

PAID BUT UNAFFORDABLE:

**The Consequences of
Energy Poverty in Missouri**

May 2004

Prepared For:

*National Low-Income Energy Consortium
Sue Present, Executive Director
Washington D.C.*

May 2004

Paid but Unaffordable: **The Consequences of Energy Poverty Missouri**

Prepared By:

Roger D. Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
34 Warwick Road, Belmont, MA 02478
617-484-0597 (voice) 617-484-0597 *** (fax) 617-484-0594
(e-mail) roger@fsconline.com *** <http://www.fsconline.com>

May 2004

Particular gratitude is expressed to the following individuals for their assistance, counsel, and guidance in the preparation of this research: the staff of Citizens Energy Corporation (for the data entry); Stephen Colton of the Minneapolis firm Lenhardt & Colton, LLC (for developing analytic mechanisms for the insecurity scale), Jeanna Machon (Missouri Director of LIHEAP) (for distributing surveys statewide); and the staff of the Missouri community action agencies (for distributing and returning surveys).

The views and opinions expressed herein are exclusively those of the authors and do not necessarily state or reflect those of the National Low-Income Energy Consortium.

TABLE OF CONTENTS

Introduction	1
<i>The Affordability of Low-Income Home Energy.....</i>	<i>1</i>
<i>Energy Poverty and Bill Payment Problems</i>	<i>3</i>
<i>Energy Poverty and Social-Economic Problems.....</i>	<i>4</i>
 Chapter 1: Scope of Work and Methodology	 7
 Chapter 2: Findings of Fact.....	 9
<i>Introduction</i>	<i>9</i>
<i>Chapter 3: Impacts on Social, Economic, and Physical Well-being</i>	<i>10</i>
Hunger	10
Health Care	10
Household Safety.....	11
Childhood Education.....	11
Employment.....	12
Housing.....	13
<i>Chapter 4: A Special Look at Home Energy Assistance.....</i>	<i>13</i>
Income and Demographics	13
Bill Payment Characteristics.....	14
Energy Insecurity Characteristics	14
Non-Application for Energy Assistance.....	14
Energy Assistance and Service Disconnection of Discontinuance.....	15
<i>Chapter 5. The Missouri Home Energy Insecurity Scale</i>	<i>15</i>
The Development of a Home Energy Insecurity Scale	15
The Overall Home Energy Insecurity of Low-Income Missouri Households.....	16
The Specific Home Energy Insecurity Threshold Findings	16
 Chapter 3: Impacts on Social, Economic, and Physical Well-being	 19
<i>Hunger</i>	<i>20</i>
<i>Health Care.....</i>	<i>22</i>
Prescribed Medicines.....	22
Doctor and Dentist Appointments.....	23
Combined Medical Effects	25
<i>Household Safety.....</i>	<i>25</i>
<i>Childhood Education.....</i>	<i>28</i>
Books and School Supplies).....	31
<i>Employment</i>	<i>31</i>
Frequent Mover Households.....	32
Transportation.....	34

<i>Housing</i>	34
Temporary Abandonment.....	34
Lost Usable Space.....	35
<i>Summary</i>	37
Chapter 4: A Special Look at Home Energy Assistance	39
<i>The Energy Assistance Populations</i>	39
<i>Payment Attributes of the Energy Assistance Population</i>	41
<i>Energy Insecurity Attributes of the Energy Assistance Population</i>	43
<i>Non-Application for Energy Assistance</i>	44
<i>Energy Assistance and Service Disconnection or Discontinuance</i>	46
Chapter 5: Home Energy Insecurity in Missouri.....	49
<i>The Basic Outline of the Home Energy Insecurity Scale</i>	50
The Five Energy Insecurity Thresholds.....	50
The Home Energy Insecurity Indicators.....	51
Collecting Indicator Data: The Survey Instrument.....	53
The Scaling Process.....	54
<i>Home Energy Insecurity in Missouri</i>	55
<i>Basic Household Attributes</i>	55
<i>Home Energy Insecurity Attributes in Missouri</i>	57
In-Crisis Households	58
Vulnerable Households.....	60
Stable Households.	62
Capable Households	64
Thriving Households.	66
Chapter 6: Meeting the Low-Income Home Energy Needs of Missouri.....	67
<i>Increasing Funding for Bill Payment Assistance Programs</i>	68
Funding for LIHEAP	68
State Public Benefits Programs	69
Fuel Fund Funding.....	70
Additional Actions not Considered	71
<i>Attention to Energy Aspects of Non-Energy Programs</i>	72
Food Stamps	73
Public/Subsidized Housing.....	74
Earned Income Tax Credit (EITC).....	76
Chapter 7: Building Bridges—Common goals	79
<i>Appendix A: Energy Insecurity Scale Survey</i>	81
<i>Appendix B: Energy Insecurity Scale Threshold Scoring</i>	89

TABLE OF TABLES

Missouri’s Home Energy Affordability Gap by Poverty Level (2003 and 2004).....	2
Missouri Fuel Prices (2002 vs. 2003)	3
Distribution of Missouri Home Energy Insecurity Scale Survey Responses by USPS SCF Region.....	8
Energy-Induced Hunger by Demographics	21
Energy-Induced Hunger by Energy Burden Tier.....	21
Hunger by Income as Proportion of Federal Poverty Level.....	22
Reduced Medicines as Energy Bill Payment Strategy by Demographics.....	22
Reduced Medicines by Energy Burden Tier	23
Reduced Medicines by Income as Proportion of Federal Poverty Level.....	23
Avoided Medical Appointments as Energy Bill Payment Strategy by Demographics	24
Avoided Medical Appointments by Energy Burden Tier.....	24
Avoided Medical Appointments by Income as Proportion of Federal Poverty Level	25
Use of Kitchen Oven for Space Heating by Frequency of Service Disconnection	27
Use of Kitchen Oven as Space Heating Source by Poverty Level of Household.....	28
Use of Kitchen Oven as Space Heating Source by Home Energy Burden.....	28
Frequent Mover Status by Household Demographics	30
Frequent Mover Status by Poverty Level of Household.....	30
Frequent Mover Status by Home Energy Burden.....	30
Failure to Buy Books or School Supplies by Poverty Level.....	31
Reason for Most Recent Move within Frequent Mover Population.....	32
Frequent Mover—Last Move Because of Energy Bill By Disconnect Warning or Actual Disconnection .	33
Warning of Disconnection and Actual Disconnection Within Total Frequent Mover Population	33
Frequent Mover Population with Service Disconnections By Household Response to Disconnection.....	34
Wage Earners by Frequency of Forgoing Automobile Repairs to Save for Home Energy Bill Payment .	34
Left Home For all or Part of Day Due to Inability to Afford to Heat/Cool House	35
Frequency of Closing Off One or More Rooms Due to Inability to Heat/Cool House.....	36
Frequency of Leaving Home by Frequency of Disconnect Notices	36
Frequency of Closing One or More Rooms by Frequency of Disconnect Notices	37
Household Demographics by Application for Energy Assistance	40
Poverty Tiers (Total Population vs. Energy Assistance Population).....	41
Home Energy Disconnections/Disconnection Warnings for Energy Assistance Recipients	42

Frequency of Unpaid Bills due to Inability to Pay for Energy Assistance Recipients	42
Frequency of Inability to Pay without Help for Energy Assistance Recipients	43
Energy Insecurity Indicators for Energy Assistance Recipients	43
Energy Insecurity Indicators for Energy Assistance Recipients	44
Reasons Not Applying for Energy Assistance by Demographics	46
Response to Often or Some Disconnection of Service for Nonpayment	46
Home Energy Insecurity Ratings for Total Population and Energy Assistance Recipients	55
Home Energy Insecurity in Missouri by Home Energy Burden.....	56
Home Energy Insecurity by Poverty Tiers	56
Home Energy Insecurity by Household Demographics	57
Home Energy Insecurity Attributes of In-Crisis Households	59
In-Crisis Households Reporting by Number of In-Crisis Indicators Reported.....	59
Home Energy Insecurity Attributes of Vulnerable Households	61
Vulnerable Households Reporting by Number of Vulnerable Indicators Reported.....	62
Home Energy Insecurity Attributes of Stable Households	63
Stable Households Reporting by Number of Stable Indicators Reported.....	64
Home Energy Insecurity Attributes of Capable Households	65
Capable Households Reporting by Number of Capable Indicators Reported.....	65
Number of Weatherized Units (1999 – 2001): Missouri.....	71

TABLE OF APPENDICES

Appendix A: Energy Insecurity Scale Survey.....	81
Appendix B: Energy Insecurity Scale Threshold Scoring.....	89

This page intentionally left blank.

INTRODUCTION

Home energy is unaffordable to Missouri's low-income households. This is true statewide. It is true whether the household receiving the home energy bill is old or young, working or disabled, raising children or on her own. It is true whether the household heats primarily with natural gas, LPG gas, or electricity. Energy poverty harms low-income Missouri households without regard to age, gender, family type, or geographic location.

The analysis that follows provides a detailed look at energy poverty in Missouri. The discussion undertakes to accomplish three tasks:

- It documents the extent of energy poverty in Missouri;
- It describes the consequences of that energy poverty; and
- It measures the insecurity imposed on a low-income household that faces energy poverty.

The unaffordability of home energy affects the full spectrum of a household's physical, economic, and social well-being. In addition to being a direct threat to the ability to retain home energy service, energy poverty in Missouri is a substantive contributor to hunger, inadequate housing, educational underachievement, health and safety dangers, and inability to retain employment. Addressing the unaffordability of home energy in Missouri will generate benefits not only within the energy context, therefore, but will generate a much wider range of benefits as well.

The state of Missouri was selected for this study, in part, because of its location in America's heartland. In the center of the United States, its geographic location results in both cold-weather and hot-weather hardships. It also has urban as well as rural areas, each presenting with energy challenges.

THE AFFORDABILITY OF LOW-INCOME HOME ENERGY

Home energy is a crippling financial burden for low-income Missouri households. According to the 2004 Home Energy Affordability Gap study,¹ Missouri households with incomes of below 50% of the Federal Poverty Level pay 38% or more of their annual income simply for their home energy bills. Home energy unaffordability, however, is not simply the province of the very poor. Bills for households between 50% and 100% of Poverty take up 13% of income.

The number of households facing these energy burdens is substantial. More than 115,000 Missouri households live with incomes at or below 50% of the Federal Poverty Level and thus

¹ The Home Energy Affordability Gap analysis documents the dollar gap between affordable low-income home energy bills and actual low-income home energy bills. State-specific fact sheets presenting the results of the Home Energy Affordability Gap analysis are available at <http://www.fsconline.com/work/heag/heag.htm>.

face a home energy burden of 38% of income or more. 70,000 additional Missouri households live with incomes between 50% and 74% of Poverty (home energy burden of 16%). 80,000 *more* Missouri households live with incomes between 75% and 99% of the Federal Poverty Level (home energy burden of 11%).²

*Missouri's Home Energy Affordability Gap by Poverty Level
(2003 and 2004)*

Poverty Level	2004 /a/	2003 /b/
Below 50%	\$124,363,490	\$120,666,973
50 – 74%	\$55,044,707	\$52,977,115
75 – 100%	\$47,710,100	\$45,513,159
101 – 124%	\$37,189,286	\$34,917,939
125 – 150%	\$20,367,995	\$18,170,920
150% - 185%	\$894,549	\$350,549
Total statewide	\$285,570,127	\$272,596,654

NOTES:

/a/ Given 2002/2003 prices.

/b/ Given 2001/2002 prices.

Increases in the price of natural gas, propane, and fuel oil drove Missouri's Home Energy Affordability Gap up in 2003. The total statewide Home Energy Affordability Gap increased by \$13 million between 2002 and 2003 prices.

- The gap for the lowest income households (0-50% of Poverty) increased by roughly \$4 million.
- The gap for the highest income households (150-185% of Poverty) increased by more than \$0.5 million.

² Different surveys report different numbers of households below Poverty Level in Missouri. The Current Population Survey, for example, reports a different number from the 2000 Census. Use of either figure is appropriate.

In Missouri, fuel oil prices increased substantially during 2003, while natural gas and propane prices increased moderately. Electricity prices, both heating and cooling, stayed relatively constant.

Missouri Fuel Prices (2002 vs. 2003)

	2002 Price	2003 Price
Natural gas heating (ccf)	\$0.761	\$0.841
Electric heating (kWh)	\$0.067	\$0.063
Propane heating (gallon)	\$1.010	\$1.211
Fuel Oil heating (gallon)	\$0.999	\$1.392
Electric cooling (kWh)	\$0.083	\$0.085

SOURCE:
Home Energy Affordability Gap 2004, Missouri State Fact Sheet.
Available at <http://www.fsconline.com/heag/heag.htm>

ENERGY POVERTY AND BILL PAYMENT PROBLEMS

The energy bill payment problems associated with energy poverty have long been recognized. National data published by the U.S. Census Bureau has documented the disproportionate utility bill payment problems faced by low-income households. National data published by the U.S. Census Bureau reports that while 9.8% of non-poor families could not pay their utility bills in full, 32.4% of poor families could not do so.³

Information from various states corroborates this national data.⁴ While one 1998 Illinois report indicated that 44.5% of low-income natural gas customers were in arrears,⁵ an analysis by the staff of the New Hampshire Public Utilities Commission estimated that roughly 35% of the low-income *electric* customers entering that state’s Electric Assistance Program (EAP) entered the program with arrearages.⁶ After an extensive empirical review, the Pennsylvania Public Utilities

³ U.S. Census Bureau, *Extended Measures of Well-Being: 1992*, P70-50RV (November 1995).

⁴ Some care must be taken in interpreting this data. Frequently, “low-income” data is available only for households identified as being low-income. A low-income customer that pays in a full and timely fashion, however, has no reason to have been identified as low-income by the energy company.

⁵ Department of Energy and Community Affairs, *Residential Energy Costs and Assistance in Illinois: The 1997 – 98 Winter*, at 6, Springfield (IL).

⁶ Colton, R. (2002). *Payment-Problems, Income Status, Weather and Prices: Costs and Savings of a Capped Bill Program*, at 4, Fisher, Sheehan & Colton: Belmont (MA).

Commission estimated that 40% of all identified low-income gas and electric customers are in arrears at any given time.⁷

ENERGY POVERTY AND SOCIAL-ECONOMIC PROBLEMS

While perhaps the most discussed, bill payment problems are not the *only* impact of unaffordable home energy bills, however. Research in 1999 concluded:

Whether it is accurate to equate "unaffordability" and "bill nonpayment" can be empirically tested. This paper concludes that it is not. The analysis below finds both that: (1) an inability-to-pay does not necessarily lead to nonpayment; and that, conversely, (2) actual bill payment does not necessarily imply an *ability* to pay. In fact, what the analysis below finds is that *many* consumer responses exist to an inability-to-pay home energy bills, only one limited set of which involves *not* paying the bill. . .Bill payment and bill affordability are not synonymous terms. Quite simply, it is possible for a person to pay an unaffordable bill. Indeed, it is possible for a person to make continuing, full and timely payments of an unaffordable bill.⁸

Previous research by the Iowa Department of Human Rights (DHR), which is the agency that administers LIHEAP in Iowa, found that bill nonpayment is perhaps not even the most significant of the adverse impacts of unaffordable winter home energy bills. A DHR study of Iowa LIHEAP recipients found that:⁹

- Over 12 percent of Iowa LIHEAP recipients went without food to pay their home heating bill. Projected to the total participating LIHEAP population, that meant that about 7,600 low-income households (representing 20,000 Iowa citizens) went without food at times as a result of unaffordable home heating bills.
- More than one-in-five went without medical care to pay for heating bills. This included not seeking medical assistance when it was needed, not filling prescriptions for medicine when a doctor had prescribed it, and/or not taking prescription medicines in the dosage ordered by the doctor.
- Almost 30 percent reported that they did not pay other bills, but did not elaborate as to which bills were not paid. In addition to not paying other bills, many low-income households incurred debt in order to pay both their home heating bills and other basic necessities. They borrowed from friends and/or neighbors, used credit cards to pay for food and other necessities, or did not pay the heating bill.

⁷ Bureau of Consumer Services (1992). *Final Report on the Investigation into the Control of Uncollectible Balances*, at 33 - 34, Docket NO. I-900002, Pennsylvania Public Utilities Commission: Harrisburg (PA).

⁸ Roger Colton (1999). *Measuring LIHEAP Results: Responding to Home Energy Unaffordability*, at 2 – 3, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

⁹ Joyce Mercier, Cletus Mercier and Susan Collins (June 2000). *Iowa's Cold Winters: LIHEAP Recipient Perspective*, Iowa Department of Human Rights: Des Moines (IA).

Similar results were found by The Heat and Warmth Fund (THAW), Michigan's primary fuel fund. THAW reports that when asked what they would have done had they not received THAW funds, 70% indicated that they would have missed a rent or house payment. In addition, 68% said they would have had to go without food, while 45% said they would have gone without health care or medicine.

THAW concluded:

The effect of simply paying a delinquent utility bill goes beyond maintaining service. THAW funds made a difference in the quality of life of many who received help, preventing homelessness or forced mobility and averting hunger and health problems from insufficient food or medicine. THAW may also be preventing injury and death from the use of unsafe alternatives.¹⁰

In sum, the nature of energy poverty is, at best, an imprecise concept. What does it mean? How can it be measured? We know that it often means that people cannot pay their home energy bills. We know further, however, that even if they do pay their bills, they may suffer serious consequences from those actions they must take in order to allow that to be possible.

¹⁰ The Heat and Warmth Fund (November 2000). *THAW Fund Outcome Evaluation Survey Results*, at 2, The Heat and Warmth Fund: Detroit (MI).

This page intentionally left blank.

CHAPTER 1:

SCOPE OF WORK AND METHODOLOGY

The purpose of this study is to describe energy poverty within Missouri's low-income population. The primary focus of the study is to apply the Home Energy Insecurity Scale. The Missouri Home Energy Insecurity Scale is based on a variation of the Home Energy Insecurity Scale survey developed for the federal Low-Income Home Energy Assistance Program (LIHEAP) office in 2003. The Missouri Home Energy Insecurity Scale survey consists of 21 questions. After collecting basic demographic information, the survey asks questions directed toward comprehensively assessing five different aspects of a household's energy bill affordability or unaffordability:

- The receipt of outside assistance to help pay the household's home energy bill;
- Constraints on household energy use;
- Constraints on the use of household necessities;
- Nonpayment of energy bills; and
- Household financial strain imposed by home energy bills.

The survey instrument is attached as Appendix A. Survey responses were collected from January 2004 through March 2004. A total of 734 usable surveys were collected.

The survey was distributed through the various community-based organizations engaged in LIHEAP intake for the State of Missouri. While respondents were thus likely to be energy assistance recipients, not *all* respondents were.¹¹ Surveys were self-administered. Some were directly returned by low-income households to the research offices in Boston. Others were collected by the local community-based organizations and forwarded to Boston.

Survey responses were obtained from each of Missouri's 19 community action agencies, in addition to being obtained directly from the Missouri State LIHEAP office. Surveys were compiled by three-digit zip codes and aggregated by U.S. Postal Service (USPS) Section Center Facility (SCF) region. The distribution statewide was as follows:

¹¹ While there are various references through this report to "energy assistance recipients" and to the "low-income population," these references are intended to encompass only survey respondents.

