BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Investigation into Financial Collections Issues Regarding the Philadelphia Gas Works	:	**Docket Nos. P-00042090**
	:	**R-00049157**
	:	**M-00021612**
	:	**P-00032061**
	:	

DIRECT TESTIMONY

ROGER D. COLTON

ON CREDIT AND COLLECTION ISSUES

OCA Statement No. FCI-1

7/6/04 Phila PR

ON BEHALF OF THE
Office of Consumer Advocate (OCA)

Harrisburg, Pennsylvania

June 28, 2004

TABLE OF CONTENTS

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics. In that capacity, I provide technical assistance to a variety of public utilities, state agencies and consumer organizations on rate and customer service issues involving telephone, water/sewer, natural gas and electric utilities.

Q. FOR WHOM ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income energy issues. This work involves not only rate and customer service work, but involves the design and implementation of low-income energy assistance programs as well. At present, I am working on various projects in the states of Pennsylvania, Michigan, Missouri, Louisiana, Indiana and Colorado. My clients include state agencies (e.g., the New Hampshire Public Utilities Commission, the Pennsylvania Office of Consumer Advocate, the New Jersey Division of Ratepayer Advocate, the Maryland Office of People's Counsel), federal agencies (e.g., the U.S. Department of Health and Human Services, Oak Ridge National Laboratory), community-based organizations (e.g., the Indiana Community

Action Association, Colorado Energy Assistance Foundation, The Heat and Warmth Foundation [Detroit]), and private utilities (e.g., Entergy Services, Citizens Gas and Coke Company, Empire District Company).

Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. A list of my publications is attached as Appendix A.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A. Yes. A list of proceedings in which I have appeared as an expert witness is attached as Appendix A as well.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY TODAY?

A. The purpose of my testimony today is two-fold:

- to review the Philadelphia Gas Works (PGW) requests for Chapter 56 waivers to assess their reasonableness; and
- to determine whether there are reasonable alternatives to the requested Chapter 56 waivers in those instances where I conclude that those waiver requests should not be granted.

In brief, I conclude that the PGW waiver requests, with some limited exceptions, should not be granted. I conclude further, however, that there are reasonable steps that the Company might take to accomplish the primary objectives it seeks to

accomplish through its waiver requests. Before I turn to an evaluation of the specific requests, however, I will set forth some brief overview comments.

PART 1: INTRODUCTION.

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I seek to place the analysis and recommendations into some broader context. Several basic themes underlie the full range of recommendations that I make below. I present those themes in these introductory comments before turning to the specific waiver requests.

Q: WHAT IS THE PURPOSE OF THE COMMISSION'S INVESTIGATION?

A: In its June 2 Order, the Commission noted that PGW continues to face challenges regarding its financial condition and its collections process. The Commission stated that it is opening this investigation "to take a comprehensive approach to PGW's financial and collection problems." The investigation is to examine the following issues:

1. the adequacy, cost effectiveness and management of PGW's collection practices;
2. the reasonableness of any requested waivers or modifications of the Commission's Chapter 56 regulations;

3. the level of PGW's universal service costs as well as the cost effectiveness and management of these programs;4. the costs associated with a means-tested Senior Citizen Discount program; and

5. remaining issues pertaining to PGW's compliance tariff from the restructuring proceeding.

With respect to proposed Chapter 56 waivers, the Commission specifically directed that it "would be PGW's responsibility to explain in such a petition how the alternative standard or procedure adequately balances consumer protection rights with PGW's financial integrity."

A. Impact of Time Limitations.

Q. HAVE YOU HAD ADEQUATE TIME TO REVIEW THE NEED FOR CHANGES IN PGW COLLECTION PROCEDURES GENERALLY AND THE SPECIFIC PGW CHAPTER 56 WAIVER REQUESTS IN PARTICULAR?

A. No. PGW's specific waiver requests were filed only twelve days ago. A broader discussion of PGW's collection problems has not been possible under the schedule adopted for this proceeding. This schedule necessitates a focus on responding to the PGW filing. A more detailed review of PGW's credit and collection practices could not be conducted in the time period allotted for discovery and testimony.

Neither has the schedule provided time for a complete review of the specific waiver requests advanced by PGW. For example, as of the time my testimony has been prepared, the Company has been unable to respond to the vast majority of the data requests propounded by OCA. The Company has not been able to provide sufficient data requested by OCA to support the range of waivers that it seeks in the time provided.

Q. HAVE YOU HAD ADEQUATE TIME TO EVALUATE WHAT PGW IS DOING, GENERALLY, TO INCREASE THE EFFECTIVENESS AND EFFICIENCY OF ITS COLLECTION PRACTICES?

A. No. In June 2003, PGW realized that it was experiencing a significant decline in collections in comparison to its historic 10-year average of 92%. For the fiscal year ending August 2003, PGW had a collections rate of 86.57% of revenues billed. The Company's five year average for the five years ending August 2003 was 91.85%. As a result of this decline in collections, in November 2003, PGW launched its Collection Renewal Initiative. The Collections Initiative has a two-tiered approach to collection through (1) enhancing cash flow and containment of uncollectibles, and (2) a long-term initiative to improve collections processes and efficiencies. Given the accelerated time period for this proceeding, there has been insufficient time to evaluate PGW's ongoing improvements in its collection practices. Nor has there been time to review the ongoing changes in PGW's collection practices and results from its Collections Initiative.

Q. HAVE YOU HAD ADEQUATE TIME TO REVIEW THE EFFECTS GENERATED BY PGW'S COLLECTIONS RENEWABLE INITIATIVE?

A. No. Consideration of the specific Chapter 56 waivers requested by PGW is premature at best. Although the Collections Initiative began in September 2003, the actual effect of the initiative did not start to yield results until the end of March and early April 2004. In March 2004, PGW was projecting a collections rate of 89% for the fiscal year ending August 31, 2004. PGW subsequently recognized an improvement in collections, and updated their projected collections rate to 90.5% for the 12 months ending March 2004. If this improvement continues, PGW is projecting a collections rate of 93%. (PGW Statement CRRC-1R, at 2). Each one percent change in the collections rate for PGW results in a change of approximately $8 million in cash reserves for the Company. (PGW Statement CCRC-1, at 5). It now appears that PGW's Collection Initiative is yielding positive results. There has been insufficient time, however, to allow the Collections Initiative to fully work. Before PGW is granted waivers of Chapter 56 protections for its customers, the PUC should determine whether the Collections Initiative would generate the increased collections that it appears capable of generating.

B. Further Innovations in Collections.

Q. ARE THERE ADDITIONAL INNOVATIONS IN COLLECTIONS THAT YOU RECOMMEND PGW ADOPT PRIOR TO PURSUING SIGNIFICANT CHAPTER 56 WAIVERS?

A. Yes. I will discuss two proposals that PGW should pursue. The first involves an increased use of Electronic Funds Transfer (EFT) payments. The second involves mandatory budget billing.

Q. PLEASE EXPLAIN YOUR FIRST PROPOSAL.

A. I recommend that PGW increase its use of e-commerce in its payment plans for customers with incomes at or above 250% of the Federal Poverty Level. Electronic Funds Transfer (EFT) systems are widely used by various commercial institutions to receive and transfer money. Institutions ranging from banks to credit unions to insurance and mortgage companies (as well as public utilities) use EFT both to make payments and to collect payments from their consumers. Not only does EFT result in lower transaction costs (such as processing and mailing), it has been found to be useful in reducing delinquencies and defaults.

Q. HAS ANYONE USED EFT SPECIFICALLY AS A MECHANISM THROUGH WHICH TO COLLECT DELINQUENT BILLS?

A. Yes. Both Minnesota and California changed their installment agreement programs for delinquent taxes to promote tax payments by EFT. Minnesota has required taxpayers entering into new installment agreements since July 1995 to pay by EFT.

In April 1997, California initiated procedures to let taxpayers make installment agreement payments by EFT. By mid-November 1997, 90% of California's installment payments on delinquent taxes were being made by EFT; 60% of Minnesota's installment payments on delinquent taxes were.

Q. WHAT HAS BEEN THE IMPACT OF THAT MOVE TO EFT FOR INSTALLMENT AGREEMENT PLANS FOR DELINQUENT TAXES?

A. According to state officials, both Minnesota and California have seen a sharp decrease in their installment agreement default rates, in part due to EFT. In Minnesota, officials said that default rates were reduced from about 50 percent to between three and five percent. In California, officials said that default rates were reduced from about 40 percent to about five percent. Officials in both states have said that the lower default rates have resulted in collecting revenues from installments faster as well.

Q. *DESCRIBE WHAT YOU MEAN BY THE USE OF E-COMMERCE TECHNOLOGY FOR PAYMENT AGREEMENTS.*

A. EFT transactions involve the paperless transfer of funds between accounts in financial institutions, which allows for transactions such as the direct deposit of payroll checks, mortgage payments, and installment payments. In today's technology-rich environment, nearly every financial institution can both make and receive EFT transactions.

Q. CAN EFT PAYMENTS BE REQUIRED AS A MECHANISM THROUGH WHICH TO PAY BILLS?

A. Because of the advantages that EFT payments offer to the commercial institutions, most institutions provide incentives for customers to make their current bill payments electronically. States such as Minnesota and California, however, require persons who owe back taxes, and who enter into installment agreements through which to pay those taxes, to make those installment payments through EFT transfers (with some exceptions). One exception in Minnesota, for example, is for taxpayers who do not have bank accounts. A bank account is necessary for an electronic transaction to occur. In addition, in Minnesota, payment agreements of fewer than four months in duration can be exempt from the EFT requirement.

So, too, does California require taxpayers who enter into installment agreements to pay their installments through EFT. Like Minnesota, California allows exceptions, including for taxpayers that do not have bank accounts, taxpayers for whom an EFT transaction would represent a particular hardship, or tax liabilities that are small in nature. By the end of the first six months of the program, 60% of the agreements, and 90% of the value of outstanding taxes subject to new installment agreements, were arranged as EFT transactions.

Q. HOW WOULD AN EFT PAYMENT AGREEMENT OPERATE IN PRACTICE?

A. An EFT payment agreement for PGW arrears would likely be arranged as an Automated Clearinghouse ("ACH") debit transaction. In such a transaction, PGW's financial institution would originate the transaction by sending a request for funds to the customer's financial institution. The customer's financial institution then transfers the funds in order to settle the transaction. ACH transactions generally settle the next day after they are originated. Settlement means that the funds are actually transferred and made available to the requesting institution.

Q. WOULD PGW NEED PRIOR AUTHORIZATION FROM THE CUSTOMER TO MAKE THE PAYMENT REQUEST EACH MONTH?

A. Absolutely. However, the payment agreement entered into with the customer could contain the prior authorization needed for PGW to make such a direct call on the customer's funds. PGW would not be required to gain customer approval in each subsequent month.

Q. WHY SHOULD A CUSTOMER BE REQUIRED TO ENTER INTO AN ELECTRONIC FUNDS TRANSFER AGREEMENT AS PART OF A PAYMENT AGREEMENT?

A. Through a payment agreement, the PGW customer is agreeing to make monthly payments toward an arrears in any event. The e-commerce aspect of the agreement merely reduces costs as well as the possibility that the customer will breach the agreement.

Q. WHAT IF A CUSTOMER WITH INCOME AT OR ABOVE 250% OF POVERTY REFUSED TO ENTER INTO AN EFT AGREEMENT?

A. I propose that PGW make EFT agreements a precondition of payment plans for customers with incomes at or above 250% of the Federal Poverty Level, with narrow hardship exceptions akin to those promulgated by the Minnesota and California tax agencies. Agreements that would impose undue hardship, agreements with customers lacking checking accounts, and agreements for arrears that are below designated threshold limits (to be determined by PGW), could be exempt.

Q. WHY WOULD YOU EXEMPT CUSTOMERS WITH INCOME BELOW 250% OF THE FEDERAL POVERTY LEVEL FROM THIS MANDATORY EFT PAYMENT AGREEMENT ARRANGEMENT?

A. A fundamental assumption for an EFT requirement to work is that customers have bank accounts from which payments may be drawn. Based on data from the Federal Reserve Board, I conclude that there is too high of a likelihood that customers at these lower income levels would *not* have bank accounts to use for EFT payments. In addition, a series of studies has found that even when customers at these lower income levels *do* have bank accounts, they maintain insufficient balances to ensure that an EFT arrangement would provide the guarantee of automatic payment that PGW seeks.

Q. WHAT FUNCTION DOES AN EFT PAYMENT PLAN SERVE?

A. One primary "rule" with respect to designing collection programs is to design the program to address the underlying reason why customers do not pay their bills. There is considerable information on why customers do not pay. I have attached my review of why customers do not pay as Appendix B. As you can see, directing mandatory EFT payment plans toward customers with incomes at 250% of the Federal Poverty Level or below does not address the underlying reason why bills are not paid in the first instance. Directing EFT payment plans toward higher income customers, however, does match the collection technique with the cause of the underlying nonpayment.

Q. IS THERE A SECOND ALTERNATIVE THAT YOU PROPOSE?

A. Yes. It is clear that the primary reason for nonpayment of natural gas bills is the high burden which winter natural gas heating bills place on customers. While this is primarily true for low-income customers, it is true across-the-board as well. I reach this conclusion based on a study of nearly four years of payment data for both fuel assistance recipients and non-fuel assistance recipients in the State of Iowa. I have attached a copy of that study as Appendix C. I find that levelizing bills, and eliminating the peaks in winter natural gas bills, will not only improve payment patterns, but will help the Company by generating a prepayment of some portion of the winter bills before they become due.

Based on this analysis, I conclude that PGW should not be held to an historic billing structure under which customers are billed after-the-fact based on current

usage. Instead, PGW should be allowed automatically to place residential customers on levelized budget billing plans. Customers could, upon a demonstration of creditworthiness, be allowed to opt out of the levelized budget billing.

Q. WILL A MOVE TO MANDATORY BUDGET BILLING YIELD ANY ADDITIONAL COLLECTION ADVANTAGES TO PGW?

A. Yes. The impact of high winter heating bills on increasing arrears has been documented throughout the nation. A study released by the National Energy Assistance Directors' Association (NEADA) in April 2001 reported on both the level of arrears and the number of utility customers subject to the termination of service coming out of the winter heating season that year. High winter gas rates combined with cold temperatures resulted in substantial increases in winter bills. As a result, state-after-state reported dramatic increases in arrearages.

- Indiana reports that arrearages have increased to $30.5 million from $14.4 million at the same time last year.
- Iowa reported that more than 180,000 families had more than $34.5 million in arrearages, more than double last year's amount.
- Kansas reported that customers have two to three times the level of arrears they had at the end of the 1999/2000 winter heating season.
- Minnesota reported that the average residential arrears increased from $168 last year to $267 this year.

- One Louisiana utility reported an increase in arrears from $14 million to $32.9 million in that one winter heating season.

Pennsylvania did not provide information about the changes in arrearage levels.

Consider the implications of this for PGW. PGW states that it "collects a huge percent (75%) of its total revenue in the winter months. . ." (Petition, para. 15). One problem with this concentration of revenue within the winter months, combined with high gas bills and declining real income within the City, is that the Company has a substantial level ($137.5 million) in what it refers to as "unprotected accounts receivables." (Petition, at para. 19). The Company continues to state: "Because of the sheer volume of the problem, PGW will not be able to complete the collections process for these 133,000 customers [in arrears] (i.e., either receive full payment, enter into a payment agreement or terminate service) until late June." (Petition, at para. 19). PGW expresses concern because it anticipates a further increase in natural gas prices of $77 million for the winter of 2004/2005. (Gyory Direct, at 11).

Given the above information, it seems clear that one impact of mandatory budget billing would be to improve the Company's cash flow by generating prepayments of winter revenue. Through budget bill, PGW customers will have paid some portion of their winter heating bill during the non-heating months. Thus, if PGW does experience substantial price increases this winter, customers will at least

have prepaid some portion of those bills. As a result, if customers do miss winter payments, they will be placing a smaller proportion of PGW revenue in jeopardy.

Q. WHAT DO YOU CONCLUDE?

A. I conclude that PGW's request for Chapter 56 waivers is premature. Reasonable alternatives exist to the grant of Chapter 56 waivers sought by PGW. The alternatives recommended above can yield immediate results for PGW's collection efforts. I recommend that, PGW convert its residential customers to mandatory budget billing in order to begin to receive the affordability and prepayment benefits offered by such a billing approach. Prior to such conversion, PGW should provide consumer notice and education as to the reasons for the conversion, the benefits to individual consumers arising from the conversion, and the benefits to the Company arising from the conversion. While this notice and education process will likely mean that the conversion cannot happen early in the fall, the conversion of consumers to mandatory budget billing will offer benefits to the Company in the long term.

In addition, PGW's Collections Initiative appears to be generating positive results. The Company should be required to allow that Collections Initiative to continue so that its impacts on collections can be evaluated. Pursuing collections within Chapter 56 requirements should be the highest priority for the Company and can produce improved collections as the Collections Initiative has shown.

PART 2:

PGW'S SPECIFIC CHAPTER 56 REQUESTS.

A. General Overview Comments.

Q. IS THERE A GENERAL APPROACH THAT YOU AND THE OFFICE OF CONSUMER ADVOCATE HAVE TAKEN TO THE PGW WAIVER REQUESTS?

A. Yes. Clearly something is amiss at PGW. Now is not the time to "just say no" to PGW waiver requests. As seen above, both the OCA and myself have endeavored to offer reasonable alternatives to the waiver requests. Many of the specific waiver requests, however, are not in the public interest and should not be granted.

Q. IS THERE A GENERAL OBSERVATION THAT YOU WISH TO MAKE ABOUT PGW'S WAIVER REQUESTS?

A. PGW's waiver requests lack adequate evidentiary or data-based analysis. The Company provides no data supporting their assertions that the specific waiver requests it seeks address specifically-identifiable problems on the Company's system. Indeed, as I indicate below, many of the assertions advanced by the Company are based on stereotypes or anecdotal information rather than on data-based analysis. The Company provides no data supporting its conclusions that the waiver requests will generate the results it postulates. While the Company sets forth broad statements of the financial impacts of its proposed waiver requests, it presents no information or supporting data to support those broad statements.

After its eighteen month investigation into the control of uncollectible accounts in 1991 and 1992 (Docket No. I-900002), BCS concluded with respect to Chapter 56: "In short, the standards in Chapter 56 are effective collection tools provided companies properly categorize their customers and correctly apply all pertinent provisions. Where Chapter 56 is ineffective, that is with customers with an inability to pay, the problem is not Chapter 56. Other programs are needed to address this problem. . ." (BCS Final Report, at 114). Given that conclusion, based on substantial factual inquiry, I would submit that to the extent that PGW seeks to have multiple waivers of Chapter 56 regulations, PGW should be required to make a clearer evidentiary showing, and responding parties should be allowed to engage in a reasonable and adequate factual inquiry into the waiver requests, before any such waivers are approved.

Q. DO YOU HAVE GENERALIZED CONCERNS ABOUT THE WAIVERS SOUGHT BY PGW IN THIS PROCEEDING?

A. Yes. Each of the specific waiver requests submitted by PGW has an impact unto itself. The Company seeks to constrain the availability of payment plans (Request #1, #5). The Company seeks to broaden its ability to terminate service (Request #2, #4, #6). The Company seeks to increase the financial consequences of nonpayment (Request #3). The Company seeks to reduce notice requirements. (Request #7, #8). Each of these waiver requests individually has specifically identifiable consequences, many of which I discuss below. What tends to get lost

in the discussion, however, is the synergistic impacts that the package of requests as a whole will have on PGW customers. The compounding effect of the package of waiver requests is to strip PGW customers of much of their ability to be protected against the loss of essential home heating services. One of the stated purposes of Chapter 56 is to protect against unreasonable termination of service. (52 Pa. Code §56.1).

It is important to note, for example, how BCS emphasized the inter-relatedness of proposals in its Draft Report in the previous docket on the control of uncollectible accounts. In setting out its recommendations, BCS noted that "these groups reflect the Bureau's perspective that the recommendations are interdependent, and as such, no single recommendation is meant to stand alone. . .Since the recommendations are interdependent and as a whole provide a balanced approach, failure to implement one recommendation may affect the impact of effectiveness of other recommendations." (BCS Final Report, at 6).

Q. DO YOU HAVE ANY FINAL GENERALIZED COMMENT ABOUT THE PGW WAIVER REQUESTS?

A. PGW structures many of its waiver requests to apply only to BCS Level 3 and Level 4 customers. The implicit message in these requests is that if customers live with incomes above 150% of the Federal Poverty Level, these households are no longer "low-income" and thus do not require the protections offered by Chapter 56. It should be remembered, however, that BCS Level 3, in particular,

covers a wide range of households. Working poor households, as well as seniors receiving fixed incomes through Social Security, frequently have incomes falling just above 150% of Federal Poverty Level. In addition, as I describe in more detail below, 150% of the Federal Poverty Level falls below that income which is necessary in Pennsylvania for a household to live a minimally sufficient life.

The choice of 150% of Federal Poverty Level as the demarcation of households that are provided low-income assistance contrasted to those that are not finds its historical roots in the federal LIHEAP program. Due to federal budget constraints, LIHEAP eligibility has often been set at 150% of the Federal Poverty Level. This decision, however, reflected constrained federal funds, not a decision that households with higher incomes did not "need" assistance, or merit consumer protections. The federal LIHEAP statute allows a state program to increase LIHEAP eligibility standards to 60% of the state's median income. As a rule of thumb, 50% of median income is generally considered to be roughly equivalent to 200% of Federal Poverty Level. Thus, the LIHEAP statute, itself, recognizes that inability-to-pay can go to well above 200% of the Federal Poverty Level. Indeed, as LIHEAP has been supplemented in recent years through emergency appropriations, some states have increased their LIHEAP eligibility to the full 60% of median income allowed by statute. It is important not to accept the implicit assumption that merely because a household has income above BCS Level 2, that household *a priori* can be found to have an ability-to-pay its home heating bills.

In a related vein, it is important to remember that Chapter 56 was not designed to protect the "deadbeats" that exist within any given population. It is an unfortunate fact of life that no matter what system of consumer protections is developed, some extent of "gaming the system" can be perpetrated. In fact, no matter what system is developed, some amount of outright fraud is possible. The existence of that potential, however, is no reason to introduce wholesale revisions into the system. Chapter 56 is not designed to protect those deadbeats. It is a system that is designed to help rehabilitate customers who may fall into arrears on their utility bills. It works to assist marginal customers, such as working poor customers that make too much money to be eligible for public assistance but too little money to consistently be assured of being able to pay their home energy bills. It works to prevent collection mechanisms from exacerbating rather than helping to resolve payment problems.

After an extensive empirical review of credit and collection actions by Pennsylvania's electric and natural gas utilities, the Pennsylvania BCS concluded in 1992 that "more generally, BCS believes that Chapter 56, when properly applied, is effective and provides reasonable methods of dealing with non-low income delinquencies. . .In short, the standards in Chapter 56 are effective collection tools provided companies properly categorize their customers and correctly apply all pertinent provisions." (BCS Final Report, at 113, 114).

Q. HAS THE COMMISSION REACHED SIMILAR CONCLUSIONS MORE RECENTLY?

A. Yes. In its Opinion and Order in *Frayne v. PECO Energy* (Docket No. C-20029005), the PUC stated that "The 2001 Universal Service Programs and Collections Performance Report reveals a range of gross bad debt write-offs from a low of 1.5% to a high of 2.8% for those electric companies that participated in the survey. This data leads us to conclude that most energy companies have found Chapter 56 compliant programs to be effective in managing over-due accounts and payment troubled customers. This does not suggest that Chapter 56 contributes to dramatic increases in uncollectible accounts." (Opinion and Order, September 10, 2003).

Q. WHAT DO YOU CONCLUDE?

A. PGW has provided no compelling argument, and certainly no factual information, to conclude otherwise with respect to itself.

B. 52 PA. CODE §56.191

Q. PLEASE EXPLAIN THE FIRST WAIVER REQUESTED BY PGW.

A. PGW proposes to modify the payment arrangement procedures for restoration of service contained in Section 56.191 for Level 3 and Level 4 customers. Section 56.191 provides that a utility must reconnect service by the end of the first full working day after full payment of outstanding charges and a reasonable reconnection fee is received; however, these amounts can be amortized over a

reasonable period of time. PGW requests that Level 3 and Level 4 customers be required to pay the full amount of the outstanding balance and restoration fee without a payment arrangement before service can be restored. Petition at 19-20. PGW estimates that this will result in a $4.2 million savings.

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. PGW's waiver request assumes that Level 3 and Level 4 customers have, by virtue of the fact that they have incomes above the Bureau of Consumer Services (BCS) Levels at which low-income rate affordability is provided, an ability to consistently pay their bills. This is demonstrably in error. In particular, Level 3 customers constitute the working poor, many of whom are living from paycheck to paycheck and do not qualify for PGW's CRP or other social program. Level 3 customers may not be able to provide payment in full to have their service restored but may be able to make monthly payments. Without the ability to enter into a payment arrangement, these customers may be left without heat during the winter heating season.

Q. WHAT DATA DO YOU HAVE TO SUPPORT THAT CONCLUSION?

A. The National Priorities Project documented its the minimum monthly costs for a four-person household in each state in 1999. This research found that a four person household in Pennsylvania (two adults with two children) would need, on an after-tax basis, $34,069 a year (1999$) to maintain a subsistence budget.

Q. HOW DO THESE FIGURES COMPARE TO THE POVERTY LEVEL?

A. The 2001 poverty level for a four-person household was $17,650. The Pennsylvania cost of living (on an after-tax basis) is thus nearly 200% of the Poverty Level. It is important to note that this budget I have identified is merely a subsistence budget. It may not meet a household's entire range of basic needs. According to the National Priorities Project, the household purchases day care that is 30% cheaper than the statewide average. The household spends half of what the average family spends on transportation. There is no savings for repairs of a car, the home, or any appliances. There is no money for a college education or a vacation. There is certainly no savings for retirement.

Q. IS THERE OTHER DATA DOCUMENTING THAT 150% OF THE FEDERAL POVERTY LEVEL IS NOT AN ADEQUATE MEASURE OF ABILITY-TO-PAY?

A. Yes. PathwaysPA quantified a "self-sufficiency standard" for Pennsylvania in 2001.[1] According to the Self-Sufficiency Standard for Pennsylvania: 2001, a three person household (one adult, one preschooler, one school age child) would require a monthly wage of $3,156 (an annual wage of $37,872). This wage is nearly 260% of the 2001 Federal Poverty Level of $14,630 for a three-person household. In addition, a four-person household (two adults, one preschooler, one school age child) would require a monthly wage of $3,567 (an annual wage of $42,804). This wage is more than 240% of the 2001 Federal Poverty Level for a household of four.

[1] Self-sufficiency standards are used for a number of purposes. One is to compare those public assistance benefits needed to fully cover household costs. Some private and public employers also use self-sufficiency standards as a benchmark against which to compare the level of wages.

Q. DO YOU HAVE REASON TO BELIEVE THAT THE WORKING POOR, IN PARTICULAR, WILL NOT HAVE SUFFICIENT SAVINGS TO MAKE LUMP SUM PAYMENTS TOWARD AN OUTSTANDING ARREARS?

A. Yes. Substantial research has examined the nature of the "unbanked" population. The "unbanked" population is that group of persons who do not maintain either checking or savings accounts. These "unbanked" consumers are overwhelmingly poor. Four of five have incomes below $25,000. Moreover, even low-income households that do have bank accounts frequently have insufficient savings to make lump sum payments toward expenses such as a utility deposit.

Q. ARE THERE REASONS WHY WORKING POOR CUSTOMERS MIGHT FALL INTO ARREARS AND THEN HAVE INSUFFICIENT INCOME TO RETIRE THOSE ARREARS, ALONG WITH ASSOCIATED FEES, IN ONE LUMP SUM?

A. Yes. In 2003, I performed a study for the National Fuel Funds Network on the ability of working poor households to maintain payment arrangements. The observations that I made with respect to payment arrangements are equally applicable to utility bills in general. I have attached a copy of that NFFN paper as Appendix D. Working poor households, in particular, are likely to have incomes above the eligibility guidelines for public assistance. Despite this, they are also likely to have incomes that are not only insufficiently high to allow them to meet

their living expenses without occasional disruption, but that are also insufficiently stable to allow them to meet their living expenses without occasional disruption.

Q. WHAT DO YOU CONCLUDE?

A. Based on the above analysis, I reach two conclusions. First, I conclude that PGW has not justified its proposal to waive PUC regulations regarding payment plans for Level 3 and Level 4 customers. Second, I conclude that the proposed waiver request will affirmatively harm customers.

Q. DO YOU PROPOSE ANY ALTERNATIVES?

A. Yes. As stated above, mandatory budget billing, along with the mandatory use of Electronic Funds Transfer (EFT) for payment plans, are appropriate alternatives.

C. 52 PA. CODE §56.100

Q. PLEASE EXPLAIN THE SECOND WAIVER REQUESTED BY PGW?

A. PGW's Petition proposes to waive the Chapter 56 provisions pertaining to winter terminations. 52 Pa. Code § 56.100 prohibits termination of heat-related services from December 1 through March 31, the winter moratorium period. If a reasonable payment arrangement cannot be reached, PGW can request from the Commission permission to terminate the customer. PGW wishes to waive the prohibition of termination during the winter moratorium period for Level 3 and Level 4 customers.

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. PGW's waiver request assumes that Level 3 and Level 4 customers have, by virtue of the fact that they have incomes above the Bureau of Consumer Services (BCS) Levels at which low-income rate affordability is provided, an ability to consistently pay their bills. As I demonstrated above, this is demonstrably in error.

Q. IS THERE ANY OTHER EMBEDDED ASSUMPTION INHERENT IN THE PGW REQUEST THAT IS IN ERROR?

A. PGW's implicit argument behind the request to waive the winter moratorium is that the PUC's winter moratorium causes an increase in the nonpayment of bills during the moratorium period. The PUC has found this not to be the case. According to a 1983 BCS analysis, contrary to the argument by the utility companies, the Pennsylvania winter shutoff moratorium does not result in an increase in the number of unpaid bills, or the amount of unpaid bills, that would have existed in the absence of a moratorium. The BCS study reported that:

> Average overdue bills are at a low in November and rise to a high point in March or April. The apparent relationship of this pattern to Public Utility Commission regulations is obvious. That is, arrears are greatest at the end of the Commission's winter termination restrictions (December 1 to March 31 of the following year) and have been reduced to their lowest point immediately prior to the introduction of those restrictions for the following year. This pattern is consistent with the assertion put forward by utilities that they would be able to control arrearages if there were no winter termination restraints. However, the seasonal fluctuations are substantial only for heating accounts. Arrearages for non-heating accounts show only minor seasonal fluctuations. A comparison of [the data] suggests a simple explanation for this difference, that is, that the size of arrearages is related to the size of monthly bills. Heating customers' bills grow

> radically in the winter and so do their arrearages. Non-heating customers' bills change very little seasonally and their arrearages follow suit. In other words, if the assertion that winter termination restraints invite nonpayment were correct, then non-heating arrearages should show the same seasonal pattern of variations as do heating arrearages. That they do not casts substantial doubt on the assertion that PUC winter termination restraints are responsible for willful non-payment and consequent collection problems.[2]

This Pennsylvania report introduces the notion that any assessment of arrears must control for the impact of monthly bills. The BCS report is consistent with the BCS recommendation, often stated, to use a "weighted arrears" or "bills behind" statistic to factor out the impact of increased arrears caused by factors other than nonpayment. BCS explains that its "bills behind" statistic "permits comparisons to be drawn between companies by eliminating the effects of different customer bills on arrearages." Without such a measure, "the interpretation of average arrearages, either over time or in comparison between companies, presents some difficulties."

Q. DO YOU HAVE INDEPENDENT REASON TO BELIEVE THAT THE 1983 BCS CONCLUSIONS REMAIN VALID TODAY?

A. Yes. I performed a study of the Iowa winter shutoff moratorium for the Iowa Department of Human Rights, the state agency that administers the federal Low-Income Home Energy Assistance Program (LIHEAP) in Iowa. A copy of that study is attached as Appendix E. In that study, I found as follows:

> Iowa's LIHEAP recipients do not experience an increase in the number of weighted "bills behind" they incur during the winter shutoff moratorium period. While average arrears increase during the winter, this increase is a reflection of the fact that winter bills are higher, not of the fact that LIHEAP recipients are a larger number of months behind in their payments.

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[2] Joseph Farrell (1983). ***Utility Payment Problems: The Measurement and Evaluation of Responses to Customer Nonpayment***, at 19, Pennsylvania Public Utility Commission: Harrisburg, PA

- Iowa's LIHEAP recipients do not reduce the number of payments made each month resulting in a $0 balance during the shutoff moratorium period.

- Iowa's LIHEAP recipients continue to make payments each month during the winter moratorium period even when such payments do not reduce the account balance to $0. Partial payments continue to be made both toward bills for current usage and toward arrears.

- Iowa's LIHEAP recipients do not reduce the total dollars paid each month relative to the total bills for current usage rendered each month during the shutoff moratorium period.

- Iowa's LIHEAP recipients continue to make winter month payments equal to 90+% of the winter month bills despite the presence of the winter shutoff moratorium.

- Iowa's LIHEAP recipients do not reduce the number of total payments they make relative to the number of bills they receive during the shutoff moratorium period.

Iowa's winter shutoff moratorium is an important health and safety protection for Iowa's low-income customers who frequently find that they face high home energy bills that are simply not affordable. The moratorium has been implemented without creating substantive nonpayment problems for Iowa's utilities.

Q. IS THERE ANOTHER IMPORTANT REASON NOT TO ALLOW A WAIVER OF THE WINTER SHUTOFF PROTECTIONS FOR PGW?

A. Yes. Pennsylvania's winter shutoff protections[3] provide critical health and safety protections for customers having difficulty paying their winter natural gas bills. Problems are caused not only by the nonpayment of bills, but by the payment of bills as well. The recent National Energy Assistance (NEA) survey performed by the National Energy Assistance Directors Association (NEADA)[4] reports that

[3] I recognize that Pennsylvania does not have a complete winter shutoff moratorium.

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

"despite. . .significant residential energy expenses, most low-income households pay their energy bills regularly. But at what cost?" 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.

I have attached the NEADA survey as Appendix F.

Q. WHAT WILL BE THE IMPACT OF GRANTING PGW'S WAIVER REQUEST?

A. Granting PGW's waiver request of winter shutoff protections will place more households in the position of making the untenable choices outlined above. PGW's consultant, H. Gil Peach, has correctly noted that these financial choices are no longer limited to the very low-income. Pennsylvania's cold weather rules protect not only those customers who do not pay, but those who do pay as well. The PGW waiver request should be denied.

Q. ARE THERE REASONABLE ALTERNATIVES TO PGW'S REQUESTED WAIVER OF WINTER SHUTOFF PROTECTIONS?

B. Yes. PGW should move forward with the mandatory budget billing and mandatory EFT payment plan proposals that I describe in more detail above.

D. 52 PA. CODE §56.32

Q. PLEASE EXPLAIN THE THIRD WAIVER REQUESTED BY PGW?

A. PGW's Petition proposes to waive the Chapter 56 provisions pertaining to credit standards. Section 56.32 allows an applicant to avoid a deposit by showing a prior utility payment history, by owning property or leasing property for at least one year, or by otherwise demonstrating that he or she is not a poor credit risk. PGW wishes to set a flat deposit fee for all customers who initiate service with PGW. PGW proposes to set the deposit at twice the average monthly bill for customers, which is $250 for heating customers and $100 for non-heating customers. If a heating customer is restoring service after termination, a deposit of $500 would be required. For non-heating customers seeking restoration, a deposit of $200 would be required.

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. PGW's waiver request assumes that deposits are an effective and appropriate response to nonpayment. This assumption is in error. Moreover, alternatives exist that will more appropriately respond to the risk of lost revenue from nonpayment.

Q. WHAT IS THE PURPOSE OF A UTILITY DEPOSIT?

A. The *sole* purpose of a deposit is to minimize the possible money loss to a utility due to nonpayment of bills. This principle has been ignored by PGW in its waiver request concerning residential deposits. Late payment, standing alone, does not represent an adequate predictor of the loss of revenue due to bad debt. I performed a study for the Washington Utilities and Transportation Commission that empirically examined this relationship. That study is attached as Appendix G.

Q. WHAT DID YOU FIND IN YOUR STUDY FOR THE WASHINGTON COMMISSION?

A. My study examined data from 25 utilities in Colorado, Massachusetts, Michigan, New York, Vermont and Ohio. It presents data for gas, electric and combination (gas/electric) companies. It presents geographically disaggregated data. It presents data from small and large companies. It presents data using some 30-day arrears and some 60-day arrears. The data was designed to test whether a customer who pays late poses a risk to the company of ultimately losing revenue due to disconnection and bad debt.

As I note above, the only purpose of a deposit is to protect against revenue loss, not to protect against late payments. What I found was that late payment is no predictor of the potential loss of revenue through disconnection and bad debt. The number of delinquent accounts that are actually eventually disconnected ranges from one

percent (1%) to five percent (5%). In the case of the best case of prediction, therefore, use of late payment as the predictor of the potential loss of revenue would be wrong 95 out of 100 times. And even that rate of success was obtained in only one of 25 companies. In six (6) of the 25 companies, use of late payment as a predictor would be wrong 96 out of 100 times; in eight (8) of the 25 companies, it would be wrong 97 out of 100 times; in seven (7) of the 25 companies, it would be wrong 98 out of 100 times; in three (3) of the 25 companies, it would be wrong 99 out of 100 times.

For the WUTC, I concluded that being late on one's payment more than once in a six month period may indeed represent an "unsatisfactory payment history" from several different perspectives. Such a payment history may impose working capital costs on a utility. It may cause a utility to incur credit and collection costs. But these adverse consequences are not the consequences against which a deposit is designed to protect. And, from the perspective of whether a customer is going to ultimately contribute to the permanent loss of revenue through bad debt, the mere fact that a customer has been late in his or her payment is no predictor at all.

Q. HOW IS THIS APPLICABLE TO THE PGW WAIVER REQUEST?

A. PGW takes its Chapter 56 waiver request regarding deposits one step further than I studied in Washington State. PGW seeks permission to automatically impose a deposit irrespective of payment history or credit history. The Company attributes, without substantiation, a substantial savings ($7.6 million) to these automatic

deposits. I conclude that PGW's approach and its calculations are incorrect. Requiring deposits in the way PGW proposes will not generate the cost savings it claims.

In addition, as I indicate in my testimony above, many working poor households will not have the financial assets to afford a deposit. These households do not have bank accounts from which they can draw a utility deposit in an amount ranging up to $250. Imposing such a deposit demand would represent a substantive barrier to having households obtain PGW service. This is particularly true if the PUC grants PGW's request to eliminate the payment period over which a deposit can be collected.

Finally, PGW's request for permission to apply a customer's deposit against his or her account after twelve months, rather than refunding the deposit to the customer as is required by PUC regulation, may well be counterproductive. Applying a deposit against a customer's bill may well be counterproductive to creating prompt bill paying habits rather than productive. In response to discovery from the Office of Trial Staff (OTS), PGW reported that its average annual residential heating bill in the past seven years ranged from $870 (2002) to $1,301 in 2003. A $250 deposit would thus represent a payment equal to between 20% and 30% of the total annual bill. Rather than generating regular monthly payments, in other words, application of the deposit to the typical residential heating account would generate an extended series of months in which *no* payment would be required. This result is contrary to

the need to develop payment patterns that consist of making regular monthly payments.

Q. IS THERE A REASONABLE ALTERNATIVE TO THE ACROSS-THE-BOARD REQUEST FOR FLAT DEPOSITS FROM RESIDENTIAL CUSTOMERS?

A. Yes. The need for PGW is not to collect deposits from every customer. The need for PGW is to identify those customers that represent a risk of the permanent loss of revenue due to nonpayment. A number of Pennsylvania utilities have implemented a credit scoring pilot project involving the Energy Risk Assessment Model (ERAM) to accomplish precisely that. Pursuant to these pilots, credit scoring will apply to applicants for service who are not exempt from providing security deposits due to a favorable prior utility payment history. In addition, an applicant that is certified as low-income will not be required to post a deposit. If an applicant is unable to pay a security deposit, and indicates an inability-to-pay, the applicant will be referred to the appropriate agency to determine whether he or she is eligible for the company's Customer Assistance Program (CAP). Other protections are also included in these pilot programs.

Q. WHAT SIGNIFICANCE LIES IN THE FACT THAT PGW CLAIMS A LACK OF SOFTWARE TO IMPLEMENT CREDIT SCORING?

A. Any number of Pennsylvania electric and natural gas utilities are now pursuing credit scoring pilot projects. One aspect of PGW's response to its collection

problems is to redirect its resources into effective and efficient credit and collection activities. Given the experience of other Pennsylvania utilities, PGW should be required to direct its resources to credit scoring in the same manner as other utilities have been, in order to determine whether it will be of substantial assistance in identifying customers who present a risk of lost revenue through nonpayment.

Q. WHAT DO YOU RECOMMEND?

A. PGW should be permitted to apply a deposit to a customer's bill only if that customer presents a demonstrated risk of lost revenue through nonpayment. One way that such a demonstration can be made is if a particular customer has been terminated or had service discontinued. A second way for this demonstration to be made is through the ERAM credit scoring model in the same manner as is being done by other Pa utilities. Additionally, after one year of current payments, PGW should be required to return the deposit to customers unless the customer chooses to have it applied to his or her bill.

E. 52 PA. CODE §56.35 AND §56.83.

Q. PLEASE EXPLAIN THE FOURTH WAIVER REQUESTED BY PGW?

A. PGW's Petition proposes to waive Section 56.35. Section 56.83 requires an applicant to pay any outstanding residential account with the utility within the past four years for which the applicant is legally responsible and for which the applicant was billed properly. Section 56.35 prohibits a utility from requiring an

applicant to pay for residential service previously furnished to a person of another name, unless the applicant is legally responsible for that person. PGW requests that it be able to require an applicant to present positive identification to determine whether the applicant was a previous resident and, if so, may require the applicant to pay any outstanding residential account accrued on the residence within the last four years or for the time the applicant was a resident. Section 56.83 prohibits termination of service of service for non-payment of delinquent bills by a prior ratepayer at the same address.

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. This PGW request violates a host of legal tenets regarding regulatory law, family law, contract law, and consumer credit law. It impermissibly allows the denial of service for a collateral matter. It impermissibly allows PGW to impute an implied-in-fact contract when faced with an express contract with contrary terms. It impermissibly allows PGW to ignore spousal responsibility laws. It impermissibly allows PGW to communicate the existence of a consumer's debt to a third party. The request should be denied. I have attached an analysis of the lawfulness of holding a person responsible for their roommate's utility bill as Appendix H. I have attached an analysis of the lawfulness of holding one spouse liable for the utility bills of the other spouse as Appendix I.

F. 52 PA. CODE §56.97

Q. PLEASE EXPLAIN THE FIFTH WAIVER REQUESTED BY PGW?

A. PGW's Petition proposes to waive the Chapter 56 provision requiring reasonable payment agreements to avoid termination. With PGW's modification, customers at Levels 1-4 would be limited to only one payment arrangement. Customers would be required to pay a specified minimum monthly payment amount for Level 1 customers of $15, for Level 2 customers of $40, and for Levels 3 and 4 customers of $100.

Q. *SHOULD THIS REQUEST BE GRANTED?*

A. No. This PGW proposal commits a classic error of assuming a perfect correlation between the "ability to pay" of a customer with the "income" of a customer. I previously testified as to a study that I performed for the National Fuel Funds Network (NFFN) in 2002. In that study, I examined reasonable payment plan practices for working poor households in particular.

In my NFFN study, which I have previously attached as Appendix D, I reported that standard regulations adopted by utility regulators around the country provide that a utility shall take into account designated factors in deciding what payment plans are "reasonable." These factors include, but are not limited to, "ability to pay."[5] The phrase "ability to pay," however, as PGW does in this proceeding, is

[5] *See e.g.*, IDAPA 31.21.01.313 (2001) (Idaho); 83 Ill. Adm. Code 280 Appx. D (2001) (Illinois); CMR 65-407-860 (2001) (Maine); 4 CSR 240-13.060 (2001) (Missouri); MONT. ADMIN. R. 38.5.1415 (2001) (Montana); 52 Pa. Code § 56.97 (2001) (Pennsylvania); 16 TAC § 7.45 (2001) (Texas); Wis. Adm. Code PSC 113.0404 (2001) (Wisconsin).

often treated as being synonymous with "level of income." If a household's income is sufficiently high, the reasoning goes, the household is deemed to have an ability to pay its home energy bills.

