for utility service territories.

Our analysis found that each of the two types of public power utilities serve communities with a higher average poverty rate than that of IOUs. The average poverty rate for rural electric cooperative service territories is 7% higher than that for IOUs, while for municipal utilities it is 12% higher. Taken together, the average poverty rate for the two public power utility categories is 9% higher than for IOUs.

Table 1: Average poverty rate in the Southeast, by type of electric utility (2012)

	Total customers	Average poverty	Percent greater than IOUs
Rural electric cooperatives	5,907,062	17.9	7%
Municipal utilities	3,523,491	18.8	12%
Total public utilities	9,589,182	18.3	9%
Investor-owned utilities	11,741,516	16.8	

It is notable that for all three utility categories, the average poverty rate for each type of utility in the Southeast was higher than the national average of 15.9% in 2011. In fact, of the 477 total utilities in eight southeastern states, 393 serve an area with an average poverty rate above the national average. These results underscore the need for greater utility investment in residential energy efficiency in the Southeast, particularly in areas served by public power utilities.

The Burden of Electricity Costs in the Southeast

According to the federal Energy Information Administration, the average U.S. household spent 2.7% of family income on electricity and gas bills in 2012.⁶ However, according to our analysis, Southeast residents spent an even greater amount of their income — 3% on average — on electricity costs alone (not including gas for heating), so the total burden of energy costs can be even higher. Furthermore, as illustrated by the following maps, the electricity cost burden was greater for families served by public power utilities than for those served by IOU’s.

⁶ See <http://www.eia.gov/todayinenergy/detail.cfm?id=10891>.

Figure 1: Electricity cost burden for rural electric cooperatives in the Southeast

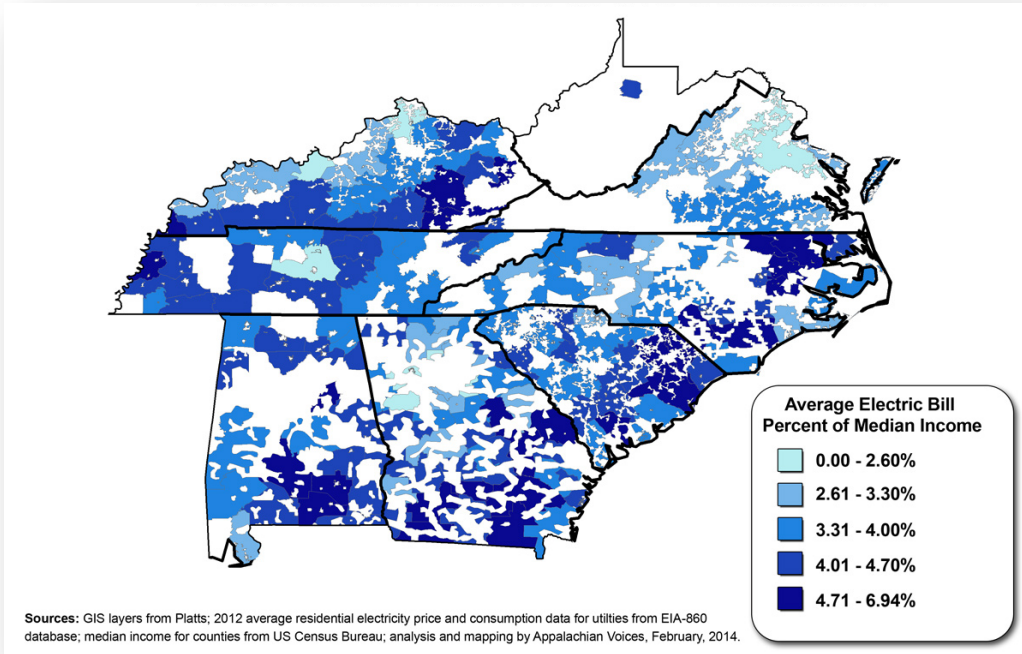
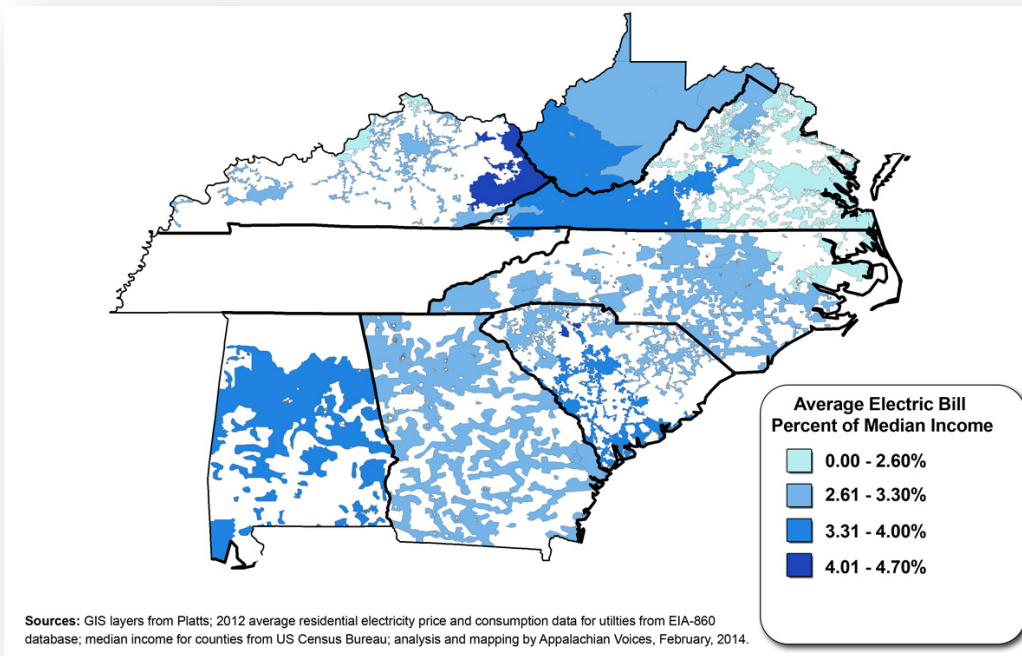


