

ECONOMIC OPPORTUNITY STUDIES

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Low-Income Consumers' Energy Bills and Energy Savings In 2003 and FY 2004

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Abstract

Low-Income Consumers' 2003 and FY 2004 Energy Bills and Energy Savings

All consumers in the U.S. now spend significantly more to buy the same amount of household energy they used six years ago. However, for the average low-income consumer, the growth in energy bills has out-paced the growth in income. Only those whose homes have been weatherized by the Department of Energy's Weatherization Assistance Program or have received the same kind of efficiency upgrades, are, on average, able to buy as much energy as six years ago without spending a higher share of their household income.

This analysis finds that the 25% of U.S. households with the lowest incomes will spend 16.7% of their entire annual budget on residential energy during the current 2004 Federal Fiscal Year. In 1997, the figure was 14.7%. The figures are based on updates of the most recent U.S. Department of Energy Residential Energy Consumption Survey's household records, which are from 1997. March 2004 short-term price and weather projections from the Energy Information Administration and household income data from the Census Current Population Survey were used to update the records and forecast.

Income and Energy Bills.

Although the average income of the poorest one-quarter of U.S. households has grown since 1997, household energy bills grew more rapidly. Recent and projected increases in natural gas and fuel oil prices are responsible for the higher bills. In 2003, the average price for residential natural gas was \$9.45 per thousand cubic feet compared to \$6.69 as recently as 1999. The Department of Energy predicts the 2004 price will be even higher: over \$10. Home heating oil rose from its 1999 average of \$0.86 per gallon to \$1.32 in 2003 and is expected to grow through this fiscal year.

Fuel and Bills

The total annual energy bills of the low income fuel oil users have grown the most as compared to 1997, about 56%. The average energy burden, percent of income needed to pay the year's energy bills for all household uses will be a little over 20%. Natural gas consumers also experienced gas bills that were 46% higher and saw a 26.5% increase in their combined residential energy bills; this will translate to an average FY 2004 energy burden of nearly 20%, after adjusting their incomes for growth during the period.

Geography and Bills

Residents of the colder regions are seeing the biggest increases, while the poor in the Mid-Atlantic, the Mid-West, and the Rocky Mountain regions lost the highest shares of their incomes to energy costs.

Consumers who are not low-income

Other individuals and families are also affected by these rising costs. The average bill for all fuels used by the 75% of consumers not in the lowest-income group will be about \$1720 in FY 2004, as compared to \$1430 in 1997. Their energy burden averages 4% of income now, just slightly higher than six years ago. In spite of growing incomes over the past six years, many middle-income families must use all of their recent economic gains to keep as warm or as cool as they were in 1997.

Energy Efficiency and Bills

As oil and gas bills rose, so did the annual dollar savings resulting from the efficiency investments made by the Department of Energy's Weatherization Assistance Program in over 5 million low-income homes or by other programs using similar technology. In FY 2004, Weatherized consumers will pay substantially less for their annual energy bills than they would have before the efficiency investments: almost \$325 less if they live in gas-heated homes and about \$350 less if they heat with oil or propane. The savings offset the increases, on average, and mean that more disposable income is available for other necessities than six years ago.

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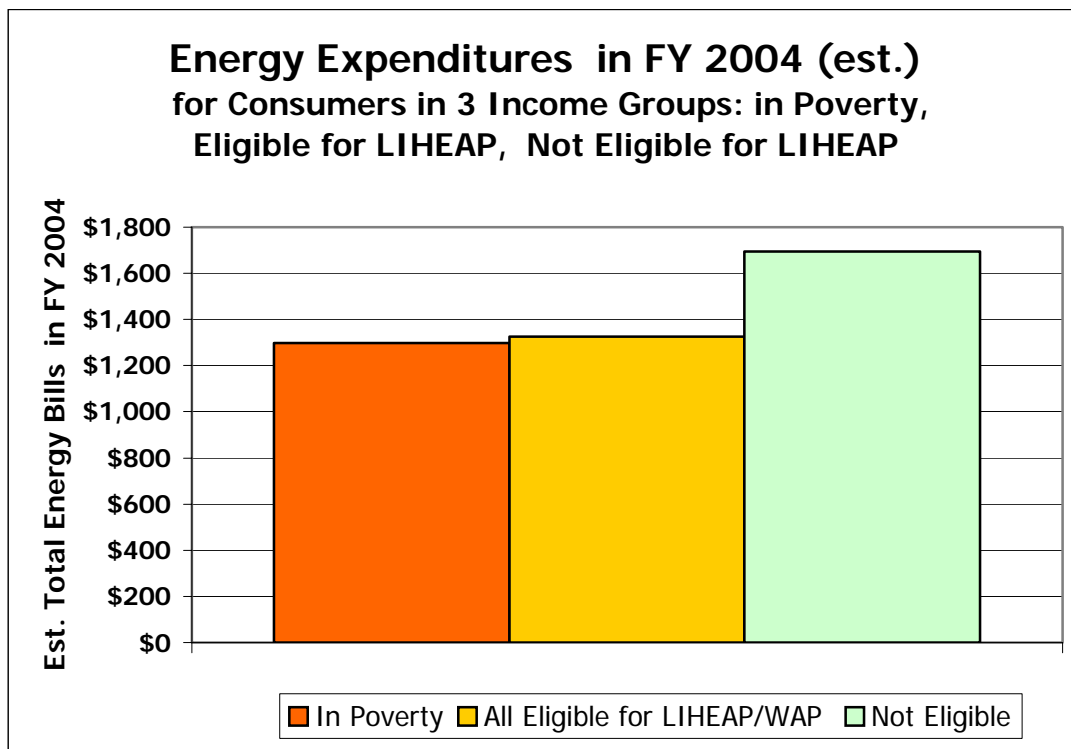
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Low-Income Consumers' Energy Bills and Energy Savings In 2003 and FY 2004

All US consumers are generally aware that their bills for household energy are considerably higher than just a few years earlier; for many, their income is also somewhat higher, and the utility or fuel payments have not exceeded their gains. Still, others have incomes that are barely keeping up to the growth in energy bills. Most of the households in the lowest income brackets have not realized large growth in income and are now losing financial ground simply based on the size of their energy bills.

The consumer impacts of recent changes in market conditions can roughly be estimated by updating historic energy use and expenditure data using current costs and weather data. Using the Department of Energy's most recent database of detailed energy information from almost 6000 households, the 1997 Residential Energy Consumption Surveyⁱ, we updated income, price, and weather-dependent usage to arrive at the bills households paid in 2003 and those they can expect to pay in the current federal Fiscal Year (FY) 2004 (October 1, 2003 to September 30, 2004). The usage assumed is the quantity of fuels needed to remain as warm in winter, as cool in summer, and to run the same appliances as they did seven years ago.ⁱⁱ

Figure 1A.