Q. WHAT IS THE MORE REASONABLE APPROACH?

A. Taking into account the "ability to pay" of the working poor should involve *more* than simply taking into account income level. The *stability* of income is one additional aspect of the ability to pay of the working poor. The negotiation of a payment plan for utility arrears should take into account the potential instability of income amongst the working poor as one aspect of ability to pay. Income for the working poor, in particular, can be erratic and unpredictable. A working poor customer may not *know* in April what his or her income is going to be in July or August, let alone in the following December or January. Periods of unstable wages may make payments that were reasonable in April unreasonable at a later date.

This income attribute of working poor households has been recognized in a variety of contexts. The instability of income has been found to be a barrier to effective budget counseling. The evaluation of one asset-building program, for example, reported that "staff and participants thought the budgeting worksheet. . .became obsolete almost immediately because participants' incomes were very unstable."[6] One major barrier to savings and asset accumulation by working poor households

[6] Dianne Lazear (September 1999). ***Implementation and Outcomes of an Individual Development Account Project***, at 12, Center for Social Development, Washington University: Saint Louis (MO).

involves their "irregular incomes."[7] One barrier to the long-term accumulation of assets has been found to be the "recurring crises," such as unemployment, which force working poor households to deplete their savings.[8] Individuals have been found to view saving and systematic budget planning as not worthwhile because of the inability to predict income and labor-market conditions.[9]

I found that working poor families tend to find themselves in lower quality hourly wage jobs, often marked by considerable income fluctuations due to the number of hours they are called upon to work. The Urban Institute quantified the types of occupations that characterize the working poor. Even aside from the level of wages,[10] the presence of hourly wages and unpredictable hours mark occupations that are the province of the working poor.[11]

I finally reported that families in the bottom quartile of income are significantly less likely to have access to paid sick leave, paid vacation leave, or flexible work schedules than families with higher incomes. More

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[7] *See e.g.*, David Smyth (1993). *Toward a Theory of Savings*, in James Gapinski (ed.). ***The Economics of Savings***, at 47 – 92, Klewer Academic Publishers: Boston; Franco Modigliani (1986). "Life cycle, individual thrift, and the wealth of nations," ***American Economic Review***, 76(3): 297-313.

[8] Cathleen Finn, *et al.* (1994). "Assets and Financial Management Among Poor Households in Extreme Poverty Neighborhoods," ***Journal of Sociology and Social Welfare***, 21(4):75-94.

[9] Arthur Kennickell, Martha Starr-McCluer, and Annika Sunden (1997). "Saving and Financial Planning: Some Findings from a Focus Group," ***Financial Counseling and Planning***, 8(1):1-8.

[10] The median hourly wage of primary earners in working poor families ($7.55) is less than half the median wage of primary earners in families with incomes above 200% of poverty ($16.67).

[11] Acs, Gregory, Katherin Ross Phillips and Daniel McKenzie (May 2000). ***Playing by the Rules but Losing the Game***, at 10 – 11, Urban Institute: Washington D.C.

than three fourths (76 percent) of workers in the bottom quartile of family income lack regular sick leave; more than half (58 percent) do not have consistent vacation leave. Families in the bottom income quartile are more likely than other workers to lack *both* sick leave *and* vacation leave.

The lack of paid leave time may directly affect the ability of a working poor customer to maintain payments on a payment arrangement. A person working 35 hours a week on hourly wages may lose three days of work simply due to a sick child missing school and requiring care. If no leave time exists for that employee, the sick child translates into permanently lost wages. Personal illness, too, results in permanently lost wages, whether illness keeps a worker away from his or her job for a day, for two days, or for a week.

One of my primary recommendations in the NFFN report was to avoid the one-strike-you're-out payment plan structures now being requested by PGW.

Q. IS THERE ANY CONFLICT BETWEEN YOUR RECOMMENDATION AND THE PUC'S RECENT DECISION LIMITING THE REQUIREMENT TO OFFER NEW PAYMENT PLANS?

A. No. The PUC's recent decision in *Frayne* allows for payment plans to be renegotiated should the customer be able to show changed circumstances. This is precisely the recommendation that I advance as well. As the attached NFFN report demonstrates, the problem that I seek to address is the situation where working poor customers face changed circumstances. They should be allowed to make that demonstration and to negotiate a new payment plan based on those changed circumstances.

Q. IS THERE A REASONABLE ALTERNATIVE TO PGW'S REQUEST TO IMPLEMENT A ONE-STRIKE-YOU'RE-OUT PROVISION FOR PAYMENT PLANS?

A. Yes. The NFFN report which is attached presents a series of recommended payment plan alternatives that appropriately respond to the fragility of income of working poor households in particular. Each of these recommendations is consistent with past PUC precedent and is appropriate for PGW. More specifically, I recommend that PGW adopt the following payment plan policies:

- On the front-end, PGW should build check-points into the payment plans of working poor households with substantial arrears. Through such a process, PGW would break-up arrears above certain threshold amounts into multiple component parts. A payment arrangement for a $400 arrears, for example, might be made subject to a payment plan for the first $200 over a 3-month period. Upon successful completion of that plan, PGW would develop a payment plan for the next increment of arrears.[12]

- Subsequent to entering into a payment plan, PGW should provide for a revision to the payment plan should customer circumstances change.

[12] My NFFN analysis documents the advantages to approaching large arrears in this fashion.

With working poor households, in particular, as I discuss in detail above, this ability to revisit payment plan terms is important.

G. 52 PA. CODE §56.82

Q. PLEASE EXPLAIN THE SIXTH WAIVER REQUESTED BY PGW?

A. PGW's Petition requests that PGW be able to terminate service on Fridays. Section 1503(a) of the Public Utility Code, as well as Section 56.82 of the Commission's regulations, prohibit Friday shut-offs for nonpayment of service.

Q. SHOULD THIS REQUEST BE GRANTED?

A. In order for this waiver to be granted, PGW should be required to document that consumers will have access to the full range of community and commercial services needed to allow a customer to appropriately respond to the termination of service. Should such a documentation be made, PGW's waiver request should be granted on an experimental basis.

PGW claims that this regulation was promulgated at a time when customers were not able to pay bills on Fridays or Saturdays due to limited banking hours and lack of ATM machines. PGW, however, erroneously attributes the need to avoid Friday shutoffs only to the need to gain access to banks. Other responses are as common if not more so. I had occasion to consider the responses of low-income customers to the disconnection of service in my recent study on home energy insecurity in Missouri. I found that "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."[13] Accessing energy assistance to pay utility arrears after a shutoff occurred half again as often as paying the past due utility bill from a household's own resources.

My Missouri study did not distinguish between private and public sources of energy assistance. The energy assistance referenced by survey respondents could refer to basic federal LIHEAP assistance. It could refer to federal LIHEAP crisis assistance. It could just as easily refer to private fuel funds or other community-based organizations.

Work by the National Regulatory Research Institute (NRRI) released in April 2003 further supports the conclusion that it is not merely banks that consumers would turn to in response to an actual or pending service disconnection. The NRRI study *Where Consumers Go for Help Paying Utility Bills* (April 2003) reports that community advocacy organizations, social service agencies, and state government are among those entities to whom a consumer would turn for assistance. I have attached a copy of the NRRI study as Appendix J. These

[13] Roger Colton (June 2004). ***Paid but Unaffordable: The Consequences of Energy Poverty in Missouri***, at 46, prepared for National Low-Income Home Energy Consortium.

agencies would not be available to a household that experienced a disconnection of service on a Friday and who would need to seek assistance over the weekend. This is especially true where someone comes home from work on Friday to find that service has been terminated.

Finally, one important consumer protection is the ability to avoid a disconnection of service when a medical emergency is present. Whether or not banks are open on Saturdays or weekends, obtaining a medical certificate would generally not be possible on weekends. The failure to be able to respond when a medical emergency exists could pose life-threatening consequences.

Just as importantly, the Pennsylvania PUC would not be available. Should the customer believe that he or she had been unreasonably disconnected, that customer would not be able to seek immediate relief from the PUC.

Q. WHAT DO YOU CONCLUDE?

A. The Chapter 56 regulation limiting the days on which service is disconnected provides important consumer protections to consumers. The PUC's regulation in this regard is certainly not unique. Other state utility commission regulations limit service disconnections on Fridays, or at other times on or before days when banks are closed or consumers cannot gain access to assistance that would help address the loss of service. Before any waiver of this important consumer protection is granted, PGW should be required to factually document that a consumer has

access to the full range of services that are necessary to appropriately respond to the loss of natural gas service.

H. 52 PA. CODE §§ 56.94 AND 56.95

Q. PLEASE EXPLAIN THE SEVENTH WAIVER REQUESTED BY PGW?

A. PGW's Petition requests a waiver of the personal contact immediately prior to termination provision and the subsequent 48 hour notice posting requirement if personal contact is not made immediately prior to termination. According to Chapter 56, PGW is required to provide termination notice in three instances.

- First, pursuant to Section 56.91, PGW must provide written notice to the ratepayer at least 10-days prior to the date of the proposed termination.
- Second, pursuant to Section 56.93, PGW must make personal contact with the ratepayer or a responsible adult occupant at least 3 days prior to termination of service; and,
- Third, pursuant to Section 56.94, PGW must attempt to make personal contact in the same manner immediately prior to termination of service.

If PGW does not make personal contact immediately prior to termination in accordance with Section 56.94, PGW must post a 48-hour termination notice in a conspicuous location at the ratepayers residence and the affected dwelling.

PGW is requesting modification of Section 56.94 to give it discretion to personally contact a responsible person at the residence of the ratepayer

immediately prior to termination. Furthermore, PGW is requesting waiver of 56.95, which requires the posting of a termination notice at the residence of the ratepayer. PGW's modifications provide that the only prior personal contact required of PGW before termination is the personal contact requirement contained in Section 56.93.[14]

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. Eliminating the notice requirements as requested by PGW eliminates the potential ability of a notice to perform its intended functions. As I explained in detail elsewhere, through a shutoff notice, a consumer should be provided with the information he or she needs to quickly and intelligently take available steps to prevent the threatened termination of service. However, additional functions can be served as well. For example, one *different* function of a shutoff notice is to permit the customer to make alternative plans after service is, in fact, terminated. Consider, for example, that the right to receive notice does not depend upon the right to contest the disconnection of service. Regardless of whether the customers have a right to contest the discontinuance of service, they certainly have a right to know that service is being discontinued to enable them to protect themselves from damages that might occur.

Q. IS THIS AN IMPORTANT CONSUMER PROTECTION?

[14] Section 1503 of the Public Utility Code requires personal contact *at least three* days prior to discontinuance of service. 66 Pa. C.S. § 1503(b).

A. Unfortunately, yes. The Missouri study that I have previously discussed found that nearly one-in-five customers that experience a termination of service for nonpayment simply go without service as a result. Should households be in that situation, they should have a right to receive the notice which PGW seeks to eliminate.

Q. IS IT ONLY THIS PREPARATION FOR GOING WITHOUT SERVICE ABOUT WHICH YOU HAVE CONCERNS?

A. Clearly not. I prepared a study in 1999 looking at the various alternative courses of action that low-income households have available to them, and actually use, in response to pending service disconnections for nonpayment. Among the responses that customers utilize are:

- Signing up for a utility low-income program;
- Negotiating payment plans;
- Borrowing money from friends or family;
- Borrowing money from commercial institutions;
- Seeking pay advances;
- Rearranging other bills;
- Requesting public or private assistance;

A host of other responses were identified as well. I have attached this report as Appendix K. The point is that these alternative responses require time to pursue. At the time of a the ten day notice, households may well believe that they can pay the bill from their own resources (a result we know to be the case from the

Missouri study). The later notice, however, serves the precise function for which it is intended—to notify the customer that time is running out and that final payment arrangements must be made or alternative living arrangements pursued.

Q. WHAT DO YOU CONCLUDE?

A. The notice requirements which PGW seeks to waive serve important consumer protection functions. The availability of a host of services is necessary to help consumers respond to a loss of service. These services provide important health and safety protections. Unless or until PGW can demonstrate that this full range of services is available, the Company's waiver request should be denied.

I. TIME LIMITS FOR ACTING ON SHUTOFF NOTICES.

Q. PLEASE EXPLAIN THE EIGHTH WAIVER REQUESTED BY PGW.

A. PGW's Petition seeks to modify the BCS informal guideline requiring that a termination notice must lead to termination of service within 30 days of the notice if a customer does not enter into a payment arrangement to avoid shut-off. PGW states that if termination does not occur within 30 days, PGW must begin the entire process again with another 30-day termination window. PGW seeks to extend this 30-day period to 60-days.

Q. SHOULD THIS REQUEST BE GRANTED?

A. The Company should be permitted to demonstrate that extending the period in which shutoffs can occur subsequent to a notice will materially increase the

efficacy of its shutoff process. This waiver should be granted with certain protective conditions. In addition, the waiver should be granted only with a sunset provision effective 24 months after the final order granting the waiver, unless specifically extended by the PUC.

Q. WHAT CONCERNS LEAD YOU TO RECOMMEND LIMITING THE GRANT OF THIS WAIVER TO A LIMITED PERIOD OF TIME?

A. In order to assess the reasonableness of this waiver requested by PGW, it is necessary to consider the purposes and functions of a notice. Through a shutoff notice, a consumer should be provided with the information needed to quickly and intelligently take available steps to prevent the threatened termination of service. The notice should meet sufficiently stringent standards so as to protect all customers, given that customers are of various levels of education, experience and resources. The notice should be made at a meaningful time and in a meaningful manner. It should present truthful information.

To meet these standards, the notice should contain specific information and meet specific standards. For example:

- The notice should state the reasons for having the utility seek the termination of service.
- To fulfill the standard that the notice be "meaningful," it should give a clear and believable warning that termination is about to occur.

- The notice must inform the consumer of the required procedure by which the proposed termination can be avoided. It should, for example, mention the available procedure by which a disputed termination can be challenged.
- It must provide the amount that a customer needs to pay in order to avoid the termination.

In sum, through a shutoff notice, the customer should be informed clearly of the pending shutoff along with the means to avoid it.

Q. UPON WHAT DO YOU BASE THIS CONCLUSION?

A. To meet the requirement that the notice be "meaningful," it must give a clear and believable warning that termination is about to occur. The key word in this formulation is that the notice be "believable." Note, for example, the case of *Palmer v. Columbia Gas Co.*, where the utility's notice was invalidated when the utility sent out 120,000 to 140,000 shutoff notices each year while actually disconnecting only 6,000 households.[15] By sending repeated disconnect notices, with no collection follow-up, PGW would destroy the message contained by the notice. As a result, the basis for its claimed compliance with notice requirements collapses.

As discussed above, a notice of discontinuance serves several different functions. As time passes subsequent to the initial issuance of the notice, the efficacy of the notice deteriorates. Eventually, at some point after the final notice of

[15] 342 F.Supp. 241, 242 - 243 (N.D.Ohio 1972)

discontinuance is issued, if no action has occurred, the purpose of the notice is no longer served. Since the passage of time makes the initial notice void, it is as though the initial notice had not been issued in the first place. Under these circumstances, a new notice must be issued. Accordingly, the new notice must be issued using the same procedures as the initial notice with the proper amount owed.

It should be noted that providing notice of a pending discontinuance of service, when in fact such discontinuance is not imminent or intended, can be destructive to a customer's life, health and property and should be discouraged by the PUC. This is particularly true for low-income consumers. In addition to the NEADA study I discuss above, one study by the Iowa Department of Human Rights (the Iowa LIHEAP agency), for example, found that Iowa LIHEAP recipients go to extraordinary lengths to pay unaffordable bills. The Iowa study found, for example, that:

- More than 12% of the more than 3,000 Iowa survey respondents reported going without food for at least one meal a week to try to save enough money to pay their utility bills.
- More than 20% reported going without medical care, by either not filling prescriptions, taking prescription medicines in lower than prescribed doses, or by skipping or postponing doctor's appointments in order to save money to pay for utility bills.
- Nearly 10% reported not making their rent or mortgage payments in order to pay their home heating bills.

Customers should not be forced into making these decisions by threats of non-existent collection actions.

Q. IS THERE ANY OTHER REASON TO PLACE A TIME LIMIT ON THE EFFICACY PERIOD FOR PGW SHUTOFF NOTICES?

A. Aside from the social cost of empty collection threats, there is a business cost as well. A study by the New York Public Service Commission staff, for example, reported that:

> The effectiveness of Final Termination Notices as a means to encourage payments or to make payment arrangements prior to field action has deteriorated. The rate of customer non-responses to Final Termination Notices has increased from 33% in 1983 to 46% in 1987. This may result in part from customer perception that utilities threaten to terminate service, but rarely do. In 1983, 16% of the customers who did not make arrangements on their arrears in response to a termination notice had their service terminated; in 1987, only 9% of those customers had their service terminated.[16]

For both these business and social reasons, PGW's request to waive the requirement that notice procedures begin anew if the notice has not resulted in a disconnection within 30 days should be approved on a pilot basis.

Q. IS THERE ANY OPERATIONAL CONCERN THAT YOU HAVE IN THOSE INSTANCES WHERE SHUTOFFS DO NOT OCCUR WITHIN THE FIRST THIRTY DAYS AFTER A SHUTOFF IS ISSUED?

A. Yes. It is generally the case that the amount of arrears that appears on a notice of discontinuance is a different dollar amount than the total arrears on a utility bill. In addition, the amount of the bill that is outstanding (i.e., that bill which includes current charges in addition to arrears) will likely be different from the amount

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[16] David Sawyer and Phillip Teumin, ***Gas and Power Utility Uncollectibles and Collection Activity***, A Report by the consumers Services Division of the New York State Public Service Commission.

subject to the notice of discontinuance. Given these observations, it is important for customers to receive notice of what payment must be received in order to avoid the termination of service. The date and dollar amount that is on the notice of discontinuance should be that dollar amount which the customer needs to pay in order to prevent the discontinuation of service.

Q. WHAT DO YOU CONCLUDE?

A. One factor that leads to the decreased efficacy of shutoff notices is having a utility issue shutoff notices without those notices leading to the actual loss of service upon nonpayment. In this situation, nonpaying customers "learn" that shutoff notices can be ignored with little or no threat of consequences. This was the lesson in New York. This was the lesson of Columbia Gas. Given this observation, PGW should demonstrate that extending the period in which the actual disconnection of service can be implemented will increase the effectiveness of its disconnect procedures.

At the end of a 24 month period, however, before extending the grant of this waiver for additional time, PGW should be required to demonstrate, and the PUC should be required to find, that the waiver request has resulted in a material improvement in the PGW disconnect process without substantial offsetting harm to consumers.

J. 52 PA. CODE §191 AND §115.

Q. PLEASE EXPLAIN THE NINTH WAIVER REQUESTED BY PGW?

A. PGW's Petition that restoration of service should be extended from one day to seven days for "dig ups" and three days for "non-dig ups." Section 56.191 provides that "a utility shall reconnect service by the end of the first full working day" where restoration of service is required during April 1 through November 30. Section 115 requires that a utility act diligently to restore service on the day of receipt of a medical certification and shall restore service by the end of the next working day.

Q. SHOULD THIS REQUEST BE GRANTED?

A. No. Allowing PGW to take up to seven days for a service restoration imposes an unreasonable burden on customers, especially in situations where a medical certificate has been provided. PGW should, of course, be required to install curb boxes, when practical, at the time of any service disconnection requiring a dig-up. Then restoration of service will be less burdensome on the Company. Given this practical alternative, no reason exists that the service restoration would also require a dig-up.

It should be remembered, as well, that weather in Philadelphia can be quite cold in the months of April and November. Normal heating degree days for November in Philadelphia are roughly 540. Normal heating degree days for April in Philadelphia are roughly 380. Two of the past four Novembers (2000 and 2002)

have been colder than normal. I conclude that one cannot assume the lack of need for heating service simply because a natural gas shutoff falls between April and November.

Q. WHAT DO YOU CONCLUDE?

A. Allowing a seven-day period within which PGW can restore service will present serious health and safety concerns, particularly in the months of April and November. Given PGW's unique circumstances, however, requiring service restoration within by the end of the next full working day, however, may provide the Company insufficient time within which to restore service. Should this waiver be granted in whole or part, the PUC should limit the waiver to non-cold weather months. The PUC should further limit the waiver to those situations where a curb box does not exist or could not practically be installed at the time the Company digs up to terminate service in the first place.

PART 3:
PGW'S CUSTOMER RESPONSIBILITY PROGRAM (CRP).

Q. DOES YOUR TESTIMONY ADDRESS THE STRUCTURE OF PGW'S CUSTOMER RESPONSIBILITY PROGRAM (CRP)?

A. No. PGW presented no proposal to restructure its CRP low-income rate affordability program. There can be little question but that the costs that the CRP program are imposing upon PGW, like the costs of Customer Assistance Programs (CAPs) for other Pennsylvania natural gas utilities, are being stretched due to increasing natural gas prices today. No serious suggestion can be made,

however, that these increased CRP costs are attributable to changes made by PGW in response to regulation by the PUC. Before the PGW restructuring proceeding, the CRP required participants to pay 7.35% of their income toward the PGW bill. In its restructuring proceeding, the household percentages were adjusted to 8%, 9% and 10%, depending on the Federal Poverty Level at which the customer lives. This restructuring did not impose additional costs on the Company. While it is necessary to consider the impacts of the historically high natural gas prices on CRP (and other CAP programs), the time allowed for the prosecution of this proceeding, as well as the lack of a proposal by PGW, itself, did not permit OCA to develop such a proposal.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Investigation into Financial Collections Issues Regarding the Philadelphia Gas Works	:	Docket Nos.	P-00042090
		:		R-00049157
		:		M-00021612
		:		P-00032061

A THRU R

APPENDICES ACCOMPANYING
THE DIRECT TESTIMONY OF
ROGER D. COLTON

7/6/04 CLila

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b. **Volume 2:** ***An Evaluation of Low-Income Utility Protections in Maine: Payment Arrangements for Maine's Electric Utilities.***

c. **Volume 3:** ***An Evaluation of Low-Income Utility Protections in Maine: Fuel Assistance and Family Crisis Benefits.***

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COLTON TESTIMONY EXPERIENCE

1988 - PRESENT

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Citizens Gas & Coke/Vectren	Witness	Citizens Action Coalition of Indiana	Universal service	Indiana	04
I/M/O PPL Electric Corporation	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	04
I/M/O Consumers New Jersey Water Company	Witness	Division of Ratepayer Advocate	Low-income water rate	New Jersey	04
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Low-income gas rate	Maryland	04
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Low-income gas rate	Maryland	03
Golden v. City of Columbus	Witness	Helen Golden	ECOA disparate impacts	Ohio	02
Huegel v. City of Easton	Witness	Phyllis Huegel	Credit and collection	Pennsylvania	02
I/M/O Universal Service Fund	Witness	Public Utility Commission staff	Universal service funding	New Hampshire	02
I/M/O Philadelphia Gas Works	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	02
I/M/O Washington Gas Light Company	Witness	Office of Peoples Counsel	Rate design	Maryland	02
I/M/O Consumers Illinois Water Company	Witness	Illinois Citizens Utility Board	Credit and collection	Illinois	02
I/M/O Public Service Electric & Gas Rates	Witness	Division of Ratepayer Advocate	Universal service	New Jersey	01
I/M/O Pennsylvania-American Water Company	Witness	Office of Consumer Advocate	Low-income rates and water conservation	Pennsylvania	01
I/M/O Louisville Gas & Electric Prepayment Meters	Witness	Kentucky Community Action Association	Low-income energy	Kentucky	01
I/M/O NICOR Budget Billing Plan Interest Charge	Witness	Cook County State's Attorney	Rate Design	Illinois	01
I/M/O Rules Re. Payment Plans for High Natural Gas Prices	Witness	Cook County State's Attorney	Budget Billing Plans	Illinois	01
I/M/O Philadelphia Water Department	Witness	Office of Public Advocate	Credit and collections	Philadelphia	01
I/M/O Missouri Gas Energy	Witness	Office of Peoples Counsel	Low-income rate relief	Missouri	01
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	01
I/M/O T.W. Phillips Gas and Oil Co.	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
I/M/O Peoples Natural Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O UGI Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	00
Armstrong v. Gallia Metropolitan Housing Authority	Witness	Equal Justice Foundation	Public housing utility allowances	Ohio	00
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	00
I/M/O Universal Service Fund for Gas and Electric Utilities	Witness	Division of Ratepayer Advocate	Design and funding of low-income programs	New Jersey	00
I/M/O Consolidated Edison Merger with Northeast Utilities	Witness	Save Our Homes Organization	Merger impacts on low-income	New Hampshire	00
I/M/O UtiliCorp Merger with St. Joseph Light & Power	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	00
I/M/O UtiliCorp Merger with Empire District Electric	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	00
I/M/O PacifiCorp	Witness	The Opportunity Council	Low-income energy affordability	Washington	00
I/M/O Public Service Co. of Colorado	Witness	Colorado Energy Assistance Foundation	Natural gas rate design	Colorado	00
I/M/O Avista Energy Corp.	Witness	Spokane Neighborhood Action Program	Low-income energy affordability	Washington	00
I/M/O TW Phillips Energy Co.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O PECO Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O National Fuel Gas Distribution Corp.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
I/M/O UGI Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	00
Re. PSCO/NSP Merger	Witness	Colorado Energy Assistance Foundation	Merger impacts on low-income	Colorado	99 - 00
I/M/O Peoples Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Columbia Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O PG Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Equitable Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
Allerruzzo v. Klarchek	Witness	Barlow Allerruzzo	Mobile home fees and sales	Illinois	99
I/M/O Restructuring New Jersey's Natural Gas Industry	Witness	Division of Ratepayer Advocate	Universal service	Pennsylvania	99
I/M/O Bell Atlantic Local Competition	Witness	Public Utility Law Project	Lifeline telecommunications rates	New Jersey	99
I/M/O Merger Application for SBC and Ameritech Ohio	Witness	Edgemont Neighborhood Association	Merger impacts on low-income consumers	Ohio	98 - 99

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
Davis v. American General Finnce	Witness	Thomas Davis	Damages in "loan flipping" case	Ohio	98 - 99
Griffin v. Associates Financial Service Corp.	Witness	Earlie Griffin	Damages in "loan flipping" case	Ohio	98 - 99
I/M/O Baltimore Gas and Electric Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Delmarva Power and Light Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Electric Power Co. Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Edison Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
VMHOA v. LaPierre	Witness	Vermont Mobile Home Owners Association	Mobile home tying	Vermont	98
Re. Restructuring Plan of Virginia Electric Power	Witness	VMH Energy Services, Inc.	Consumer protection/basic generation service	Virginia	98
Mackey v. Spring Lake Mobile Home Estates	Witness	Timothy Mackey	*Mobile home fees*	*State ct: Illinois*	98
Re. Restructuring Plan of Atlantic City Electric	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Jersey Central Power & Light	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Public Service Electric & Gas	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Re. Restructuring Plan of Rockland Electric	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97-98
Appleby v. Metropolitan Dade County Housing Agency	Witness	Legal Services of Greater Miami	HUD utility allowances	Fed. court: So. Florida	97 - 98
Re. Restructuring Plan of PECO Energy Company	Witness	Energy Coordinating Agency of Philadelphia	Universal service	Pennsylvania	97
Re. Atlantic City Electric Merger	Witness	New Jersey Division of Ratepayer Advocate	Low-income issues	New Jersey	97
Re. IES Industries Merger	Witness	Iowa Community Action Association	Low-income issues	Iowa	97
Re. New Hampshire Electric Restructuring	Witness	NH Comm. Action Ass'n	Wires charge	New Hampshire	97
Re. Natural Gas Competition in Wisconsin	Witness	Wisconsin Community Action Association	Universal service	Wisconsin	96
Re. Baltimore Gas and Electric Merger	Witness	Maryland Office of Peoples Counsel	Low-income issues	Maryland	96
Re. Northern States Power Merger	Witness	Energy Cents Coalition	Low-income issues	Minnesota	96
Re. Public Service Co. of Colorado Merger	Witness	Colorado Energy Assistance Foundation	Low-income issues	Colorado	96
Re. Massachusetts Restructuring Regulations	Witness	Fisher, Sheehan & Colton	Low-income issues/energy efficiency	Massachusetts	96
Re. FERC Merger Guidelines	Witness	National Coalition of Low-Income Groups	Low-income interests in mergers	Washington D.C.	96
Re. Joseph Keliikuli III	Witness	Joseph Keliikuli III	Damages from lack of homestead	Honolulu	96

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
Re. Theresa Mahaulu	Witness	Theresa Mahaulu	Damages from lack of homestead	Honolulu	95
Re. Joseph Ching, Sr.	Witness	Re. Joseph Ching, Sr.	Damages from lack of homestead	Honolulu	95
Joseph Keaulana, Jr.	Witness	Joseph Keaulana, Jr.	Damages from lack of homestead	Honolulu	95
Re. Utility Allowances for Section 8 Housing	Witness	National Coalition of Low-Income Groups	Fair Market Rent Setting	Washington D.C.	95
Re. PGW Customer Service Tariff Revisions	Witness	Philadelphia Public Advocate	Credit and collection	Philadelphia	95
Re. Customer Responsibility Program	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	95
Re. Houston Lighting and Power Co.	Witness	Gulf Coast Legal Services	Low-Income Rates	Texas	95
Re. Request for Modification of Winter Moratorium	Witness	Philadelphia Public Advocate	Credit and collection	Philadelphia	95
Re. Dept of Hawaii Hometands Trust Homestead Production	Witness	Native Hawaiian Legal Corporation	Prudence of trust management	Honolulu	94
Re. SNET Request for Modified Shutoff Procedures	Witness	Office of Consumer Counsel	Credit and collection	Connecticut	94
Re. Central Light and Power Co.	Witness	United Farm Workers	Low-income rates/DSM	Texas	94
Blackwell v. Philadelphia Electric Co.	Witness	Gloria Blackwell	Role of shutoff regulations	Penn. courts	94
U.S. West Request for Waiver of Rules	Witness	Wash. Util. & Transp. Comm'n Staff	Telecommunications regulation	Washington	94
Re. U.S. West Request for Full Toll Denial	Witness	Colorado Office of Consumer Counsel	Telecommunications regulation	Colorado	94
Washington Gas Light Company	Witness	Community Family Life Services	Low-income rates & energy efficiency	Washington D.C.	94
Clark v. Peterborough Electric Utility	Witness	Peterborough Community Legal Centre	Discrimination of tenant deposits	Ontario, Canada	94
Dorsey v. Housing Auth. of Baltimore	Witness	Baltimore Legal Aide	Public housing utility allowances	Federal district court	93
Penn Bell Telephone Co.	Witness	Penn. Utility Law Project	Low-income phone rates	Pennsylvania	93
Philadelphia Gas Works	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	93
Central Maine Power Co.	Witness	Maine Assn Ind. Neighborhoods	Low-income rates	Maine	92
New England Telephone Company	Witness	Mass Attorney General	Low-income phone rates	Massachusetts	92
Philadelphia Gas Co.	Witness	Philadelphia Public Advocate	Low-income DSM	Philadelphia	92
Philadelphia Water Dept.	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	92
Public Service Co. of Colorado	Witness	Land and Water Fund	Low-income DSM	Colorado	92
Sierra Pacific Power Co.	Witness	Washoe Legal Services	Low-income DSM	Nevada	92

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
Consumers Power Co.	Witness	Michigan Legal Services	Low-income rates	Michigan	92
Columbia Gas	Witness	Penn. State Office of Consumer Advocate (OCA)	Energy Assurance Program	Pennsylvania	91
Mass. Elec. Co.	Witness	Mass Elec Co.	Percentage of Income Plan	Massachusetts	91
AT&T	Witness	TURN	Inter-LATA competition	California	91
Generic Investigation into Uncollectibles	Witness	Penn OCA	Controlling uncollectibles	Pennsylvania	91
Union Heat Light & Power	Witness	Kentucky Legal Services (KLS)	Energy Assurance Program	Kentucky	90
Philadelphia Water	Witness	Philadelphia Public Advocate (PPA)	Controlling accounts receivable	Philadelphia	90
Philadelphia Gas Works	Witness	PPA	Controlling accounts receivable	Philadelphia	90
Mississippi Power Co.	Witness	Southeast Mississippi Legal Services Corp.	Formula ratemaking	Mississippi	90
Kentucky Power & Light	Witness	KLS	Energy Assurance Program	Kentucky	90
Philadelphia Electric Co.	Witness	PPA	Low-income rate program	Philadelphia	90
Montana Power Co.	Witness	Montana Ass'n of Human Res. Council Directors	Low-income rate proposals	Montana	90
Columbia Gas Co.	Witness	Penn. OCA	Energy Assurance Program	Pennsylvania	90
Philadelphia Gas Works	Witness	PPA	Energy Assurance Program	Philadelphia	89
Southwestern Bell Telephone Co.	Witness	SEMLSC	Formula ratemaking	Mississippi	90
Generic Investigation into Low-income Programs	Witness	Vermont State Department of Public Service	Low-income rate proposals	Vermont	89
Generic Investigation into Dmnd Side Management Measures	Consultant	Vermont DPS	Low-income conservation programs	Vermont	89
National Fuel Gas	Witness	Penn OCA	Low-income fuel funds	Pennsylvania	89
Montana Power Co.	Witness	Human Resource Develop. Council District XI	Low-income conservation	Montana	88
Washington Water Power Co.	Witness	Idaho Legal Service Corp.	Rate base, rate design, cost-allocations	Idaho	88

UNDERSTANDING WHY CUSTOMERS DON'T PAY:

THE NEED FOR FLEXIBLE COLLECTION PRACTICES

(REVISED)

PREPARED BY:

Roger D. Colton

January 1991

The first step of analysis in seeking to respond to problems involving utility customer nonpayment is to determine precisely *why* households might not pay their bills. By understanding the full range of reasons why households may not pay, utilities and their regulators can adopt a flexible approach to bill collection, involving a full range of techniques addressing specific problems. This flexibility will help maximize the receipt of revenue while minimizing collection expenses.

A failure to inquire into why customers do not pay has ramifications on the *need* for collection efforts as well as on the *effectiveness* of collection efforts. On the one hand, a failure to understand why people do not pay their bills may result in inappropriately severe collection techniques being imposed on nonpaying households. The involuntary disconnection of service, for example, is particularly inappropriate for households who are facing short-term payment difficulties. Temporarily losing employment, incurring extraordinary medical bills, or experiencing unusually high heating bills are all types of nonpermanent situations which might cause a household to face payment problems for some short period of time. These circumstances do not warrant the disconnection of service. Nor would the disconnection of service in these circumstances serve any collection purpose or protect the utility against the future loss of revenue.

On the other hand, failing to inquire into why households do not pay their bills on time may well result in collection techniques being pursued that have no hope for success. Deferred payment agreements, for example, are a particularly inappropriate mechanism through which to seek full payment of arrears for households that are chronically poor. If a household could not pay the full current bill in the past because of a lack of money, it lacks good sense to call upon that household to enter into a deferred payment plan in which a promise is made to pay the full current bill *plus* some increment to retire the arrears in the future.

The imposition of a late payment charge is one collection technique the validity of which is particularly susceptible to an evaluation in terms of why people do not pay their bills. Late payment fees are often justified as a means to accelerate payments.\11\ It might well be a rational collection strategy, in other words, to impose a late payment fee on a customer that does not make timely payments because she seeks to capture the time value of money while letting arrears develop.\12\ In contrast, however, if a customer does not pay because she cannot afford to pay, to seek to accelerate

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\11\ Late fees can also be justified as a cost-based charge designed to compensate the utility for the expenses associated with late payment. This justification, however, most often fails on close analysis. *See generally*, National Consumer Law Center, ***Determining the Cost-Effectiveness of Utility Credit and Collection Practices***, at 67 - 90 (July 1990).

\12\ However, several studies indicate that the imposition of a late charge is not effective in accelerating customer payments. *See generally*, Warren Samuels, "Commentary: Utility Late Payment Charges," 19 ***Wayne Law Review*** 1151 (July 1973). Samuels notes in particular that late fees have ***no*** impact on accelerating payments for utilities that have due date 30 days or more from the date on which the bill is rendered. Id., at 1159.

payments by *increasing* the bill through imposition of a late charge is not only bound to fail as a collection device, but is bound to *exacerbate* rather than to alleviate the payment problems the household is experiencing.[13] As one Michigan State study concluded:

> "Payment performance tends, moreover, to accord with socio-economic class, with better performance in middle-income and more affluent areas than in low-income areas* * *. * * *Late payment is generally but by no means exclusively concentrated among inner-city and other poor neighborhoods, and among the elderly on fixed incomes. It has been statistically confirmed that the late charge is not effective for those whose problem is not

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[13] The impact of a proposed late fee was recently examined in a rate case involving Columbia Gas of Pennsylvania. *See*, ***Pennsylvania Public Utility Commission v. Columbia Gas Company of Pennsylvania***, Docket No. R-891468 (Decision and Order, Sept. 19, 1990). The Direct Testimony on behalf of the Office of Consumer Advocate found:

> "For the 3,907 customers in our sample, this late payment charge would, in many cases, add up to more than $200 per year to the cost of the arrears subject to the payment plan.* * *It is not the dollar amount, however, which is so important, as it is the strain that the added late payment charge will add to the Budget Plus plan. A household making $5 "Plus" payments, who faces a $40 annual late payment charge, would face the equivalent of eight additional payments each year. Remember, that these equivalent additional payments are above and beyond the level of payment which has already been determined to be the limit of the participating customer's ability to pay.
>
> "The fallacy in any belief that a late payment charge will accomplish any constructive task is seen with a sub-sample of the 3,907 Budget Plus plans studied. A late payment charge would *add* a monthly cost of $5 or more to 751 households who are charged the minimum $5 "Plus" amount because they already have an acknowledged *negative ability to pay.*"

Direct Testimony and Exhibits of Roger D. Colton, Docket No. R-891468 (filed April 14, 1990).

lack of incentive to pay but unemployment and poverty."[4]

In this instance, therefore, both the efficacy and the legitimacy of the collection technique (i.e., imposing a late payment fee) depends upon a proper determination of *why* the household did not pay in the first place.[5] Without looking at the reasons for nonpayment, a late fee qua collection device not only is ineffective, but is actually counterproductive as well.

Given the thesis that the rationality of particular utility collection mechanisms depends upon the reason for nonpayment in the first instance, it is surprising that so little information is available regarding the reasons for customer nonpayment. The purpose of this evaluation is to help remedy that lack. This evaluation will review the existing literature on why customers do not pay. It will review empirical research that has been undertaken in Pennsylvania, Wisconsin, Washington State and Quebec.

I. THE PENNSYLVANIA STUDY.

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[4] Warren Samuels, "Commentary: Utility Late Payment Charges," 19 ***Wayne Law Review*** 1151, 1159 - 1160 (July 1973).

[5] *See also*, the Wisconsin Public Service Corporation study which concluded "Finally, we come to the Group 5 people who have the money to pay but don't. This problem might be handled by a finance charge on the unpaid balance. However, a blanket finance charge might increase the financial burdens of Groups 1, 2 and 3. Some sort of limitation might need to be designed into the finance charge." Michael Kiefer & Ronald Grosse, "Why Utility Customers Don't Pay Their Bills," ***Public Utilities Fortnightly***, at 44 (June 21, 1984). The classification of the five groups is discussed *infra*, page 12.

A late 1985 Pennsylvania State University (Penn State) study looking at payment troubled households in Pennsylvania[6] debunked the myth that nonpaying households are characterized by "deadbeats." The Penn State study found that "payment troubled households are experiencing considerable socioeconomic stress when compared to the pattern for the average (general) customer sample."[7] The study noted that families encountering payment problems have a higher number of female heads of household, dependents, disabled members, nonmarried heads of households, and unemployed household members while also having lower levels of education, income and home ownership than households that do not experience difficulties. Ultimately, the study concluded: "thus, with regard to their socio-economic and demographic characteristics, the groups that encounter payment problems have higher proportions of the type of customers intended for protection by public policy."[8] The data reported in the study are laid out in Table A.

TABLE A

Comparison of Four Survey Groups on Selected Socioeconomic And Demographic Characteristics

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[6] Hyman, et al., "Optimizing the Public and Private Effects of Utility Service Terminations," ***Public Utilities Fortnightly***, at 29 (December 29, 1985).

[7] The statewide study examined representative samples of four groups of households involving over 1,800 interviews. The four groups included: (1) general residential utility customers; (2) customers who received a termination notice; (3) households whose service was actually terminated; and (4) households who sought to have a proposed termination mediated by the Public Utility Commission Bureau of Consumer Services. Id., at 30, n. 1.

[8] Id., at 30.

Characteristic	General	Notice	Termination	PUC-BCS
Female heads of household	22%	23%	31%	43%
Aged heads of household	24%	5%	8%	5%
Unmarried heads of household	24%	24%	31%	43%
Median per capita income	$6,403	$4,500	$4,035	$2,282
Home ownership	83%	71%	67%	57%
Unemployment during study year	17%	29%	32%	66%
Major source of income is welfare	2%	3%	8%	17%
Disabled members in household	21%	20%	23%	37%
Average family size	3.0	3.9	3.9	4.2
Education -- lacks high school diploma	21%	18%	31%	26%
N=	559	532	265	271

The Penn State study found that six of ten customers who had utility payment problems indicated that some unusual condition hindered timely payment of their utility bill.[91] Employment related problems (such as being laid off, having reduced working hours, or being unemployed) were most frequently cited as the cause for the receipt of a shutoff notice as well as for the actual termination of service (22% for shutoff notice; 18% for termination

[91] While the Penn State study labelled "lack of money" as an "unusual condition," that assumption was not made for this analysis.

of service).[10] Unusually high medical expenses (resulting from hospitalization or illness) and unusually high bills (resulting from seasonal usage variations) were the second and third most common reasons cited for the termination of service. (19% and 18% percent respectively). The Penn State study concluded: "in view of the lower-income levels and higher number of dependents in the payment-troubled households when compared to the general sample, it is not surprising that these difficulties readily manifest themselves in the form of overdue bills."[11] Moreover, Penn State found that 20 percent of the households with payment troubles

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[10] Id., at 32, Table 2.

[11] Id., at 32.

reported that they simply lacked adequate income. The reasons underlying household payment problems are set forth in Table B.

TABLE B

Comparison of Three Study Groups on Circumstances

Surrounding the Overdue Bill

Unusual Condition for Overdue Bill	NOTICE	TERMINATED	PUC-BCS
No income. No money	18%	18%	6%
Illness. Medical	15%	19%	21%
Extra high utility or other large bill	22%	18%	16%
Laid off. Less work	21%	21%	32%
Other	14%	16%	11%
No unusual condition	10%	8%	4%

Finally, the Penn State study found that payment troubled customers "made changes in their spending or lifestyle (or both) to deal with inflation and the high cost of energy." In general, the study found that "payment troubled groups report cutting back more on essentials such as food, clothing and medical care than the general sample, and they also cut back more in other areas such as recreation, vacations, and gasoline for automobiles."[\12\] Indeed, the Penn State study reported that:

> "the payment-troubled groups, which may be living near or below the margin of adequacy for necessities, exhibit greater

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\12\ Id., at 32.

propensity to cut these items than the average residential consumer. Furthermore, the more serious the degree of utility payment problems, the higher the rate of reported cutbacks."[13]

In sum, the Penn State study concluded that looking at the "microdynamics of behavior and needs of the different utility consumers" suggests that "a uniform response to nonpayment may be inappropriate from both company economic and broader social perspectives. In fact, a monolithic response may be suboptimal from the point of view of utility company profit maximization."[14]

A second Penn State study (1988) sought to determine "the importance consumers place on utility services compared to other typical household expenses."[15] Consumers were asked to indicate their "level of concern" about nine major household budget items.[16] A series of nonutility

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[13] Id., at 32.

[14] Id., at 34. The utility's profit is implicated because, by not automatically seeking to disconnect households who do not pay, "utility companies continued to receive payments, many of which might otherwise have been written off as bad debts had the customers' service been terminated." Id., at 34.

[15] Drew Hyman, et al., ***Consumer Budget Priorities and Utility Payment Problems in Pennsylvania***, Penn State University (1988). According to this study: "The importance of utility service to consumers can be measured by how consumers rank these services as part of their household budgets. To examine this issue, consumers were asked to indicate their level of concern (that is, if they were concerned a great deal, to some extent, or not at all) about *nine major budget items. The level of concern consumers placed on utility costs for heating,* electricity, telephone, water and sewer, were then compared to other necessary household budget items, and to other major expenses related to a family's present and future security." Id., at 1.

