

Energy Efficiency Equals Economic Development.

Jerrold Oppenheim and Theo MacGregor are the co-authors of a number of studies for Entergy, including "The Economics of Education" in 2002, and "The Economics of Poverty," released in 2006. Early in 2008, Entergy asked Oppenheim and MacGregor to research and answer some critical questions:

- Are poor people in the Entergy states better off economically than they were ten years ago?
- If not, what public policies can help ensure that we can answer this question positively ten years from now?

Introduction

Poverty in the Entergy service territories runs deep. Residents of the Entergy states remain at or near the economic bottom of the U.S. For example, the U.S. Census, Bureau of Labor Statistics and other data sources tell us:

- The high percentage of children living in poverty in Mississippi and Louisiana rank them at the bottom of the scale in the U.S. (50 and 49, respectively). Arkansas and Texas tie for 44th place.
- Hunger is rampant in the Entergy states, with more than 18 percent of people in Mississippi not having enough to eat (ranking it 51 among the states), followed by Texas at 49, Louisiana at 45, and Arkansas at 44.
- While the percentage of adults in Entergy's service territories that finished high school in 2006 rose in each state from the level in 2000, they were still in the very bottom ranks in the nation: Mississippi at 51; Texas at 50; Louisiana at 49; and Arkansas at 45.

A statistical review of the past decade shows:

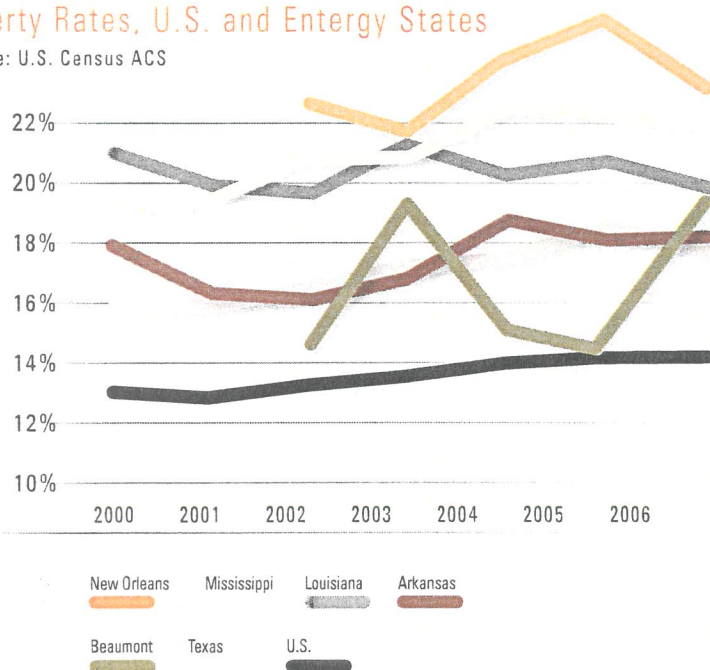
- Official poverty rates in the Entergy jurisdictions are high and increasing, sharply in some jurisdictions.
- Households in poverty are losing ground—the federal poverty line is rising two percentage points faster than income at the bottom.
- Incomes for the bottom 60 percent, adjusted for inflation, are about the same now as in 1998. Meanwhile, the top 20 percent has enjoyed an income increase of 7 percent, so the gap between rich and poor is widening. Income concentration at the top is the greatest since 1929.

Despite these appalling statistics, not enough is being done to ease the suffering, let alone to alleviate the conditions that cause poverty. For example, government data show:

- Welfare support has decreased in the past 10 years in each of the Entergy states, most dramatically in Louisiana.
- Very few eligible customers receive fuel assistance for heating in the Entergy states (less than 2 percent in Texas, 6 percent in Louisiana, 19 percent in Mississippi and 30 percent in Arkansas).
- Even after an emergency release of fuel assistance funding in the 2007-2008 heating season, fuel assistance provided only about 73 percent as much fuel as it did two years before.
- The National Climatic Data Center shows that deaths from heat-related causes are rising. During a prolonged heat wave in August 2007 alone, in the central and southeastern U.S., more than 50 people died and many more suffered from heat exhaustion, often due to inadequate air conditioning. National Weather Service data show that "Intense heat is the most dangerous extreme weather condition facing low-income Americans when measured in terms of individual deaths and injuries."
- Except for Arkansas, which has set a state minimum wage that is \$0.40 per hour higher than the federal minimum, none of the Entergy states exceeds the federal minimum wage of \$5.85 per hour (\$6.55 in July 2008, \$7.25 in 2009), thus setting the income from working at below the poverty line. A person would need to work 57 hours a week at \$7.25 just to reach the federal poverty level for a family of four (\$20,650).

