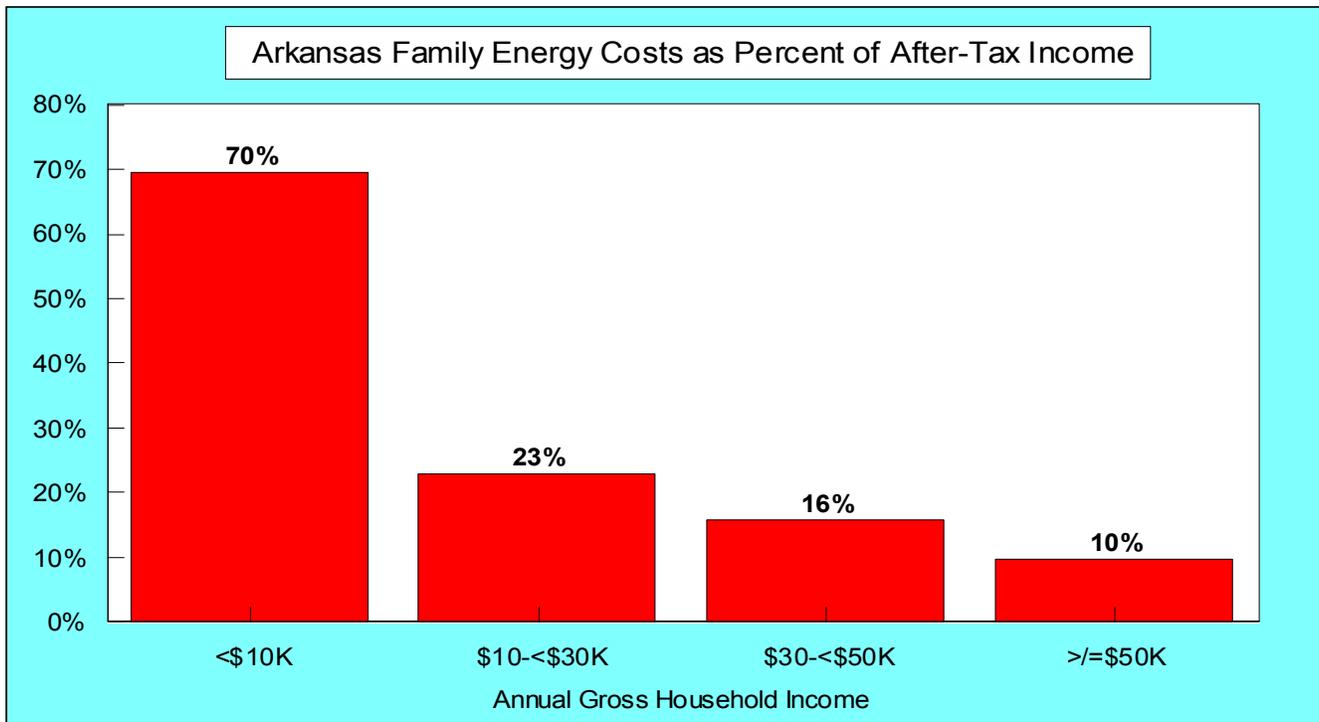


Energy Cost Impacts on Arkansas Families

Energy prices and stagnant incomes are straining the budgets of Arkansas's lower- and middle-class families. Arkansas households with gross annual incomes below \$50,000, representing 61% of Arkansas's households, spend an estimated average of 20% of their after-tax income on energy. Energy bills for the poorest households earning less than \$10,000 represent 70% of their family incomes, before accounting for any energy assistance programs. Increased energy costs are competing with other necessities for lower- and middle-income family budgets across Arkansas.



Energy Cost Impacts on Arkansas Families

This paper assesses the impact of energy costs on Arkansas households using energy consumption survey data and current energy price data from the U.S. Department of Energy's Energy Information Administration (DOE/EIA).¹ Energy costs are summarized by household income group using 2013 Arkansas data from the U.S. Bureau of the Census.² Energy expenditures as a percentage of after-tax income are estimated for the effects of federal and state income taxes and federal social insurance payments.

