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Lifting the Burden: Leveraging Existing Programs to Reduce Energy Costs in Low-Income Communities

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Abstract

Nationwide rising retail electricity rates have disproportionately affected Latino communities. From 2000-2015, Latino household income declined slightly, while average residential electricity prices rose significantly. Consequently, a larger proportion of household income is being allocated to electricity consumption. Investment in new electricity infrastructure, greater adoption of renewable energy, and costs associated with environmental compliance are driving the rising electricity prices. Meanwhile, the Latino population has yet to fully recover from the 2007-2009 recession and median Latino household income is significantly below the national average. By examining existing national programs that reduce energy costs in low-income communities, this paper identifies opportunities for improvement and provides pragmatic policy solutions.

Introduction

Electricity is fundamental to modern life and responsible for many of the amenities we have come to rely upon such as powering appliances, providing light, heating and cooling our homes, and storing food.¹ The past decade presided over historic changes to the United States' electricity system. Carbon emissions in the power sector de-

clined,² the cost of renewable technologies plummeted as performance improved,³ and electricity markets became more competitive.⁴ However, over the past 15 years, the electricity burden—defined as the proportion of total income spent on electricity—afflicting the Latino community grew. The first section of the paper explores the electricity burden trend and discusses its implications. The second section focuses on the role of government in ensuring affordable energy and provides recommendations to improve and expand existing programs.

The Latino Community's Electricity Burden

Since 1990 the number of Latino households in the U.S. has nearly tripled, growing at a 4% average annual rate thru 2015. Although modest income gains occurred in the 1990s, by the 2000s Latino household income growth had begun to stagnate, contracting slightly by -1% between 2000 and 2015.⁵ Further analysis shows 2000 to be the apex coming off strong growth beginning in 1992, before leveling off and then deteriorating into the 2007-2009 recession,⁶ from which recovery has been tepid.⁷ By 2015, median Latino household income in the U.S. was \$45,148, well below the national average of \$56,516.⁸ Moreover,

of the roughly 50,000 Latino households in the U.S. as of 2015, 20.4% lived below the federal poverty line (FPL).⁹ In comparison, median income for white households was \$77,166 in 2015 and 11.6% of total U.S. households were below the FPL.¹⁰ Coinciding with this period of stagnant income growth has been a 54% rise in average residential electricity prices nationwide.¹¹

There are two components reflected in an electric bill: the cost of generation and the cost of transmission and distribution.¹² Influencing these two components are factors such as the price of fuel, electric infrastructure development and operation, weather conditions, and environmental regulations.¹³ Over the past decade greater investment in transmission and distribution lines to improve electric reliability and capacity,¹⁴ the construction of renewable energy resources, and the implementation of critical environmental regulations have caused electricity rates to increase.¹⁵

The trends affecting electricity price are causing Latino families to direct a greater share of their income towards paying electricity bills. The share of income expended on electricity is referred to as the electricity burden. The point at which household expenditures on electricity transcends "a nuisance"

