

increases is accelerating, reaching 5.6 percent in the fourth quarter.⁷¹ In the first third of 2008 (through April), the pace of food price inflation rose to 6.9 percent; gasoline and heating oil prices jumped to record levels.⁷² The average share of income required to pay energy bills has hit six percent, the highest since the 1980s⁷³ (For the typical low-income household, the average share of income going to utilities is 15 percent.⁷⁴) But wages dropped in 2007, for the fourth time in five years,⁷⁵ and median household income is less now than in 1999.⁷⁶

- Since the 1980's, the benefits of economic growth in the US have favored the wealthiest Americans, while the incomes of the poorest have remained substantially stagnant.⁷⁷ Factory and other skilled jobs paying \$15-\$30 an hour are being replaced by \$7 or \$8 retail jobs. "If you don't work at Wal-Mart, the only job you can get around here is in fast food," says a mother of four in Wellston, Ohio.⁷⁸ Consumer bankruptcies jumped nearly 40 percent in 2007 and are expected to increase further in 2008.⁷⁹ One survey found 48 percent expecting their children to be worse off than they are.⁸⁰

⁷¹ Bureau of Labor Statistics, "Consumer Price Index: December 2007" (Jan. 16, 2008), www.bls.gov/cpi; Associated Press, "Gas and food costs drive inflation up 4.1% in 2007," *Boston Globe* at D2 (Jan. 17, 2008).

⁷² Bureau of Labor Statistics, "Consumer Price Index: April 2008" (May 14, 2008), www.bls.gov/cpi; Associated Press, "Cost of oil falls after government demand report/Dollar holds gains against euro, price of gas passes \$4.04 a gallon," <http://www.msnbc.msn.com/id/12400801/> (June 10, 2008); Anon., "Crude Prices Rally; Heating Oil Hits Record," <http://www.thestreet.com/story/10416511/2/crude-prices-rally-heating-oil-hits-record.html> (May 13, 2008); Anon., "UPDATE 1-U.S. retail heating oil price [\$3.30] rises to record -EIA," <http://uk.reuters.com/article/oilRpt/idUKN2742223920071227> (Dec. 27, 2007). By mid-March, heating oil had risen further, to \$3.85. <http://www.mass.gov/doer/fuels/pricing.htm#oilsurvey> (March 18, 2008), http://tonto.eia.doe.gov/dnav/pet/pet_pri_wfr_dcus_nus_w.htm (March 17, 2008). As this is written, it is now \$4.59. <http://www.mass.gov/doer/> (June 10, 2008).

For the year ended April 2008, dairy prices have jumped 11.8 percent while household energy prices are up 9.4 percent, including fuel oil at 42.8 percent. Transportation prices have risen 7.2 percent, including motor fuel at 21.1 percent. Bureau of Labor Statistics, "Table 1. Consumer Price Index for All Urban Consumers" (May 14, 2008), www.bls.gov/cpi.

⁷³ US Department of Commerce in S. Patterson, "Energy's Expanding Chunk of Household Budgets," *Wall St. Journal* at C1 (Oct. 24, 2007).

⁷⁴ Mark Wolfe, NEADA Testimony on LIHEAP before the Subcommittee on Children and Families, Committee on Health, Education, Labor and Pensions, U.S. Senate (March 5, 2008).

⁷⁵ Bureau of Labor Statistics, "Real Earnings in December 2007" (Jan. 16, 2008), www.bls.gov/ces; Associated Press, "Gas and food costs drive inflation up 4.1% in 2007," *Boston Globe* at D2 (Jan. 17, 2008).

⁷⁶ US Census CPS, www.census.gov/hhes/www/income/histinc/h08.html. Median family income is less than in 2000. J Bernstein, "The Recession Analysis I Haven't Seen, Or Why We May be About to Make Economic History" (Dec. 2, 2007), http://www.epi.org/printer.cfm?id=2850&content_type=1&nice_name=webfeatures_viewpoints_recession_analysis.

⁷⁷ "Pulling Apart: A State-by State Analysis of Income Trends," Center on Budget and Policy Priorities (Jan. 2006).

⁷⁸ E. Eckholm, "Blue-Collar Jobs Disappear, Taking Families' Way of Life Along," *New York Times* (Jan. 16, 2008).

⁷⁹ American Bankruptcy Institute, "Consumer Bankruptcy Filings Up Nearly 40 Percent in 2007" (National Bankruptcy Research Center data) (Jan. 3, 2008), Anon., "Consumer Bankruptcy Filings Rose 40% in '07," *Wall St. Journal* at A4 (Jan. 4, 2008).

⁸⁰ C. Lake *et al.*, "Analysis of 2008 Swing Voters and the American Dream," Lake Research Partners (survey of swing voters, about a third of voting population) (Dec. 10, 2007), [www](http://www.lake-research.com).

- Less than 20 percent of eligible customers received LIHEAP assistance in 2006, and the average benefit was only \$250.¹¹⁶

Texas (Beaumont)

- In the early 2000's, the richest 20 percent of Texans had average incomes 8.1 times higher than the poorest 20 percent, up from 6.2 times in the 1980's. During that same time period, the income of the lowest 20 percent rose an average of \$70 per year, while that of the richest 20 percent rose \$3,830 per year.¹¹⁷
- In 2006, 20 percent of Beaumont residents lived below the FPL, including eleven percent of the elderly¹¹⁸ and over 30 percent of children under 18.¹¹⁹
- The poverty rate in Jefferson County, of which Beaumont is the County Seat, rose ten percent between 2000 and 2007, to 18.7 percent.¹²⁰
- In Southeast Texas, a family of four would need to earn almost \$12,000 above the federal poverty level to afford the basics of housing, food, child care, health care and transportation. Without employer-provided health insurance, that family would need an annual income of at least \$45,000.¹²¹
- The median household income in Beaumont in 2006 was \$40,072, compared with that of Texas generally of \$44,922.¹²²
- Nearly 18 percent of Beaumont residents over 25 did not have a high school diploma in 2006, ranking it second to the bottom nationally, and 21 percent had a bachelor's degree or higher.¹²³

¹¹⁵ Bureau of Labor Statistics, LAU Current Unemployment Rates for States and Historical Highs/Lows, Oct. 2007 (seasonally adjusted).

¹¹⁶ http://www.neada.org/publications/issuebriefs/LIHEAP_Issue_Brief_2007-11-26.pdf.

¹¹⁷ "Pulling Apart: A State-by State Analysis of Income Trends," Center on Budget and Policy Priorities (Jan. 2006).

¹¹⁸ US Census ACS, <http://factfinder.census.gov>.

¹¹⁹ CityBloc.com, Beaumont Data, Statistics, Facts and Figures.

¹²⁰ Rose Ybarra, "Number of Child deaths on the rise in Jefferson County," The Beaumont Enterprise (Dec. 10, 2007).

¹²¹ Dan Wallach, "How much does a Southeast Texas family need to live on?" The Beaumont Enterprise (Aug. 31, 2007).

¹²² US Census ACS, <http://factfinder.census.gov>.

¹²³ US Census ACS, <http://factfinder.census.gov>.

Measures of Poverty in the Entergy States and the United States						
	U.S.	Arkansas	Louisiana	New Orleans	Mississippi	Texas (Beaumont)
Median Household Income 2006	\$ 48,451	\$ 36,599	\$ 39,337	\$35,859	\$ 34,473	\$ 40,072
% people living below 100% FPL in 2006	13.3%	17.30%	19.0%	22.2%	21.1%	18.5%
Children under 18 below 100% FPL	18.3%	24.3%	28%	41.9%	30%	28%
Children under 18 below 150% FPL	29.0%	37%	39%	NA	44%	37% (1)
% People living below 200% FPL in 2006	36%	45%	39%	NA	49%	43% (1)
Elderly Poor (over 65 below 100% FPL)	13.0%	15.0%	14.0%	12.2%	23.0%	18% (1)
Working parents without health insurance (2003)	24.8%	16.2%	22.6%	NA	27.5%	34.7% (1)
Children under 17 without health insurance (2005)	11%	9%	10%	NA	14%	20% (1)
Food Insecurity (Hunger) 2004-2006	11.30%	14.3%	14.4%	NA	18.1%	15.9% (1)
% Children in low-income families with no telephone (2005)	9%	15%	12%	15%	18%	11% (1)
Unemployment levels (Oct. 2007)	4.4%	5.7%	3.3%	3.1%	6.1%	4.9%
% over 25 with high school diploma	84.1%	80.5%	79.4%	81.6%	77.9%	81.4%
Low-income renters with housing costs over 50% of household income	38.3%	32.4%	37.7%	NA	38.5%	38.1%
% of people living below EPI Basic Family Budget	NA	27%	28%	28%	30%	35%
% Eligible receiving LIHEAP heating assistance	23%	30.4%	5.7%	NA	19.1%	1.9% (1)
Leveraged energy funds per person	\$ 5.97	\$ 0.58	\$ 0.19		\$ 0.13	\$ 0.17
% leveraged by state vs US		10%	3%		2%	3%

(1) State of Texas

Sources: US Census, factfinder.census.gov/home, <http://www.census.gov/hhes/www/saipe/index.html>;
LIHEAP Issue Brief <http://www.neada.org/>; BLS, LAU Current Unemployment Rates for States;
US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget and Policy Priorities
Economic Policy Institute, www.epi.org/content.cfm/datazone_dzlocal

V. PUBLIC POLICY CAN MAKE A DIFFERENCE

What Public Policy Can Do to Foster Energy Affordability

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. 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**.

Eliminating or diminishing 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.” Research has shown that individuals trapped in poverty for two or more generations live by rules that are often misunderstood by those who design programs to help alleviate that poverty.¹²⁴ By partnering with community action agencies that understand these “rules”, state public utility policy can be a force for breaking through the despair and establishing new behavior patterns that will better serve the participating families and the community as a whole. Meeting energy problems with energy efficiency, for instance, teaches the ability to make choices that make a difference and the value of planning for the future. Saving for homeownership or higher education through an Individual Development Account while learning financial management skills can be a first step on the road to self-sufficiency. “[M]aybe the best way to break the cycle of poverty is to raise the hopes and expectations of the poor by putting them closer to the goal line.”¹²⁵

Despite the gloomy statistics cited above, there are glimmers of hope in the Entergy states. A majority of young children in each state attend pre-school, including kindergarten, Head Start, or Early Start programs.¹²⁶ Prior research we did showed that a high-quality pre-school education could return at least nine dollars to society for every

¹²⁴ Kerri McCormick, “Fact Sheet: Generational vs. Situational Poverty and the Hidden Rules” (West Virginia University 2003), www.ext.wvu.edu/cyfar/rut/hiddenrules.htm.

¹²⁵ S. Pearlstein, “On Poverty, Maybe We’re All Wrong,” *Washington Post* at D1 (Aug. 29, 2007), citing philosophy professor C. Karelis (George Washington University), *The Persistence of Poverty*.

¹²⁶ Child and Adolescent Health Measurement Initiative (2005); 2003 National Survey of Children’s Health, Data Resource Center on Child and Adolescent Health, www.childhealthdata.org.

dollar spent.¹²⁷ Over 90 percent of children between the ages of one and 17 have medical insurance in each of the states except Texas (where the figure is 83 percent).¹²⁸

Success Begins in Arkansas

In Arkansas, in a process sponsored by the Arkansas Public Service Commission, Entergy took a lead role, along with the Arkansas Community Action Agency Association (ACAAA), Arkansas Western Gas and others, to develop and implement the Arkansas Weatherization Program (AWP). While homeowners of all income levels are eligible for the AWP, it is implemented through the network of agencies that implement the US Department of Energy Weatherization Assistance Program (DOE WAP) and is free to qualifying low-income customers.¹²⁹ The AWP follows the protocols of the DOE WAP, a program which has made a real difference in the lives of program recipients. For example:¹³⁰

- An 81-year-old Entergy customer in Little Rock was able to stay in his home due to the weatherization program. A widower, father of two daughters, and retired gardener for a dairy, said his energy savings after weatherization by the Central Arkansas Development Council (CADC) enabled him to pay for needed improvements, including storm doors, a driveway and sidewalk, and trimming of trees. “I wouldn’t even have a house...I couldn’t afford to live, pay my bills” if it weren’t for the weather stripping, caulking, replacing of windows, insulation of walls and ceiling and other work, he said, adding that he pays a third less for energy now.
- An 81-year-old woman in Arkansas wrote a letter of gratitude to the local community action agency after it had weatherized her home and provided safety equipment, including smoke and carbon monoxide detectors. She mentioned that on a cold April night, an alarm went off and a woman’s voice screamed “Warning! Carbon Monoxide!” about every 20 seconds after she had tried to heat her house by lighting flames on her kitchen stove. She went on to say that “I have no doubt that without the installation of the alarm by the weatherization people, our 9-1-1 emergency service and our on-the-ball firemen, I would not be among the living today.” She went on to say, “Thank you. I had a chance to benefit from many of the weatherization people’s efforts...the carbon monoxide detector saved my life, and I’m certainly grateful for that; thank you.”
- Two letters to the Ozark Opportunities, Inc., community action agency are typical of many received:

¹²⁷ J. Oppenheim and T. MacGregor, “The Economics of Education: Public Benefits of High-Quality Preschool Education for Low-Income Children” at 1 (Entergy Corp., n.d. [2002]), <http://www.democracyandregulation.com/detail.cfm?artid=37&row=5>.