Key findings include:

- Some 61% of Arkansas's families have gross annual incomes of \$50,000 or less, with an average after-tax income of \$22,116. These households collectively receive 27% of Arkansas's total household income. The median gross household income of Arkansas families in 2012 was \$40,112, 21% below the national median household income of \$51,017. The average gross income of Arkansas households in 2012 was \$54,116, 24% below the national average of \$71,274.
- Measured in constant 1990 prices, residential electricity prices in Arkansas are 34% below their 1990 levels. After more than a decade of sharp price increases, residential natural gas prices are 13% above their 1990 levels. The relative low price of electricity in Arkansas reflects in part the state's dependence on low-cost domestic coal for a majority of its electric power supplies. In 2013, Arkansas will generate approximately 53% of its electricity from domestic coal.
- Energy costs are consuming the household incomes of Arkansas's low- and middle-income families at levels comparable to other necessities such as housing, food, and health care. Arkansas families spend an estimated average of 12% of their after-tax incomes on energy. The 683,000 Arkansas households earning less than \$50,000 devote an estimated average of 20% of their after-tax incomes to energy.
- The 111,000 poorest families in Arkansas, living well below the federal poverty line and earning less than \$10,000 per year, are being squeezed hardest by energy cost increases. Many of these families receive state and other energy assistance to help reduce energy costs. Yet for most lower-income families and for the 34% of Arkansas households receiving Social Security, energy costs are competing with other basic necessities for the family budget.

Arkansas Household Incomes

U.S. Census Bureau data on Arkansas household incomes in 2012 (the most recent available) provide the basis for estimating the effects of energy prices on consumer budgets.³ The table below shows estimated 2012 after-tax incomes for Arkansas families in different income brackets. The Congressional Budget Office has calculated effective total federal tax rates, including individual income taxes and payments for Social Security and other social welfare programs.⁴ State income taxes are estimated from Arkansas income tax rates.⁵

Arkansas households by pre-tax and after-tax income, 2012

Pre-tax annual income:	<\$10K	\$10-<\$30K	\$30-<\$50K	≥\$50K	Total/avg.
Households (Mil.)	0.111	0.330	0.242	0.461	1.143
Pct. of total households	10.4%	29.2%	21.4%	39.1%	100.0%
Avg. pre-tax income	\$4,975	\$19,545	\$39,544	\$98,387	\$54,116
Effec. fed tax rate %	1.8%	4.5%	10.6%	19.5%	11.6%
Est. state tax %	0.0%	2.5%	4.0%	6.5%	4.2%
Est. after-tax income	\$4,885	\$18,176	\$33,771	\$72,806	\$45,587