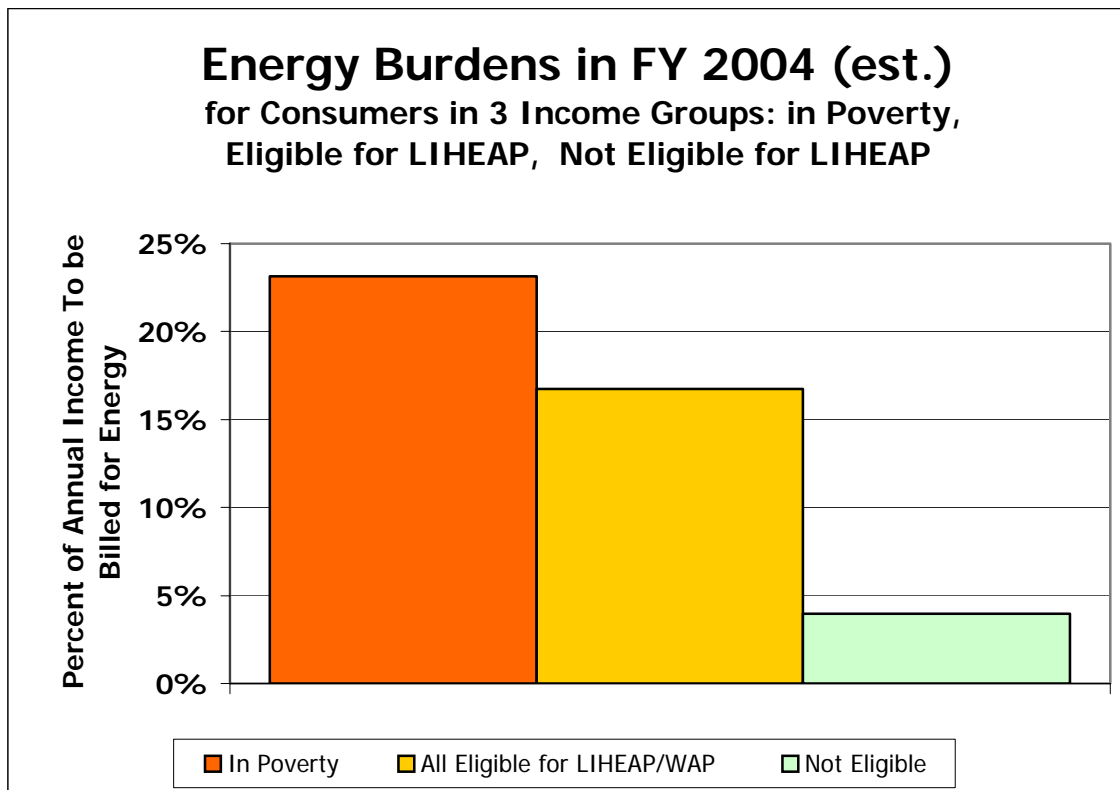


The average 2003 energy bill for the poorest 26.7 million households, the one-fourth with the lowest incomes, was about \$1300. These consumers make up most of the population eligible for Low Income Home Energy Assistance, or LIHEAP, and will be called “low-income” or “eligible” here.ⁱⁱⁱ During FY 2004, if weather is normal, these low-income consumers’ average expenditure will rise slightly to almost \$1335. Figure 1A compares the predicted FY 2004 expenditures for the eligible households to those of the very poorest among the eligible consumers i.e., approximately 12 million with incomes at or below the Federal Poverty Guideline, and to the average for households *not* eligible for LIHEAP, including moderate-income and high-income consumers, 80 million or more energy consumers who will, on average, use and pay far more, or about \$1695 in FY 2004.

The family economic impact of bills is measured by calculating the share of annual household income required to pay the year’s combined utility and/or fuel bills. This statistic, ‘energy burden’, represents the costs of all energy the home used, such as natural gas, fuel oil, and/or propane and electricity, divided by the annual income of all the household members.

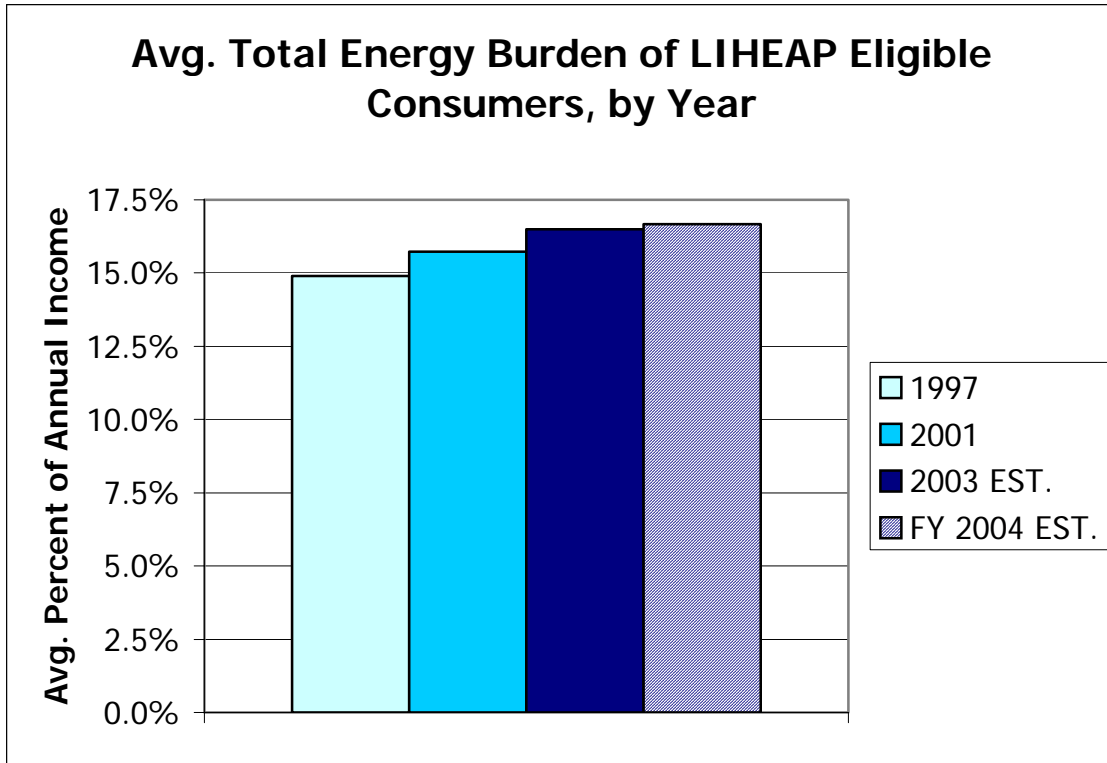
Figure 1B compares the expected FY 2004 energy burden for the same groups shown in Figure 1A. The larger low-income group, those eligible for LIHEAP, will, as a group, have a lower average burden of 16.8%. The pattern is reversed by comparison to the previous chart; the poor have the highest burdens in Figure 1B, but the lowest expenditures in Figure 1A, just as those not in the Poverty or LIHEAP-eligible groups will have the highest usage and bills in 1A and the lowest burden in 1B. As this graph also shows, the average FY 2004 energy burden for those in Poverty would be nearly one-quarter of their income if they keep their homes at the same temperatures reported in 1997 and have the same appliances. The graph also shows the 3.9% average burden of all other Americans combined.