¹²⁸ Child and Adolescent Health Measurement Initiative (2005); 2003 National Survey of Children’s Health, Data Resource Center on Child and Adolescent Health, www.childhealthdata.org.

¹²⁹ The 50 percent co-payment of the AWP is, for low-income customers, paid by the DOE WAP.

¹³⁰ Our thanks to Ludwik Kozlowski, Energy Coordinator of ACAA, who gathered these stories (Jan. 2008).

- “I’m writing you to let you know how pleased I am with the work that was done to my home. The windows and new front door stopped air leaks, and the insulation under my floors has made my floors stay warm. I use less heat, and I’m sure I will see a BIG difference in my cooling bills. I’m so elated with it all! And the workers were so pleasant. Thank you so very much for the help in weatherizing! I’m deeply grateful!”
- “I want to thank you for the blessings you have given us a few weeks ago. We received all-new windows, a wood stove and new storm door. Our home for the first time is so comfortable. No unwanted air coming in. We aren’t burning half the wood we used to and we’re staying warm. What a blessing. We could not have done any of this on our own. God bless.”

And in Texas

There are signs in Southeast Texas that the economy may be about to improve. A group called the “Industrial Workforce Alliance,” composed of businesses (including Entergy), non-profits and other faith-based organizations, colleges and universities, has begun work on recruiting, training, and hiring workers to meet a growing economy over the next three years. Jobs in manufacturing and other industry, construction and engineering, medical and healthcare fields, logistics and distribution, retail, hospitality, call centers, financial services and hurricane repair will require up to 28,500 new workers by the end of 2010, also taking into account the retirement of many of the baby boomers during that time period. The area faces challenges in meeting its employment goals, including a housing shortage, lack of adequate transportation services for many new workers, and young people leaving Southeast Texas or not staying in school to receive a diploma or to go on to higher education. The Alliance has a strategy for overcoming these obstacles and is moving forward with funding, education and training sessions in order to meet these ambitious targets for Southeast Texas.¹³¹

But for the Southeast Texas low-income population, the outlook is still bleak. Many low-income people want to improve their homes and save money on utilities, but they simply do not know where to turn. They carry an enormous energy burden and must choose between utilities, groceries and medicine. The partnership of Entergy and the DOE WAP, with implementation by agencies such as Programs for Human Services in Southeast Texas, seeks to eliminate, or at least reduce, these kinds of burdens for clients. The Weatherization Program offers Entergy customers long-term solutions to their high energy consumption and financial burdens, enabling them to maintain their sense of responsibility and independence while keeping their homes temperate, especially during the summers when cooling is needed so badly.¹³²

What follows is a sampling of Entergy customers who have been helped by the Weatherization Program:

¹³¹ Presentation on the Industrial Workforce Alliance by the Southeast Texas Workforce Development Board (Oct. 25, 2007).

¹³² Our thanks to Connie Gray, Housing & Energy Coordinator, Program for Human Services, Inc., Orange, TX, who gathered these stories (Jan. 2008).

A disabled 84-year-old woman received weatherization services that allowed her and three great grandchildren to stay at home without fearing for their health and safety. A new front door, oversize peep sight, and deadbolt and entry lock keep them sleeping soundly at night knowing that they are secure. And replacing their inefficient air conditioner and heater, adding attic and wall insulation, and repairing holes in walls and ceilings lowered their utility bills.

One customer wrote: "...[W]e ... wish to express our heart-felt gratitude to each and every one of you for whatever role that you played in replacing our central unit and providing the weatherization services. Again, thank you and may God's grace be upon each and every one of you, forever and ever, Amen. Our family will continue to pray that your organization will continue to prosper, in order to be there for others, as you were for us. Thank you, again."

Entergy and its partners in the community, including community action and other service agencies, churches, Habitat for Humanity, local and state lawmakers, the American Red Cross, the Salvation Army, Councils on Aging, and others, have been addressing the problem of energy affordability for some time. Entergy has looked for ways to work together with others to develop effective solutions to the problem.¹³³ Entergy has committed to making energy more affordable for its low-income customers. To that end, Entergy has instituted Low-Income Summits in all of its jurisdictions, developed information and education programs, and participated in employee voluntary weatherization programs. Entergy has been especially active in providing energy education to its low-income customers.¹³⁴

- *In Texas, Entergy instituted its "Coffee Breaks" program to provide educational materials to advocates working together;*
- *In Louisiana, after Hurricanes Katrina and Rita, Entergy held six regional summits to assess needs and disseminate information;*
- *Entergy distributes the "Advocate Power" newsletter to 20,000 low-income advocates, providing information and references; and*
- *Entergy partners with faith-based organizations to share information and recruit volunteers for weatherization projects.*

Entergy also provides grants primarily to support weatherization activities such as the Entergy Charitable Foundation for non-profit conservation funding; grants to low-income champions within each service territory that are dispersed to local CAPs; and a revolving loan fund in Louisiana for new home construction.¹³⁵

These are laudable efforts but, as Entergy recognizes and is committed to addressing, much more needs to be done to begin to make energy affordable. But there is only so

¹³³ Linda Barnes, "Entergy reaches out to those hardest to reach," presentation to Chartwell's Audio Conference on Best Practices in Reaching Low-Income Customers with Energy Efficiency Programs (Oct. 18, 2006).

¹³⁴ Barnes (2006).

¹³⁵ Barnes (2006).

much one corporation can accomplish; scale is needed for impact. These efforts point the direction for public policy and represent an excellent point from which to begin to break the poverty cycle. Public utilities such as Entergy generally have excellent relationships with their customers and with stakeholders interested in moving programs forward to help low-income customers afford their energy bills. In addition, there is a foundation infrastructure in place already, including federal fuel assistance and weatherization programs, that can be used as a springboard from which to launch partnership programs established by public policy and funded by ratepayers. Most importantly, the design and testing of successful programs has already been done, both in other states and in Entergy's own service territories in Arkansas and Texas, as described above.¹³⁶

The most effective models include a well-trained, highly qualified, stable staff and infrastructure to deliver services, and implementers trusted by the community. Several states have chosen to implement state-wide programs, so that consistent, comprehensive, well-coordinated energy efficiency and education services are available to all low-income citizens within the states, through coordinated, but decentralized, delivery. The AWP in Arkansas, described above, is open to all qualifying residential customers – not simply low-income customers. The customers in all of Entergy's other service territories deserve access to similar programs. In Appendix C, we discuss some successful payment affordability and energy efficiency program designs. As shown in Section II above, both affordability and energy efficiency programs are extremely cost-effective ways from a societal point of view to reduce the energy burden faced by low-income customers.

Historic Trends

Historic poverty trends with and without public policy targeted at poverty shows that public policy, including low-income efficiency and assistance investments, can dramatically reduce poverty. “The relative decline in [even] the median income in the US is a problem. ... [Reversing this decline] needs to be underpinned by two legs: programmes that help individuals make employment transitions, and solid safety nets and assured access to basic services such as education and healthcare. ... To have an open economy we may need a more protective one than we have had in the recent past.”¹³⁷

The U.S. Census has tracked the incidence of the American population with incomes below the Federal Poverty Line (FPL) since 1959, when almost a quarter of Americans (22.4 percent) were classified as poor. It is therefore possible to track this one statistic across the varying policy approaches to poor people, from the War on Poverty to periods of what could be charitably described as benign neglect.¹³⁸ The reality of poverty is

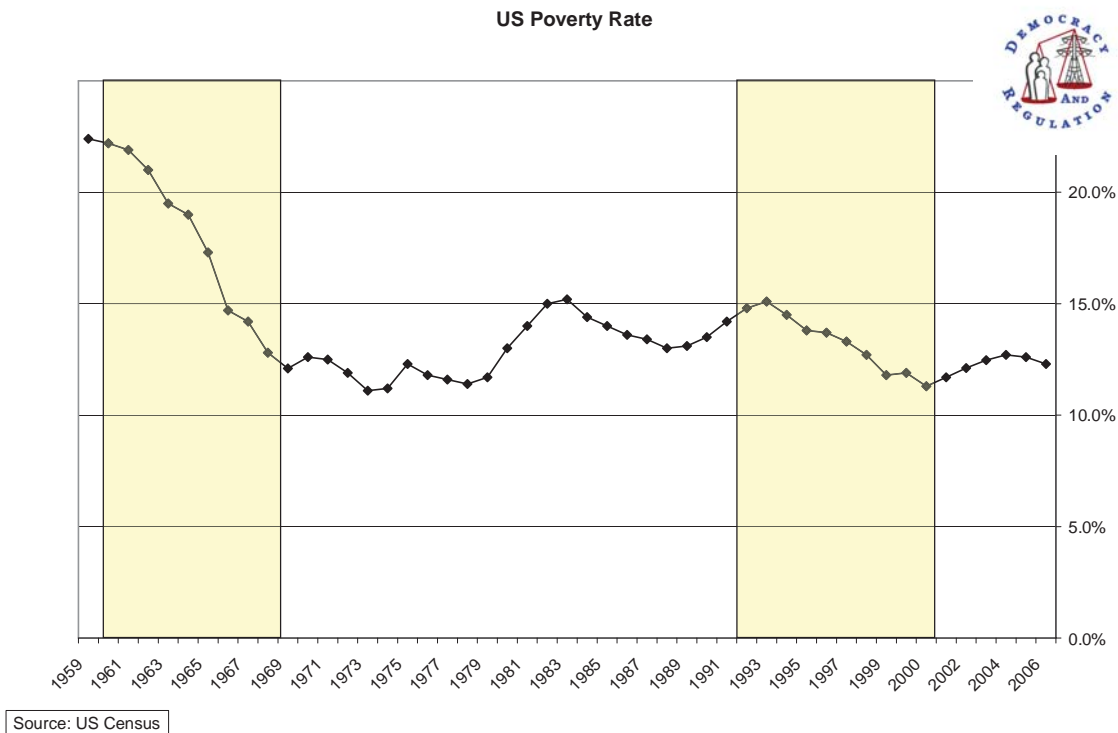
¹³⁶ The Entergy Texas program has been temporarily suspended and is expected to resume.

¹³⁷ D. Leipziger (vice president, World Bank) and M. Spence (senior fellow, Hoover Institution), “Globalisation’s losers need support,” *Financial Times* at 11 (May 15, 2007).

¹³⁸ The data have been collected in 35 tables, covering everything from poverty to health insurance to regional, gender, and age differences, by the Center on Budget and Policy Priorities (CBPP). www.cbpp.org/10-19-05pov.htm. Since it is FPL data that are published, it is the assumption of this section that the trends are substantially the same at true levels of poverty (but not the absolute numbers, of course).

worse than pictured by these data, since the FPL in fact has increasingly understated poverty as time has passed.¹³⁹

The federal War on Poverty itself dramatically slashed official poverty rates, from 22.1 percent in 1960 to 12.1 percent in 1969 – a drop of 10 percentage points, or 46 percent of the starting poverty rate. Similarly, federal policies in the 1990s of economic expansion and reducing inequality saw official poverty reduced from 15.1 percent in 1993 down to 11.7 percent in 2001 – a drop of 3.4 percentage points, or a 22.5 percent improvement. In contrast, the federal neglect of the poor for many of the years between 1969 and 1993 increased the official poverty rate from 12.1 percent to 15.1 percent and similar federal neglect after 1993 brought the official rate from 11.7 percent to 13.3 percent.