Distribution of Missouri Home Energy Insecurity Scale Survey Responses by USPS SCF Region

Sectional Facility Center Region	3-Digit Zip Codes Included	Survey Responses
Saint Louis	630, 620, 622, 630, 631, 633	140
Cape Girardeau	636, 637, 638, 639	77
Saint Joseph	644, 645	76
Chillicothe	646	39
Harrisonville	647	12
Mid-Missouri	650, 651, 652, 653	112
Springfield	648, 654, 655, 656, 657, 658	116
Kansas City	640, 641, 649	80
Quincy	623, 634, 635	77
Other	Miscellaneous	5

Survey respondents were provided an incentive to participate. On April 2, 2004, two households were randomly selected from those having responded to the survey. Each of the selected households was provided a \$500 payment toward the energy provider of his or her choice. Payments were made by two-party check made payable to the individual and the energy vendor.

CHAPTER 2: FINDINGS OF FACT

INTRODUCTION¹²

1. Home energy is a crippling financial burden for low-income Missouri households. Missouri households with incomes of below 50% of the Federal Poverty Level pay 38% or more of their annual income simply for their home energy bills. Home energy unaffordability, however, is not simply the province of the very poor. Even Missouri households with incomes between 150% and 185% of the Federal Poverty Level often have energy bills above the percentage of income generally considered to be affordable.
2. The number of households facing these energy burdens is staggering. More than 115,000 Missouri households live with incomes at or below 50% of the Federal Poverty Level. 70,000 additional Missouri households live with incomes between 50% and 74% of Poverty. 80,000 *more* Missouri households live with incomes between 75% and 99% of the Federal Poverty Level.
3. Existing sources of energy assistance do not adequately address the energy affordability gap in Missouri. Actual low-income energy bills exceeded affordable energy bills in Missouri by nearly \$285 million at 2003 prices. In contrast, Missouri received a gross allotment of federal energy assistance funds of \$40.8 million for Fiscal Year 2003. Some of those funds will be used for administrative costs, weatherization, and other non-cash assistance.
4. National data published by the U.S. Census Bureau has documented the disproportionate utility bill payment problems faced by low-income households. Information from various states corroborates this national data.
5. Bill payment and bill affordability are not synonymous terms. It is possible for a person to pay an unaffordable bill. Many low-income households make continuing, full and timely payments of unaffordable bills.
6. To make these payments on unaffordable bills, low-income households make significant sacrifices toward their social, economic, and physical well-being.

¹² This chapter presents in summary terms factual findings that are based on the text and discussion below. For further detail on any particular finding, the reader should look to the specific chapter under which the finding is listed.

CHAPTER 3: IMPACTS ON SOCIAL, ECONOMIC, AND PHYSICAL WELL-BEING

Hunger

7. Skipping meals to save money to pay home energy bills is not an uncommon occurrence within the survey population. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 46% reported that they either “often” or “sometimes” went without food in order to pay their home energy bill.
8. The prevalence of energy bill-induced hunger within Missouri’s low-income population occurs throughout the range of energy burdens.
9. Households with incomes well below the Federal Poverty Level experience the greatest energy-induced hunger. Nearly half of those households reporting that they go without food “often” or “sometimes” in order to have money to pay their home energy bills live with incomes below 50% of the Federal Poverty Level. More than three-quarters live with incomes below 100% of the Federal Poverty Level.

Health Care

10. Skipping medicines to save money to pay home energy bills is not an uncommon occurrence within the survey population. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 45% reported that they either “often” or “sometimes” did not take their medicine, or took their medicines in a dosage less than prescribed by their doctor, in order to pay their home energy bill.
11. Households that forgo taking prescription medicines in order to have money to pay for their home energy are common throughout Missouri’s low-income population. The rate at which households do not take their prescribed medicines, or take their medicines in dosages less than that prescribed, ranges from 40% to 50% of the population.
12. The need to go without medicine, or to reduce the intake of medicine below the dosage prescribed by a doctor, is concentrated in the lowest Poverty Levels. Three-quarters of those reporting forgoing medicines, or reducing prescribed dosages, “often” or “sometimes” in order to save money to pay their home energy bills live with incomes below 100% of the Federal Poverty Level.
13. Many low-income Missouri households skip seeing doctors and dentists altogether because of unaffordable home energy bills.

14. Households with incomes well below the Federal Poverty Level experience the greatest incidence of energy-induced avoided health care visits. Nearly 80% of those households reporting avoiding medical appointments “often” in order to save money to pay their home energy bills live with incomes below 100% of the Federal Poverty Level.
15. The health care impacts rarely arise independently of each other. The households reporting that they frequently reduced their medicine intake in order to have money to pay their home energy bills overwhelmingly reported that they also skipped a doctor’s or dentist’s appointment in order to have money to pay their home energy bills.

Household Safety

16. One common response to the unaffordability of home energy in Missouri is to seek to heat small areas of a home with appliances not intended to be a source of space heating. One of the most common of these alternative sources of space heating is the kitchen oven. The practice is not uncommon. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, more than half reported using an appliance intended for cooking food (kitchen oven/stove/range) as a source of space heating either frequently or sometimes.
17. A high percentage of households reporting the use of their kitchen oven for space heating have experienced the disconnection or discontinuance of service for nonpayment.
18. The safety burdens posed by the perceived need to use the kitchen oven as a source of space heating fall most heavily on those with the highest energy burdens as a percentage of income.

Childhood Education

19. Energy poverty in Missouri contributes to the lack of educational preparedness within the low-income population.
20. One of the primary contributing factors to educational underachievement is the frequent mover status of the student. Third grade students that have changed schools frequently are two-and-a-half times as likely to repeat a grade as third grader students who have never changed schools. Frequent mover students are more likely to be below grade level in both reading and math. More than one-in-five of the respondents to the Missouri Home Energy Insecurity Survey were found to be frequent movers over a two year period.
21. Frequently moving substantively affects households with children. More than 70% of all frequent mover households had children under age 18.
22. Frequently moving occurs primarily in the lowest income populations. More than half of the frequent mover households had incomes that were at or below 50% of the Federal Poverty Level, while nearly 85% had incomes at or below 100% of the Federal Poverty Level.

23. High energy burdens are associated with frequent mover status. Nearly 50% of all frequent movers had energy burdens equal to 16% or more of their annual income. More than 60% of all frequent mover households had energy burdens in excess of 13% of their income.
24. Energy poverty adversely affects the educational attainment of low-income students by impeding the ability of parents to provide adequate schoolbooks and supplies. More than one-third of the frequent mover households indicated that they also would not buy schoolbooks or supplies for children in order to preserve household funds to pay for the home energy bill.
25. The harms that accrue to children by not having access to schoolbooks and school supplies fall primarily on the lowest income households. Three-quarters of the households reporting that they did not buy schoolbooks or supplies had incomes of less than 100% of the Federal Poverty Level.

Employment

26. Energy poverty contributes to employment problems facing working poor households in Missouri. Working poor households have particularly fragile incomes. Working poor families tend to have hourly wage jobs. In addition, low-wage workers lack paid leave benefits (sick leave, personal leave, vacation leave). As a result, various aspects of unaffordable home energy bills can disrupt these incomes.
27. More than one-quarter of frequent mover households had income from wages. The frequent mover status of low-wage workers will reduce the wages earned by reducing the hours worked, as households seek out new housing. This will occur even if the worker succeeds in keeping his or her job after the move.
28. Nearly one-in-six frequent mover households cited an energy-related reason as the primary reason for their most recent move. Most frequent mover households citing energy reasons indicated that the primary reason for their move was to find lower energy bills. A smaller number indicated that service had been disconnected or discontinued at their prior address.
29. The frequent mover status of households because of high energy bills differs from forced moves induced by the disconnection or discontinuance of service. Seeking more affordable home energy bills occurs whether or not the household has faced the actual disconnection of service. Most, however, faced the ongoing *threat* of service termination.
30. Frequent mover households were far more likely to simply go without home energy service than they were to move to a new home to reinstate service.

Housing

31. The first primary way in which energy poverty affects the housing of low-income Missouri households is by forcing those households to abandon their home for all or part of a day due to their inability to heat or cool it. Households having persons with disabilities, as well as households receiving public assistance, reported the greatest need to frequently abandon their homes because they could not afford to heat their home.
32. Across-the-board, more households left their homes because they could not afford to cool them than left their homes because they could not afford to heat them.
33. A second primary housing impact resulting from low-income inability to pay for heating and cooling bills is the lost usable space created in an effort to reduce the need for heating and cooling. A substantial proportion of low-income households overall, as well as in every demographic category, closed off one or more rooms of their homes because they could not afford to heat or cool that space.
34. The frequency of closing off rooms did not increase with the frequent receipt of disconnect notices. Neither the total percentages of households closing rooms because they could not afford to heat, nor the total percentages of households closing rooms because they could not afford to cool, changed when the frequency of disconnect notices was overlaid on the analysis.

CHAPTER 4: A SPECIAL LOOK AT HOME ENERGY ASSISTANCE

Income and Demographics

35. Energy assistance is insufficient in Missouri to resolve low-income energy poverty problems. This occurs despite the fact that energy assistance recipients¹³ have substantially the same demographic, income, and energy burden characteristics as the total respondent population as a whole.
36. Households with at least one member age 60 or older are not underrepresented in the energy assistance population. Neither are households with at least one person having a disability underrepresented in the energy assistance population.
37. A significant number of households that receive either Food Stamps or public assistance do not *also* receive home energy assistance.

¹³ References to “energy assistance recipients throughout this report are to survey respondents that reported applying for energy assistance.

38. Somewhat fewer than half of energy assistance applicants lived with incomes at or below 50% of the Federal Poverty Level. Nearly 80% of the applicants reporting that they applied for energy assistance live at or below the Federal Poverty Level.

Bill Payment Characteristics

39. The distribution of energy assistance applicants between energy burden tiers closely resembles the Home Energy Insecurity Survey respondents as a whole. The respondents reporting having received weatherization assistance have somewhat lower energy burdens.

40. Energy assistance respondents systematically experience service disconnections. In addition, energy assistance respondents reported the frequent receipt of disconnect warnings from their energy suppliers.

41. Energy assistance in Missouri reaches beyond those households with energy bill payment problems. Energy assistance recipients systematically experience other energy insecurity problems identified through the survey. Energy assistance recipients: (1) frequently worried about their home energy bills because they could not afford to pay them; (2) frequently could not afford to heat or cool their homes to comfortable temperatures; and (3) frequently closed off rooms of their home during hot weather because they could not afford to cool them.

42. In addition, energy assistance recipients often were forced to leave their homes frequently for all or parts of a day during hot weather because they could not afford to cool the m. They frequently were forced to use their kitchen oven as a temporary source of space heating.

Energy Insecurity Characteristics

43. Missouri's home energy assistance recipients reported that they frequently reduced spending on household necessities because they could not afford both to purchase the necessities and to pay their home energy bill. Indeed, energy assistance recipients reported that they would: (1) frequently go without food so they would have money to pay their home energy bills; (2) not buy school books or supplies for children in order to have money to pay their home energy bills; (3) frequently go without necessary clothing, such as coats or boots, in order to pay their home energy bills; (4) not go to doctor or dentist appointments in order to pay their home energy bills; and (5) go without making needed automobile repairs in order to have sufficient money to pay their home energy bills.

Non-Application for Energy Assistance

44. The reasons why households do not apply for energy assistance are very specific to the demographic group into which the household falls.

45. By far, the most common reason in the overall population for not applying for energy assistance was because the household felt that it "did not need help with my energy bills."

This reason was 50% more frequent than the next most common reason (“thought my income was too high”) and twice as common as the most common reasons involving barriers to applications. Specific populations, however, differed from the total population.

46. The Missouri data supports the need for specialized outreach efforts directed toward specific low-income populations.

Energy Assistance and Service Disconnection of Discontinuance

47. Energy assistance is an important mechanism for Missouri low-income households to use to restore energy service once it has been disconnected or discontinued. One-third of the households that either often or sometimes experienced a service disconnection reported that they used energy assistance to pay their overdue bill after their loss of service and had service restored.
48. The use of energy assistance to pay past due bills so that service could be restored after a service termination was the most frequent response to the disconnection of service.
49. Responding to a service termination by moving and restoring service at a new address, changing the name of the account holder, or changing energy providers, was rare.
50. Simply going without home energy service occurred only half as often as using energy assistance, yet far more often than the other available alternatives.

CHAPTER 5. THE MISSOURI HOME ENERGY INSECURITY SCALE

The Development of a Home Energy Insecurity Scale

51. Despite the acknowledged existence of the paid but unaffordable bill, no systematic tool has previously existed to measure the complete spectrum of the “unaffordable” home energy bill.
52. The Home Energy Insecurity Scale uses the same five thresholds as does the federal ROMA process: Thriving, Capable, Stable, Vulnerable, and In-Crisis. Each of these thresholds measures the self-sufficiency status of a household at a particular point in time.
53. Each of the five thresholds used in the Home Energy Insecurity Scale represents a conclusion as to the level of energy self-sufficiency of a household. The Home Energy Insecurity Scale has been designed to represent the energy-equivalent of other household-level scales. Whether it involves energy, or housing, or nutrition, the provision of basic household needs by a self-sufficient household involves certain fundamental similarities.

54. A household can fit into one, but only one, of the five thresholds that underlie the Home Energy Insecurity Scale.
55. The questions used in the Home Energy Insecurity Scale have been adapted from the survey used by the Food Assistance and Nutrition Research Program of the U.S. Department of Agriculture (USDA) to measure “food insecurity” in the United States. The parallels between food insecurity and home energy insecurity make the use of the USDA questions an excellent model for use in developing the Home Energy Insecurity Scale.

The Overall Home Energy Insecurity of Low-Income Missouri Households

56. The vast majority of low-income Missouri households face significant home energy problems as measured by the Home Energy Insecurity Scale.¹⁴ Almost half of Missouri’s low-income households are In-Crisis. An additional 46% are rated Vulnerable using the scale. Less than one percent were rated as Thriving.
57. Missouri households found to be In-Crisis tended to be less frequent applicants for home energy assistance.
58. Households in Missouri with lower energy burdens tended to have higher energy security.
59. Households in progressively higher Poverty Level brackets had progressively lower numbers of households In-Crisis, and progressively higher numbers of households rated Stable or above.
60. The population that appears to be in the best circumstances involves households that have at least one member age 60 or older. Five percent of this group of households with aging members are either Capable or Thriving, exceeding every other demographic group.

The Specific Home Energy Insecurity Threshold Findings

61. Health and safety issues were the top tier of attributes that marked the In-Crisis households. Half of In-Crisis households indicated that they would not go to the doctor or dentist in order to pay their home energy bill. Going without food and experiencing an actual disconnection or discontinuance of service were also common attributes that placed Missouri’s low-income households In-Crisis.
62. Missouri households falling into the In-Crisis threshold generally experienced more than one of the In-Crisis attributes.

¹⁴ As with references to energy assistance recipients, references to the low-income population generally refer only to the survey respondents.

63. Frequently going without medical care, experiencing the occasional disconnection of service, and using inappropriate appliances to provide space heating, were the three indicators most frequently experienced by Vulnerable Missouri low-income households.
64. In addition, occasionally not having money to pay the home energy bill without outside help, not paying the home energy bill due to a lack of money, and going without food and/or medicine, were common indicators of the Vulnerable household.
65. Nearly a third of all Vulnerable households experienced five or more of the 11 indicators that mark a Vulnerable household. Nearly half experienced four or more of the 11 indicators.
66. Receiving frequent warnings that service would be disconnected or discontinued, without actually experiencing the loss of service, was the most frequent reason for households being classified as Stable rather than Capable. More than three-quarters of the Stable households had received frequent warnings without having actually experienced the loss of service.
67. Somewhat over one-third of the Stable households reported that they frequently worried about whether their bill would become overdue before they could get money to pay for it.
68. While absolute numbers were small, a very large proportion of Capable households reported that their bill occasionally became due without them having the money to pay it absent somebody's help. Whether that help was in the form of energy assistance, loans from family and/or friends, church assistance, or assistance from a local fuel fund was unspecified.
69. An insufficient number of households were classified as Thriving to be able to provide quantitative description of the population.
70. It is *perhaps* noteworthy that: (1) two of the three Thriving households have incomes between 101% and 150% of the Federal Poverty Level, (2) no household with income below 50% of Poverty was Thriving; and (3) all three Thriving households had energy burdens of 8% or less.

This page intentionally left blank.

CHAPTER 3: IMPACTS ON SOCIAL, ECONOMIC, AND PHYSICAL WELL-BEING

In Fiscal Year 2004, the federal government will spend nearly \$2.0 billion to provide home energy assistance to low-income consumers. Known as the Low-Income Home Energy Assistance Program (LIHEAP),¹⁵ this fuel assistance program was first begun in 1981. Since that time, the federal government has spent tens of billions of dollars on low-income energy assistance.¹⁶

We know what LIHEAP "does." We know that LIHEAP distributes federal assistance to roughly five million low-income households each year. We know further that LIHEAP makes home energy bills more "affordable" to recipients of program benefits.¹⁷ We know that LIHEAP reduces the home heating burden¹⁸ imposed on low-income consumers.¹⁹

Despite all of this, opinions widely vary on defining the precise reason *why* low-income households receive LIHEAP benefits.

Many argue that LIHEAP protects against unaffordable home energy bills and the resulting disconnection or denial of service accompanying unaffordability. Under this reasoning, the disconnection of service denies low-income consumers access to a fundamental necessity of life, thus leading to illness, death, housing abandonment, and homelessness. The loss of winter heating service in cold weather states --as well as cooling service in warm weather states-- poses obvious dangers to health and property. Under this reasoning, a publicly funded fuel assistance program is primarily a mechanism to prevent these dangers by supplementing income to avoid utility bill non-payment.

At its core, this line of reasoning equates, or at least closely associates, the concepts of "unaffordability" and "inability-to-pay" with the concept of "bill nonpayment." Whether it is, in fact, accurate to equate "unaffordability" and "bill nonpayment" can be empirically tested. This

¹⁵ 42 U.S.C. §§ 2601, *et seq.*

¹⁶ The Department of Health and Human Service's *Low Income Home Energy Assistance Program Annual Report to Congress* reports the appropriations and expenditures by year since the inception of federal fuel assistance. The LIHEAP report to Congress indicates that the bulk of all LIHEAP expenditures are used on heating assistance, with smaller amounts being used for crisis intervention, weatherization and administration. A small portion of funding is used for cooling assistance.

¹⁷ Any bill that is offset in whole or part by some type of public aid would be "more" affordable. That does not address the question of whether bills are "affordable" in some objective sense after distribution of assistance.

¹⁸ In some states, LIHEAP is primarily a cooling program.

¹⁹ This assumes there is no "take back" from making bills more affordable. An illustration of a "take back" would involve a person who is living with all but two rooms of his or her home closed off. If bills are made more affordable, the person may decide to "open up" and use the rest of his or her home.

chapter documents that households can live in energy poverty, have unaffordable bills, yet still achieve bill payment --- but at a substantial risk to the well-being of the members of the household.

In addition to the policy implications such an effort has with respect to assessing low-income energy needs, ultimately these measures also can be used to define the outcomes generated by LIHEAP and, therefore, to measure the performance of LIHEAP or other energy affordability programs.