[16] These included: (1) income and property taxes, (2) medical and health expenses, (3) winter heating costs, (4) food, (5) monthly electric costs, (6) education expenses, (7) telephone costs, (8) mortgage or rent, and (9) water and sewer costs.

items was included "to put utility items in a larger context." According to the study: "a comparison of the importance of paying utility bills with other necessities of household life indicates the relative importance of utilities in modern society."[17]

The study found that among utility expenses, heating is the most important.[18] Sixty-three percent of consumers were concerned "a great deal" about their heating expenses. Somewhat fewer households, 59% said they were concerned "a great deal" about monthly electric bills.[19]

Among the nine budget items listed, winter heating costs were in the top three items of concern for consumer budgets.[20] Monthly electric bills ranked fifth (59% concerned "a great deal"), right behind food expenses (60% concerned "a great deal"). The rankings are set out in Table C.

TABLE C

BUDGET ITEM[21]	GREAT DEAL (%)	SOME EXTENT (%)	NOT AT ALL (%)	TOTAL (%)[22]
Income and				

[17] Id., at 2.

[18] Id., at 2.

[19] Id.

[20] .The study found that there were only "marginal differences" among the top three items. The top two were income and property taxes and medical and health expenses respectively.

[21] Some respondents answered "not applicable" to particular budget items. These respondents are not included in the statistics presented in this Table. The proportion of respondents answering "not applicable" is: taxes (6%); medical (2%); heat (6%); electric (3%); education (27%); mortgage/rent (19%); water/sewer (30%).

[22] *Some items do not equal 100 percent due to rounding.*

property taxes	67	22	11	100
Medical and Health expenses	64	27	11	102
Winter heating costs	63	26	11	100
Food	60	32	8	100
Monthly electric costs	59	34	7	100
Education expenses	56	26	18	100
Telephone costs	49	44	8	101
Mortgage or rent	48	29	24	101
Water and sewer costs	44	38	18	100
N=431				

The examination of relationships between social and demographic characteristics and their levels of concern show that neither age nor income were associated with greater or lesser concern for household budget items.[\23\] "Age differences do not have a statistically significant effect on consumer responses regarding the payment of utility bills."[\24\] "All income groups have comparable levels of concern."[\25\]

In sum, the 1988 Penn State study concluded that: "the degree of

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[\23\] Id., at 4.

[\24\] Id.

[\25\] Id.

concern consumers place on public utility services is intermixed with the importance of other household budget items. Heating and monthly electric costs are in the same general range of concern as such necessities as food and health care. Telephone, water and sewer costs elicit less concern* * * .\26\

II. THE WISCONSIN STUDY.

A 1983 study by the Wisconsin Public Service Corporation was designed "to find out why customers pay late, why they miss payments, what percentage is unable to pay, and what percentage could pay but do not."\27\ The Wisconsin research broke the study population into five basic groups:\28\

1. The poor and the helpless who blame themselves for their status (19%).
2. The poor and the helpless who are angry with their life (16%).
3. The poor who are in transition (12%).
4. People whose income should be sufficient to pay their

\26\ Id., at 5. The study continued to state, however, that telephone, water and sewer costs "still evoke a great deal of concern among nearly half of Pennsylvania's consumers." Id.

\27\ Michael Kiefer & Ronald Grosse, "Why Utility Customers Don't Pay Their Bills," ***Public Utilities Fortnightly***, at 41 (June 21, 1984).

\28\ Wisconsin Public Service provided the survey firm of Bergo & Matousek with a sample of 1,700 customers in Green Bay who had a history of bill payment problems. Some of these customers had been disconnected. From this sample, 200 door-to-door interviews were completed. The questionnaire took thirty to forty-five minutes to complete and did not identify the utility as the sponsor of the survey.

utility bills, but who are poor money managers (41%).

5. People who can pay their bills but do not (12%).[29]

The Wisconsin study found that roughly half (47%) of all customers who had a history of bill payment problems "did not have enough money to pay their bills."[30]

Wisconsin Public Service described Group 1 as being "very poor. They seem to be standing still economically."[31] According to the utility, these households "spend little on luxuries, have done what they can do to save money, and are still unable to manage on their incomes."[32] Looking at their income versus family size and expenses, the utility concluded, "it appears they really do not have enough to live on."[33]

These households tend to be "primarily young women." One-third (32%) are high school dropouts and one-half (47%) have spouses who are high school dropouts.[34] Eight of ten (79%) have annual income less than $10,000 and nine of ten (90%) have annual income less than $15,000.[35]

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[29] Id., at 42.

[30] Id.

[31] Id.

[32] Id.

[33] Id.

[34] In contrast, the general dropout rate for Green Bay was 15 percent.

[35] The mean income for Brown County, in which Green Bay is located, is $24,000.

Group 2 was described by Wisconsin Public Service as a group that "feels helpless.* * *they are angry and frustrated with their position."[\36\] According to the utility, this is the "poorest and least educated" of the nonpayment groups. "This group is down and out and apparently destined to *stay down and out.*"[\37\]

This group, too, is primarily young and female. While half the Group 2 households have an employed person, only one-quarter (28%) have a full time employed person; none have two people working full time. Sixty-five percent of the Group 2 households are high school dropouts. More than nine of ten (94%) have incomes less than $10,000.

Group 3 was described by Wisconsin Public Service as being "somewhat of a mixture."[\38\] On the one hand, the group includes "some younger, well-educated people* * *who are moving up in the world." On the other hand, the group contains households who appear "either to be rising from hard times or sinking into hard times. This portion is less educated and primarily blue collar."[\39\]

\36\ Id.

\37\ Id., at 43.

\38\ Id., at 43.

\39\ Id.

Most Group 3 customers are women. They are better educated with only 17 percent being high school dropouts. They tend to be employed, with more than seven of ten (71%) having an employed person and nearly four of ten (38%) having at least one full time employed person. The income level is somewhat higher, with only 54% making less than $10,000 and only 12 percent making less than $5,000 per year.

Group 4, Wisconsin Public Service concluded, "is the most diverse group in terms of demographics, attitudes, and life-styles."[40] The one common attribute is that the households making up this group "are poor at managing their money. They appear to be either spending beyond their means or to have bill paying priorities which are not realistic." While education is lower in this group (with 26 percent being high school dropouts), employment is higher, with 75 percent having someone employed and 18 percent having two members employed full time.

The income of Group 4 is higher than any other group except Group 5, the most affluent group. Only 30 percent of Group 4 makes less than $10,000 per year. According to the utility, for the households in this group,

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[40] Id.

"their income level and family composition is such that they should be able to pay their bills if they manage their income carefully. They appear to be in financial difficulty because they have not learned to budget properly."[41]

Wisconsin Public Service reported that for Group 5 , "there is no apparent reason why they should not be paying their utility bills."[42] The utility, according to the study, "is low on their list of priority" for this group of households. Possibly these households do not pay their utility bills "because they would rather do other things than write out checks or, perhaps, they prefer to spend their money on other priorities."

This group is well-educated. Only 12 percent of the persons interviewed had less than a high school education. More than nine of ten (92%) have someone employed in these households and 20 percent have two people employed full time. None of these households make less than $10,000 per year and 72 percent make more than $20,000 per year. According to the utility, "this group can pay their utility bill when they are threatened with a cutoff.* * *They have discretionary money and generally do not care to worry too much about money."[43] The utility concluded that this last group of households "appear to be savvy people who know how to make

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[41] Id., at 43.

[42] Id.

[43] Id., at 44.

the system work for them."

In addition to looking at the 1984 article by Wisconsin Public Service Corporation, the detailed study which underlies the article provides much useful information.

"Overall," Wisconsin Public Service concluded in this study, "it appears that about half the sample is quite hopeless, but half can learn to pay their bills with a little coaxing and coaching."[44] The detailed study provides much useful information about the nonpaying population. It is important to understand the characteristics which distinguish the households Wisconsin Public Service found to be "quite hopeless." Only in this way can efficient and effective collection mechanisms be designed to address both their particular needs and the needs of the company. The "quite hopeless" customers include those households in Groups 1, 2 and 3.

All households in Group 1 had been late in making a utility payment

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[44] *Wisconsin Public Service Corporation: Lifestyle Study: Selected Payment Patterns*, at ii (July 1983). "Those people who cannot pay their bills because of income and family size appear to be doing just about all they can to pay their bills. They are not indulging in luxuries they cannot afford. They're just scraping by." Id.

within the prior twelve months.[45] Nearly half (45%) had been late four or more times. The late payments, according to Wisconsin Public Service, were not surprising. Four of ten of those households had an average monthly utility bill in excess of $100.[46] This is to be added to rent/home mortgage payments[47] of $200 - $300 per month.[48]

The combination of home payments and utility bills often makes housing unaffordable.[49] As a result, 24 percent of these households had moved within the past year.[50] An additional 26 percent plan to move in the next year. Wisconsin Public Service reported that "the main reason they are moving is because they can't afford to live where they do."[51]

If this group had to make choices in which bills to pay first, they would pay the bills in the following order:

1. Pay the utility bill first..... 79%

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[45] Id., at G-4.

[46] Id., at G-5.

[47] 34% of these households own their homes; 66% rent.

[48] 47% of these households pay $200 - $300 per month. An additional 16% pay more than $300 per month.

[49] Remember, 80 percent of these households have incomes of less than $10,000 per year.

[50] Id., at G-4.

[51] Id.

2. Pay the telephone bill second 74%

3. Pay the gas credit card third 68%

4. Pay the charge account last 76%

The reason the utility bill is paid first is because it represents an essential service and is subject to disconnection for nonpayment.[52]

Wisconsin Public Service ultimately concluded with regard to Group 1 that: "there is probably very little that can be done with these people. Most likely, they will continue to pile up unpaid bills and do the best they can."[53]

All households in Group 2 had been late in making a utility payment within the prior twelve months.[54] More than half (54%) had missed four or more payments and roughly four of ten (36%) had missed more than five payments. The utility bills for these households are somewhat lower than Group 1, with only one-third (33%) having an average monthly bill in excess of $100.[55] Again, this utility bill is to be added to rent or mortgage payments[56] of $200 - $300 per month.[57]

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[52] Id., at G-7.

[53] Id., at G-7.

[54] Id., at G-13.

[55] Id., at G-13.

[56] Only 13% of Group 2 households own their own homes.

[57] 61% of Group 2 households make rental payments of $200 - $300 per month.

Like the households in Group 1, these payments tend to force households into a pattern of mobility. More than one-third of Group 2 households (36%) have lived in their current home for less than six months. In addition, more than four of ten (42%) plan to move in the next year, citing the unaffordability of their current housing as the reason for the move.[58]

If Group 2 households had to make choices in which bills to pay first, they would pay bills in the following order:

1. Pay the utility bill first 77%
2. Pay the telephone bill second 71%
3. Pay the gas credit card third 74%
4. Pay the charge account last 81%

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[58] Id., at G-12.

As with Group 1, the reason the utility bill is paid first is because it represents an essential service and is subject to disconnection for nonpayment.[59]

Wisconsin Public Service ultimately concluded that the Group 2 households "offer() little opportunity for (the company) to work with."[60]

All households in Group 3 had been late paying a bill within the past 12 months. More than six of ten (62%) had been late over four times in the past year.[61] The utility bills for these households are somewhat higher. Exactly half have average monthly bills in excess of $100.[62] Unlike Groups 1 and 2, Group 3 households tend to own their own homes (46%).[63] Nearly nine of ten (88%) pay $100 - $300 in house payments each month; roughly half (46%) pay $200 - $300 per month.

This group of households is quite stable. Nearly all (88%) have lived at the same address for more than one year.[64] While none has moved more than once in the past year, six in ten have moved more than once in the past

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[59] Id., at G-15.

[60] Id., at G-16.

[61] Id., at G-21.

[62] Id., at G-22.

[63] Id., at G-21. "This may reflect that this is a more stable, settled group." Id.

[64] Id., at G-21.

five years.

If Group 3 households had to make choices in which bills to pay first, they would pay bills in the following order:[65]

1. Pay the utility bill first 79%
2. Pay the telephone bill second 71%
3. Pay the gas credit card third 67%
4. Pay the charge account last 71%

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[65] Id., at G-24.

Several items need attention in this discussion of the households that Wisconsin Public Service found to be "quite hopeless." First, these households generally try very hard to cut household expenses. Group 1 households, for example, spend less than $10 per month on recreation. Moreover, 66 percent spend less than $50 a week on groceries (for an average family size of more than 4).[66] More than half (60%) own a car, but half of those own a car that is at least ten years old.[67] Similar findings were made for Group 2 and Group 3 households as well.[68]

Despite these cost-cutting measures, these households are forced into a mode of constant mobility. As a result, one expense they cannot avoid is the expense of moving: the actual cost of moving; connect fees for telephone and utilities; rental deposits; and the like. Stabilizing the living situation for these households would go a long way toward extending their budgets.

The bill paying priorities should be noted also. For each group, nearly eight of ten households said that, if a choice were forced between which bills to pay, they would pay their utility bill first. This is because, these households said, utility service is essential and is subject to disconnection. (Remember, too, these households did *not* know the survey was being

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[66] "Most" of these families have 3 or more people. 50% have 4 or more members and 40% have 5 or more people. Most have small children. Id., at G-1.

[67] Id., at G-1.

[68] See, Id., at pp. G-11 (Group 2) and G-19 - G-20 (Group 3).

sponsored by the local utility company.) These households went on to say that payment of credit card bills would come last. As a result, it should be clear that consumer credit reports involving bills other than utility bills should be rejected as a basis for making utility credit and collection decisions. For example, deposit demands should not be based upon nonpayment of a non-utility bill that households consistently ranked as "last" in their order of priorities.

The futility in deferred payment plans should be recognized. For Group 1 households, for example, while 88 percent of the households said that someone from the utility talked to them, made arrangements to let them pay what they could, and put them on a budget, nevertheless, nearly six in ten (56%) missed 2 - 3 payments and nearly half (45%) missed 4 or more payments.[69] Again, similar observations were made for Group 2 and Group 3 households.[70]

Finally, the futility (as well as the counterproductiveness) of utility late fees for these households should be noted. In all three groups, eight of ten households have already decided that the utility would be the first bill to be paid with the limited income available. To add a late fee, therefore, would be to add no incentive to pay and, indeed, would simply make the utility bills that

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[69] Id., at G-4.

[70] Id., at G-13 (Group 2) and G-21 - G-22 (Group 3).

much more unaffordable. Moreover, nonpayment, according to the utility, is due to the unaffordability of the bills, not to a lack of incentive. While eight of ten households in Group 1 had incomes less than $10,000, for example, (and 94% of households in Group 2 had incomes of less than $10,000), none of the households in the can-pay-but-don't group (Group 5) had incomes that low (with three-quarters [72%] making in excess of $20,000).

III. THE WASHINGTON STATE STUDY.

A 1989 Washington Natural Gas study was based upon a survey undertaken for the Washington Utility Group.[71] The purpose of the study was to "develop() a mutually acceptable understanding of the ability of delinquent utility customers to pay their energy bills. Is it that most can pay these bills on time, but choose not to, or is it that they truly are unable to pay* * *?"[72]

The Washington study[73] found that roughly half (47%) of all payment

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[71] This group consists of Washington Natural Gas, Pacific Power and Light, Washington Water Power, Northwest Natural Gas, Cascade, and Puget Power.

[72] Mildred Baker, ***Utility Collection Customers: Understanding Why They Don't Pay on Time***, at 1 (1989). Baker states that this paper only "represents the interpretations of Washington Natural Gas Company, one of the principal survey sponsors." The broader survey was titled: ***Investor Owned Utility Group Credit Customer Survey***, Market Trends Research Corp. (1989).

[73] The survey was undertaken during March of 1988. It examined customers who either had received three late payment notices in the past year or had had their service disconnected for nonpayment. The study was designed to be statewide in scope rather than utility specific. Thus, the sample size for any individual utility would be too small for accurate analysis, but

troubled customers experienced some "unusual condition" that prevented the timely payment of their utility bill.[74] The most commonly cited condition (13%) was the loss of work, either being laid off or being reduced in hours.[75] A second tier of conditions, receiving almost identical shares of citation, included the presence of an illness (7%), the presence of some other major bill (7%), the presence of an unusually high utility bill (6%) and the presence of a conflict between the billing date and the due date (5%).[76]

In contrast, one third (33%) of all customers could cite no particular reason for their account being past due while one fourth (22%) of all customers cited having insufficient money in general as the reason.

TABLE D

UNUSUAL CONDITION THAT PREVENT

UTILITY BILL PAYMENT

NONE	33%
NO MONEY	22%

(..continued)

the results, taken as a whole, would be projectible on a statewide basis. Baker, at 2. The surveyed customers had no notion that the survey was being sponsored by the consortium of utilities. Baker, at 3.

[74] The response of "no money" has been deemed for purposes of this paper *not* to be an "unusual condition."

[75] Baker, at 6.

[76] Id., at 6. Being out of town (3%), having "family demands," (2%) and other reasons (4%) were also cited.

LAID OFF/LESS WORK	13%
ILLNESS	7%
OTHER BIG BILL	7%
HIGH UTILITY BILL	6%
CONFLICTING DATES	5%
OUT OF TOWN	3%
FAMILY DEMANDS	2%
OTHER	4%
REFUSED/NONE	4%

While aware of "support services" to help people pay their utility bills,[77] *very* few delinquent customers had taken advantage of such services. Eight of ten did not participate in Budget Billing (81%) or financial assistance (82%) while nine of ten (93%) did not participate in any type of credit counseling.[78]

Like the households in Wisconsin, payment of utility bills was high on the list of bill payment priorities. Most households (82%) said they would pay their rent or mortgage payment first with 13 percent saying they would pay their heating bill first. Nearly six of ten persons (56%) said they would pay their heating bill as the second bill while only 21 percent said they would pay it as the third bill.[79] An additional 10 percent said they would pay their

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[77] Nearly six of ten (57%) said they were aware of such services while four of ten (39%) said they were not).

[78] Id., at 9.

[79] Id., at 10.

heating bill as the fourth bill. In general, most customers said they would pay their utility bills after their rent or house payment but before medical bills and car payments.

The Washington survey made particular efforts to develop demographic (age and income) profiles of their "collection customers." The Washington study found that roughly 30 percent of all customers surveyed had incomes below the poverty level.[80] No effort was made, however, to determine the portion of customers who were below the more common definition of "poor," 150 percent of the Poverty Level.

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[80] The Poverty Level is defined by the State of Washington consistent with the Federal Poverty Level.

The Washington utilities sought, also, to identify "commonalities between various delinquent account customers." Six "mutually exclusive groups" were identified as set forth in Table E.[81]

TABLE E

PROFILE OF NONPAYMENT CLUSTERS/GROUPS

POOR MANAGERS	39%
TEMPORARY DOWNERS	16%
WON'T PAYS	8%
NEW POOR	22%
SURVIVORS	9%
CHRONIC POOR	6%

The largest group of nonpayers, the Washington utilities found, were poor money managers (39%). This group of customers had "no apparent reason for nonpayment of their bill. They just seem to be poor money managers who wait to pay until absolutely necessary."[82] This group is typically a college graduate, with income above the poverty level, owning significant numbers of home appliances,[83] and participating in medical

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[81] Id., at 10.

[82] Id., at 19.

[83] These include washers and dryers, microwaves, VCR's and home computers.

insurance programs.

The next largest group involves the "new poor." This group has had "a recent life-style change --such as unemployment or divorce."[84] The persons in this group are "struggling with incomes temporarily below the poverty level.* **They have little or no money to meet their obligations."[85] Nearly half of these households have no medical insurance. They tend not to have appliances such as VCR's or microwaves and a "large percentage" have no telephone. Washington Natural Gas reported that for these customers, "household incomes are below the poverty level and significant unemployment is seen."[86]

The third group found by the Washington utilities is the group of "temporary downers."[87] While this group has experienced a "temporary setback," such as unemployment or disability, they see things "getting better in the future."[88] Household income is above poverty level, although a significant percent have experienced unemployment in the last year. These households own a variety of appliances, including home computers, VCR's, microwaves and washer/dryers. They have college education and carry

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[84] Id., at 20.

[85] Id.

[86] Id., at 20.

[87] Id., at 21.

medical insurance.

The fourth group is the group of "survivors."[\89\] This group tends to be older households who "are barely making ends meet." According to Washington Natural Gas, "retired or on disability, they are just trying to survive."[\90\] These households generally have incomes "right at the poverty level." They receive their income primarily through Social Security and/or disability. They own few appliances other than washer/dryers and most do not have telephones. These households, the utility reports, "have trouble paying their bills because of significant medical expenses* * *they are not spenders."[\91\]

The fifth group is the "won't pays."[\92\] Members of this group, even though they have the means to pay, do not pay. The households in this group live "comfortably, but are not lavish spenders." They tend to be "the older, cynical portion of the population."[\93\] Most of these households report

(..continued)

\88\ Id., at 21.

\89\ Id., at 22.

\90\ Id.

\91\ Id.

\92\ Id., at 23.

\93\ Id., at 23.

incomes above the poverty level. A significant portion carry no medical insurance and most own appliances such as washer/dryers and microwaves.

The final group includes the "chronic poor."[\94\] According to the utility: "this group represents the truly poor segment of the population. They are always below the poverty level and are resigned to that position. These are larger families with chronic unemployment and no money. They don't pay because they can't."

Washington Natural Gas summarized by categorizing the six groups into two broader populations: (1) those who "can pay"; and (2) those who "can't pay." Most payment-troubled customers (64%) can pay, according to the utility. These include the poor money managers (39%), the temporary downers (16%) and the won't pays (8%). A significant minority of payment-troubled households (36%), however, simply "do not have the means to pay."[\95\] These include the new poor (22%), the survivors (9%) and the chronic poor (6%).

IV. HYDRO-QUEBEC.

\94\ Id., at 24.

\95\ Id., at 25.

In 1986, Hydro-Quebec conducted a study[96] of the "lifestyle and payment habits" of its residential customers.[97] The purpose of the Hydro-Quebec study, it said, was to "circumscribe the characteristics of HQ's residential customers with regard to their lifestyles and their payment habits in order to establish a strategy of efficient account management."[98]

According to the study, Hydro-Quebec customers carried nearly twice the arrears owed to the local natural gas company ($254 vs. $136) and nearly three times the amounts owed to Bell Canada ($254 vs. $81).[99] The difference in arrears, Hydro-Quebec found, was directly related to the reasons for nonpayment. While roughly one-half of the delinquent Bell Canada payers (48%) stated that they simply forgot to pay their bills, nearly half (46%) of the delinquent Hydro-Quebec customers explained their arrears by noting the existence of personal financial problems and thus an inability to pay.[100] The reasons found for nonpayment are set out in Table F.

TABLE F
REASONS FOR NONPAYMENT
OF VARIOUS HOME UTILITY BILLS

\96\ *See, **Customer Account Management Summary Report: Study of Residential Customers' Lifestyles and Payment Habits*** (January 1987). Translated from French for the National Consumer Law Center by Jill Singer.

\97\ The survey was conducted by the survey firm of Jolicoeur and Associates, Professional Survey Company, in October -November 1986. It consisted of two phases. The first phase involved a telephone survey of 1435 residential customers. The second phase involved household interviews with 102 customers who had received a final notice or who had experienced an interruption of service.

\98\ *Id.*, at 5.

\99\ Id., at 3.

\100\ Id., at 4.

REASONS	GAS	OIL	TELEPHONE	ELECTRICITY
FINANCIAL PROBLEMS	34%	9%	17%	46%
NEGLECT	38%	29%	48%	27%
DELAY	17%	34%	25%	18%
OTHER REASONS	11%	28%	10%	9%
AMOUNT OWED (last notice)	$136.30	$160.12	$ 81.19	$254.05

In general, households who don't receive notices from Hydro-Quebec[101] "distinguish themselves" from the other households in a number of ways in terms of "financial structure", including: available savings, few dependents, stability of employment, household makeup[102] and higher household revenues.

Moreover, Hydro-Quebec found, certain characteristic traits can be found based on the type of notice received. Households receiving first notices have different characteristics from households who receive a final notice or interruption notice (who are relatively similar). This latter group is composed of many people --of children and financial dependents-- or of people living alone. Generally, Hydro-Quebec continued, "the family income of these groups is much less than the income of households who have never

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[101] Hydro-Quebec sends three types of notices sequentially: missed payment notices, final notices, and interruption notices.

[102] They have a smaller household size, with few or no children.

received a notice or who have only received a first notice."[103] Four of ten (40%) final notices are sent to households in the 30 - 40 year old age group. The receipt of either unemployment insurance or social security increases the probability of being sent an interruption notice.[104]

In contrast, missed payment notices are sent out more to people with higher than average education.[105] The characteristics of households receiving the various notices are set out in Table G.

TABLE G

DISTINCTIVE CHARACTERISTICS OF HOUSEHOLDS RECEIVING VARIOUS COLLECTION NOTICES: HYDRO-QUEBEC

	NO NOTICE	MISSED PAYMENT	FINAL NOTICE	INTERRUPTION NOTICE
AGE:				
Less than 40	36	49	56	52
40 and older	64	51	44	48
EDUCATION				
Less than 11 years	45	32	36	46
High school	24	31	24	26
Post high school	31	37	40	28
NO OF PEOPLE IN HOUSEHOLD				
1 person	16	7	11	12
2 - 3 person	52	56	40	35
4 and over	32	37	49	53
PRESENCE OF CHILDREN				

[103] Id., at 6.

[104] Id., at 7.

[105] Id., at 7.

No children	58	46	37	34
Children	32	54	63	66
OCCUPATION OF HOUSEHOLD AND SPOUSES				
Two spouses active	35	49	43	41
One active spouse	43	40	49	49
No active spouse	22	11	8	10
HOUSEHOLD INCOME				
Less than $30,000	62	56	64	74
$30,000 and more	38	44	36	26
SAVINGS AVAILABLE				
Less than $1,000	41	57	65	74
$1,000 and more	59	43	35	26

Hydro-Quebec found five distinct groups of households among its payment-troubled population. These included:[\106\]

TABLE H
BREAKDOWN OF HOUSEHOLDS WITH BILL PAYING PROBLEMS

GROUPS		PERCENT OF HOUSEHOLDS	NUMBER OF HOUSEHOLDS
1	*Easy financial situation*	34.7%	52,700
2	Improving financial situation and future bills will be paid	21.1%	32,000
3	Improving financial situation but insufficient income to pay future bills	20.4%	31,000
4	*Deteriorating financial situation but* future bills will be paid	11.0%	16,700
5	Very difficult situation, now getting worst, and future bills will not be paid	12.9%	19,600

Household income decreases with the household's index of financial difficulty, Hydro-Quebec reported. Thus, households who consider their

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\106\ Id., at 9.

financial situation to be easy have an average annual income of nearly $38,000 while those whose future appears difficult (Group 5) have an average annual income of $13,000. More than that, the *per capita* income of the households perceiving a difficult future is only $3,000 as compared to a *per capita* income of more than $15,000 for those whose situation is perceived to be easier.\107\

In sum, Hydro-Quebec concluded:

> the frequency of nonpayment of bills can be explained more strictly by financial situation: personal income of less than $10,000, unemployment insurance, social security and food assistance as sources of annual incomes, small amount of savings, people living alone, separated, or widowed, without a partner and with a small household income.\108\

The nonpaying population, Hydro-Quebec found, includes those people "who don't foresee an improvement in their situation and who tend to use their income for handling debt."\109\

\107\ Id., at 10.

\108\ Id., at 17.

\109\ Id., at 17.

Customers who received a final notice or an interruption notice name rent as the highest priority bill to pay. Besides the rent, Hydro-Quebec found, "those bills related to heat, like electricity and gas, are a priority (rank 1 and 2) for 48% and 57% of users, respectively."[\110\] To the extent that these households will delay paying their electric bill to pay their rent, Hydro-Quebec found, they will delay paying their telephone bill to pay for electricity.[\111\]

TABLE I
COST OF SERVICES AND PAYMENT PRIORITY
(population have received final or interruption notice)

	AVERAGE MONTHLY EXPENDITURE	PRIORITY						RECEIPT OF NOTICE
		1	2	3	4	5	6+	
Rent or mortgage	$354	88	5	0	5	1	0	4%
Natural gas	$42	11	46	20	23	0	0	38%
Electricity	$74	14	34	42	5	4	1	55%
Telephone	$32	1	32	33	20	10	4	40%
Heating oil	$136	0	32	29	12	21	6	10%
Equipment rental	$24	0	27	6	27	25	14	0%
Insurance	$50	3	15	13	30	35	4	0%
Taxes	$56	3	13	10	35	35	5	10%
Services (cable TV)	$19	0	0	15	33	30	21	12%

Hydro-Quebec found that roughly half of the nonpayment households would defer payment of their electric bill to pay other bills, primarily rent. In contrast, the utility continued, only 33 percent of the households would defer

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\110\ Id., at 18.

\111\ Id., at 19.

other payments in order to pay their electric bill.[112] The utility found, however:

> * * *in a difficult financial situation, the amount demanded by HQ when notices are sent is so high compared to other services that it becomes a substantial resource for rent payment. In contrast, in order to obtain an amount sufficient to pay the HQ bill, it is almost useless to defer payment of some other services, unless they are *all* deferred. Deferring other bills in order to pay HQ is thus a strategy with very minimal payment possibilities.[113]

In sum, Hydro-Quebec found much the same results as the other utilities. Households receiving electric shutoff notices tend to be overwhelmingly poor. They more likely miss electric payments because of financial difficulties than for other reasons. They place a higher priority on paying their utility bills (except for telephones) than on paying other bills excepting rent.

V. DISCUSSION.

These empirical reports are significant in several regards. For example, on the one hand, the Washington report identifies (as discussed

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[112] Id., at 20.

[113] Id., at 20. (emphasis deleted).

above) payment-troubled households by reason for nonpayment. Just as importantly, however, based on the Washington report, it is possible to work backwards as well: to characterize households with certain characteristics as particular types of nonpayers. For example, if a household at 90 percent of poverty does not pay, it is possible to conclude from this report that this household is not likely a poor money manager (household incomes above poverty level),[114] a temporary downer (income above poverty level),[115] or a won't pay (most incomes above poverty level).[116] (It is unfortunate, however, that the Washington study categorized only households at or below 100% of the Poverty Level as "poor." It would be useful to know how many households in the "poor money managers" category would have been recategorized as "chronic poor" if the more typical definition of "poor" [150% of the Poverty Level] used for public benefits purposes would have instead been used.)

Other significant policy conclusions can be reached for that portion of the populations (in all three reports: Wisconsin, Washington, Pennsylvania) that these utilities found "do not have the means to pay."

o First, to impose late charges on these households makes

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[114] Id., at 19).

[115] Id., at 21.

[116] Id., at 23.

little sense. If these households do not pay their bills because they cannot afford to pay their utility bills, to respond by *increasing* their bills through late charges makes little sense.

- Second, deferred payment plans are not likely to succeed in retiring accrued arrears. Again, if these households have not paid their bills in the past because they cannot afford them, to expect the households to pay their current bills in the future *plus* some additional increment to retire arrears is unreasonable.
- Finally, credit counseling and budget billing is not the answer to the payment problems of these households. If credit counseling or budget billing would have resolved the payment problems of these households, the households would already have been placed into the "poor money managers" group and categorized as a "can pay" household. By instead placing these households into the "can't pay" category, (defined as households that "do not have the means to pay"), the utilities have acknowledged the inapplicability of credit counseling and budget billing as a solution.

One observation can be made about the "can pay" population as well.

This involves the use of late payment charges. Of the 64 percent of the payment-troubled population that "can pay," late payment charges are inapplicable, unnecessary and likely counterproductive in 55 percent of the cases. A late charge will not make a poor money manager (39%) a better money manager nor will a late charge give the temporary downer (16%) a job or eliminate her temporary disability. The only population to which the late payment charge is applicable as an effective collection tool is the "won't pays" (8%).

Finally, these reports demonstrate the lack of any basis to demand deposits from low-income households who have poor credit histories with non-utility vendors. In both Wisconsin and Washington, the utilities found that consumer utility bill payment came before any and all other credit payments. Ironically, therefore, to base the demand for a utility deposit based on a bad non-utility credit report may well penalize a poor person who paid the utility bill on time to the detriment of other outstanding consumer credit. In any event, however, these studies demonstrate that bad credit reports regarding payments consumers said they would pay "last" provides no basis to demand a deposit for payments that consumers said they would pay "first."

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PAYMENT-PROBLEMS, INCOME STATUS, WEATHER AND PRICES:
COSTS AND SAVINGS OF A CAPPED BILL PROGRAM

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With low-income utility customers facing home energy burdens of 15% of income and more, it comes as no surprise that many of those customers cannot afford to pay their bills in a full, timely and regular basis. As a result, not only do the low-income customers face the social and economic deprivations associated with their inability-to-pay, but the utilities that provide service to them incur the business expenses associated with that inability-to-pay as well. These business expenses include not only the costs of carrying arrears, but the costs of charge-offs and the cost of collections as well.

Irrespective of the unaffordability of home energy during "normal" times, one additional question is whether low-income customers, and the companies that serve them, can beneficially insulate these customers from the vagaries of weather and price-induced spikes in annual and seasonal home energy bills. After the confluence of cold weather and a fly-up in natural gas prices during the 2000/2001 winter heating season in much of the nation, an increasing number of industry observers recognize the harms that arise from extraordinary changes in bills accompanying spikes in price and/or temperature.

Programs directed toward low-income customers are both more likely to reach customers that have accounts in arrears and more likely to reach customers with higher levels of arrears than are programs directed to the residential population as a whole. While the notion that payment-troubled customers are disproportionately low-income is commonly accepted conventional wisdom,[1] remarkably little empirical data has been collected to verify or to challenge that conventional wisdom.

National data reported by the U.S. Census Bureau indicates that the proportion of households in arrears at any given point in time is substantially higher for the low-income population than for the population as a whole. One 1995 census study, for example, reported 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. According to the Census Bureau, while 1.8% of non-poor families had their electric and/or natural

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[1] This is not to say that all low-income customers are payment-troubled, nor that all payment-troubled customers are low-income. It is merely to say that low-income customers are disproportionately payment-troubled.

gas service disconnected for nonpayment, 8.5% of poor families suffered this same deprivation.[2] Unfortunately, systematic information on the arrears of low-income customers is not collected on a state level basis.[3]

The discussion below seeks to answer several questions: (1) are payment-troubles truly centered in the low-income population? (2) is there a relationship between the incidence and extent of payment troubles and temperature and/or price factors? (3) can a utility that introduces a program to insulate low-income customers from the fly-up of bills hope to recoup all or some substantial part of the cost of such a program through offsetting expense savings.

To develop answers to these questions, the discussion below focuses on data from Iowa.[4] Iowa not only reports monthly data on arrears, the disconnection of service, limited collection activities, and write-offs, but reports much of this data specifically for energy assistance recipients. The availability of information for "energy assistance" recipients allows for a comparison of that low-income population to the population as a whole.[5]

The discussion below is broken into four parts:

- **Part 1** considers the relationship between payment-troubled status and low-income status.
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- **Part 2** considers the relationship between various indicators of payment-troubled status, winter temperatures (measured by heating degree days), and natural gas prices.
- **Part 3** considers the expense incurred by a utility associated with nonpayment of residential energy accounts. This section applies per-unit costs to each step in a collection process.
- **Part 4** considers the financial impact to a utility from instituting a program that would control the exposure of low-income customers to changes in temperature and prices.

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

3 There is sporadic corroborative information from the states. One 1998 Illinois report, for example, indicated that while 44.5% of LIHEAP-assisted natural gas customers were in arrears, only 28.9% of "general households" were. Department of Energy and Community Affairs, ***Residential Energy Costs and Assistance in Illinois: The 1997 – 98 Winter***, at 6, Springfield (IL). So, too, has an analysis by the staff of the New Hampshire Public Utilities Commission estimated that roughly 35% of the low-income *electric* customers entering the Electric Assistance Program (EAP) entered the program with arrears. As a general rule, estimates place the average number of customers in arrears at any given point in time at around 12% of the total customer base.

4 A supplement to the report will include brief analyses based on New Jersey and Maryland data. Because of the limitations of this data, however, that data is not included in this main report.

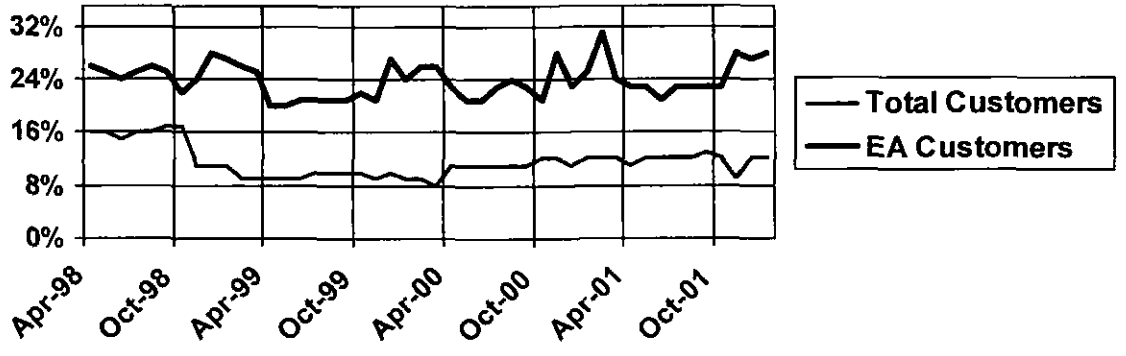
5 Even Iowa, however, does not systematically track low-income customers. Only low-income customers identified also as fuel assistance recipients are included in the "low-income" population.

PART 1.
THE RELATIONSHIP BETWEEN INCOME AND PAYMENT-TROUBLES

The Iowa Utility Board systematically collects information on the incidence of arrears for low-income customers. Under the Iowa reporting system, a "low-income" customer is identified by the receipt of energy assistance through the federal Low-Income Home Energy Assistance Program (LIHEAP). Even in Iowa, however, LIHEAP reaches somewhat less than 20% of the state's total eligible population. As a result, this information is limited both by the fact that customers self-select into the population of energy assistance recipients and by the fact that the energy assistance population "misses" 80% and more of the total low-income population. Nonetheless, the Iowa data is the best there is nationwide.

The percentage of energy assistance accounts in arrears consistently and substantially exceeds the percentage of accounts in arrears in the total customer base in Iowa. The figure below presents information over a 46 month period (April 1998 through January 2002). While, on average, 24% of all energy assistance accounts were in arrears over that time period, only 12% of total accounts were in arrears.

Percentage of Accounts in Arrears: Energy Assistance and Total Customers (Iowa)



While there is some variation by year, the overall proportions are remarkably consistent over time. The data were examined using twelve month periods. Each period began immediately following the winter heating season (April) and extended through the next March. In this way, each winter heating season was kept intact as a study period.

The metric used to measure "accounts" is the proportion of accounts in arrears rather than the number of accounts. The number of accounts identified as "energy assistance" recipients varies on a month to month basis rather than being consistent throughout the year. The absolute number of accounts in arrears, therefore, does not provide a meaningful number.

Within this framework, the proportions of accounts in arrears on an annual basis were as follows:

Proportion of Accounts in Arrears: Total Customer Base and Energy Assistance Recipients (Iowa)		
Study period	Total Accounts	Energy Assistance Accounts
April 1998 – March 1999	14%	25%
April 1999- March 2000	9%	22%
April 2000 – March 2001	11%	24%
April 2001 – January 2002	12%	24%

As can be seen, on a monthly basis, the proportion of energy assistance accounts in arrears is twice as high (or more) (22% vs. 9%; 24% vs. 11%; 24% vs. 12%) as the proportion of total accounts in arrears. While this ratio had dropped since April 1999, the drop can be attributed to a modest increase in the proportion of non-low-income accounts in arrears (from 9% to 12%) rather than to a decrease in the proportion of energy assistance accounts in arrears.

It is possible to track the relationship between energy assistance accounts in arrears and total population accounts in arrears by: (1) creating a ratio, (2) placing the proportion of energy assistance accounts in arrears in the numerator, and (3) placing the proportion of total customer accounts in arrears in the denominator. It is necessary, however, to be very careful about understanding what this tells you. The ratio does *not* indicate how many accounts of either population are in arrears. It merely tells you the *relative* rate at which customers in each population are in arrears. If the ratio is 2.0, in other words, then energy assistance recipients are in arrears at a rate twice as high as the population as a whole.[6]

Graphing the monthly ratio of the proportion of energy assistance accounts in arrears to the proportion of the total population accounts in arrears reveals a seasonal variation that is not evident in the annual data. Clearly, energy assistance customers fall into arrears at a faster rate than does the total population during the winter months. While the ratio of energy assistance customers in arrears to the total population accounts in arrears hovers around the 2.0 mark for most of the non-heating season,[7] the ratio sees consistent increases during the winter heating months, up to 3.0 or more. In October 1999, for example, 10.6% of all customer accounts were

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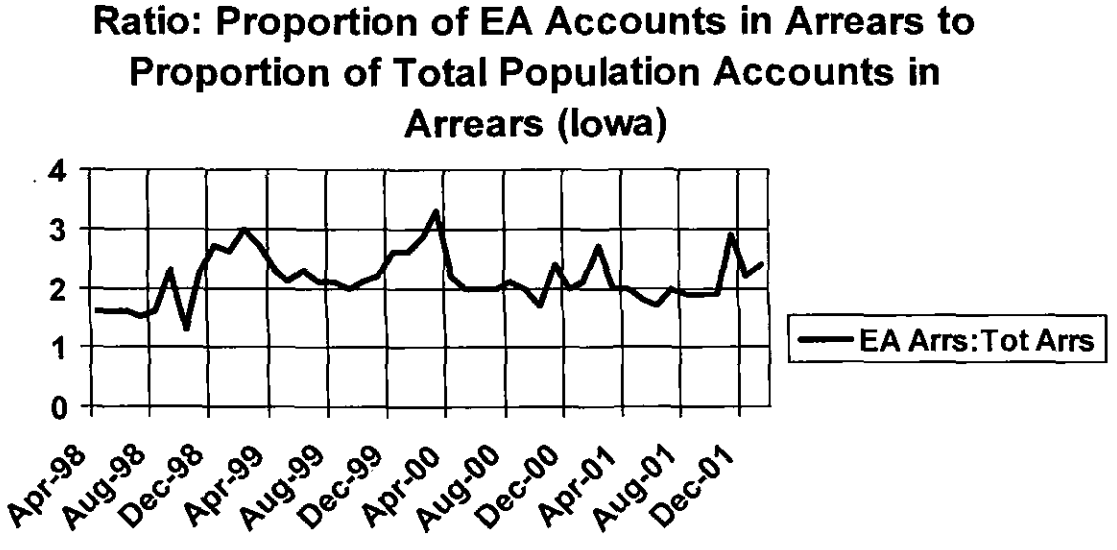
[6] It does not say that twice as many energy assistance customers are in arrears. Merely that the *rate* at which they fall into arrears is twice as high as the total population.

[7] Again, remember that this does not mean that the arrears are constant. It merely means that if the proportion of total population in arrears increases from 10% to 13%, the proportion of energy assistance recipients in arrears has increased at the same rate (from 20% to 26%), leaving a constant ratio of 2.0.

in arrears while 21.7% of low-income accounts were (a ratio of 2.1). By March 2000, the proportion of all customer accounts in arrears had fallen to 8.0% while the proportion of low-income accounts in arrears had risen to 26.2% (a ratio of 3.3). In contrast, during the 2000 – 2001 heating season, the proportion of energy assistance accounts in arrears had increased from 23% (December) to 25% in February. Non-low-income accounts, however, were similarly higher than normal (11% and 12% for December and February respectively), and thus the ratio did not reveal the same variability as in prior years. The purpose of the figure below is to show *relative* rates of arrears, not absolute rates.

Just as clear as the increased rate of energy assistance accounts going into arrears during the winter heating months is the extent to which these customers clear their accounts (relative to the total population) in the non-heating months. The peaks in the ratio occurred in the heating months of each of the four winter periods graphed.[8]

Interestingly, the disparity between the energy assistance population and the total customer population was not as high in the 2000 – 2001 winter heating season (with its high costs) as it was in other years. This can be attributed to two factors. First, as mentioned above, the rate at which total population accounts were in arrears increased, thus narrowing the typical disparity between energy assistance and total population accounts. Second, the higher 2000/2001 winter heating costs were met with a release of additional federal heating assistance benefits. Indeed, the decline in energy assistance accounts in arrears between December 2000 and April 2001 as additional aid was made available is readily evident in the graph below.



[8] *Note that data for the 2001 – 2002 winter heating season is not complete. The most recent data available is* through January 2002.