While it is obvious that public policy thus makes a difference in the poverty rate, it is much more difficult to quantify the difference made by a particular set of public policies. Further, it is probable that defeating poverty becomes more difficult as success brings the poverty rate down. It is not difficult to imagine, however, that an eight-year set of public policies directed toward eradicating poverty could be at least as successful as the more general growth and equality policies of the 1990s, *i.e.*, an improvement of at least 22.5 percent -- perhaps more in the states and cities with above-average poverty rates. If 22.5 percent improvement were achieved from the base year of 2006, the resulting poverty rates would be as follows:

¹³⁹ The reasons for this are described in footnote 50.

	<u>2006</u>	<u>22.5% lower</u>
US	13.3%	10.3%
Arkansas	17.3%	13.4%
Louisiana	19.0%	14.7%
New Orleans	22.2%	17.2%
Mississippi	21.1%	16.4%
Beaumont area, Texas	18.5%	14.3%

This would certainly leave much more to be done to eradicate poverty, but it would achieve the lowest national poverty rate recorded and thus be a very good start.

Current Anti-Poverty Programs

An important part of anti-poverty public policy since the energy crises of the 1970s has been energy-related – the federal Low-Income Home Energy Assistance Program,¹⁴⁰ the federal Weatherization Assistance Program,¹⁴¹ and state-mandated assistance and efficiency programs.¹⁴² As shown in Section II of this report, low-income energy programs not only help reduce poverty, but are also immensely cost-effective for the entire economy.

Another low-income program with a very large pay-off for both low-income households and the society at large is education. We have shown, for example, that investments in pre-school education of three- and four-year old children from low-income families returns more than \$9 for every dollar spent.¹⁴³ Early education increases learning ability, which increases high school and college graduation rates, which results in better jobs at higher salaries. Full-time, year-round workers without a high school diploma earn more than 30 percent less than those with a diploma. In the period 2000-2005, only those with doctorates or the equivalent (including MBAs) enjoyed income increases that outpaced inflation.¹⁴⁴ In addition to the obvious benefit for the children who are educated, society reaps rewards in the form of lower welfare and unemployment payments, lower public and private medical costs, higher income and other tax revenue, reduced burdens on the

¹⁴⁰ First enacted in 1974 as Project Fuel (Office of Economic Opportunity). www.acf.hhs.gov/programs/liheap/library/history.html#74-79. LIHEAP was first enacted by P.L. 96-223 in 1981. *Id.*; <http://www.liheapch.acf.hhs.gov/Funding/lhhist.htm>.

¹⁴¹ First enacted in 1975 as Emergency Energy Conservation Program (Community Services Administration). www.acf.hhs.gov/programs/liheap/library/history.html#74-79. WAP was enacted in 1977. <http://www.liheapch.acf.hhs.gov/Funding/lhhist.htm>. It is codified at 42 USC sec. 6861. *See* www.eere.energy.gov/weatherization, www.waptac.org/sp.asp?id=1437.

¹⁴² LIHEAP Clearinghouse, State Leveraging FY 2006 (May 2007), <http://liheap.ncat.org/tables/FY2006/06stlvb.htm>.

¹⁴³ J. Oppenheim and T. MacGregor, “The Economics of Education: Public Benefits of High-Quality Preschool Education for Low-Income Children” (Energy Corp., n.d. [2002]), <http://www.democracyandregulation.com/detail.cfm?artid=37&row=5>.

¹⁴⁴ D. Wessel, “Why It Takes a Doctorate to Beat Inflation,” *Wall St. Journal* at A2 (Oct. 19, 2006) (based on US Census CPS).

criminal justice and special education systems, and multiplier effects of all these benefits. Later on, job training can also be important.

Individual Development Accounts (IDAs) are another important strategy to help families escape poverty.¹⁴⁵ In 2002, Entergy partnered with the Foundation for the Mid South (FMS) to develop the first multi-state initiative to foster IDA's in Arkansas, Louisiana, Mississippi, and later Southeast Texas.¹⁴⁶ Arkansas had enacted an IDA program by statute in 1999, funded by federal Temporary Assistance for Needy Families (TANF) dollars through the Arkansas Department of Workforce Services.¹⁴⁷

It is very difficult for low-income families, who do not have sufficient income for essentials, to escape poverty by saving. So IDAs provide matching funds (usually a 100-300 percent match, but sometimes more)¹⁴⁸ as an incentive to working low-income families to set aside savings for specific asset-building purposes, such as owning or repairing a home, obtaining an education, or establishing a business. Financial and other counseling is usually part of the program. The first careful evaluation of the IDA approach found that the program made a significant contribution to narrowing the home-ownership gap between Blacks and whites; Black home-ownership (compared to controls) rose by ten percentage points. Other participants "experienced a substantial increase in business equity relative to controls." For those who were already homeowners, education was often a priority: "the likelihood of taking non-degree classes rose sharply" and computer purchases rose by 30 percentage points, even though they were not covered by matching funds.¹⁴⁹

Through April 2006, the state-funded Arkansas IDA program helped 570 families build assets, including 117 who purchased homes, 228 who renovated homes, 154 who attended institutions of higher learning, and 71 who invested in new or existing businesses. "Beyond helping low-income families acquire tangible assets, [participants experienced] increased self-sufficiency, or in other words, less use of public assistance of various sorts. ... 55 percent of program graduates who had previously received public assistance no longer receive such assistance. ... More funding for IDAs needs to be provided so that IDAs are available in every county of the state."¹⁵⁰ In Louisiana, 1029 completed financial education programs; 895 completed asset training, 300 purchased homes, and 157 started or expanded a small business with help from IDA's.¹⁵¹ However,

¹⁴⁵ See e.g., US HHS, "Assets for Independence Program," <http://www.acf.hhs.gov/programs/ocs/afi/>.

¹⁴⁶ "Changing Lives: An Investment in the Mid South," at 1 (Foundation for the Mid-South, 2008), http://www.fndmidsouth.org/Documents/IDA_Changing_Lives_report.pdf.

¹⁴⁷ Arkansas Act 1217 of 1999, the Family Savings Initiative Act.

¹⁴⁸ Such matches are a much stronger incentive to save than are conventional tax deductions (e.g., for Individual Retirement Accounts), especially since low-income tax rates are low or zero.

¹⁴⁹ W. G. Gale, "What Do Individual Development Accounts Do? Evidence from a Controlled Experiment" (Brookings Institution 2006), http://www.brookings.edu/papers/2006/071housing_gale.aspx (program in Tulsa 1998-2003).

¹⁵⁰ "Arkansas' Individual Development Account (IDA) Program: Survey Shows Broad Impact," Policy Points at 1, 4, 5 (Southern Good Faith Fund, vol. 28, Oct. 2006); see Annual Report of the Arkansas Department of Health and Human Services Individual Development Account Program, for State Fiscal Year 2005 (Aug. 2005).

¹⁵¹ IDA Collaborative of Louisiana Program Highlights, <http://idacola.tulane.edu/program/highlights>.

there has been only occasional state funding by Louisiana and Texas; none in Mississippi.¹⁵² State funding is essential because “The primary obstacle to the continued growth of IDAs in the region is obtaining financial support. . . . State funding and policies provide stability, allowing IDA programs to provide services on an ongoing (and ultimately permanent) basis.”¹⁵³ Entergy contributed \$1.6 million to the Mid-South IDA initiative, the largest fraction of the \$15 million raised so far;¹⁵⁴ the number of IDA accounts there has almost doubled in five years.¹⁵⁵

Altogether, low-income programs have prevented poverty in America from being even worse than it is. One estimate is that low-income programs have reduced the incidence of poverty by as much as 47 percent, particularly among the elderly.¹⁵⁶ In addition to energy and education programs, most anti-poverty programs focus on health, nutrition, housing, or income.¹⁵⁷

Health programs include Medicaid and the State Children’s Health Insurance Program (SCHIP). They have reduced infant and childhood mortality, by 8.5 percent and 5.1 percent, respectively, as well as increased treatment and screening – yet reduced preventable hospitalization -- for such adult problems as cancer and chronic diseases. About 70 percent of Medicaid funds care for seniors and the disabled. Uninsured adults who become insured by Medicare at age 65 regain half their health deficit by the time they reach 70.¹⁵⁸

¹⁵² <http://gwbweb.wustl.edu/csd/policy/states/Louisiana.html>, <http://gwbweb.wustl.edu/csd/policy/states/Mississippi.html>, <http://gwbweb.wustl.edu/csd/policy/states/Texas.html>; see

R, Miller, “Individual Development Accounts and Banks: A Solid ‘Match,’” at Table 1, [FDIC Quarterly](http://www.fdic.gov/bank/analytical/quarterly/2007_vol1/IDAs-and-banks.html), www.fdic.gov/bank/analytical/quarterly/2007_vol1/IDAs-and-banks.html.

¹⁵³ “Changing Lives: An Investment in the Mid South,” at 2, 17 (Foundation for the Mid-South, 2008), http://www.fndmidsouth.org/Documents/IDA_Changing_Lives_report.pdf. State funding includes tax credits, Community Development Block Grants, Temporary Assistance for Needy Families (TANF) allocations, and appropriations from general funds. *Id.* at 17.

¹⁵⁴ *Id.* at 6, 15.

¹⁵⁵ *Id.* at 12.

¹⁵⁶ A. Sherman, “Public Benefits: Easing Poverty and Ensuring Medical Coverage” at Table 2, p. 5 (Center on Budget and Policy Priorities, 2005), www.cbpp.org/pubs/accomplishments.htm.

¹⁵⁷ Most of the foregoing (except where otherwise footnoted) is drawn from: Center on Budget and Policy Priorities, “What does the Safety Net Accomplish?” (News Release, 2005); S. Parrot *et al.*, “Selected Research Findings on Accomplishments of the Safety Net” (Center on Budget and Policy Priorities, 2005); A. Sherman, “Public Benefits: Easing Poverty and Ensuring Medical Coverage” (Center on Budget and Policy Priorities, 2005); all at www.cbpp.org/pubs/accomplishments.htm; D. Rice and B. Sard, “The Effects Of The Federal Budget Squeeze On Low-Income Housing Assistance” (Center on Budget and Policy Priorities, 2007), www.cbpp.org/2-1-07hous2.htm; American Planning Association, “Policy Guide on Homelessness” (2003), www.planning.org/policyguides/homelessness.htm; J. Oppenheim and T. MacGregor, “The Economics of Poverty: How Investments to Eliminate Poverty Benefit All Americans,” (Entergy Corp. n.d.[2006]), www.democracyandregulation.com/detail.cfm?artid=99&row=0. See also sources cited in these summaries.

¹⁵⁸ J.M. McWilliams *et al.*, “Health of Previously Uninsured Adults After Acquiring Medicare Coverage,” 298 *Journal of the American Medical Association* 2886 (Dec, 2007), <http://jama.ama-assn.org/cgi/content/abstract/298/24/2886>; E. Cooney, “Insurance makes a difference,” *Boston Globe* at C2 (Dec. 31, 2007).

The American health insurance system has developed largely without public policy guidance, the only significant exceptions being Medicare and Medicaid as part of the War on Poverty in 1966. Although health insurance became available as early as 1847, it was not until the development of non-profit community hospital pre-payment systems (the precursor to Blue Cross) in 1929 that health insurance became broadly available. Non-profit associations of doctors followed in 1939 (later becoming Blue Shield), though mostly to prevent what doctors saw as possible encroachment by hospitals and national health insurance. The success of the Blues, together with World War II wage controls that encouraged employers' offers of health insurance in lieu of pay increases, led to rapid development of commercial health insurance, though with price discrimination among customers. By 1958, about 75 percent of Americans were thus covered by health insurance. But in 1962-63, only 62 percent of those 65 or over were covered – only 58 percent of those not working. More than 99 percent of those over 65 are now covered, leaving about 16 percent of the population, primarily lower-income, without health insurance.¹⁵⁹

Nutrition programs include Food Stamps, Free and Reduced Price School Lunches (FRPL) and Breakfasts, and the Special Supplemental Program for Women, Infants, and Children (WIC). Not surprisingly, these programs have been demonstrated to improve health, especially in children, and school performance. WIC alone saves \$3.50 in health care costs for every dollar spent.