The discussion below thus considers the paid-but-unaffordable bill. It documents the impacts that unaffordable home energy has on the social, economic, and physical well-being of low-income Missouri households. The discussion below will consider, in turn, the impacts of energy poverty on:

- Hunger
- Health care
- Safety
- Education
- Employment
- Housing

HUNGER

Energy poverty in Missouri contributes to hunger within the low-income population. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 46% (n=341) reported that they either “often” (n=68) or “sometimes” (n=273) went without food in order to pay their home energy bill.

Skipping meals to save money to pay home energy bills is not an uncommon occurrence within the survey population. Wage earners report the highest incidence of skipped meals. Households with young children also report a high incidence of skipped meals. The relationship between high energy bills and reduced food intake has been previously documented.²¹ Households with aged members report the lowest incidence of using skipped meals as a utility bill payment mechanism.

²⁰ Mark Nord, et al. (October 2002). *Household Food Security in the United States, 2001*, at section 1, page 13, Economic Research Service, U.S. Department of Agriculture: Washington D.C.

²¹ Jayanta Bhattacharya, et al. (June 2002). *Heat or Eat? Cold Weather Shocks and Nutrition in Poor American Families*, National Bureau of Economic Research: Cambridge (MA).

Energy-Induced Hunger by Demographics

	Often		Sometimes		Combined		Total
Aged	8	8%	33	34%	41	42%	98
Children Under 6	21	12%	81	47%	102	59%	173
Children Under 18	43	13%	152	44%	195	57%	343
Disabled	20	11%	84	45%	104	56%	185
Wage earner	18	13%	76	53%	94	66%	143
Unemployed	18	9%	99	48%	117	57%	207
Public assistance /a/	11	12%	40	43%	51	54%	94

NOTES:

/a/ The term “public assistance” was not defined in the Home Energy Insecurity Survey. Public assistance is generally thought to include Temporary Aid to Needy Families (TANF).

The prevalence of energy bill-induced hunger within Missouri’s low-income population occurs throughout the range of energy burdens.²² Between 40% and 55% of Missouri’s low-income households report that they either frequently or sometimes went without food in order to have enough money to pay their home energy bill.

Energy-Induced Hunger by Energy Burden Tier

Went Without Food to Pay Home Energy	Energy Burden as Percent of Income						Total
	0-6%	7-9%	10-12%	13-15%	16-20%	21%+	
Frequently	10%	8%	13%	6%	10%	9%	68
Sometimes	35%	43%	41%	40%	29%	37%	273
Never	55%	49%	46%	54%	61%	53%	393
Total	100%	100%	100%	100%	100%	100%	734
Total	91	120	87	113	143	180	

Clearly, however, households with incomes well below the Federal Poverty Level experience the greatest energy-induced hunger. Nearly half (44%) of those households reporting that they go without food “often” or “sometimes” in order to have money to pay their home energy bills live with incomes below 50% of the Federal Poverty Level. More than three-quarters (76%) live with incomes below 100% of the Federal Poverty Level.

²² “Hunger” is defined by the U.S. Department of Agriculture’s Food Insecurity Survey as going without a meal at least once every three months. Mark Nord, et al. (October 2002). *Household Food Security in the United States, 2001*, at section 1, page 13, Economic Research Service, U.S. Department of Agriculture: Washington D.C.

Hunger by Income as Proportion of Federal Poverty Level

Went Without Food to Pay Home Energy	Income as Percent of Federal Poverty Level					Total	
	0 - 50%	51 – 100%	101 – 150%	151 – 200%	201% and more		
Frequently	37%	37%	25%	1%	0%	100%	68
Sometimes	45%	31%	21%	2%	1%	100%	273
Total	44%	32%	21%	2%	1%	100%	341

HEALTH CARE

Energy poverty contributes to health care problems within Missouri’s low-income population. Two health care issues arise because of unaffordable home energy. First, low-income households are forced into choosing to pay home energy bills rather than taking medicines that have been prescribed. In addition, low-income households are forced to forgo necessary medical care by avoiding doctor and dentist appointments.

Prescribed Medicines

Skipping medicines to save money to pay home energy bills frequently occurs within the survey population. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 45% (n=333) reported that they either “often” (n=112) or “sometimes” (n=222) did not take their medicine, or took their medicines in a dosage less than prescribed by their doctor, in order to pay their home energy bill.

The need to forego taking medicines is present throughout the various demographic groups. Public assistance recipients report the highest incidence of reduced medicines. Households with at least one member over age 60 report the lowest incidence of reduced medicines.

Reduced Medicines as Energy Bill Payment Strategy by Demographics

	Often		Sometimes		Combined		Total
Aged	13	13%	33	34%	46	47%	98
Children Under 6	37	21%	61	35%	98	57%	173
Children Under 18	65	19%	125	36%	190	55%	343
Disabled	37	20%	69	37%	106	57%	185
Wage earner	29	20%	56	39%	85	59%	143
Unemployed	44	21%	82	40%	126	61%	207
Public assistance	18	19%	41	44%	59	63%	94
Total	112	15%	221	30%	333	45%	734

Not taking prescription medicines because of high energy bills occurs throughout Missouri’s low-income population. The rate at which households do not take their prescribed medicines, or take their medicines in dosages less than prescribed, ranges from 40% to 50% of the population.

Reduced Medicines by Energy Burden Tier

Reduced Prescribed Medicine Dosage	Energy Burden as Percent of Income						Total
	0-6%	7-9%	10-12%	13-15%	16-20%	21% +	
Frequently	18%	15%	22%	15%	10%	15%	112
Sometimes	30%	28%	17%	35%	38%	28%	221
Never	53%	57%	61%	50%	52%	57%	333
Total percent	100%	100%	100%	100%	100%	100%	
Total	91	120	87	113	143	180	734

The need to go without medicine, or to reduce the intake of medicine below the dosage prescribed by a doctor, is concentrated in the lowest Poverty Levels. More than 40% of those reporting forgoing medicines, or reducing prescribed dosages, “often” or “sometimes” in order to save money to pay their home energy bills live with incomes below 50% of the Federal Poverty Level.

Reduced Medicines by Income as Proportion of Federal Poverty Level

Reduced Prescribed Medicine Dosage	Income as Percent of Federal Poverty Level					Total	
	0 - 50%	51 – 100%	101 – 150%	151 – 200%	201% and more	Percent	Count
Frequently	40%	33%	21%	4%	1%	100%	112
Sometimes	41%	34%	21%	3%	1%	100%	221
Total	41%	34%	21%	4%	1%	100%	333

Doctor and Dentist Appointments

In addition to reducing the medicines which have been prescribed by doctors, low-income Missouri households skip seeing doctors and dentists altogether because of unaffordable home energy bills. Avoiding seeing doctors and dentists to save money to pay home energy bills is a common occurrence within the survey population. Public assistance recipients and households with unemployed persons report the highest incidence of avoided medical appointments. Households with at least one member over age 60 report the lowest incidence of avoided appointments.

Avoided Medical Appointments as Energy Bill Payment Strategy by Demographics

	Often		Sometimes		Combined		Total
Aged	18	18%	42	43%	60	61%	98
Children Under 6	61	35%	71	41%	132	76%	173
Children Under 18	102	30%	153	45%	255	74%	343
Disabled	47	25%	93	50%	140	76%	185
Wage earner	43	30%	64	45%	107	75%	143
Unemployed	72	35%	98	47%	170	82%	207
Public assistance	30	32%	43	46%	73	78%	94
Total	178	24%	264	36%	442	60%	734

High energy burdens contribute to energy bill-induced health care avoidance. From 60% to 70% of Missouri’s low-income population report avoiding going to the doctor or dentist in order to have sufficient money to pay their home energy bills.

Avoided Medical Appointments by Energy Burden Tier

	Energy Burden as Percent of Income						Total
	0-6%	7-9%	10-12%	13-15%	16-20%	21%+	
Frequently	23%	22%	26%	32%	20%	24%	178
Sometimes	29%	40%	41%	33%	40%	33%	264
Never	48%	38%	32%	35%	41%	42%	442
Total	100%	100%	100%	100%	100%	100%	
Total	91	120	87	113	143	180	734

Households with incomes well below the Federal Poverty Level experience the greatest incidence of energy-induced avoided health care visits. More than 40% of those households reporting avoiding medical appointments “often” in order to save money to pay their home energy bills live with incomes below 50% of the Federal Poverty Level. Nearly 80% live with incomes below 100% of the Federal Poverty Level.

Avoided Medical Appointments by Income as Proportion of Federal Poverty Level

	Income as Percent of Federal Poverty Level					Total	
	0 - 50%	51 – 100%	101 – 150%	151 – 200%	201% and more		
Frequently	43%	35%	18%	3%	1%	100%	178
Sometimes	40%	33%	24%	3%	0%	100%	264
Total	41%	33%	21%	3%	0%	100%	442

Combined Medical Effects

Compounding the health care problems associated with unaffordable home energy bills is the fact that these health care impacts rarely arise independently of each other. Of the 112 respondents reporting that they frequently reduced their medicine intake in order to have money to pay their home energy bills, only eight (7%) reported that they had not *also* skipped a medical appointment. Conversely, of the 178 households reporting that they frequently avoided medical appointments in order to save money to pay their home energy bills, only 47 (26%) reported that they had not *also* reduced medicines that had been prescribed to them.

HOUSEHOLD SAFETY

Energy poverty presents substantial safety risks to low-income households in Missouri. According to the National Fuel Funds Network:

A 1999 national study surveyed nearly 500 low-income service providers, including state LIHEAP administrators; state administrators of the federal low-income weatherization assistance program (WAP); state and local community action administrators; and local Legal Services Corporation (LSC) and other community-based low-income advocates. In addition, survey requests were sent to each state office that is a member of the National Association of State Utility Consumer Advocates (NASUCA) as well as to the consumer services staff member at each state public utility commission. In response to a question asking what low-income households do in response to unaffordable home energy bills, the *most* common response was that households rely on alternate heat sources (ovens, burners, electric blankets), change fuel types, and use electric space heaters.²³

NFFN reports that “the winter heating season presents the most dangerous time for home heating fires.”²⁴ NFFN quotes the National Fire Protection Association (NFPA) as reporting that “not

²³ National Fuel Funds Network (December 2001). *In Harm’s Way: Home Heating, Fire Hazards, and Low-Income Households*, at 2, National Fuel Funds Network: Washington D.C.

²⁴ Marty Ahrens (June 2001). *The U.S. Fire Problem Overview Report: Leading Causes and Other Patterns and Trends*, at 76, National Fire Protection Association: Quincy (MA). According to this NFPA report, “both home structure fires and home structure fire deaths show a sharp peak in the cold-weather months. . .Half of the home heating fires and three-fourths of the home-heating fire deaths occurred in the months of December, January and

being able to afford utilities” is one of the “major factors of increased fire risks” for low-income households. “In poor homes, small portable heaters or space heaters may be used to heat areas much too large for their capacity, and some households supplement heating equipment by turning on their ovens and leaving the door open.”²⁵

Moreover, NFFN reports that poverty is a particular fire danger indicator:

Aside from low-income status being associated with an increased incidence of home fires generally, it is associated with deadly fires as well. Several factors contribute to this result, the NFPA has found:

- Not being able to afford smoke detectors. “Three fifths of all home fire deaths occur in the approximately seven percent of homes without detectors.”²⁶ One-third of all homes with detectors that have fires have detectors that are not working.
- Not always being able to afford child care and leaving children unattended or unsupervised. Unattended children are those left completely alone with no adult or babysitter to look after them.
- Not being able to afford a telephone. “Without a telephone, the chance of a delay in alarm when reporting a fire to the fire department increases.” According to the Federal Communications Commission (FCC), while telephone penetration rates for residential consumers in general exceeds 95%, March 2000 data shows that the penetration rate for households with incomes below \$5,000 was only 80.3%. In addition, penetration rates for households relying exclusively on public assistance for income fall to only 45%.²⁷
- Living in less fire resistant housing, as well as using less fire resistant furniture and mattresses. “Diminished financial resources prevent many families from investing in fire safety because the resources they do have usually go to other, more immediate necessities.”²⁸

February. . .As noted earlier, heating fires and heating fire deaths are disproportionately associated with portable or fixed space heating equipment and the associated chimneys or venting systems.”

²⁵ *In Harm’s Way*, *supra*, at 3 – 4, quoting, “Burning Issues,” *NFPA Journal*, at 104 (January/February 1996).

²⁶ *U.S. Fire Problem Overview Report*, *supra*, at 51.

²⁷ Among specific low-income households, telephone penetration rates are dramatically low. Of households on public assistance, 35 percent lack telephones. Of households receiving food stamps, 31 percent lack telephones. Of households receiving energy assistance, 21 percent lack telephones. Indeed, of those households completely dependent on public assistance, the penetration rate of telephone service is only 43.5 percent (leaving more than 56 percent without service). Alexander Belinfante (1989). *Telephone Penetration and Household Family Characteristics*, Federal Communications Commission Docket No. CC 87-339. Washington D.C.

²⁸ *In Harm’s Way*, citing, Rita Fahy and Alison Norton, “How Being Poor Affects Fire Risk. . .” *Fire Journal*, at 29:34 (January/February 1989).

The practice of low-income households using the kitchen appliance intended for cooking (oven/range/stove) as a small space heater when they are having difficulty paying their home heating bill is not uncommon. Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 398 (54%) reported using their kitchen oven—henceforth reference to the kitchen oven will be considered a reference to the range and the oven both—as a source of space heating either frequently (n=137) (19%) or sometimes (n=261) (36%).

A high percentage of households reporting the use of their kitchen oven for space heating have experienced the disconnection or discontinuance of service for nonpayment. 236 of the 397 households using their kitchen oven for space heating had experienced a disconnection or discontinuance of service either often (n=61) or sometimes (n=175).

Use of Kitchen Oven for Space Heating by Frequency of Service Disconnection

Use of Kitchen Oven as Space Heating Source	Had Experienced Disconnection or Discontinuance of Service						Total	
	Often		Sometimes		Never			
Often	36	26%	51	37%	50	36%	137	100%
Sometimes	25	10%	124	48%	111	43%	260	100%
Never	20	6%	82	25%	232	69%	334	100%
Total	81	11%	257	35%	393	54%	731	100%

More than 40% (n=36) of the 87 households that reported using their kitchen oven either frequently or sometimes also reported a frequent termination of service. This rate considerably exceeded the rate for the households who used their kitchen ovens for space heating less frequently (25 of 149 or 17%).

The column percentages of the data above indicate how kitchen ovens are used for space heating purposes when service is otherwise disconnected. Three-quarters of the 81 households reporting a frequent disconnection of service indicated using their kitchen oven for space heating either often or sometimes (n=61). Nearly 70% of the 257 households reporting experiencing a disconnection or discontinuance of service “sometimes” reported using their kitchen oven for space heating either often or sometimes (n=175).

The safety burdens fall primarily on the lowest income households in Missouri. While 50% of households with incomes between 101% and 150% of Poverty Level never used their kitchen oven for space heating, only 40% of the households below 50% of Poverty could report that. While 21% of the households below 50% of Poverty frequently used their ovens for space heating, only 18% of households between 51% and 150% of Poverty did.

Use of Kitchen Oven as Space Heating Source by Poverty Level of Household

Use of Kitchen Oven	Income as Percent of Federal Poverty Level					Total
	0-50%	51-100%	101-150%	151-200%	201%+	
Often	21%	18%	18%	10%	0%	137
Sometimes	39%	36%	32%	10%	0%	261
Never	41%	46%	50%	81%	100%	336
Total	329	233	147	21	4	734

Similarly, the safety burdens posed by the perceived need to use the kitchen oven as a source of space heating fall most heavily on those with the highest energy burdens as a percentage of income. While only 11% of the households with home energy burdens of 6% or less often used their kitchen ovens for heating, 23% of households with energy burdens exceeding 20% of income did. In contrast, while 60% of the lowest energy burden households never used their kitchen oven for space heating, only 42% of the highest burden households never did.

Use of Kitchen Oven as Space Heating Source by Home Energy Burden

	Home Energy Burden as Percentage of Income						Grand Total
	0 – 6%	7 – 9%	10 – 12%	13 – 15%	16 – 20%	21% and more	
Often	11%	16%	17%	18%	22%	23%	137
Sometimes	29%	33%	36%	39%	41%	35%	261
Never	60%	52%	47%	43%	38%	42%	336
Total	100%	100%	100%	100%	100%	100%	
Total	91	120	87	113	143	180	734

CHILDHOOD EDUCATION

Energy poverty in Missouri contributes to the lack of educational preparedness within the low-income population. Two specific factors are identified by the Missouri Home Energy Insecurity Survey. First, the frequent mover status of low-income households with children interferes with educational achievement. Unaffordable home energy bills have been found to be a substantial contributor to this mobility. Second, unaffordable home energy bills is also reported to be a factor contributing to the inability of low-income households to purchase necessary books and school supplies for their children.

One of the primary contributing factors to educational underachievement is the extent to which students frequently change residents.²⁹ When students move frequently, they have difficulty fitting into the educational curriculum. In addition, teachers have difficulty assessing the strengths and weaknesses of a frequent mover student, in order to build on the strengths of and fill the gaps in the student's knowledge relative to the current school's curriculum.³⁰ This research found that third grade students who have changed schools frequently are two-and-a-half times as likely to repeat a grade as third graders who have never changed schools. It found further that frequently-mobile students are more likely to be below grade level in both reading and math.

Of the 734 respondents to the Missouri Home Energy Insecurity Survey, 161 (22%) were found to be a frequent mover over a two year period. Frequently moving was defined to include households that had either moved twice in two years or had moved once in the past year and intended to move again in the next year.

The high extent to which the Missouri survey population frequently moved is consistent with other research. The U.S. Census Bureau reports that in 1996, the median duration of residence for those living in households with incomes of \$75,000 or more was 6.3 years, compared with 3.6 years for those living with incomes of less than \$25,000. Over 20% of those living in households with incomes less than \$25,000 lived in their current residence less than one year, compared with just 13% of those living in households with incomes of \$75,000 or more.³¹

Frequently moving substantively affects households with children. More than 70% of all frequent mover households (115 of 161) had children under age 18 (with 44% having children under age 6).³² Forty percent of the frequent mover households had wage income, while roughly one quarter (23%) received public assistance. Only two percent (3 of 161) had a household member over age 60.

²⁹See generally, Paul Barton (October 2003). *Parsing the Achievement Gap: Baselines for Tracking Progress*, Educational Testing Service: Princeton (NJ).

³⁰Roger Colton (1996). "A Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility and Childhood Education in Missouri," 2 *Journal of Children and Poverty* 23, 29 – 30, citing, General Accounting Office (1994). *Elementary school children: Many change schools frequently, harming their education*, General Accounting Office: Washington D.C.

³¹Jason Shacter and Jeffrey Kuenzi (November 2002). *Seasonality of Moves and the Duration and Tenure of Residence: 1996*, Working Paper 69, U.S. Census Bureau: Washington D.C.

³²These groups are not mutually exclusive.