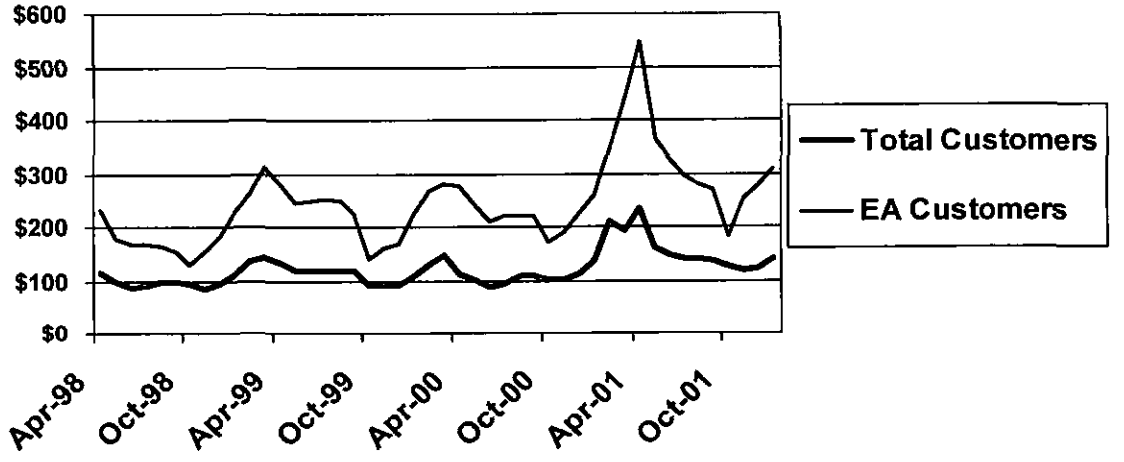
In addition to looking at the *number* of accounts in arrears, it is necessary, also, to look at the *extent* to which accounts are in arrears. The average arrears for energy assistance recipients in Iowa are between $200 and $300 year-round, about twice the level of the total population. It is possible to see the impact of the payment of LIHEAP benefits early in the winter season, as total average arrears (of accounts in arrears) decrease. It is also possible to see the seasonal increase in the arrears experienced by energy assistance recipients.

Importantly, as well, is the increase in arrears (for both energy assistance recipients and the total population) that occurred in the 2000- 2001 winter heating season. While for energy assistance recipients, the previous four year high in level of arrears (for those customers with arrears) was about $300 (in April 1999 and April 2000 respectively), the average arrears for energy assistance accounts in arrears skyrocketed to more than $500 in the winter of 2001. So, too, did the average arrears of the total population in arrears see increases to more than $200 in the 2000 – 2001 winter heating season.

Note two additional observations about these 2000 – 2001 winter arrears. First, the level of arrears corresponded to a higher proportion of accounts that were in arrears. In Iowa, in other words, it was true that the high bills of the 2000 – 2001 winter heating season resulted in more customers being behind on their bills. In addition, these customers were *further* behind on their bills than in previous years. Moreover, the level of arrears did not come *back* down to pre-2000/2001 winter heating season levels during the subsequent twelve months. The average arrears for the total population never did come back to the $100 level before beginning another increase in the 2001/2002 winter season. The energy assistance arrears were reduced in the non-heating season, but were already back up to $300 in January 2002, a level not previously reached (before the 2000/2001 heating season) since April 1998.

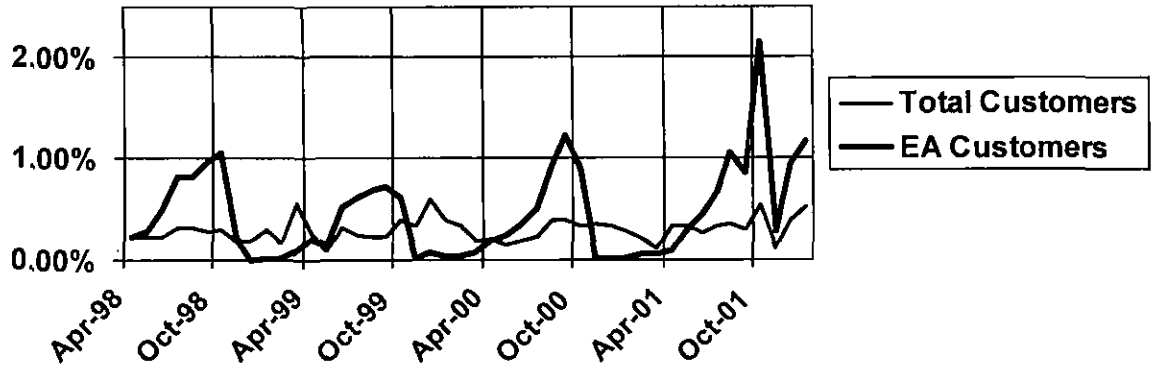
The relationship between temperatures, prices and arrears will be discussed in greater detail below.

Revenue per Accounts in Arrears (Iowa) Energy Assistance and Total Population



The unprecedented level of accounts in arrears, as well as the historically high level of arrears (on a dollars per account in arrears basis) has two direct impacts on a utility. First, these arrears have led to a fly-up in the number of energy assistance accounts written-off as uncollectible. While Iowa does not separately track the *dollars* of write-off for energy assistance accounts, given the higher level of arrears on a per account basis, it is reasonable to conclude that the dollars of write-off showed a spike similar to the spike in the number of accounts written off.

Percentage of Accounts Written Off as Uncollectible: Energy Assistance and Total Customers (Iowa)



The monthly spikes in the number of accounts written off is perhaps somewhat misleading because of regulatory constraints placed on the disconnection of service during the winter months (which would prevent the termination of service accompanied by a subsequent write-off). The high bills during the 2000/2001 winter heating season, however, and the increased incidence and level of arrears accompanying those bills, did have a substantive impact on the total average annual rate at which accounts were written off during the following year. On an annual basis, the proportion of energy assistance accounts written off reached nearly 0.8% during the months following the 2000/2001 winter heating season. This was more than twice the write-off rate for the previous two years (in terms of number of accounts written off) and nearly twice the previous four year high from the April 1998 through March 1999 period. Even the increase for the total population (from .26% to .35%) represented a 35 increase in the proportion of accounts written-off as uncollectible.

Proportion of Accounts Written-Off as Uncollectible: Total Customer Base and Energy Assistance Recipients (Iowa)		
Study period	Total Accounts	Energy Assistance Accounts
April 1998 – March 1999	0.27%	0.42%
April 1999- March 2000	0.30%	0.31%
April 2000 – March 2001	0.26%	0.37%
April 2001 – January 2002	0.35%	0.79%
46 month average	0.29%	0.46%

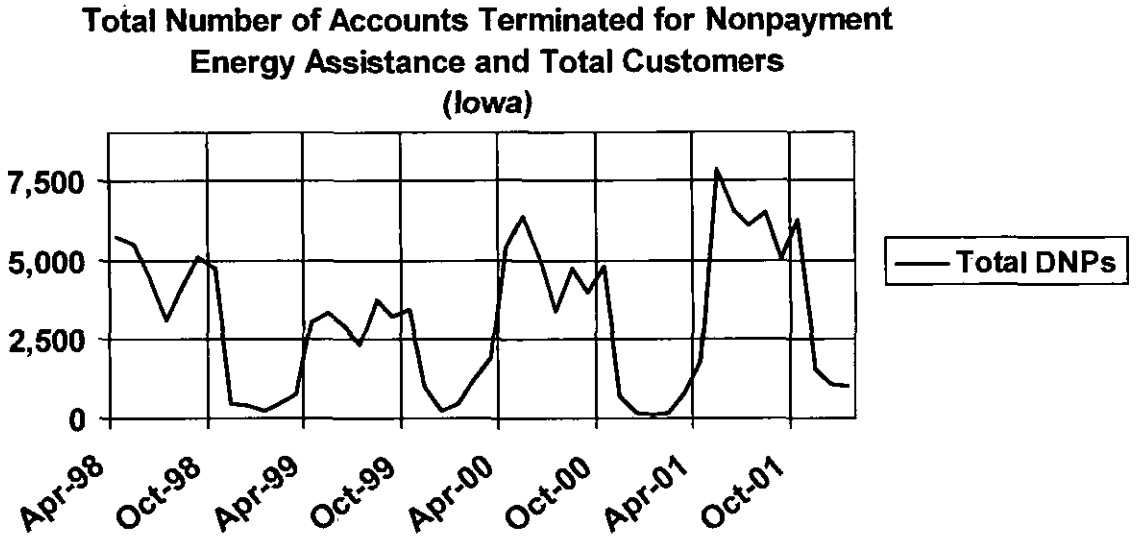
One reason for the spike in uncollectible accounts is the spike in the proportion of accounts disconnected for nonpayment resulting from the 2000/2001 winter heating season. Iowa does not track the number of disconnects separately for energy assistance accounts and for the total population. Only the total number of disconnections is reported.

Not surprisingly, Iowa utilities disconnected a substantively higher number of accounts after the 2000/2001 winter heating season. The number of disconnections per month never fell below 5,000 during the warm weather months following the 2000/2001 winter heating season. This is particularly significant given the observation that in prior years, the number of disconnections per month rarely even *reached* those heights.

It was not merely warm weather terminations that were affected by the incidence and level of arrears resulting from the 2000/2001 winter heating season. The number of terminations during the opening months of the 2001/2002 winter season was unprecedented in scope. The total number of service terminations during the December/January time period for each year for the prior four years was as follows:

Total Iowa Service Disconnections (December/January)			
1998 – 1999	1999 - 2000	2000 - 2001	2001 - 2002
652	712	283	2,142

The 2,142 accounts for which service was terminated in December 2001 and January 2002 was seven times as many terminated accounts as in the corresponding time period one year earlier. It was 30% higher than the total number of accounts terminated in the December/January time period for the past three years *combined.*

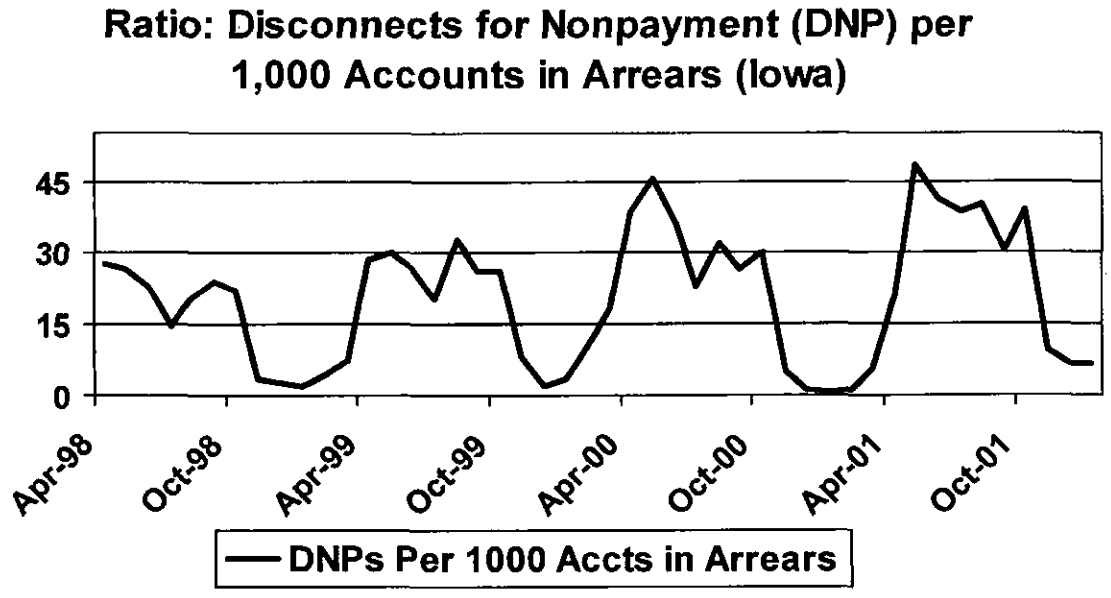


It would be wrong to conclude that the high winter bills of the 2000/2001 winter heating season resulted only in an increase in the total number of accounts experiencing a service termination. *That* observation might result merely from the fact that a larger number of accounts was in arrears after that winter heating season. In fact, the implications go beyond that result.

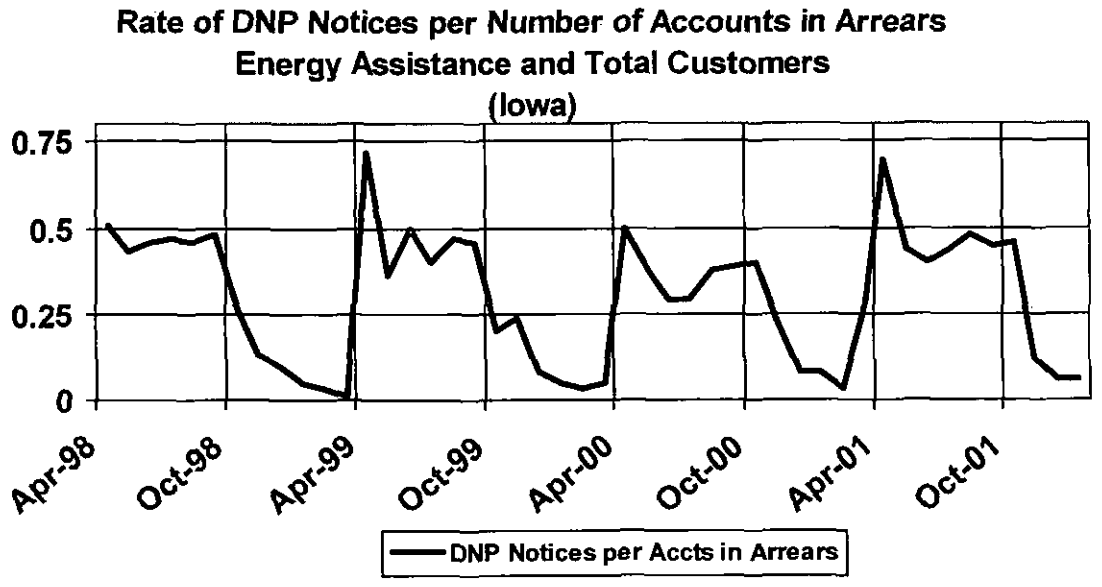
The figure below translates the number of service disconnections into a rate of disconnection per 1,000 accounts in arrears. Converting the number of disconnections into a rate per 1,000 accounts in arrears factors out the increased number of accounts in arrears. As the figure below shows, Iowa utilities disconnected customers in arrears at a far faster rate than had historically been the case.

Assuming that Iowa utilities did not make a conscious policy choice to disconnect customers under circumstances that would not have resulted in a disconnection in a prior year, what this figure tells us is that after the 2000/2001 winter heating season, a far greater number of customers had dug themselves into an arrears hole which they could not climb out of prior to the termination of service. The rate of service terminations during the warm weather months after the 2000/2001 winter heating season never fell below 30 disconnections per 1,000 accounts in

arrears. In contrast, while the 30-per-1000 rate had been reached in occasional months in the previous four years, that rate of service termination had never been reached and sustained over a period of months as was experienced in 2001.



The graph below indicates that it is *not* the case that more customers were entering the collection cycle. While the number of disconnect notices for each account in arrears was somewhat less in the time period of April 2000 through March 2001, the number of notices per accounts in arrears was relatively constant between the other three collection cycles (98-99,99-00 and 01-02). The conclusion must be, when looking at each of these figures in conjunction with each other one, that when customers entered the collection cycle after the 2000/2001 winter heating season, they were less able to extract themselves and were, therefore, more likely to proceed to an ultimate termination of service.



In summary, several conclusions march forward from the data presented above:

- Low-income customers (as identified through the receipt of fuel assistance) have a higher incidence of arrears than does the population as a whole;

- In addition to this higher incidence of arrears, energy assistance customers in arrears have a higher level of arrears than do customers in arrears from the customer base as a whole.

- Winter weather causes a faster increase in the incidence of arrears within the energy assistance population than is caused in the total customer base as a whole.

- Winter weather marked by high bills caused by temperature and/or price spikes has the impact of driving both the incidence of arrears and the level of arrears disproportionately higher in the energy assistance population than in the customer base as a whole.

- The higher proportion of accounts in arrears, coupled with the higher dollar level of arrears (for those customers having arrears) results in an increase in the number of accounts written-off as uncollectible. While dollars of uncollectible are not reported in Iowa, it is assumed that the higher dollar level of arrears for customers in arrears will result in a higher rate of uncollectible dollars as well. The rate of write-off in the energy assistance population can be twice as high as in the total customer base as a whole.

- The higher incidence of arrears, when coupled with the higher level of arrears, arising from price fly-ups results in an increase in the number of disconnections.

- In addition to higher numbers of disconnection, the higher incidence of arrears, when coupled with the higher dollar level of arrears (for those customers having arrears), resulted in a higher rate of disconnections per thousand accounts having arrears. A higher rate of customers in arrears, in other words, were so deeply in arrears, they could not retire their arrears (or at least retire their arrears to an extent sufficient to avoid the termination of service).

A closer look at the relationship between payment troubles, price and temperature, will be presented in the next section.

PART 2.
THE RELATIONSHIP BETWEEN PRICE, TEMPERATURE AND PAYMENT-TROUBLES

This section seeks to provide insights into the relationship between various indicators of payment-troubled status, energy assistance recipients, and two specific factors that can increase bills to those recipients in any given month or year (price and weather). The search for such a relationship using publicly available data is complicated by a variety of factors.

First and foremost is the complete absence of data. Most states do not report data on the incidence of service terminations or on either the number of accounts in arrears or dollars of arrears on a regular basis. Those few states that do publish information do not generally distinguish between the total residential population and the low-income residential population. The state of New Jersey reports data on arrears and disconnects but does not break-out data by customer class. The New Jersey data thus includes residential, commercial, industrial and institutional data all in one number. The states of Missouri and Pennsylvania collect certain information on arrears and collection activities but accords that data confidential status. The state of Colorado has quarterly reporting requirements, but has either allowed utilities to engage in a systematic non-compliance over time or has lost or destroyed all but the most recent months of data. The state of Maryland annually reports data on the winter heating season, but neither collects nor reports data on a total annual or on a monthly basis.

Most states, however, simply do not compile data on collections or payment-troubles for residential customers generally, let alone for low-income residential customers in particular.

Having said that, it is possible to apply basic some analytic tests to data obtained for the state of Iowa. The Iowa Utilities Board reports on a monthly basis:

- The number of energy assistance accounts in arrears;

- The level of arrears for energy assistance accounts in arrears;

- The number of disconnect notices issued to energy assistance accounts;
- The number of energy assistance accounts written-off (but not the dollars of write-off); and
- The number of residential disconnections for nonpayment (but not the number of energy assistance accounts disconnected for nonpayment).

While Iowa also reports the total number of residential accounts and energy assistance accounts on a monthly basis, it does not report total revenue for either population. As a result, monthly bills cannot be calculated. The monthly Iowa reports were obtained for April 1998 through January 2002 (the most recent available), a period of 46 months.

Four measures of payment-troubled status were selected or developed as indicators of the impact of price and/or temperature on energy assistance recipients in Iowa. These included:

- The proportion of energy assistance accounts in arrears;
- The dollars of arrears for accounts in arrears;
- The rate of disconnections for nonpayment (DNP) per thousand accounts in arrears;[9] and
- The index of the number of energy assistance accounts written-off to the total number of energy assistance accounts.

The rational for, and significance of, selecting each one of these indicators was explained in detail in Part 1 above.

Each of these indicators was obtained for the four years used in this study. In addition, within each year, three data points were selected to consider the impacts at different points in the year. The three months selected included:

- April, the month immediately following the winter heating season (and the close of he winter shutoff moratorium);
- July, the middle of the non-heating season when, perhaps, any residual effects of the heating season may have been played out; and

[9] Again, this data was available for the total residential class, not for energy assistance recipients specifically.

- October, the month immediately preceding the next winter heating season, when presumably the effects of the *preceding* season would be at their lowest (and the effects of the coming season would not yet have begun to accumulate).

These twelve variables were the dependent variables used in the inquiry.

	April	July	October
Dollars of arrears per EA account in arrears			
Percent of EA accounts in arrears			
Ratio: EA accounts written off to total number of EA accounts			
Disconnects for nonpayment per 1,000 accounts in arrears			

Two independent variables were selected for consideration. Since average monthly revenue was not available, for either residential customers generally or for energy assistance customers in particular, the factors affecting bills as directly controlled by a capped bill program were selected as the independent variables:

- Temperature; and
- Price

Each of these variables will be explained in the specific section discussing their application.

A simple R^2 analysis was performed for each relationship. An R^2 indicates the "tightness" of the fit of two sets of data. A high R^2 (one approaching 1.0) indicates that changes in the dependent variable are closely explained by changes in the independent variable. A low R^2 indicates that the movements in the two variables are random (or that they, at the least, are not associated with each other). An R^2 does *not* establish causation. It cannot be said, in other words, that a high R^2 demonstrates that the movement in the independent variable *causes* the movement in the dependent variable. It merely indicates that there is an association or relationship.

Temperature

Temperature was measured through the use of Heating Degree Days (HDDs). Heating degree days for the state of Iowa, as reported by the National Weather Service, National Oceanographic and Atmospheric Administration (NWS/NOAA), were obtained for November 1997 through January 2002. The HDDs metric selected for use was the sum of the HDDs in the months of each heating season (November through March) of each year. Each HDD metric was regressed against the twelve dependent variables explained in detail above.

The following R^2s resulted:

	April	July	October
Dollars of arrears per EA account in arrears	0.935	0.731	0.485
Percent of EA accounts in arrears	0.005	0.501	0.738
Ratio: EA accounts written off to total number of EA accounts	0.639	0.012	0.655
Disconnects for nonpayment per 1,000 accounts in arrears	0.426	0.690	0.344

The following conclusions are reached based upon these results:

- There is a strong association between the dollars of arrears for energy assistance accounts at the end of the heating season and the temperatures experienced during the heating season. The strength of that association remains even during the middle of the non-heating season (with a correlation coefficient of 0.73). While the strength understandably wanes the further in time the customers get from the winter heating season, there is a moderately strong association as late as the subsequent October.

- Similarly, there is a moderately strong relationship between the proportion of energy assistance customers in arrears at the selected months and the sum of the heating degree days during the heating months of November through March. While the R^2 began at close to 0.0 for the month of April, it increased to 0.501 for July to.0.730 for the month of October. These data reveal an association between the proportion of accounts in arrears and the extent of Heating Degree Days.

- There is a moderately strong relationship between the proportion of energy assistance accounts written off as uncollectible and the temperature in the preceding heating season. While the relationship virtually disappears during the month of July, it ranges from 0.63 to 0.65 for the months of April and October.

- There is also a moderately strong relationship between the rate at which accounts in arrears experience a disconnection for nonpayment and the temperature in the preceding heating season. The rate of disconnection is measured by the number of disconnections per 1,000 accounts in arrears. The relationship grows stronger from April to July before beginning to relax.

Each of these conclusions is consistent with the narrative discussion of the Iowa data presented in Part 1 of this paper. The conclusions are not of mere theoretical significance. Indeed, they will be used as direct inputs into the discussion of the financial impacts of a capped bill program.

Prices

Prices were measured using actual natural gas bills for the state of Iowa derived from data reported by the Energy Information Administration of the U.S. Department of Energy (EIA/DOE). The Natural Gas Monthly published by EIA/DOE provided data for both the total residential gas consumption[10] and gas prices.[11] The average monthly number of customers was

[10] Gas deliveries by customer class are provided in Table 15.

obtained for Iowa from the EIA/DOE Natural Gas Annual.[12] Dividing total consumption by average customers provided a monthly consumption which, when multiplied by the average price yields a monthly natural gas bill. Bills were calculated for November 1997 through January 2002. The price metric selected for use was the sum of the natural gas bills for the months of November through April of each heating season (for example, November 1997 through April 1998. These annual metrics was regressed against the twelve dependent variables explained in detail above.

The following R^2s resulted:

	April	July	October
Dollars of arrears per EA account in arrears	0.950	0.669	0.854
Percent of EA accounts in arrears	0.001	0.613	0.854
Ratio: EA accounts written off to total number of EA accounts	0.817	0.048	0.599
Disconnects for nonpayment per 1,000 accounts in arrears	0.329	0.768	0.351

The relationships found between these billing metrics and the payment outcome indicators are even stronger than the relationship between temperature and the payment outcome metrics. This is not surprising, of course, since price, standing alone, was not used in the analysis, but rather total bills. The data for total bills would include, as implicit input factors, both price and temperature.

The following conclusions are reached based upon these results:

- There is a strong association between the dollars of arrears for energy assistance accounts at the end of the heating season and the bills experienced during the heating season. The association in April (marked by a coefficient of 0.95) is quite strong. While the strength understandably wanes somewhat in July (0.67) as customers get from the winter heating season, there is still a strong association as late as the subsequent October (0.85).

- There is a moderately strong relationship between the proportion of energy assistance customers in arrears at the selected months and the sum of the heating degree days during the heating months of November through March. While the R^2 began at close to 0.0 for the month of April, it increased to 0.613 for July to.0.854 for the month of October. These data reveal an association between the proportion of accounts in arrears and the size of the natural gas bills in the prior winter heating season.

- There is a very strong relationship between the proportion of energy assistance accounts written off as uncollectible in April and the bills incurred in the preceding

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11 Gas prices by month are provided in Table 21.

12 The average monthly number of customers is provided in individual tables for each state. Iowa data is provided in Table 57.

heating season. While the relationship virtually disappears during the month of July, it ranges from 0.82 to 0.60 for the months of April and October.

- There is also a moderately weak relationship between the rate at which accounts in arrears experience a disconnection for nonpayment in April and the bills in the preceding heating season. The rate of disconnection is measured by the number of disconnections per 1,000 accounts in arrears. The relationship grows much stronger for the month of July (up to an R^2 of 0.77) before beginning to relax in October.

In sum, the relationships that are documented above are consistent with the narrative discussion in Part 1. The impacts of temperature and price on bills have a substantive impact on payment outcomes for energy assistance recipients. The issue which is thus presented is whether a program directed toward controlling impact of the two factors of temperature and price can generate real financial savings to a sponsoring utility.

PART 3.
THE COST OF NONPAYMENT.

The last building block to be examined before considering the financial impacts of a capped bill program involves assessing the costs associated with nonpayment. The cost of non-payment of a residential utility bill generally consists of three separate components:

- The cost of collecting the past-due bill (collection costs);
- The cost of obtaining replacement revenue (either internally or externally) for the time the billed revenue goes uncollected; and
- The cost of revenue ultimately written off as uncollectible.

The discussion below will separately consider each of these components.

Cost of Collection

The cost of collecting unpaid bills depends on both the collection interventions that are put into play and the point in time at which the interventions are activated. Little collection activity occurs within the first 30 days after a bill is first rendered. This occurs for three reasons:

- The billed revenue is not overdue; or
- The size of the receivable is not sufficiently large to cost-justify incurring collection expenses; and/or
- The age of the receivable is not sufficiently old to place the receivable at risk of long-term non-collection or eventual uncollectability.

The longer a receivable ages, the more that subsequent bills will pancake on top of the oldest arrears[13] and the greater the long-term risk accrues of eventual uncollectability. On a per account basis, therefore, an older arrears imposes greater costs in three ways:

- It generates a larger number of dollar lag days giving rise to working capital expense;
- It generates more intense (and thus more expensive) collection interventions; and
- It creates high levels of charge-offs.

Reducing both the level and age of arrears, therefore, should result in direct dollar savings to the utility experiencing the reductions.

In reaching this conclusion, resource expenditures that are not avoided altogether but that are redirected to other productive tasks are considered to be "saved" in this analysis. If a half-time full time equivalent (0.50 FTE) can be moved from collecting 90-day old residential arrears to performing other productive work, the labor cost associated with that 0.50 FTE is deemed a "savings" to the collection activities of a company.

Collection Timeline

Assuming a bill is rendered on day 1 of a collection timeline, and is due on Day 20, significant intervention costs begin to accrue to the utility at around Day 40. The following interventions occur along the collection timeline:

- If a customer-initiated in-bound calls occurs, it will generally occur before the due date of the second bill;
- An out-bound collection call will happen within ten days of the date of the second bill (which first contains the Bill 1 arrears);
- A written disconnect notice is issued within ten days of the out-bound reminder telephone call;
- A written disconnect notice generally generates a response by the customer. If a payment is not made, an in-bound call is handled;
- A field disconnection notice is delivered within ten to fourteen days of the presumed receipt of the written disconnect notice;

[13] For an arrears to be 90-days old, the immediately two preceding bills must be in arrears in their entirety. A 30-day or 60-day arrears will not be paid prior to the 90-day arrears being retired.

- A service termination occurs within three days of the delivery of the field disconnection notice;
- If service is reconnected, the reconnection generally occurs within one day of the service termination;
- Write-offs are presumed to occur at day 180 after the initial bill.

The collection time line is as follows:

A TYPICAL COLLECTION TIME LINE AND COSTS

	Days from Bill Date			
	1 - 30	31 - 60	61 - 90	91 – 150
Bill #1 rendered	Day 1			
Bill past due	Day 21			
In-bound call	Day 25 ($8)			
Out-bound call		Day 40 ($5)		
Written DNP notice		Day 50 ($0.50)		
In-bound query		Day 53 ($8)		
Deliver DNP notice			Day 64 ($35)	
Disconnect service			Day 67 ($40)	
Reconnect service			Day 68 ($45)	
Final bill issued			Day 74 ($6)	
Write-off				Day 180
Total cost	$8.00	$13.50	$126.00	$0.00

The costs presented in this time line are rounded to eliminate any sense of false precision. Clearly, also, individual utilities may differ based on individual company costs, procedures, and time lines. Individual customers not only may, but are likely, to deviate from the norm as well.

The Collection Intervention Costs

Assuming that an account traverses the entire range of collection interventions once, that account will cause a utility to incur nearly $150 in costs exclusive of any final write-off amount.[14] Of the total collection costs, 85% ($126 of $147.50) are incurred in the period running form 60 to 90 days after a bill is first issued. Keeping an arrears from entering the 61 – 90 day age bucket will thus provide a substantial cost savings to a utility. However, the bulk of the costs arise from an account entering the active disconnect process. Even if an account enters the 61 – 90 day age bucket, therefore, unless the arrears progresses to the beginning of field services, substantial savings will not arise from collection savings.

The Cost of Replacement Revenue

Whenever a utility bills a dollar of revenue without collecting it, that utility will incur a cost of money associated with the unpaid bill. The cost of money will manifest itself in one of two ways. Either:

- The utility will *procure* money to replace the unpaid revenue (external sources); or
- The utility will use *internal cash* to replace the unpaid revenue (internal sources).

In the first instance, the company will incur a cost at the weighted rate of return. Since working capital is a capital expense for ratemaking purposes, the equity portion of the return will have an income tax component associated with it.[15] In the second instance, in the absence of the need to use the internally-generated cash to meet cash working capital needs, the company would have presumably have invested that cash. Again, the cost consequence of the unpaid revenue is thus quantified at the rate of the weighted cost of capital (grossed up for taxes).

A customer will bring two revenue components into play in any given month:

- The unpaid arrears from prior months' bills;[16] and
- The bill for current usage.

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14 The derivation of cost figures is presented in Attachment A.

15 Since arrears are a relatively permanent aspect of a utility's operations, the working capital reserve is a part of the company's permanent capital requirements. Accordingly, the funds procured from an external source are costed out at a company's weighted cost of capital.

16 This unpaid arrears may be $0, but to maintain some conceptual consistency, the presence of unpaid arrears must be recognized in all instances. To try to distinguish between a customer with "no arrears" and a customer with an arrears of $0 leads to difficulty in application.

The Cost of Arrears

The unpaid arrears will fall into the various aging buckets that a company maintains. For purposes of analysis, the discussion below will assume that a company has three aging buckets: (1) 30-day arrears; (2) 60-day arrears; and (3) 90+-day arrears.

The working capital costs imposed by arrears are based on the number of revenue lag days created by the arrears. The revenue lag days represent the incremental number of days that a bill remains unpaid from the day the bill is first rendered. The days from the day a bill is rendered to an on-time payment is supplied by assumption (15 days, assuming that bills are paid three-quarters of the way through a 20-day payment period). The incremental lag days are then calculated by placing the arrears at the mid-point of each aging bucket.

- A 30-day arrears thus adds 20 days to the initial billing period (the final five days of the payment period plus one-half of the 30-day arrears period).

- A 60-day arrears adds 30 more incremental days (the final 15 days of the 30-day arrears period plus one-half of the 60-day arrears period);

- A 90-day arrears adds 105 more days. Since the 90-day bucket is open-ended, it is unreasonable to assume that the arrears fall within the first 30-days of this age bucket. This analysis supplies the age of 90+-day arrears by taking the arrears out to one-month short of the time at which they are written off as uncollectible (at Day 180). This process adds the final 15 days of the 60-day arrears period plus the 90 more days to 150 days).

The dollar lag days are computed by multiplying the dollars in arrears times the incremental lag days for that month. The dollar lag days are then multiplied by a daily cost of capital to determine the working capital expense.

The table below presents the working capital expense associated with arrears within any given month.

	Bill Date to Due Date	30-Day Active	60-Day Active	90-Day Active
Arrears	$100	$100	$100	$100
Incremental Age	15	20	30	105
Dollar Lag Days	1,500	2,000	3,000	10,500
Annualized Weighted Return	8.5%	8.5%	8.5%	8.5%
Gross Up Factor for Taxes	40.0%	40.0%	40.0%	40.0%
Weighted Return (GUFT)	11.9%	11.9%	11.9%	11.9%
Days per Year	365	365	365	365
Daily Return (GUFT)	[redacted]	[redacted]	[redacted]	[redacted]
Working Capital	$0.46	$0.62	$0.93	$3.29
Annualizing Factor	12	12	12	12
Annualized Working Capital	$5.56	$7.42	$11.14	$39.45
WC per $1,000 Receivables	$55.58	$74.16	$111.41	$394.48

Per $1000 0.0326%

It is important to note that the working capital expense is not additive, but incremental. With 60-day arrears appearing on a July bill, for example, the working capital associated with those dollars in the month they were billed would have been determined in May. The working capital associated with them when they were 30-day arrears would have been calculated in June. The working capital expense above is presented on a dollars-per-arrears ($000) basis.

The working capital expense for a particular company for a particular month would thus need to be determined as follows (in a hypothetical illustration):

	Bill Date to Due Date	30-Day Active	60-Day Active	90-Day Active	Total
WC per $1,000 Receivables	$55.58	$74.16	$111.41	$394.48	
Dollars of receivables	$30,000,000	$3,600,000	$2,000,000	$6,700,000	
Receivables ($1000 increments)	30,000	3,600	2,000	6,700	
Working capital	$1,667,277	$266,970	$222,818	$2,643,006	$4,800,071

The Cost of Current Bills

Current bills in any particular month must be divided into two buckets. The first bucket captures those bills that are paid by the due date. The second bucket captures those bills that are not paid by the due date and thus will be reflected as 30-day arrears in the next month. Both buckets are limited to those dollars that are eventually paid and do not proceed to charge-off.

The significance of the two buckets is simply that dollars in the first bucket are assumed to be paid before the due date. The working capital associated with these current bills thus includes only those days between the billing date and the payment date. In contrast, the dollars that proceed to become arrears go full-term, and thus have a full 20-days of working capital associated with them. For current bills that eventually become arrears, the incremental days of

working capital are recognized and calculated in the working capital calculations relating to arrears.

On a per $1,000 basis, the working capital associated with current bills not subject to eventually being charged-off is as follows:

	Bill Date to Due Date
Current bill not in arrears	$100
Incremental Age	15
Dollar Lag Days	1,500
Annualized Weighted Return	8.5%
Gross Up Factor for Taxes	40.0%
Weighted Return (GUFT)	11.9%
Days per Year	365
Daily Return (GUFT)	[redacted]
Working Capital	$0.46
Annualizing Factor	12
Annualized Working Capital	$5.56
WC per $1,000 Receivables	$55.58

The significance of this calculation lies in the ability to reduce the incremental age of the current bill at the time it is paid in the current month. The same calculation, assuming that bills are paid at Day 10 rather than Day 15, would result in the following cost determination:

	Bill Date to Due Date
Current bill not in arrears	$100
Incremental Age	10
Dollar Lag Days	1,000
Annualized Weighted Return	8.5%
Gross Up Factor for Taxes	40.0%
Weighted Return (GUFT)	11.9%
Days per Year	365
Daily Return (GUFT)	0.0308%
Working Capital	$0.31
Annualizing Factor	12
Annualized Working Capital	$3.70
WC per $1,000 Receivables	$37.02

As can be seen, reducing the bill payment date from Day 15 to Day 10 would save nearly $20 per $1,000 of current receivables.

The Cost of Charge-offs

The final cost component to be considered is the cost of charge-offs. The first out-of-pocket cost of charge-offs is the rate at which bills are to be written-off. Charge-offs have both a prospective and a retrospective component to them.

- The prospective component consists of applying the charge-off rate to all future bills rendered for current usage;
- The retrospective component consists of applying the charge-off rate to the arrears that are brought into the program.

While by its nature, the prospective rate will be repeatedly applied (as each month's current usage is billed), the retrospective component involves a one-time application to the arrears that exist on the books as arrears at the beginning of the program. Data does not exist to disaggregate the rate of charge-off based on the age of arrears.

The rate of charge-off differs depending on the age of arrears. Experience counsels that 95% of 30-day arrears are collectable, 90% of 60-day arrears are collectable, and 85% of 90+-day arrears are collectable. As an arrears ages, only the incremental charge-off should be considered. Under the circumstances identified above, the incremental charge-off rate is five percent for each age bucket.

In addition to the charged-off revenue itself, the working capital associated with carrying bills until they are finally charged-off is an expense to be considered. Some portion of each age bucket of arrears will proceed along the collection time line until it is charged off. By having those bills paid in a particular month, rather than proceeding to charge-off, a utility would avoid the working capital from the point in time in question to the date of charge-off. Thus, for example, the time remaining until charge-off would be as follows by age bucket:

- Current receivables: 165 days
- 30-day arrears: 145 days
- 60-day arrears: 115 days
- 90+-day arrears: 10 days

If a company has $100 in current receivables, 2.5% of which will eventually be charged-off (at day 180), then having the entire $100 paid in Month 1 will avoid $0.13 in future working capital simply for the charge-off amount. A 30-day arrears of $100 would result in an avoided working capital of $0.11 simply for the charge-off amount. The calculation translating this into a cost per $1,000 of receivables is set forth below:

	Bill Date to Due Date	30 Day Active	60 Day Active	90 Day Active
Charge-off Working Capital				
Maximum Age of Charge Off	180			
Potential charge-off rate	2.5%			
Potential Charge Off Dollars	$2.50	$2.50	$2.50	$2.50
Days Remaining until Charge Off	165	145	115	10
Dollar Lag Days	413	363	288	25
Potential Working Capital	$0.13	$0.11	$0.09	$0.01
Annualizing Factor	1	1	1	1
Annualized Working Capital	$0.13	$0.11	$0.09	$0.01
WC per $1,000 Receivables	$52.14	$45.68	$36.06	$3.09

Summary and Conclusions

In summary, the costs associated with nonpayment can be categorized into three elements:

- The cost of collection, which involves the expenses associated with interventions *which the utility triggers* in response to nonpayment;
- The cost of replacing the revenue that is billed but not collected. This cost arises whether the company generates its replacement revenue externally or internally; and
- The costs of charge-offs. This expense involves both the charge-off itself and the working capital associated with the billed revenue carried to the charge-off date.

PART 4:
THE FINANCIAL IMPACTS OF A CAPPED BILL PROGRAM

One response to bill volatility involves programs called a Capped Bill program. Under a Capped Bill program, the participant pays the same bill amount each month for twelve months. An external party –the company that designed and is promoting a Capped Bill program is called WeatherWise USA—acquires financial instruments that pay the participants' bills above the monthly capped bill amount. Bills may increase due to changes in weather or to changes in price. In the event of *lower* bills driven by milder temperatures or an energy price drop, the participant receives a refund at the end of the program year.

The data presented above have been combined into a model that considers the financial impact of a capped bill program. The model considers the change in costs to the utility that might arise from the implementation of a capped bill program. Based on the discussion in Parts 1 and 2 above, the cost savings are estimated assuming three alternative scenarios. Each scenario is an alternative way of considering how a capped bill program might eliminate the impacts of dramatic changes in bills attributable to temperature and/or prices. The three alternatives are:

- **Scenario #1:** Assuming that the energy assistance population will act in the same way as the residential population as a whole;

- **Scenario #2:** Assuming that the energy assistance population in the 2000/2001 heating season instead acted in the same fashion as the energy assistance population in the 1998/1999 heating season, a season in which price and temperature did not play a factor; and

- **Scenario #3:** Assuming that the energy assistance population in the 2000/2001 heating season acted in the same fashion as the energy assistance population acted in the 2000/2001 non-heating season, a time period in which price and temperature did not play a factor in affecting bills.

Results of each of the alternative scenarios are discussed separately below. Each scenario assumes that the capped bill program has 10,000 participants and that the program cost is $100 per participant. Except to the extent that the number of participants might have an impact on the program cost per participant, the analysis of savings on a per participant basis will not be affected by the total number of program participants.

The analysis in this paper does not consider the working capital changes associated with changes in the current payment of bills for current usage.

Scenario #1: Acting as the Residential Customer Class Acts

Scenario #1 tests the financial impacts of a capped bill program that will generate payment outcomes for the energy assistance population that reflect the payment outcomes of the residential population as a whole. Under these conditions, the capped bill program will generate offsetting cost savings of roughly $75 ($74.48) per participant.[17] These savings go to offset a program cost of $100 per participant.

The savings come primarily in three areas:

- Avoided charge-offs ($359,181)

- Avoided working capital associated with month-to-month arrears ($197,312); and

- Avoided collection costs ($132,948).

[17] This is not to say that each participant generates program savings. But the sum of the savings divided by the total number of program participants yields the savings per participant.

While the costs of disconnecting service are substantially higher than the collection costs associated with 30-day to 60-day arrears, the number of accounts that move into the disconnection cycle is not sufficient to generate substantial dollar reductions.[18]

In contrast, while the costs of collection are relatively low on a per unit of collection basis, the number of accounts subject to collection are sufficiently high to make this part of a company's cost incursion a source of potentially substantial savings.

The calculation of the savings attributable to modifying energy assistance recipient payment outcomes such that they reflect the payment outcomes of the residential population as a whole is set forth in Appendix 1.

Scenario #2: Acting as the Energy Assistance Recipient Population Acts in a Typical Heating Season (and beyond)

Scenario #2 tests the financial impacts of a capped bill program that will generate payment outcomes for the energy assistance population that reflect the payment outcomes of the energy assistance population in a typical heating season (compared to the 2000/2001 heating season). The typical heating season used (where the HDDs approach normal on both a monthly and annual basis) is the 1998/1999 heating season. Under this approach, the impacts of the weather and price are factored out by looking at the behavior of the energy assistance population during a year in which those factors were not in play.

Under these conditions, the capped bill program will generate offsetting cost savings of roughly $24 ($24.08) per participant. These savings go to offset a program cost of $100 per participant.

The savings come primarily in three areas:

- Avoided charge-offs ($131,827)
- Avoided working capital associated with month-to-month arrears ($19,685); and
- Avoided collection costs ($48,795).

The difference in payment outcomes as reported between years are an insufficient basis upon which to build an argument that a capped bill program will generate substantive savings. The reduction in both the percentage of accounts in arrears and the level of arrears per account from 1998/1999 to 2000/2001 resulted in reduced collection costs of tens of thousands (not hundreds of thousands) of dollars. The number of shutoffs for nonpayment, as well as the total collection

[18] Because of limitations in data, there is no way to determine the number of accounts that go through some portion, but not all, of the disconnect process. The avoided collection costs exclude any part of the disconnect process. To the extent, for example, that there are accounts that may receive a disconnect notice delivered via a field visit, but that do not experience an actual disconnection of service, there are costs that are not included in this model.

activities, are largely (albeit not entirely) driven by the number of accounts in arrears, not by the level of arrears. The proportion of accounts in arrears, however, is one of the factors with the least strong relationship to temperature and total monthly bill size.

As can be seen, the factor with the largest decrease in savings potential (moving the Scenario #1 to Scenario #2) is the month-to-month avoided working capital associated with arrears. Neither the proportion of energy assistance accounts in arrears nor the level of arrears shows a substantial decline from a "bad" year to a "typical" year. The fall off in working capital savings from Scenario #1 to Scenario #2 was more than 90 percent.

The calculation of the savings attributable to modifying energy assistance payment outcomes such that they reflect the payment outcomes of energy assistance recipients in a year with typical prices and temperature is set forth in Appendix 2.