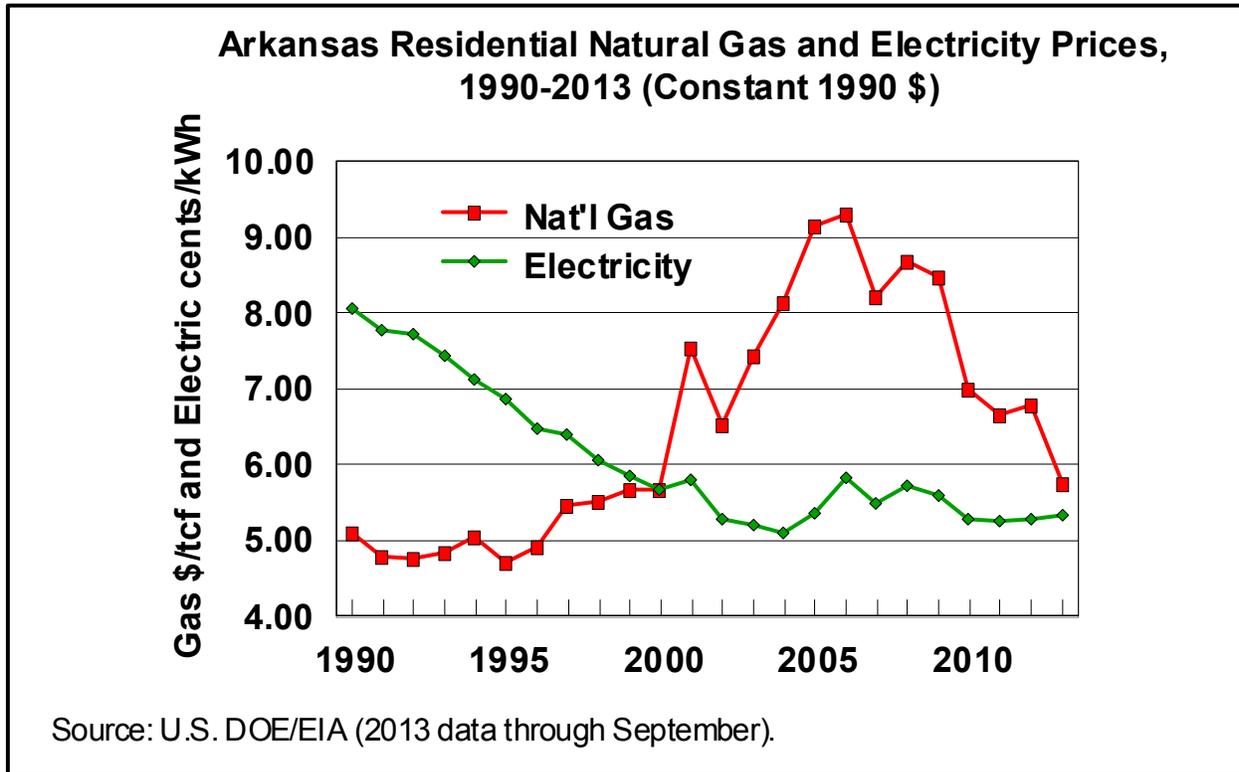
Some 61% of Arkansas families had estimated pre-tax incomes below \$50,000 in 2012. After federal and state taxes, these families had average annual incomes of \$22,116, equivalent to an average monthly take-home income of \$1,843. Collectively, these households received 27% of Arkansas' total household income in 2012. The top-4% of households, those earning more than \$150,000 annually, received 17% of total income. In 2012, the median gross household income of Arkansas families was \$40,112, 21% below the national median household income of \$51,017.⁶ The average gross income of Arkansas households was \$54,116, 24% below the national average.

Residential and Transportation Energy Expenses

The principal residential energy expenses are for electricity and natural gas for home cooling, heating, and household appliances. Many Arkansas homes also use propane fuel and other heating sources such as wood.

As shown in Chart 1, the price of residential electricity is 34% below its level in 1990, measured in real, inflation-adjusted terms.⁷ The relative low price of electricity in Arkansas reflects in part the state's dependence on low-cost domestic coal for a majority of its electric power supplies. In 2013, Arkansas will generate approximately 53% of its electricity from domestic coal. After more than a decade of sharp price increases, the real price of residential natural gas is 13% above its 1990 level.⁸ Recent natural gas price decreases primarily reflect the development of new gas supplies.

Chart 1



Energy Expense Estimates

Estimated household energy expenses for Arkansas are based upon DOE/EIA residential electric and natural gas sales data for Arkansas through September 2013. Total household energy costs are distributed by income category using the most recent DOE/EIA residential energy survey data.

Gasoline prices have declined from their 2012 peaks, but are above \$3.25 per gallon in many areas. Gasoline accounts for the largest single increase in consumer energy costs since 2001. EIA’s November 2013 Short-Term Energy Outlook estimates 2013 average retail gasoline costs at \$3.56 per gallon, nearly two and a half times higher than the \$1.47 per gallon price in 2001.