Figure 1B



By contrast, in 1997 the energy burden for eligible consumers was 14.9%. In spite of increases in their average income, this year’s energy bills consume a larger share of low-to-moderate-income consumers’ disposable resources than was the case in 1997; other consumers spent about the same proportion of their budgets, just under 4%, to pay utility and fuel bills because the average income of Americans in the higher income groups grew at least as fast as their energy bills. Figure 2 shows the relative change in low-income household’s energy burden over time. The price escalation began in 2000 with a jump in petroleum product prices and continued with sharp increases in natural gas costs. Appendix 2 shows the detailed national figures.^{iv}

Figure 2



The averages mask great variations among individual consumers, even within the same income group. The differences stem from the fuel they use, where they live, and how they use energy, in addition to how well-off they are. For example, calculation of the median estimated FY 2004 expenditures provides a marker for the degree to which extreme case influences the averages. Half of eligible consumers will pay FY 2004 bills totaling \$1215 or more, while half will pay less, and half will have energy burdens equal to or less than 11%. The same statistics for those not eligible, the 80 million consumers spanning all climates and incomes, indicate half will pay less than \$1547 and half will have energy burdens at or below 3.3%.

The sections below suggest the scope of the differences in energy costs and burdens that are attributable to the fuels used and to geographic location. In addition, the value of the efficiency gains measured by reductions in heating fuel bills and of other forms of federal and utility bill subsidies is compared to the total cost of energy to the low-income consumer population.

The Impact of Household Heating Fuel

Table 1 shows the estimated FY 2004 bills and energy burdens of more than 24 million of the eligible households grouped according to the main fuel they use; included are those that heat with natural gas, electricity, or fuel oil, groups for whom there are large statistical samples in the database. It shows the statistics for the median households as well as averages. The projected expenditures show only bills for electricity and for the main fuel; any purchases of propane, kerosene, or wood are not broken out, as DOE projections of the future prices for these fuels are not made on the same basis. Detailed breakdowns appear in Appendix 3, along with the bills for all fuels. The "Total Burden" is based on all fuel usage.

These data indicate fuel oil customers are most heavily burdened, and the average natural gas user's burden is also very high; the medians indicate nearly half of eligible fuel oil users may be billed over 15% of their incomes this year, while half of eligible natural gas users will have to budget more than 12%. Electrically-heated homes are far more common in the milder climate areas in the South and West, and their occupants' average and median burdens are lower, as are their expenditures.

Table 1 Expected 2004 Bills for Fuels, by Main Heat Fuel of Eligible Households

Main Heat Fuel:		Eligible Consumers' 2004 Bills	
		Mean	Median
Natural Gas	Natural Gas Bills	\$802	\$714
	Electric bills	\$643	\$545
	Total Burden	19.6%	12.3%
Fuel Oil	Fuel Oil Bills	\$907	\$851
	Electric Bills	\$697	\$579
	Total Burden	20.2%	14.8%
Electricity	Electric Bills	\$1,054	\$899
	Total Burden	12.4%	8.1%

Estimates for 2003 are similar and are shown together with the 1997 mean and median figures in Appendix 3. Figure 3A compares energy burdens of the eligible group in 1997 to the present burdens, while Figure 2B compares the trends in expenditures. These two charts show the only median figures, not the averages cited above, in order to provide a conservative estimate of energy affordability pressures for these smaller sub-groups. The top of each bar marks the figure below which will fall half of the group's burdens and bills.