Housing programs also improve health (by freeing up family funds for food and medicine) and school performance and provide a foundation for steady employment. The programs include vouchers (“Section 8”), rent subsidies, project supports (including tax credits), and public housing. Most cost-effectively, especially in this era of rapidly rising rents, housing programs avoid homeless expenditures that are much higher -- \$15,000 per year for individuals or \$25,000 for families, as opposed to rent subsidies of \$4500-\$6000.

Income supports for low-income people include some programs that also benefit others – Social Security and unemployment insurance, and worker's compensation – as well as the targeted programs of Supplemental Security Income (SSI), the Earned Income Tax Credit (EITC), and Temporary Assistance for Needy Families (TANF, the successor to Aid for Families with Dependent Children and welfare). Income supports have been especially effective at combatting poverty among the elderly, reducing the incidence of

¹⁵⁹ M. Thomason (Miami University), “Health Insurance in the United States,” <http://eh.net/encyclopedia/article/thomasson.insurance.health.us>, G. Gleeson “Hospital and Surgical Insurance Coverage, United States - 1968 (National Center for Health Statistics (NCHS) 1972); P. Ahmed, “family Hospital and Surgical Insurance Coverage, United States - July 1962-June 1963” (NCHS 1967); “Hospital and Surgical Insurance Coverage, United States – 1974” (NCHS 1977). NCHS documents available at www.cdc.gov/nchs/products/pubs/pubd/series/ser.htm#sr10. M Broadbuss et al, “Poverty, Income, and Health Insurance Coverage Tables” at Table 31 (Center on Budget and Policy Priorities 2005), www.cbpp.org/10-19-05pov.htm, from US Census, and subsequent Census data. The Census began collecting health insurance data in 1987; before this time, data are incomplete and inconsistent.

elderly poverty by more than 80 percent. (For one thing, between Medicare and Medicaid, virtually all Americans over age 65 now have health insurance.) The incidence of poverty among children has also been cut, although the percentage of children in deep poverty (families with income below half the FPL) has risen to almost a third (31 percent) from less than a quarter (23 percent). The EITC rewards work at low wages, helping to lift a minimum wage job towards the poverty line and encouraging more than a half million families to go to work.

The minimum wage has been a tool for supporting the lowest incomes since 1938, although only in 1968 did a full-time job at the federal minimum wage reach 90 percent of the poverty level.¹⁶⁰



As shown in this chart, most of the inflation-adjusted increases in the minimum wage have occurred in the periods 1960-1969 and 1993-2001.¹⁶¹

¹⁶⁰ <http://oregonstate.edu/instruct/anth484/minwage.html>. Shown in 2007 dollars and a 2000 hour work year.

¹⁶¹ Data from www.epionline.org/mw_statistics_annual.cfm.

Tax policy, including the EITC mentioned above, has also been used, to a limited extent, to support those at the economic bottom. For example, since 1960, Federal tax rates for the bottom 40 percent (including payroll and other taxes) have dropped from about 14 percent to about ten percent. More significant have been much larger decreases at the top, particularly for the top one percent, partly reversed at the end of the 1960-1969 period and the beginning of the 1993-2001 period. Since 1960, the tax rate for the top one percent has fallen from 44.0 percent to 30.4 percent and the rate for the top 0.1 percent from 71.4 percent to 34.2 percent. The most recent tax cuts have been sharper at the top than at the bottom.¹⁶² However, a consensus may be emerging that tax policy should be used more forcefully to support those struggling at the bottom.¹⁶³

The ability of the economy to provide jobs is another important measure of how successful the economy is at preventing poverty. Long-term unemployment (six months or more) is particularly painful and here again the periods 1960-1969 and 1993-2001 have been among the most successful at avoiding long-term unemployment:¹⁶⁴

Benefits often leave families still in poverty, and funding is often inadequate to cover all those eligible for help. For some programs, already inadequate funding has been reduced. In some cases, most notably non-elderly individuals without children, there is very little help available. One result is that American poverty rates are higher than others in the industrialized world and supports for the poor are weaker. For example, U.S. programs are sufficient to raise only one low-income child in nine to 50 percent of the nation's median income, compared to one child in three in Canada and more than one child in two in Belgium, Germany, the Netherlands, the United Kingdom, and elsewhere. The inadequate U.S. investment is difficult to understand since, as we have shown,

¹⁶² A. Aron-Dine, "New Study Finds 'Dramatic' Reduction Since 1960 in the Progressivity of the Federal Tax System: Largest Reductions in Progressivity Occurred in 1980s and Since 2000" (Center on Budget and Policy Priorities 2007), www.cbpp.org/3-29-07tax.htm; based on T. Piketty (Prof. of economics, Paris School of Economics and E. Saez (Prof. of economics, University of California at Berkeley), <http://elsa.berkeley.edu/~saez/jep-results-standalone.xls>.

¹⁶³ E.g., D. Wessel, "The Case for Taxing Globalization's Big Winners," *Wall St. Journal* at A2 (June 14, 2007) (citing the proposal of a former advisor to President George W. Bush to eliminate the payroll tax below \$33,000 and raise the tax on others); M. Whitehouse, "Why Americans Should Pay More Taxes: A Nobel Winner's View on Productive Economics," *Wall St. Journal* at A2 (Oct. 16, 2006) (interview with Edmund Phelps: "I think economic justice is all about pay rates at the low end relative to those in the middle. ...I've been advocating a solution: subsidies that would be paid to companies for the ongoing employment of low-wage workers. ... Our Earned Income Tax Credit is a step in the same direction, but it's aimed toward low-wage parents.")

¹⁶⁴ www.bls.gov/webapps/legacy/cpsatab9.htm.

investments against poverty return at least four dollars for every dollar invested, and often more.¹⁶⁵

¹⁶⁵ J. Oppenheim and T. MacGregor, “The Economics of Poverty: How Investments to Eliminate Poverty Benefit All Americans,” (Entergy Corp. n.d. [2006]), www.democracyandregulation.com/detail.cfm?artid=99&row=0.

VI. CONCLUSION

The public record clearly shows that public policy is capable of substantially reducing poverty. The programmatic approach of the War on Poverty and the jobs and tax policies of the 1990s were especially effective.

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

Manufacturing plants may be one of the more effective public economic development investments – and public investments may well influence a specific location decision once a decision has been made to locate in a particular region.¹⁶⁶ We do not necessarily suggest that energy efficiency vs. manufacturing is an either-or proposition, but efficiency investments could make tax subsidies for manufacturing less important and could thus save taxpayers from a portion of that expense while producing greater benefits. For example, a low-income program of one-third efficiency and two-thirds assistance would be at least 20 percent more economically productive than investments in manufacturing and create 50 percent more jobs.¹⁶⁷

Utility contributions in the Entergy states to low-income efficiency and assistance are substantially below the national average.¹⁶⁸

The way-above-average charitable contributions in Arkansas and Louisiana are impressive and laudable, but not sufficient to replace what government policy provides in other states in the form of state expenditures and utility mandates. State public energy policy is well-situated 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

¹⁶⁶ Hill & Brahmst, "The Auto Industry Moving South: An Examination of Trends" (Center for Automotive Research, 2003).

¹⁶⁷ Five leading states in the Northeast, midWest, and West -- Connecticut, Iowa, Massachusetts, Montana, and Oregon – allocate 24-30% of their local low-income energy resources to utility-funded energy efficiency, the balance to other forms of utility, charitable and state-funded cash assistance. Computed from LIHEAP Clearinghouse, State Leveraging FY 2006 (May 2007), <http://liheap.ncat.org/tables/FY2006/06stlvb.htm>.

¹⁶⁸ Computed from LIHEAP Clearinghouse, 2006 State-by-State Supplements to Energy Assistance and Energy Efficiency (May 2007), <http://www.liheap.ncat.org/Supplements/2006/supplement06.htm>.

policy can facilitate public utility work with stakeholders to help poor families help themselves use energy more efficiently.

Low-income energy efficiency is not commonly seen as a tool for economic development, yet this investment to fight poverty creates a powerful engine of economic opportunity for all. Low-income energy efficiency and assistance is a large lost opportunity for broad economic development.

APPENDIX A: ENTERGY JURISDICTIONS

The Economic Benefits of Combatting Poverty with Low-Income Energy Efficiency in each Entergy Jurisdiction

ARKANSAS

Although in many respects better off than the other Entergy service territories, Arkansas still has a long way to go:

Measures of Poverty in Arkansas vs the United States	U.S.	Arkansas
Median Household Income 2006	\$ 48,451	\$ 36,599
Income rank among 50 states plus DC		49
% people living below 100% FPL in 2006	13.3%	17.30%
Children under 18 below 100% FPL	18.3%	24.3%
Children under 18 below 150% FPL	29.0%	37%
% People living below 200% FPL in 2006	36%	45%
Elderly Poor Despite Social Security	8.7%	11.8%
Working parents without health insurance (2003)	24.8%	16.2%
Children under 17 without health insurance (2005)	11%	9%
Food Insecurity (Hunger) 2004-2006	11.30%	14.3%
% Children in low-income families with no telephone (2005)	9%	15%
Unemployment levels (Oct. 2007)	4.4%	5.7%
% over 25 with high school diploma	84.1%	80.5%
Low-income renters with housing costs over 50% of household income	38.3%	32.4%
% of people living below EPI Basic Family Budget	NA	27%
% Eligible receiving LIHEAP heating assistance	23%	30.4%
Leveraged energy funds per person	\$ 5.97	\$ 0.58
% leveraged by state vs US		10%

LIHEAP Issue Brief <http://www.nead.org/>; BLS, LAU Current Unemployment Rates for States; US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget and Policy Priorities; Economic Policy Institute, www.eoi.org/content.cfm/datazone_dzlocal

As for state public policy supporting anti-poverty programs, a survey shows that:

- 90 percent of Arkansans feel it is important to fund programs to help poor families pay their utility bills,
- 77 percent say government should help, and

- 72 percent feel that a state program should include contributions from business as well as residential customers.¹⁶⁹

What more can be done?

Arkansas has already adopted a low-income efficiency program, as described in the body of the paper. As this program develops, consideration should be given to ramping it up to full scale (approximately double or more). In addition, Arkansas waives the sales tax on the first 500 kWh of use for customers with less than \$12,000 of income. Sales tax in Arkansas is six percent state, up to 2.5 percent city, and up to 2.75 percent county.¹⁷⁰ Consideration should be given to a more generous discount, as well as to broadening eligibility to the same standard as is used for low-income efficiency programs or for LIHEAP.

Arkansas has also made excellent starts on non-energy anti-poverty programs such as pre-school education and Individual Development Accounts. Here again, additional funding is what is needed.

The Economic Benefits of Low-income Efficiency and Assistance Investments¹⁷¹

Investments in low-income efficiency, when multiplied through the Arkansas economy, yield *almost 28 (27.7) times* the investment, as well as 196 jobs for each million dollars invested. Public investments to attract high-paying manufacturing jobs also yield a positive benefit to the local economy – but, when analyzed in the same way, utility investment in low-income energy efficiency yields *well over quadruple* (4.6 times) the economic benefit and almost three-and-a-half (3.4) times as many jobs. Even a combination of one-third long-term energy efficiency investment and two-thirds short-term emergency assistance would be a cost-effective way to break the back of poverty in a way that benefits the entire economy – 89 percent more economically productive than public investment to attract manufacturing and generating 73 percent more jobs.

¹⁶⁹ Flake-Wilkerson Marketing Insights, “Low Income Energy Study” (Entergy Corp., based on Oct. 2002 survey); Entergy Corp., “Arkansas Answers” (drawn from Flake-Wilkerson survey).

¹⁷⁰ www.bankrate.com/brm/itax/edit/state/profiles/state_tax_Ark.asp,
www.state.ar.us/dfa/excise_tax_v2/et_su_rates_ct.html,
www.state.ar.us/dfa/excise_tax_v2/et_su_rates_co.html.

¹⁷¹ See Section II and Appendix B for methodology.

Arkansas Multipliers		
For every \$1,000,000 in investment	Increased economic output	Jobs
ENERGY EFFICIENCY		
Net effect of investment	\$349,729	9
Net effect of bill savings	\$8,963,639	68
Effect of environmental improvement	\$2,064,159	12
Effect of non-energy benefits	\$16,355,687	107
TOTAL	\$27,733,214	196
ASSISTANCE		
Net effect of investment	\$1,430,642	40
Effect of non-energy benefits	\$1,997,841	13
TOTAL	\$3,428,483	54
MANUFACTURING PLANT		
Net effect of investment	\$8,741,751	69
Effect of environmental detriment	-\$2,699,312	-10
TOTAL	\$6,042,440	58

LOUISIANA

In most measures of poverty, Louisiana is near the bottom, not only compared to the rest of the United States, but compared to the other Entergy service territories. Louisiana has its own distinctive problems, as well, some due to the residual effects of the hurricanes of 2005, Katrina and Rita.