Figure 2: Electricity cost burden for investor-owned utilities in the Southeast



The higher electricity costs for residents of the Southeast, specifically those served by public power utilities, are due to a combination of higher electricity rates, higher demand due to inefficient housing, and lower average incomes. These combined factors result in a higher electricity burden for residents, most notably those served by rural electric cooperatives.

Table 2: Burden of electricity costs for Southeast residents, by type of utility (2012)

	Average rate (cents/kWh)	Average demand (kWh/year)	Avg. annual bill	Median income	Electricity cost burden
Rural electric cooperatives	8.9	14,089	\$1,582	\$47,322	3.30%
Municipal utilities	9.7	13,446	\$1,388	\$46,328	3.00%
Investor-owned utilities	9.3	13,233	\$1,427	\$50,834	2.80%
Total	9.2	13,507	\$1,463	\$48,239	3.00%

The average cost burdens shown in the table above mask the fact that electricity costs can average more than 20% of family income for low-income families each year.⁷ Electric utilities in the Southeast should help reduce the electricity cost burden for their customers by developing low-cost energy efficiency loan programs. Such programs can provide significant savings on home energy costs, thereby alleviating poverty while promoting local economic development.⁸

The Case for On-Bill Home Energy Loan and Tariff Programs

Poverty, the burden of electricity costs, and the lack of economic diversity in the Southeast are exacerbated by the lack of strong energy efficiency investments on the part of the region’s electric utilities. The higher-than average burden of electricity costs, measured as the percent of family income spent on electricity bills, reduces a family’s ability to pay for other essential needs. Much of this burden is due to the fact that many homes lack proper insulation, are poorly weatherized, and use old, inefficient appliances, resulting in significant energy waste.⁹

One way that utilities can help alleviate the impact of electricity costs on low-income families while supporting new economic opportunities is by developing comprehensive OBF loan or tariff programs. Such programs have proven to be a cost-effective means for achieving significant reductions in energy use and costs for residents of all income classes.

Two of the most prominent and successful models in the Southeast are the Help My House pilot program developed by the Electric Cooperatives of South Carolina and Central Electric Power Cooperative, and eastern Kentucky’s How\$mart program developed by the Mountain Association for Community Economic Development and participating rural electric cooperatives. These two programs have achieved an average savings of 36% and 21%, respectively, for their participating customers, resulting in respective annual savings of approximately \$1,150 and \$600.

⁷ See http://www.opportunitystudies.org/repository/File/energy_affordability/Forecast_Burdens_08.pdf.

⁸ See <http://www.aceee.org/blog/2012/09/energy-efficiency-and-economic-opport>.