Frequent Mover Status by Household Demographics /a/

	Number	Percent /b/
Household has member over 60	3	2%
Household has child under 6	66	41%
Household has child under 18	115	71%
Household has at least one person w/ disability	41	25%
Household receives wage income	43	27%
Primary wage earner is unemployed	66	41%
Household receives public assistance	37	23%
Household receives Food Stamps	116	72%

NOTES:

/a/ Total does not equal 100% since a household can belong to more than one group.

/b/ Total number of frequent mover households is 161.

Frequently moving occurs primarily in the lowest income populations. More than half of the frequent mover households had incomes that were at or below 50% of the Federal Poverty level, while nearly 85% had incomes at or below 100% of the Federal Poverty Level.

Frequent Mover Status by Poverty Level of Household

	Income as Percent of Federal Poverty Level					Total
	0-50%	51-100%	101-150%	151-200%	201%+	
Number	82	53	20	6	0	161
Percent	51%	33%	12%	4%	0%	100%

High energy burdens, as well, are associated with frequently moving. Nearly 50% of all frequent mover households had energy burdens equal to 16% or more of their annual income. More than 60% of all frequent mover households had energy burdens in excess of 13% of their income.

Frequent Mover Status by Home Energy Burden

	Home Energy Burden as Percentage of Income						Grand Total
	0 – 6%	7 – 9%	10 – 12%	13 – 15%	16 – 20%	21% and more	
Number	21	22	19	24	33	42	161
Percent	13%	14%	12%	15%	20%	26%	100%

Books and School Supplies)

A second way in which energy poverty adversely affects the educational attainment of low-income students is by impeding the ability of parents to provide adequate school books and supplies. Of the 159 frequent mover households responding to a question about school books and supplies, 55 (35%) indicated that they would not buy school books or supplies for children in order to preserve household funds to pay for the home energy bill.³³

In contrast, 194 households with children responding to the Home Energy Insecurity Survey reported that they did not purchase school books or school supplies either frequently (n=60) or “sometimes” (n=134) in order to save money to pay for the home energy bill.

The harm that accrues to children by not having access to school books and school supplies falls primarily on the lowest income households. Nearly 90% of the households reporting that they did not buy school books or supplies had incomes of less than 100% of the Federal Poverty Level.

Failure to Buy Books or School Supplies by Poverty Level

	Income as Percent of Federal Poverty Level						
	0 – 50%	51 – 100%	101 – 150%	151-200%	201%+	Total	
Frequently	47%	40%	10%	3%	0%	100%	60
Sometimes	44%	40%	13%	3%	0%	100%	134
Total	45%	40%	12%	3%	0%	100%	195

EMPLOYMENT

Energy poverty contributes to employment problems facing working-poor households in Missouri. Working-poor households have particularly fragile incomes. According to the National Fuel Funds Network,³⁴ working-poor families tend to have hourly wage jobs. In addition, NFFN cites research from the Institute for Women’s Policy Studies which documents that low-wage workers lack paid leave benefits (sick leave, personal leave, vacation leave).³⁵ As a result, these incomes can be disrupted by various aspects of unaffordable home energy bills.

³³ It is not known how many of the 159 frequent mover households responding to the question had school age children. A household without school age children, in other words, may have answered this question “never.” “Not applicable” was not a choice.

³⁴ National Fuel Funds Network (2002). *A Fragile Income: Deferred Payment Plans and the Ability to Pay of Working Poor Utility Customers*, at 4 – 5, NFFN: Washington D.C.

³⁵ Id., quoting, Jody Heymann (October 2001). *The Widening Gap: A New Book on the Struggle to Balance Work and Caregiving*, at 3, Institute for Women’s Policy Research: Washington D.C.

Frequent Mover Households

Frequently moving has an impact on employment as well as education. A significant proportion (43 of 161 or 27%) of frequent mover households had income from wages. The frequent mover status of low-wage workers will reduce the wages earned by reducing the hours worked, as households seek out new housing.³⁶ This will occur even if the worker succeeds in keeping his or her job after the move.

Many of these employment problems can be associated with unaffordable home energy bills. Nearly one-in-six (27 of 161) frequent mover households cited an energy-related reason as the primary reason for their most recent move. Of the frequent mover households, 23 indicated that the primary reason for their move was to find lower energy bills. The other four indicated that service had been disconnected or discontinued at their prior address.

Reason for Most Recent Move within Frequent Mover Population /a/

	Number	Percent /b/
New job or job transfer	13	8%
To be closer to work/school/family/other	36	22%
To establish own household	31	19%
Needed larger house/apartment	45	28%
Utility service disconnected at former home	4	2%
Married, widowed, divorced, separated	22	17%
Wanted better quality house/apartment	37	23%
Changed from renter to homeowner	9	6%
Changed from homeowner to renter	6	4%
Wanted lower rent or less expensive home to maintain	40	26%
Wanted lower energy bills	23	14%
Wanted to be in safer neighborhood	34	21%
Wanted to be in better school system	24	15%

NOTES:

/a/ Total does not equal 100% since a household can belong to more than one group.
/b/ Total number of frequent mover households is 161.

The frequent mover status of households associated with high energy bills differs from the frequent moves induced by the disconnection or discontinuance of service. Seeking more

³⁶ Prior research has found that low-income households devote 32 hours to the process of searching for new housing after a utility disconnect. Lisa Skumatz (March 2001). *Non-Energy Benefits (NEBS): Recognizing and Measuring All Net Program Benefits*, at 86, Skumatz Economic Research Associates (SERA): Superior (CO).

affordable home energy bills occurs whether or not the household has faced the actual disconnection of service. Of the 23 households indicating the reason for their most recent move was “wanted lower energy bills,” only four reported that they had frequently experienced the actual disconnection of service for nonpayment. About half, however, reported that they had experienced the disconnection of service at least sometimes. Most (18) faced the ongoing *threat* of service termination, having been warned of an impending service disconnection sometimes or often.

*Frequent Mover—Last Move Because of Energy Bill
By Warning of Disconnection and Actual Disconnection*

	Incidence within Frequent Mover Population Citing Energy Bills as Reason for Move			
	Total	Often	Sometimes	Never
Warning	23	11	7	5
Actual Disconnect for Nonpayment	23	4	8	11

Within the total population of frequent Mover households, nearly half (73 of 161, or 45%) had experienced a termination or discontinuance of service at least sometimes. A full three-quarters (120 of 161) had faced the threat of service disconnection.

*Warning of Disconnection and Actual Disconnection
Within Total Frequent Mover Population*

	Incidence within Frequent Mover Population			
	Total	Often	Sometimes	Never
Warning of disconnection	161	49	71	41
Disconnection for nonpayment	160	16	57	87

The actual termination of service, however, did not substantially contribute to the frequent mover status of households. Of the 73 households reporting that they had experienced the disconnection or discontinuance of energy service at least sometimes, most did not respond by moving to a new home. Frequent mover households were far more likely to simply go without home energy service than they were to move to a new home to reinstate service.

*Frequent Mover Population with Service Disconnections
By Household Response to Disconnection*

	Total	Numbers	Percentage
Paid bill from own money and had service restored	73	20	27%
Paid bill from energy assistance and had service restored	73	27	37%
Moved to new home and got new service	73	3	4%
Had service put in another person's name	73	1	1%
Changed suppliers of fuel	73	0	0%
Went without service	73	13	18%

Transportation

Energy poverty contributes to the fragility of low-wage employment through its impact on worker transportation. One-quarter (184 of 734) of the respondents to the Missouri Home Energy Insecurity Survey reported that their households had wage income during the previous 12 months. High energy bills interfere with the ability of these households to maintain household transportation. Of the 184 wage earners, fully 80% reported that they went without making necessary automobile repairs in order to have money to pay their home energy bills. More than one-third reported going without necessary automobile repairs frequently in order to have money to pay the home energy bills.

*Wage Earners by Frequency of Forgoing Automobile Repairs
to Save for Home Energy Bill Payment*

	Incidence of Going without Automobile Repairs to Pay Home Energy Bill			Total
	Often	Sometimes	Never	
Number	67	80	37	184
Percent	36%	43%	20%	100%

HOUSING

Energy poverty contributes to housing problems facing low-income Missouri households. Two different housing issues were noted. First, unaffordable energy bills result in some households being denied the use of parts of their home during hot or cold weather. In addition, unaffordable home energy bills can force low-income households to abandon their homes altogether because of their inability to stay warm or cool in their homes. These households have to leave their homes for all or part of a day. In both cases, the unaffordable home energy bill is denying households the use of their homes as a source of basic shelter.

Temporary Abandonment

The first primary way in which energy poverty affects the housing of low-income Missouri households is by forcing those households to abandon their homes for all or part of a day due to their inability to heat or cool them. One fundamental function of shelter is to protect the resident from the elements. When a home becomes uninhabitable because the resident cannot afford to heat or cool it, the housing is failing to perform one of its most basic functions.

Households having persons with a disability, as well as households receiving public assistance, reported the greatest need to frequently abandon their homes because they could not afford to heat them. With rates of households frequently leaving their homes reaching 10% and 8%, respectively, households with persons having a disability and public assistance recipients were up to twice as likely to be denied the full use of their home. The same two populations also had the highest to temporarily leave their homes because they could not afford to cool them.

For all groups, there were more cases where households left their homes because they could not afford to cool them than left their home because they could not afford to heat them. While 38% of all low-income households left their homes because of their inability to cool them, 31% left their homes because they could not afford to heat them.

Left Home For all or Part of Day Due to Inability to Afford to Heat/Cool House

	Could Not Afford to Heat Home			Could Not Afford to Cool Home			Total
	Often	Some	Never	Often	Some	Never	
Aged	6%	18%	76%	6%	18%	76%	98
Kid <6	6%	22%	72%	7%	29%	65%	227
Kid <18	4%	23%	73%	6%	31%	63%	449
Disabled	10%	30%	60%	12%	34%	54%	230
Wage earner	3%	23%	74%	5%	29%	66%	184
Unemployed	5%	28%	67%	5%	37%	58%	261
Public assistance	8%	31%	61%	12%	31%	57%	119
Total	6%	25%	69%	7%	31%	62%	734

Lost Usable Space

A second housing impact resulting from energy poverty is the loss of usable space created in an effort to reduce the need for heating and cooling. A substantial proportion of low-income households overall, as well as in every demographic category, closed off one or more rooms of their homes because they could not afford to heat or cool that space.

- While 6% of all low-income households left home for all or part of the day because they could not afford to heat their homes, 32% closed off one or more rooms because of an inability to afford heating.

- While 7% of all low-income households left their homes because of an inability to cool, 32% closed off one or more rooms because they could not afford to cool their entire homes.

Frequency of Closing Off One or More Rooms Due to Inability to Heat/Cool House

	Could Not Afford to Heat Home			Could not Afford to Cool Home			Total
	Often	Some	Never	Often	Some	Never	
Aged	36%	37%	28%	39%	33%	29%	98
Kid <6	27%	31%	42%	27%	28%	45%	227
Kid <18	27%	36%	38%	27%	33%	40%	449
Disabled	40%	32%	29%	41%	32%	27%	230
Wage earner	25%	35%	40%	30%	29%	41%	184
Unemployed	29%	40%	31%	30%	34%	36%	261
Public assistance	35%	31%	34%	35%	29%	36%	119
Total	32%	34%	34%	32%	31%	37%	734

Surprisingly, only a modest relationship existed between the frequent receipt of disconnect notices and the loss of housing space due to temporary housing abandonment. While 6% of all households often left their homes because they could not afford to stay warm in their homes, that figure only modestly increased to 9% among households frequently receiving disconnect notices. While 7% of all low-income households often left home because they could not afford to stay cool in their homes, that figure only modestly increased to 12% among households frequently receiving disconnect notices.

Frequency of Leaving Home by Frequency of Disconnect Notices

Frequency of Disconnect Notices	Could Not Afford to Heat Home			Could Not Afford to Cool Home			Total
	Often	Some	Never	Often	Some	Never	
Often	9%	29%	62%	12%	35%	53%	175
Sometimes	3%	28%	69%	6%	34%	61%	343
Never	7%	17%	77%	6%	24%	70%	210
Total	6%	25%	70%	7%	32%	62%	728

Nor did the frequency of closing off rooms increase with the frequent receipt of disconnect notices. Neither the total percentages of households closing rooms because they could not afford

to heat, or the total percentages closing rooms due to the unaffordability of cooling, changed when the frequency of disconnect notices was overlaid on the analysis.

Frequency of Closing One or More Rooms by Frequency of Disconnect Notices

Frequency of Disconnect Notices	Closed Rooms Due to Inability to Heat			Closed Rooms Due to Inability to Cool			Total
	Often	Some	Never	Often	Some	Never	
Often	41%	28%	31%	44%	27%	29%	175
Sometimes	30%	38%	31%	29%	36%	35%	343
Never	28%	31%	41%	28%	26%	46%	210
Total	32%	34%	34%	33%	31%	37%	728

SUMMARY

The paid-but-unaffordable home energy bill is a real phenomenon in Missouri’s low-income community. Whether for electricity, natural gas, or liquid propane gas (LPG), the home energy bills paid by Missouri’s low-income households frequently lead to deprivation and hardship. When low-income households face unaffordable home energy bills, they face a range of potential responses. Many of those responses involve direct and immediate threats to their health and safety, to their ability to educate their children, to the ability to obtain and retain employment, and to the ability to retain decent and fully inhabitable shelter.

This page intentionally left blank.

CHAPTER 4:

A SPECIAL LOOK AT HOME ENERGY ASSISTANCE

While federal energy assistance is an important source of funding for Missouri's low-income home energy consumers, LIHEAP alone does not provide sufficient assistance to help alleviate their energy poverty problems. The grant of energy assistance frequently still leaves households with unpaid bills, along with the social and economic problems associated with energy poverty.

Existing sources of energy assistance do not adequately address the home energy affordability gap in Missouri. Actual low-income energy bills exceeded affordable energy bills in Missouri by nearly \$286 million at 2003 fuel prices. In contrast, Missouri received a gross allotment of federal energy assistance funds of \$40.8 million for Fiscal Year 2003. Some of those LIHEAP funds will be used for administrative costs, weatherization, and other non-cash assistance.

In addition, Missouri's LIHEAP program sets its eligibility at 125% of the Federal Poverty Level. This is at the lower end of allowable eligibility. Under federal law, states may establish their own income eligibility guidelines, so long as those guidelines do not fall below 110% of the Federal Poverty Level or above 60% of state median income. As a general rule, 50% of median income is considered to be roughly equivalent to 200% of the Federal Poverty Level. By design, therefore, the Missouri LIHEAP program does not serve all potentially eligible households.³⁷

Despite this, the Missouri LIHEAP program ran out of Crisis money during the past winter heating season. Crisis funds are funds that customers access generally to avoid the disconnection of service due to nonpayment. Crisis funds help to avoid many of the payment problems identified in this report. Even given the Missouri program's low income-eligibility standards, income-eligible persons who applied for Crisis assistance would have been turned away due to the lack of funding.

THE ENERGY ASSISTANCE POPULATIONS

Respondents to the Home Energy Insecurity Survey reporting that they applied for energy assistance—the type of energy assistance was not designated—is reasonably constant over all demographic groups in Missouri. Just over three-quarters (77%) of the 751 respondents (n=576) reported applying for energy assistance while a modestly smaller proportion of households with children (both very young children and all children) applied for energy assistance. Overall, however, the participation rate across demographic classes fell into a narrow range of between 76% and 82%.

³⁷ Increasing eligibility, of course, does not bring additional resources into the state. It would merely spread the fixed number of federal LIHEAP dollars over a larger population, resulting in a smaller grant to each participant household.

Several interesting observations proceed from the Home Energy Insecurity Survey responses:

- Frequently, it is assumed that older persons fail to apply for energy assistance because they do not want to be seen as taking welfare. This influence does not appear to be at work in the respondent population.
- Sometimes it is suggested that persons with disabilities lack the ability to access energy assistance. This influence does not appear to be at work in the respondent population. Households with at least one person with a disability are not under-represented in the energy assistance population responding to the Missouri Home Energy Insecurity Survey.
- A significant number of households that receive either Food Stamps or public assistance³⁸ do not *also* receive home energy assistance. Despite the fact that these households have already applied for a government benefit, they either did not, or could not, also apply for energy assistance. While beyond the purview of this research, the reason for this lack of overlap between programs deserves further research and policy attention.

Household Demographics by Application for Energy Assistance /a/

	Total	Received LIHEAP		No LIHEAP	
	Number	Number	Percent /c/	Number	Percent /c/
Household has member over 60	98	79	81%	19	19%
Household has child under 6	227	173	76%	54	24%
Household has child under 18	449	343	76%	106	24%
Household has at least one person w/ disability	230	185	80%	45	20%
Household receives wage income	184	143	78%	41	22%
Primary wage earner is unemployed	261	207	79%	54	21%
Household receives public assistance	119	94	79%	25	21%
Household receives Food Stamps	463	376	81%	87	19%
Household receives Medicaid	444	362	82%	82	18%

NOTES:

/a/ Total does not equal 100% since a household can belong to more than one group.

/b/ Total number of respondents equals 751.

/c/ Total number of respondents reporting they applied for fuel assistance equals 576.

³⁸ The specific *type* of public assistance was not specified.

The distribution of the population applying for energy assistance across poverty tiers also closely reflected the population as a whole. Somewhat fewer than half (45%) of energy assistance applicants lived with incomes at or below 50% of the Federal Poverty Level. Nearly 80% of the applicants reporting that they applied for energy assistance live at or below the Federal Poverty Level. The distribution of energy assistance applicants was virtually identical to the distribution of the total survey population.

Poverty Tiers (Total Population vs. Energy Assistance Population)

	Total Population		LIHEAP Recipients	
	Number	Percent	Number	Percent
0 – 50%	329	45%	252	45%
51 – 100%	233	32%	189	33%
101 – 150%	147	20%	112	20%
151 – 200%	21	3%	10	2%
201% and over	4	1%	3	1%
Total	734	100%	566	100%

Similarly, the distribution of energy assistance applicants between energy burden tiers closely resembles the Home Energy Insecurity Survey respondents as a whole. While 12% of the total population has an energy burden of 6% or less, 10% of the energy assistance population does. While 25% of the total population has an energy burden of 21% or more, 26% of the energy assistance population does.

PAYMENT ATTRIBUTES OF THE ENERGY ASSISTANCE POPULATION

Missouri’s energy assistance program reaches households having significant utility bill payment problems. The Missouri Home Energy Insecurity Survey examined two different aspects of bill payment problems:

- How frequently the household had service disconnected or discontinued due to nonpayment; and
- How frequently the household received a warning that it would be disconnected or have its service discontinued, without the supplier actually doing so.

In addition, Home Energy Insecurity Survey respondents provided information about how frequently they did not pay their energy bill when it became due because they could not afford to do so.

Energy assistance recipients in Missouri experienced a consistently high number of service terminations.³⁹ Of the Home Energy Insecurity Survey respondents, 11% of energy assistance respondents indicated that they frequently experienced service terminations; 47% of those energy assistance recipients reported experiencing service disconnections either frequently or “sometimes.”

Energy assistance recipients reported a frequent receipt of disconnect warnings from their energy suppliers. Nearly three-quarters (73%) of energy assistance respondents reported receiving a warning that service was to be disconnected or discontinued for nonpayment. Indeed, more than one quarter (26%) of energy assistance respondents reported receiving frequent warnings.