Poverty Rates, U.S. and Entergy States

Source: U.S. Census ACS



What Can Be Done?

Low-income energy affordability is one of the most potent tools states have to stimulate the economy and soften income disparities, while providing to everyone benefits that far exceed the investment. Research indicates that across the Entergy jurisdictions, investments in low-income energy efficiency would produce an economic impact that is more than 23 times the original investment. Much of the economic impact is driven by the creation of jobs throughout the region—216 jobs for every million dollars of investment.

For Every \$1 Million in Investment

Multipliers across Entergy Territory

	Increased Economic Output	Jobs
Energy Efficiency		
Net effect of investment	\$3,699,944	31
Net effect of bill savings	\$4,397,586	63
Effect of environmental improvement	\$1,707,728	13
Effect of non-energy benefits	\$13,211,457	109
Total	\$23,016,716	216
Assistance		
Net effect of investment	\$2,108,640	44
Effect of non-energy benefits	\$1,791,523	15
Total	\$3,900,162	59

Eliminating or alleviating the energy crisis of poor people is an extremely cost-effective way to fight poverty and move people toward self-sufficiency. When people can meet their essential energy needs, they can then address other fundamental problems, such as hunger, education, health care and employment. Such investments can lower the burdens currently placed on charitable resources, and support federal and state anti-poverty efforts. It is impossible to address poverty without addressing energy use and costs.

Anti-poverty investments such as energy efficiency can also help attack the hopelessness that may underlie a “generational poverty gap.” By partnering with community action agencies, state public utility policy can be a force for breaking through despair and establishing new behavior patterns that will better serve the participating families and the community as a whole.

With utility bills lowered through efficiency improvements, families have more money in their pockets to spend at the grocer, the pharmacy, department stores and clothing stores – creating more jobs for people who then spend their new incomes on more products and services, thus creating yet more jobs. It is what economists call the multiplier effect. The analysis presented here is derived from data maintained by the U.S. Department of Commerce Bureau of Economic Analysis (BEA). An investment in energy efficiency thus creates jobs to fabricate, distribute, and install products ranging from weatherstripping to thermostats to compact fluorescent light bulbs (CFLs). Analysis tracks this path of dollars in particular economic sectors within a state or region or across the nation and describes their economic and employment impact.

The study analyzes the economic effectiveness of state-mandated utility-ratepayer-funded investments in low-income energy efficiency (such as those begun in Arkansas and Texas), including how such

investments multiply through the economy. In addition to creating jobs, the investments:

- lower energy bills, which puts more cash in the hands of low-income households to be spent on goods and services, multiplying as above (this is partially offset by the negative multiplier effect of reduced utility revenue);
- reduce pollution—particularly emissions of carbon dioxide, which in turn reduces property and health damage from climate change, conservatively measured as the cost of controlling carbon dioxide (i.e., the projected price for an allowance to emit carbon dioxide); and
- result in other benefits not otherwise accounted for, such as reduced fires, lower crime rates (currently a trillion dollar drag on the economy), less homelessness, increased health, and reduced costs of utility collection and termination, the value of which also multiply through the economy.

Unlike many studies of this kind, this analysis takes into account the impact of transferring the funds necessary for the investments from ratepayers, so the baseline impact is subtracted in order to compute the net impact of using the funds to support energy efficiency. The analysis conservatively does not account for the value of the job and building science training provided in what are, in many cases, entry-level jobs. The analysis compared the economic impact of investment in energy efficiency targeted to low-income utility customers with that of public investments (e.g., tax credits and infrastructure such as roads) to attract large manufacturing plants. Incentives for manufacturing are commonly regarded as a good use of public money because of the considerable economic activity generated, including many well-paid jobs. This study does not question the need for public investment to attract or keep large-scale manufacturing plants. The research points to the benefits of investing in both manufacturing plants and low-income energy efficiency.

Energy efficiency is more than the casual tacking up of some weatherstripping and screwing in a few light bulbs. It is a systematic search for inefficiency, based on building science, coupled with professional installation of measures designed to counter the inefficiency. The process begins with a thorough building audit that may employ such technology as appliance meters, blower doors, and infrared cameras in order to detect inefficient appliances and leaks of conditioned air. This is followed by replacement of inefficient appliances (where cost-effective) and a comprehensive regimen of air sealing using yes, weatherstripping, but also such advanced materials and processes as foam and densepack insulation.