Latino Household Income & National Electricity Rates

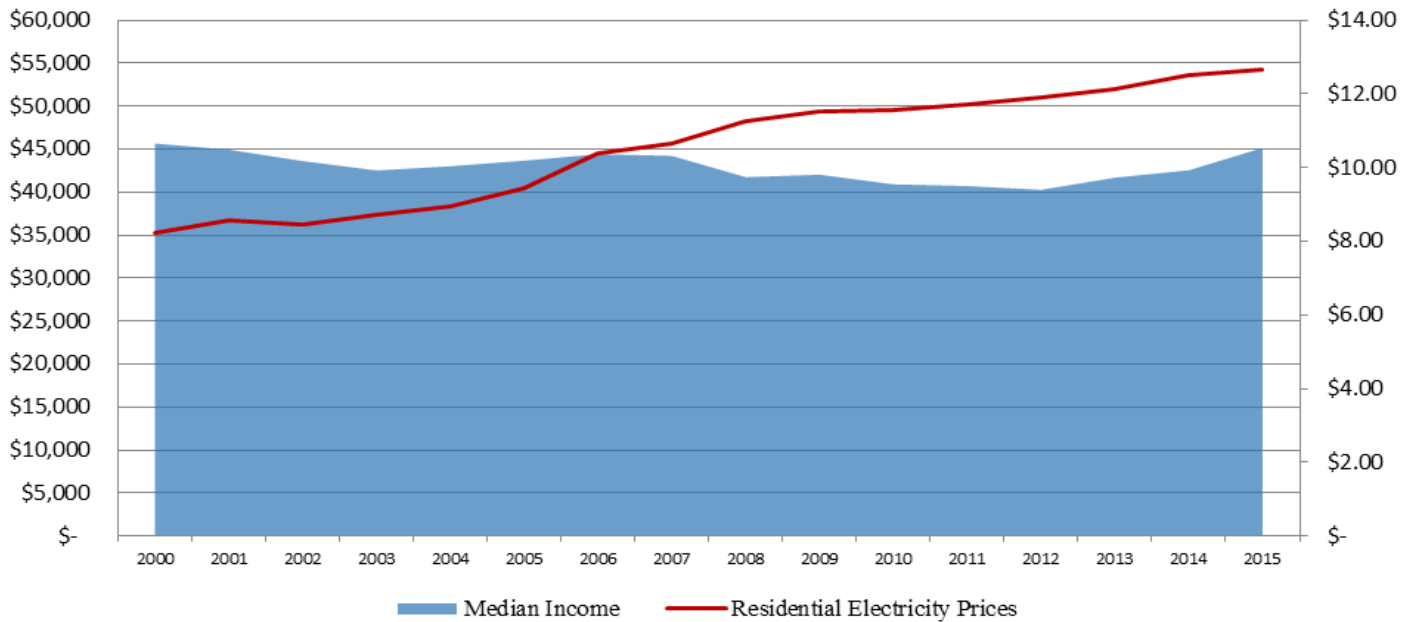


Figure 1: Latino Household Income & National Electricity Rates

and becomes “a burden” is not generally agreed upon. Thresholds vary, derived by observing other costs such as food and shelter and then extrapolating a proportion. One approach is to identify the national median percent of total income spent on electricity bills and either set the electricity burden as any percent beyond that or choose a standard deviation above that percent.¹⁶ For the purposes of this paper, a high energy burden will be greater than the national median electricity burden. Based on residential electricity price data collected by the EIA, the average annual cost of electricity is \$1,370.¹⁷ Since median household income in 2015 was \$56,516, the percent of income spent on electricity was 2.4%. In 2015 the FPL was set at an annual income level of \$24,250 per four-person family.¹⁸ Consequently, 20% of Latino families are spending roughly 6% of their total income on electricity bills; almost three times more than the national average.

The Importance of Lifting the Electricity Burden

National economic growth and the

availability of inexpensive electricity are inextricably linked. Energy is a critical input for nearly all goods and services and throughout the 20th century the U.S. economy moved in tandem with electricity consumption.¹⁹ This trend gradually changed as the U.S. economy matured, becoming more efficient and less energy intensive.²⁰ However, energy remains central to maintaining and improving living standards, helping to improve productivity and health.²¹ Consequently, inexpensive electricity has become a fundamental human need and as such it is within the purview of government to ensure equitable access to all citizens when market failures persist. Threatened by exclusion are low-income households who allot a greater proportion of their total income to utility bills and are disproportionately affected by high electricity prices.

All funds in low-income households are generally accounted for to meet basic needs, thus pressure from one category can force them to decide between core needs.²² As a result, rate increases can reallocate money towards electricity bills, reducing spend-

ing on food, healthcare, savings, housing, and education.²³ Moreover, electricity price shocks are typically beyond the consumer’s control, including factors such as inclement weather, geographic location, government policy, and structural changes in the energy market.²⁴ These shocks, which are particularly harmful to low-income families, can cause families to rapidly accumulate unsustainable amounts of debt attempting to meet monthly bill payments.²⁵ Further, numerous studies have concluded that the inability to pay utility bills is a major cause of home evictions and homelessness.²⁶ In addition to the societal benefit of reducing overall energy consumption, low-income families in particular stand to gain the most from weatherization and efficiency improvements. Low-income families tend to live in older housing stock dating back to the 1970s and therefore lack adequate insulation, contain antiquated heating and cooling systems, and own less energy efficient appliances; all factors leading to higher energy bills.²⁷ In comparison, higher income households generally live in newer homes, devoid of these shortcomings. Further compounding

“Electricity is fundamental to modern life and responsible for many of the amenities we have come to rely upon”

the issue, 35% of U.S. households rent, with the majority of renters earning under \$50,000 annually.²⁸ Renters, have little excess budget and lack the incentive to invest in energy upgrades as they are unlikely to live in the same unit long enough to realize a benefit from such an investment. Landlords also lack the motivation to make these upgrades, since utility bills are passed on to the tenants.²⁹ Fortunately, inexpensive and innovative solutions have existed for over 40 years with some institutionalized across the nation.