Home Energy Disconnections/Disconnect Warnings for Energy Assistance Recipients

	Total Recipients	Frequency of Disconnects/Disconnect Warnings		
		Often	Some	Never
Actual disconnection /a/	566	11%	36%	53%
Disconnect warning /b/	566	26%	47%	27%
NOTES				
/a/ Disconnection includes the actual disconnection or discontinuance of service by the electric, gas or fuel supplier.				
/b/ Warnings include only those warnings not followed by the actual disconnection of service.				

These data are consistent with the extent to which Home Energy Insecurity Survey respondents reported not paying their home energy bills because they could not afford them. Nearly nine out of every ten (87%) households receiving energy assistance report that they either frequently or sometimes did not pay their bill when it became due because they could not afford it.

Frequency of Unpaid Bills due to Inability to Pay for Energy Assistance Recipients

	Total Recipients	Frequency of Not Paying Bill When Due		
		Often	Some	Never
Did not pay bill when due	566	42%	45%	13%

These results, too, are consistent with the reported inability of households to pay their home energy bills without resorting to outside assistance. More than 90% of the energy assistance recipients (94%) reported that they either frequently or sometimes found that their home energy bill became due and they could not pay it without outside help. Indeed, 44% of the energy assistance recipients reported *frequently* being unable to pay their home energy bill when it became due without accessing outside financial help.

³⁹ The termination or disconnection of service includes within its scope the discontinuance of making deliveries by bulk fuel vendors.

Frequency of Inability to Pay without Help for Energy Assistance Recipients

	Total Recipients	Frequency of Inability to Pay w/o Help		
		Often	Some	Never
Could not pay bill when due w/o outside help	566	44%	50%	6%

ENERGY INSECURITY ATTRIBUTES OF THE ENERGY ASSISTANCE POPULATION

Energy assistance in Missouri reaches beyond those households with energy bill payment problems, however. Energy assistance recipients systematically experience other energy insecurity problems, as identified through the survey. Energy assistance recipients:

- Frequently worried about their home energy bills because they could not afford to pay them;
- Frequently could not afford to heat or cool their homes to comfortable temperatures;
- Frequently closed off rooms in their homes during hot weather because they could not afford to cool them.

In addition, energy assistance was provided to households that reported:

- Leaving home frequently for all or part of a day during hot weather because they could not afford to cool their home.
- Using their kitchen oven as a temporary source of space heating;

Energy Insecurity Indicators for Energy Assistance Recipients

	Total Recipients	With Energy Assistance		
		Often	Some	Never
Worried about bill	566	66%	31%	3%
Could not heat/cool to comfortable temperature	566	35%	48%	18%
Could not use appliance/water as wanted	566	18%	38%	44%
Use at uncomfortable/inconvenient level	566	32%	46%	22%
Closed off rooms because could not afford to heat	566	33%	33%	34%
Closed off rooms because could not afford to cool	566	34%	31%	35%
Left home because could not afford to heat	566	5%	26%	69%
Left home because could not afford to cool	566	6%	33%	60%

Turned off hot water because could not afford	566	5%	10%	84%
Used kitchen oven because could not afford to heat	566	19%	38%	43%
Reduced spending on household necessities to save money for energy bill	566	47%	44%	8%

Finally, Missouri’s home energy assistance recipients frequently reported that they reduced spending on household necessities because they could not afford to both purchase those necessities and pay their home energy bill. Roughly seven-of-eight energy assistance recipients reported that they were required to reduce spending on household necessities either sometimes or often in order to save money to pay their home energy bills.

Energy assistance recipients reported that they would:

- Frequently go without food so they would have money to pay their home energy bills;
- Frequently go without necessary clothing, such as coats or boots, in order to pay their home energy bills;
- Not go to doctor or dentist appointments in order to pay their home energy bills; and
- Go without making needed automobile repairs in order to have sufficient money to pay their home energy bills.

Energy Insecurity Indicators for Energy Assistance Recipients

	Total Recipients	Frequency of Reported Action		
		Often	Some	Never
Go without food	566	10%	36%	54%
Go without medicine /a/	566	15%	30%	55%
Go without necessary clothing	566	20%	36%	44%
Not go to doctor or dentist	566	25%	36%	38%
Go without auto repairs	562	38%	43%	19%

NOTES:

This includes not taking medicine and/or taking medicines in dosages less than that prescribed by a doctor.

NON-APPLICATION FOR ENERGY ASSISTANCE

The reasons why households do not apply for energy assistance are very specific to the demographic group into which the household falls. Unlike most tables in this report, the following table shows absolute numbers rather than percentages since the absolute numbers better tell the story.

By far, the most common reason given in the overall survey population for not applying for energy assistance was because the household felt that it “did not need help with my energy bills.” This reason (n=44) was 50% more frequent than the next most common reason (“thought my income was too high”) (n=29) and twice as common as the most common reasons involving barriers to applications. Specific populations, however, differed from the total population:

- The population with disabilities reported having trouble getting to the place to apply (n=10) and trouble finding out about energy assistance (n=12) as its two most common reasons for non-applications.
- The two most common reasons among wage earners were that the household “did not need help” (n=15) or “thought my income was too high” (n=10).
- The three most common reasons cited by unemployed households were that the household “did not need help” followed by “trouble getting to place to apply” (n=10) and “thought my income was too high” (n=9).
- Public assistance recipients were spread reasonably evenly over “thought my income was too high,” “told was ineligible,” “trouble getting to place to apply,” and “not able to meet deadline for applying.”

The Missouri data support the need for specialized outreach efforts directed toward specific low-income populations.⁴⁰ The efforts directed at the wage earner and unemployed must address the perceived need for energy assistance. Efforts directed at persons with disabilities must address physical access issues. Efforts directed toward public assistance recipients must address program barriers.

⁴⁰ Roger Colton (2000). *Outreach Strategies for Iowa’s LIHEAP Program: Innovations in Improved Outreach*, Iowa Department of Human Rights: Des Moines (IA).

Reasons Not Applying for Energy Assistance by Demographics

	Total	Over 60	Disabled	Kids <6	Unemployed	Public Assistance	Wage Earner
Trouble finding out about energy assistance	21	4	12	6	7	3	3
Trouble getting to place to apply	22	2	10	8	10	4	2
Not able to meet deadline for applying	18	3	9	6	8	5	4
Did not understand application form	6	1	3	3	4	2	2
Could not receive help with application	6	0	5	2	3	1	2
Told was ineligible	17	3	6	5	7	5	3
Thought my income was too high	29	5	8	10	9	2	10
Thought ineligible due to own car/home	15	4	7	2	7	2	5
Amount of assistance not worth the hassle	3	0	2	2	2	0	1
Didn't want to take money from gov't	7	0	3	4	3	1	1
Did not need help with my energy bills	44	2	9	20	17	8	18
Other	13	2	6	6	6	2	1
Total by demographic	201	19	45	54	54	25	41

ENERGY ASSISTANCE AND SERVICE DISCONNECTION OR DISCONTINUANCE

Energy assistance is an important mechanism for Missouri low-income households to use to restore energy service once it has been disconnected or discontinued. One-third (33%) of the 338 households that experienced a service disconnection either often or sometimes reported that they used energy assistance to pay their overdue bill after their loss of service and had service restored. The use of energy assistance to pay past due bills so that service could be restored after a service termination was the most frequent response to the disconnection of service. In contrast, responding to a service termination by moving and restoring service at a new address, changing the name of the account holder, or changing energy providers was rare. Simply going without service occurred only half as often as using energy assistance, yet far more often than the other available alternatives.

Response to Often or Some Disconnection of Service for Nonpayment

	Total Disconnect for Nonpayment	No. with Identified Response	Pct with Identified Response
Paid bill from own money/restored service	338	79	23%
Energy assistance paid bill/service restored	338	110	33%
Moved to new home/restored service	338	6	2%
Put service in another person's name	338	3	1%

Changed suppliers of fuel	338	2	1%
Went without service	338	54	16%

In sum, the provision of energy assistance in Missouri is not sufficient, standing alone, to insulate households from the consequences of their energy poverty. Despite the grant of energy assistance, Missouri’s low-income households still face unpaid bills, as well as the difficult choice between paying their home energy bill or spending their limited resources on other household necessities.

In addition, Missouri’s energy assistance program is insufficiently funded to reach all eligible households. Given that energy assistance is a fixed allocation from the federal government – increased participation does not give rise to an increase in funding levels—higher participation rates would simply result in lower per-participant home energy grants. Already inadequate grants would become even more inadequate if spread more thinly because of increased participation.

This page intentionally left blank.

CHAPTER 5:

HOME ENERGY INSECURITY IN MISSOURI

Despite the acknowledged existence of the paid-but-unaffordable bill, no comprehensive tool now exists to measure the complete spectrum of energy poverty. Historical measurement tools have all had problems. Research for the federal LIHEAP office in 2003 acknowledged that “administrators of [low-income energy assistance] programs have long struggled to develop a mechanism to capture the many facets of home energy unaffordability.”⁴¹ That research noted:

Some efforts have focused on lowering home energy burdens. A household’s “energy burden” is the household bill divided by the household’s gross income.⁴² This process, however, does not capture the circumstances of a household for whom the receipt of energy assistance results in an *increase* in the home energy burden because he or she is no longer required to cut off all rooms of the home but one. Some efforts have focused on the nonpayment of home energy bills (as well as the disconnection of service and other collection-related problems). This process, however, does not capture the circumstances of a customer that pays his or her bill, but reduces spending on household necessities for food or medicine in order to do so. Some efforts have focused on reductions in energy consumption. This process, however, does not capture the circumstances of a household whose energy unaffordability problems result from a combination of very low incomes (even though usage is very low as well).⁴³

That report recommended pursuit of a Home Energy Insecurity Scale as the remedy for this inability to capture the complete picture of problems arising from energy unaffordability. This study seeks to continue the process of remedying the historical inability to measure the full range of energy poverty.⁴⁴

The state of Missouri was selected for this study, in part, because of its location in America's heartland. In the center of the United States, its geographic location results in both cold-weather and hot-weather hardships. It also has urban as well as rural areas, each presenting with energy challenges.

⁴¹ Roger Colton (2003). *Measuring the Outcomes of Low-Income Home Energy Assistance Programs through a Home Energy Insecurity Scale*, U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance: Washington D.C. (hereafter *Measuring LIHEAP's Outcomes*).

⁴² A household with a bill of \$1,200 and an income of \$6,000 thus has an energy burden of 20% ($\$1,200 / \$6,000 = 0.20$).

⁴³ *Measuring LIHEAP's Outcomes*, *supra*.

⁴⁴ The Food Insecurity Scale has been subjected to technical and academic critiques and revisions for more than two decades. Although the Energy Insecurity Scale is adapted from the USDA efforts, it is a recent innovation. Accordingly, its critical review remains to occur.

The study examines the payment problems of low-income Missouri households. It then documents the multiple social, economic, and physical problems that are forced upon low-income households by the unaffordability of their home energy bills, paid or unpaid. Issues involving health care, safety, education, employment, and housing were examined in particular.

THE BASIC OUTLINE OF THE HOME ENERGY INSECURITY SCALE

Understanding the structure of the Home Energy Insecurity Scale involves understanding two basic tools: thresholds and indicators. The “threshold” tells you where on the scale a household falls. The threshold is a conclusion. It represents a determination about the extent of the energy self-sufficiency of a household. The indicators are specific pieces of information about a household upon which the threshold conclusion is based. These two tools are discussed in more detail below.

The Five Energy Insecurity Thresholds.

As is typical with scales, the basic building blocks of the Home Energy Insecurity Scale are called “thresholds.” In their simplest form, “thresholds” are the points along a scale. Every scale, in other words, must have a beginning point and an ending point. Every scale must *also* have points between the two endpoints that indicate “movement” along the scale. These benchmarks are called the scale’s “thresholds.”

The Home Energy Insecurity Scale uses the same five thresholds as does the federal Results-Oriented Management and Accountability (ROMA) process.⁴⁵ Each of these thresholds measures the self-sufficiency status of a household at a particular point in time. The same five thresholds are used for all aspects of a household’s well-being (*e.g.*, food and nutrition, housing, employment, energy). The five thresholds used for the Home Energy Insecurity Scale are:

- Thriving
- Capable
- Stable
- Vulnerable
- In-Crisis

Each of the five thresholds used in the Home Energy Insecurity Scale represents a conclusion as to the level of energy self-sufficiency of a household. The Home Energy Insecurity Scale has

⁴⁵ The use of the same five thresholds as ROMA scales use is simply to facilitate the incorporation of the Home Energy Insecurity Scale into other ROMA data collection.

been designed to represent the energy-equivalent of other household scales. Whether it involves energy, or housing, or nutrition, the provision of basic household needs by a self-sufficient household involves certain fundamental similarities. Households that fall within the “capable” threshold of the Home Energy Insecurity Scale, in other words, should demonstrate the same basic attributes relative to energy that a household falling into the “capable” threshold of the food and nutrition scale would demonstrate relative to food and nutrition.

The thresholds that comprise the Home Energy Insecurity Scale indicate the following about a household:

- A *thriving* household is one that has achieved generally accepted standards of well-being. The thriving household can engage in the full range of home energy uses of its choice without outside assistance and without financial strain.⁴⁶
- A *capable* household is secure, even though not having achieved the full range of generally accepted standards of well-being.
- A *stable* household does not face significant threats and is unlikely to be in immediate crisis.
- A *vulnerable* household is one that is not in immediate danger, but that may avoid this danger only through temporary or inappropriate solutions. A vulnerable household may occasionally face energy choices that require it to compromise not merely on comfort and/or convenience, but on basic household energy needs such as heating and/or hot water.
- An *in-crisis* household faces immediate needs that threaten the household’s physical and/or emotional safety. Three alternative conditions might place someone in the “in-crisis” threshold: (1) the household goes without energy; *or* (2) the household has energy, but has to routinely compromise on its energy use for basic household necessities; *or* (3) the household does not compromise on its energy use, but in order to maintain that energy use, must compromise on *non-energy* basic necessities.

The Home Energy Insecurity Indicators

The basic pieces of factual information that are collected and used to determine which threshold best describes a household are called “indicators.” The indicators used in a scale are facts about a household. They may be collected by survey, by observation, or by a review of program application forms. The Missouri Home Energy Insecurity Scale is based upon survey data.

⁴⁶ The term “outside assistance” is used instead of “public assistance” or “government assistance.” “Outside assistance” covers a broader range of help, including assistance from friends and families, assistance from local fuel funds, and the like.

The most important task in implementing the thresholds that underlie the Home Energy Insecurity Scale involves ensuring that a household can fit into only *one* of the thresholds when data are collected. Each threshold must be defined so that a household either fits, or it does not. Conversely, if a household does *not* fit into one threshold, the household *must* fit into another.

The Missouri Home Energy Insecurity Scale uses five basic categories of indicators through which to determine home energy self-sufficiency:

- **Receipt of outside assistance.** This includes more than simply energy assistance. The household is asked the extent to which its home energy bill became due and [the household] did not have money to pay it without somebody's help."
- **Constraints on energy usage.** Different questions explore different intensities of constraint on energy usage. One question, for example, asks whether the household was constrained in the energy the household "wanted" to use. A more intense constraint involves whether reductions in energy use were to "uncomfortable or inconvenient levels." An even more intense constraint involves turning hot water heating or space heating/cooling off entirely because of the lack of money.
- **Constraints on household necessities.** Different questions explore different levels of impact that home energy bills have on the provision of household necessities. On the one hand, the involuntary discontinuance of energy service due to nonpayment was considered to be an adverse impact on the provision of household necessities. On the other hand, households are asked the extent to which, if at all, they reduced their expenditures on household necessities such as food or medicine because there was not enough money to pay for these *and* the home energy bill.
- **Nonpayment of energy bills.** Again, different questions explore different levels of intensity of the response. Households were asked whether they ever did "not pay your home energy supplier because there was not enough money for the home energy bill." A more intense nonpayment issue is raised by the question of whether the household ever had its supplier of electricity or heating energy threaten to disconnect electricity or home heating fuel service, or discontinue making heating fuel deliveries, because the household could not afford to pay a past-due energy bill. An even more intense response involves the *actual* disconnection of service (or discontinuance of deliveries).
- **Financial strain.** The presence of "strain" is measured through a variety of questions, including the extent to which, if at all, a respondent "worried whether [his or her] home energy bill would become overdue before [he or she] could get money to pay it."

Each question provides the household an opportunity to indicate whether a statement about the indicator is true within a three-step frequency scale. At their root, each of the indicators is based on whether, within the twelve months preceding the survey, the indicated circumstance is never true, is true sometimes, or is often true. Appendix A presents the Home Energy Insecurity Scale

Survey that serves as the basis for generating the factual data on each indicator. Appendix B presents the response patterns that indicate into which threshold particular answers will place the household.

Collecting Indicator Data: The Survey Instrument

The questions used in the Home Energy Insecurity Scale have been adapted from the survey used by the Food Assistance and Nutrition Research Program of the U.S. Department of Agriculture (USDA) to measure “food insecurity” in the United States.⁴⁷ The parallels between food insecurity and home energy insecurity make the use of the USDA questions an excellent model for use in developing the Home Energy Insecurity Scale. As with the USDA food questions, the home energy questions ask about conditions in the past 12 months and cover a wide range of severity, from having worried about whether home energy would run out to having home energy service disconnected or discontinued because there was not enough money for energy.

Moreover, the Food Insecurity survey seeks information that is closely analogous to energy insecurity. USDA measures of food insecurity include:

- Indicators of food stress;
- Constrained access to food; and
- Coping actions for avoiding food insufficiency.

Just as “food security can be thought of as lying along a continuum from complete food security to severe hunger,”⁴⁸ home energy insecurity can be thought of as lying along a continuum from complete energy security to the loss of service due to nonpayment.

The definitions of “food security” and “food insecurity” appear to be readily transferable to the energy arena. The conceptual definition first published in 1990 defines “food insecurity” as “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”⁴⁹

Three levels of prevalence for various food insecurity measures have been developed, including:

⁴⁷ For a discussion of the ongoing study of food insecurity, see generally, Mark Nord and C. Philip Brent (September 2002). *Food Insecurity in Higher Income Households*, U.S. Department of Agriculture, Food and Nutrition Service, Alexandria (VA); Gary Bickel et al. (2000). *Guide to Measuring Household Food Security, Revised 2000*, U.S. Department of Agriculture, Food and Nutrition Service, Alexandria (VA); William Hamilton, et al. (1997). *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project*, U.S. Department of Agriculture, Food and Consumer Service, Office of Analysis and Evaluation, Alexandria (VA); William Hamilton et al. (1997). Despite its long use, the Food Insecurity Scale has been criticized by at least one social scientist. Richard Bavier (2001). *Second Food Security Measurement and Research Conference: Volume I, Proceedings*, at 75, Research Agenda, U.S. Department of Agriculture: Washington D.C.

⁴⁸ *Food Insecurity in Higher Income Households, supra.*

⁴⁹ *Id.*, at 20.

- Rare or occasional, which means that the measure occurs in only one or two months of the year.
- Recurring, which means that the measure occurs in three or more months of the year.
- Frequent or chronic, which means that the measure occurs often, or in almost every month.

These levels of prevalence also appear to be well-suited to the energy arena.