Scenario #3: Acting as the Energy Assistance Recipient Population Acts in the Non-heating Season

Scenario #3 tests the financial impacts of a capped bill program that will generate payment outcomes for the energy assistance population that reflect the payment outcomes of the energy assistance population in the non-heating season. The payment outcomes in the time period November 2000 through October 2001 were compared to the average payment outcomes for the August through October 2000 time period. Under this approach, the impacts of the weather and price are factored out by looking at the behavior of the energy assistance population during a time period in which those factors are not in play.

Under these conditions, the capped bill program will generate offsetting cost savings of more than $30 ($30.14) per participant. These savings go to offset a program cost of $100 per participant.

The savings come primarily in three areas:

- Avoided charge-offs ($171,922)
- Avoided working capital associated with month-to-month arrears ($25,392); and
- Avoided collection costs ($63,635).

Improving payment outcomes for energy assistance recipients subsequent to a winter heating season when bills are affected by increases due to price and or temperature spikes to reflect the payment outcomes of the non-heating season prior to the price spikes will provide a moderate basis for the conclusion that a capped bill program would generate offsetting cost savings. As with other Scenarios of payment outcomes, the primary reduction in utility expenses will occur in the area of avoided charge-offs. Avoided collection costs are noticeably higher than simply

improving payment outcomes to a typical year's level for energy assistance recipients. Working capital savings do not provide a substantial contribution to the offsetting savings.

The calculation of the savings attributable to modifying energy assistance payment outcomes such that they reflect the payment outcomes of energy assistance recipients in the non-heating season is set forth in Appendix 3.

SUMMARY AND CONCLUSIONS

Offering a program that will control low-income exposure to payment outcomes associated with spikes in bills caused by temperature and/or price changes will generate expense savings to the utility that will offset program costs in whole or part. Elements of cost savings will include:

- Foregone collection expenses, including the avoided need to disconnect service for nonpayment;
- Avoided working capital expense; and
- Avoided charge-offs.

The extent to which a capped bill program will generate offsetting savings depends on how the elimination of price and temperature variability will affect low-income payment outcomes. There is no question, based on the discussion above, that low-income customers experience payment outcomes to a utility that are less favorable to a utility than the residential class as a whole. Low-income customers:

- Have a higher proportion of accounts in arrears;
- Have a higher level of arrears on a per account basis;
- Fall more deeply into arrears faster during the heating months;
- Have a higher proportion of accounts written-off as uncollectible;
- Have a higher proportion of accounts in arrears proceed all the way to the disconnection of service.

A capped bill program can help a utility to control these payment outcomes (and thus the expenses associated with these payment outcomes). A capped bill program can:

- Generate $75 in savings per participant if low-income outcomes are reduced to the level of payment outcomes for the total population;

- Generate $20 in savings per participant if low-income payment outcomes can be held constant at the non-heating month levels through subsequent high bill months;

- Generate $30 in savings per participant if low-income payment outcomes can be held constant at the levels of a year that has normal temperature and natural gas prices.

ATTACHMENT A

Cost Component	Outbound Calls	Inbound Call	Field Collection Visit	Mailed Notice	Disconnect	Reconnect	Final bill
Set-up costs	$0.00	$0.00	$6.00	$0.00	$6.00	$6.00	$6.00
Labor minutes	8	15	30	0	30	50	0
Completion rate	80%	100%	100%	100%	100%	100%	100%
Adjusted labor minutes	10	15	30	0	30	50	0
Annual salary	$30,000	$30,000	$40,000	$0	$40,000	$40,000	$0
Salary per hour	$15.00	$15.00	$20.00	$0.00	$20.00	$20.00	$0.00
Productivity factor (6hrs:8hrs)	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adjusted salary per hour	$20.00	$20.00	$26.67	$0.00	$26.67	$26.67	$0.00
Loaded benefits	35%	35%	35%	35%	35%	35%	35%
Direct labor cost	$4.50	$6.75	$18.00	$0.00	$18.00	$30.00	$0.00
Vehicle cost	$0.00	$0.00	$8.50	$0.00	$8.50	$8.50	$0.00
Materials	$0.68	$1.01	$0.00	$0.15	$0.00	$0.00	$0.00
Mail cost	$0.00	$0.00	$0.00	$0.35	$0.00	$0.00	$0.00
Post-action collections	$0.00	$0.00	$0.00	$0.00	$5.18	$0.00	$0.00
Total cost	$5.18	$7.76	$32.50	$0.50	$37.68	$44.50	$6.00

Additional appendices have been omitted from this report due to their length.
Readers may contact the author for copies.

Energy Safety Net Toolkit

TOOL #4

A FRAGILE INCOME:
DEFERRED PAYMENT PLANS AND THE ABILITY TO PAY OF WORKING POOR UTILITY CUSTOMERS

An Energy Safety Net Tool from:

National Fuel Funds Network
733 15th Street NW, Suite # 940
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http://www.nationalfuelfunds.org

March 2002

Natural gas and electric utilities provide varying types and degrees of protections against the termination of winter utility service due to nonpayment.[1] Some protections prevent shutoffs during a specified time period,[2] while others prohibit shutoffs only when temperatures fall below a designated level.[3] Some protections prevent shutoffs only for "low-income" customers,[4] while others apply to all customers irrespective of income. Some protections impose a complete prohibition on winter service terminations, while others simply require utility commission approval prior to effecting a winter service termination.

Whatever the form of the winter protections, when those protections end with the arrival of spring, a multitude of customers face the prospect of paying off accrued arrears or losing their utility service altogether.[5] When this happens, customers frequently end up seeking financial assistance from local fuel funds to help prevent the termination of service.

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1 The 1990 *Annual LIHEAP Report to Congress* presented a national survey of the type, and the extent, of winter utility shutoff restrictions. U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance (September 1991). ***Low Income Home Energy Assistance Program, Report to Congress for Fiscal Year 1990***, at 153 – 162, Department of Health and Human Services: Washington D.C.

2 For example, shutoffs may be prohibited between November 15th and April 1st.

3 For example, shutoffs may be prohibited on any day when the temperature is forecast to fall below 32° F.

4 For example, shutoffs may be prohibited only for households qualifying for the Low-Income Home Energy Assistance Program (LIHEAP).

5 A study by the National Fuel Funds Network, and other national energy groups, found that at the end of the 2000/2001 winter heating season, at least 4.3 million low-income households were at risk of having their utility service cutoff because of an inability to pay their winter home energy bills. National Fuel Fund Network, et al. (June 2001). ***The Cold Facts***, at 1, National Fuel Fund Network: Washington D.C.

With high natural gas bills and a sagging economy, it is more critical than ever to develop appropriate policies to allow winter arrears to be paid. A failure to do so not only places the dollars of arrears in jeopardy of non-collection, but it places the payment of future bills in jeopardy as well. One alternative to the springtime disconnection of service is for a customer to make a downpayment on his or her arrears and enter into a reasonable deferred payment plan. Standard regulations adopted by utility regulators around the country provide that a utility shall take into account designated factors in deciding what payment plans are "reasonable." These factors include, but are not limited to, "ability to pay."[6]

The phrase "ability to pay" is often treated as being synonymous with "level of income." If a household's income is sufficiently high,[7] the reasoning goes, the household is deemed to have an ability to pay its home energy bills. Taking into account the "ability to pay" of the working poor, however, should involve *more* than simply taking into account income level. The *stability* of income is one additional aspect of the ability to pay of the working poor. The discussion below considers how this facet of ability to pay might affect the administration of a deferred payment plan for utility arrears.

INCOME STABILITY AND ABILITY TO PAY

The negotiation of a deferred payment plan for utility arrears should take into account the potential instability of income amongst the working poor as one aspect of ability to pay. Income for the working poor, in particular, can be erratic and unpredictable. A working poor customer may not *know* in April what his or her income is going to be in July or August, let alone in the following December or January. Periods of unstable wages may make payments that were reasonable in April unreasonable at a later date.

This income attribute of working poor households has been recognized in a variety of contexts. The instability of income has been found to be a barrier to effective budget counseling. The evaluation of one asset-building program, for example, reported that "staff and participants thought the budgeting worksheet. . .became obsolete almost immediately because participants' incomes were very unstable."[8] One major barrier to savings and asset accumulation by working

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6 *See e.g.*, IDAPA 31.21.01.313 (2001) (Idaho); 83 Ill. Adm. Code 280 Appx. D (2001) (Illinois); CMR 65-407-860 (2001) (Maine); 4 CSR 240-13.060 (2001) (Missouri); MONT. ADMIN. R. 38.5.1415 (2001) (Montana); 52 Pa. Code § 56.97 (2001) (Pennsylvania); 16 TAC § 7.45 (2001) (Texas); Wis. Adm. Code PSC 113.0404 (2001) (Wisconsin).

7 While the question of what income is "sufficiently high" is explicitly set aside for purposes of this discussion, the reader can gain guidance from the determination of what constitutes a "livable wage." ***Working Hard—Earning Less***, National Priorities Project: Northhampton: MA. (http://www.natprior.org/grassrootsfactbook/jobgrowth/jobgrowth.html). Further guidance can be gained from a review of self-sufficiency budgets. A calculation of self-sufficiency standards for about 20 states can be found at the World Wide Web site of Wider Opportunities for Women. http://www.sixstrategies.org/resources/resources.cfm

8 Dianne Lazear (September 1999). ***Implementation and Outcomes of an Individual Development Account Project***, at 12, Center for Social Development, Washington University: Saint Louis (MO).

poor households involves their "irregular incomes."[9] One barrier to the long-term accumulation of assets has been found to be the "recurring crises," such as unemployment, which force working poor households to deplete their savings.[10] Individuals have been found to view saving and systematic budget planning as not worthwhile because of the inability to predict income and labor-market conditions.[11]

Reductions in Hours

Working poor families tend to find themselves in lower quality hourly wage jobs, often marked by considerable income fluctuations due to the number of hours they are called upon to work. The Urban Institute quantified the types of occupations which characterize the working poor. The table below shows the difference in occupations between working poor families and non-poor families in 1996.[12] Even aside from the level of wages,[13] the presence of hourly wages and unpredictable hours mark occupations that are the province of the working poor. Three times as many working poor families (as compared to non-poor families) are in service occupations (11.5% vs. 4.1%) and laborer occupations (11.5% vs. 4.1%), while nearly twice as many working poor (compared to non-poor) families have workers who are in operator/transportation occupations (18.9% vs. 11.1%).

Percent of Non-Elderly Persons by Occupation of Primary Earner		
	All Families: Poor	All Families: Non-Poor
Professional/managerial/technical	15.1%	43.3%
Sales	8.6%	10.2%
Clerical/administrative support	9.9%	8.5%
Service	20.1%	7.4%
Craft/repair	15.8%	15.4%
Operators/transportation	18.9%	11.1%
Laborers	11.5%	4.1%

Persons working in these occupations often face periods of lost wages. The U.S. Department of Labor refers to periods of lost wages caused by a reduction in hours as "involuntary part time employment."[14] "Involuntary part time workers are persons who in at least one week of the year worked fewer than 35 hours because they could not find full-time work."[15] In 1999, 3.9 million workers experienced involuntary part time employment.[16] In 2000, 3.045 million non-

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9 *See e.g.*, David Smyth (1993). *Toward a Theory of Savings*, in James Gapinski (ed.). ***The Economics of Savings***, at 47 – 92, Klewer Academic Publishers: Boston; Franco Modigliani (1986). "Life cycle, individual thrift, and the wealth of nations," ***American Economic Review***, 76(3): 297-313.

10 Cathleen Finn, *et al.* (1994). "Assets and Financial Management Among Poor Households in Extreme Poverty Neighborhoods," ***Journal of Sociology and Social Welfare***, 21(4):75-94.

11 Arthur Kennickell, Martha Starr-McCluer, and Annika Sunden (1997). "Saving and Financial Planning: Some Findings from a Focus Group," ***Financial Counseling and Planning***, 8(1):1-8.

12 Acs, Gregory, Katherin Ross Phillips and Daniel McKenzie (May 2000). ***Playing by the Rules but Losing the Game***, at 10 – 11, Urban Institute: Washington D.C.

13 The median hourly wage of primary earners in working poor families ($7.55) is less than half the median wage of primary earners in families with incomes above 200% of poverty ($16.67).

14 This is sometimes known, also, as "part time employment for economic reasons."

15 Bureau of Labor Statistics (February 2001). ***A Profile of the Working Poor, 1999***, Report No. 947, at 3, U.S. Department of Labor: Washington D.C.

16 ***1999 Profile***, *supra*, at Table 8, page 11.

agricultural workers experienced involuntary part time employment. A full 60% of these workers (1.835 of the 3.045 million) faced their cutbacks in hours due to slack work or business conditions.[17]

The number of lost hours, and thus the amount of lost wages, is substantial. Persons who usually worked fulltime in non-agricultural industries, but did not do so in 2000 because of economic reasons, worked on average only 24.0 hours a week in 2000.

This fact of unstable income presents no commentary on the working poor individuals themselves. Rather it reflects the nature of work in which the working poor find themselves. Given the nature of that work, to simply *assume* that the income of a working poor household at any given point in time will continue unabated to support payment plan payments is to ignore one major attribute of the working poor's ability to pay.

The Impact of Paid Leave Benefits

A second factor contributing to the instability of income of the working poor involves the paid leave benefits provided. The absence of paid vacation and sick leave can directly affect the ability of a household to maintain a deferred payment arrangement over time. One researcher for the Institute for Women's Policy Research (IWPR) reports:[18]

> Low-income workers often have few or no workforce benefits, like paid leave or flexible schedules that are essential if workers are to meet the needs of their family members. Paid leave would make it economically possible for workers to spend time away from work in order to address their family's needs. Flexibility would allow workers to meet with teachers, care for sick or disabled family members, and deal with emergencies without having to miss work or go without wages. . .Without flexibility in their work schedules or access to paid leave, workers have no choice but to take unpaid leave when family or medical emergencies occur.[19]

The IWPR found that:

> Families in the bottom quartile of income are significantly less likely to have access to paid sick leave, paid vacation leave, or flexible work schedules than families with higher incomes. More than three fourths (76 percent) of workers in the bottom quartile of family income lack regular sick leave; more than half (58 percent) do not have consistent vacation leave. Families in the bottom income

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17 U.S. Department of Labor, Bureau of Labor Statistics, ***January 2001 Employment and Earnings***, at Table 20, Department of Labor: Washington D.C.

18 *The principal data sources for the IWPR research include primary and secondary data from the U.S.* Department of Labor's National Longitudinal Survey of Youth (NLSY), the Survey of Midlife in the United States, the Urban Working Families Study, and the National Daily Diaries Study.

19 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.

> quartile are more likely than other workers to lack *both* sick leave *and* vacation leave. (emphasis in original).
>
> Low-income families are also less likely to have flexible work schedules. Among low-income parents, 78 percent have jobs that offer no flexibility at all. The majority of workers beneath the median income level say they cannot choose or change their starting and quitting times, or take days off to care for their sick children.[20]

The lack of paid leave time may directly affect the ability of a working poor customer to maintain payments on a deferred payment arrangement. A person working 35 hours a week on hourly wages may lose three days of work simply due to a sick child missing school and requiring care. If no leave time exists for that employee, the sick child translates into permanently lost wages. Personal illness, too, results in permanently lost wages, whether illness keeps a worker away from his or her job for a day, for two days, or for a week.

The lost wages attributable to the lack of paid leave for the working poor is not theoretical. Data from the U.S. Department of Labor shows that absence rates in occupations where the working poor tend to work are from 50% to 60% higher than the absence rates in occupations populated by their higher income counterparts. [21] Absence rates for higher income occupations are lower because time missed from work covered by paid leave is not counted as an "absence."

IMPLICATIONS FOR UTILITY DEFERRED PAYMENT ARRANGEMENTS

The instability of income for the working poor has multiple implications with respect to the negotiation of deferred payment arrangements for utility arrears. These implications exist both for the initial negotiation of payment plans and for the ongoing administration of payment plans.

Building Success: On the front-end, utilities may want to build check-points into the deferred payment plans of the working poor. Such a process could be implemented in one of two ways. On the one hand, a utility may simply break-up arrears into multiple component parts. A deferred payment arrangement for a $400 arrears, for example, might be made subject to a payment plan for the first $200 over a 3-month period. Upon successful completion of that plan, the utility would develop a payment plan for the next increment of arrears.

Such a process builds on the "learning" about savings amongst low-income households. One researcher at Washington University's Center for Social Development reports with respect to household savings:

> . . .aspirations and expectations of success are likely to affect saving. Those who do not expect their saving attempts to be 'successful' are unlikely to try to save. In a study of saving in Britain, Furnham found that beliefs about the pointlessness of

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20 *Id.*

21 ***Employment and Earnings***, *supra*, at Table 27.

> saving were negatively associated with income, even though lower-income individuals recognized the benefits of saving. . .Since the possibility of accumulating even a fairly small amount of savings probably seems remote to many low-income individuals, some poor individuals may not even attempt to save. In fact, Furnham suggests that 'these feelings of helplessness may. . .serve to maintain low levels of saving even when ability to save increases.'[22]

The same statements made above could easily be made by substituting references to the retirement of utility arrears for references to saving. An individual who makes progress toward a goal of retiring his or her arrears is more likely to raise that goal, while those whose attempts are unsuccessful are likely to lower their aspirations. Those who do not expect their efforts to maintain utility bill payments to be successful are unlikely to try as hard to do so.

To enter into a deferred payment plan, with no chance to "revisit" the payments at regular intervals, fails to recognize the income variability that is inherent in much of the employment that is available to the working poor. To operate in such a fashion creates the risk of raising the "feelings of helplessness" among working poor families with utility arrears. In contrast, to address each part of the arrears through a successful short-term plan will help to build the "expectation of success."

One-Strike-You're-Out Policies: In addition to the structure of payment plans on the front-end, utilities should revise their "one-strike-you're-out" policy on payment plans. Many utilities have a policy providing that once a customer negotiates a deferred payment plan, the customer is not entitled to a second or renegotiated plan if the first one is breached. What this policy implicitly assumes is a constant, predictable, stream of income over time, some portion of which can be earmarked for the repayment of utility arrears. If, however, a customer is an hourly wage employee without leave, something as commonplace as a sick child requiring parental care can compromise the customer's ability to make agreed-upon payments. In such a case, the one-strike policy fails to take into account the fragility of the working poor customer's income stream.

Moreover, something as common as short-term periods of involuntary part time employment may threaten the ability of a customer to maintain agreed-upon payments. As the above discussion shows, these situations –lost wages due to family care responsibilities or involuntary part time employment—not only "may" happen to the working poor, but can reasonably be

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22 Sondra Beverly (1997). ***How Can the Poor Save? Theory and Evidence on Saving in Low-Income Households*** at 26 – 27, Center for Social Development, Washington University: Saint Louis (MO), *quoting*, Adrian Furnham (1985). "Why do people save? Attitudes to, and habits of, saving money in Britain," ***Journal of Applied Social Psychology***, 15(4): 354-373. Beverly continues: "In part, individual saving-related aspirations and expectations will be determined by past experiences, including past asset accumulation experiences. According to aspiration theory (citation omitted), an individual's aspirations are raised (lowered) according to her success (failure) in achieving them. Applying this proposition to economic behavior, Katona (1975) suggests that an individual who makes progress toward a savings goal is more likely to raise that goal. Conversely, those whose attempts to save money are unsuccessful are likely to lower their saving aspirations." ***Id.***, at 27, *citing*, George Katona (1975). ***Psychological Economics***, at 369, Elsevier Press: New York.

expected to happen. Strict application of a one-strike-you're-out policy may be unreasonable in light of this aspect of ability to pay.

Unquestionably, a change in the structure and operation of payment plan processes to account for the fragile income of the working poor must accommodate the capabilities of the customer information systems of the affected utility. Some utility information systems, for example, are structured so that if payments on deferred arrangements are missed, the arrangement is automatically canceled. A utility need not avoid such a cancellation. However, in deciding upon the utility's credit action subsequent to such a cancellation, regulatory policy that would refuse to allow a revised payment arrangement to account for any changes in income that might have led to the initial default, as well as any policy that would fail to account for the fragility of income in considering the "why" behind a prior arrangement default,[23] should be modified.

Summary and Conclusions

In applying payment plan policies, utilities and their regulators should take into account the income fragility of hourly wage employees who face unstable incomes and who lack paid leave time and flexible work schedules. The failure to comply with agreed-upon deferred payment arrangements may frequently be due to this fragility rather than due to an unwillingness to maintain agreed-upon payments. As utilities face another round of winter-end arrears this spring, utilities and their regulators should adopt policies and procedures that will reasonably allow working poor families to communicate, and have considered, *all* aspects of their ability to pay in an effort to negotiate and successfully maintain deferred payment arrangements.

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[23] Some utilities, for example, use decision trees to determine if a new arrangement will be granted. Such decision trees take into account previous credit behaviors in deciding whether to grant a new arrangement. These decisions should consider not only the *fact* of prior credit behavior, but the reasons for such behavior as well.

WINTER WEATHER PAYMENTS:
The Impact of Iowa's Winter Utility Shutoff Moratorium On Utility Bill Payments by Low-Income Customers

February 2002

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This study looks at whether Iowa utility customers protected by a winter shutoff moratorium respond by stopping or substantially reducing the payments which they would otherwise make toward their winter utility bills. The study is based on utility payment records from roughly 3,000 recipients of Low-Income Home Energy Assistance Program (LIHEAP) benefits for 38 months (April 1998 through May 2001). The LIHEAP recipients were served by three separate Community Action Agencies (CAAs) in central and northwest Iowa.[1] The recipients were gas and/or electric customers of Alliant Energy or Mid-American Energy.

THE UNAFFORDABILITY OF IOWA'S WINTER HOME ENERGY BILLS

The observation that Iowa winters present high and unaffordable home energy bills to low-income households comes as no surprise. "Affordability" in this regard is measured by customer home energy burdens. A home energy burden is simply the household's home energy bill divided by household income. A household with an annual home energy bill of $1,500 and an annual income of $6,000 would therefore have a home energy burden of 25% ($1,500 / $6,000 = 0.25).

Data from the U.S. Department of Energy's Residential Energy Consumption Survey (RECS) shows that in the Midwest, while non-low-income residential consumers have home energy burdens of between 2.7% and 3.5%, recipients of benefits from the Low-Income Home Energy Assistance Program (LIHEAP) have home energy burdens from four to five times higher (between 11.7% and 12.3%).

TABLE 1
RESIDENTIAL ENERGY: AVERAGE ANNUAL EXPENDITURES, BY AMOUNT (DOLLARS) AND MEDIAN INDIVIDUAL BURDEN (PERCENT) FOR MIDWEST CENSUS REGION (1999)

	All Fuels		Natural Gas		Electricity	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
All households	$1,286	3.5%	$1,310	3.4%	$1,079	3.4%
Non-low-income households	$1,354	2.7%	$1,373	2.7%	$1,192	2.2%
Low-income households	$1,125	8.0%	$1,151	8.1%	$893	7.4%
LIHEAP recipient households	$1,125	11.9%	$1,236	12.3%	$856	11.7%

These, of course, are *average annual* burdens. Many households at lower income levels have burdens in the 40+% range. Moreover, winter home bills as a percent of winter income impose much higher burdens as well.

One impact of the unaffordability of home energy service is the nonpayment of bills. Previous research by the Iowa Department of Human Rights (DHR), however, which is the agency administering LIHEAP in Iowa, found that bill nonpayment is perhaps not

[1] *Accordingly, subsequent references in this analysis to "Iowa LIHEAP recipients" are to the recipients* served by these three CAAs.

even the most significant of the adverse impacts of unaffordable winter home energy bills. A DHR study of Iowa LIHEAP recipients found that:[2]

- 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.

Recognizing the dangers of the lack of home energy during cold weather months, Iowa legislators mandated adoption of a winter shutoff moratorium. Section 476.20 of the Iowa Code provides that a household certified to be eligible for benefits from either the federal Low-Income Home Energy Assistance Program (LIHEAP) or the federal Weatherization Assistance Program (WAP) shall not be subject to the disconnection of service between the dates of November 1 and April 1 of each winter heating season.[3]

From the inception of the Iowa winter shutoff moratorium, as well as in discussions regarding winter shutoff protections in other states, arguments have been raised that the blanket prohibition on the termination of service during the winter season would result in customers deciding to stop making payments toward their home utility bills. In the absence of the potential use of service termination as a collection tool, the reasoning goes, customers will stop paying their bills in order to, in effect, take a "loan" from the utility throughout the moratorium period. The "loan" would be paid when Spring weather brought an end to the prohibition on service terminations.

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

3 The Iowa Utilities Board has incorporated this winter shutoff moratorium into its administrative rules. 199 IAC §19.4(17) and 199 IAC § 20.4(17). In response to the high gas costs and cold weather during the 2000/2001 winter heating season, the Iowa Utilities Board administratively extended the winter shutoff moratorium to May 1, 2001.

The purpose of the analysis below is to empirically examine one large group of LIHEAP recipients protected by the Iowa winter moratorium to determine whether the concerns over winter bill nonpayment have any empirical basis.

THE DATA ANALYSIS

An examination of the monthly arrears of Iowa's LIHEAP recipients might at first blush appear to support the conclusion that these low-income customers substantially curtail their payments during winter months when utilities are constrained by the state's winter shutoff moratorium. Table 1 compares, in three different years, the arrears of LIHEAP customers[4] in the four month period representing the winter heating seasons with the four month period immediately preceding the heating season. The winter months of January 1999 through April 1999, for example, were compared to the months of September through December 1998.[5] Average arrears were calculated by dividing the sum of all arrears appearing on bills by the total number of bills rendered.

TABLE 1
ARREARS FROM FOUR WINTER HEATING MONTHS
COMPARED TO ARREARS IN FOUR MONTHS IMMEDIATELY PRECEDING WINTER

	1998 - 1999		1999 - 2000		2000 – 2001	
Non-Htg/Htg Months	Preceding Months	Heating Months	Preceding Months	Heating Months	Preceding Months	Heating Months
Sep/Jan	$58	$69	$89	$17	$65	$46
Oct/Feb	$50	$71	$86	$44	$75	$121
Nov/Mar	$61	$95	$53	$70	$73	$117
Dec/Apr	$92	$118	$34	$77	$36	$58
4-Month Average	$65.25	$88.25	$65.50	$52.00	$62.25	$85.50

Heating months are January – April
Preceding months are September – December preceding the winter heating season.

This data would at first make it appear that customers pay less during the winter months than they do during the months immediately preceding the winter. The average arrears for the four-month winter period is higher than the corresponding non-winter months in two of the three years.[6] The average arrears for the four-month winter period January – April 1999 was 33% higher than the corresponding four-month non-winter period ($65.25 vs. $88.25). The average arrears for the four-month winter period January – April 2001 was 37% higher than the corresponding four-month non-winter period ($62.25 vs.

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4 The arrears were calculated by taking the balance on the account at the time of a monthly bill and subtracting the monthly bill rendered for current usage. The monthly bill for current usage is subtracted because, while "due" at the time it is rendered, the bill is not "overdue" until some point in the future.

5 Because the study considers arrears, bills are lagged by one month. The arrears appearing on a bill in April, in other words, represent unpaid bills from March. The arrears appearing on a bill in December represent unpaid bills from November.

6 The substantial influx of LIHEAP dollars during December 1999 reduced the January 2000 arrears and somewhat skewed the four month average.

$85.50). In eight of the 12 winter heating months over three years, the arrears appearing on the bill during the month were higher than the average arrears for the four month period immediately preceding the winter period.

A closer examination of the Iowa data, however, reveals that this conclusion as to increased payment trouble during the winter moratorium months is in error.

PAYMENT OUTCOMES

The analysis of the payment impacts of the Iowa winter moratorium considers a range of metrics testing whether utility bill payments are made in a full and timely fashion. This section of the moratorium evaluation examines billing and payment data to determine the extent to which full and timely payments have been made. Payment outcomes have been measured using the following metrics:

- **Complete payment:** If the customer is billed $100, the company wants to collect $100.
- **Prompt payment:** If the customer receives a bill that is due on the 20th of the month, the company wants its payment no later than the 20th of the month.
- **Regular payment:** If the customer receives 12 bills in a year, the company wants 12 payments in a year, one in response to each bill.

Metrics have been developed to measure each of these payment outcomes.

Weighted Arrears

The use of "weighted arrears" as a mechanism to assess payment outcomes is based on a foundation first provided by the Bureau of Consumer Services (BCS) of the Pennsylvania Public Utilities Commission. According to a 1983 BCS analysis, contrary to the argument by that state's utility companies, the Pennsylvania winter shutoff moratorium did not result in an increase in the number of unpaid bills, or the amount of unpaid bills, that would have existed in the absence of a moratorium. The BCS study reported that:

> Average overdue bills are at a low in November and rise to a high point in March or April. The apparent relationship of this pattern to Public Utility Commission regulations is obvious. That is, arrears are greatest at the end of the Commission's winter termination restrictions (December 1 to March 31 of the following year) and have been reduced to their lowest point immediately prior to the introduction of those restrictions for the following year. This pattern is consistent with the assertion put forward by utilities

> that they would be able to control arrearages if there were no winter termination restraints. However, the seasonal fluctuations are substantial only for heating accounts. Arrearages for non-heating accounts show only minor seasonal fluctuations. A comparison of [the data] suggests a simple explanation for this difference, that is, that the size of arrearages is related to the size of monthly bills. Heating customers' bills grow radically in the winter and so do their arrearages. Non-heating customers' bills change very little seasonally and their arrearages follow suit. In other words, if the assertion that winter termination restraints invite nonpayment were correct, then non-heating arrearages should show the same seasonal pattern of variations as do heating arrearages. That they do not casts substantial doubt on the assertion that PUC winter termination restraints are responsible for willful non-payment and consequent collection problems.[7]

This Pennsylvania report introduces the notion that any assessment of arrears must control for the impact of monthly bills. The BCS report is consistent with the BCS recommendation, often stated, to use a "weighted arrears" or "bills behind" statistic to factor out the impact of increased arrears caused by factors other than nonpayment.

BCS explains that its "bills behind" statistic "permits comparisons to be drawn between companies by eliminating the effects of different customer bills on arrearages." Without such a measure, "the interpretation of average arrearages, either over time or in comparison between companies, presents some difficulties."[8]

A similar analysis was performed for this Iowa evaluation. Figure 1 shows the number of average "bills behind" by month starting with June of a year and continuing through May of the following year. The time periods studied, therefore, included the following: (1) June 1998 through May 1999; (2) June 1999 through May 2000; and (3) June 2000 through May 2001. These periods were selected to ensure that the winter heating season, the four months immediately preceding the winter heating season, and the two months immediately succeeding the winter heating season were in the same data set.

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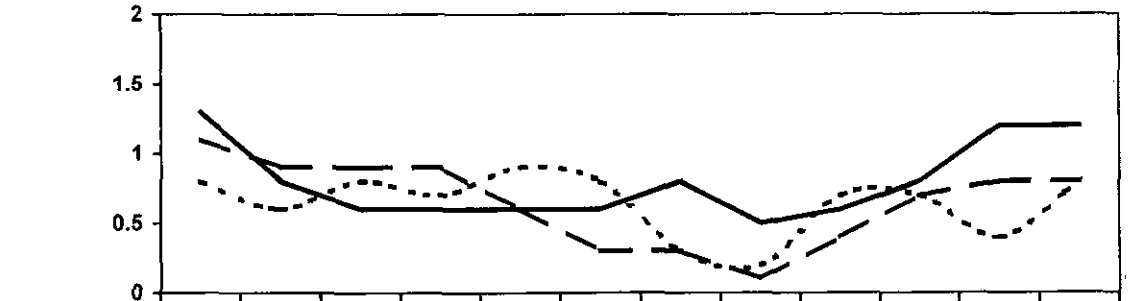
7 Joseph Farrell (1983). ***Utility Payment Problems: The Measurement and Evaluation of Responses to Customer Nonpayment***, at 19, Pennsylvania Public Utility Commission: Harrisburg, PA

8 *Id.*

"Bills Behind" by Month for Iowa LIHEAP Recipients



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
98-99	1.3	0.8	0.6	0.6	0.6	0.6	0.8	0.5	0.6	0.8	1.2	1.2
99-00	1.1	0.9	0.9	0.9	0.6	0.3	0.3	0.1	0.4	0.7	0.8	0.8
00-01	0.8	0.6	0.8	0.7	0.9	0.8	0.3	0.2	0.7	0.7	0.4	0.8

Figure 1

As this data shows, the number of bills behind that Iowa LIHEAP recipients incur fluctuates within a very narrow band over the course of the year. While arrears unquestionably go up during the high cost winter months, the increase is not substantial. In the June 1998 – May 1999 period, the "bills behind" in January through March were virtually identical to the "bills behind" in July through October. During the June 1999 - May 2000 and the June 2000 – May 2001 periods, the "bills behind" during the winter months were actually *lower* than the bills behind for the corresponding non-heating/non-moratorium months.

No-one suggests, however, that low-income arrears do not increase in the high cost winter months. Instead, the most significant observation in Figure 1 is that rather than experiencing a *dramatic* increase in the number of bills behind during the winter moratorium months, resulting from a decrease in the amount and/or frequency of payments, the normalized weighted arrears for Iowa LIHEAP customers fluctuates within a very narrow band.

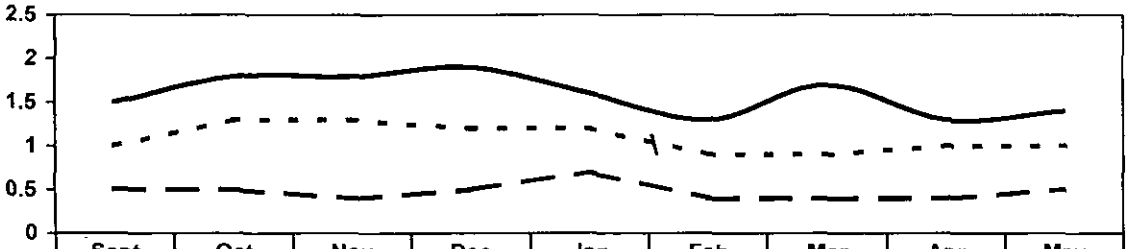
Just as found by the Pennsylvania BCS in 1983, in Iowa, while the dollar level of arrears tends to be higher during the winter moratorium months, this results from the fact that bills are higher, not from the fact that a greater number of bills remain unpaid.

Payments Resulting in $0 Balances to Total Number of Payments

Despite the contribution of LIHEAP benefits to help pay winter home energy bills, a relatively small number of LIHEAP recipients were consistently able to make monthly

payments that reduced their account balance to zero dollars, even when monthly payments were made. Figure 2 shows an index of the number of accounts on which monthly payments were made to the number of accounts on which such payments reduced the account balance to $0. If the index is 1.0, 100% of the payments reduced the balance to $0. If the index is 0.5, 50% of the payments reduced the account balance to $0. Accounts on which no payments were made in a month are not included in this analysis. A $0 balance includes those accounts having credit balances.

Index: Payments Yielding $0 Balance to Total Payments



	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
00-01	0.5	0.5	0.5	0.7	0.4	0.4	0.8	0.3	0.4
99-00	0.5	0.8	0.9	0.7	0.5	0.5	0.5	0.6	0.5
98-99	0.5	0.5	0.4	0.5	0.7	0.4	0.4	0.4	0.5

Figure 2

Several important observations march forward from Figure 2. First, the data clearly indicate that the winter moratorium does not result in a substantial change in winter payment

patterns by low-income customers. The numbers of payments in January through April which reduce the account balance to $0 do not substantively differ from the numbers of such payments reducing account balances to $0 in the non-moratorium months.

In addition, Figure 2 shows that the failure of LIHEAP recipients to bring their accounts current through a monthly payment in a particular month is not even necessarily bad news from the perspective of a utility. The Iowa LIHEAP recipients demonstrate that they will make "some" payment on their accounts, even if the payment is only in partial satisfaction of their total outstanding arrears.

If the index of payments resulting in a $0 balance is 0.4, in other words, what this means is that while 40% of the payments made reduced account balances to $0, 60% of the households making payments made their payments even though the account still had a balance remaining after the payment.[9] The *total* number of payments made is discussed separately below.

Finally, it is interesting to see how the LIHEAP benefits flow through this data. The jump in payments resulting in a $0 balance in December and January might at first seem counter-intuitive. It would not be immediately evident, in other words, why the number of customer payments resulting in a $0 balance would actually *increase* when the higher-cost cold weather months came around. The explanation lies with LIHEAP. LIHEAP payments made in November and December reduce total balances for recipients to the point where an increased number of those recipients can zero out their account balance in that month or in the ensuing month.

Dollars of Monthly Payments to Dollars of Monthly Bills for Current Usage

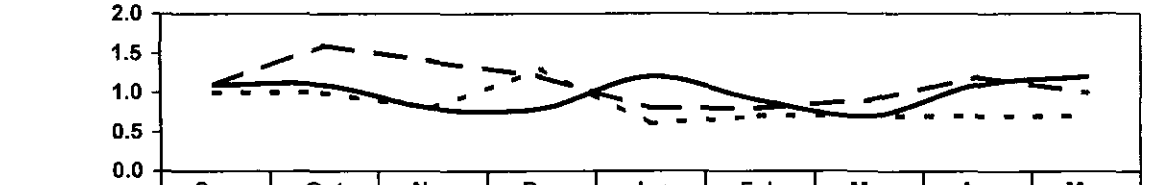
If a LIHEAP recipient is not generating a $0 balance in a particular month, the next logical question is whether the customer is at least "catching up," or whether that customer is falling further behind. In order to maintain the status quo relative to outstanding arrears, the customer must at least make payments equal to the total bill for current usage. Irrespective of whether a customer makes a payment towards his or her arrears, if the January bill for current usage is paid in January, the customer, at the least, has fallen no further behind.

In Figure 3 below, customer bills for current usage are indexed to customer payments. If the index is 1.0, the total dollars in payments exactly equaled the total dollars in bills for current usage. If the index is 0.5, the payments equaled 50% of the bills, while if the index is 1.2, the payments equaled 120% of the bills for current usage. A payment of

[9] The amount due for budget billing customers is the budget billing amount, not the bill for current usage.

more than 100% of the bill indicates that the customer not only paid the entire current bill, but made some payment towards arrears as well.

Total Dollars of Payments in Month to Total Dollars of Bills for Current Usage in Month



	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
98-99	1.1	1.1	0.8	0.8	1.2	0.9	0.7	1.1	1.2
99-00	1.1	1.6	1.4	1.2	0.8	0.8	0.9	1.2	1.0
00-01	1.0	1.0	0.8	1.3	0.6	0.7	0.7	0.7	0.7

Figure 3

The Iowa LIHEAP recipients as a group consistently made their payments throughout both the winter moratorium season and the non-heating season as shown in Figure 3. While payments did not equal current bills in the winter heating season, the dip in payments in relation to current bills does not support the conclusion that low-income customers protected by the winter moratorium consistently, let alone systematically, substantively reduced the payments being made.

Indeed, the apparent dip in payments made during the period January through March can, in part, be attributed to the receipt of LIHEAP assistance in the preceding month. In December 2000, for example, payment of LIHEAP benefits resulted in a ratio of 1.3, to be followed by a ratio of only 0.6 in January. The cause for the January dip is, however, in substantial part, attributable to the fact that part of the January bill had been *pre*paid by the December LIHEAP payment.

That this, in fact, is the case can be seen by comparing the aggregate dollars of payments to the aggregate dollars of bills for current use. In the aggregate, Iowa LIHEAP recipients were billed $1,718,872 in the four months of the 1999/2000 winter heating season and made $1,554,780 in payments. Iowa utilities collected 90% of the revenue billed during the winter months through winter month payments. Even in the high cost 2000/2001 winter heating season, Iowa LIHEAP recipients were billed $2,739,608 and made $2,407,071 in payments (87.9% of billed heating season revenue paid through heating season month payments). While a substantial part of those payments clearly represented the LIHEAP benefits provided, nonetheless, this data does not support the conclusion that Iowa's low-income customers stop making their winter bill payments when protected by the winter shutoff moratorium.

TABLE 2
BILLS AND PAYMENTS BY IOWA LIHEAP RECIPIENTS IN 4-MONTH WINTER HEATING SEASON[10]

	Bills			Payments			Percentage Payments of Bills		
	98-99	99-00	00-01	98-99	99-00	00-01	98-99	99-00	00-01
Jan	$411,328	$481,374	$898,275	$509,812	$383,076	$520,103			
Feb	$333,945	$478,432	$665,278	$300,209	$404,739	$492,136			
Mar	$340,969	$426,826	$590,502	$251,082	$380,488	$985,000			
Apr	$280,440	$332,240	$585,553	$294,841	$386,477	$409,832			
4-Month Total	$1,366,682	$1,718,872	$2,739,608	$1,355,944	$1,554,780	$2,407,071	99.2%	90.5%	87.9%

[10] The four months presented are January through April. January bills and payments are for December usage, while April bills and payments are for March usage.

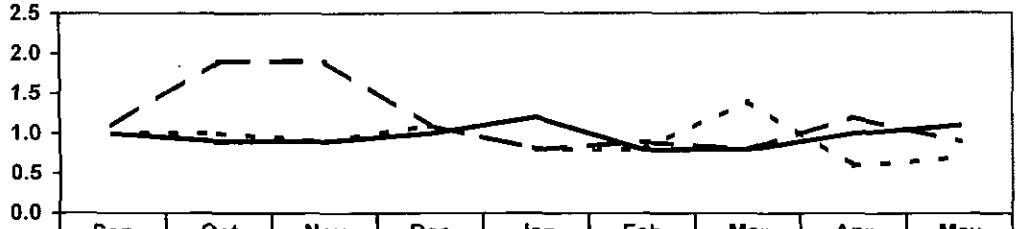
Total Number of Payments vs. Total Number of Bills

The regularity of payments can be measured by indexing the total number payments to the total number of bills rendered each month. If "some" payment is made on an account in any given month, there is an increased likelihood that the customer will be able to make a future payment sufficient to reduce the account balance to $0. The July bill is easier to pay in full, in other words, if the customer has made *some* payment toward the June bill, even if the June payment is only a partial payment.

Figure 3 shows that Iowa LIHEAP recipients tend to make almost one payment for each bill they receive for home energy service. These payments may not reduce the total balance to $0. Neither may the payments cover the entire bill for current usage. The winter moratorium, however, does not result in LIHEAP recipients deciding to *stop* making payments on a widespread, let alone universal, basis. While the number of payments is reduced during the winter heating season, Iowa utilities tend to receive roughly eight payments for every ten bills tendered during these months.

Taking out the seemingly anomalous number of payments in October and November of 1999 (a time when supplemental LIHEAP payments were made which were small relative to the typical annual benefit and were insufficient to pay entire bills), the index of payments made to bills rendered tends to fluctuate in a narrow band of between 0.8 and 1.1 each month.

Index: Total Number of Payments in Month to Total Number of Bills in Same Month



	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
98-99	1.0	0.9	0.9	1.0	1.2	0.8	0.8	1.0	1.1
99-00	1.1	1.9	1.9	1.1	0.8	0.9	0.8	1.2	0.9
00-01	1.0	1.0	0.9	1.1	0.8	0.8	1.4	0.6	0.7

Figure 4

The annual dips in the number of payments made by LIHEAP recipients in January and February do not necessarily reflect nonpayment toward outstanding accounts. Instead, as discussed elsewhere, the annual LIHEAP payments that are made in December and

January often leave credit balances on customer accounts. These credit balances do not call for a customer payment in order for the customer to remain current on his or her account.

While a LIHEAP recipient may be well-served (as a matter of sound money management) to make a payment of *any* amount even in those winter months when LIHEAP has left a credit balance on the account –this means that a lower dollar payment will be required on some future bill when there is no LIHEAP offset—this rarely occurs. Accordingly, the LIHEAP payment has the impact of completely paying one month's bill for winter heating consumption while leaving future bills to be absorbed completely out of the recipient's monthly income at that time.

SUMMARY AND CONCLUSIONS

It is often taken as "conventional wisdom" that adoption of a winter moratorium on the termination of utility service will result in a wholesale increase in winter nonpayment. Under this reasoning, consumers who are not subject to the disconnection of service in response to their nonpayment have no incentive to make their payments. Implicit within this argument is the assertion that the *only* incentive for making full and timely payments on a household utility bill is the threat that service will be disconnected in the face of nonpayment.