Current Policies & Programs

Reducing energy bills is a well-entrenched national policy objective, with Congress first providing home energy assistance during the Organization of Petroleum Exporting Countries (OPEC) Oil Embargo of 1973-1974.³⁰ The embargo constrained U.S. oil supply, driving up the cost of heating oil and compelling Congress to assist with lowering home energy bills. Leading the way to cut energy costs, state officials in Maine partnered with Community Action Agencies (CAAs) to seal air leaks in homes with techniques such as covering windows with plastic sheeting, caulking, and weather stripping, improving efficiency and reducing home energy bills.³¹ Building off Maine’s success and the legal precedent set by the Economic Opportunity Act of 1964, which established the War on Poverty, congress directed CAAs to administer energy assistance programs nationally. Initial measures provided assistance through home weatherization and household education programs, later expanding to include crisis relief for households facing immediate shutoff, and eventually providing direct energy bill subsidies for low-income households.³²

These national objectives are pursued through congressional appropriations, executed at the state and local level, and often complemented or augmented by states in order to provide greater relief for disadvantaged residents. At the national level, major federal programs include the Department of Health and Human Services’ (HHS) Low Income Home Energy Assistance Program (LIHEAP) and the Department of Energy’s (DOE) Weatherization Assistance Program (WAP), which focus predominantly on bill assistance and home weatherization, respectively. Additionally, some executive branch agencies support state and municipal level programs, such as the Residential Property-Assessed Clean Energy program, by providing analysis, data, and technical expertise.

Low Income Home Energy Assistance Program

Established by Title XXVI of the Omnibus Reconciliation Act of 1981 (Public Law 97-35), the LIHEAP statute primarily provides grants to states, territories, and tribes (collectively referred to as “grantees”) through two mechanisms: regular funds and emergency contingency funds.³³ The statute employs a formula to determine the amount of regular funding states are apportioned, while emergency contingency funds are retained by the President and the Secretary of Health and Human Services, to be distributed at their discretion.

Federal requirements for LIHEAP are minimal, with application decisions broadly bestowed to the grantees. Rather, the statute demands for 16 assurances regarding program operations to be certified in order for grants to be awarded. The assurances include acceptable forms of assistance, who can

be served, and the administration of funds. Income-based household eligibility for assistance is decided by the states, and is typically between 150% and 110% of the federal poverty line (FPL), or 60% of the state median income. Grantees can also elect to make LIHEAP assistance available for households in which at least one member is a recipient of other social welfare benefits such as Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), or Supplemental Nutrition Assistance Program (SNAP).³⁴

The U.S. Department of Health and Human Services (HHS) estimates between 31.1 million and 38.5 million households qualified for LIHEAP assistance in FY 2014 across the lower (110% FPL) and upper (150% FPL) range of income eligibility. In comparison, roughly 6.3 million households received LIHEAP assistance in FY 2014, implying only 16% to 20% of all eligible households received federal aid.³⁵ In order to overcome this discrepancy, states may turn to donations from higher income utility customer to cold weather funds, charitable groups, and, occasionally, structured bill payment plans.³⁶ The risk of unpaid bills to utility companies tends to be mitigated by distributing costs to paying customers; a practice that cost all other ratepayers an estimated \$6 billion in poverty costs and does not necessary aid those unable to pay.³⁷ The inability to provide federal assistance to over 80% of eligible households is a significant appropriations failure. Inadequate coverage is further aggravated by the susceptibility of the program to fraud and improper payments. A Government Accountability Office (GAO) report from 2010 randomly sampled 7 states and discovered that 9% of LIHEAP recipients had used invalid identity information. The report notes that in some instances this occurred due to typos,

“Rate increases can reallocate money towards electricity bills, reducing spending on food, healthcare, savings, housing, and education”

however in other cases the information of deceased relatives information was used to qualify for eligibility.³⁸ In order to reconcile the coverage disconnect, Congress should change how LIHEAP is funded, moving from a fixed annual amount to a percentage of total eligible households per state based on annual estimates submitted to HHS. Accompanying eligibility estimates, states should also be required to submit “LIHEAP Program Integrity Plans” outlining key element of their fraud prevention systems in order to reduce fraud and waste.³⁹ At present only 16% of households with incomes at or below 150% of the FPL receive LIHEAP assistance. This percentage should be raised gradually over a ten year period to allow the requisite administrative support system to develop until 100% of eligible households are covered and adequately served.