Measures of Poverty in Louisiana and the United States	U.S.	Louisiana
Median Household Income 2006	\$ 48,451	\$ 39,337
Income rank among 50 states plus DC		46
% people living below 100% FPL in 2006	13.3%	19.0%
Children under 18 below 100% FPL	18.3%	28%
Children under 18 below 150% FPL	29.0%	39%
% People living below 200% FPL in 2006	36%	39%
Elderly Poor Despite Social Security	8.7%	12.6%
Working parents without health insurance (2003)	24.8%	22.6%
Children under 17 without health insurance (2005)	11%	10%
Food Insecurity (Hunger) 2004-2006	11.30%	14.4%
% Children in low-income families with no telephone (2005)	9%	12%
Unemployment levels (Oct. 2007)	4.4%	3.3%
% over 25 with high school diploma	84.1%	79.4%
Low-income renters with housing costs over 50% of household income	38.3%	37.7%
% of people living below EPI Basic Family Budget	NA	28%
% Eligible receiving LIHEAP heating assistance	23%	5.7%
Leveraged energy funds per person	\$ 5.97	\$ 0.19
% leveraged by state vs US		3%

Sources: US Census, factfinder.census.gov/home, <http://www.census.gov/hhes/www/saipe/index.html>; LIHEAP Issue Brief <http://www.neada.org/>; BLS, LAU Current Unemployment Rates for States; US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget and Policy Priorities; Economic Policy Institute, www.eoi.org/content.cfm/datazone_dzlocal

As for state public policy supporting anti-poverty programs, a survey shows that:

- 91 percent of Louisianans feel it is important to fund programs to help poor families pay their utility bills,
- 80 percent say government should help, and
- 72 percent feel that a state program should include contributions from business as well as residential customers.¹⁷²

¹⁷² Flake-Wilkerson Marketing Insights, “Low Income Energy Study” (Entergy Corp., based on Oct. 2002 survey); Entergy Corp., “Louisiana Answers” (drawn from Flake-Wilkerson survey).

What more can be done?

Louisiana has no state-mandated low-income efficiency program, nor does it have a low-income energy bill discount program. Both should be considered, with reasonable funding and eligibility to the same standard as is used for LIHEAP. A reasonable low-income energy efficiency program need not cost average residential customers more than a dollar a month.¹⁷³

Similarly, Louisiana should consider reasonable and permanent funding for its non-energy anti-poverty programs such as pre-school education and Individual Development Accounts.

The Economic Benefits of Low-income Efficiency and Assistance Investments¹⁷⁴

Investments in low-income efficiency, when multiplied through the Louisiana economy (excluding New Orleans), yield *more than 20 times* the investment, as well as 223 jobs for each million dollars invested. Public investments to attract high-paying manufacturing jobs also yield a positive benefit to the local economy – but, when analyzed in the same way, utility investment in low-income energy efficiency yields *more than double* (2.3 times) the economic benefit and almost triple (2.8 times) the number of jobs. Even a combination of one-third long-term energy efficiency investment and two-thirds short-term emergency assistance would be a cost-effective way to break the back of poverty in a way that benefits the entire economy – five percent more economically productive than public investment to attract manufacturing and generating 35 percent more jobs.

¹⁷³ J. Oppenheim and T. MacGregor, “The Economics of Low-Income Electricity Efficiency Investment” (Entergy Corp., 2001); J. Oppenheim and T. MacGregor, “Protecting Low-Income Consumers: Building on Two Decades of Lessons Learned” (Entergy Corp, 2000, updated 2001); J. Oppenheim and T. MacGregor, “Poverty in the Entergy Service Territories” (Entergy Corp., 2002).

¹⁷⁴ See Section II and Appendix B for methodology.

NEW ORLEANS

Although a city of Louisiana, New Orleans has characteristics unlike any other city in the entire United States. The catastrophic effects of Hurricane Katrina in 2005 have radically changed the portrait of this unique world.

Measures of Poverty in New Orleans and the United States	U.S.	New Orleans
Median Household Income 2006	\$ 48,451	\$35,859
Income rank among 50 states plus DC		NA
% people living below 100% FPL in 2006	13.3%	22.2%
Children under 18 below 100% FPL	18.3%	41.9%
Children under 18 below 150% FPL	29.0%	NA
% People living below 200% FPL in 2006	36%	NA
Elderly Poor Despite Social Security	8.7%	12.2%
Working parents without health insurance (2003)	24.8%	NA
Children under 17 without health insurance (2005)	11%	NA
Food Insecurity (Hunger) 2004-2006	11.30%	NA
% Children in low-income families with no telephone (2005)	9%	15%
Unemployment levels (Oct. 2007)	4.4%	3.1%
% over 25 with high school diploma	84.1%	81.6%
Low-income renters with housing costs over 50% of household income	38.3%	NA
% of people living below EPI Basic Family Budget	NA	28%
% Eligible receiving LIHEAP heating assistance	23%	NA

Sources: US Census, factfinder.census.gov/home, <http://www.census.gov/hhes/www/saipe/index.html>;
LIHEAP Issue Brief <http://www.neada.org/>; BLS, LAU Current Unemployment Rates for States;
US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget
and Policy Priorities; Economic Policy Institute, www.eoi.org/content.cfm/datazone_dzlocal

What can be done?

New Orleans has no city-mandated low-income efficiency program, nor does it have a low-income energy bill discount program. Both should be considered, with reasonable funding and eligibility to the same standard as is used for LIHEAP. A reasonable low-income energy efficiency program need not cost average residential customers more than a dollar a month.¹⁷⁵

¹⁷⁵ J. Oppenheim and T. MacGregor, “The Economics of Low-Income Electricity Efficiency Investment” (Entergy Corp., 2001); J. Oppenheim and T. MacGregor, “Protecting Low-Income Consumers: Building on Two Decades of Lessons Learned” (Entergy Corp, 2000, updated 2001); J. Oppenheim and T. MacGregor, “Poverty in the Entergy Service Territories” (Entergy Corp., 2002).

Similarly, New Orleans should consider reasonable and permanent funding for its non-energy anti-poverty programs such as pre-school education and Individual Development Accounts. The latter are especially important to hurricane recovery efforts.

The Economic Benefits of Low-income Efficiency and Assistance Investments¹⁷⁶

Investments in low-income efficiency, when multiplied through the New Orleans economy, yield *more than 22 (22.2) times* the investment, as well as 250 jobs for each million dollars invested. Public investments to attract high-paying automobile manufacturing jobs also yield a positive benefit to the local economy – but, when analyzed in the same way, utility investment in low-income energy efficiency yields *more than two-and-a-half (2.6) times* the economic benefit and more than triple (3.1 times) the number of jobs. Even a combination of one-third long-term energy efficiency investment and two-thirds short-term emergency assistance would be a cost-effective way to break the back of poverty in a way that benefits the entire economy – 13 percent more economically productive than public investment to attract auto manufacturing and generating 46 percent more jobs.

New Orleans Multipliers		
For every \$1,000,000 in investment	Increased economic output	Jobs
ENERGY EFFICIENCY		
Net effect of investment	\$1,838,048	19
Net effect of bill savings	\$4,472,901	85
Effect of environmental improvement	\$1,816,307	15
Effect of non-energy benefits	\$14,083,501	130
TOTAL	\$22,210,758	250
ASSISTANCE		
Net effect of investment	\$1,940,269	37
Effect of non-energy benefits	\$1,712,397	16
TOTAL	\$3,652,667	53
MANUFACTURING PLANT		
Net effect of investment	\$11,950,452	94
Effect of environmental detriment	-\$3,319,161	-13
TOTAL	\$8,631,291	81

¹⁷⁶ See Section II and Appendix B for methodology.

MISSISSIPPI

- The problem of energy affordability in all of the Entergy service territories, including Mississippi, runs deep. In a number of measures of poverty, residents of Mississippi remain at or near the economic bottom compared to the rest of the US.

Measures of Poverty in Mississippi and the United States	U.S.	Mississippi
Median Household Income 2006	\$ 48,451	\$ 34,473
Income rank among 50 states plus DC		51
% people living below 100% FPL in 2006	13.3%	21.1%
Children under 18 below 100% FPL	18.3%	30%
Children under 18 below 150% FPL	29.0%	44%
% People living below 200% FPL in 2006	36%	49%
Elderly Poor Despite Social Security	8.7%	15.8%
Working parents without health insurance (2003)	24.8%	27.5%
Children under 17 without health insurance (2005)	11%	14%
Food Insecurity (Hunger) 2004-2006	11.30%	18.1%
% Children in low-income families with no telephone (2005)	9%	18%
Unemployment levels (Oct. 2007)	4.4%	6.1%
% over 25 with high school diploma	84.1%	77.9%
Low-income renters with housing costs over 50% of household income	38.3%	38.5%
% of people living below EPI Basic Family Budget	NA	30%
% Eligible receiving LIHEAP heating assistance	23%	19.1%
Leveraged energy funds per person	\$ 5.97	\$ 0.13
% leveraged by state vs US		2%

Sources: US Census, factfinder.census.gov/home, <http://www.census.gov/hhes/www/saipe/index.html>; LIHEAP Issue Brief <http://www.neada.org/>; BLS, LAU Current Unemployment Rates for States; US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget and Policy Priorities; Economic Policy Institute, www.eoi.org/content.cfm/datazone_dzlocal

As for state public policy supporting anti-poverty programs, a survey shows that:

- 90 percent of Mississippians feel it is important to fund programs to help poor families pay their utility bills,
- 82 percent say government should help, and
- 75 percent feel that a state program should include contributions from business as well as residential customers.¹⁷⁷

¹⁷⁷ Flake-Wilkerson Marketing Insights, “Low Income Energy Study” (Entergy Corp., based on Oct. 2002 survey); Entergy Corp., “Mississippi Answers” (drawn from Flake-Wilkerson survey).

What can be done?

Mississippi has no state-mandated low-income efficiency program, nor does it have a statewide low-income energy bill discount program.¹⁷⁸ Both should be considered, with reasonable funding and eligibility to the same standard as is used for LIHEAP. A reasonable low-income energy efficiency program need not cost average residential customers more than a dollar a month.¹⁷⁹

Similarly, Mississippi should consider reasonable and permanent funding for its non-energy anti-poverty programs such as pre-school education and Individual Development Accounts. The latter are especially important to hurricane recovery efforts.

The Economic Benefits of Low-income Efficiency and Assistance Investments¹⁸⁰

Investments in low-income efficiency, when multiplied through the Mississippi economy, yield *more than 19 (19.1) times* the investment, as well as 213 jobs for each million dollars invested. Public investments to attract high-paying manufacturing jobs also yield a positive benefit to the local economy – but, when analyzed in the same way, utility investment in low-income energy efficiency yields *almost triple (2.8 times)* the economic benefit and almost quadruple (3.5 times) the number of jobs. Even a combination of one-third long-term energy efficiency investment and two-thirds short-term emergency assistance would be a cost-effective way to break the back of poverty in a way that benefits the entire economy – 21 percent more economically productive than public investment to attract manufacturing and generating 62 percent more jobs.

¹⁷⁸ Mississippi Power Co. does have a tariffed discount which could serve as a model for a statewide mandated program if it were made more generous and eligibility were broader. This Mississippi Power discount is 55 cents per day (about 14 percent of the average bill) and limited to recipients of Supplemental Security Income or Aid to Families with Dependent Children (or, presumably, its successor, Transitional Assistance for Needy Families). Mississippi Power tariff, Schedule 37, Residential Base Charge Waiver Rider Schedule SSI-1. Value of discount computed from tariff and Energy Information Administration data for average bill, at www.eia.gov/cneaf/est/esr_sum.html at Table 6.

¹⁷⁹ J. Oppenheim and T. MacGregor, “The Economics of Low-Income Electricity Efficiency Investment” (Entergy Corp., 2001); J. Oppenheim and T. MacGregor, “Protecting Low-Income Consumers: Building on Two Decades of Lessons Learned” (Entergy Corp, 2000, updated 2001); J. Oppenheim and T. MacGregor, “Poverty in the Entergy Service Territories” (Entergy Corp., 2002).