Figure 3a

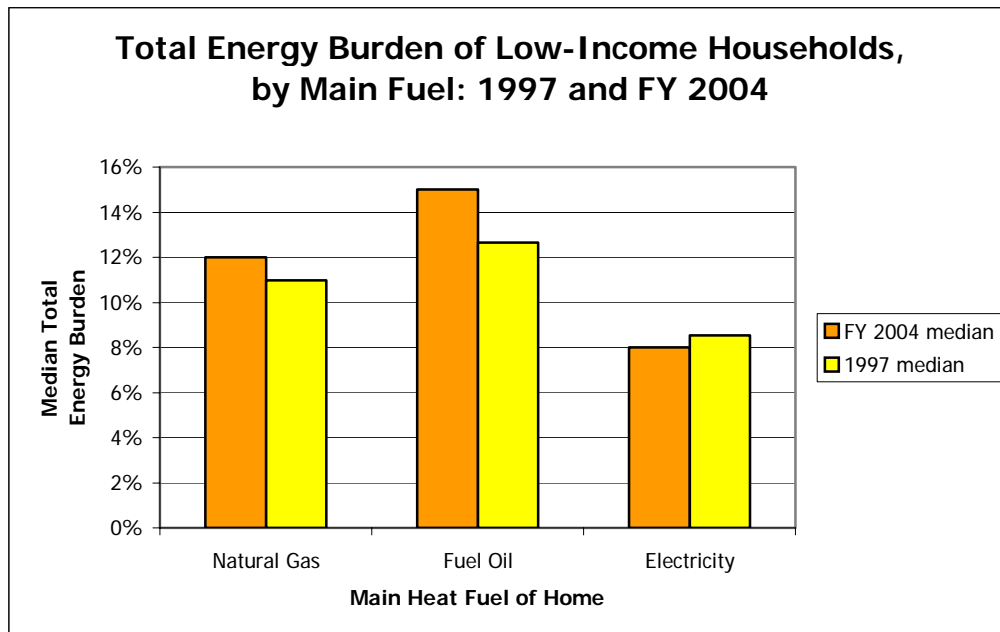
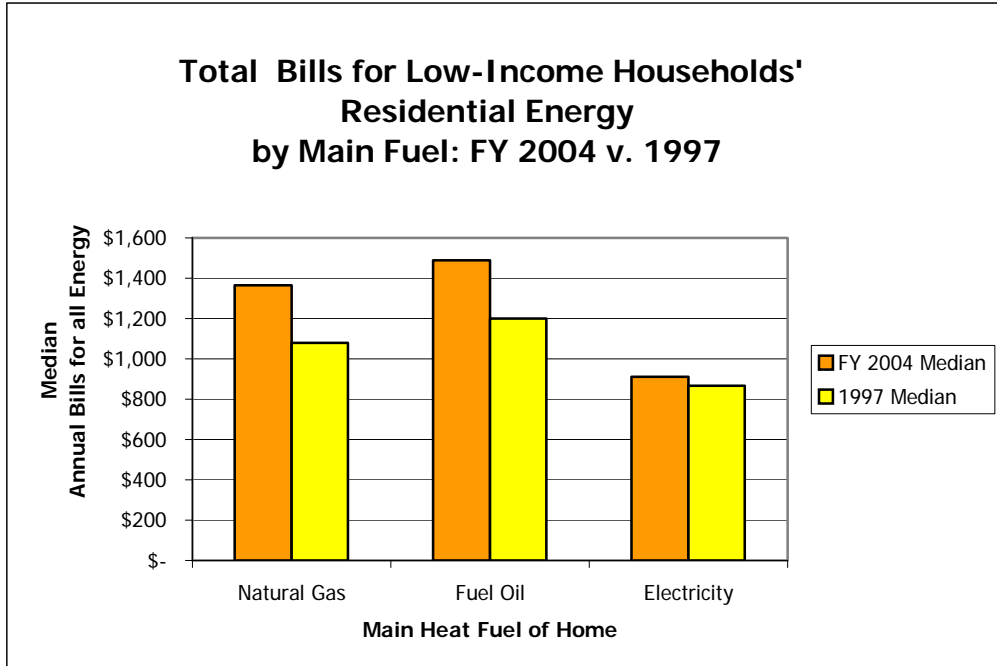
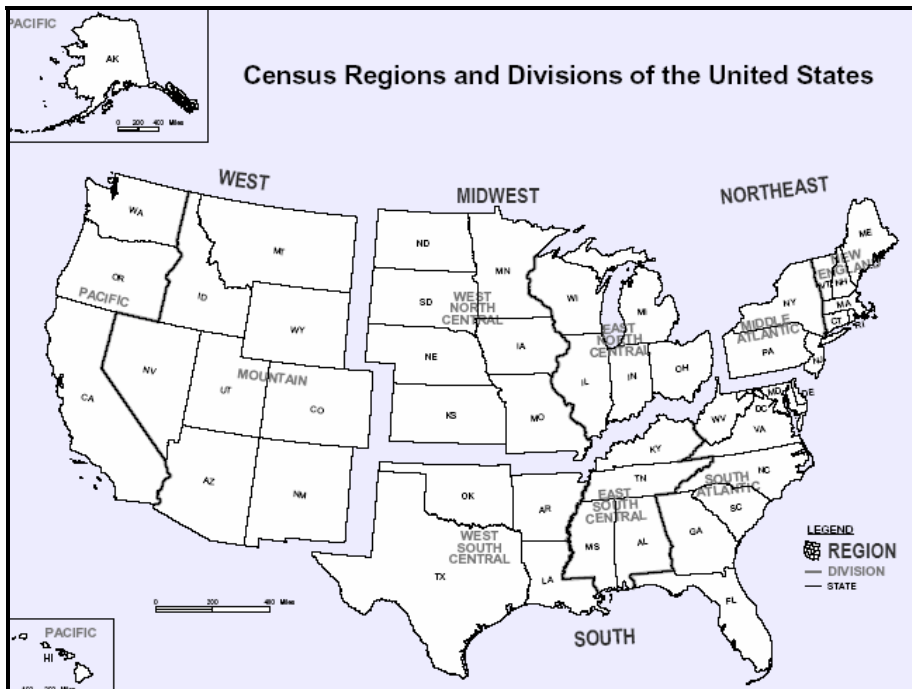


Figure 3b



Low-income natural gas and fuel oil consumers are giving up not only more money, as shown in Figure 3b, but also a higher share of their incomes; Figure 3a shows half of natural gas heat customers will pay at least 1.4% more of their entire household resources for energy. In other words, in spite of the increases in income factored into the estimates, more than half gave up current income that had previously been available for other expenditures. The total payments for residential energy by eligible fuel oil consumers have increased the most, and their energy burden will be 2.2% higher than in 1997. Electric heat consumers appeared to be slightly better off than six years earlier in the sense that, even though their bills were higher, their incomes rose as well, and their energy burden dropped by a fraction of a percent.

Figure 4 Census Regions and Divisions of the United States



Geography and Climate

Figure 4 shows the nine Census Divisions for which bills are projected. Energy bills and burdens vary by region for a number of reasons, including climate, household income, fuels available, and housing type. Figure 5a shows the median total bills, and how they changed in each region. Four colder areas where fuel oil and gas are major heating sources clearly saw the biggest increases: the Mid-Atlantic, both parts of the Mid-West, and the Mountain region. However, bills are higher everywhere.