Finally, as with the USDA food insecurity questions, the Home Energy Insecurity Scale is concerned only about energy problems associated with resource constraints. USDA states about its food insecurity scale:

Each question specifies lack of resources as the reason for the behavior or experience (“because we couldn’t afford more food,” or “because there wasn’t enough money for food.”) This is to ensure that the measure does not register as food deprivation any behavior associated with dieting to lose weight, fasting for religious reasons, or undergoing food shortages for any reason other than resource constraints.⁵⁰

Likewise, home energy experiences can vary based on personal preferences. Some people prefer it cold in their housing units, while others have a high tolerance for heat. These decisions are often based on lifestyle or personal taste rather than on resource constraints. The data collection questions for the Home Energy Insecurity Scale are limited to behavior and experience associated with a lack of resources. As with the USDA questions, these questions specify that the experience or behavior is related to observations such as “because there wasn’t enough money” or “because we could not afford” it.

The Scaling Process

Once the Home Energy Insecurity Scale surveys have been completed, the responses must be reviewed to determine where on the Home Energy Insecurity Scale a respondent falls. The process of scaling involves an iterative classification of all respondents. The process of classification is intended to use a bottom-up iteration. A bottom-up process begins by reviewing the entire population of survey respondents. All respondents found to exhibit the indicators demarcating an “in-crisis” household are removed from the population. The remaining population is considered again, with all respondents found to exhibit the indicators demarcating a “vulnerable” household then removed. The process of classification continues until all households are appropriately classified.

⁵⁰*Id.*, at 21.

HOME ENERGY INSECURITY IN MISSOURI

The vast majority of low-income Missouri households face significant energy poverty problems as measured by the Home Energy Insecurity Scale. Almost half (361 of 734) of Missouri’s low-income households are In-Crisis. An additional 46% are rated Vulnerable using the scale. Only three households (0.4%) were rated as Thriving while only 14 (2%) were rated as Capable.

Home Energy Insecurity Ratings for Total Population and Energy Assistance Recipients

	Total Population	Energy Assistance Recipients	
		Number	Percent
Thriving	3	2	67%
Capable	14	13	93%
Stable	22	19	86%
Vulnerable	334	255	76%
In-Crisis	361	277	77%
Total Population	734	566	77%

Missouri households found to be In-Crisis tended to be less frequent recipients of home energy assistance. While the numbers are small, and thus less robust, from 86% to 93% of the Capable and Stable households had applied for energy assistance, while 76% to and 77% of the Vulnerable and In-Crisis households had.

BASIC HOUSEHOLD ATTRIBUTES

Households with lower energy burdens tended to have higher home energy security in Missouri. While 8% of households with energy burdens of 6% or less had Home Energy Insecurity thresholds of Stable or higher, only 4% of households with energy burdens in excess of 21% did. With the exception of the 10 – 12% energy burden tier, households with higher energy burdens (i.e., their home energy bills took increasingly large portions of their income) had progressively lower Home Energy Insecurity Ratings. Ratings of Stable or higher by energy burden included:

- 8% of households with burdens of 6% or below were rated Stable or higher.
- 7% of households with burdens of 7 – 9% were rated Stable or higher.
- 6% of households with burdens of 13 – 15% were rated Stable or higher.
- 5% of households with burdens of 16 – 20% were rated Stable or higher.
- 5% of households with burdens of 21% or more were rated stable or higher.

Home Energy Insecurity in Missouri by Home Energy Burden

Energy Burden	Thriving		Capable		Stable		Vulnerable		In-Crisis		Total
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
0 – 6%	0	0%	3	3%	5	5%	39	43%	44	48%	91
7 – 9%	3	3%	0	0%	5	4%	59	49%	53	44%	120
10 – 12%	0	0%	2	2%	1	1%	43	49%	41	47%	87
13 – 15%	0	0%	2	2%	4	4%	47	42%	60	53%	113
16 – 20%	0	0%	3	2%	4	3%	71	50%	65	45%	143
21% and over	0	0%	4	2%	3	2%	75	42%	98	54%	180
Total	3	0%	14	2%	22	3%	334	46%	361	49%	734

Similarly, even setting aside the tier of households reporting incomes of 200% of the Federal Poverty or higher, households in progressively higher Poverty Level brackets had progressively lower numbers of households In-Crisis, and progressively higher numbers of households rated Stable or above.

Home Energy Insecurity by Poverty Tiers

Poverty Level	Thriving		Capable		Stable		Vulnerable		In-Crisis		Total
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
0 – 50%	0	0%	6	2%	7	2%	152	46%	164	50%	329
51 – 100%	1	0%	5	2%	6	3%	101	43%	120	52%	233
101 – 150%	2	1%	1	1%	7	5%	69	47%	68	46%	147
151 – 200%	0	0%	2	10%	1	5%	11	52%	7	33%	21
201% and over	0	0%	0	0%	1	25%	1	25%	2	50%	4
Total	3	0%	14	2%	22	3%	334	46%	361	49%	734

The population that appears to be in the best circumstances involves households that have at least one member age 60 or older. Five percent of this group of households with aging members are rated either Capable or Thriving, exceeding every other demographic group. Conversely, considerably fewer aging households are rated In-Crisis. While 38% of aging households have an In-Crisis rating, from 46% to 54% of other demographic groups fall into this threshold. Aging households are not comfortably well off, however. While 56% of aging households have a Home Energy Insecurity Rating of vulnerable, the proportion of other demographic groups falling into the Vulnerable threshold ranges from 40% to 48%. Across all demographic groups, more than 90% of all households fall into either the Vulnerable or In-Crisis thresholds.

Home Energy Insecurity by Household Demographics /a/

	Thriving	Capable	Stable	Vulnerable	In-Crisis	Total
Household has member over 60	2%	3%	1%	56%	38%	98
Household has child under 6	0%	4%	3%	46%	48%	227
Household has person w/ disability	0%	2%	4%	41%	52%	230
Household receives wage income	1%	2%	4%	48%	46%	184
Primary wage earner is unemployed	0%	1%	2%	43%	54%	261
Household receives public assistance	0%	1%	6%	40%	53%	119
Household receives Food Stamps	0%	2%	3%	46%	49%	463

NOTES:

/a/ Total does not equal 100% since a household can belong to more than one group.

/b/ Total number of respondents equals 751.

/c/ Total number of respondents reporting they applied for fuel assistance equals 576.

HOME ENERGY INSECURITY ATTRIBUTES IN MISSOURI

Given the broad overview above, the discussion below seeks to identify more precisely what indicators *made* a household In-Crisis, Vulnerable, Stable, Capable and Thriving. Each household was graded on seventeen (17) different indicators in five broad categories. As indicated above, the five broad categories included:

- Receipt of outside assistance
- Constraints on energy use
- Constraints on household necessities
- Nonpayment of energy bills
- Financial strain

Not all indicators were used to differentiate households between the various thresholds. No indicator within the “receipt of outside assistance” or “financial strain,” for example, could place a household in the In-Crisis threshold. The detailed indicators are discussed below.

In-Crisis Households

Missouri low-income households were found to be In-Crisis if they:

- Frequently were denied the full use of their home in hot or cold weather;
- Frequently were called upon to use dangerous methods of space heating;
- Frequently were called upon to forgo basic household necessities in order to pay their home energy bill; or
- Frequently were subject to the disconnection or discontinuance of service.

Health and safety issues were the top tier of attributes that marked the In-Crisis households. Of the 361 In-Crisis households, 49% (n=178) indicated that they would not go to the doctor or dentist in order to pay their home energy bill. In addition, 31% said they would go without medicine, or take medicines in lower dosages than prescribed by the doctor while 38% said they used their kitchen stove as a supplemental heating source. Going without food (19%) and experiencing an actual disconnection or discontinuance of service (22%) were also common attributes that placed Missouri’s low-income households In-Crisis.

Home Energy Insecurity Attributes of In-Crisis Households

Home Energy Insecurity Indicator	Response	Number	Percent /a/
"I left my home for all or part of the day because there was not enough money to <u>heat</u> my home."	Often	42	12%
"I left my home for all or part of the day because there was not enough money to <u>cool</u> my home."	Often	52	14%
"I turned off my hot water heater for all or part of the day because there was not enough to pay the home energy bill."	Often	39	11%
"I used my kitchen oven or range to provide heat because there was not enough money to pay my home heating bills."	Often	137	38%
"My electric or natural gas company, or my heating fuel supplier, disconnected my service or stopped making deliveries because of nonpayment of bills."	Often	81	22%
"Go without food in order to pay your home energy bill?"	Often	68	19%
"Go without medicine, or take medicines in a dosage less than that prescribed by your doctor in order to pay your home energy bill?"	Often	112	31%
"Not go to the doctor or dentist in order to pay your home energy bill?"	Often	178	49%
Total In-Crisis /a/		361	---

NOTES:

/a/ Total need not add up to 100% since households can fall in more than one category.

As the table above shows, in each of the response categories, only a response that the action occurred "often" would place a household in the In-Crisis threshold.

Although any one of these attributes would place a household into the In-Crisis threshold, in fact, Missouri households falling into the In-Crisis threshold generally experienced more than one of the In-Crisis attributes. Nearly 30% of all households falling into the In-Crisis threshold experienced two indicators. More than 10% experienced four or more of the eight indicators demarcating an In-Crisis household.

In-Crisis Households Reporting by Number of In-Crisis Indicators Reported

Number of Indicators Experienced	No. of Households	Percent of In-Crisis Households
1	169	47%
2	106	29%
3	43	12%
4	27	7%
5 or more	16	4%
Total number In-Crisis	361	---

Vulnerable Households

Missouri's low-income households were found to be Vulnerable if they:

- Frequently did not have enough money to pay their home energy bill when it came due without someone's help;
- Frequently did not pay their home energy bill when it came due, or received notices of service disconnections;
- Frequently had to reduce energy use to uncomfortable or inconvenient levels, or had to forgo the use of some part of their home because they could not afford to heat or cool it;
- Occasionally experienced the actual disconnection of service, or occasionally were forced to use their kitchen stove or oven as a source of space heating; or
- Occasionally went without food, health care, or medicine in order to pay their home energy bill.

Going without medical care (49%), experiencing the occasional disconnection of service (39%), and using inappropriate appliances to provide space heating (46%) were the three frequent indicators that placed survey respondents in the Vulnerable threshold.

In addition, occasionally not having money to pay the home energy bill without outside help (35%), not paying the home energy bill due to a lack of money (32%), and going without food (34%) and/or medicine (34%) were common indicators of the Vulnerable household.

Home Energy Insecurity Attributes of Vulnerable Households

Home Energy Insecurity Indicator	Response	Number	Percent /a/
“My home energy bill became due, and I didn’t have money to pay it without somebody’s help.”	Often	116	35%
“I reduced my home energy usage to uncomfortable or inconvenient levels because I was running out of money to pay the home energy bill.”	Often	71	21%
“I had to close off one or more rooms in my home because I could not afford to <u>heat</u> my entire home.”	Often	78	23%
“I had to close off one or more rooms in my home because I could not to <u>cool</u> afford my entire home.”	Often	78	23%
“I did not pay my home energy bill when it became due because there was not enough money.”	Often	108	32%
“I used my kitchen oven or range to provide heat because there was not enough money to pay my home heating bills.”	Some	152	46%
“My electric or natural gas company, or my heating fuel supplier, disconnected my service or stopped making deliveries because of nonpayment of bills.”	Some	131	39%
“My electric or natural gas company, or my heating fuel supplier, warned that it would disconnect service because of nonpayment of bills, without actually doing so.”	Often	71	21%
“Go without food in order to pay your home energy bill?”	Some	115	34%
“Go without medicine, or take medicines in a dosage less than that prescribed by your doctor in order to pay your home energy bill?”	Some	115	34%
“Not go to the doctor or dentist in order to pay your home energy bill?”	Some	165	49%
Total number of Vulnerable		334	---

NOTES:

/a/ Total need not add up to 100% since households can fall in more than one category.

As with In-Crisis households, while any one of these attributes would place a household into the Vulnerable threshold, in fact, 85% of Missouri’s survey respondents falling into the Vulnerable threshold experienced more than one of the Vulnerable attributes. Nearly a third (31%) of all Vulnerable households experienced five or more of the 11 indicators that mark a Vulnerable household. Nearly half (46%) experienced four or more of the 11 indicators.

Vulnerable Households Reporting by Number of Vulnerable Indicators Reported

Number of Indicators Experienced	No. of Households	Percent of Vulnerable Households
1	47	14%
2	69	21%
3	65	19%
4	51	15%
5 or more	102	31%
Total number of Vulnerable	334	---

Stable Households.

Missouri’s low-income households were found to be Stable if they:

- Frequently could not afford to heat or cool their home to a comfortable temperature or could not use their hot water or appliances as much as they wished to;
- Occasionally left home for all or part of the day because they could not afford to either heat or cool their home, or occasionally turned off their hot water heater because there was not enough money to pay the home energy bill;
- Frequently worried about whether their home energy bill would become due before they could get money to pay it; or
- Occasionally received a warning that service would be disconnected or discontinued due to nonpayment without having service actually terminated.

Receiving frequent warnings that service would be disconnected or discontinued, without actually experiencing the loss of service was the most frequent indicator of a Stable (rather than Capable) survey respondent. More than three-quarters of the Stable households (77%) had received frequent warnings without having actually experienced the loss of service. In addition, somewhat over one-third (36%) of the Stable households reported that they frequently worried about whether their bill would become overdue before they could get money to pay for it.

The occasional reliance on usage reduction measures such as closing off rooms and turning off the hot water heater in response to affordability problems was not an indicator that frequently placed households into the Stable classification. While the numbers are small, and thus less robust, it would appear that when people close off rooms, they do it frequently (perhaps for an entire season?) rather than doing it on an occasional basis.

The incongruence between some responses poses an interesting dilemma among Stable households. While more than three-quarters of the 22 Stable households reported that they “sometimes” received warnings that their natural gas or electric service would be disconnected for nonpayment, or that their fuel vendor would discontinue deliveries, only one-third of these respondents indicated that they frequently “worried about” whether their home energy bill would become due before they could get money to pay for it. Outside of that, however, a substantially greater number of households often worried about whether their bill would become due before they had money to pay for it than actually experienced one of the other of Home Energy Insecurity Scale indicators.

Home Energy Insecurity Attributes of Stable Households

Home Energy Insecurity Indicator	Response	Number	Percent /a/
“I worried about whether my home energy bill would become overdue before I could get money to pay it.”	Often	8	36%
“I could not afford to heat or cool my home to a comfortable temperature.”	Often	4	18%
“I could not afford to use the water or appliances in my home when or as much as I wanted to use them.”	Often	0	0%
“I left my home for all or part of the day because there was not enough money to <u>heat</u> my home.”	Some	2	9%
“I left my home for all or part of the day because there was not enough money to <u>cool</u> my home.”	Some	4	18%
“I turned off my hot water heater for all or part of the day because there was not enough to pay the home energy bill.”	Some	1	5%
“My electric or natural gas company, or my heating fuel supplier, warned that it would disconnect service because of nonpayment of bills, without actually doing so.”	Some	17	77%
Total Number of Stable		22	---

NOTES:

/a/ Total need not add up to 100% since households can fall in more than one category.

With the smaller numbers of total households in the Stable category, it comes as no surprise that fewer numbers of households experience multiple indicators. More than half of all Stable households (55%) experienced only one indicator placing them into the Stable classification. About one-third (32%) experienced two of the Stable indicators while only a handful reported experiencing three or more indicators.

Stable Households Reporting by Number of Stable Indicators Reported

Number of Indicators Experienced	No. of Households	Percent of Stable Households
1	12	55%
2	7	32%
3	2	9%
4	1	5%
5 or more	0	0%
Total number of Stable	22	100%

Capable Households

Missouri’s low-income households were found Capable if they:

- No more than occasionally worried about whether their home energy bill would become due without having money to pay for it;
- No more than occasionally either did not pay their home energy bill due to a lack of money or had their energy bill become due without having money to pay it absent someone’s help;
- No more than occasionally had to adjust their use of heating, cooling, hot water, or appliances because they did not have money to pay the energy bill; or
- No more than occasionally had to forgo the use of part of their home because they could not afford to heat or cool it.

Even though these households were classified as Capable on the Home Energy Insecurity Scale, 100% of the respondents reported that they “worried about” whether their home energy bill would become overdue before they could get money to pay for it. A somewhat smaller percent, but still very large, reported that their bill occasionally did become due without their having the money to pay it absent somebody’s help. Whether that help was in the form of energy assistance, loans from family and/or friends, church assistance, or assistance from a local fuel fund was unspecified.

Home Energy Insecurity Attributes of Capable Households

Home Energy Insecurity Indicator	Response	Number	Percent /a/
"I worried about whether my home energy bill would become overdue before I could get money to pay it."	Some	14	100%
"My home energy bill became due, and I didn't have money to pay it without somebody's help."	Some	11	79%
"I could not afford to heat or cool my home to a comfortable temperature."	Some	2	14%
"I could not afford to use the water or appliances in my home when or as much as I wanted to use them."	Some	1	7%
"I reduced my home energy usage to uncomfortable or inconvenient levels because I was running out of money to pay the home energy bill."	Some	5	36%
"I had to close off one or more rooms in my home because I could not afford to <i>heat</i> my entire home."	Some	2	14%
"I had to close off one or more rooms in my home because I could not afford to <i>cool</i> my entire home."	Some	2	14%
"I did not pay my home energy bill when it became due because there was not enough money."	Some	6	43%
Total number of Capable		14	---

NOTES:

/a/ Total need not add up to 100% since households can fall in more than one category.

Given the small total number of Capable households, the precise percentages of respondents providing multiple responses is less important than the overall story that emerges from these figures. It is noteworthy, however, that such a large proportion of Capable respondents experienced three or more of the eight possible Capable indicators.

Capable Households Reporting by Number of Capable Indicators Reported

Number of Indicators Experienced	No. of Households	Percent of Capable Households
1	3	21%
2	2	14%
3	5	36%
4 or more	4	29%
Total number of Capable	14	100%

Within the 14 Capable households, 9 (65%) reported experiencing three or more of the qualifying indicators. Only the Vulnerable population had a similar extent of multiple indicators (also with 65%). Further research might be warranted about why households tended to experience indicators in "bunches" for those two thresholds.

Thriving Households.

A Missouri low-income household was found to be Thriving if they never experienced one of the energy insecurity indicators. A Thriving household:

- Never worried about whether its bill would become due without having money to pay it;
- Never experienced nonpayment of a bill due to a lack of funds, and never needed to seek outside assistance to help pay a bill which became due;
- Never experienced the need to cutback on consumption or reduce expenditures on household necessities in order to have money to pay its home energy bills;

Only three of the 734 Home Energy Insecurity Survey respondents were classified as Thriving. An insufficient number of households were classified as Thriving to be able to provide quantitative description of the population. It is perhaps noteworthy that:

- Two of the three Thriving households have incomes between 101% and 150% of the Federal Poverty Level.
- No household with income below 50% of Poverty was Thriving.
- All three Thriving households had energy burdens of 8% or less.

While the numbers involved do not allow for conclusions, they do highlight the need for further research into whether there is a discernible relationship between energy burdens and the Home Energy Insecurity Scale threshold into which a household falls.

