

THE ECONOMICS OF POVERTY:

How Investments to Eliminate Poverty Benefit All Americans

By Jerrold Oppenheim and Theo MacGregor

In 2006, we were commissioned by Entergy Corporation, an electric company operating in some of the poorest states in the United States, to examine the potential impact that investing in the eradication of poverty could have on all U.S. households.

The result of our study is a 20-page report titled *The Economics of Poverty: How Investments to Eliminate Poverty Benefit All Americans*. While the full report addresses how an investment in the elimination of poverty could affect health, education, employment, homelessness, hunger and crime, this document focuses primarily on the energy-related findings contained in that report and in a report done for Entergy in 2001.

Overall, we found that investing in the eradication of poverty in America would increase the resources of each American household by an average of more than \$18,000 a year, equivalent to a wage increase of more than 30 percent. Targeted investments, such as in weatherization and energy efficiency in low-income households, could bring even greater returns.

We calculated the return on investments in energy-efficiency in low-income households to be seven-fold. Our estimate is conservative, however, because it does not quantify many of the benefits that accrue from weatherizing the homes of low-income families, and we chose the low end of estimates for others. As an Oak Ridge meta-evaluation (http://weatherization.ornl.gov/download_files/Con-484-april02.pdf) also concluded, “the total monetized nonenergy benefit estimate is lower than it could be because the estimate does not contain some benefits that have not been expressed in monetary terms.” As that report and others demonstrate, it is possible to generate much higher benefit/cost ratios.

Program details and estimated savings through investments in low-income weatherization and energy efficiency to mitigate the effects of poverty are provided below. They are described in detail in the original study conducted for Entergy in 2001, which can be found at <http://www.democracyandregulation.com/detail.cfm?artid=14&row=4>.

Inability to Pay Utility Bills

Poor people cannot pay the full cost of heating and lighting their homes. Utilities, governments, and social service agencies have long assisted low-income ratepayers in paying their bills through such programs as the Low Income Home Energy Assistance Program (LIHEAP), charitable fuel funds, levelized billing, discounts, home weatherization, energy efficiency, energy usage education and arrearage forgiveness/debt management.

Utility bad debt costs around \$1 billion annually. According to *Utility Collections Best Practice: Theory Into Practice* (a Peace Software White Paper published in May 2005), American utilities, through their ratepayers, paid an average of \$3 per customer to collect bad debt, and, in some cases, the cost was as high as \$10. From information provided by the LIHEAP Clearinghouse and the National Community Action Foundation, we calculated that if all Americans lived in weatherized and energy efficient homes and had the income to pay their full share of utility bills, all other ratepayers would save nearly \$6 billion in poverty costs, including fuel assistance, lifeline and other rate assistance; weatherization and efficiency costs; and the costs of late and unmade payments, such as service disconnections.

Weatherization and Efficiency Benefits

In the 2001 study, we calculated what investments in weatherization and energy efficiency for low-income households would be worth. Since that time, of course, electric utility rates have risen dramatically, so the benefit/cost analysis results presented here would be even higher today.

The analysis included electricity and non-electricity benefits from a standard utility low-income electricity efficiency program, funded by a charge of one mill per kilowatthour (kWh) assessed on all kWhs sold in the United States, and operated in all 50 states. One mill (one-tenth of one cent) per kWh, which for a typical residential customer would be about \$1.00 a month based on average annual residential consumption of 10,331 kWhs, would raise about \$3.8 billion nationally for a low-income efficiency program. This is in addition to what is spent currently in some states, including Department of Energy (DOE) programs. We calculated that, over time, the investment would be returned seven-fold.

Here is what our 2001 study determined it would buy (undiscounted) for *each year* of spending on a typical low-income program:

Benefits of one mill for low-income efficiency	US
Low-income homes served	3,500,000
KWH saved (life of measures)	84B
Participating Customer bill savings	\$6.9B
Savings to other ratepayers (arrears, shut-offs)	\$1.4B
Saved moving costs	\$540M
Increased earnings of children (from staying in school without being homeless)	\$28M
Avoided fire damage	\$2.7B
Saved uninsured medical costs & lost work	\$2.9B
Increased property values	\$8.9B
Net GDP gain	\$280M
Net wage & salary gain	\$1.4B
Water saved	\$1.6B
Total of these savings (life of measures)	\$26.6B
as multiple of cost	7.0

Families saved from homelessness	1,100,000
Net new jobs	75,303
Gallons of water saved	400B
CO2 saved (Tons)	52M
Equivalent to removing cars	1.3M
Natural gas saved (MCF)	941M

All savings are stated on a lifetime basis. Costs and savings were based on studies by the Oak Ridge National Laboratory and experience in Massachusetts.

Electric utility savings included kWh bill savings to the customer and savings to utilities (i.e., ratepayers) due to reduced costs of carrying arrears and disconnecting and reconnecting customers. Low-income customers are more likely to be in arrears due to lack of funds with which to pay utility bills than are non-low-income customers. Since studies show these customers want to pay their bills if they can, measures that save them money are more likely to result in arrearage payments from low-income customers than from others.

A review of studies of arrearage reduction benefits conducted by the Tellus Institute in 1995 showed that energy efficiency programs generate reductions in arrearages ranging from \$0 to \$469 per participating household. In Colorado, utility debt write-offs dropped 18 percent at weatherized homes. Further, arrearages dropped 26 percent, emergency gas assistance calls dropped 74 percent, and bills were reduced 22 percent. Benefits to the utility also include reductions in complaints and collection costs, increases in customer comfort and health, and increases in discretionary income. The Tellus Institute study is one of many addressing arrearage reduction benefits; findings in other studies vary.