Figure 5a

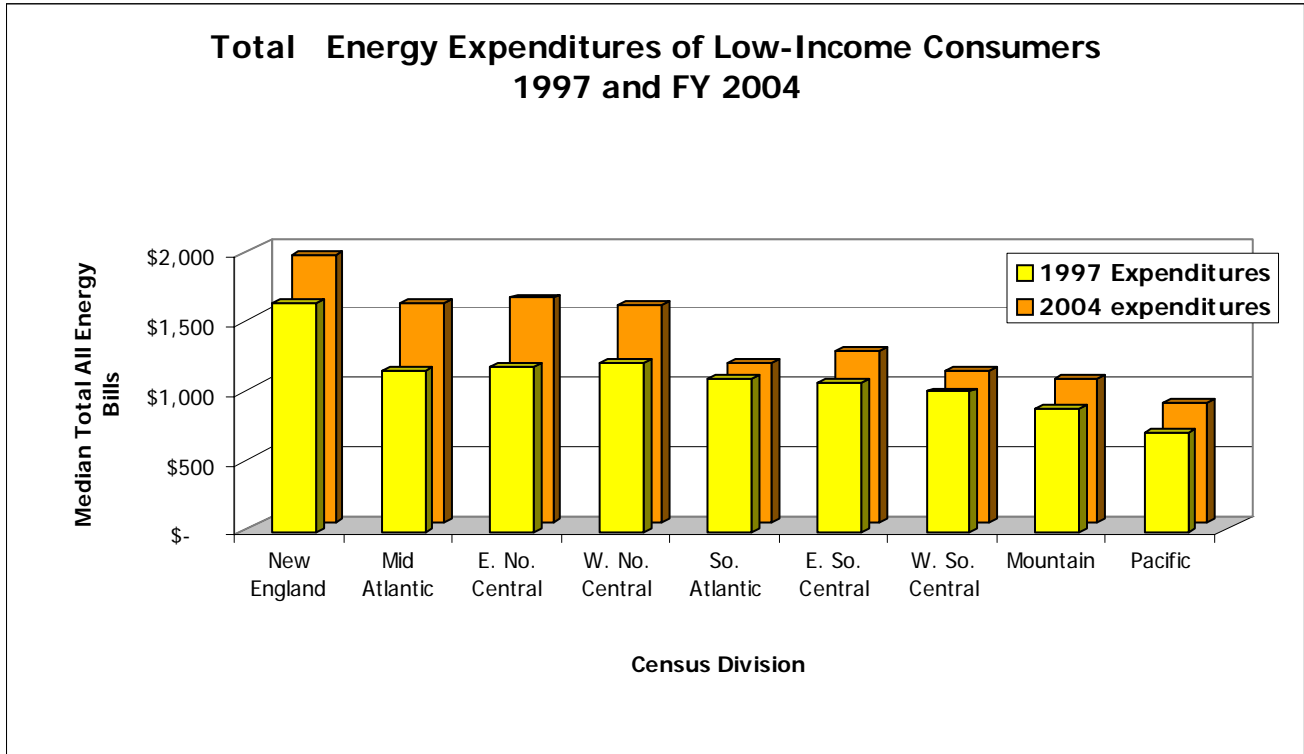


Figure 5b

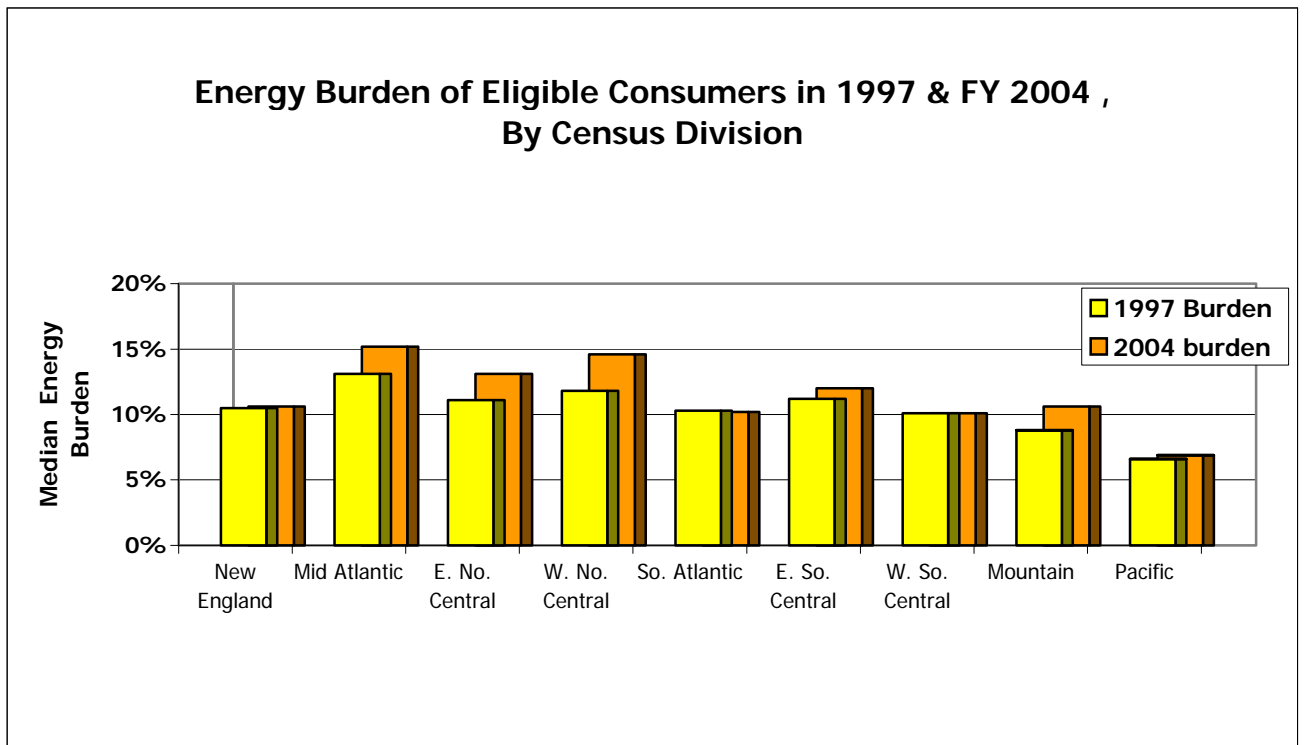


Figure 5b shows that consumers in the Mid-Atlantic and Mid-West, as well as those in the Mountain region, are also likely to experience the greatest increase in hardships that result from reduced disposable income as a result of growing energy burden. In those four regions and the East South Central area as well consumers' incomes did not grow nearly as fast as their energy bills. The four regions with the highest 1997 burdens, the Mid-Atlantic, the Western part of the Mid-West, and the South kept that dubious distinction this year; further, the Mountain region surpassed New England with respect to the median burden of its eligible population.