¹⁸⁰ See Section II and Appendix B for methodology.

Mississippi Multipliers		
For every \$1,000,000 in investment	Increased economic output	Jobs
ENERGY EFFICIENCY		
Net effect of investment	\$844,300	8
Net effect of bill savings	\$4,290,544	76
Effect of environmental improvement	\$1,526,111	13
Effect of non-energy benefits	\$12,439,817	116
TOTAL	\$19,100,772	213
ASSISTANCE		
Net effect of investment	\$1,544,420	28
Effect of non-energy benefits	\$1,551,689	14
TOTAL	\$3,096,109	43
MANUFACTURING PLANT		
Net effect of investment	\$9,810,011	73
Effect of environmental detriment	-\$2,896,173	-12
TOTAL	\$6,913,837	61

TEXAS (Beaumont)

Even in the Beaumont-Port Arthur area of Texas, the problem of energy affordability runs deep.

Measures of Poverty in Beaumont, Texas and the United States	U.S.	Texas (Beaumont)
Median Household Income 2006	\$ 48,451	\$ 40,072
Income rank among 50 states plus DC		32 (1)
% people living below 100% FPL in 2006	13.3%	18.5%
Children under 18 below 100% FPL	18.3%	31%
Children under 18 below 150% FPL	29.0%	37% (1)
% People living below 200% FPL in 2006	36%	43% (1)
Elderly Poor Despite Social Security	8.7%	11.0%
Working parents without health insurance (2003)	24.8%	34.7% (1)
Children under 17 without health insurance (2005)	11%	20% (1)
Food Insecurity (Hunger) 2004-2006	11.30%	15.9% (1)
% Children in low-income families with no telephone (2005)	9%	11% (1)
Unemployment levels (Oct. 2007)	4.4%	4.9%
% over 25 with high school diploma	84.1%	82.4%
Low-income renters with housing costs over 50% of household income	38.3%	38.1%
% of people living below EPI Basic Family Budget	NA	35%
% Eligible receiving LIHEAP heating assistance	23%	1.9% (1)
Leveraged energy funds per person	\$ 5.97	\$ 0.17
% leveraged by state vs US		3%

(1) State of Texas

Sources: US Census, factfinder.census.gov/home, <http://www.census.gov/hhes/www/saipe/index.html>; LIHEAP Issue Brief <http://www.neada.org/>; BLS, LAU Current Unemployment Rates for States; US Dept. of Labor, www.dol.gov/esa/minwage/america.htm, 11/28/2007; Center on Budget and Policy Priorities; Economic Policy Institute, www.eoi.org/content.cfm/datazone_dzlocal

As for state public policy supporting anti-poverty programs, a survey shows that:

- 89 percent of Texans feel it is important to fund programs to help poor families pay their utility bills,
- 75 percent say government should help, and
- 74 percent feel that a state program should include contributions from business as well as residential customers.¹⁸¹

¹⁸¹ Flake-Wilkerson Marketing Insights, “Low Income Energy Study” (Entergy Corp., based on Oct. 2002 survey); Entergy Corp., “Arkansas Answers” (drawn from Flake-Wilkerson survey).

What more can be done?

Texas has already adopted a low-income efficiency program, as described above. As this program develops further, consideration should be given to ramping it up to a fuller scale. Texas also has a low-income discount program with automatic enrollment from designated income-screened programs. The size of the discount has varied from year to year; currently it is a 12 percent discount only in four summer months. In addition, Entergy has a low-income discount tariff under which it waives the customer charge, which amounts to an additional average discount of 2.7 per cent; a ten percent discount is pending in a rate case, to offset a proposed rate increase.¹⁸² Consideration should be given to a larger discount and to automatic enrollment for all discounts.

Similarly, Texas should consider reasonable and permanent funding for its non-energy anti-poverty programs such as pre-school education and Individual Development Accounts. The latter are especially important to hurricane recovery efforts.

The Economic Benefits of Low-income Efficiency and Assistance Investments¹⁸³

Investments in low-income efficiency, when multiplied through the Beaumont-Port Arthur area economy, yield *more than 33(33.5) times* the investment, as well as 284 jobs for each million dollars invested. Public investments to attract high-paying manufacturing jobs also yield a positive benefit to the local economy – but, when analyzed in the same way, utility investment in low-income energy efficiency yields *more than triple (3.2 times)* the economic benefit and more than triple (3.1 times) the number of jobs. Even a combination of one-third long-term energy efficiency investment and two-thirds short-term emergency assistance would be a cost-effective way to break the back of poverty in a way that benefits the entire economy – 30 percent more economically productive than public investment to attract manufacturing and generating 48 percent more jobs.

¹⁸² Personal communication, R. Chapman, Texas Legal Services Center (Dec. 2007). Value of customer charge waiver computed from FERC Form 1 average bill data.

¹⁸³ See Section II and Appendix B for methodology.

Beaumont, Texas area Multipliers		
For every \$1,000,000 in investment	Increased economic output	Jobs
ENERGY EFFICIENCY		
Net effect of investment	\$6,108,142	52
Net effect of bill savings	\$7,588,607	86
Effect of environmental improvement	\$2,004,475	14
Effect of non-energy benefits	\$17,830,893	133
TOTAL	\$33,532,117	284
ASSISTANCE		
Net effect of investment	\$1,891,109	50
Effect of non-energy benefits	\$2,131,603	16
TOTAL	\$4,022,712	66
MANUFACTURING PLANT		
Net effect of investment	\$14,253,191	106
Effect of environmental detriment	-\$3,645,585	-13
TOTAL	\$10,607,606	93

APPENDIX B: METHODOLOGY

QUANTIFYING THE ECONOMIC BENEFITS OF LOW-INCOME ENERGY EFFICIENCY

Our analysis is based on the Regional Input-Output Modeling System (RIMS II) industry multiplier tables maintained by the U.S. Department of Commerce Bureau of Economic Analysis (BEA).¹⁸⁴ The latest regional data are based on industry linkages in 2005, and are thus affected in unknown ways by Hurricane Katrina.¹⁸⁵ However, the impacts of the hurricane were focused on New Orleans and parts of Louisiana and Mississippi; the results of the analysis are reasonably stable across states and, in fact, show less economic impacts of investments in the Entergy region than the nation at large.

We conservatively report this impact net of the impact of transferring the funds necessary for the investments from taxpayers or ratepayers. The funds so transferred would themselves have had a multiplier effect in the absence of the transfer, so we subtract that baseline impact in order to compute the net impact of transferring the funds to support energy efficiency, energy assistance, or a manufacturing plant. In the case of manufacturing plants, we track only the public investment and assume, based on historic experience, that it leverages out-of-region investment of 4.3 times the public investment.¹⁸⁶

We computed the impacts of investments in efficiency improvements with a weighted average 19.25-year life.¹⁸⁷ We assumed a 20-year life for the manufacturing plant. Since we assumed a 20-year life for the plant, we also assumed that the employment impact would last 20 years. However, a 20-year plant life is considerably less certain than the lifetime of a permanently installed efficiency improvement. Some manufacturing plants are not economically stable – a typical product model may only be built for five years, after which a plant must be temporarily closed for re-tooling or even permanently closed.¹⁸⁸

It is also noteworthy that low-income households pump proportionately more money into the economy than average households¹⁸⁹ – they cannot afford to save – so the multiplier

¹⁸⁴ <http://www.bea.gov/regional/rims/index.cfm>.

¹⁸⁵ See e.g., www.bea.gov/katrina/index2.htm.

¹⁸⁶ Computed from Hill & Brahmst, “The Auto Industry Moving South: An Examination of Trends” (Center for Automotive Research, 2003).

¹⁸⁷ Efficiency measure lives range from 7 years for water heater wraps to 30 for attic insulation.

¹⁸⁸ Hill & Brahmst, “The Auto Industry Moving South: An Examination of Trends” at 13 (Center for Automotive Research, 2003). The economics of existing plants do not necessarily favor keeping them open. E.g., E. Eckholm, “Blue-Collar Jobs Disappear, Taking Families’ Way of Life Along” *New York Times* (Jan. 16, 2008).

¹⁸⁹ P. R. Tcherneva, “Missouri’s Cost of Unemployment” (University of Missouri – Kansas City Department of Economics, Center for Full Employment and Price Stability, Special Report 0502, 2002). Also see BLS consumer expenditure data: in 2006, for example, the average household, with after-tax

effect of lowering their bills with energy efficiency measures is particularly strong. This is partially offset by reductions in utility revenue (the utility multiplier is lower than that of low-income households), though this effect is attenuated somewhat by utility benefits that lower utility costs: lower arrears,¹⁹⁰ lower collection costs,¹⁹¹ and lower disconnection-reconnection costs.¹⁹²

Environmental impacts

In determining the economic value of energy efficiency, we have taken into account the economic impact of avoiding property and health damage from environmental pollutants, mostly carbon dioxide. Conversely, we account for the environmental costs of manufacturing.¹⁹³

The damage caused by increasing concentrations of carbon dioxide is their tendency to increase the overall temperature of the planet. Adverse impacts in the US include:

- more intense storms (Boston, for example, has been subjected to two “100-year storms” and three “fifty-year storms” in the last decade; Hurricanes Rita and Katrina may also be examples of this phenomenon);
- coastal flooding;
- urban heat-related mortality (including deteriorated air quality, *i.e.*, smog);
- increases in allergic reactions;
- reduced winter recreation;
- increased competition for fresh water;
- increased damage to forests from fires, pests, and disease; and
- drought in the Southwest.¹⁹⁴

income of \$58,101, spent 83% of income; above \$70,000, averaging income of \$119,298, spent only 60%, but the group between \$30,000 and \$40,000, averaging income of \$33,916, spent 104% of income – at lower incomes, expenditures above income are even larger. Income before taxes: Average annual expenditures and characteristics, Consumer Expenditure Survey, 2006

<ftp://ftp.bls.gov/pub/special.requests/ce/standard/2006/income.txt>

¹⁹⁰ Based on research by National Grid USA (formerly Massachusetts Electric) and used in its energy efficiency cost-effectiveness analysis.

¹⁹¹ Based on Entergy costs of calls and disconnect notices. Customer service time based on research set out in J. Oppenheim & T. MacGregor, “All-Ratepayers Test of Cost-Effectiveness of DCEO Low-Income Utility Efficiency Program,” in DC PSC Formal Case No. 945 (August 2004), http://www.democracyandregulation.com/columns.cfm?subject_id=16&subject_name=Cost%2Deffectiveness (hereinafter “DCEO Cost-Effectiveness Report”); cost thereof based thereon and service territory average income compared to national average income.

census.gov/hhes/www/income/income06/statemhi2.html.

¹⁹² Based on Entergy costs of disconnection and reconnection. Incidence of low-income disconnection and reconnection based on research set out in DCEO Cost-Effectiveness Report.

¹⁹³ For purposes of calculating environmental impacts, we looked specifically at automobile manufacturing. www.energystar.gov/ia/business/industry/Auto_EPI.xls. There may be additional societal costs of a manufacturing plant, such as the need to build infrastructure and the increase in traffic congestion; however, these are not quantified.

¹⁹⁴ The Intergovernmental Panel on Climate Change (IPCC) of the United Nations (UN), Fourth Assessment Report, www.ipcc.ch; Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge University Press, 2007), <http://www.hm->

It is often pointed out in response that an extended US growing season would offset the adverse economic effects of such impacts.¹⁹⁵ However, this short-run benefit will be offset by high temperatures and water shortages in the longer run.¹⁹⁶ “High temperature episodes can reduce yields by up to half.”¹⁹⁷ Another pressure on food supplies, and thus prices, is the sharply increased use of corn to produce the gasoline substitute ethanol – the fraction of the corn crop devoted to ethanol has gone from three percent to 20 percent in five years while the price of corn has about doubled in two.¹⁹⁸

In the rest of the world, particularly the less developed world, impacts also include:

- drought,
- heat-related mortality,
- increased cardio-respiratory disease caused by increased ground level ozone,
- additional stress on water resources (including hydroelectricity) from both reduced snow melt and pollution such as algae and salinization,
- flash floods,
- decreased ability to grow food (including aquaculture),
- stress on fisheries,
- flooding (to the point of overwhelming some small South Pacific islands) and erosion,
- increased insect-borne disease, and
- pressure to migrate.¹⁹⁹

These impacts translate to national security concerns in the US as pressure mounts for aid and conflict resolution.²⁰⁰ Changes in ocean temperatures and melting ice sheets also

treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm (October 2006). Supporting documents are located at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_supporting_documents.cfm (Stern Review).