Although LIHEAP funds can be applied in various ways, such as crisis relief or weatherization, they are mainly used for direct bill assistance. Of the \$3.5 billion in LIHEAP funding for FY 2014, 55.8% went to heating and cooling, 21% went to energy crisis assistance, and 9% went to weatherization measures.⁴⁰ Direct bill assistance for heating, cooling, and energy crisis captures the majority of LIHEAP funds and appears as reduced rates or small credit amounts dispersed throughout the year as needed. The attraction of bill assistance is twofold: implementation is easy and relief immediate. However, it does little to address the underlying reasons assistance is needed in the first place. While LIHEAP provides relief in the short-run the program is unsustainable as a purely bill assistance program. As the institution responsible for authorizing and appropriating federal funds, Congress should pass legislation instructing HHS to convene a taskforce to determine the

resources needed to substantially reduce overall demand for bill assistance within the next ten years and report the finding back to Congress. The taskforce should also be instructed to provide estimates on the number of potential jobs such an undertaking would create and its economic impact.

Weatherization Assistance Program

The U.S. Department of Energy’s (DOE) Weatherization Assistance Program (WAP) was established in 1974 under Title IV of the Energy Conservation and Production Act (Public Law 94-385, as amended) and is a formula block grant program to assist low-income families. As set forth by statute, the law intends to increase the energy efficiency of homes to reduce dependence on foreign energy and prevent future energy shortages. The large marginal gains from efficiency upgrades to housing stock occupied by low-income families coupled with their inability to otherwise afford home modifications were the primary basis for the bill’s enactment.⁴¹ The act ascribes responsibility for implementation to DOE and since WAP’s inception in 1976, over 7 million households have benefited, with priority given to homes with elderly or handicapped members.⁴²

Funding for WAP is appropriated by Congress and dispensed by DOE to states thru two methods: a fixed allocation, which varies by state, and a variable formula allocation.⁴³ Total state fixed allocations sum to \$171,858,000.⁴⁴ The variable formula accounts for a state’s climate, the estimated number of low-income homes, and residential energy expenditures. Additionally, WAP can retain up to 20% of funding for training and technical assistance at the national, state, and local level.⁴⁵

States in turn allocate funds to local governments and nonprofits who utilize a national network of over 900 service providers to purchase and install of weatherization material.⁴⁶ Program guidelines outline suitable energy efficiency measures including the installation of: insulation, efficient windows, water heaters, air conditioners, ventilation equipment, and storm doors.⁴⁷ Savings from these efficiency measures are permanent, providing long-term benefits to low-income households. Moreover, for every \$1 invested, weatherization returns \$2.72 in related benefits and supports over 8,000 direct jobs nationwide.⁴⁸ However, appropriations for WAP have been erratic and changes in program requirements have historically caused major implementation delays opening the program up to criticism.⁴⁹

A study conducted by the Oak Ridge National Laboratory (ORNL) evaluating WAP concluded the average cost per unit weatherized in 2008 was \$4,695 (2013 dollars).⁵⁰ In comparison, the combined present value of energy and non-energy benefits per unit was \$22,156 (2013 dollars).⁵¹ Therefore the program achieved an impressive overall savings-to-investment ratio of 4.72. Households that received weatherization also participate in utility administered Percent of Income Payment Plans, which are subsidized by other ratepayers. Approximately 22% of the energy cost savings from weatherization went to full ratepayers in the form of a reduced subsidy. Additionally, numerous non-energy benefits, such as health impacts of refrigerator replacement, greater home value from weatherization, reduced foreclosures, and reduced carrying costs from arrearages, were excluded from the ORNL evaluation, implying the total benefit calculated was a conservative estimate.⁵²

The budget process is highly politicized in the present Congress; however the success of WAP and its high return on investment demand enhanced funding levels. Similar to LIHEAP, WAP funding should be changed from a fixed allocation to a more fluid method that better reflects the needs of low-income families. As such, funding should be based on WAP's saving-to-investment ratio. The President should direct DOE to evaluate the proper amount of funding necessary for WAP's saving-to-investment ratio to equal 1 in order to support the Agency's budget request. If the new budget request is substantially greater than current WAP funding, DOE should also be required to submit a plan to gradually disburse the funds to avoid burdening state administrators and causing implementation delays.