DOE/EIA’s 2001 Survey of Household Vehicles Energy Use (December 2004) provides information on regional gasoline use by household income category.⁹ These regional gasoline consumption data are updated using EIA’s 2013 national average retail gasoline price estimate of \$3.56 per gallon. To be conservative, household gasoline consumption is reduced by 17% from 2001 levels, reflecting trends in retail gasoline sales.¹⁰

The table below summarizes estimated Arkansas household energy expenses by income group, with the percentage of after-tax income represented by energy costs:

Estimated Arkansas household energy costs by income category

Pre-Tax Annual Income:	<\$10K	\$10-<\$30K	\$30-<\$50K	≥\$50K	Average
Residential energy \$	\$1,529	\$1,614	\$1,833	\$2,416	\$2,048
Electric \$	\$1,182	\$1,228	\$1,424	\$1,833	\$1,563
Natural Gas \$	\$226	\$252	\$266	\$380	\$316
Other* \$	\$121	\$135	\$142	\$203	\$169
Gasoline \$	\$1,871	\$2,572	\$3,490	\$4,733	\$3,540
Total energy \$	\$3,400	\$4,186	\$5,323	\$7,149	\$5,588
Energy % of after-tax income	70%	23%	16%	10%	12%

*Other includes LPG and wood.

The share of household income spent for energy falls disproportionately on lower- and middle-income families earning less than \$50,000 per year. The 61% of Arkansas households earning less than \$50,000 spend an estimated average of 20% of their after-tax income on energy. While many lower-income consumers qualify for energy assistance, these government programs are hard pressed to keep pace with the escalation of energy prices. The large share of after-tax income devoted to energy by lower-income groups poses difficult budget choices among food, health care and other necessities.

Disproportionate Impacts on Senior Citizens

The impacts of increased energy costs are falling disproportionately on Arkansas's elderly Social Security recipients, representing 34% of the state's households. In 2012, Social Security recipients in Arkansas had average household Social Security incomes of \$16,022.¹¹ Some 17% of Arkansas households had additional retirement income averaging \$19,163 before taxes.

Unlike young working families, many fixed income seniors are limited to cost-of-living increases that may not keep pace with energy prices. Maintaining the relative affordability of electricity and natural gas prices, and increasing low-income energy assistance, are essential to the wellbeing of Arkansas' senior and lower-income citizens.

=====
 Acknowledgment: This paper was prepared for ACCCE by Eugene M. Trisko, an energy economist and attorney in private practice. Mr. Trisko has served as an attorney in the Bureau of Consumer Protection at the Federal Trade Commission and as an expert economic witness before state public utility commissions. He represents labor and industry clients in environmental and energy matters. Mr. Trisko can be contacted at emtrisko@earthlink.net.

End Notes

¹ Data on residential energy consumption patterns by income category are from U.S. Department of Energy, Energy Information Administration, 2009 Survey of Residential Energy Consumption (2012). Arkansas electricity, natural gas and other residential energy costs are based on 2013 state data from U.S. DOE/EIA Electric Power Monthly (November 2013), Natural Gas Monthly (November 2013), and State Energy Data System data available at www.eia.gov/state/seds. 2013 gasoline price estimates are from DOE/EIA Short Term Energy Outlook (November 2013).

² Household incomes in Arkansas by income category are derived from the distribution of household income in U.S. Census Bureau, American Fact Finder, Arkansas Selected Economic Characteristics: 2012 (2013).

³ *Id.*

⁴ Congressional Budget Office, "Effective Federal Tax Rates Under Current Law, 2001 to 2014," (August 2004). Effective federal tax rates for the income categories employed in this paper were interpolated from CBO's tax rates by income quintile and adjusted for changes in the American Taxpayer Relief Act of 2013.

⁵ State tax data are from state tax rates compiled by the Tax Foundation (2012).

⁶ U.S. Census Bureau, American Fact Finder, Arkansas Selected Economic Characteristics 2012 (2013).

⁷ U.S. DOE/EIA, Electric Power Monthly (November 2013).

⁸ U.S. DOE/EIA, Natural Gas Monthly (November 2013).

⁹ U.S. DOT, 2001 National Household Travel Survey, "Summary of Travel Trends," (December 2004).

¹⁰ DOE/EIA data indicate that retail gasoline consumption in barrels per day declined by 17% from 2001 to 2013 on a household-adjusted basis. The household gasoline expenditure estimates presented in this report are comparable to the total national expenditure data reported in DOT's 2009 National Household Travel Survey after adjustment for gasoline price differences.

¹¹ U.S. Census Bureau, American Fact Finder, Arkansas Selected Economic Characteristics: 2012 (2013).