¹⁹⁵ *E.g.*, R. Mendelsohn and J. Neumann, eds., The Impact of Climate Change on the United States Economy (Cambridge Univ. Press 1999). “The research provides repeated support of the importance of adaptation. Adaptation mitigates the impacts of environmental damage in every sector studied. The research also demonstrates that modest warming will entail benefits for the United States in some sectors. The U.S. agriculture, forestry, and outdoor recreation sectors are all projected to benefit from a *slightly* warmer, wetter, CO₂-enriched world. These benefits outweigh the damages measured in the coastal, water, and energy sectors, suggesting *small* amounts of warming could be good for the U.S. economy. The research, however, does not measure all relevant nonmarket [costs and] benefits such as health effects, species loss, and human amenity impacts, so nothing definitive can be said about the net effect of climate change on the quality of life in the United States. The research also does not extend beyond U.S. borders.” (Introduction, p. 15, emphasis added)

¹⁹⁶ Stern Review at 71, 80.

¹⁹⁷ Stern Review at 80.

¹⁹⁸ *E.g.*, Anon., “Very, Very Big Corn,” Wall St. Journal at A8 (Jan. 27, 2007).

¹⁹⁹ IPCC; Stern Review.

²⁰⁰ A. Revkin (New York Times), “UN: Poor nations unprepared for global warming,” Boston Globe at A5 (April 1, 2007) (referring to IPCC Fourth Assessment, vol II); B. Bender, “Bill ties climate to national security/Seeks assessments by CIA, Pentagon,” Boston Globe at A1 (April 9, 2007).

have an impact on US Navy operations.²⁰¹ Also of concern is that economic pressures on other nations reduce their ability to export to, or import from, the US.

We did not attempt to evaluate the cost of this damage from carbon dioxide. As a conservative proxy for this health, property, and economic damage, we use the cost of control, which is approximated by the projected market price for an allowance for carbon dioxide emission.²⁰² The cost of damage is very much greater than the cost of control,²⁰³ so our use of the cost of control is very conservative. Avoiding these costs is a benefit of energy efficiency; incurring them is a cost of manufacturing.

Environmental costs of manufacturing include, for example, jobs lost due to damaged machines and hours of employment lost due to damaged health. Of course these costs can be mitigated and this additional cost creates jobs and economic output, albeit at lower economic multipliers than a manufacturing plant. However, such environmental mitigation also requires investment. Our analysis compares \$1 million of public investment in low-income energy efficiency against the same investment to attract a manufacturing plant. The latter requires investment in environmental mitigation, which must be netted against the manufacturing investment in order to maintain the comparison at \$1 million each. Since the multipliers for environmental mitigation are less than those for manufacturing, the net economic impact of an efficiency investment remain superior to manufacturing with environmental mitigation. As an additional conservatism, we do not account for this in our results.

We also accounted for criteria air pollutants – oxides of sulphur (SO_x)²⁰⁴ and nitrogen (NO_x),²⁰⁵ as well as mercury (Hg)²⁰⁶ – but not carbon monoxide (CO), fine particulates

²⁰¹ B. Bender, "Bill ties climate to national security/Seeks assessments by CIA, Pentagon," Boston Globe at A1 (April 9, 2007); S. Hargreaves, "Ex-CIA chief spooked by fossil fuels/R. James Woolsey says the switch to renewables must be made to head off global warming and terrorism," CNN. Com (March 8, 2007).

²⁰² See cbo.gov/ftpdoc.cfm?index=2876&type=0&sequence=3. J. K Boyce et al., "Cap and Rebate: How to Curb Global Warming while Protecting the Incomes of American Families" Table 7 (University of Massachusetts at Amherst Political Economy Research Institute, Oct. 2007).. This exercise assumed a consensus estimate of carbon price of \$200 per ton (about \$55 per ton of CO₂) The price of CO₂ in Europe has already reached an average of \$22.89 in 2007. Computed from L. Abboud, "Hot Carbon Market Signals New Interest," *Wall St. Journal* at A6 (Jan. 18, 2007).

Pollution emission rates from Entergy, from eia.doe.gov/cneaf/pubs_html/rea/tablefe2.htm, and from netl.doe.gov/energy-analyses/technology.html.

²⁰³ IPCC; Stern Review.

²⁰⁴ ccfe.com/education_ccfe/SO2_Background_Drivers_Pricing_PDF.pdf, <http://ferc.gov/market-oversight/otr-mkts/emiss-allow/2007/archives/09-2007-otr-emns-no-so-pr.pdf>.

²⁰⁵ netl.doe.gov/publications/proceedings/02/scr-sncr/farrellsummary.pdf,

eia.doe.gov/cneaf/pubs_html/rea/tablefe2.htm.

²⁰⁶ "Mercury Trading Takes Form", Evolution Markets, October 2006, <http://new.evomarkets.com/>, cleanerandgreener.org/resources/emission_reductions.htm.

or volatile organic compounds (VOCs),²⁰⁷ which have no consensus value. We also accounted for water savings.²⁰⁸

Other benefits²⁰⁹

We also computed other benefits that multiply through the economy,²¹⁰ including (conservatively estimated):²¹¹

* Societal and taxpayer benefits, such as avoided fire damage,²¹² reduced costs of homeless shelters,²¹³ the cost of crime avoided by reducing poverty, and the reduced costs of healthcare as a result of reducing poverty.²¹⁴

* Savings to program participants, including bill savings,²¹⁵ the reduced costs of moving (due to termination for non-payment) and resulting lost education,²¹⁶ the value of

²⁰⁷ cleanerandgreener.org/resources/emission_reductions.htm, mainegreenpower.org/calculator/residential-1.shtml.

²⁰⁸ "The California Low Income Public Purpose Test, TecMRKT Works (April 2001); mainegreenpower.org/calculator/residential-1.shtml (households); R. Hornsby *et al*, Synapse Energy Economics Inc., "Avoided Energy Supply Costs in New England", 2007 Final Report (Aug 10, 2007) at pg 7-18, Exhibit 7-14; P. Freedman and J. Wolfe, LimnoTech, "Thermal Electric Power Plant Water Uses" (October 2, 2007) (plants).

²⁰⁹ Multiplier analysis was also conducted for assistance programs. The benefits described here were also computed for assistance programs, except refrigerator purchase deferral and comfort.

²¹⁰ We accounted for the different multiplier effects of benefits to utilities, low-income customers, and society generally.

²¹¹ Discounted at 20-year (approximate life of measure) Treasury bond rate, minus inflation.

http://online.wsj.com/mdc/public/page/2_3020-treasury.html?mod=2_0031.

²¹² http://firechief.com/health_safety/firefighter-injuries-cost032505/, "The Total Cost of Fire in the United States", J. Hall, Jr., Fire Analysis & Research Division, National Fire Protection Association, Dec. 2006 "Trends & Patterns of U.S. Fire Losses", Marty Ahrens, Fire Analysis & Research Division, National Fire Protection Association, Sept. 2007

<http://www.nfpa.org/newsReleaseDetails.asp?categoryID=488&itemID=37090>. Avoided costs are divided between savings to participants and savings to taxpayers and society at large from a reduction in fire losses. Avoided costs include deaths and injuries as well as property damage and firefighting costs.

²¹³ Cost of homelessness derived from Millennial Housing Commission. "Meeting Our Nation's Housing Challenges. Washington", D.C.: U.S. Government Printing Office, 2002,

<http://www.planning.org/policyguides/homelessness.htm> and U.S. Census Bureau, www.census.gov; percentage of homeless derived from the foregoing applied to population of disconnected customers (developed in DCEO Cost-effectiveness Report. *See also* [planning.org/policyguides/homelessness.htm](http://www.planning.org/policyguides/homelessness.htm).

²¹⁴ Avoided costs derived from J. Oppenheim and T. MacGregor, "The Economics of Poverty" (Entergy Corp., 2006), democracyandregulation.com/detail.cfm?artid=99&row=0. One-third of factor applied to estimated participant savings to conservatively account for failure to eradicate poverty (as assumed in referenced study).

²¹⁵ Laitner, Eldridge, Elliott, "The Economic Benefits of an Energy Efficiency and Onsite Renewable Energy Strategy to Meet Growing Electricity Needs in Texas" (ACEEE Report Number E076, Sept., 2007); L. Berry, M. Brown, L. Kinney, "Progress Report of the National Weatherization Assistance Program," (DOE Metaevaluation, Sept 1997) at pg. ii; <http://www.waptac.org/si.asp?id=1097>. *Also see* DCEO Cost-effectiveness Report.

²¹⁶ Based on time to move, computed at minimum wage. "The California Low Income Public Purpose Test," TecMRKT Works (April 2001). *Also see* DCEO Cost-effectiveness Report.

deferring the purchase of a refrigerator,²¹⁷ the value of not losing utility service, the value of increased comfort,²¹⁸ the value of spending less time on the phone with the utility,²¹⁹ the reduced costs of poor health,²²⁰ and the increase in property value.²²¹

Many benefits are not quantified here, including increased property tax payments, energy price reductions caused by lower demand, or energy rate reductions caused by retained sales.²²²

²¹⁷ Efficiency programs typically replace inefficient refrigerators where it is cost-effective to do so. Based on program experience, assumed five-year deferral was discounted at 20-year (life of measure) Treasury bond rate, minus inflation. http://online.wsj.com/mdc/public/page/2_3020-treasury.html?mod=2_0031.

Penetration rate and cost based on program experience. DCEO Cost-effectiveness Report.

²¹⁸ These subjective estimates are based on survey research. DCEO Cost-effectiveness Report.

²¹⁹ Telephone time at federal minimum wage., based on "The California Low Income Public Purpose Test," TecMRKT Works (April 2001) and research set out in DCEO Cost-effectiveness Report.

²²⁰ Cost of ill health measured as carbon monoxide deaths and cost of healthcare caused by carbon monoxide injury. Vicusi, *et.al.*, "Pricing Environmental Health Risks: survey assessments of risk-risk and risk-dollar trade offs for chronic bronchitis", 21 *Journal of Environmental Economics and Management* 32-51(issue 1, 1991); Goldstein, "The California Low Income Public Purpose Test," (TecMRKT Works, April 2001), at Tab-9GNEBsParticH&S-CO, cell P52 (illness cost default set as \$50,000 adjusted for inflation); L. Skumatz & Gardner, PA Government Services, "State of Wisconsin Department of Administration, Division of Energy Low Income Public Benefits Evaluation" (Nov 9, 2005) at pp.10-22, Tables 1-2 and 4-1 (number and cost of CO illness of crises); Berry, Brown & Kinney, "Progress Report of the National Weatherization Assistance Program" (Oak Ridge National Laboratory, ORNL/CON-450, September 1997) at pg.44.

²²¹ Research set out in DCEO Cost-effectiveness Report.

²²² See generally DCEO Cost-effectiveness Report.

APPENDIX C:

Successful Low-Income Programs

There are two broad categories of energy assistance programs for utility low-income customers that can enhance and complement the federally funded LIHEAP and DOE WAP: affordability and efficiency and weatherization.²²³

- Affordability programs provide direct assistance in paying energy bills, through fuel funds, a fixed or percentage discount on the utility bill, a percentage of income payment plan (PIPP), and/or a credit re-establishment incentive program. All of these affordability programs are funded by all non-low-income ratepayers based on the premise that keeping paying customers on the system provides an economic benefit to the utility and all of its ratepayers.²²⁴ Contributing to the efficacy of these types of programs are consumer protections such as winter or summer moratoria; installment billing; choice of payment date; protection against disconnects for infants, elderly or disabled; and reduced or waived late or disconnect fees. These programs, combined with consumer education on budgeting and efficient energy use, can act as short-term solutions to energy unaffordability.
- Efficiency and weatherization programs to reduce energy usage and lower bills are long-term solutions to unaffordable energy bills. Combined with education programs which teach customers about prudent energy use and budgeting, such as those already provided by Entergy, these programs actually reduce the amount of energy used by consumers and can lower energy bills substantially.