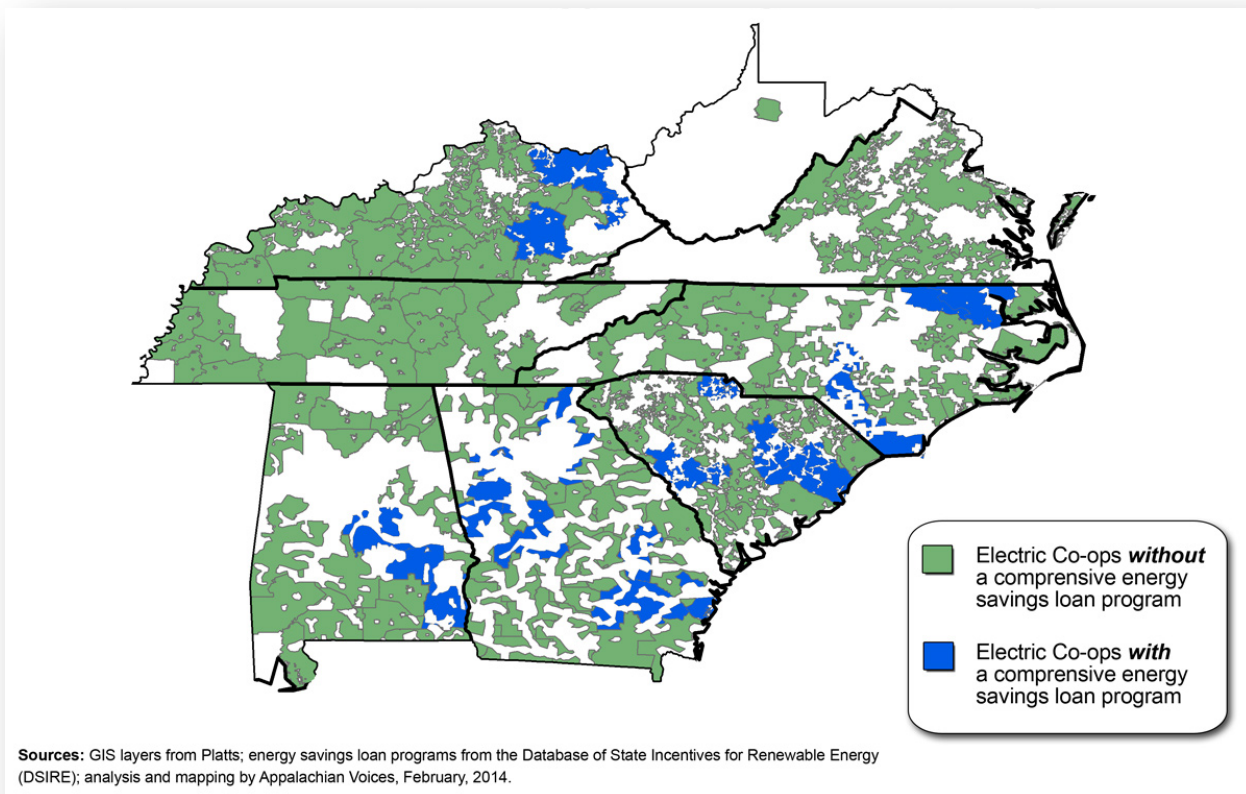
⁹ See http://www1.eere.energy.gov/library/pdfs/48098_weatherization_assisprog_fsr4.pdf.

Furthermore, an economic analysis conducted by Coastal Carolina University estimated that a full-scale Help My House program in South Carolina could produce 1,500 new jobs after one year, and more than 7,000 jobs after 20 years.¹⁰ The analysis concluded that the program, within 10 years of full-scale implementation, would save South Carolina's residents a projected \$166 million per year in addition to the energy savings allocated to repaying the loans.

While 31 out of the 477 utilities in the Southeast currently offer this type of program, only one out of eight residents, at most, has access to financing for home energy efficiency. Therefore, the potential exists for significantly reducing energy costs throughout the Southeast. For many families, on-bill energy efficiency loan or tariff programs would significantly aid in alleviating the impacts of poverty, and would support new and existing jobs in local communities where economic opportunities are at a premium.

The map below shows which Southeast rural electric membership cooperatives offer OBF programs. More information about OBF programs and detailed information on all electric utilities in the Southeast can be found at appvoices.org/saveenergy.

Figure 3: Rural electric cooperatives in the Southeast with (and without) energy efficiency loan/tariff programs



¹⁰ See <http://www.eesi.org/south-carolina-co-ops-release-results-help-my-house-energy-efficiency-pilot-20-jul-2013>.