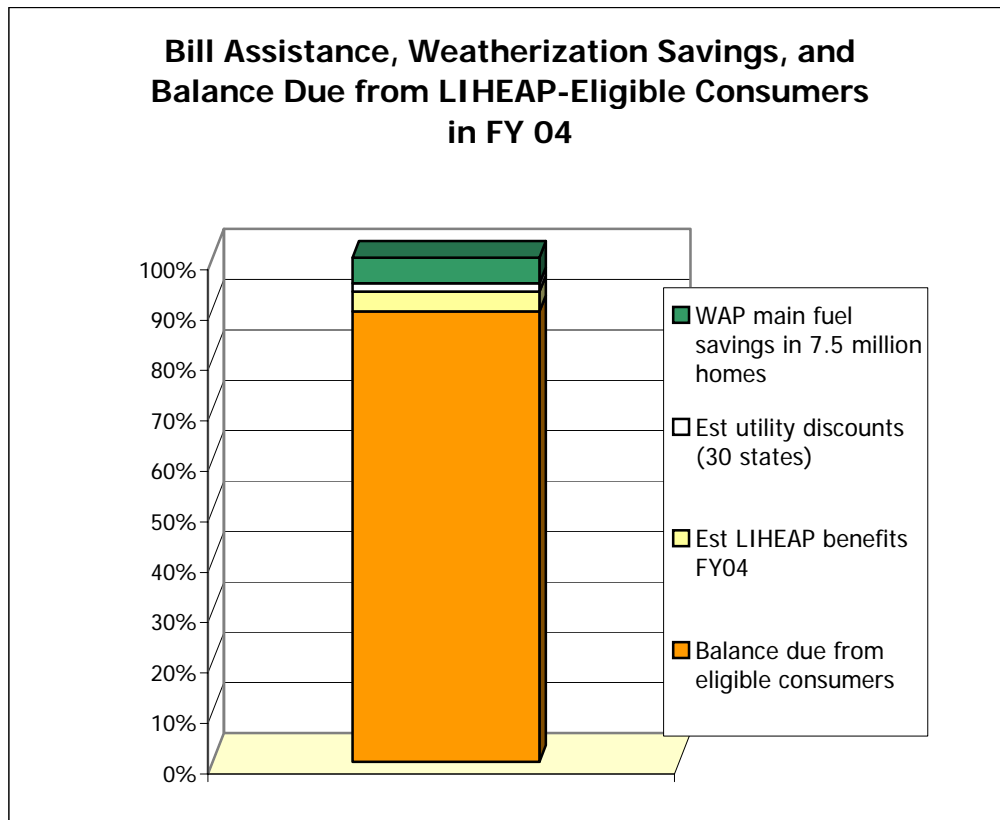
Bill Assistance Resources v. Needs of Low-Income Consumers

The LIHEAP program shrank in the mid-1990's and rebounded during the study period. In 1997 it was funded at \$1.2 billion, and in FY 2004 it is nearly \$1.9 billion, or just under the FY 1996 level. The program has never enrolled more than a minority of the eligible population nor did benefits cover more than a fraction of participant bills.^v Therefore, as both the number of eligible consumers and the real cost of fuels keep growing, the funding pays for a reduced share of the combined bills of America's poor.

Weatherization Assistance becomes more valuable as prices rise; in FY 2004, weatherized homes will have gas bills averaging \$281 less than others who are LIHEAP-eligible, fuel oil users' bills will be \$287 bills lower, and those using electric heat will save about \$187. (The same investments will have lowered cooling costs and conservation resulting from recently-introduced Weatherization appliance and lighting investments would also have brought bills down, but the Department of Energy does not yet have firm indicators of these reductions.)

Recent studies show that a significant share of LIHEAP-funded Weatherization investments are in homes that are treated as if they were subject to the Department of Energy program practices; therefore they produce the same savings. It is fair to estimate there are at least 2.5 million such homes. Many other efficiency investments are funded by LIHEAP and by utility rate-based programs, but their impact on reducing bills has not been evaluated as definitively as the DOE-WAP program. Figure 6 compares the known

Figure 6



FY 2004 low-income assistance resources, including:

- ✓ The combined annual savings enjoyed by occupants of about 7.5 million homes that received proven Weatherization investments. The FY 2004 savings add up to about \$2 billion, of which \$1.4 billion represents the savings in 5.2 million DOE Weatherization Assistance-funded units and the balance is from homes treated like DOE homes but funded with other monies. These savings surpass LIHEAP bill payments as a source of FY 2004 bill reduction;
- ✓ Utility discounts estimated at the levels reported in FY 2003; and
- ✓ LIHEAP bill assistance appropriated.^{vi}

Altogether, these sources reduce out-of-pocket payments of the eligible population by about 11% compared to the estimated total of their bills. Of course, that support is limited to program beneficiaries. Most of the gap is composed of the remainder of the FY 2004 energy expenses of about 27 million eligible customers, the amount which, collectively, they will pay out of their own resources: almost \$35 billion.

Because the incomes of most LIHEAP-eligible households are inadequate to cover the basic household necessities consistently and include no reserves for life's unpredicted necessities, high energy bills mean choices among essential goods: housing, food, medical care or drugs, schooling, and transportation. The pressure felt by consumers as a consequence of the bills for basic quantities of energy becomes heavier over time because deferred needs, such as medical care or clothing, become impossible to ignore and old arrearages grow and/or become overdue.^{vii}

Transformation of U.S. and international energy markets has altered the financial plans of most consumers, but the effect on the well-being of the poor is most dramatic. The Department of Energy's outlook for 2005 is for persistently high prices at, or in excess of, 2004 levels. Neither the exact dimensions of the growing human problem nor the exact public policy solutions are a yet subject of national consensus.

Endnotes

ⁱ 1997 was the last year for which the U.S. Department of Energy published detailed statistics; see the Energy Information Administration, U.S. Department of Energy, Residential Energy Consumption Survey, 1997, which is a quadrennial report. The 2001 data had not been released as of 3/1/04.

ⁱⁱ Appendix 1 describes in detail the methodology used to update the household records in the 1997 database and discusses issues regarding validity or bias in the items; to model these changes, it is necessary to assume the same households remain in the bottom income quartile and that their geographic distribution and the equipment they use has not changed. A larger distortion probably results from the fact that the expenditure estimates in this analysis assume that the weather-adjusted usage remains constant regardless of price; this is obviously not realistic, especially as concerns households with very limited disposable income. However, to the extent the energy estimated here was NOT used, there was a decrease in less measurable conditions, such as home temperature, food handling, water heating, health and safety.

ⁱⁱⁱ The US Dept. of Health and Human Services estimated 24.1 million households qualified for 1997 LIHEAP under federal law and 29; the RECS survey identified more than 34 million because of incomplete income data. RECs also identified 26.7 million as having income at or below 150% of Poverty, in a year in which the more accurate Census found 18.7 million in that bracket. All data here use the group of 26.7 million as a proxy for the eligible population, since it is closer to the HHS-CPS figure and represents about the lowest income quartile of American households.

^{iv} Appendix 1 also describes our method of estimating income increases. The income of the lowest quintile was raised by 9.9% from 1997 and the second lowest by 11.2%. The burden data are based on these 2002 income figures; the lowest group's incomes may have continued to decline in 2003, in which case our estimates are too conservative and energy burdens are higher still.