Affordability Programs

Discounts

While there are many variations in discount design among states and utilities, there are three basic discount program types:

- Fixed percent of bill;
- Fixed dollar discounts; and
- Discounts that vary with usage

²²³ Ratepayers contribute about two-thirds of all state and local funding for low-income energy assistance programs. LIHEAP Clearinghouse, State Leveraging FY 2006 (May 2007), <http://liheap.ncat.org/tables/FY2006/06stlvtb.htm>. The balance is funded by charitable and taxpayer contributions.

²²⁴ The economics are described in detail in Section II of this paper, above.

Each state or utility has assessed the needs and circumstances of its customers, the number of affected customers, the effect on other customers, and the political will to provide relief before designing its chosen program.²²⁵

The fixed percent of bill design has resulted in discounts ranging from seven percent to 40 percent, depending on the state and utility company. Some states waive the tax on energy,²²⁶ which is by nature a fixed percent of the bill, and in a small number of states, the discounts apply only during the costliest part of the year.²²⁷ Discounts that vary seasonally recognize the sharp differences in consumption that exist in certain climates and are thus designed to contribute to simplifying low-income budgeting.

A fixed dollar discount, for example waiving the customer charge for low-income customers, can be enough of a discount to make energy bills affordable in some cases. In others, a fixed credit amount is determined in a rate case to be sufficient to a state's purposes.²²⁸

Fixed percentage and fixed dollar discounts are simple for the utility to administer and for customers to understand. Some states have chosen to vary the discount with a customer's usage, such as a lifeline rate for a fixed block of kWh determined to be essential to life, then the regular residential rate for all other uses, or higher rates for succeeding blocks – an inverted block rate. A discount that varies with usage is preferred by some because it encourages conservation.

Different discount strategies tend to target different sectors of the low-income population. A fixed dollar discount, and discounts that vary directly with usage, tend to benefit most those electricity customers with the lowest incomes, to the extent that electricity consumption is correlated with income.²²⁹ Fixed percentage discounts better serve low-income households with high consumption that is not within their control, such as those with electric heat, cooling needs, large families, or exceptionally wasteful appliances.

There is probably little difference among all these discount strategies in the predictability of their financial impact on all other ratepayers since the number of low-income customers and their consumption tend to be similarly stable. The least predictable

²²⁵ J. Oppenheim and T. MacGregor, "Low-Income Consumer Utility Issues: A National Perspective" at 11 (2000).

²²⁶ Arkansas waives the sales tax on the first 500 kWh of electricity usage per month for customers with annual income less than \$12,000. LIHEAP Clearinghouse, www.arkansas.gov/dfa/income_tax/tax_general_excise_questions.html, www.energys-arkansas.com/your_home/special_needs.aspx, www.liheap.ncat.org/Supplements/2006/arstfd.htm.

²²⁷ J. Oppenheim and T. MacGregor, "Low-Income Consumer Utility Issues: A National Perspective" at 11 (2000).

²²⁸ Note that, where customer charges are very low, waiver of the customer charge would have little benefit, and a larger fixed dollar amount is therefore more appropriate. J. Oppenheim and T. MacGregor, "Low-Income Consumer Utility Issues: A National Perspective" at 11 (2000).

²²⁹ The correlation between income and gas usage is smaller than that for electricity usage because many low-income families live in substandard, poorly weatherized homes that require excessive consumption of gas to heat. J. Oppenheim and T. MacGregor, "Low-Income Consumer Utility Issues: A National Perspective" at 13 (2000).

variable is usually the penetration of the rate; *i.e.*, how successful outreach efforts are. This is often correlated with the penetration of a state's federally-funded Low Income Home Energy Assistance Program (LIHEAP) (shown for heating assistance for the Entergy states in the Table at the end of the second section), the penetration of other benefit programs, the fraction of low-income consumers in master-metered buildings or group living situations (group homes, nursing homes, and the like), the nature of the low-income population, the nature and extent of outreach efforts, and the presence of automatic sign-up mechanisms.

Low-income discounts are usually recovered from other ratepayers on a per-kWh basis, such as through a system benefits fund, or embedded in non-low-income customer rates. Generally, rates are established on the basis of a predicted cost based on historical experience and other known parameters, and are reviewed periodically as part of general rate cases. Costs are usually recovered from all non-low-income customers, on the principle that all customers benefit from the consequent cost reductions and that all customers share the social obligation to assist low-income families.

Percentage of Income Payment Plans (PIPP)

This type of program directly takes into account the energy burden on individual low-income households and structures a payment program such that the burden faced by these customers will be no higher than a predetermined percentage of their income. The average electric energy burden on a non-low-income Entergy customer is 3.8 percent;²³⁰ the burden on a low-income customer can be up to three times as high or more. A PIPP could bring that burden down to the same or nearly the same as that for an average residential customer.

PIPP designs vary by state and utility. To simplify administration, some use income brackets to determine the percentage; others use income brackets and levels of consumption. In some cases, the fraction of income paid depends on the level of poverty. PIPPs are often coupled with a credit re-establishment incentive program (described below), with a fractional forgiveness of amounts due for each month of successful participation in the PIPP.

PIPP programs are based on the premise that, although low-income customers cannot afford to pay the entire energy bill, they can pay (and are willing to pay) something toward their bill each month. The amount may be negotiated and based on what the customer agrees is affordable, based on an analysis of income and expenses. PIPPs obviously require an additional commitment of administrative resources, but by allowing low-income customers to do what they want to do -- pay their bills -- PIPPs have succeeded in reducing arrearages and consequent collection and termination costs.²³¹

²³⁰ Weighted average computed from Entergy FERC Forms 1 and US Census. Energy burden is the fraction of income required to pay for home energy (heat and electricity). Electricity burden is the fraction required for electricity alone.

²³¹ Columbia Gas in Ohio, for example, found reduced arrearages and improved payments. West Penn Power also found reduced arrearages and confirmed that participants paid more than their variable costs so they contributed to fixed costs. Pennsylvania Power & Light found improvements in payment frequency

Credit Re-establishment Incentive Programs²³²

An important component of many discount and PIPP programs is an incentive program that offers low-income customers in arrears an opportunity to earn their way back to good credit through good payment behavior. Low-income customers are usually in arrears because they cannot afford to pay their bills -- not because they do not want to pay.²³³ Early studies showed that half of all customers fell behind on utility bills because they did not have enough money to pay them, due to such causes as unemployment and medical bills.²³⁴ Since then, utility bills have risen sharply and thus become much less affordable for low-income customers. If the bills are made more affordable, experience demonstrates that low-income customers in general will pay more of their bill. As arrearages grow, low-income customers are apt to become fearful of ever getting out from under their debt. Thus, increasing the late payment penalty, disconnecting the customer and then charging a reconnection fee, or setting a payment plan in place that requires more than the customer is able to pay, are unlikely to generate much incremental revenue from the low-income customer with a high arrearage. In fact, that customer is likely to become discouraged and to stop making any payments at all.

Credit re-establishment programs are directed to the relatively small fraction of low-income customers who have resources to pay (and are willing to pay) their bill each month, but are unable to manage their arrears. A payment amount may be negotiated and based on what the customer agrees is affordable, based on an analysis of income and expenses. The customer must sign an agreement with the utility, or with a community action agency acting on the utility's behalf, in which, in exchange for a reduction over time in the arrearage amount owed to the utility, the customer agrees to make regular, timely payments; participate in budget counseling if deemed appropriate and helpful; take advantage of all monetary assistance available, such as LIHEAP, discounts, and other assistance; and participate in a utility's weatherization and efficiency program to the degree that customer is eligible.

“Successful arrears forgiveness programs are designed to target customers who, with the right training, assistance and support, can move from needing some sort of assistance to self-sufficiency. These programs are comprehensive and cost-effective, offering budget counseling, payment plans, arrears forgiveness, energy efficiency and links to other financial grants and assistance. Customers benefit from a reduction in their electric and/or gas bill arrearage, with the ultimate goal of independently managing bill payments more effectively.”²³⁵

and decreased account management costs. All studies found no increase in consumption. J. Oppenheim and T. MacGregor, “Low-Income Consumer Utility Issues: A National Perspective” at 15 (2000).

²³² Sometimes known as “arrears management” or “arrears forgiveness” programs.

²³³ E.g., Ron Grosse, “Win-Win Alternatives to Credit & Collections”, Wisconsin Public Service Co., 1997.

²³⁴ Matousek and Radue, “Wisconsin Public Services Corp. Lifestyles II” at 25 (Matousek & Assocs. 1993).

²³⁵ Penni McLean-Conner, vice president, customer care, NSTAR (the electric and gas utility serving a large portion of Metropolitan Boston), “The New Age of Arrears Forgiveness Programs, Electric Light & Power (Sept. 2006).

Credit re-establishment programs have been used by Brooklyn Union Gas (now KeySpan, a subsidiary of National Grid) and all of the investor-owned utilities in Massachusetts as an entrée to providing direct services, or as a referral source for customers to other service providers, to help customers become energy self-sufficient. Services include utility discount programs; energy audits, weatherization and energy efficiency services; heating system repairs or replacement; refrigerator/freezer replacement; assistance from FEMA; income tax preparation in order to claim the EITC; legal services; budget and credit counseling; Medicaid and state health insurance; GED preparation, ESL courses and adult education; employment training and referrals; child care; Food Stamps and other food resources; transportation; homelessness prevention; and others.²³⁶ A preliminary independent evaluation of the Massachusetts program has shown that the number of customers in arrears dropped by 13 percent in one year, the number who had skipped a meal to pay a utility bill had been cut in half, and clients reported increases in their food, nutrition and housing security, as well as in energy self-sufficiency.²³⁷

Energy Efficiency Programs

Comprehensive energy efficiency, education, and weatherization services lower customer bills, enabling low-income customers to better manage their usage and thus empowering them to take better control of their finances. The low-income population faces unique barriers to participation in energy efficiency programs, so a program must be designed to minimize barriers and facilitate participation. It is equally important to standardize a set of measures and auditing tools for the chosen implementers in order to reduce training needs and speed installation time.

In the early years of utility companies' providing energy efficiency services to low-income customers, the "neighborhood blitz" approach was widely used. Savings from measures installed in the blitz were often small and difficult to evaluate; there was no education provided; and no follow-up was conducted.

For the past decade or more, the trend has been to provide customized audits in previously scheduled visits, along with education, refrigerator metering (to determine energy use for possible replacement), and installation of all measures that can be installed at the time, with appointments scheduled for any further work necessary (such as ceiling, wall or floor insulation). A blower door test is conducted to determine the need for insulation and/or air sealing. Energy efficient lighting, including fluorescent torchieres, high efficiency water heaters, refrigerators and air conditioners can provide extremely cost-effective savings while lowering utility bills.

²³⁶ Jim Yardley, "The Gas Company as Social Worker; Brooklyn Utility Tries Softer Approach to Pursue Unpaid Bills," NY Times (Jan. 17, 1999); Residential Energy Assistance Challenge (REACH) Option Program: Annual Program Progress Report, 2005-2008 Massachusetts LASER Project (Oct. 2007).

²³⁷ "8th Quarterly Evaluation Report for the REACH (LASER) Project, University of Massachusetts Donahue Institute (Oct. 2007).

To maximize efficiencies and minimize costs of service delivery, the efficiency program should be "piggy-backed" onto a previously existing network of experienced administrators. Indeed, an important feature of most successful programs is to coordinate (piggyback) among all resources available to a particular home, including electric and gas utilities, the U.S. Department of Energy Weatherization Assistance Program (DOE WAP), and state funds. A comprehensive program would provide an audit, a detailed appliance survey with usage data, detailed energy education about energy use, and opportunities for saving energy tailored to each household's practices. Because low-income customers have no spare resources for efficiency improvements, all cost-effective efficiency measures should be installed at no direct cost to the low-income building occupant, including attic and floor insulation, pipe and duct insulation, lighting, new refrigerators, air conditioners, water heaters, programmable thermostats, and low-flow showerheads and faucet aerators. Carbon monoxide detectors should be installed for health and safety purposes.

Electric utility companies usually do not offer measures that are mainly designed to save resources other than electricity. However, where natural gas companies also implement energy efficiency programs and pay for gas-saving measures, electric companies should provide electricity-saving measures in gas-heated homes, such as energy efficient lightbulbs and appliances. By coordinating both the electric and natural gas utility programs with the DOE WAP program, even more cost and delivery efficiencies can be realized.