A review of the payment patterns of Iowa LIHEAP recipients served by three Community Action Agencies in central and northwest Iowa, as well as a review of payment outcomes for those same LIHEAP recipients,[11] does not support the conclusion that the existence of a winter utility shutoff moratorium results in a substantive change in payment practices. The review of this Iowa data finds that:

- Iowa's LIHEAP recipients do not experience an increase in the number of weighted "bills behind" they incur during the winter shutoff moratorium period. While average arrears increase during the winter, this increase is a reflection of the fact that winter bills are higher, not of the fact that LIHEAP recipients are a larger number of months behind in their payments.

- Iowa's LIHEAP recipients do not reduce the number of payments made each month resulting in a $0 balance during the shutoff moratorium period.

- Iowa's LIHEAP recipients continue to make payments each month during the winter moratorium period even when such payments do not reduce the account

[11] Iowa's winter shutoff moratorium extends only to households certified to be eligible for LIHEAP and/or WAP.

balance to $0. Partial payments continue to be made both toward bills for current usage and toward arrears.

- Iowa's LIHEAP recipients do not reduce the total dollars paid each month relative to the total bills for current usage rendered each month during the shutoff moratorium period.

- Iowa's LIHEAP recipients continue to make winter month payments equal to 90+% of the winter month bills despite the presence of the winter shutoff moratorium.

- Iowa's LIHEAP recipients do not reduce the number of total payments they make relative to the number of bills they receive during the shutoff moratorium period.

Iowa's winter shutoff moratorium is an important health and safety protection for Iowa's low-income customers who frequently find that they face high home energy bills that are simply not affordable. The moratorium has been implemented without creating substantive nonpayment problems for Iowa's utilities.

NATIONAL ENERGY ASSISTANCE DIRECTORS' ASSOCIATION

NATIONAL ENERGY ASSISTANCE SURVEY REPORT

FINAL REPORT
April 2004

THE NATIONAL ENERGY ASSISTANCE DIRECTORS' ASSOCIATION

The National Energy Assistance Directors' Association (NEADA) represents the state directors of the Low Income Home Energy Assistance Program (LIHEAP). LIHEAP is a federal program providing heating and cooling grants to states to help low income families pay their heating and cooling bills. NEADA is a nonprofit educational and policy organization based in Washington, DC. Its mission is to support the delivery of LIHEAP services by state agencies and programs.

This report has been prepared under contract by APPRISE for NEADA through funding provided by the Administration for Children and Families (ACF), U.S. Department of Health and Human Services (Cooperative Agreement No. 90XP0040). The statements, findings, conclusions, and recommendations do not necessarily reflect the views of ACF.

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California	Massachusetts	Ohio
Colorado	Minnesota	Pennsylvania
Georgia	Montana	Rhode Island
Delaware	New Mexico	Virginia
Iowa	New York	Washington
Louisiana	North Carolina	Wisconsin
Maine	North Dakota	

These states provided data necessary to select the sample of LIHEAP recipients for the study.

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Mark Wolfe
Executive Director
National Energy Assistance Directors' Association

ABSTRACT

NATIONAL ENERGY ASSISTANCE SURVEY REPORT

In FY 2004 LIHEAP will provide close to $2 billion in heating and cooling assistance to more than 4.9 million low-income households throughout the United States. The National Energy Assistance Directors' Association (NEADA), representing the state directors of the Low Income Home Energy Assistance Program (LIHEAP), contracted with APPRISE Incorporated to conduct a national survey of 2,161 LIHEAP recipients to collect information on the choices made by households in FY 2003 when faced with high energy bills. Among the findings of the study:

Who Receives LIHEAP? The majority of households have at least one member who is disabled (43%), elderly (41%), and/or have a child under the age of 5 years old (18%). Most families are very low-income: 74% have incomes below $15,000 and 50% have incomes below $10,000. Almost 43% are homeowners, 36% are working or self-employed and 36% are retired. In addition, 31% were unemployed at least sometime during the year. LIHEAP families pay on average 13% of their family income for total residential energy costs, as, compared to 3% for all other families.

Does LIHEAP Make a Difference? The survey found that LIHEAP is essential in helping a large number of low-income Americans meet their home energy needs. Furthermore, LIHEAP assistance reduces the percentage of household income spent on total residential energy costs from 14% to 11%. Before LIHEAP, only 9% of the recipient households had energy burdens of less than 5%, and after LIHEAP the proportion increased to 27%. Of even greater significance, the percentage of families with energy burdens above 25% of income declined from 12% to 4% with LIHEAP benefits. This reduction was achieved through a relatively small average grant of $313 in FY 2003.

Despite the small grant, the findings point to very large benefits:

88% of recipients said that LIHEAP has been very important in helping meet their needs; another 8% said it was somewhat important.

- 62% of those who lost their heat due to an inability to pay their energy bills said that LIHEAP helped to restore their heat.
- 54% of recipients said that they would have kept their home at an unsafe or unhealthy temperature if LIHEAP had not been available.
- 48% of recipients said that they would have had their electricity or home heating fuel discontinued if LIHEAP had not been available.

Unaffordable energy bills have serious, long-term impacts on families. In the past five years:

Impact on Health: 22% went without food for at least one day, 38% of LIHEAP recipients went without medical or dental care, 30% went without filling a prescription or taking the full dose of a prescribed medicine, 21% became sick because their home was too cold, 7% became sick because their home was too hot, and 5% reported that an illness resulted in a doctor or hospital visit. Of growing concern, 20% of recipients said that they were not able to pay their energy bills due to medical expenses.

Impact on Shelter: 28% did not make a rent or mortgage payment, 9% reported that they moved in with family or friends, 4% were evicted, and 4% were homeless.

Some LIHEAP recipients faced life-threatening challenges. In FY 2003, 17% were unable to use their main source of heat due to

discontinued utility service or an inability to pay for fuel, and 8% had their electricity shut off due to nonpayment.

Even with LIHEAP families have to take drastic actions to pay their energy bill:

- 78% reduced basic expenses for household necessities to afford their energy bill
- 30% used their kitchen stove for heat
- 51% paid less than their entire home energy bill

Almost all LIHEAP recipients took constructive actions to lower their energy bills:

- 44% put plastic on their windows
- 76% turned down the heat when they went to bed
- 83% kept shades and curtains closed during the daytime in the summer
- 78% used fans and opened windows
- 65% washed clothes in cold water
- 44% used compact fluorescent light bulbs

The study found significant differences among LIHEAP recipients based on fuel type and homeownership. In FY 2003:

- 31% of bulk fuel respondents said that they experienced a loss of energy service due to discontinued utility service or an inability to pay for fuel, compared to 15% of respondents that use natural gas or electricity as the primary fuel for heating their home.
- 72% of bulk fuel respondents who were without heat due to inability to pay their energy bill said that LIHEAP helped restore their heat, compared to 49% of respondents that use natural gas or electricity as the primary fuel for heating their home.
- 53% of renters said that they needed to borrow from a friend or relative to pay their residential energy bill, compared to 38% of homeowners.
- 56% of renters said that they skipped paying or paid less than the whole residential energy bill, compared to 46% of homeowners.

How Long Do LIHEAP Recipients Receive LIHEAP? Only 21% of LIHEAP recipients reported that they received LIHEAP five times in the past five years. Approximately 25% of households with at least one elderly family member and 27% of households with at least one disabled family member have received LIHEAP five times in five years, compared to 9% of households with a child under the age of five, and 12% of households without vulnerable members.

The need for LIHEAP far exceeds the availability of current appropriations. Approximately 4.6 million households received LIHEAP in 2003, only 13% of the over 34.6 million households that were eligible to receive LIHEAP.

Summary

The study clearly documents that low-income households spend an inordinate amount of their household income on energy; households that receive LIHEAP face significant hardship in attempting to pay their energy bills; and yet LIHEAP makes a significant difference for recipient households.

For further information about this study contact: Mark Wolfe, NEADA, 202-237-5199, mlwolfe@neada.org.

Table of Contents

List of Acronyms and Abbreviations

ACF	Administration for Children and Families
AHS	American Housing Survey
CPS	Current Population Survey
DOE	Department of Energy
EIA	Energy Information Administration
FY	Fiscal Year
HHS	U.S. Department of Health and Human Services
LIHEAP	Low Income Home Energy Assistance Program
NEA	National Energy Assistance
NEADA	National Energy Assistance Directors' Association
OBRA	Omnibus Budget Reconciliation Act of 1981
RECS	Residential Energy Consumption Survey

Executive Summary

The Low-Income Home Energy Assistance Program (LIHEAP) helps low-income households meet their immediate home heating and cooling needs. In FY 2004 LIHEAP will provide close to $2 billion in heating and cooling assistance to more than 4.9 million low-income households throughout the United States. In October 2003, NEADA commissioned APPRISE to conduct a national survey of choices made by LIHEAP-recipient households when they cannot afford their energy bills. By examining how low-income families manage energy unaffordability, the 2003 NEA survey serves as a complement to other important national surveys such as the Residential Energy Consumption Survey and the Current Population Survey.

Low-income households have energy burdens that far exceed those of higher-income households. LIHEAP-recipient households spent an average of 14 percent of their income on total residential energy bills.[1] This compares to 3 percent for households with income above 150 percent of the poverty level.[2] Despite these significant residential energy expenses, most low-income households pay their energy bills regularly. But at what cost?

The 2003 NEA survey found that LIHEAP recipients faced life-threatening challenges. In FY 2003:

- 17 percent were unable to use their main source of heat due to discontinued utility service or an inability to pay for fuel; and,
- 8 percent had their electricity shut off due to nonpayment both due in part to unaffordable energy bills.
- 53 percent of renters said that they needed to borrow from a friend or relative to pay their residential energy bill, compared to 38 percent of homeowners.
- 56 percent of renters said that they skipped paying or paid less than the whole residential energy bill, compared to 46 percent of homeowners.

The 2003 NEA survey found that LIHEAP-recipient households across the country face serious hardships in attempting to pay their energy bills. In the past five years:

- 38 percent went without medical or dental care;
- 30 percent went without filling a prescription or taking the full dose of a prescribed medicine;

The 2003 NEA survey found significant differences among LIHEAP recipients based on fuel type and homeownership. In FY 2003: 31 percent of bulk fuel respondents said that they experienced a loss of energy service due to discontinued utility service or an inability to pay for

[1] 2003 National Energy Assistance (NEA) Survey.
[2] 2001 Residential Energy Consumption Survey (RECS). Database available from the Energy Information Administration (EIA), a statistical agency of the U.S. Department of Energy (DOE).

fuel,, compared to 15 percent of respondents that use natural gas or electricity as the primary fuel for heating their home.[3]

- 72 percent of bulk fuel respondents who were without heat due to inability to pay their energy bill said that LIHEAP helped restore their heat, compared to 49 percent of respondents that use natural gas or electricity as the primary fuel for heating their home.
- 28 percent did not make a rent or mortgage payment;
- 22 percent went without food for at least one day;
- 21 percent believe they became sick because their home was too cold; and,
- 7 percent believe they became sick because their home was too hot

due in part to unaffordable energy bills.

The NEA study presented in this report finds that LIHEAP is essential in helping a large number of low-income Americans meet their energy needs. LIHEAP assistance reduces the percentage of household income spent on total residential energy costs from 14 percent to 11 percent.[4] This reduction is achieved through a relatively small average grant of $313 in FY 2003. Despite the small grant, the findings point to very large benefits:

- 88 percent of recipients said that LIHEAP has been very important in helping meet their needs; another 8 percent said it was somewhat important.
- 62 percent of those who lost their heat due to an inability to pay their energy bills said that LIHEAP helped to restore their heat.
- 54 percent of recipients said that they would have kept their home at an unsafe or unhealthy temperature if LIHEAP had not been available.
- 48 percent of recipients said that they would have had their electricity or home heating fuel discontinued if LIHEAP had not been available.

The need for LIHEAP far exceeds the availability of current appropriations. Over 4.6 million households received LIHEAP in 2003, only 13 percent of the over 34.6 million households that had income below the federal maximum LIHEAP standard.[5]

Key findings from the 2003 NEA study can be summarized as follows:

- Low-income households spend an inordinate amount of their household income on residential energy.
- Households that receive LIHEAP face significant hardship in attempting to pay their energy bills.
- LIHEAP makes a significant difference for most recipient households.

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[3] Bulk fuel respondents are defined as LIHEAP-recipient households who reported bottled or tank gas (e.g., LPG or propane), fuel oil, kerosene, etc. as the fuel most used for heating their home. Utility service respondents are defined as LIHEAP-recipient households who reported natural gas or electricity as the fuel most used for heating their home.

[4] The statutory intent of LIHEAP is to reduce home heating and cooling costs for low-income households. However, information on total residential energy costs is more accessible and more apparent to LIHEAP-recipient respondents. Moreover, any reduction in home heating and cooling costs leads to a direct reduction in total residential energy costs. Therefore, this report will address total residential energy costs.

[5] The Federal maximum LIHEAP standard is 150 percent of poverty or 60 percent of state median income. Many states limit eligibility to households with income below lower limits.

- However, LIHEAP still only serves a small fraction of eligible households.

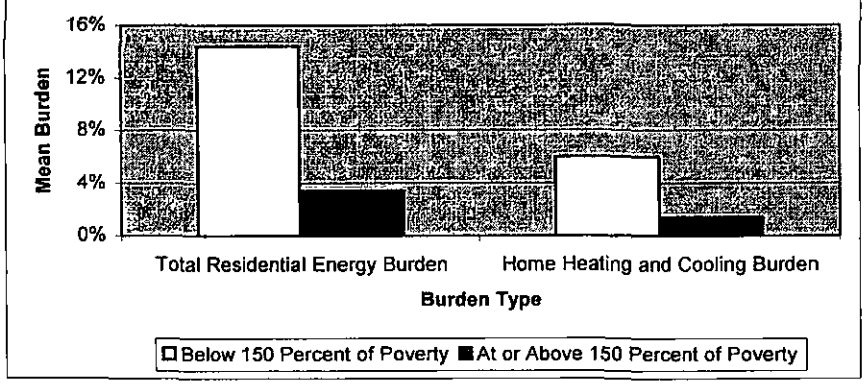
Energy Burden

Energy burden is a statistic that is often used to assess the problems households have in meeting their energy needs. Energy burdens are high for low-income households, both because of their low income and higher relative energy costs. Low-income households have higher energy costs because of old or substandard housing with inefficient heating systems, low levels of insulation, or gaps in the exterior of the home.

According to the 2003 Current Population Survey, 24 million households have incomes below 150 percent of poverty, and the mean annual gross income for those households was $11,897. This compares to a mean annual income of $70,232 for the households at or above 150 percent of poverty.

Figure 1 shows that households with income below 150 percent of poverty spend 14 percent of their income on total residential energy, compared to 3 percent for households with income above 150 percent of poverty.[6] The mean home heating and cooling burden is 6 percent for low-income households, compared to 1 percent for households that are not low-income.[7]

Figure 1: Mean Total Residential Energy Burden and Home Heating and Cooling Burden

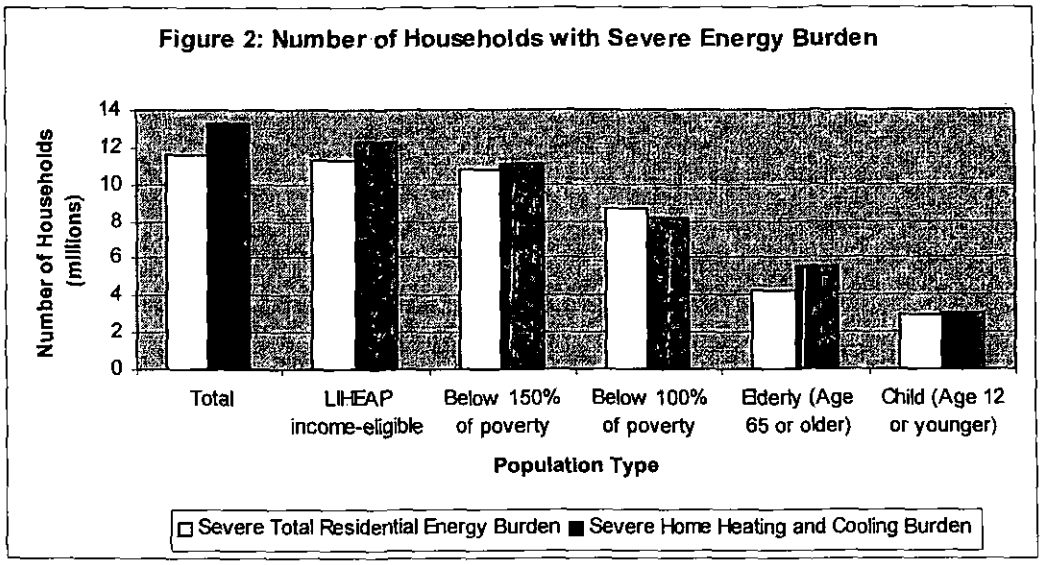


Source: 2001 Residential Energy Consumption Survey
Total residential energy burden is the total cost of energy used in the home divided by total household income. Home heating and cooling burden is the total cost of home space heating and cooling divided by total household income. The statutory intent of LIHEAP is to reduce home heating and cooling costs for low-income households. As noted in footnote 4, this report focuses on total residential energy costs and not home heating and cooling costs.

[6] 2001 Residential Energy Consumption Survey (RECS).
[7] 2001 RECS.

Within this study, severe total residential energy burden is defined as energy costs exceeding 11 percent of income and severe home energy burden as heating and cooling costs exceeding 4 percent of income.[8]

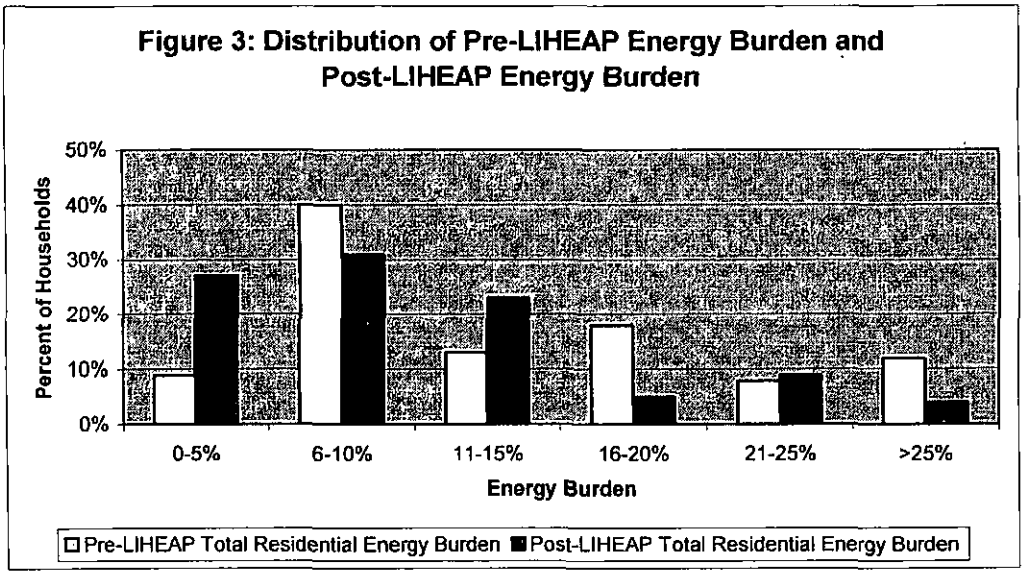
Figure 2 illustrates that 12 million households with income below the federal maximum eligibility standard of 60 percent of state median income or 150 percent of the federal poverty level have severe home heating and cooling burdens.



Source: 2001 Residential Energy Consumption Survey

Figure 3 displays the level of energy burden both prior to subtracting LIHEAP benefits from energy costs (pre-LIHEAP), and after subtracting LIHEAP benefits (post-LIHEAP). Figure 3 shows that 91 percent of LIHEAP recipients have pre-LIHEAP total residential energy burdens above 5 percent, and 20 percent above 20 percent. After accounting for LIHEAP benefits, the proportion of households that fall into the lowest energy burden interval (of 0-5%) increases from 9 percent to 27 percent. LIHEAP benefits reduce the proportion of households with total residential energy burden above 15 percent from 38 percent to 19 percent.

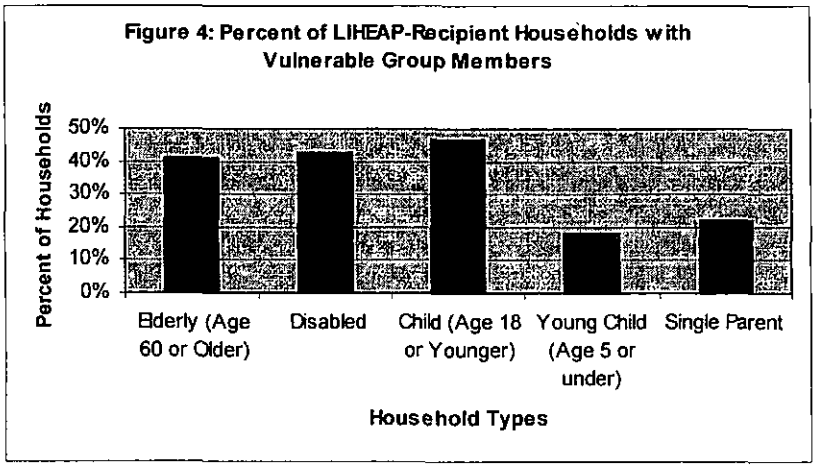
[8] Some researchers have defined severe shelter burden as shelter costs at or greater than 50 percent of income (See Cushing N. Dolbeare. 2001. "Housing Affordability: Challenge and Context." Cityscape: A Journal of Policy Development and Research, (5)2:111-130. A Publication of the U.S. Department of Housing and Urban Development, Office of Policy Development and Research.) The severe shelter burden definition is used in this study as a guide to define severe total residential energy burden. The median total residential energy costs for households with income below 150 percent of poverty are 21.8 percent of shelter costs. If shelter costs are 50 percent of income, then these total residential energy costs represent 10.9 percent of income. Therefore severe total residential energy burden is defined as total residential energy costs that exceed 10.9 percent of income (Calculation: *.218 x .50 = .109*). Severe home heating and cooling energy burden is defined as the percentage of income spent on home heating and cooling that would be excessive for low-income households. The 2001 RECS shows that heating and cooling energy expenses comprise 39.3 percent of total residential energy expenditures. Therefore, severe home heating and cooling energy burden is defined as heating and cooling costs that exceed 4.3 percent of income (Calculation: .39 x .218 x.50 = .043).



Source: 2003 National Energy Assistance Survey

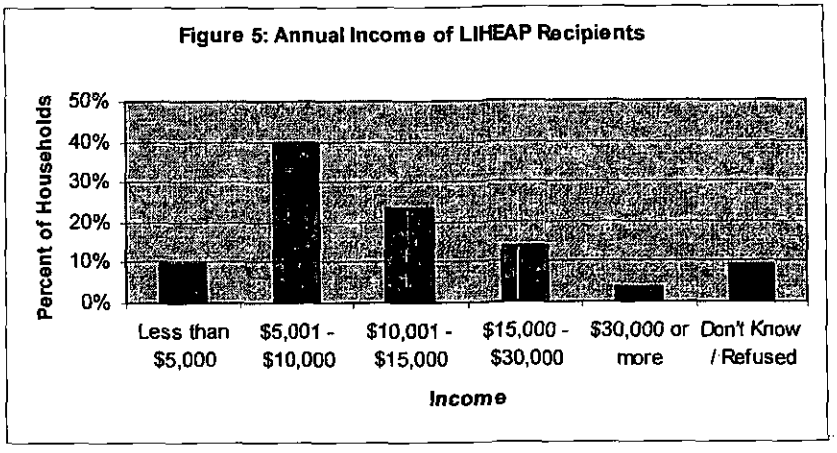
LIHEAP Recipients

Figure 4 presents the percentage of LIHEAP recipients with one or more household members particularly vulnerable to unaffordable energy bills. Forty-one percent reported that they have one or more household members age 60 or older, 43 percent have one or more disabled household members, 47 percent have one or more children age 18 or younger, 18 percent have one or more young children age 5 or younger, and 22 percent are single parent households.



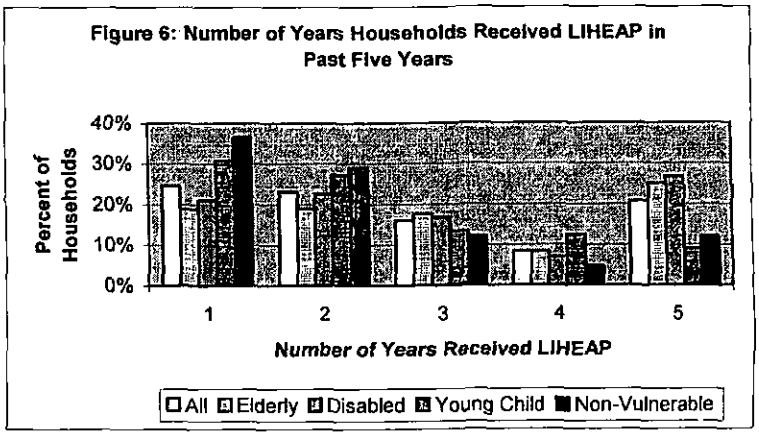
Source: 2003 National Energy Assistance Survey

Respondents were asked for their annual household income. Figure 5 shows that 50 percent reported an annual income at or below $10,000 per year and 74 percent reported an annual income at or below $15,000.[9]



Source: 2003 National Energy Assistance Survey

Respondents were asked how many times in the past five years they received LIHEAP benefits. Figure 6 shows that 25 percent reported that they received LIHEAP only once, and 21 percent reported that they received LIHEAP five times in the past five years. Approximately 25 percent of households with an elderly person and 27 percent of households with a disabled person have received LIHEAP five times in five years, compared to 12 percent for non-vulnerable (i.e., households with no residents that are elderly, disabled, or children) households and 9 percent for LIHEAP-recipient households with children age 5 or younger.

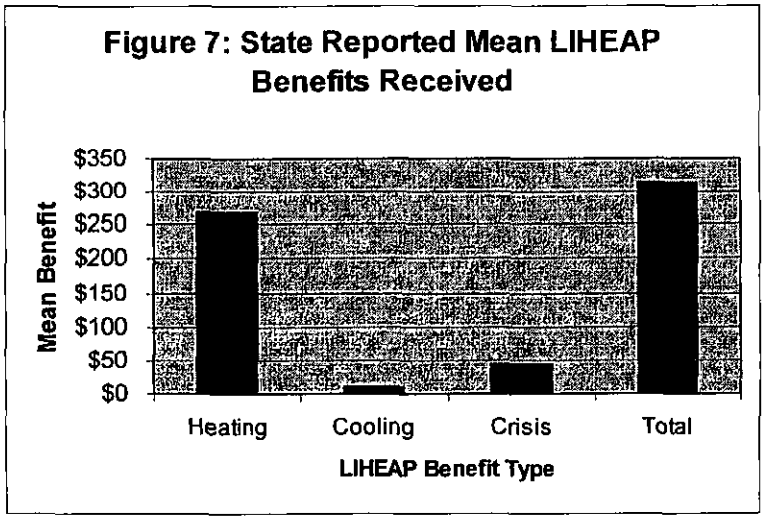


Source: 2003 National Energy Assistance Survey

[9] Table 14 shows that 70 percent of LIHEAP recipients have incomes below 100 percent of poverty.

States were asked to provide data on the amount of heating, cooling, and crisis benefits received by each household. All twenty states included in the survey provided data for nearly all (2,132 of 2,161) of the respondents.

Figure 7 shows that the total average LIHEAP award was $313 in FY 2003. The average LIHEAP grant was $267 for heating, $10 for cooling, and $45 for crisis. Most LIHEAP recipients received heating assistance, but only a small minority received cooling assistance.[10]

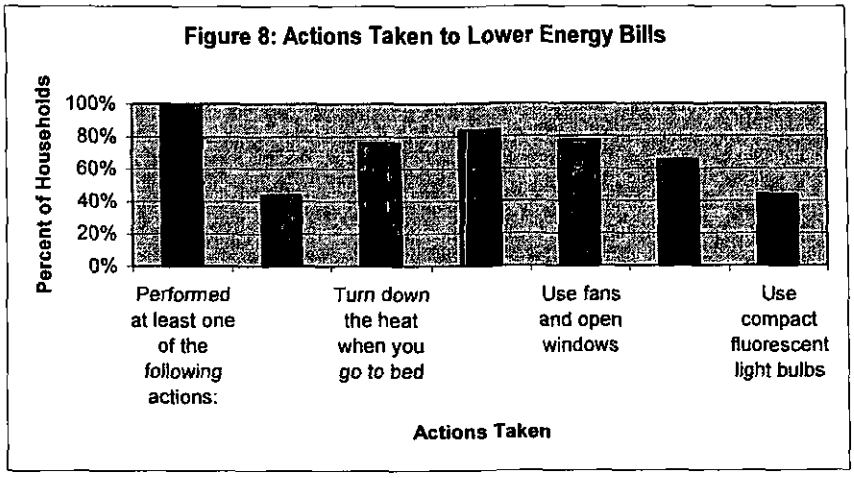


Source: 2003 State LIHEAP office data

Constraints, Hardships, and Unsafe Practices

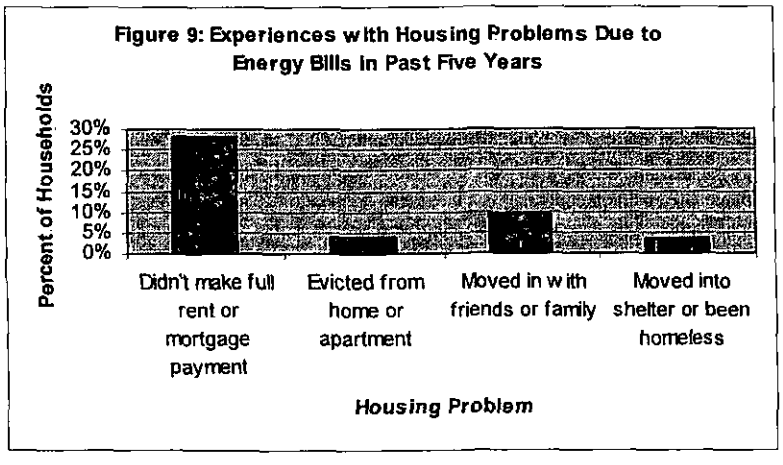
Respondents were asked whether they took specific actions in FY 2003 to bring down their total residential energy costs. Figure 8 illustrates that nearly all LIHEAP recipients took constructive actions to lower their energy bills. Forty-four percent of LIHEAP recipients said that they put plastic on their windows and 76 percent said they turned down the heat when they went to bed. Eighty-three percent said they kept shades and curtains closed during the daytime in the summer and 78 percent said they used fans and opened windows. Sixty-five percent said they washed clothes in cold water and 44 percent said they used compact fluorescent light bulbs.

[10] Table 34 shows that 2.6 percent (56 of 2,132) of LIHEAP recipients received cooling benefits, 11.5 percent (245 of 2,132) received crisis benefits, and 95.8 percent (1,959 of 2,132) received heating benefits. The mean LIHEAP benefits received are averages over all recipients in the states where those benefits were offered. The average cooling benefit among only those who received a cooling benefit was $147 and the average crisis benefit among only those who received a crisis benefit was $264.



Source: 2003 National Energy Assistance Survey
Note: These responses may be overestimated due to respondent compliance (i.e., desire to provide a socially desirable or positive response).

Respondents were asked whether they encountered specific housing problems over the past five years due in part to their total residential energy expenses. Figure 9 shows that 28 percent of respondents reported not making a full rent or mortgage payment, 9 percent reported that they moved in with friends or family, 4 percent said they were evicted from their home or apartment, and 4 percent were homeless at some point during the last five years.

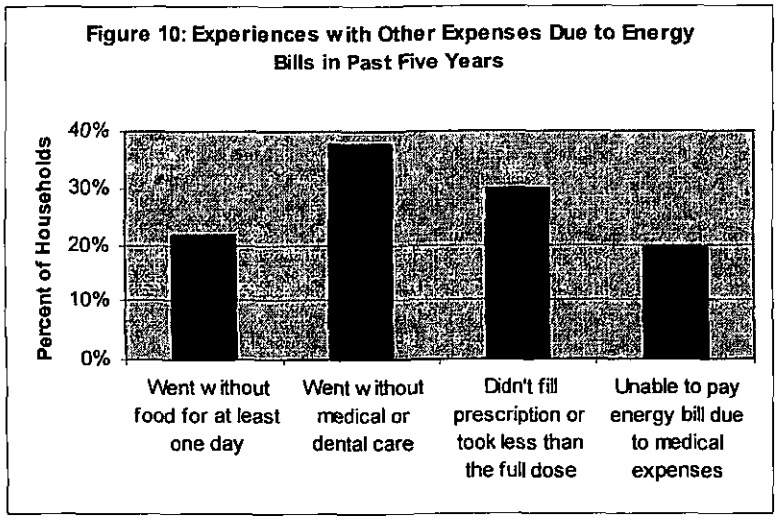


Source: 2003 National Energy Assistance Survey

Health: Tough Choices and Health Problems

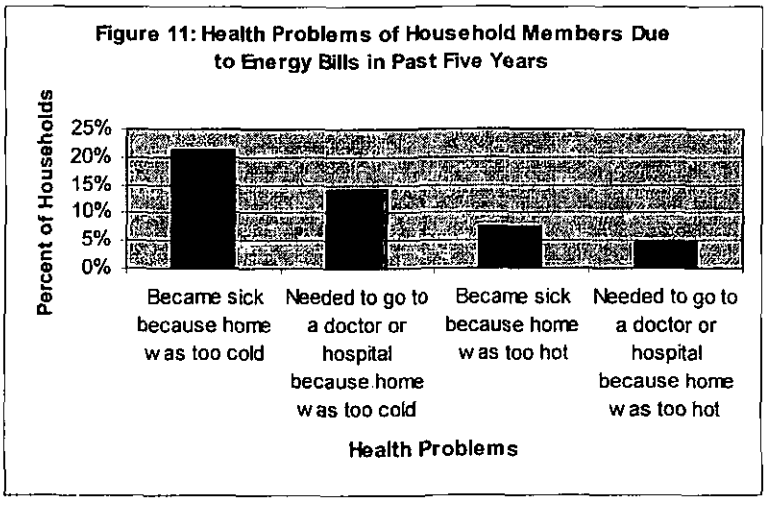
Respondents were asked whether they went without food, medical care, or medicine in the past five years due in part to their total residential energy expenses. Figure 10 shows that 22 percent

of LIHEAP recipients reported that they went without food for at least one day, 38 percent said they went without medical care, 30 percent said they didn't fill a prescription or took less than the full dose of a prescribed medicine, and 20 percent said they were unable to pay their energy bill due to medical expenses.



Source: 2003 National Energy Assistance Survey

Respondents were asked whether they suffered illness in the past five years because their homes were too hot or too cold. Figure 11 shows that 21 percent of LIHEAP recipients reported that someone in their household became sick because their home was too cold, and 14 percent reported that someone in the household needed to go to the doctor or hospital due to an illness. Seven percent of LIHEAP recipients reported that someone in their household became sick because their home was too hot, and 5 percent reported that an illness resulted in a doctor or hospital visit.

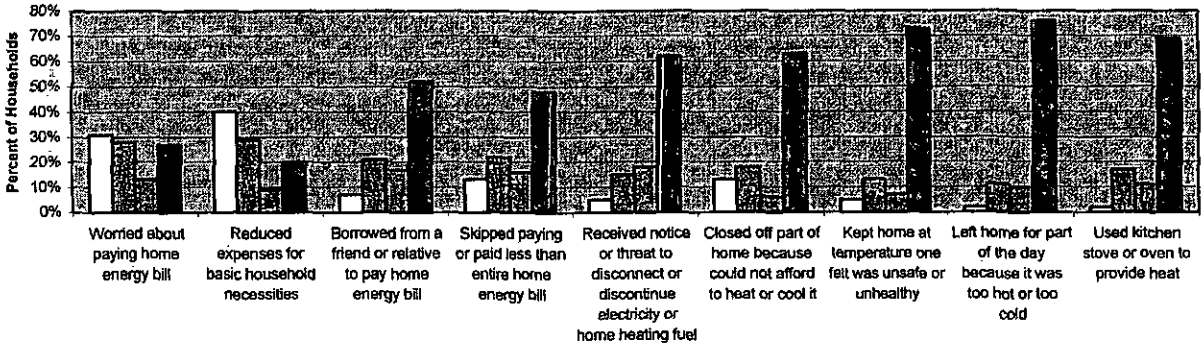


Source: 2003 National Energy Assistance Survey

Energy Insecurity

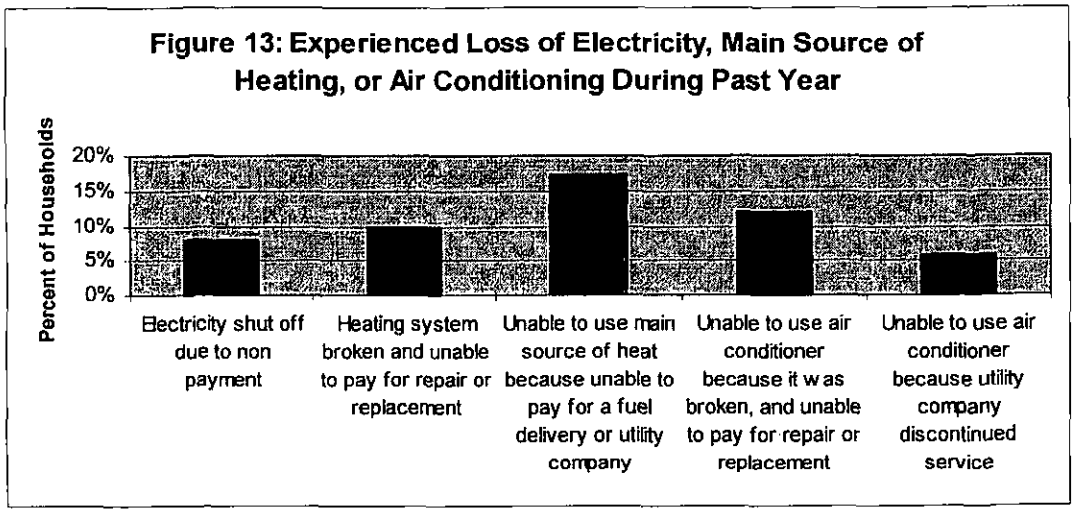
Respondents were asked to report the frequency of actions or experiences in FY 2003 that could be considered indicators of energy insecurity. As shown in Figure 12, 72 percent of LIHEAP recipients worried in FY 2003 about their ability to pay the home energy bill. Seventy-eight percent said that they reduced expenses on basic household necessities. Fifty-one percent skipped paying or paid less than their entire home energy bill. Thirty percent reported that they used their kitchen stove for heat.

Figure 12: Experiences Due to Not Having Enough Money for the Energy Bill During Past Year



Source: 2003 National Energy Assistance Survey

Figure 13 displays whether the respondent reported a loss of electricity, heating, or air conditioning. Eight percent of LIHEAP recipients reported not being able to use their main source of heat in FY 2003 because their electricity was shut off due to nonpayment, 10 percent said their heating system broke and they were unable to pay for a repair or replacement, and 17 percent said they couldn't use their main source of heat because they were unable to pay for a bulk fuel delivery or the utility company discontinued their energy service. Twelve percent of LIHEAP recipients reported not being able to use their air conditioner because it was broken and they were unable to pay for a repair or replacement, and 6 percent reported not being able to use their air conditioner because the utility company discontinued their service.



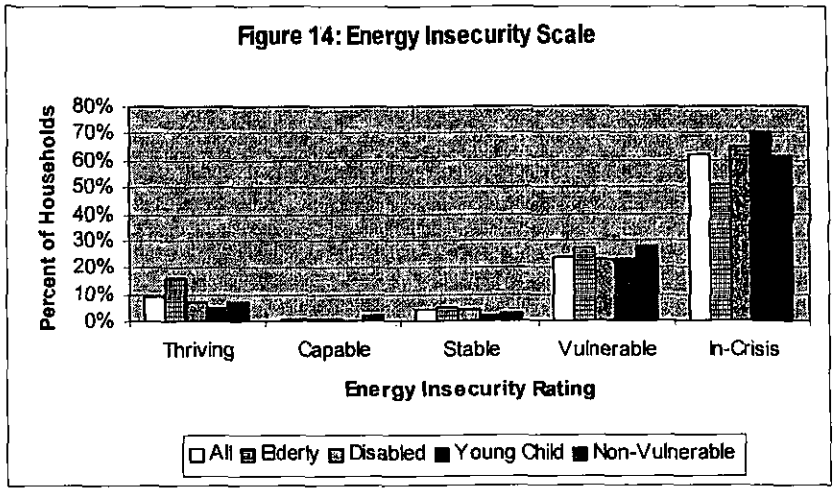
Source: 2003 National Energy Assistance Survey

Figure 14 presents a scale that classifies LIHEAP recipients based on their level of home energy insecurity. The scale, constructed from some of the previously described NEA survey questions, is a modified version of the home energy insecurity scale developed in Roger Colton's paper, "Measuring the Outcomes of Low-Income Energy Assistance Programs Through A Home Energy Insecurity Scale."[11]

The scale classifies respondents as thriving, capable, stable, vulnerable or in-crisis, based on how they answered the questions previously described in Figures 12 and 13. Each threshold serves as a measured stage of a household's energy insecurity status at a point in time. An in-crisis household suffers a loss in energy service, regularly foregoes basic household necessities to pay its energy bill, regularly constrains energy use to unsafe or unhealthy levels, or regularly practices unsafe or dangerous alternative heating techniques.

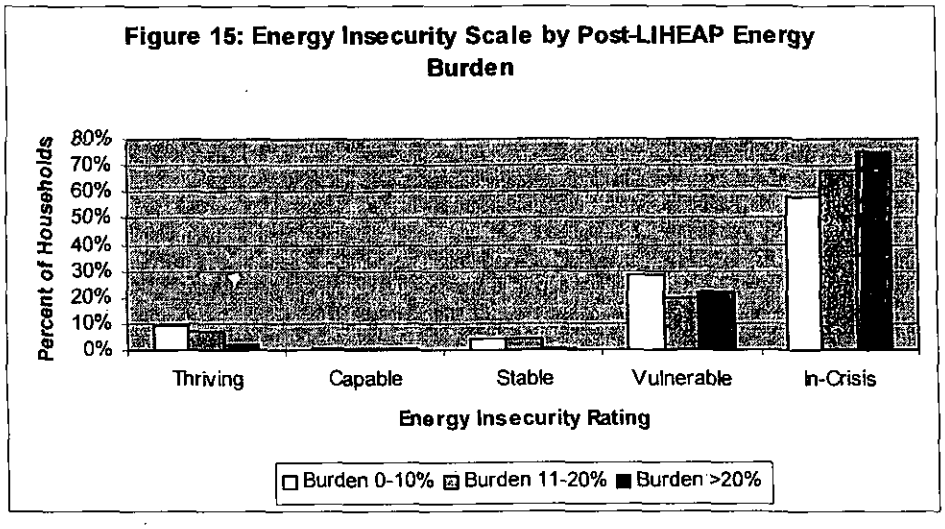
Figure 14 shows that 62 percent of LIHEAP recipients are classified as being in-crisis. Elderly households are least likely to be in-crisis and households with young children are most likely to be in-crisis. While research has shown that the elderly are more likely to pay their bills and less likely to be shut off, there is also evidence that they are less likely to admit they have problems meeting their needs.

[11] Roger Colton. July 2003. "Measuring the Outcomes of Low-Income Energy Assistance Programs Through A Home Energy Insecurity Scale." A Publication Prepared for: LIHEAP Committee on Managing for Results. U.S. Department of Health and Human Services. Administration for Children and Families. Office of Community Services, *Division of Energy Assistance.*



Source: 2003 National Energy Assistance Survey

Figure 15 displays the relationship between total residential energy burden and the energy insecurity rating. Households with the highest total residential energy burdens are most likely to be in-crisis. Approximately 75 percent of respondents with a post-LIHEAP total residential energy burden of more than 20 percent are in-crisis, compared to 58 percent of respondents with a post-LIHEAP total residential energy burden of less than 11 percent.