^v See the LIHEAP Annual Reports to Congress at <http://www.acf.hhs.gov/programs/liheap/im01-11.htm>

^{vi} U.S. Department of Energy Estimates about 5.2 million homes will have been Weatherized with Department of Energy funds by the end of PY 2003. The average volumetric savings of each heat fuel those are based on the most recent estimate of WAP savings by Oak Ridge National Laboratory, and can be found at http://weatherization.ornl.gov/pdf/CON_488.pdf. The average savings for each type are weighted by the share of the WAP units with each heat fuel reported in a recent national survey of local weatherization agencies (Power, Meg Weatherization PLUS Other Efficiency and Housing Investments, Washington, DC, 2003 at www.opportunitystudies.org.) This survey also found the local agencies were Weatherizing about 50% more units using the same methods and cost tests but that these were financed by LIHEAP efficiency funding. Figure 6 data assumes 150% of the DOE-reported unit savings are being enjoyed annually. It assumes the same survey's breakdown of weatherized units by main fuel (45% gas, 20% electric, 20% fuel oil, 15% propane) to derive a weighted average FY 04 national savings of \$288.45 per home. Thousands of other units were provided with improvements funded by utility or state programs, but their benefits are not precisely measured. The utility discount figure in Figure 6 represents the bill assistance in the form of discounts and waivers of fees or past bills reported by 30 states applying to the U.S. Department of Health and Human Services for 2002 leveraging incentive funds. See them at www.ncaf.org/liheap/stateprograms.htm The LIHEAP payments are 80% of the block grant for FY 04.

^{vii} An extensive literature exists on the material hardships of low- to moderate-income households as a result of being unable to afford a full range of the goods and basic services they need for their health and safety. This work is summarized with respect to the role energy bills play in the economic life of families in Power, Meg and Maggie Spade-Aguilar, 'Low-income Consumer Energy Hardships as an Indicator of Family Well-Being and Housing Quality', forthcoming April 2004, Economic Opportunity Studies, Washington, DC. A review of literature on the "Heat or Eat?" dilemma for vulnerable households is in Bhattacharya, Jayanta, Thomas DeLeire, Steven Haider and Janet Currie, "Cold Weather Shocks and Nutrition in Poor American Families" National Bureau of Economic Research Working Paper No. 9004, June 2002, JEL No. I32, I12

Appendix 1

Methodology

Using the RECS 1997 Public Use Database, 5,898 household records (those with any energy usage) were updated with certain variables as described under the update method column below. Each change carries with it the potential for errors in one or more directions. The list of uncertainties shows the considerations factored into evaluating any bias in the estimates.

Household Variable

Income

Update Method

The percent increase in the average income of the four lowest income quintiles from 1997 to 2002 was calculated. Households were assigned to quintiles based on RECS 1997 income and their income increased by that percentage. One average increase for the top 40% was used because the RECS top income was capped at \$128,500 or more and the upper income group cannot be identified.

DeNavas-Walt, Carmen, Robert Cleveland and Bruce H. Webster, Jr., U.S. Census Bureau, Current Population Reports, P60-221, *Income in the United States: 2002*, U.S. Government Printing Office, Washington, DC, 2003

Uncertainties

The RECS sample does not divide into five even groups by income, so the income increases of the highest-income households are under-stated and their energy burden is overstated. The RECS income is an estimate; the mid-point of a \$5,000 range. This estimate adds to the potential error in calculating a household's energy burden, but the direction of the error is unknown. Incomes in 2003 are thought to have dropped further; if so, the current energy burdens may be understated. The average and median burdens of the higher income group are overstated.

Weather

Census region gas-weighted heating degree days and, for cooling degree days for calendar 2003 (from NOAA/CDPC) were compared to those for 1997. The percent difference was applied to the DD reported in 1997 for each record from that region. For FY 2004, actual degree days were used for the first quarter and normals for January through September 2004 were assumed and a separate FY 2004 update was calculated.

This method means the aggregate regional and national average weather is correct, but no other subgroup data within a region would be valid because nothing is known about a customers' location or exact weather conditions.

Appendix 1

Price per unit of fuel

The average annual prices for 2003 and 2004 from the February EIA Short-Term Energy Outlook are used for natural gas, fuel oil and electricity. Propane prices are increased by the percentage increase in natural gas.

Energy regional and market variations are the same as in 1997. Propane prices can differ more dramatically than gas by region and location, so the variance in this small market segment is understated.

Usage

The rate of use of each unit of heat by HDD65 in 1997 is calculated. That figure is multiplied by the change in the households' HDD65 compared to 1997.

If the household had air-conditioning in 1997, the 97 rate of KWH usage per CDD65 for cooling is multiplied by the change in CDD65 and the same KWH usage per CDD65 is (?). The usage of each fuel for all other purposes is estimated to be the 1997 amount. Kerosene usage was estimated at 1997 levels; even for households reporting it as a main heat fuel, as national data on the usage for heat vary widely and the sample is small.

The analysis therefore presents the usage needed to maintain 1997 comfort levels given weather variation. It also assumes no change in the appliance energy usage, where, in fact, air-conditioning use and other uses of electricity have grown. It assumes no home has changed its main heat fuel and that households have not changed location. The result is the updated cost of the 1997 'snapshot' of most of those now eligible for LIHEAP.

Expenditures

Prices are those estimated in the February Short-Term Energy Outlook, which undergo frequent, minor modifications. For FY 2004, which ends up 30, the gas price used is the Mid-West 03-04 winter average, \$0.995. This and the New England 03-04 winter fuel oil price is below the estimate for the entire year of \$1.33. Propane is increased by the same 6% over 2003 as natural gas.

The predictions are uncertain; the analysis takes the most conservative figure for natural gas.

Appendix 2
Energy Expenditures and Burdens by Income Group 2003 and FY 2004

	HOUSEHOLDS	EXPENDITURES				INDIVIDUAL ENERGY BURDEN			
	<i>Percent</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>
Poor	14.4%	\$1,278	\$1,181	\$1,299	\$1,211	22.7%	15%	23.1%	15.4%
All Others	85.6%	\$1,621	\$1,510	\$1,647	\$1,543	4.6%	3.6%	4.7%	3.6%
Total	100.0%	\$1,571	\$1,459	\$1,597	\$1,486	7.2%	4.1%	7.3%	4.2%

	HOUSEHOLDS	EXPENDITURES				INDIVIDUAL ENERGY BURDEN			
	<i>Percent</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>
Lowest Quartile Eligible	26.3%	\$1,306	\$1,190	\$1,334	\$1,215	16.5%	10.8%	16.8%	11.0%
All Others	73.7%	\$1,667	\$1,546	\$1,694	\$1,547	3.9%	3.2%	4.0%	3.3%
Total	100.0%	\$1,571	\$1,459	\$1,597	\$1,486	7.2%	4.1%	7.3%	4.2%

	HOUSEHOLDS	EXPENDITURES				INDIVIDUAL ENERGY BURDEN			
	<i>Percent</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>	<i>Avg. 2003</i>	<i>Median 2003</i>	<i>Avg. FY 2004</i>	<i>Median FY 2004</i>
RECS "Eligible" (34 m.)	33.6%	\$1,341	\$1,244	\$1,371	\$1,272	14.5%	9.5%	14.8%	9.8%
All Others	66.4%	\$1,688	\$1,568	\$1,716	\$1,602	3.5%	3%	3.6%	3%
Total	100.0%	\$1,571	\$1,459	\$1,597	\$1,486	7.2%	4.1%	7.3%	4.2%