CHAPTER 6: MEETING THE LOW-INCOME HOME ENERGY NEEDS OF MISSOURI

A consideration of the impacts of energy poverty in Missouri generates important information for the nation as a whole. Missouri presents a mix of home heating fuels, including natural gas, electricity, and propane. It presents urban and rural settings. It presents both warm weather and cold weather issues.

Indeed, the Missouri findings are consistent with the recent National Energy Assistance (NEA) survey performed by the National Energy Assistance Directors Association (NEADA).⁵¹ The NEA survey reports that “despite. . .significant residential energy expenses, most low-income households pay their energy bills regularly. But at what cost?” As documented in this Missouri study as well, The NEA survey found that “LIHEAP recipients faced life-threatening challenges.”

- 17% of the national respondents had their heating disconnected or discontinued because of an inability to pay.
- 8% had their electricity (as opposed to heating) disconnected due to an inability to pay.
- 38% went without medical or dental care in order to have money to pay their home energy bill;
- 30% went without filling a prescription or taking the full dose of a prescribed medicine.
- 22% went without food for at least one day.

Low-income customers frequently have little incentive, and even fewer choices, to pursue constructive responses to their energy poverty. Enrolling in an energy efficiency program to reduce high bills on a going-forward basis, for example, does not help pay an existing arrearage unless coupled with a reasonable long-term deferred payment plan. Conversely, agreeing to a deferred payment arrangement does not address affordability on a going-forward basis unless some adjustment can be made that either affects the level of the bill or the level of household resources available to pay for the bill.

⁵¹ Apprise, Inc. (April 2004). *National Energy Assistance Survey Report*, National Energy Assistance Directors Association: Washington D.C.

All too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. Given the immediate consequences of failing to address the short-term nonpayment crisis, the customer is presented with a choice between untenable alternatives.

In this era of tight budgets and financial cutbacks for social services programs, it may seem unrealistic to recommend that we as a society direct increased funding to help alleviate a poverty-related need. Nonetheless, it would be irresponsible to fail to acknowledge that the primary means to help meet the low-income home energy affordability need involves money. The following discussion focuses primarily on increasing the dollars that can be generated for bill payment assistance programs to assist low-income households.

INCREASING FUNDING FOR BILL PAYMENT ASSISTANCE PROGRAMS

Funding for bill payment assistance programs may come from three major sources:

- The federal government, through the Low-Income Home Energy Assistance Program (LIHEAP);
- The state government, through utility-funded universal service or public benefits programs; and
- The private sector, through private charitable crisis-intervention funds, known as fuel funds.

Each will be separately discussed below.

Funding for LIHEAP

The full nationwide Home Energy Affordability Gap,⁵² was calculated to reach nearly \$18.2 billion in 2003. The heating and cooling Home Energy Affordability Gap was calculated to be more than \$8.2 billion. The remaining gap can be attributed primarily to the shortfall between actual and affordable baseload electric bills.⁵³

Clearly, additional funding for LIHEAP would reduce the energy burdens experienced by low-income households. But how much would our nation need to spend to provide sufficient funding to serve all low-income households in need? “A definition of full funding,” one research organization has said, “depends on defining the level of assistance to individual families which is

⁵² The Home Energy Affordability Gap is the difference between actual low-income home energy bills and home energy bills set at an affordable percentage of income. Affordable bills were set equal to four percent of income for electricity, and two percent of income for space heating or cooling.

⁵³ A baseload electric bill would be electric bills for appliances, lighting, refrigeration, and the like.

adequate, effective, and/or appropriate. The cost of meeting that level, or a defined share of it, for a target population will allow a determination of the resources needed in LIHEAP.”⁵⁴ The need should be determined by what funding it takes to reduce energy burdens, as a percentage of income, to an affordable level.⁵⁵

State Public Benefits Programs

One of the most effective low-income fuel assistance program structures outside LIHEAP and federal subsidized housing utility allowances involves the delivery of rate discounts through public utilities. While clearly not all low-income households use utility fuels such as natural gas and electricity as their primary heating source, nonetheless, the existence of electricity is nearly universal and the combination of gas and electric heating covers the vast majority of low-income households throughout the nation. A variety of program designs, target populations, and justifications exist for the utility programs that operate around the nation. The experience from these programs merits their emulation in those states where programs currently do not exist.

The Pennsylvania Customer Assistance Program (CAP) represents an exemplary comprehensive statewide effort on the part of utilities to address the payment problems of their low-income households. Under the 1990 Pennsylvania Public Utility Commission (PUC) order directing the establishment of CAPs by both electric and gas utilities, affordable rate programs were to be directed toward income-eligible payment-troubled customers.

The Pennsylvania CAP programs were directed to be implemented by a 1992 Pennsylvania Public Utility Commission order. That order, titled *Policy Statement on Customer Assistance Program (CAP)*,⁵⁶ found that "CAPs provide alternatives to traditional collection methods for low-income, payment troubled customers. Generally, customers enrolled in a CAP agree to make monthly payments based on household family size and gross income. These regular monthly payments, which may be for an amount that is less than the current bill, are made in exchange for continued provision of utility service." The PUC concluded: "as a result of our investigation, the Commission believes that an appropriately designed and well implemented CAP, as an integrated part of a company's rate structure, is in the public interest. These guidelines prescribe a model CAP which is designed to be a more cost effective approach for dealing with issues of customer inability to pay than are traditional collection methods."

Other states' universal service programs include:

- New Hampshire's Electric Assistance Program (EAP), operating as a "tiered discount" program;

⁵⁴ Persons interested in the most recent efforts to achieve full funding for LIHEAP can access information at the World Wide Web site of the Campaign for Home Energy Assistance: <http://www.LIHEAP.org>.

⁵⁵ Economic Opportunity Studies (February 2001). "Full Funding for LIHEAP: What is it?", Economic Opportunity Studies: Washington D.C.

⁵⁶ Docket M-00920345 (July 2, 1992).

- New Jersey’s Universal Service Fund (USF), operating as a “fixed credit” program;
- Maryland’s Electric Universal Service Program (EUSP), operating as a LIHEAP supplement program;
- Ohio’s Percentage of Income Payment Plan (PIPP), operating as a straight percentage of income program.

A variety of other states (Illinois, Wisconsin, Oregon, Texas, Montana, California) also operate public benefits programs that provide rate affordability assistance.⁵⁷

Fuel Fund Funding

Missouri fuel funds are among the most successful in the country. The Dollar More program funded primarily through customer contributions from Ameren UE distributed in excess of \$5.1 million to nearly 20,400 households in the program year October 2002 through September 2003. Laclede Gas raised more than \$1.0 million and assisted more than 3,800 households through local fuel funds.

Public utilities should recognize the benefits of engaging in aggressive fundraising efforts to assist local fuel funds. Fuel funds are local agencies that provide charitable energy assistance, generally to prevent the disconnection of service for nonpayment. Aggressive fundraising can occur in at least the following ways:

- Utilities can engage in direct outreach to their customers on a periodic basis. Many utilities provide fuel fund solicitation no fewer than four times a year, at least one of which is not a bill insert.
- Utilities can seek to enroll customers in regular contribution programs rather than merely seek one-time contributions. Program enrollment involves customers agreeing to donate on a regular basis through a line-item on the bill. Once enrolled, the participation continues until the customer asks to be unenrolled.
- Utilities can solicit customers to donate refunds or other rebates provided by the utility. This refund might involve excess earnings sharing of a utility operating under an earnings cap, refunds of interim base rate increases collected under bond subject to refund, gas pipeline refunds, or other money directed back to the customer. Donations of rebates offered through energy efficiency programs, for example, as well as donations of customer capital distribution by Rural Electric Cooperatives (RECs) can be sought. The Colorado Energy Assistance Foundation (now Energy Outreach Colorado) found that because customers often view refunds as “found

⁵⁷ The National Consumer Law Center, in Boston, maintains an up-to-date list of public benefits programs. Because such a list is so constantly changing, one is not included in this publication.

money,” the rate of customers contributing, as well as the level of giving per customer, are up to four times higher with donations than with normal solicitations.

- Utilities can adopt fuel fund contribution mechanisms to be used during on-line payment. As an increasing number of customers move to on-line payment of bills, the proportion of contributions decreases in the absence of a specific on-line contribution mechanism. A mandatory fuel fund contribution screen, requiring a person to make an affirmative choice about whether or not to contribute, is a useful mechanism.

Each utility company’s activities can be evaluated against other national utilities to determine whether their fuel fund solicitations are generating funds at a rate and level that is consistent with those of best practice utilities. Appropriate benchmarking includes fuel fund contributions on a dollars-per-customer basis as well as on a contribution-as-percent-of-residential-revenue basis. Where the subject utility company’s fuel fund contributions are shown through such an evaluation to have fallen short, the company should develop specific plans on how to modify its fuel fund solicitation process.⁵⁸

Additional Actions not Considered

Generating additional funding for bill assistance is certainly not the only needed energy assistance. Weatherization, for example, can be an effective tool to use in reducing low-income energy needs for many, but not all, households. Weatherization improves affordability by increasing the efficiency of energy usage and thus decreasing energy bills.

Like fuel assistance, however, weatherization has substantial limitations to its effectiveness. It is inadequately funded. Federal Weatherization Assistance Program (WAP) dollars will never be adequate to provide services to all eligible low-income homes needing weatherization within a reasonable period of time. According to the National Association for State Community Service Programs (NASCS), Missouri weatherized roughly 6,200 housing units in the three years 1999 through 2001 (the most recent data available).

<i>Number of Weatherized Units (1999 – 2001): Missouri</i>				
	1999	2000	2001	3-Year Total
Missouri	2,099	1,838	2,248	6,185

SOURCE: National Association for State Community Service Programs.

In contrast, the Home Energy Affordability Gap study found that Missouri has nearly 115,000 households living with income below 50% of the Federal Poverty Level. An additional 70,000

⁵⁸ The primary source of information on fuel funds is the National Fuel Funds Network (NFFN). NFFN information can be accessed at its World Wide Web site: <http://www.nationalfuelfunds.org>.

live with incomes between 50% and 75% of Poverty, while 80,000 more live with incomes between 75% and 100% of Poverty. As can be seen, even limiting consideration to households below Poverty Level, weatherization makes only a small dent in the statewide needs of low-income households.

Finally, for some households with very low-incomes, no amount of weatherization will be able to bring their bills low enough to be an affordable energy burden. The energy poverty crisis facing low-income households is not a problem that can be addressed by increasing weatherization funds alone. The home energy burdens faced by low-income households are not simply a function of high energy bills, but instead are a function of the interplay between energy bills and income. While weatherization unquestionably plays an important role in helping to address energy poverty issues, even if given unlimited funding, weatherization alone would be inadequate to redress the mismatch between household home energy expenses and household resources available to pay those expenses.

One additional energy efficiency strategy that is a component of WAP and some state-funded programs involves energy education. While proven to reduce energy consumption, like weatherization, while energy education activities represent a valuable component in any response to energy poverty, it cannot be a substitute for direct bill payment assistance.

Finally, issues such as regulatory protections through processes such as payment plans, extreme weather protections (such as hot and cold weather shutoff moratoriums), the impacts of current efforts to impose miscellaneous fees (such as field collection charges and service connect charges) have been set aside not because they are unimportant, but rather because it is impossible to comprehensively address such issues in this report.⁵⁹

ATTENTION TO ENERGY ASPECTS OF NON-ENERGY PROGRAMS

As shown throughout this study, energy poverty has significant adverse impacts on the social, economic, and physical well-being of low-income households. The unaffordability of home energy has been shown to contribute to problems relating to hunger, the lack of adequate health care, and the lack of adequate housing.

While increased energy assistance funding will reduce energy poverty, energy assistance is not the *only* public program that responds to energy costs. Public assistance programs addressing food and housing, in particular, take explicit account of home energy bills. With the federal Food Stamp and public/subsidized housing programs, higher food and housing benefits are used to offset higher energy costs. The specifics of three particular programs are examined below to the extent that these programs can be used as effective responses to increasing energy bills.

⁵⁹ Persons interested in such issues can access information through organizations such as the National Consumer Law Center (<http://www.consumerlaw.org>), the National Fuel Funds Network (<http://www.nationalfuel.org>), and Fisher, Sheehan & Colton (<http://www.fsconline.com>).

Food Stamps

One part of the calculation of a family's Food Stamp benefits provided by the U.S. Department of Agriculture (USDA) is a determination of whether the family is entitled to an "excess shelter cost deduction." To the extent that a family has excess shelter costs, the amount of the excess is, under a prescribed formula, deducted from the family's income for purposes of determining an appropriate monthly Food Stamp allotment.

"Shelter costs," as with most such calculations, include both rent/mortgage and utility costs. The increase in natural gas and fuel oil prices will thus have one of two impacts on Food Stamp families:

- Some families that had not previously qualified for an excess shelter cost deduction now will qualify; and
- Some families that had previously qualified for an excess shelter cost deduction will now qualify for a bigger deduction.

In either case, the family would be entitled to a larger allotment of Food Stamps as a result of the rapid increase in energy costs. Ensuring that low-income families requalify themselves for Food Stamps, with an excess shelter cost deduction appropriately based on the dramatically increased energy prices, would certainly help low-income families absorb the energy cost spike.

In brief, the excess shelter cost deduction for Food Stamps works like this. The amount of Food Stamps a family receives is based on the family's "countable income." Countable income includes pre-tax earnings and welfare benefits, minus an earnings deduction (for families with earnings), minus a child care deduction (for families with out-of-pocket child care expenses), minus the excess shelter cost deduction (for families with high shelter costs relative to their incomes).

The calculation of the shelter costs can take one of two forms for purposes of Food Stamps. A state may either take a family's actual energy costs into account, or, in the alternative, it may add a "standard utility allowance" to a family's rent and use the result (i.e., rent plus utility allowance) to determine the family's shelter deduction. (If, however, a family's actual utility costs are greater than the standard deduction, the family can document its actual utility costs and those greater costs will be added to their rent.)

The "excess" shelter cost is the extent to which the shelter costs exceed 50% of the family's total adjusted income up to a maximum dollar amount established by federal regulation.

As can be seen, the assumption behind the distribution of Food Stamps is that the costs of food take up a particular proportion of a household's available income. If, due to the substantial increases in energy prices, however, that available income is much less, the cost of food will take up a much greater portion of the available income, thus making it more likely that inadequate nutrition will result. That is the lesson of the empirical data presented in the chapters above.

In short, there are really two Food Stamp-related issues raised by high energy prices. First, there is the issue of excess shelter cost deductions. Federal regulations provide that monthly shelter costs in excess of 50 percent of the household's income (after all other deductions) are to be deducted from income. The deduction is up to a maximum prescribed by USDA.⁶⁰ The role for persons, organizations, and companies concerned with affordable home energy is to seek to ensure that Food Stamp administrators engage in the systematic reevaluation of shelter costs required in light of increased home energy costs.

Second there is the issue involving a state's "standard utility allowance." Federal regulations provide that "the state agency *shall* review and adjust the standard utility allowance annually to reflect changes in the cost of utilities." (While states have some discretion in the methodologies they use, the term "shall," of course, imposes a mandatory duty.) The role for persons, organizations, and companies concerned with affordable home energy is to request (and review) both: (1) the methodology used for setting the standard utility allowance; and (2) the most recent annual update (to determine whether that update took into account changes in home electric and heating/cooling prices).

Public/Subsidized Housing

The U.S. Department of Housing and Urban Development (HUD) provides energy assistance to tenants of public and assisted housing. "Public housing" refers to housing *owned* by local public housing authorities (PHAs). "Assisted housing" refers primarily to what is called Section 8 housing.⁶¹

HUD's energy assistance comes in the form of what is called a "utility allowance." Under federal law, a utility allowance is supposed to be sufficient to pay a tenant's entire utility bill (electricity *and* space heating/cooling).⁶² Separate utility allowances are calculated for each fuel used by a tenant (and sometimes for each end use). Unlike LIHEAP, the allowance is not paid in cash to the tenant (or directly vendored to the tenant's utility service provider). Instead, the amount of the allowance is provided as an offset to the tenant's rent.⁶³ The effect, however, is to put additional cash in the pocket of the tenant so that the tenant can pay his or her utility bills as they come due.⁶⁴

A utility allowance is set by the local Public Housing Authority. At least in theory, each PHA is supposed to review (and revise where appropriate) its utility allowance on an *annual* basis. In addition, again at least in theory, each PHA is supposed to adjust its utility allowance whenever

⁶⁰ If a household is elderly or disabled (as defined by federal regulation), the maximum doesn't apply.

⁶¹ While other miscellaneous types of assisted housing exist, as well, to which this analysis applies, the bulk of "assisted housing" is Section 8 housing.

⁶² Under the law, a tenant's shelter costs (including rent plus all utilities other than telephone) is not to exceed 30% of income. Rent is set equal to 30% of income. Accordingly, to comply with the law, utility costs must be covered in their entirety to keep total shelter costs at 30%.

⁶³ If the tenant has a rent of \$250 and a utility allowance of \$150 per month, the rent is reduced to \$100.

⁶⁴ If the utility allowance exceeds what the tenant would pay in rent, the excess is, in fact, paid to the tenant in cash.

there is a rate change of 10% or more. These “requirements” are frequently ignored by local Public Housing Authorities (and low-income tenants simply do not have the resources to constantly challenge PHA inaction).

A utility allowance is paid by a local Public Housing Authority. The PHA is then reimbursed for these payments by HUD. While a local PHA is required to file its utility allowances with HUD, there is no formal HUD review and approval process.

The law does not require that the entire bill of a tenant be paid. Instead, the legal test is whether the utility allowance will be sufficient to cover the utility bill of an “energy conservative household of modest means.” Much can be written about what that phrase means. The basic message, however, is that while there is no guarantee that the entire bill will be paid, PHA discretion is not absolute. If the tenant uses more energy than is paid by the utility allowance, that energy consumption must be *more* than what would be used by an “energy conservative household of modest means.”

Two guarantees are *supposed* to be met by a Public Housing Authority utility allowance:

- A utility allowance is to cover all energy consumption that is not within the ability of the tenant to control; and
- A utility allowance is to distinguish between what is a “necessity” and what is a “luxury” based on “local usage and custom.”

Despite the legal constraints identified above, local Public Housing Authorities often set utility allowances so as to substantially *underpay* tenants of public and assisted housing. As a result, these tenants are required to pay much of what is supposed to be covered by a utility allowance out of their own pocket. These utility costs can be devastating to a tenant of public and assisted housing. An analysis by the U.S. General Accounting Office (GAO) reported that public and assisted housing tenants, on average, live with incomes of *below* 50% of Poverty Level.⁶⁵

It is not clear why HUD utility allowances receive so little attention by persons interested in seeing that the government programs designed to help low-income customers pay their home energy bills are adequately funded and appropriately administered. Consider that:

- Unlike LIHEAP, utility allowances are not seasonal benefits, but are year-round;
- Unlike LIHEAP, utility allowances are intended to cover total energy consumption, including electricity and space heating, not simply home heating (or cooling);

⁶⁵ General Accounting Office (March 1991). *Assisted Housing: Utility Allowances Often Fall Short of Actual Utility Expenses: Volume I*, General Accounting Office: Washington D.C. General Accounting Office (March 1991). *Assisted Housing: Utility Allowances Often Fall Short of Actual Utility Expenses: Volume II*, General Accounting Office: Washington D.C.