Residential Property-Assessed Clean Energy

Low-income homeowners attempting to mitigate rising energy costs face the difficult reality that home energy improvements require significant upfront capital. Residential Property-Assessed Clean Energy (PACE) programs aim to overcome this barrier by allowing homeowners to obtain energy efficiency, renewable energy, and water conservation home improvements through a tax collected with their annual property taxes.⁵³ This innovative financing mechanism, currently available in 16 states, provides access to capital by financing the high cost of home improvement projects over a long repayment horizon – up to 20 years.⁵⁴ Proponents of PACE assert that annual energy savings from improvement projects typically exceed the annual tax payment.⁵⁵ Additionally, homeowners, who generally move every 5 to 7 years, are reluctant to pursue long lifespan investments; however PACE financing is attached to the property not the owners, allowing the assessment to transfer with the sale of the property. States can implement residential PACE programs by passing legislation permitting the use of assessments at the local level.⁵⁶ In turn, local governments have the flexibility to enact ordinances, resolutions, or policies authorizing vol-

untary PACE property assessments and collection methods tailored to regional market needs.⁵⁷

Since the PACE program was first conceived in 2010, with the DOE publication "Guidelines for Pilot PACE Financing Programs," 31 state governments have passed PACE enabling legislation and 16 states have active programs.⁵⁸ Over the past six years a few critical shortcomings of PACE programs have emerged. Most notably, a perverse incentive exists for contractors selling home upgrade products to maximize sales irrespective of energy reduction gains.⁵⁹ Consequently, unnecessary projects are sold to consumers, with little material benefit or oversight. PACE has also been offered to low-income homeowners without them being informed of their eligibility for free energy improvements under WAP or another program.⁶⁰ An additional barrier to PACE is that almost 30% of low-income households rent, providing little incentive for property level invest.⁶¹ To address some of these issues, DOE published a "Best Practices Guideline" in 2016 with recommendations for current and future programs based on public comments.⁶² State legislatures should pass amendments institutionalizing DOE's guidance and require the laws be updated whenever new guidelines are published. In order to encourage state lawmakers to pass amending legislation, DOE should offer data and technical assistance to states who adopted the most up-to-date guidelines.

Conclusion

The Great Recession continues to have a profound effect on Latino households, contributing to plateauing income and declining household wealth.⁶³ This has coincided with a period of rising residential electricity prices, causing a greater proportion of Latino household income to be allocated to electricity bills rather than other critical expenditures such as food, healthcare, and education. Moreover, with 20% of Latino households living below the federal poverty level, a substantial portion of the population is increasingly financial strained by high-

er electricity prices.

Given the centrality of energy in the modern era, the federal government operates two national residential programs to help low-income households afford energy. HHS' Low-Income Home Energy Assistance Program directly helps low-income households by providing direct bill assistance, while DOE's Weatherization Assistance Program reduces overall utility bills by improving home energy efficiency. At their core both programs are highly successful, helping millions of families annually, however, both are underfunded and room for improvement exists. Government support in the form of technical expertise and resources is also provided to innovative approaches seeking to drive down the cost of energy, such as the residential PACE program.

At present LIHEAP is unable to provide coverage to all eligible households and the program is susceptible to fraud. Moreover, the emphasis on supplementing utility bills rather than shrinking them fails to address the underlying problem. In order to improve the effectiveness of LIHEAP two changes should be made: (1) Congress should fund LIHEAP based on the number of eligible households rather than a fixed appropriation. Funding should increase gradually to provide ample time for the administrative capability of the program to develop. (2) Congress should also instruct HHS to establish a taskforce to responsible for examining how to reduce the need for bill assistance within the next ten years and report back to Congress.

WAP is a highly successful federal program with a proven record of delivering significant economic returns. Greater success can be achieved if WAP's appropriation is changed from a fixed amount to an amount that places the savings-to-investment ratio at 1. Although the budget process in congress is highly contentious, WAP has an incredibly successful financial record and benefits all 50 states.

State and local governments are increasingly turning to innovative financ-

ing mechanism, such as PACE, to overcome the affordability barrier and promote energy efficiency adoption. However, these programs are still evolving and various concerns have arisen. State legislatures can address PACE's shortcomings by updating state laws to incorporate DOE program guidelines and DOE can encourage the deployment of best practices by aiding states that have adopted the newest guidance.

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