Appendix 3

1997 vs. 2003 and FY 2004 Bills and Burdens for Main Heating Fuel, Other Electricity, and Total of All Residential Energy by Income Group and Main Heat Fuel

23.7 Million Consumers of Major Heat Fuels Eligible for LIHEAP

1997						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$569	\$487	\$602	\$512	\$1172	\$1078
Fuel Oil	\$560	\$445	\$614	\$535	\$1212	\$1201
Electricity	\$935	\$823	-	-	\$990	\$868
2003						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$802	\$691	\$634	\$538	\$1439	\$1316
Fuel Oil	\$867	\$814	\$685	\$571	\$1568	\$1473
Electricity	\$1036	\$894	-	-	\$1054	\$904
FY 2004						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$833	\$715	\$644	\$546	\$1480	\$1364
Fuel Oil	\$873	\$820	\$695	\$579	\$1585	\$1489
Electricity	\$1034	\$892	-	-	\$1053	\$911

*All bills may exceed total of electricity and main heat fuel expenditures.

69 Million Consumers of Major Heat Fuels NOT Eligible for LIHEAP

1997						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$649	\$580	\$777	\$687	\$1427	\$1345
Fuel Oil	\$808	\$703	\$935	\$799	\$1801	\$1668
Electricity	\$1207	\$1101	-	-	\$1265	\$1162
2003						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$892	\$787	\$826	\$735	\$1719	\$1614
Fuel Oil	\$1111	\$988	\$1076	\$923	\$2213	\$2006
Electricity	\$1358	\$1206	-	-	\$1384	\$1241
FY 2004						
	MAIN FUEL BILL		OTHER ELECTRIC BILL		ALL BILLS*	
MAIN FUEL	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
Natural Gas	\$931	\$828	\$838	\$746	\$1770	\$1480
Fuel Oil	\$1120	\$996	\$1092	\$937	\$2237	\$2030
Electricity	\$1348	\$1201	-	-	\$1374	\$1227

*All bills may exceed total of electricity and main heat fuel expenditures.

Appendix 3 Cont'd

Median Burdens of Households Eligible for LIHEAP

MAIN FUEL	1997	2003	2004	Increase as a percent of Income
Natural Gas	10.9%	12.1%	12.3%	1.4%
Fuel Oil	12.6%	14.7%	14.8%	2.2%
Electricity	8.5%	8%	8.1%	-0.4%

Median Burdens of Households Not Eligible

MAIN FUEL	1997	2003	2004	Increase as a percent of Income
Natural Gas	3%	3.3%	3.4%	.4%
Fuel Oil	3.9%	4.4%	4.4%	.5%
Electricity	2.8%	2.6%	2.6%	-.2%

Median Burdens of Households in Poverty

MAIN FUEL	1997	2003	2004
Natural Gas	15.4%	26.3%	27%
Fuel Oil	15.1%	26.8%	27.1%
Electricity	12.4%	17.4%	17.5%

Appendix 4
 FY 2003 and FY 2004 Total Residential Energy Expenditures by Census
 Division and Income Group

ANNUAL EXPENDITURES					
	% OF ALL HOUSEHOLDS	AVERAGE 2003	MEDIAN 2003	AVERAGE FY 2004	MEDIAN FY 2004
<i>LIHEAP Eligible Households</i>					
REGION					
New England	1.0%	\$1434	\$1182	\$1454	\$1193
Mid-Atlantic	3.3%	\$1555	\$1438	\$1579	\$1462
E. North Central	3.7%	\$1585	\$1567	\$1627	\$1620
W. North Central	1.3%	\$1550	\$1549	\$1597	\$1568
South Atlantic	5.1%	\$1308	\$1193	\$1269	\$1156
E. South Central	2.2%	\$1304	\$1187	\$1325	\$1288
W. South Central	3.3%	\$1174	\$1082	\$1190	\$1096
Mountain	1.6%	\$1158	\$984	\$1200	\$1036
Pacific	4.6%	\$940	\$809	\$994	\$859
<i>All Eligible</i>	26.3%				
<i>Not LIHEAP Eligible</i>					
New England	4.2%	\$2080	\$1897	\$2106	\$1931
Mid-Atlantic	10.9%	\$2015	\$1853	\$2046	\$1882
E. North Central	12.9%	\$1901	\$1818	\$1949	\$1874
W. North Central	5.7%	\$1741	\$1665	\$1797	\$1705
South Atlantic	13.3%	\$1592	\$1528	\$1544	\$1482
E. South Central	4.0%	\$1438	\$1337	\$1458	\$1348
W. South Central	7.3%	\$1539	\$1437	\$1559	\$1463
Mountain	4.5%	\$1376	\$1336	\$1426	\$1389
Pacific	10.8%	\$1217	\$1094	\$1294	\$1173
<i>All Not Eligible</i>	73.7%				
U.S. Total	100%	\$1571	\$1459	\$1597	\$1486

Appendix 4 Cont'd
 FY 2003 and FY 2004 Total Residential Energy Burdens by Census Division
 and Income Group

PERCENT OF INDIVIDUAL ENERGY BURDEN				
	AVERAGE 2003	MEDIAN 2003	AVERAGE FY 2004	MEDIAN FY 2004
<i>Eligible Households</i>				
REGION				
New England	18.8%	10.4%	19.0%	10.6%
Mid-Atlantic	21.4%	15%	21.7%	15.2%
E. North Central	22.7%	12.6%	23.4%	13%
W. North Central	20.5%	14.3%	21.2%	15%
South Atlantic	13.8%	10.6%	13.4%	10%
E. South Central	16.0%	11.8%	20.0%	12%
W. South Central	14.1%	10%	14.2%	10.1%
Mountain	15.4%	10%	16.0%	10.6%
Pacific	9.7%	6.7%	10.2%	6.9%
<i>Not Eligible</i>				
New England	4.8%	4.2%	4.8%	43.0%
Mid-Atlantic	4.5%	3.5%	4.5%	3.6%
E. North Central	4.4%	3.7%	4.5%	3.8%
W. North Central	4.3%	3.5%	4.4%	3.6%
South Atlantic	3.7%	3.3%	3.6%	3%
E. South Central	3.6%	3%	3.6%	3.0%
W. South Central	3.7%	3%	3.7%	3.0%
Mountain	3.4%	2.9%	3.6%	2.9%
Pacific	2.8%	2.2%	3.0%	2.4%
U.S. Total	7.2%	7%	7.3%	4.0%