- Unlike LIHEAP, utility allowances are intended to pay the *entire* bill of a tenant, not merely some portion of it.

In short, persons, organizations and companies interested in the affordability of home energy as a component of public and subsidized housing programs are challenged to ask these three questions, and pursue corrective action to ensure the maximum effectiveness of public and subsidized housing programs in reducing energy poverty:

- First, which local Public Housing Authorities have failed to update their utility allowances each year as required by federal law for public and subsidized housing?
- Second, which local Public Housing Authorities have failed to update their utility allowances for public and subsidized housing in those instances and at those times when energy rates have changed by 10% or more?
- Third, which local Public Housing Authorities have failed to adopt utility allowances that reasonably reflect the energy usage of energy conservative households of modest means such that tenants of public and subsidized housing have allowances that pay all consumption that is not within their ability to control?

Earned Income Tax Credit (EITC)

While the Earned Income Tax Credit (EITC) is not per se an “energy assistance” program, public utilities should take an active roll in ensuring that income-eligible households claim the EITC credits to which they are entitled. The EITC is a source of funding that is important for low-income utility customers in three respects.

- First, coming as part of the federal income tax return process, the money will come at the time when low-income households are most vulnerable to unpaid energy bills. Refunds from tax returns filed in January and February would easily put cash in the hands of low-income households during the high bill winter months.
- Second, tax credits coming back to customers in April may well also serve as a source of downpayment on a payment plan to prevent the loss of service at the very time state winter shutoff moratoria are ending.
- Finally, while a low-income household would need to file a tax return in order to receive the EITC, the household need not have a tax liability in order to receive the credit. The credits can place actual cash in the pockets of households.

For these reasons, promotion of the EITC can be an important strategy for helping the working poor address otherwise unaffordable winter home energy bills.

Utility participation in promoting the EITC is helpful in generating additional dollars to help pay utility bills to the extent that households qualifying for the EITC do not already claim their benefits. According to John Wancheck, Coordinator of the EITC Outreach Campaign for the Center on Budget and Policy Priorities:

Research on the total number of eligible workers compared to those who actually claim the EITC is not wonderfully precise. It probably isn't going to be, because the criteria to estimate EITC eligibility using census data can't be as specific as the actual IRS eligibility rules. From the IRS side, it isn't known how many people who don't file tax returns are eligible for the EITC.

The research that *has* been done indicates that about 80% of those eligible claim the credit. Both the IRS and the President's Council of Economic Advisors use this figure.

Participation among welfare recipients transitioning to employment (as well as applicants diverted to job searches) is much lower (around 50%). Research has found simply that new workers at very low wages (as well as new parents and new foster parents) are less likely to know about credits and how to claim them.

Given that average EITC credits vary by state, but generally range between \$1,800 and \$2,000, it would seem evident on its face that a utility would benefit from any increase in financial resources to be brought to bear on low-income living expenses. More than intuition, however, supports the conclusion that increasing EITC claims will help pay utility bills. An Edison Electric Institute (EEI) staffperson reports, for example, that a 1994 study found that 90 percent of New Jersey EITC recipients used their tax credit to pay household living expenses. One-third of all recipients used their EITC to pay *past-due* bills and one-quarter used part of the refund to pay utility bills.

This page intentionally left blank.

CHAPTER 7: BUILDING BRIDGES—COMMON GOALS

There is a need for low-income energy advocates to build more bridges with low-income advocates of other basic needs. As shown through this report, energy poverty affects households' access to a host of basic needs. To the extent that housing, education, healthcare, employment, and the like are, through various programs and initiatives, made more affordable or accessible, there will be fewer circumstances where low-income households must choose what essential components of their lives to pay for and what to go without.

While historically the network of advocates seeking “full funding” of LIHEAP has included an array of low-income service providers, non-profit advocacy groups, and the energy industry, the universe of potential organizations and individuals with a direct interest in the various aspects of energy assistance funding is much more expansive than that.

Consider the extent to which energy poverty affects the educational attainment of children. The direct enlightened self-interest that the education infrastructure has in seeking to remedy the underlying causes of frequent mover status are now evident. In addition, education professionals have exerted considerable effort in response to the recognition that hungry students make bad students.

Those professionals now have a basis not only to conclude that *cold* students make bad students as well, but to conclude that having students be cold and hungry are not unrelated phenomena. Organizations such as local school boards (and school board associations), as well as associations of school principals and guidance counselors, should have a concern about affordable home energy.⁶⁶ State and local teachers' unions, also, should have a direct self-interest in addressing energy poverty.

Organizations and private businesses interested in economic development should have an interest in the impacts of energy poverty on educational attainment. Private business has long seen improvement in our nation's education system as a prerequisite to long-term sustained economic development.

Advocates for children should be solicited for active support of energy affordability strategies. As has been shown, the impacts that energy poverty have on children range from hunger to educational impediments, from direct threats to physical health and safety to fire. Children's

⁶⁶ In Belmont (MA), the school nurses at the elementary and middle schools are some of the strongest front-line allies of local fuel fund.

advocates include not only the “Kids Count” network operating under the auspices of the Annie E. Casey Foundation, but state and local associations of Head Start teachers, administrators, and parents.

One particular impact on children involves the heightened threat of deaths and injuries resulting from fire. The National Fire Prevention Association has found that the fires resulting from inappropriate use of heating strategies, as well as the use of portable heaters, contribute substantially to deaths and injuries within the low-income population. The use of portable heaters arises, NFPA has found, when energy poverty prevents the use of central heating systems (or prevents their use for some specific portion of a home). Organizations engaged in fire prevention activities should have a direct interest in energy assistance strategies to address the underlying energy poverty issues.

Organizations involved with the Free and Reduce Meal (FARM) school program should have an interest in helping to reduce energy poverty. School administrators and staff, public health officials, and hunger advocacy organizations can now be shown that the interests of hunger and energy advocates are interdependent.

Individuals and organizations involved with Food Stamp advocacy and service delivery should be natural allies with energy advocates. Not only do the interests overlap, but participants in the energy industry should also be able to supply consistently timely and relevant information relating to the impact of energy costs on excessive shelter burdens used in the Food Stamp program.

Advocates for the aging should be allies in the effort to respond to energy poverty. These advocates, however, far transcend traditional institutional supporters of LIHEAP such as the American Association of Retire Persons (AARP). Local resident councils at retirement communities, for example, would have an interest in the health, safety, hunger, and housing issues presented to older Americans. So, too, would associations of Home Health Aides have similar interests.

In addition, organizations and service providers involved with the state’s Pharmaceutical Assistance to the Aged and Disabled (PAAD) program should work to ensure that the benefits of cheaper prescription medicine are not offset by increasing energy poverty.

It seems clear that the traditional network of advocates, service providers, and energy companies that support the traditional range of remedies for energy poverty have defined their universe of potential support too narrowly. Energy poverty is not merely an energy issue. It is a children’s issue, a hunger issue, a public health issue. The list could continue.

One continuing challenge to Missouri is to explain to as broad a spectrum as possible how their enlightened self-interest, as well as sound social and economic policy, is served by seeking remedies to energy poverty.

APPENDIX A:
ENERGY INSECURITY SCALE SURVEY

NAME: _____

STREET ADDRESS: _____

CITY/TOWN: _____

STATE/ZIP CODE: _____

Please return this survey to the agency that provided it to you or mail it to:

Missouri Home Energy Insecurity Survey
c/o Roger Colton
34 Warwick Road
Belmont, MA 02478

Date: _____

Town/city where you live: _____ Zip code: _____

Agency providing survey form: _____

In this first part of this survey, we would like to collect some basic information about you and your household. Please circle all responses that are appropriate.

1. At some time between January 1, 2003 and February 29, 2004, did you apply to receive government funding for energy bill payment assistance from the agency that provided you with this survey from some other government-funded agency?
 - a. yes
 - b. no

2. At some time between January 1, 2003 and February 29, 2004, did you receive weatherization services for your home (such as wall or ceiling insulation, or weather stripping for your doors and windows) from the agency that provided you with this survey or from some other government-funded agency?

- a. yes
- b. no

3. If you did not apply to receive government funding for energy bill payment assistance, why not (circle all that apply)?

- a. I had trouble finding out about energy assistance.
- b. I had trouble getting to the place where I needed to apply for energy assistance.
- c. I was not able to meet the deadline for applying for energy assistance.
- d. I did not understand the questions on the application form for energy assistance.
- e. I needed help in filling out the application form, but could not receive that help.
- f. I was told I was ineligible for energy assistance.
- g. I thought my income was too high for me to be eligible for energy assistance.
- h. I thought I was ineligible for energy assistance because I own a home or car.
- i. The amount of money was not worth the hassle.
- j. I did not want to take money from the government.
- k. I did not need help with my energy bills.
- l. Other (specify: _____)

4. How many people live in your household?

_____ persons

5. My household includes (circle all that apply):

- a. a person age 60 years or older
- b. a child or children under 6 years old
- c. a child or children under 18 years old
- d. a disabled person
- e. a wage earner
- f. a veteran
- g. an unemployed worker
- h. a public assistance recipient
- i. a food stamp recipient
- j. a Medicaid recipient

6. Do you own or rent your home?
- a. own
 - b. rent
 - c. other (specify: _____)
7. When did you move into your current home?
- a. 2003
 - b. 2002
 - c. 2001
 - d. 2000
 - e. 1999 or before
8. In the last 12 months, what is your estimate of the total cost of electricity, gas and other fuels (oil, coal, kerosene, wood, etc.) for your home?
- a. Less than \$500
 - b. \$500 - \$1,000
 - c. \$1,000 - \$1,500
 - d. \$1,500 - \$2,000
 - e. More than \$2,000
9. How many times have you moved since January 1, 2002?
- a. 0
 - b. 1
 - c. 2
 - d. 3 or more

10. What are the reasons you moved from your last home? (Circle all that apply)

- a. new job or job transfer
- b. to be closer to work/school/family/other
- d. to establish own household
- e. needed larger house/apartment
- f. utility service disconnected at former home
- g. married, widowed, divorced or separated
- h. wanted better quality house/apartment
- i. changed from renter to homeowner
- j. changed from homeowner to renter
- k. wanted lower rent or less expensive house to maintain
- l. wanted lower energy bills
- m. wanted to be in a safer neighborhood
- n. wanted to be in a better school system
- o. other (specify: _____)

11. If you marked two or more reasons in your answer to Question 10, what is the MAIN reason you moved:

- a. _____ (enter item number from Question 10)
- b. All reasons are of equal importance

12. Do you expect to move from your current home in the next 12 months?

- a. yes
- b. no

13. What are the reasons you expect to move from your current home in the next 12 months?

(Circle all that apply)

- a. new job or job transfer
- b. to be closer to work/school/family
- c. to establish own household
- d. utility service has been or is going to be disconnected at current home
- e. need larger house or apartment
- f. married, widowed, divorced or separated
- g. want better quality house or apartment
- h. change from renter to homeowner
- i. change from homeowner to renter
- j. want lower rent or less expensive house to maintain
- k. want lower energy bills
- l. want to be in a safer neighborhood

- m. want to be in a better school system
- n. other (specify: _____)

14. If you marked two or more reasons in your answer to Question 13, what is the MAIN reason you expect to move in the next twelve months:

- a. _____ (enter item number from Question 13)
- b. All reasons are of equal importance

15. Which fuel is used most for heating your home?

- a. Gas from underground pipes serving the neighborhood
- b. Gas: bottled, tank or LPG, or propane
- c. Electricity
- d. Fuel oil, kerosene, etc.
- e. Coal or coke
- f. Wood
- g. Solar energy
- h. Other fuel (specify _____)
- i. No fuel used

16. What is your household's income?

- a. Less than \$6,000 per year (less than \$500 per month)
- b. \$6,000 - \$12,000 per year (\$500 - \$1,000 per month)
- c. \$12,000 - \$18,000 per year (\$1,000 - \$1,500 per month)
- d. \$18,000 - \$24,000 per year (\$1,500 - \$2,000 per month)
- e. \$24,000 - \$30,000 per year (\$2,000 - \$2,500 per month)
- f. \$30,000 - \$36,000 per year (\$2,500 - \$3,000 per month)
- g. \$36,000 - \$42,000 per year (\$3,000 - \$3,500 per month)
- h. More than \$42,000 per year (more than \$3,500 per month)

The next five questions are about the energy used in your household in the last 12 months and whether you were able to afford the home energy you need. Please do not leave a question unanswered. While each statement asks about you, if you live with others, please think of the statement as it applies to your entire household.

17. Listed below is a series of statements that someone has made about his or her home energy. For each statement, please tell me whether the statement was either *often true*, or *sometimes true*, or *never true* for you or your household in the last 12 months. (Circle the appropriate answers.)

- | | | | | |
|---|--|------------|----------------|------------|
| a | “I worried about whether my home energy bill would become overdue before I could get money to pay it.” | Often true | Sometimes true | Never true |
| b | “My home energy bill became due, and I didn’t have money to pay it without somebody’s help.” | Often true | Sometimes true | Never true |
| c | “I could not afford to heat or cool my home to a comfortable temperature.” | Often true | Sometimes true | Never true |
| d | “I could not afford to use the water or appliances in my home when or as much as I wanted to use them.” | Often true | Sometimes true | Never true |
| e | “I reduced my home energy usage to uncomfortable or inconvenient levels because I was running out of money to pay the home energy bill.” | Often true | Sometimes true | Never true |
| f | “I had to close off one or more rooms in my home because I could not afford to <u>heat</u> my entire home.” | Often true | Sometimes true | Never true |
| g | “I had to close off one or more rooms in my home because I could not afford to <u>cool</u> my entire home.” | Often true | Sometimes true | Never true |

18. Listed below is a series of statements that someone had made about what they may or may not do when they cannot afford to pay their home energy bills. For each statement, please tell me whether the statement was either *often true*, or *sometimes true*, or *never true* for you or your household in the last 12 months. (Circle the appropriate answers.)

- | | | | | |
|----|--|------------|----------------|------------|
| a. | “I left my home for all or part of the day because there was not enough money to <u>heat</u> my home.” | Often true | Sometimes true | Never true |
| b. | “I left my home for all or part of the date because there was not enough money to <u>cool</u> my home.” | Often true | Sometimes true | Never true |
| c. | “I turned off my hot water heater for all or part of the day because there was not enough money to pay the home energy bill.” | Often true | Sometimes true | Never true |
| d. | “I did not pay my home energy bill when it became due because there was not enough money.” | Often true | Sometimes true | Never true |
| e. | “I used my kitchen oven or range to provide heat because there was not enough money to pay my home heating bill.” | Often true | Sometimes true | Never true |
| f. | “I reduced what I spent on basic household necessities because there was not enough money to pay for these <u>and</u> the home energy bill.” | Often true | Sometimes true | Never true |

19. Listed below are two statements someone has made about their energy supply. For each statement, please tell me whether the statement was *often true*, or *sometimes true*, or *never true* for you or your household in the last 12 months. (Circle the appropriate answer.)

- | | | | | |
|----|---|------------|----------------|------------|
| a. | “My electric or natural gas company, or my heating fuel supplier, disconnected my service or stopped making deliveries because of nonpayment of bills.” | Often true | Sometimes true | Never true |
| b. | “My electric or natural gas company, or my heating fuel supplier, warned that it would disconnect service because of nonpayment of bills, without actually doing so.” | Often true | Sometimes true | Never true |

20. If you had a supplier of electricity or home heating fuel disconnect or discontinue your energy supply because you were unable to pay a past-due bill, what did you do after the disconnection or discontinuance?

- a. Paid the past due bill from our own money and had service restored.
- b. Paid the past due bill from public or private energy assistance and had service restored.
- c. Moved to a different home and had service begun at that new home.
- d. Had service restored in the name of a different person.
- e. Changed suppliers of fuel.
- f. Went without service.
- g. Other (specify: _____)

21. People often have to make choices in how to spend their limited incomes. In the last 12 months, how often, if ever, did you find yourself making the following choices?

a.	Go without food in order to pay your home energy bill?	Often true	Sometimes true	Never true
b.	Go without medicine, or take medicines in a dosage less than that prescribed by your doctor in order to pay your home energy bill?	Often true	Sometimes true	Never true
c.	Not buy school books or school supplies for your children in order to pay your home energy bill?	Often true	Sometimes true	Never true
d.	Go without necessary clothing (such as coats or books) in order to pay your home energy bill?	Often true	Sometimes true	Never true
e.	Not go to the doctor or dentist in order to pay your home energy bill?	Often true	Sometimes true	Never true
f.	Go without making needed automobile repairs in order to pay your home energy bill?	Often true	Sometimes true	Never true

Thank you for taking the time to complete this survey!!!

APPENDIX B: ENERGY INSECURITY SCALE THRESHOLD SCORING

	Thriving	Capable	Stable	Vulnerable	In Crisis
<i>Receipt of Outside Assistance</i>					
17b. "My home energy bill became due, and I didn't have money to pay it without somebody's help."	Never	Some	Some	Often	Often
<i>Constraints on Energy Use</i>					
17c. "I could not afford to heat or cool my home to a comfortable temperature."	Never	Some	Often	Often	Often
17d. "I could not afford to use the water or appliances in my home when or as much as I wanted to use them."	Never	Some	Often	Often	Often
17e. "I reduced my home energy usage to uncomfortable or inconvenient levels because I was running out of money to pay the home energy bill."	Never	Some	Some	Often	Often
17f. "I had to close off one or more rooms in my home because I could not afford to <u>heat</u> my entire home."	Never	Some	Some	Often	Often
17g. "I had to close off one or more rooms in my home because I could not afford to <u>cool</u> my entire home."	Never	Some	Some	Often	Often
<i>Constraints on Household Necessities</i>					
18a. "I left my home for all or part of the day because there was not enough money to <u>heat</u> my home."	Never	Never	Some	Some	Often
18b. "I left my home for all or part of the day because there was not enough money to <u>cool</u> my home."	Never	Never	Some	Some	Often
18c. "I turned off my hot water heater for all or part of the day because there was not enough to pay the home energy bill."	Never	Never	Some	Some	Often
18e. "I used my kitchen oven or range to provide heat because there was not enough money to pay my home heating bills."	Never	Never	Never	Some	Some
21a. "Go without food in order to pay your home energy bill?"	Never	Never	Never	Some	Often
21b. "Go without medicine, or take medicines in a dosage less than that prescribed by your doctor in order to pay your home energy bill?"	Never	Never	Never	Some	Often
21e. "Not go to the doctor or dentist in order to pay your home energy bill?"	Never	Never	Never	Some	Often

Nonpayment on Energy Bills

18d. "I did not pay my home energy bill when it became due because there was not enough money."	Never	Some	Some	Often	Often
19a. "My electric or natural gas company, or my heating fuel supplier, disconnected my service or stopped making deliveries because of nonpayment of bills."	Never	Never	Never	Some	Some
19b. "My electric or natural gas company, or my heating fuel supplier, warned that it would disconnect service because of nonpayment of bills, without actually doing so."	Never	Never	Some	Often	Often

Financial Strain

17a. "I worried about whether my home energy bill would become overdue before I could get money to pay it."	Never	Some	Often	Often	Often
---	-------	------	-------	-------	-------