Source: 2003 National Energy Assistance Survey

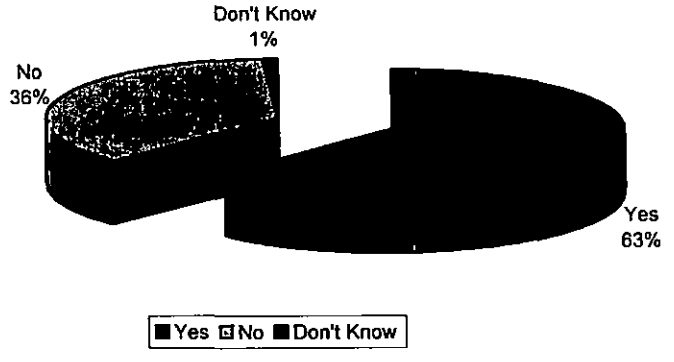
Importance of LIHEAP

LIHEAP benefits are often quite small, averaging only $313 in FY 2003. Therefore, researchers sometimes question the level of impact these benefits can have. One of the benefits of this study

is that it provides new evidence on the importance of LIHEAP for recipient households. In this study, respondents were asked to assess the impact that LIHEAP had on their circumstances and whether they would have faced certain problems if LIHEAP had not been available.

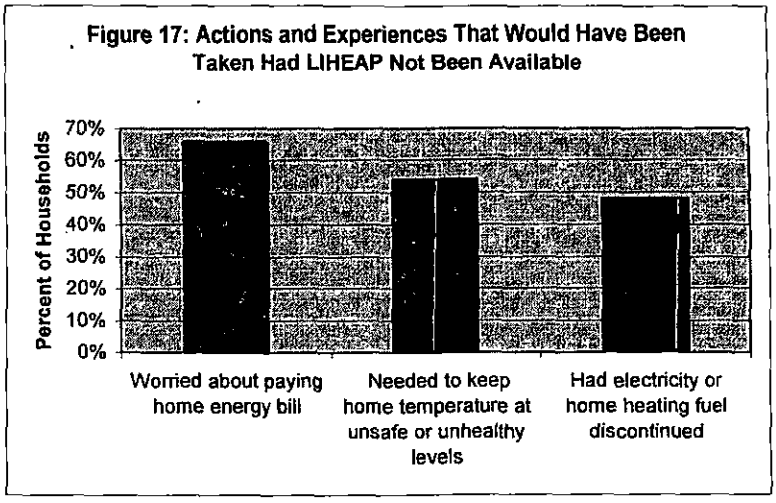
Respondents were asked whether they were unable to use their main source of heat in FY 2003 because they were unable to pay to repair or replace a broken heating system, unable to pay for fuel, or unable to pay to restore disconnected or discontinued energy service. Seventeen percent of respondents experienced a payment-related loss of heat and were asked whether LIHEAP helped restore their main source of heat. Figure 16 shows that 63 percent of these respondents reported that LIHEAP helped to restore use of their main source of heat.

Figure 16: Percent of Households That Experienced Discontinued Energy Service in the Past Year and Reported That LIHEAP Helped Restore Heat



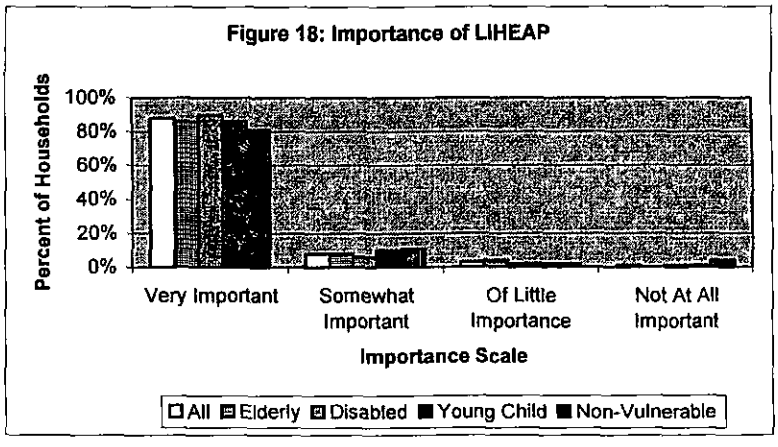
Source: 2003 National Energy Assistance Survey
Figure 16 reports on 17 percent (373 of 2,161) of LIHEAP-recipient respondents that reported being unable to use their main source of heat because they were unable to pay for a bulk fuel delivery or their utility was disconnected due to nonpayment.

Respondents who reported that they did not encounter some of the energy insecurity problems described in the previous subsection were asked whether they believe they would have faced these problems if LIHEAP assistance had not been available. Figure 17 shows that 66 percent reported that they would have worried about paying their home energy bill if LIHEAP had not been available. Fifty-four percent said they would have needed to keep their home at an unsafe or unhealthy temperature had LIHEAP not been available. Forty-eight percent said they would have had their energy service disconnected or discontinued during a time when they needed it to heat or cool their home if LIHEAP had not been available.



Source: 2003 National Energy Assistance Survey

Respondents who reported that they received LIHEAP were asked, "How important has LIHEAP been in helping you to meet your needs?" Figure 18 shows that 88 percent of LIHEAP recipients said that LIHEAP was very important in helping them meet their needs and 8 percent said it was somewhat important.



Source: 2003 National Energy Assistance Survey

I. Introduction

A. Low-Income Energy Unaffordability

National survey data show that low-income households face unaffordable energy bills. The 2001 Residential Energy Consumption Survey (RECS) shows that, in FY 2001, U.S. households spent an average of 6 percent of their income on total residential energy. The total residential energy burden for households with income at or above the poverty line was 4 percent, compared to 20 percent for households with income below the poverty line.[12] In that same year, 7.7 million LIHEAP-eligible households spent over 15 percent of their income on total residential energy. Approximately $4.9 billion of LIHEAP funding would have been needed to reduce all LIHEAP-eligible households to an energy burden of 15 percent.[13] [14] Clearly, paying for residential energy puts significant stress on the budgets of low-income households.

Though low-income households receive assistance with total residential energy costs from a number of sources, national studies show that the resources do not meet the need. In FY 2003, Congress appropriated $1.988 billion in energy assistance benefits for LIHEAP that were used to serve over 4.6 million households.[15] However, even with LIHEAP and other energy programs, households build up significant arrearages and have energy services terminated for nonpayment. The 2001 RECS showed that, during the winter of 2000-2001, about 1.2 million households had a period when they were unable to use their main heating system because they were unable to pay for their heating fuel. A 1990 National Association of Regulatory Utility Commissioners (NARUC) study showed that, in 1990, regulated utilities wrote off almost $1 billion in residential energy debts.[16] These are just a few of the indicators of the unmet need for energy assistance among low-income households.

However, the consequences of unaffordable energy bills are more far-reaching than indicated by the service termination and bad debt statistics. Despite significant residential energy expenses, most low-income households pay their energy bills regularly. But at what cost? The 1999 Iowa LIHEAP Energy Survey documented some of the strategies that low-income LIHEAP recipients in Iowa use to pay their energy bills. It demonstrated that low-

[12] According to the 2003 March Current Population Survey, households with income below the poverty line had a mean annual gross income of $7,752, compared to $64,307 for the households at or above the poverty line (See Table 2).

[13] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance. LIHEAP Home Energy Notebook For Fiscal Year 2001: Page 20.

[14] The statutory intent of LIHEAP is to reduce home heating and cooling costs for low-income households. However, information on total residential energy costs is more accessible and more apparent to LIHEAP-recipient respondents. Moreover, any reduction in home heating and cooling costs leads to a direct reduction in total residential energy costs. Therefore, this report will address total residential energy costs.

[15] National Energy Assistance Directors' Association Issue Brief: The Low Income Home Energy Assistance Program, Providing Home Heating and Cooling Assistance To More Than 4.6 Million Low-Income Families.

[16] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Service, Division of Energy Assistance. 1991. "Low Income Home Energy Assistance Program: Report to Congress for Fiscal Year 1991": pages 160-162.

income households take actions that are potentially harmful to themselves or their families to maintain energy service.

The National Energy Assistance Directors' Association contracted with APPRISE Incorporated to conduct a national survey of LIHEAP recipients. The goal of the survey was to provide information on the choices made by low-income households when they cannot afford their energy bills. This is a groundbreaking study, as no other national data describes how households cope with unaffordable energy bills. This report documents the methodology used for the study and the findings from the research.

B. Low Income Home Energy Assistance Program (LIHEAP)

The Low Income Home Energy Assistance Program (LIHEAP) is authorized by title XXVI of the Omnibus Budget Reconciliation Act of 1981 (OBRA), Public Law 97-35, as amended. LIHEAP is one of the seven block grants originally authorized by OBRA and administered by the U.S. Department of Health and Human Services (HHS). The purpose of LIHEAP is "to assist low-income households, particularly those with the lowest incomes, that pay a high proportion of household income for home energy, primarily in meeting their immediate home energy needs." The LIHEAP statute defines home energy as "a source of heating or cooling in residential dwellings."

Federal dollars for LIHEAP are allocated by the U.S. Department of Health and Human Services to the grantees (i.e., the 50 states, District of Columbia, 128 tribes and tribal organizations, and five insular areas) as a block grant. Program funds are distributed by a formula, which is weighted towards relative cold-weather conditions.

Program funds are disbursed to LIHEAP income-eligible households under programs designed by the individual grantees. Section 2605(b)(2) allows LIHEAP grantees to use two income-related standards in determining household eligibility for LIHEAP assistance:

- Categorical eligibility for households with one or more individuals receiving Temporary Assistance for Needy Families, Supplemental Security Income payments, Food Stamps, or certain needs-tested veterans' and survivors' payments, without regard for household income.
- Income eligibility for households with incomes that do not exceed the greater of an amount equal to 150 percent of the federal poverty level[17], or an amount equal to 60 percent of the state median income. Grantees may target assistance to poorer households by setting lower income eligibility levels. Grantees are prohibited from setting income eligibility levels lower than 110 percent of the poverty level. Eligibility priority may be given to households with high energy burden or need.

[17] Most states use the 150 percent of federal poverty level maximum as the guideline. 150 percent of federal poverty in 2003 was $13,470 for a single person and $27,600 for a family of four. According to the 2003 CPS, the mean annual gross income for households with income below 150 percent of poverty was $11,897.

States use a variety of factors and methods to take into account relative income, energy costs, and family size in determining LIHEAP benefits for eligible households. More states varied their heating benefits according to fuel type, energy consumption or cost, region, and household size in comparison to other types of LIHEAP assistance. Some states also used other factors to attempt to match the heating assistance benefit to a household's need. Among these additional factors relating to energy cost were housing type, whether households included persons with heating needs greater than that of the general population (e.g., a person who is elderly, disabled, or a young child), and whether the household was receiving a home energy subsidy from another program.[18]

In FY 2003, the Congress appropriated $1.788 billion in regular grant authority and $200 million in emergency funds for LIHEAP. The President has requested $1.8 billion in regular grant funding for FY 2005 and $200 million in emergency funds. On February 12, 2004, the Senate passed S.1786, The Poverty Prevention and Reduction Act, reauthorizing LIHEAP through FY 2010.[19]

C. *National Energy Assistance Study*

The 2003 National Energy Assistance (NEA) Study is comprised of three components: the 2003 NEA Survey of LIHEAP recipients, a review of previous research on low-income households and energy unaffordability, and analyses of existing national data. The most significant component of the study is the survey. The review of previous research and analysis of other national data are presented to complement and provide context for the survey design and findings.

The 2003 NEA survey provides groundbreaking information on the needs of LIHEAP-recipient households throughout the country. This national survey provides important findings on the choices low-income families make when faced with unaffordable home energy bills. This study demonstrates how those choices vary by demographic group, geography, and fuel type. Moreover, the study serves as a complement to questions unanswered from other important national surveys such as the Residential Energy Consumption Survey, the Current Population Survey, and the American Housing Survey.

D. *Survey Methodology*

The National Energy Assistance Directors' Association (NEADA) hired APPRISE Incorporated to conduct a national survey of LIHEAP recipients. Using a survey design aimed to balance survey cost with the goal of a nationally representative LIHEAP sample, 20 states were selected for inclusion in the survey. Within states, LIHEAP recipients were stratified by several characteristics in order to ensure that the sample of recipients chosen for

[18] Description of LIHEAP information obtained from "Low Income Home Energy Assistance Program. Report to Congress for Fiscal Year 2001." U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance. Additional information regarding the LIHEAP program can be found on the World Wide Web at: http://www.acf.dhhs.gov/programs/liheap/.

[19] National Energy Assistance Directors' Association Issue Brief: The Low Income Home Energy Assistance Program, Providing Home Heating and Cooling Assistance To More Than 4.6 Million Low-Income Families.

the survey represented the characteristics of the population of LIHEAP recipients in the state. A sample of 200 to 300 LIHEAP recipients from each state was selected.

The initial draft of the survey instrument was developed by APPRISE Incorporated. Cognitive interviewing was conducted to refine the survey instrument. The survey instrument was sent to NEADA working group members, and several changes and additions were made based on their comments and suggestions. Telephone interviews of sampled LIHEAP recipients were conducted between November 3, 2003, and December 22, 2003. During this time period, 1,978 interviews were completed. A mail follow-up survey was conducted with a sample of households that could not be reached by telephone. This mail follow-up survey yielded an additional 183 responses, for a total of 2,161 completed interviews. Detailed data and methodology information can be found in Appendix A.

There are limitations that should be noted regarding the findings from this survey. One limitation relates to respondents' ability to think carefully about how many bills they may have struggled to pay. It was likely difficult for respondents to disentangle which of their living expenses was primarily or directly to cause for affordability problems. Some of the difficulties that households reported facing may be due to unaffordable bills that are not related to energy use.

E. Organization of the Report

- The next section of this report, entitled "The Problem," provides the context for this research. It describes the burden and challenges faced by low-income households trying to manage their energy and other survival needs.

- The third section draws from national statistics to contrast the LIHEAP-recipient population with low-income households overall and nonrecipient LIHEAP income-eligible households.

- The fourth section of the report presents analysis of the actions that LIHEAP-recipient households take to meet their energy needs, household necessities, and health and wellness in the face of significant financial constraints.

- The fifth and sixth sections of the report are regional- and state-level analyses, respectively. These sections help the reader understand how the need for LIHEAP and challenges faced by LIHEAP recipients vary in different parts of the country and in different states.

- The final section provides a summary of the findings and makes recommendations for how the data and findings from the study can be used to substantially or completely eliminate the unhealthy and unsafe practices and conditions associated with energy affordability problems.

II. Low-Income Energy Unaffordability

The challenges that low-income families experience in paying for residential energy services have been documented by news stories and small-scale surveys. Many of these challenges, such as the choice "to heat or to eat," have existed primarily as anecdotal evidence until now. The National Energy Assistance (NEA) study is the first nationally representative study designed to describe how households cope with unaffordable energy bills. This section highlights the dimensions and the scope of the problem of unaffordable energy bills. This review both informs and places into context the value of this study.

This report makes use of several national data sets to document the demographics of low-income and LIHEAP-recipient households. The data sources that are used include:

- The Residential Energy Consumption Survey (RECS) -- Conducted by the Energy Information Administration of the Department of Energy, RECS provides information on the use of energy in residential housing units. The most recent survey in 2001 included a LIHEAP supplement that provides important information on energy costs for LIHEAP-recipient households.

- The Current Population Survey (CPS) -- Conducted by the Bureau of the Census for the Bureau of Labor Statistics, the CPS provides annual information on income and demographics for U.S. households.

- The American Housing Survey (AHS) -- Conducted by the Bureau of the Census for the Department of Housing and Urban Development, the AHS collects data on the nation's housing, including energy costs.

These data sources are quite valuable in describing the characteristics of low-income households and their energy use. However, these data sources do not address how low-income households respond to unaffordable energy bills, and the problems that low-income households face as a result of these bills. The NEA study is important because it is the only national study that provides information on the consequences of unaffordable energy bills for low-income households.

A. Dimensions of the Problem

1. Energy Burden

Energy burden is a statistic that is often used to assess the problems households have in meeting their energy needs. Energy burden is defined as the percent of income spent on energy bills. This report examines the total residential energy burden, defined as the total cost of energy used in the home divided by income. This study also examines home heating and cooling energy burden. LIHEAP is designed to assist low-income households with a high home heating and cooling energy burden.

Throughout this report, the term LIHEAP income-eligible household refers to households with incomes which do not exceed the greater of an amount equal to 150 percent of the federal poverty level, or an amount equal to 60 percent of the state median income (per the federal LIHEAP maximum income standard guidelines set forth in Section 2605(b)(2) of the LIHEAP statute).

This study also refers to low-income households, defined as those households with income below 150 percent of poverty. Low-income households are a subset of LIHEAP income-eligible households. According to the March 2003 Current Population Survey, 34.6 million (or 31 percent of all) U.S. households were LIHEAP income-eligible and 23.7 million (or 21 percent of all) U.S. households had incomes below 150 percent of poverty.

Most states limit their benefits to 150 percent of poverty. In FY 2001, 86 percent of households that received LIHEAP had incomes below 150 percent of poverty.[20] In 2003, 150 percent of federal poverty was $13,470 for a single person and $27,600 for a family of four. According to the 2003 CPS, the mean annual gross income for households with income below 150 percent of poverty was $11,897.

The study also refers to households with income below the poverty line. For FY 2003, a family of four with income below $18,400 was below the poverty line.[21] In 2003, nearly 13 million households, or 11 percent of the total population, had income below the poverty line.[22]

The economic challenges low-income households face in paying for residential energy services is apparent from national survey data. In FY 2001, the total residential energy burden for LIHEAP income-eligible households was 12.6 percent, as opposed to 3.1 percent for households not eligible.[23] In that same year, 7.7 million LIHEAP-eligible households spent over 15 percent of their income on total residential energy. Approximately $4.9 billion of LIHEAP funding would have been needed to reduce all LIHEAP-eligible households to a residential energy burden of 15 percent.[24] [25]

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[20] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Service, Division of Energy Assistance. 2001. "Low Income Home Energy Assistance Program: Report to Congress for Fiscal Year 2001."

[21] U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. 2003. "Prior HHS Poverty Guidelines and Federal Register References [online: cited March 1, 2004]." Available from World Wide Web: http://aspe.hhs.gov/poverty/03poverty.htm.

[22] Number of households below 150 percent of poverty and below the poverty line were calculated using the March 2003 Current Population Survey.

[23] 2001 Residential Energy Consumption Survey

[24] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance. LIHEAP Home Energy Notebook For Fiscal Year 2001: page 20.

[25] The statutory intent of LIHEAP is to reduce home heating and cooling costs for low-income households. However, information on total residential energy costs is more accessible and more apparent to LIHEAP-recipient respondents. Moreover, any reduction in home heating and cooling costs leads to a direct reduction in total residential energy costs. Therefore, this report addresses total residential energy costs.

The NEA study presented in this report confirms that LIHEAP is essential in helping a large number of low-income Americans meet this substantial energy burden. However, the need for LIHEAP far exceeds the availability of benefits. Over 4.6 million households received LIHEAP in 2003, only 13 percent of the 34.6 million households with income below the federal LIHEAP maximum income standard.[26] Approximately 12.7 million of those LIHEAP income-eligible households had total household income at or below the poverty line.[27] Moreover, the total residential energy burden for households with income below the poverty line was 19.5 percent, compared to only 4 percent for those with income at or above the poverty line.[28]

2. Loss of Service and Bad Debt Write-Offs

Though low-income households receive assistance with total residential energy costs from a number of sources, national studies show that the resources do not meet the need. Even with LIHEAP and other energy programs, households build up significant arrearages and have energy services terminated for nonpayment. The 2001 RECS showed that, during the winter of 2000-2001, about 1.2 million households had a period when they were unable to use their main heating system because they were unable to pay for their heating fuel.

A 1990 National Association of Regulatory Utility Commissioners (NARUC) study found that regulated utilities wrote off about 1% of residential electric and natural gas billings both in 1984 and 1990.[29] These are the most recent data, which underscores the need for more studies like this one that focus on the energy problems of low-income households. Projections to 2001 using the same bad debt rate and the total residential electric and natural gas billings from the 2001 RECS estimate that regulated utilities wrote off nearly 1.5 billion dollars in bad debt in 2001. Arrearages, service terminations, and bad debt write-offs are just a few of the indicators that illustrate the unmet need for energy assistance among low-income households.

3. Tough Choices

The consequences of unaffordable energy bills are more far-reaching than indicated by the service termination and bad debt statistics. Despite significant residential energy burdens, most low-income households pay their energy bills regularly at potentially great costs. The 1999 Iowa LIHEAP Energy Survey documented some of the strategies

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[26] Number of households receiving LIHEAP was obtained from National Energy Assistance Directors' Association Issue Brief: The Low Income Home Energy Assistance Program, Providing Home Heating and Cooling Assistance To More Than 4.6 Million Low-Income Families. Number of LIHEAP income-eligible households was calculated from the March 2003 Current Population Survey using federal LIHEAP maximum income standard (households with income below 150 percent of poverty or 60 percent of state median income).

[27] 2003 Current Population Survey.

[28] 2001 Residential Energy Consumption Survey.

[29] U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Service, Division of Energy Assistance. 1991. "Low Income Home Energy Assistance Program: Report to Congress for Fiscal Year 1991": pages 160-162.

that LIHEAP recipients in Iowa use to pay their energy bills. It demonstrated that low-income households are willing to make sacrifices in comfort and convenience to stay current on their energy bills. However, it also found that low-income households sometimes have to take actions that are potentially harmful to themselves or their families to maintain energy service.

The Iowa survey found that nearly 30 percent of respondents skipped payment on other bills to meet their total residential energy expenses. Over 12 percent of Iowa LIHEAP recipients went without food to pay their home heating bill. More than 20 percent went without needed or prescribed medical care.[30] The notion of having to choose to heat or to eat is indeed a tough choice. Having to choose immediate health (i.e., staying warm) over general long-term health (i.e., receiving appropriate medical care) is another untenable situation.

Ten percent of Iowa LIHEAP recipients reported being unable to pay for both rent and home heating. And, when faced with eviction or foreclosure, it is not surprising that people might choose to reduce total residential energy costs to levels so extreme that they suffer in unhealthy living environments.

4. Unhealthy Environments

Low-income seniors, disabled persons, and children face a number of environmental factors that put them at significant risk of injury or death due to high residential energy costs. Many will choose to (or be forced to) simply suffer without air conditioning during the summer or heat during the winter. Every summer there are cases reported in the newspapers regarding people dying in their homes from hyperthermia. Seniors are at greater risk for both hyperthermia and hypothermia (from extreme cold temperatures) due to a number of health problems associated with advancing age that contribute to the body's ability to produce heat and manage heat loss.[31]

Many low-income people are economically confined to living in substandard or poorly conditioned housing that is difficult to heat during the winter due to poor insulation and inadequately sealed windows. They suffer in uncomfortable and unhealthy temperatures, and occasionally require doctor or hospital visits due in part to inadequate heat.

Inadequate heating that leads to carbon monoxide poisoning or unhealthy home temperatures can have deleterious effects on child health, reducing the child's ability to function in school and increasing absenteeism rates. Very young children (under 5) are

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[30] Mercier Associates. 2000. "Iowa's Cold Winters: LIHEAP Recipient Perspective, The Iowa LIHEAP Energy Study." Commissioned by Iowa's Department of Human Rights, Bureau of Energy [online: cited January 8, 2004]. Available from World Wide Web: http://www.neada.org/comm/correspondence/ liheap_iowa_survey.pdf.

[31] These health problems include, but are not limited to, neuromuscular disease, arthritis, hypothyroidism, psoriasis, dermatitis, and dehydration. Source: Department of Health and Human Services, Center for Disease Control and Prevention. 2002. "Hypothermia-Related Deaths --- Utah, 2000, and United States, 1979-1998." Morbidity and Mortality Weekly Report, 51(04):76-78.

incapable of expressing or independently addressing the severity of the effects of weather. As a result, children are also more likely than adults to suffer from hypothermia during extreme cold temperatures.[32]

While these tragedies are not exclusive to low-income households, evidence supports the conclusion that improving the affordability of energy could reduce many of these tragedies.

5. Unsafe Practices

Unhealthy environments such as severe indoor temperatures produce another set of tough choices. For example, if a low-income senior can't afford her home heating bills, does she choose to turn off the heat and risk death or does she partake in an alternative practice to stay warm? Sadly, the risks involved for alternative home heating methods can lead to just as dire results.

During a single severe weekend freeze in December 2002, one hospital, Duke University Medical Center in North Carolina, treated nearly 200 cases (85 of them children) of carbon monoxide poisoning. The most common cause for these cases that doctors cited was that families were using charcoal grills indoors to heat their home.[33] During the 2003 winter season, there were significant increases in hospitals reporting similar cases of carbon monoxide poisoning from hibachi grills and outdoor gas heaters brought indoors for home heating in cities as far west as Salt Lake City, Utah.[34]

Low-income families will also compensate for a loss of home heating service or unaffordable bills by using space heaters and ovens. The inability to afford or maintain working smoke detectors in combination with misused or poorly maintained alternative heating can be deadly.

In Maine, a single mother was using the kitchen oven and a kerosene space heater to keep her family warm. When the kerosene space heater ran out of fuel oil, it sparked a fire that killed a baby girl and injured four other people.[35] In December 2003, a Florida grandmother attempting to use the oven to heat her home accidentally turned on the stove. A decorative burner caught fire and brought down the 30-year-old home she

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[32] Department of Health and Human Services, Center for Disease Control and Prevention. 2002. "Hypothermia-Related Deaths --- Utah, 2000, and United States, 1979-1998." Morbidity and Mortality Weekly Report, 51(04):76-78.

[33] Pamela Leis Higdon. 2002. "Warning Signs and Treatment of CO Poisoning." Journal of Emergency Medical Services [online]. Available: http://www.jems.com/jems/e0212n.html. Karen Garloch. 2002. "Carbon monoxide poisonings skyrocket." The Charlotte Observer: December 7, 2002. Aisling Swift. 2003. "City, Latinos break the ice." The News Observer [online: cited January 8, 2004]. Available from World Wide Web: http://newsobserver.com/news/story/2100517p-2003039c.html.

[34] Geoffrey Fattah. 2003. "Doctors say CO poisoning on rise." Deseret Morning News: December 30, 2003.

[35] Associated Press Wire. 2000. "Baby's body found in rubble of Lincoln fire." Associated Press State and Local Wire: State and Regional Section: February 11, 2000, AM Cycle [online: cited January 8, 2004]. Available from Lexis-Nexis, no link available.

shared with her daughter and grandson.[36] When temperatures fell below 20 degrees, a Louisiana man turned on his electric oven for heat and went to work. When he returned from work, his home had been burned to the ground.[37] An autistic eight-year old boy was standing too close to a stove being used for home heating. The boy was holding a piece of paper, which was ignited by the stove, causing a fire that took his life.[38] In February 2003, an eighty-three-year-old man died from either hypothermia or carbon monoxide poisoning while sitting in his parked car for warmth because his home heating system wasn't working.[39]

The extent to which low-income families will go to stay warm in the winter can be extreme. An Indiana family whose gas service had been discontinued removed a burner from the stovetop and plugged it into an extension cord to heat a downstairs bedroom. Fire officials found no smoke detectors in the remains after fire tore through the house, killing a sixty-five-year-old man and six children all under the age of nine.[40] These tragedies demonstrate that alternative efforts to simply stay warm can lead to grave results for children, the elderly, and people with income below the poverty line.

Low-income households often suffer from older, substandard housing with deteriorating or faulty heating and electrical systems. These homes are less efficient at retaining temperature and are thus more costly to heat during the winter and cool during the summer. Unsafe practices aimed at keeping costs low while heating the home during the winter lead to greater risk of fire and carbon monoxide poisoning. Older homes are less fire-resistant, and purchasing more fire-resistant furniture is unlikely to be high on the priority list of those struggling just to pay the rent. Low-income households are more likely to be in urban areas where criminal bars on the windows reduce exits during a fire. In addition, low-income households are more likely to have nonworking smoke and carbon-monoxide detectors. Getting help during a weather-related health emergency is more difficult for low-income households. Twenty percent of households with income below $5,000 do not have telephones and 55 percent of households that depend solely on public assistance do not own telephones.[41] For these reasons, unsafe practices that may seem like mere bad habits are in fact life-threatening.

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[36] Robin Campbell. 2003. "Woman burns home in heating attempt." Fort Pierce Tribune: December 22, 2003 (St. Lucie County Edition).

[37] St. Tammany Bureau. 2002. "Heating tactic backfires, torches Lacombe home." The Times-Picayune: March 1, 2002.

[38] Associated Press Wire. 2003. "Boy accidentally starts fire dies." Associated Press State and Local Wire: State and Regional Section: January 5, 2003. BC Cycle [online: cited January 8, 2004]. Available from Lexis-Nexis, no link available.

[39] Associated Press Wire. 2003. "Vignettes from the winter storm in Pennsylvania." Associated Press State and Local Wire: State and Regional Section: February 18, 2003. BC Cycle [online: cited January 8, 2004]. Available from Lexis-Nexis, no link available.

[40] John Ferak. 1998. "Makeshift heater caused fire gas was shut off at house." South bend Tribune: January 20, 1998 (Mishawaka Edition).

[41] National Fuel Funds Network. 2001. "In Harm's Way: Home Heating Fire Hazards and Low Income Households" [online: cited January 8, 2004]. Available from World Wide Web: http://www.nationalfuelfunds.org/toolkit_main2.htm.

The effects of high residential energy burden and tough choices are often most severe on children, disabled individuals, and the elderly. Children are unable to perceive and react to danger and emergencies. They have a natural curiosity for fire and a tendency to hide during an emergency, making rescue attempts more difficult.[42] Between 1994 and 1998, children under the age of 10 accounted for 22 percent of all fire deaths.[43]

Disabled and elderly individuals are more likely than the general population to suffer from some form of sensory impairment (e.g., blindness or hearing loss) and limited mobility.[44] This places each of these groups at significant risk of injury or death due to smoke inhalation or burns from accidental fires caused by unsafe alternative heating practices. The fire death risk among seniors over 65 is more than double; over age 75 triple; and over age 85 is three and one-half times that of the general population.[45]

Clearly, not everyone who can't afford heat is going to freeze to death or burn down his or her home. Nevertheless, low-income households are at greater risk of catastrophes due to unsafe practices committed in an effort to reduce their energy costs. Low-income household members are more likely to miss school and work due to illnesses caused by unhealthy environments and severe indoor temperatures. Low-income households are more often forced to make difficult health-related choices to meet their energy needs, such as whether to heat or to eat. As this section has shown in so many ways, low-income households regularly struggle due to high energy bills.

B. Scope of the Problem

1. Demographics

According to the 2003 Current Population Survey (CPS), there are approximately 12.7 million households, roughly 11.5 percent of all U.S. households, living below the federal poverty guideline. Table 1 describes the demographic characteristics of households with incomes below the poverty line.

Over 4.2 million households, or one-third of those below the poverty line, have an elderly resident, defined as an adult age 60 or older. More than 5.2 million, or 41 percent of, households with income below the poverty line have some form of a disability.[46] There are also 5.2 million, or 41 percent of, households with income below

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[42] *Ana Validzic. 2000. "Residential Fire Fact Sheet." UNC Injury Prevention Research Center [online: cited January 8, 2004]. Available from World Wide Web: http://www.sph.unc.edu/iprc/aboutinjury/fbi.htm.*

[43] United States Fire Administration. "Home Fire Safety Factsheet: Facts on Fire." Department of Homeland Security: Federal Emergency Management Agency [online: cited January 8, 2004]. Available from World Wide Web: http://www.usfa.fema.gov/public/factsheets/fact.shtm.

[44] Ana Validzic. 2000. "Residential Fire Fact Sheet." UNC Injury Prevention Research Center [online: cited January 8, 2004]. Available from World Wide Web: http://www.sph.unc.edu/iprc/aboutinjury/fbi.htm.

[45] United States Fire Administration. "Home Fire Safety Factsheet: Facts on Fire." Department of Homeland Security: Federal Emergency Management Agency [online: cited January 8, 2004]. Available from World Wide Web: http://www.usfa.fema.gov/public/factsheets/fact.shtm.

[46] Disability is defined here as having been unable to work for part of the year due to being disabled or ill, having a disability that prevents work or limits the type or amount of work, or having received disability income, social

the poverty line with children. Approximately 2.6 million, or 20 percent of, households with income below the poverty line have young children, defined as age 5 or younger.

Over 2.3 million, or 18 percent of, households with income below the poverty line are single parent (or guardian) households, defined as households with only one adult that resides with one or more children. Thirty-two percent of single parent households are below the poverty level, making single parent households the most likely vulnerable population to live below the poverty line.

Table 1
Households Below The Poverty Line with Vulnerable Group Members

	Number of Households (millions)	Percent of Households
Household With Elderly (Age 60 or older)	4.2	33%
Household With Disabled	5.2	41%
Household With Child (Age 18 or younger)	5.2	41%
Household With Young Child (Age 5 or under)	2.6	20%
Single Parent Household	2.3	18%

Source: 2003 Current Population Survey

2. Income

Table 2 displays the mean and median income for households with income at or above and below the poverty line and 150 percent of poverty. According to the 2003 CPS, the mean annual gross income for households with income below 150 percent of poverty was $11,897, compared to $70,232 for the average household at or above 150 percent of poverty. Households with income below the poverty line had a mean annual gross income of $7,752, compared to $64,307 for households at or above the poverty line.

security disability income, Medicare if under the age of 65, supplemental security income due to being blind or disabled, or veterans disability payments.

Table 2
Median and Mean Annual Income of U.S. Households
At or Above and Below the Poverty Line and 150 Percent of Poverty

	Mean Income		Median Income	
Poverty Threshold Criteria	**Below Threshold**	**At or Above Threshold**	**Below Threshold**	**At or Above Threshold**
Poverty Line (100% of Poverty)	$7,752	$64,307	$7,260	$48,684
150% of Poverty	$11,897	$70,232	$11,000	$54,096

Source: 2003 Current Population Survey

3. Energy Expenditures

Table 3 displays the mean and median total residential energy expenditures for households with income at or above and below 150 percent of poverty. According to the 2001 Residential Energy Consumption Survey (RECS), the mean annual total residential energy expenditures for households with income below 150 percent of poverty were $1,216, compared to $1,577 for households with income at or above 150 percent of poverty.

Mean heating and cooling energy expenditures were $495 for households with income below 150 percent of poverty, compared to $655 for households with income at or above 150 percent of poverty. Home heating and cooling energy expenses comprise approximately 40 percent of total residential energy expenditures.

The statutory intent of LIHEAP is to reduce home heating and cooling costs for low-income households. However, information on total residential energy costs is more accessible and more apparent to LIHEAP-recipient respondents. Moreover, any reduction in home heating and cooling costs leads to a direct reduction in total residential energy costs. Therefore, this report will sometimes address the broader measure of total residential energy costs.

Table 3
Median and Mean Total Residential Energy Expenditures of U.S. Households
With Income At or Above and Below 150 Percent of Poverty

	Mean Expenditures		Median Expenditures	
	Below 150 Percent of Poverty	**At or Above 150 Percent of Poverty**	**Below 150 Percent of Poverty**	**At or Above 150 Percent of Poverty**
Annual Total Residential Energy Expenses	$1,216	$1,577	$1,109	$1,450
Annual Home Heating and Cooling Energy Expenses	$495	$655	$421	$592

Source: 2001 Residential Energy Consumption Survey

4. Energy Burden

Energy burden is a statistic that is often used to assess the problems households have in meeting their energy needs. Energy burden is defined as the percent of income spent on energy bills. This report examines total residential energy burden defined as total cost of energy used in the home divided by income. This study also examines home heating and cooling energy burden.

In addition, this study reports the level of energy burden both prior to subtracting LIHEAP benefits from energy costs, and after subtracting LIHEAP benefits. Energy burdens are high for low-income households, both because of their low income and higher relative costs due to old or substandard housing with inefficient heating systems, low levels of insulation, or gaps in the exterior of the home.

Table 4 displays the mean and median energy burden for households with income at or above and below 150 percent of poverty. Energy burden is defined as total residential energy costs divided by income. The mean total residential energy burden is 14 percent for households with income below 150 percent of poverty, compared to 3 percent for households with income above 150 percent of poverty.

Table 4
Median and Mean Total Residential Energy Burden of U.S. Households With Income At or Above and Below 150 Percent of Poverty

	Mean Burden				Median Burden			
	All	Percent of Poverty			All	Percent of Poverty		
		< 100%	100%-150%	≥ 150%		< 100%	100%-150%	≥ 150%
Total Residential Energy Burden	6.1%	19.5%	7.8%	3.4%	3.6%	12.5%	7.1%	2.9%
Home Heating and Cooling Energy Burden	2.6%	8.0%	3.3%	1.4%	1.4%	4.8%	2.8%	1.2%

Source: *2001 Residential Energy Consumption Survey*

5. Shelter Costs

Table 5 displays the shelter costs differences between households with income at or above and below 150 percent of poverty. Shelter costs encompass all costs related to residential property, rent, taxes, land, and utilities (not including telephone or cable).

According to the 2001 American Housing Survey, the mean annual shelter costs for households with income below 150 percent of poverty was $6,565, compared to $11,539 for households with income above 150 percent of poverty.

The median household below 150 percent of poverty spends over 42 percent of its income on shelter, compared to 17 percent for the median household at or above 150

percent of poverty. In addition, total residential energy costs comprise a median of 22 percent of shelter costs for households with income below 150 percent of poverty, compared to 14 percent for households with income at or above 150 percent of poverty.

Table 5
Median and Mean Shelter Costs of U.S. Households
With Income At or Above and Below 150 Percent of Poverty

	Mean		Median	
	Percent of Poverty		Percent of Poverty	
	< 150%	≥ 150%	< 150%	≥ 150%
Total Annual Shelter Costs	$6,565	$11,539	$5,509	$9,110
Shelter Costs as Proportion of Income	48.7%	20.5%	42.4%	17.4%
***Total Residential* Energy Costs as Proportion of Shelter Costs**	30.3%	21.4%	21.8%	13.8%

Source: 2001 American Housing Survey

It is commonly held that shelter costs are a significant challenge and burden for low-income households. The information presented here suggests that total residential energy expenditures should be considered in the broader context of housing affordability.

Some researchers have defined severe shelter burden as shelter costs at or greater than 50 percent of income.[47] Using data from the 2001 American Housing Survey, we find that 17 million households (or 16 percent of all households) spent at least 50 percent of their income on shelter costs. Fifty-four percent of households with income below 150 percent of poverty and 72 percent of households with income below the poverty line have shelter burdens of 50 percent or more.

This study uses the severe shelter burden definition as a guide to define severe total residential energy burden.[48] The median total residential energy costs for households with income below 150 percent of poverty are 21.8 percent of shelter costs. If shelter costs are 50 percent of income, then these total residential energy costs represent 10.9

[47] Cushing N. Dolbeare. 2001. "Housing Affordability: Challenge and Context." Cityscape: A Journal of Policy Development and Research, (5)2:111-130. A Publication of the U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

[48] The study authors believe that it is useful to define a severe energy burden. The methodology for developing the definition used in this report was constructed as part of an ongoing evaluation study conducted for the U.S. Department of Health and Human Services' Division of Energy Assistance (DEA). This is just one construct for defining severe energy burden, and further research on the topic needs to be conducted.

percent of income.[49] Therefore, severe total residential energy burden is defined as total residential energy costs that exceed 10.9 percent of income.

Severe home heating and cooling energy burden represents the percentage of income spent on home heating and cooling that would be excessive for low-income households. The 2001 RECS shows that heating and cooling energy expenses comprise 39.3 percent of total residential energy expenditures. Therefore, severe home heating and cooling energy burden is defined as heating and cooling costs that exceed 4.3 percent of income.[50]

Table 6 displays the number and proportion of households with severe total residential energy burden (i.e., total residential energy burden greater than 10.9 percent) and severe home heating and cooling energy burden (i.e., home heating and cooling energy burden greater than 4.3 percent). This table shows that 11.6 million households (or 11 percent of all households) have severe total residential energy burdens, and 13.3 million households (or almost 13 percent of all households) have severe home heating and cooling energy burdens.

One-third of households with income below the Federal maximum LIHEAP standard have severe total residential energy burdens. Slightly more than one-third of LIHEAP income-eligible households have severe home heating and cooling energy burdens.

Table 6
Number and Proportion of Households with Severe Total Residential Energy Burden

	Severe Total Residential Energy Burden		Severe Home Heating and Cooling Energy Burden	
	Number (Millions)	Percent	Number (Millions)	Percent
All	11.6	10.8%	13.3	12.5%
LIHEAP income-eligible	11.3	33.5%	12.3	36.5%
Below 150 percent of poverty	10.8	41.0%	11.1	42.1%
Below 100 percent of poverty	8.7	58.4%	8.2	54.9%
Household With Elderly (Age 65 or older)	4.2	15.7%	5.5	20.4%
Household With Child (Age 12 or younger)	2.9	10.2%	3.0	10.2%

Source: 2001 Residential Energy Consumption Survey

This information demonstrates that LIHEAP is offered to homes and families with the greatest need, those that are facing the most severe total residential energy cost burdens. However, LIHEAP is only received by a fraction of those who are income eligible. In

[49] Calculation: .218 x .50 = .109
[50] Calculation: .39 x .218 x .50 = .043

FY 2001, 12 million of those income-eligible households that didn't receive LIHEAP fuel assistance had total household income at or below the poverty line. Moreover, the average total residential energy burden for those households at or below the poverty line was 19 percent.

The next section presents statistics on LIHEAP-recipient households and LIHEAP income-eligible households that do not receive benefits.

III. LIHEAP-Recipient and Nonrecipient Households

A. LIHEAP Recipients

This section reports the findings from the 2003 National Energy Assistance (NEA) Survey on the characteristics of LIHEAP-recipient households. This section describes the demographic, income, energy use, and energy costs for these households. The survey design allows for the projection of these results to all LIHEAP-recipient households. Tables presented in this section may not total to 100 percent due to rounding.

Table 7 displays the percentage of LIHEAP-recipient households by number of total and special-category household members. Sixty-three percent of LIHEAP-recipient households have two or more household members.

Table 7
Household Composition

	Number of Household Members	Number of Adults Age 60 or Older	Number of Children Age 18 or Younger	Number of Children Age 5 or Under	Number of Disabled[1]	Number of Veterans
0	[illegible]	59%	53%	82%	58%	89%
1	37%	35%	17%	12%	37%	10%
2	22%	6%	18%	5%	5%	1%
3	18%	0%	7%	1%	1%	0%
4	12%	0%	3%	0%	0%	0%
5	7%	0%	1%	0%	0%	0%
6 or more	4%	0%	1%	0%	0%	0%

[1] Respondents were asked to report how many of the people normally living in their household were disabled. Interviewers did not prompt or provide respondents a definition of disabled.

Table 8 presents the proportion of LIHEAP recipients that reported having one or more household members particularly vulnerable to unaffordable energy bills. Forty-one percent reported that they have one or more household members age 60 or older, 43 percent have one or more disabled household members, 47 percent have one or more children age 18 or younger, 18 percent have one or more young children age 5 or younger, and 22 percent are in single parent households.

Table 8
Vulnerable Groups

	Household With Elderly (Age 60 or older)	Household With Disabled	Household With Child (Age 18 or younger)	Household With Young Child (Age 5 or under)	Single Parent Household[1]
Yes	41%	43%	47%	18%	22%
No	59%	57%	53%	82%	78%

[1] *Defined as households with only one adult residing with one or more children.*

Respondents were asked for their marital status. Table 9 shows that 24 percent of LIHEAP recipients said that they are married and 76 percent of respondents reported that they currently live without a spouse. Twenty-five percent of LIHEAP recipients lost their spouse through divorce, 23 percent have never been married, 22 percent have suffered the loss of a spouse through death, and 7 percent were separated from their spouse at the time of the survey.

Table 9
Marital Status

	Percent
Married	24%
Divorced	25%
Never Married	23%
Widowed	22%
Separated	7%
Other / Don't Know / No Answer	1%

Respondents were asked for the highest level of education attained by any member of their household. Table 10 displays the responses to this question. Twenty-seven percent reported that the highest level of education obtained in their household was less than high school, 38 percent reported that it was a high school diploma or the equivalent, 22 percent reported that it was some college, 9 percent reported that it was college or beyond, and 3 percent reported that vocational training was the highest level of education attained.

Table 10
Education

	Percent
Less than High School Diploma	27%
High School Diploma or Equivalent	38%
Some College / Associates Degree	22%
Bachelor's Degree	6%
Master's Degree or Higher	3%
Vocational Training	3%
Don't Know / No Answer	1%

Table 11 shows that 43 percent of clients reported owning their home, 55 percent said they rent, and 1 percent said they reside with a family member.

Table 11
Home Ownership

	Percent
Own	43%
Rent	55%
Family / Partner Owned	1%
Other	1%

Respondents were asked whether their family currently has health insurance. Table 12 illustrates that 73 percent reported having some form of health insurance for the entire household. Five percent reported having insurance for the children and not the adults in the household. Four percent reported having insurance only for the adults and not the children in the household. Two percent of respondents said some members of the family have insurance, but not all. Fifteen percent reported that no one in the household had health insurance.