Using the Commerce Department multipliers, the analysis shows that investments in low-income energy efficiency generate more economic activity—and more jobs (even if not as well paid as manufacturing jobs)—spread across a state rather than

to self-sufficiency. Energy is such a significant part of a family's budget—government data show that some elderly recipients who live on fixed incomes pay as much as 35 percent of their annual incomes for energy bills—that it is impossible to address poverty

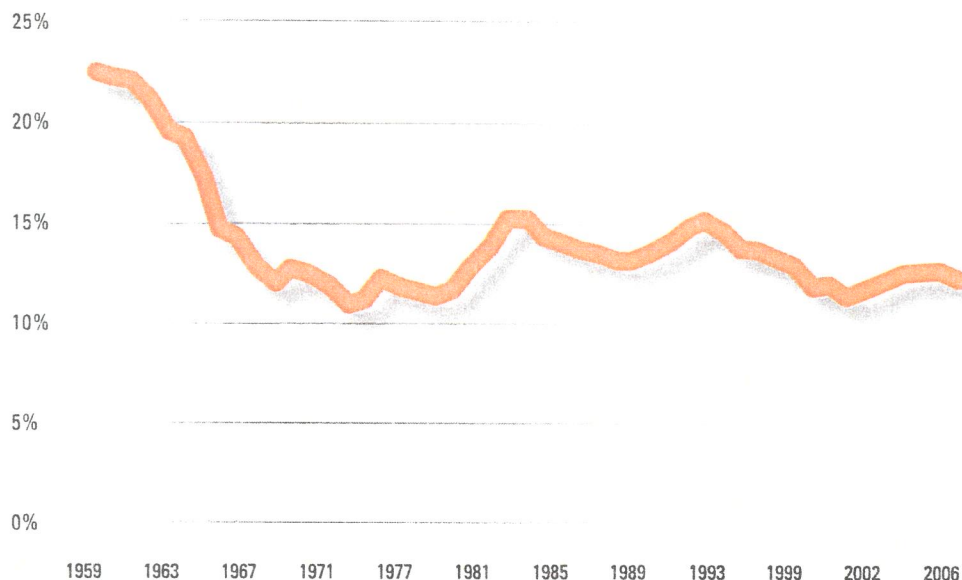
without addressing energy use and costs. Helping families permanently reduce their energy bills also attacks the hopelessness that poverty imposes by teaching that one can overcome poverty by planning, rather than passing it on to one's children.

State public energy policy is at a well-situated nexus to help break the poverty cycle. State policy can build on the existing energy assistance infrastructure (federal fuel assistance and weatherization programs, and private fuel funds), as well as on utility customer relationships. State public policy can facilitate public utility work with stakeholders to help poor families help themselves by using energy more efficiently.

Low-income energy efficiency is not commonly seen as a tool for economic development, yet this investment to fight poverty is a powerful source of regionwide economic development.

Poverty Rate

Source: U.S. Census



concentrated in one area. Also, efficiency investments can be much smaller. For example, a low-income energy efficiency program costing \$1 per month per residential customer would provide investments of \$12.5 million per year in Arkansas, \$19.9 million in Louisiana, and \$12.6 million in Mississippi—\$45 million in all—compared to an average of about \$95 million to attract a typical manufacturing plant to any one of those states. The comparative economic results are shown in the table:

Multipliers across Energy Territory

For every \$1,000,000 in investment

	Increased Economic Output	Jobs
Energy Efficiency	\$23,016,716	216
Manufacturing Plant	\$8,600,916	71

Conclusion

The public record clearly shows that public policy is capable of substantially reducing poverty. The programs of the War on Poverty (left shaded area above) and the jobs and tax policies of the 1990s (right shaded area) were especially effective.

Confronting the low-income energy crisis is an extremely cost-effective way to reduce poverty and thus support families' transition

About the authors

A graduate of Harvard College and Boston College Law School (Juris Doctor), Jerrold Oppenheim directed energy and utility litigation for the Attorneys General of New York and Massachusetts. In his 35+-year career, he has played a key role in the development of regulatory policy in U.S. states as legal counsel and advisor for state governments, consumer organizations, low-income advocates, labor unions, environmental interests, industrial customers, and utilities.

Theo MacGregor founded MacGregor Energy Consultancy in 1998, specializing in electric industry consumer, low-income, and energy efficiency issues. Prior to founding her own firm, Ms. MacGregor spent more than ten years with the Electric Power Division of the Massachusetts Department of Public Utilities, most recently as director. Ms. MacGregor holds an MBA from Simmons School of Management in Boston, Mass.



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