Moving expenses, homelessness. Research shows that termination of utility service is a frequent cause of a low-income family's moving to other shelter or even to homelessness. For example, a study by Liz Robinson of the Energy Coordinating Agency of Philadelphia found that 32 percent of low-income households move after utility termination. In surveys of individuals living in emergency shelters, 7.9 percent of respondents cited utility terminations as the reason for their homelessness. The study noted that of the many factors contributing to homelessness, mitigation of high energy costs is among those "most susceptible to remedy."

Low-income energy efficiency improvements reduce forced mobility by reducing the level of energy/utility expenditure required to attain a minimal living standard, thus freeing up funds to pay rent or other required housing costs while also paying the utility bill. In addition, weatherization improvements ameliorate dangerous or substandard conditions in heating equipment or the building shell that might otherwise force a household to relocate.

Other Benefits. There are many other benefits from weatherizing and making low-income homes more energy efficient, including reduction in fires from using unconventional and dangerous heaters; reduction in illnesses caused by lack of heat in the winter or too much heat in the summer, leading to missed employment as well as avoidable medical costs; an

increase in property values from weatherization investments; the value of continuous electricity service to the customers; and customer comfort.

Societal Benefits. In addition to individual customer benefits, society benefits when low-income households can better afford utility service. When low-income families spend less on energy, they increase spending in other sectors of the economy. Plus, energy expenditures typically represent cash outflows from a regional economy, while efficiency-based savings, particularly after accounting for multiplier effects, produce significant net employment and local income gains.

Although not quantified for this study, environmental benefits, especially carbon dioxide emission reductions from reduced electricity generation, are also substantial. Demand reductions that lower total demand and thus lower the highest bid accepted in the electricity wholesale marketplace also benefit all ratepayers. Taxpayer benefits from cost reductions due to efficiency programs include lower fire department costs; reduced Medicaid costs; reduced building and health department costs; reduced homeless shelter costs; and increases in the real estate tax base due to increases in property values. Quantifying these benefits would increase the benefit/cost results.

In addition to all of these tangible benefits, there is value in increasing the level of equity in society. The energy cost burden (i.e., the percentage of household income devoted to home energy costs) of a low-income household is as much as five times higher than that of a median income household. Paying energy and utility bills requires that other necessities must be foregone. This energy budget dilemma is faced uniquely by the poor.

Investing in weatherization and energy efficiency services for low-income households can thus reduce the effects of poverty and provide a multitude of benefits to both the low-income customers themselves and the rest of society, at a ratio of more than \$7.00 for every dollar spent.

Avoidable Costs of Poverty

The full *Economics of Poverty* study provides details about other avoidable costs of poverty not quantified in our study of efficiency. These costs include unemployment, homelessness, lack of adequate education and healthcare, crime, hunger, and anti-poverty programs and initiatives for which the average non-low-income household contributes. Among these, the study quantified some, but by no means all, of the costs that could be avoided by reducing unemployment and underemployment.

In the full study, we reported that the maximum investment needed to eradicate poverty in the United States is an amount that would raise the income of every low-income household to the minimum income required to be a non-low-income household, or \$397.2 billion per year. As costly as the investment is, it is considerably less than the annual benefit that it would achieve by reducing the costs to society that are linked to poverty. Thus, investments in low-income Americans are among the most cost-effective

investments we can make. It is time for America to invest in eradicating poverty for the benefit of all Americans.

Jerrold Oppenheim, a graduate of Harvard College and Boston College Law School, directed energy and utility litigation for the Attorneys General of New York and Massachusetts. He also directed consumer and utility legal assistance programs in New York, Boston and Chicago, as well the energy and telecommunications program at the National Consumer Law Center in Boston, and was the founding Director of Renewable Energy Technology Analysis at Pace University Law School. He has litigated and negotiated many precedent-setting regulatory policies in U.S. states during his career as legal counsel and advisor for state governments, consumer organizations, low-income advocates, labor unions, environmental interests, industrial customers and utilities. Mr. Oppenheim is a member of the Center for Public Utilities Advisory Council at New Mexico State University.

Theo MacGregor founded MacGregor Energy Consultancy in 1998, which provides expert analysis to state governments, attorneys general, utility companies and consumer advocates. She specializes in policy development in the electric and natural gas industries, especially on consumer, low-income, and energy efficiency issues. Prior to founding her own firm, she spent more than ten years with the Electric Power Division of the Massachusetts Department of Telecommunications and Energy, where she oversaw all of the electric companies' energy efficiency efforts, participated in the development of integrated resource plans, and helped develop the rules and regulations by which electric utilities operate in the market. Ms. MacGregor holds an MBA from Simmons School of Management in Boston, Massachusetts.

Entergy Corporation, which commissioned this study, is an integrated energy company engaged primarily in electric power production and retail distribution operations. It is the second-largest nuclear generator in the United States and delivers electricity to 2.6 million utility customers in Arkansas, Louisiana, Mississippi and Texas.

To order copies of the full 20-page study, The Economics of Poverty: How Investments to Eliminate Poverty Benefit All Americans, send your name and address, along with the number of copies needed, to: Kay Kelley Arnold, Entergy Corporation, P.O. Box 3797, Little Rock, AR 72203.