Table 12
Health Insurance

Household Members With Health Insurance:	Percent
Entire Household	73%
Adults Only	4%
Children Only	5%
Some, but not all family members	2%
None	15%
Don't Know / No Answer	1%

Respondents were asked, "What is your household's annual income?"[51] Table 13 shows that 50 percent reported an annual income at or below $10,000. Seventy-four percent reported an annual income at or below $15,000.

Table 13
Annual Income

	Percent
Less than $ 5,000	10%
$ 5,001 - $ 10,000	40%
$ 10,001 - $ 15,000	24%
$ 15,001 - $ 20,000	7%
$ 20,001 - $ 25,000	5%
$ 25,001 - $ 30,000	3%
$ 30,001 - $ 35,000	2%
$ 35,001 - $ 40,000	1%
More than $ 40,000	1%
Don't Know	5%
No Answer	4%

Table 14 illustrates that 70 percent of respondents reported annual household incomes below the federal poverty level.

Table 14
Poverty Level

	Percent[1]
Below Poverty Level	70%
At or Above Poverty Level	30%

[1] 1,965 respondents provided income information.

Respondents were asked whether in FY 2003 their household received income from employment; any form of retirement income including Social Security, pensions, and other funds; public assistance benefits from Temporary Assistance For Needy Families, Social Security Insurance, Aid for Families with Dependent Children, or general or public assistance; or noncash benefits, including food stamps and public or subsidized housing. Table 15 shows that 36 percent of respondents reported receiving wages or self-employment income, 36 percent said they received retirement income, 45 percent said they received public assistance, and 57 percent said they received noncash benefits.

[51] Respondents were not asked to specify whether the amount that they reported was gross or net income.

Table 15
Types of Income and Benefits Received

	Wages or Self-Employment Income	Retirement Income	Public Assistance	Noncash benefits
Yes	36%	36%	45%	57%
No	63%	64%	54%	42%
Don't Know / No Answer	2%	1%	1%	1%

Table 16 illustrates that 31 percent of respondents reported that in FY 2003 at least one member of their household was unemployed and looking for work.

Table 16
Unemployed During the Year

	Percent
Yes	31%
No	69%

Table 17 displays responses to the survey question, "Which fuel is used most for heating your home?" Fifty percent reported using natural gas as their primary heating fuel, 21 percent reported electricity, 15 percent reported fuel oil or kerosene, 10 percent reported bottled gas (which included LPG and propane) and 2 percent reported wood.

Table 17
Primary Fuel Used for Home Heating

	Percent
Natural Gas	50%
Electricity	21%
Fuel Oil or Kerosene	15%
Bottled Gas (LPG or Propane)	10%
Wood	2%
Other Fuel	0%
Don't Know	3%

As shown in Table 18, the costs for heat are included in the rent for 11 percent of LIHEAP recipients.

Table 18
Heat included in Rent

	Percent
Yes	11%
No	47%
Don't Pay Rent	42%

Table 19 displays responses to the survey question, "What is the main way that you cool your home on the hottest days of the summer?" Thirty-seven percent said they use a window or wall air conditioner to cool their home, 32 percent said they use fans, 22 percent said they use central air conditioning, and 2 percent said evaporative or swamp cooling. Seven percent reported not using any method to cool their home on the hottest days of the summer.

Table 19
Primary Method of Summer Cooling

	Percent
Window or Wall Air Conditioning	37%
Fans	32%
Central Air Conditioning	22%
Evaporative or Swamp Cooling	2%
No Cooling Method Used	7%

Respondents were asked for the total annual costs of their electricity, gas, and other fuels for their home. Table 20 shows that 43 percent of LIHEAP recipients spend more than $1,500 each year for residential energy.

Table 20
Annual Total Residential Energy Costs

	Percent[1]
Less than $ 500	8%
$ 500 - $ 1,000	27%
$ 1,001 - $ 1,500	23%
$ 1,501 - $ 2,000	18%
Over $ 2,000	25%

[1] 1,952 respondents provided energy costs information.

Pre-LIHEAP total residential energy burden is the proportion of income spent on total residential energy costs. Post-LIHEAP total residential energy burden is the proportion of income spent on total residential energy costs less LIHEAP benefit dollars received. Using

the self-reported annual income and self-reported annual total residential energy cost from the 2003 NEA survey, Table 21 displays the pre-LIHEAP total residential energy burden for all LIHEAP recipients. The table also displays both pre-LIHEAP and post-LIHEAP total residential energy burdens for survey respondents for whom we could obtain state-reported benefit amounts.

Ninety-one percent of LIHEAP recipients have total residential energy burdens at or above 6 percent, and 21 percent spend more than 20 percent of their annual income on energy. After accounting for LIHEAP benefits, the proportion of households that fall into the lowest energy burden interval (of 0-5 percent) increases from 9 to 27 percent. LIHEAP benefits reduce the proportion of households with total residential energy burden at or above 16 percent from 38 to 19 percent.

LIHEAP benefits are provided to assist with home heating and cooling expenses. The data from survey respondents are not sufficient to ascertain the amount of heating and cooling energy costs to calculate heating and cooling energy burden. Nevertheless, pre-LIHEAP and post-LIHEAP total residential energy burden serves as a useful indicator of the value of LIHEAP benefits.

Table 21
Total Residential Energy Burden

Energy Burden Intervals	Total Residential Energy Burden Percent of Households[1]	
	Pre-LIHEAP	Post-LIHEAP
0-5%	9%	27%
6%-10%	40%	31%
11-15%	13%	23%
16-20%	18%	6%
21-25%	9%	9%
>25%	12%	4%

[1] 1,825 respondents provided both income and energy costs information. States provided LIHEAP benefit amounts for all of these respondents.

As shown in Table 22, the mean total residential energy burden for respondents is reduced from 14 to 11 percent after accounting for LIHEAP benefits received. The reduction in total residential energy burden that is accounted for by LIHEAP benefits is fairly consistent across household types.

Table 22
Mean Total Residential Energy Burden by Vulnerable Group

	Mean Total Residential Energy Burden[1]	
	Pre-LIHEAP	**Post-LIHEAP**
All	14%	11%
Elderly (Age 60 or older)	14%	10%
Disabled	16%	12%
Child (Age 18 or younger)	14%	11%
Young Child (Age 5 or younger)	13%	10%
Single Parent	15%	12%

[1] 1,825 respondents provided both income and energy costs information. States provided LIHEAP benefit amounts for all of these respondents.

B. LIHEAP Recipients and the Broader Population of Low-Income Households

Using data from the 2003 NEA Survey, the 2001 Residential Energy Consumption Survey (RECS), and the 2003 Current Population Survey (CPS), this section describes how LIHEAP-recipient households differ from the broader population of low-income households, defined as households with income below 150 percent of poverty.

Table 23 shows the total number of household members in LIHEAP-recipient households and in low-income households (households with income below 150 percent of poverty).

Table 23
Household Size

	LIHEAP-recipient households (2003 NEA Survey)	LIHEAP-recipient households (2001 RECS Supplement)	Households with Income Below 150% of Poverty (2003 CPS)
1	37%	37%	41%
2	22%	22%	23%
3	17%	16%	12%
4	12%	14%	11%
5	6%	5%	7%
6 or more	4%	7%	6%

Based on the LIHEAP law, federal officials have expressed interest in developing performance goals designed to increase the percent of LIHEAP-recipient households having at least one member from a vulnerable group. Vulnerable groups include the elderly (adults age 60 years or older), disabled persons, and young children (age 5 years or younger).

Vulnerable households are also defined as those with high total residential energy burdens. As seen in Table 24 below, LIHEAP funds are being used in this direction.

Table 24 displays the proportion of LIHEAP-recipient households with a member of a vulnerable group, compared to all households with income below 150 percent of poverty. Forty-seven percent of LIHEAP-recipient households have at least one child, compared to 39 percent of low-income households in general. Twenty-two percent of LIHEAP-recipient households are single parent households, compared to 14 percent of low-income households in general.

Table 24
Vulnerable Groups

	LIHEAP-recipient households (2003 NEA Survey)	Households with Income Below 150% of Poverty (2003 CPS)
Elderly Population (60 or older)	41%	39%
Disabled	43%	39%
Child (18 or younger)	47%	39%
Young Child (5 or younger)	18%	19%
Single Parent	22%	14%

Note: Comparable vulnerable groups not available in the 2001 RECS.

Table 25 displays the percentage of LIHEAP-recipient households and the percentage of households with income below 150 percent of poverty that have income below the poverty line. Seventy percent of LIHEAP recipients have income below the poverty level, compared to 54 percent of all low-income households. Forty-one percent of elderly LIHEAP-recipient households are below the poverty level, compared to one-third of all elderly low-income households. Fifty percent of LIHEAP-recipient households with children are below the poverty level, compared to 41 percent of low-income households with children. For young children, single parent, and disabled person households, the percentages between LIHEAP recipients and the broader low-income population are fairly similar.

Table 25
Households Below Poverty Level by Vulnerable Group

	Percent Below Poverty Level	
	***LIHEAP-recipient* households (2003 NEA Survey)**	***Households with Income* Below 150% of Poverty (2003 CPS)**
All	70%	54%
Elderly Population (60 or older)	41%	33%
Disabled	44%	41%
Child (18 or younger)	50%	41%
Young Child (5 or younger)	20%	20%
Single Parent	23%	18%

C. Income-Eligible Households Not Receiving LIHEAP

According to the 2001 RECS, the mean total residential energy burden is 14 percent for low-income households, compared to 3 percent for households that are not low-income. As shown in Table 21, LIHEAP benefits reduce the percentage of LIHEAP-recipient households with total residential energy burdens over 15 percent from 41 percent to 20 percent. However, LIHEAP is only received by a fraction of those who are income-eligible. In FY 2001, twelve million of those income-eligible households that didn't receive LIHEAP fuel assistance had total household income at or below the poverty line. This section has two goals: to examine the differences between the LIHEAP-recipient households and LIHEAP income-eligible nonrecipient households, and to describe the need for LIHEAP among the 34.6 million households that are LIHEAP income-eligible but do not currently receive LIHEAP benefits.

The majority of LIHEAP benefits assist households with home heating and cooling expenses. Table 26 examines the primary fuel used for heating the homes of LIHEAP-recipient and LIHEAP income-eligible nonrecipient households. Twenty-one percent of LIHEAP recipients use electricity to heat their home, compared to 32 percent of LIHEAP income-eligible nonrecipients. LIHEAP-recipient households are more likely to use fuel oil or kerosene or bottled gas than income-eligible nonrecipients. The proportion of households using natural gas is similar for the two groups.

Table 26
Primary Fuel Used for Home Heating

	LIHEAP-Recipient Households (2003 NEA Survey)	LIHEAP-Recipient Households (2001 RECS Supplement)	LIHEAP Income-Eligible Nonrecipient Households (2001 RECS)
Natural Gas	50%	52%	53%
Electricity	21%	21%	32%
Fuel Oil or Kerosene	15%	12%	7%
Bottled Gas (LPG or Propane)	10%	11%	5%
Wood	2%	2%	2%
Don't Know	3%	0%	1%

Table 27 displays the proportion of households using air conditioners across the nation and by region for LIHEAP recipients and income-eligible nonrecipients. In the 2003 NEA Survey, respondents were asked, "What is the main way that you cool your home on the hottest days of the summer?" to which 60 percent reported central, window, or wall air conditioning. In the 2001 RECS, respondents were asked if they had an air conditioner, not whether it was used as a primary cooling method. Sixty-nine percent of LIHEAP recipients and 71 percent of LIHEAP income-eligible nonrecipients said that they had an air conditioner in their home. Differences in the wording of the question may account for the differences between recipients in 2003 and 2001. LIHEAP-recipient households in the Northeast are less likely than nonrecipients in the other regions to own an air conditioner.

Table 27
Household Primarily Uses / Has Air Conditioning

	Household Reports Air Conditioning As Primary Summer Cooling Method	Household Reports Owning an Air Conditioner	
	LIHEAP-Recipient Households (2003 NEA Survey)	LIHEAP-Recipient Households (2001 RECS Supplement)	LIHEAP Income-Eligible Nonrecipient Households (2001 RECS)
All	60%	69%	71%
Northeast	48%	51%	65%
Midwest	65%	77%	77%
South	84%	95%	92%
West	35%	45%	37%

Table 28 presents the mean total residential energy expenditures and mean total residential energy burden for LIHEAP-recipient and nonrecipient households. In 2001, LIHEAP-recipient households spent on average $1,451 on total annual residential energy, compared to $1,252 for LIHEAP income-eligible households that did not receive benefits. LIHEAP

recipients tend to have higher total residential energy expenditures and total residential energy burdens than LIHEAP income-eligible nonrecipients. Moreover, heating and cooling energy expenditures and home heating and cooling energy burdens in 2001 were larger for LIHEAP recipients than for LIHEAP income-eligible nonrecipients. This table also shows that, on average, LIHEAP benefits are going to those who need it most. However, the LIHEAP income-eligible nonrecipients also demonstrate a serious need for LIHEAP, as evidenced by their 12 percent total residential energy burden. This burden is higher than the severe total residential energy burden guideline of 10.9 percent developed in the previous section.

Table 28
Mean Total Residential Energy Expenditures and Mean Total Residential Energy Burden

	Self-Reported[1]	Based on Analysis of Utility Bills and Household Information	
	LIHEAP-Recipient Households (2003 NEA Survey)	LIHEAP-Recipient Households (2001 RECS Supplement)	LIHEAP Income-Eligible Nonrecipient Households (2001 RECS)
Total Residential Energy Expenditures	$1,336	$1,451	$1,252
Total Residential Energy Burden	14%	17%	12%
Heating and Cooling Energy Expenditures		$655	$510
Home Heating and Cooling Energy Burden		8%	5%

[1] Self-reported data from the 2003 NEA Survey are not sufficient to ascertain the amount of heating and cooling costs.

Table 29 demonstrates the energy crises faced in 2001 for LIHEAP-recipient and income-eligible nonrecipient 2001 RECS respondents. Eight percent of LIHEAP recipients experienced a loss of electricity, compared to 2 percent of income-eligible nonrecipients. Twelve percent of LIHEAP recipients went without their main source of heat due to an inability to pay for energy service or fuel, compared to 3 percent of income-eligible nonrecipients.

Table 29 shows that LIHEAP income-eligible nonrecipients who lose their main source of heat spend more days without heat than LIHEAP recipients. This may be because those who manage to get crisis assistance get their heat turned back on more quickly.

Table 29
Energy Crises in Past 12 Months

	LIHEAP-Recipient Households (2001 RECS Supplement)	LIHEAP Income-Eligible Nonrecipient Households (2001 RECS)
Electricity shut off	8%	2%
Went without main source of heat because:		
Heating system broken and unable to pay for a repair or *replacement*	2%	2%
Ran out of fuel and unable to pay for delivery	5%	1%
***Utility* company discontinued gas or electric service because of nonpayment of energy bill**	7%	2%
For Households Experiencing One of the Above Scenarios:		
Median number of days without heat	4	10
Mean number of days without heat	16	39
Without heat during the October through March period	10%	3%

The statistics presented above show that LIHEAP assistance is helping those with the highest total residential energy and heating and cooling energy expenditures, largest total residential energy burdens, and the most vulnerable populations. Nevertheless, the LIHEAP income-eligible nonrecipient households spend 12 percent of their income on energy, which we define as a severe total residential energy burden.

IV. The Need for LIHEAP and Challenges Faced by LIHEAP Recipients

This section uses the 2003 NEA Survey to examine the financial challenges and difficult choices made by LIHEAP recipients to manage their total residential energy costs. In addition, this section provides evidence on the importance of LIHEAP benefits in helping low-income households afford their high energy bills. Tables presented in this section may not total to 100 percent due to rounding.

A. Types of LIHEAP Assistance

Potential survey respondents were selected directly from state lists of FY 2003 LIHEAP recipients. Therefore, all respondents did receive LIHEAP benefits in FY 2003. However, many households are not aware or do not recall that they received LIHEAP benefits. Preliminary findings being evaluated by the U.S. Department of Health and Human Services from the 2001 RECS LIHEAP Supplement showed that some recipients do not recall or are not aware that they received benefits. Table 30 also shows that 14 percent of respondents in the NEA survey said they did not receive benefits and 2 percent did not know if they received benefits.[52] The inability to recall receiving LIHEAP appears to be similar across vulnerable household types (i.e., households with one member who is elderly, disabled, or a young child).

Table 30
Recall Receiving LIHEAP

	Percent
Yes	84%
No	14%
Don't Know	2%

Respondents were asked what time of year they received benefits. Table 31 illustrates that 64 percent of respondents reported receiving LIHEAP benefits in the winter, 11 percent reported fall, 7 percent reported spring, and 6 percent reported summer. Eight percent of respondents reported receiving LIHEAP benefits more than once or all year round.

[52] Interviewers used the name for the LIHEAP program particular to the state of the recipient interviewed. If the respondent was initially confused or did not recall the program based on the state-designated name, interviewers were trained to assist their memory by describing energy assistance benefits, and using the term energy assistance throughout the survey instead of the state-designated LIHEAP name.

Table 31
Reported Season of LIHEAP Receipt

	Percent[1]
Winter	64%
Spring	7%
Summer	6%
Fall	11%
More Than Once	3%
All Year Round	5%
Don't Know	3%

[1] 1,809 respondents who recalled receiving LIHEAP were asked this question.

Respondents were asked how many times in the past five years they received LIHEAP benefits. Table 32 shows that 25 percent reported receiving LIHEAP only once, and 21 percent reported that they received LIHEAP five times in the past five years. Approximately 25 percent of households with an elderly person and 27 percent of households with a disabled person have received LIHEAP five times in five years, compared to 12 percent for non-vulnerable (i.e., non-elderly, disabled, or young child household) households and 9 percent for LIHEAP-recipient households with children age 5 or younger.

Table 32
Number of Years Received LIHEAP in the Past Five Years

	All	Elderly[1]	Disabled[2]	Young Child[3]	Non-Vulnerable[4]
1	25%	19%	21%	31%	37%
2	23%	19%	23%	28%	29%
3	16%	18%	17%	13%	12%
4	8%	8%	7%	12%	5%
5	21%	25%	27%	9%	12%
Don't Know / No Answer	7%	11%	6%	7%	6%

[1] 888 respondents [2] 919 respondents [3] 397 respondents [4] 117 respondents

Respondents were asked whether they had or would apply for energy assistance in the coming winter or next summer. As shown in Table 33, 83 percent of LIHEAP recipients planned to apply for LIHEAP. The proportion of LIHEAP-recipient households with vulnerable populations that applied or plan to apply for LIHEAP in the near future is approximately 86 percent, compared to 72 percent of non-vulnerable households.

Table 33
Applied or Plans to Apply for LIHEAP
in Coming Winter or Next Summer

	All	Elderly[1]	Disabled[2]	Young Child[3]	Non-Vulnerable[4]
Yes	83%	87%	86%	84%	72%
No	10%	9%	5%	11%	20%
Don't Know	7%	4%	9%	5%	8%

[1] 888 respondents [2] 919 respondents [3] 397 respondents [4] 117 respondents

States were asked to provide the amount of heating, cooling, and crisis benefits received by each household. All twenty states included in the survey provided data for nearly all (2,132 of 2,161) of the respondents. Table 34 shows that the total average LIHEAP award was $313 in FY 2003. The average LIHEAP grant was $267 for heating, $10 for cooling, and $45 for crisis.[53] Most LIHEAP recipients received heating assistance, but only a small minority received cooling assistance.

Table 34
State Reported Mean LIHEAP Benefits Received

	Number Receiving Benefits	Mean Benefits in Dollars[2]
Heating	1,959	$ 267
Cooling	56	$ 10
Crisis	245	$ 45
Total[1]	2,132	$ 313

[1] Total benefits are not a summation of the three previous benefit types, but are the mean of total benefits received by each respondent. Some recipients received more than one type of assistance. State benefits data were provided for 2,132 of 2,161 respondents.
[2] These benefits are averaged over all recipients in the state that offers the benefits. Among just those who received benefits, the average LIHEAP grant was $294 for heating, $147 for cooling, and $264 for crisis.

B. Constraints, Hardships, and Unsafe Practices

Respondents were asked whether they took specific actions in FY 2003 to bring down their total residential energy costs. Table 35 illustrates that nearly all LIHEAP recipients took constructive actions to lower their energy bills. Forty-four percent of LIHEAP recipients said that they put plastic on their windows and 76 percent said they turned down the heat when they went to bed. Eighty-three percent said they kept shades and curtains closed during the daytime in the summer and 78 percent said they used fans and opened windows.

[53] These benefits are averaged over all recipients in the state that offers the benefits. Among just those who received benefits, the average LIHEAP grant was $294 for heating, $147 for cooling, and $264 for crisis.

Sixty-five percent said they washed clothes in cold water and 44 percent said they used compact fluorescent light bulbs.

Table 35
Constructive Actions Taken to Lower Energy Bills

	Number taking at least one of the following actions	Actions taken to bring down heating bills		Actions taken to bring down cooling bills		Other energy-saving actions taken	
		Put plastic on windows	Turn down the heat when you go to bed	Keep shades and curtains closed in daytime	Use fans and open windows	Wash clothes in cold water	Use compact fluorescent light bulbs
Yes	99%	44%	76%	83%	78%	65%	44%
No	1%	56%	24%	17%	22%	34%	53%
Don't Know	0%	0%	0%	0%	0%	1%	3%

Note: These responses may be overestimated due to respondent compliance (i.e., desire to provide a socially desirable or positive response).

Respondents were asked whether they encountered specific housing problems over the past five years due in part to their total residential energy expenses. Table 36 shows that 28 percent of respondents reported not making a full rent or mortgage payment, 9 percent reported that they moved in with friends or family, 4 percent said they were evicted from their home or apartment, and 4 percent were homeless at some point.

Table 36
Experiences with Housing Problems
Due to Energy Bills in Past Five Years

	Didn't make full rent or mortgage payment	Evicted from home or apartment	Moved in with friends or family	Moved into shelter or been homeless
Yes	28%	4%	9%	4%
No	71%	96%	90%	96%
Don't Know	1%	0%	0%	0%

Respondents were asked whether they needed to use a different name in order to obtain or continue receiving energy services in the past five years. Table 37 shows that 3 percent of respondents said they needed to use a different name in order to obtain or continue receiving energy services. LIHEAP recipients with young children were more likely and non-vulnerable were less likely to report this behavior.

Table 37
Use Different Name to Obtain or
Continue Receiving Energy Service

	All	Elderly[1]	Disabled[2]	Young Child[3]	Non-Vulnerable[4]
Yes	3%	2%	3%	7%	1%
No	96%	98%	96%	93%	99%
Don't Know	1%	0%	1%	0%	0%

[1] 888 respondents [2] 919 respondents [3] 397 respondents [4] 117 respondents

Table 38 shows that in the past five years, 1 percent of LIHEAP recipients reported having a fire caused by unsafe heating or lighting due to their energy bills. Despite the small proportion of LIHEAP recipients experiencing a fire caused by unsafe practices, 1 percent still represents approximately 46,000 households in FY 2003.[54]

Table 38
Fire Caused by Unsafe Heating or Lighting

	All	Elderly[1]	Disabled[2]	Young Child[3]	Non-Vulnerable[4]
Yes	1%	1%	2%	0%	1%
No	99%	99%	98%	100%	99%

[1] 888 respondents [2] 919 respondents [3] 397 respondents [4] 117 respondents

C. *Health: Tough Choices and Health Problems*

Respondents were asked whether they went without food, medical care, or medicine in the past five years due in part to their total residential energy expenses. Table 39 shows that 22 percent of LIHEAP recipients reported that they went without food for at least one day, 38 percent said they went without medical care, 30 percent said they didn't fill a prescription or took less than the full dose of a prescribed medicine, and 20 percent said they were unable to pay their energy bill due to medical expenses.

[54] Based on 1 percent of 4.6 million LIHEAP-recipient households as reported in National Energy Assistance Directors' Association Issue Brief: The Low Income Home Energy Assistance Program, Providing Home Heating and Cooling Assistance To More Than 4.6 Million Low-Income Families.

Table 39
Experiences with Other Expenses
Due to Energy Bills in Past Five Years

	Went without food for at least one day	Went without medical or dental care	Didn't fill prescription or took less than the full dose of a prescribed medicine	Unable to pay energy bill due to medical expenses
Yes	22%	38%	30%	20%
No	78%	62%	69%	80%
Don't Know	0 %	0%	1%	0%

Respondents were asked whether they suffered illness in the past five years because their homes were too hot or too cold. Table 40 shows that 21 percent of LIHEAP recipients reported that someone in their household became sick because their home was too cold, and 14 percent reported that someone in the household needed to go to the doctor or hospital due to an illness. Seven percent of LIHEAP recipients reported that someone in their household became sick because their home was too hot, and 5 percent reported that an illness resulted in a doctor or hospital visit.

Table 40
Health Problems Due to Energy Bills in Past Five Years

	Someone in household became sick because home was too cold	Someone in household *needed to* go to a doctor or hospital because home was too cold	Someone in household became sick because home was too hot	Someone in household needed to go to a doctor or hospital because home was too hot
Yes	21%	14%	7%	5%
No	78%	86%	92%	95%
Don't Know	1%	0%	1%	0%

D. Home Energy Insecurity

LIHEAP recipients were asked a series of questions designed to measure the home energy insecurity of their household. The purpose of these questions is to examine aspects of energy affordability and the experiences of households trying to meet their energy expenses. A scale of home energy insecurity will be presented at the end of this subsection.

Respondents were asked to report the frequency of actions or experiences in FY 2003 that could be considered indicators of energy insecurity. As shown in Table 41, 72 percent of LIHEAP recipients worried in FY 2003 about their ability to pay the home energy bill. Seventy-eight percent said that they needed to reduce expenses for basic household necessities to afford their energy bill. Fifty-two percent of LIHEAP recipients skipped

paying or paid less than their entire home energy bill. Thirty-one percent of respondents reported that they used their kitchen stove for heat.

Table 41
Actions and Experiences
Due to Not Having Enough Money for the Energy Bill
During Past Year

	Almost Every *Month*	Some Months	1 or 2 Months	Never / No	Don't Know / No Answer
Worried about paying home energy bill	31%	28%	13%	27%	2%
Reduced expenses for basic household necessities	40%	29%	9%	20%	1%
Borrowed from a friend or relative to pay home energy bill	7%	22%	17%	52%	2%
Skipped paying or paid less than entire home energy bill	14%	22%	16%	48%	1%
Received notice or threat to disconnect or discontinue electricity or home heating fuel	5%	15%	18%	62%	1%
Closed off part of home because could not afford to heat or cool it	13%	18%	6%	63%	0%
Kept home at temperature you felt was unsafe or unhealthy	5%	13%	7%	73%	1%
Left home for part of the day because it was too hot or too cold	2%	12%	10%	76%	0%
Used kitchen stove or oven to provide heat	2%	18%	11%	70%	0%

Table 42 displays whether the respondent reported a loss of electricity, heating, or air conditioning. Eight percent of LIHEAP recipients reported not being able to use their main source of heat in FY 2003 because their electricity was shut off due to nonpayment, 10 percent said their heating system broke and they were unable to pay for a repair or replacement, 10 percent reported not being able to pay for a bulk fuel delivery, and 11 percent said they couldn't use their main source of heat because the utility company discontinued their energy service. Twelve percent of LIHEAP recipients reported not being able to use their air conditioner because it was broken and they were unable to pay for a repair or replacement, and 6 percent reported not being able to use their air conditioner because the utility company discontinued their service.

Table 42
Experienced Loss of Electricity, Main Source of Heating, or Air Conditioning During Past Year

	Yes	No	Don't Know / No Answer
Electricity shut off due to nonpayment	8%	91%	1%
Heating system broken and unable to pay for repair or replacement	10%	89%	1%
Unable to use main source of heat because unable to pay for a fuel delivery	10%	90%	1%
Unable to use main source of heat because utility company discontinued gas or electric service due to nonpayment	11%	89%	0%
Unable to use air conditioner because it was broken, and unable to pay for repair or replacement	12%	87%	1%
Unable to use air conditioner because utility company discontinued electric service due to nonpayment	6%	94%	1%

Respondents who had their electricity or gas shut off or who could not afford to pay for fuel were asked whether they went without showers, baths, or hot meals, and whether they used candles or lanterns. Table 43 shows that 9 percent of LIHEAP recipients went without showers or baths, 5 percent went without hot meals, and 8 percent used candles or lanterns for lighting.

Table 43
Actions and Experiences Due to Discontinued Energy Services or Inability to Buy Fuel During Past Year

	Went without showers or baths	*Went without hot meals*	*Used candles or lanterns*
Yes	9%	5%	8%
No / Not Asked	91%	95%	92%

Table 44 presents a scale that classifies the low-income population based on its level of home energy insecurity. The scale, constructed from some of the previously described NEA Survey questions, is a modified version of the home energy insecurity scale developed in Roger Colton's paper, "Measuring the Outcomes of Low-Income Energy Assistance Programs Through a Home Energy Insecurity Scale."

The scale classifies respondents as thriving, capable, stable, vulnerable, or in-crisis, based on how they answered the questions previously presented in this section. The response patterns

used to classify the respondents are described in Appendix B.[55] Each threshold serves as a measured stage of a household's energy insecurity status at a point in time.

The thresholds indicate the following about a household:

- A **thriving** household engages in a full range of home energy uses of its choice without financial strain or worry.
- A **capable** household may have arrears because it cannot afford to pay its energy bills, but those arrears do not put maintaining energy service at risk. Moreover, the arrears do not have a negative impact on basic household necessities or household comfort and convenience.
- A **stable** household may have more than occasional arrears. However, those arrears are never in combination with threatened loss of energy service. A stable household never foregoes basic household necessities, but may temporarily constrain energy use in ways potentially detrimental to health and well-being.
- A **vulnerable** household does not experience loss of energy service, but to avoid doing so requires regular constraints of energy use to unsafe or unhealthy levels, reduction of basic household necessities, regularly borrowing money from family or friends to pay the energy bill, or inappropriate energy solutions (such as using the kitchen stove for heat).
- An **in-crisis** household suffers a loss of energy service, regularly foregoes basic household necessities to pay its energy bill, regularly constrains energy use to unsafe or unhealthy levels, or regularly practices unsafe or dangerous alternative heating techniques.

Table 44 shows that 62 percent of LIHEAP recipients are classified as being in-crisis, meaning that actions or experiences regularly occur in the household that threaten the physical and/or emotional health or safety of household members. Elderly households are least likely to be in-crisis and households with young children are most likely to be in-crisis. While research has shown that elderly households are more likely to pay their bills and less likely to be shut off, there is also evidence that they are less likely to admit that they have problems meeting their needs. The response patterns used to classify the respondents are described in Appendix B.

[55] Roger Colton. July 2003. "Measuring the Outcomes of Low-Income Energy Assistance Programs Through a Home Energy Insecurity Scale." A Publication Prepared for: LIHEAP Committee on Managing for Results. U.S. Department of Health and Human Services. Administration for Children and Families. Office of Community Services, Division of Energy Assistance.

Table 44
Energy Insecurity Scale

	All	Elderly[1]	Disabled[2]	Young Child[3]	Non-Vulnerable[4]
Thriving	9%	15%	7%	5%	7%
Capable	1%	1%	1%	0%	2%
Stable	4%	5%	4%	2%	3%
Vulnerable	25%	27%	23%	23%	28%
In-Crisis	62%	51%	65%	70%	61%

[1] 888 respondents [2] 919 respondents [3] 397 respondents [4] 117 respondents

Table 45 displays the relationship between total residential energy burden and the energy insecurity rating. Households with the highest total residential energy burdens are most likely to be in-crisis. Approximately 75 percent of respondents with a post-LIHEAP total residential energy burden of more than 20 percent are in-crisis, compared to 58 percent of respondents with a post-LIHEAP total residential energy burden of less than 11 percent.

Table 45
Energy Insecurity Scale by Total Residential Energy Burden

	Post-LIHEAP Total Residential Energy Burden[1]		
	0-10%	**11-20%**	**>20%**
Thriving	9%	7%	2%
Capable	1%	1%	1%
Stable	4%	4%	1%
Vulnerable	28%	20%	21%
In-Crisis	58%	68%	75%

[1] 1,825 respondents provided both income and energy costs information. States provided LIHEAP benefit amounts for all of these respondents.

E. Importance of LIHEAP

LIHEAP benefits are often quite small, averaging only $313 in FY 2003. Therefore, researchers sometimes question the level of impact these benefits can have. One of the benefits of this study is that it provides new evidence on the importance of LIHEAP for recipient households. In this study, respondents were asked to assess the impact that LIHEAP had on their circumstances and whether they would have faced certain problems if LIHEAP had not been available. This section addresses the responses to these questions.

Respondents were asked whether they were unable to use their main source of heat in FY 2003 because they were unable to pay to repair or replace a broken heating system, unable to pay for fuel, or unable to pay to restore disconnected or discontinued energy service. Those who said they did face one of these problems were asked whether LIHEAP helped restore

their main source of heat. Table 46 shows that 62 percent reported that LIHEAP helped to restore use of their main source of heat.

Table 46
LIHEAP Helped to Restore Heat

	Percent[1]
Yes	62%
No	36%
Don't Know	1%

[1] 373 respondents

Respondents who reported that they did not encounter some of the energy insecurity problems described in the previous subsection were asked whether they believe they would have faced these problems if LIHEAP assistance had not been available. Table 47 shows that 66 percent reported that they would have worried about paying their home energy bill if LIHEAP had not been available. Fifty-four percent said they would have needed to keep their home at an unsafe or unhealthy temperature had LIHEAP not been available. Forty-eight percent said they would have had their energy service disconnected or discontinued during a time when they needed it to heat or cool their home if LIHEAP had not been available.

Table 47
If LIHEAP Had Not Been Available

	Would you have worried about paying home energy bill?[1]	Would you have needed to keep home temperature at unsafe or unhealthy levels?[2]	Would you have had electricity or home heating fuel discontinued?[3]
Yes	66%	54%	48%
No	31%	42%	45%
Don't Know	3%	5%	7%

[1] 511 respondents [2] 1,392 respondents [3] 1,555 respondents

Respondents who reported that they received LIHEAP were asked, "How important has LIHEAP been in helping you to meet your needs?" Table 48 shows that 88 percent of LIHEAP recipients said that LIHEAP was very important in helping them meet their needs, and 8 percent said it was somewhat important. The non-vulnerable households were somewhat less likely to say that LIHEAP was very important.

Table 48
Importance of LIHEAP

	All[1]	Elderly[2]	Disabled[3]	Young Child[4]	Non-Vulnerable[5]
Very Important	88%	86%	90%	86%	81%
Somewhat Important	8%	8%	6%	10%	11%
Of Little Importance	3%	4%	2%	2%	2%
Not At All Important	1%	0%	1%	1%	4%
Don't Know / No Answer	1%	1%	1%	0%	2%

[1] 1,812 respondents [2] 727 respondents [3] 784 respondents [4] 341 respondents [5] 101 respondents

This section showed that LIHEAP has had a significant impact on energy affordability and quality of life for most recipients.

V. Regional-Level Report

This section reports whether challenges faced by LIHEAP recipients vary by region of the country. Tables presented in this section may not total to 100 percent due to rounding.

A. LIHEAP Recipients by Region

For each region of the country, Table 49 displays the proportion of LIHEAP recipients who reported having one or more vulnerable members in the household. Northeastern LIHEAP-recipient households are most likely and Western LIHEAP-recipient households are least likely to have an elderly household member. Respondents in the West were most likely to report having a household with children.

Table 49
Vulnerable Groups by Region

	Household With Elderly (Age 60 or older)	Household With Disabled	Household With Child (Age 18 or younger)	Household With Young Child (age 5 or younger)	Single Parent Household[1]
All	41%	43%	47%	18%	22%
Northeast	48%	43%	44%	15%	18%
Midwest	36%	38%	48%	18%	25%
South	44%	48%	45%	21%	21%
West	33%	45%	55%	23%	26%

[1] Defined as households with only one adult residing with one or more children.

Table 50 displays the percentage of LIHEAP recipients below poverty by region. Eighty-three percent of respondents in the South reported income below the poverty level. Respondents in the other regions were less likely to report income below the poverty level. Seventy percent of respondents in the West, 70 percent of respondents in the Northeast, and 63 percent of respondents in the Midwest reported income below the poverty level.

Table 50
Below Poverty Level

	Percent[1]
All	70%
Northeast	70%
Midwest	63%
South	83%
West	70%

[1] 1,965 respondents provided income information.

Respondents were asked whether in FY 2003 their household received income from employment; any form of retirement income including Social Security, pensions, and other funds; public assistance benefits from TANF, SSI, AFDC, or general or public assistance; or noncash benefits, including food stamps and public or subsidized housing. Table 51 illustrates the types of income and benefits received by LIHEAP recipients in each region. Respondents in the South were least likely to report receiving wages or self-employment income. Respondents in the West were least likely to report receiving retirement income. Respondents in the Midwest were least likely to report receipt of public assistance or noncash benefits. Respondents in the Northeast were most likely to report receiving public assistance.

Table 51
Types of Income and Benefits Received by Region

	Wages or Self-Employment Income	Retirement Income	Public Assistance	Noncash benefits
All	36%	36%	45%	57%
Northeast	32%	39%	54%	59%
Midwest	42%	35%	36%	52%
South	27%	37%	44%	63%
West	40%	29%	47%	58%

Pre-LIHEAP total residential energy burden is the proportion of income spent on total residential energy costs. Post-LIHEAP total residential energy burden is the proportion of income spent on total residential energy costs less LIHEAP benefit dollars received. Table 52 displays, for each region, pre-LIHEAP and post-LIHEAP total residential energy burdens for survey respondents for whom we could obtain state benefit amounts. Respondents from the West had the lowest energy burdens and respondents from the South had the highest energy burdens.

Table 52
Total Residential Energy Burden by Region

	Total Residential Energy Burden Percent of Households[1]					
	Pre-LIHEAP			Post-LIHEAP		
Energy Burden Intervals	0-10%	11-20%	>20%	0-10%	11-20%	>20%
All	48%	32%	20%	58%	28%	14%
Northeast	47%	32%	21%	61%	26%	13%
Midwest	48%	34%	18%	59%	29%	12%
South	41%	32%	27%	46%	33%	21%
West	63%	23%	14%	69%	24%	7%

[1] 1,825 respondents provided both income and energy costs information. States provided LIHEAP benefit amounts for all of these respondents.

Table 53 presents, by region, the average pre-LIHEAP and post-LIHEAP total residential energy burdens for survey respondents for whom we could obtain state benefit amounts. The reduction in total residential energy burden due to LIHEAP benefits is fairly consistent across regions. Households in the West have the lowest energy burdens because of lower fuel costs.[56]

Table 53
Mean Total Residential Energy Burden by Region

	Mean Total Residential Energy Burden[1]	
	Pre-LIHEAP	Post-LIHEAP
All	14%	11%
Northeast	15%	11%
Midwest	14%	10%
South	16%	13%
West	12%	9%

[1] 1,825 respondents provided both income and energy costs information. States provided LIHEAP benefit amounts for all of these respondents.

B. Types of LIHEAP Assistance

All survey respondents were chosen from state lists of FY 2003 LIHEAP recipients, ensuring that all respondents had received LIHEAP benefits in FY 2003. However, previous research has shown that some recipients do not recall or are not aware that they received

[56] Analysis of the 2001 Residential Energy Consumption Survey (RECS) confirms lower total residential energy costs for households in the West.

benefits. Table 54 shows respondents in the Midwest and in the West were more likely than respondents in the Northeast and South to report that they received benefits in FY 2003.

Table 54
Recall Receiving LIHEAP by Region

	Percent Reported		
	Yes	No	Don't Know
All	84%	14%	2%
Northeast	77%	22%	1%
Midwest	91%	7%	2%
South	79%	18%	3%
West	91%	8%	2%

Respondents were asked how many times in the past five years they received LIHEAP benefits. Table 55 shows that households in the West were more likely to only receive benefits in one of the past five years. Households in the South were least likely to report receiving benefits in each of the past five years.

Table 55
Number of Years Received LIHEAP in the Past Five Years by Region

	Years Receiving LIHEAP					
	1	2	3	4	5	Don't Know / No Recall
All	25%	23%	16%	8%	21%	7%
Northeast	25%	21%	14%	10%	22%	9%
Midwest	21%	23%	18%	9%	24%	4%
South	27%	25%	16%	7%	13%	11%
West	30%	24%	18%	5%	19%	5%

States were asked to provide the amount of heating, cooling, and crisis benefits received in FY 2003. Table 56 shows the mean heating, cooling, and crisis benefits by region. Respondents in the South received the highest cooling benefits and the lowest heating, crisis, and total benefits.

Table 56
State-Reported Mean LIHEAP Benefits Received by Region

	Heating[1]	Cooling[1]	Crisis[1]	Total[2]
All	$267	$10	$45	$313
Northeast	$288	$1	$58	$340
Midwest	$292	$9	$42	$338
South	$170	$20	$31	$236
West	$262	*	$36	$290

[1] Benefits are averaged over all recipients in the state that offers the benefits. Among just those who received benefits, the national average LIHEAP grant was $294 for heating, $147 for cooling, and $264 for crisis.
[2] Total benefits are not a summation of the three previous benefit types, but are the mean of total benefits received by each respondent. Some recipients received more than one type of assistance. State benefits data were provided for 2,036 of 2,161 respondents.
* Cooling benefits not available for any states in the West region.

C. *Constraints, Hardships, and Unsafe Practices*

Respondents were asked whether they took specific actions in FY 2003 to bring down their total residential energy costs. Table 57 illustrates that respondents in the Northeast were least likely to say that they turn down the heat when they go to bed to bring down total residential energy costs. Respondents in the South were least likely to say that they used fans and opened windows during the summer or used compact fluorescent light bulbs to reduce total residential energy costs.

Table 57
Actions Taken to Lower Energy Bills by Region

	Actions taken to bring down heating bills		Actions taken to bring down cooling bills		Other energy-saving actions taken	
	Put plastic on windows	Turn down the heat when you go to bed	Keep shades and curtains closed in daytime	Use fans and open windows	Wash clothes in cold water	Use compact fluorescent light bulbs
All	44%	76%	83%	78%	65%	44%
Northeast	50%	67%	79%	80%	65%	48%
Midwest	45%	77%	86%	81%	62%	43%
South	37%	85%	86%	66%	70%	35%
West	34%	81%	86%	82%	66%	49%

Note: These responses may be overestimated due to respondent compliance (i.e., desire to provide a socially desirable or positive response).

Respondents were asked whether they encountered specific housing problems over the past five years due in part to their energy bills. Table 58 shows that experiences with housing problems were fairly consistent across regions.

Table 58
Experiences with Housing Problems
Due to Energy Bills in Past Five Years by Region

	Didn't make full rent or mortgage payment	Was evicted from home or apartment	Moved in with friends or family	Moved into shelter or been homeless
All	28%	4%	9%	4%
Northeast	26%	4%	10%	7%
Midwest	27%	3%	8%	2%
South	33%	5%	9%	2%
West	31%	4%	12%	5%

Respondents were asked whether they needed to use a different name in order to obtain or continue receiving energy services in the past five years. Table 59 presents the responses to this question by region.

Table 59
Use Different Name to Obtain or
Continue Receiving Energy Service by Region

	Percent
All	3%
Northeast	3%
Midwest	3%
South	3%
West	6%

Table 60 shows that 1 percent of respondents in each region reported having a fire caused by unsafe heating or lighting, due to their total residential energy expenses.

Table 60
Fire Caused by Unsafe Heating or Lighting by Region

	Percent
All	1%
Northeast	1%
Midwest	1%
South	1%
West	1%

D. *Health: Tough Choices and Health Problems*

Respondents were asked whether they went without food, medical care, or medicine in the past five years due in part to their total residential energy expenses. As Table 61 shows, respondents in the West were more likely than the respondents in any other region to say that they went without food for at least one day.

Table 61
Experiences with Other Expenses
Due to Energy Bills by Region

	Went without food for at least one day	Went without medical or dental *care*	Didn't fill prescription or took less than the full *dose of a prescribed* medicine	Unable to pay energy bill due to *medical expenses*
All	22%	38%	30%	20%
Northeast	20%	36%	21%	19%
Midwest	22%	37%	35%	20%
South	19%	38%	33%	19%
West	30%	43%	34%	22%

Respondents were asked whether they suffered illness in the past five years because their homes were too hot or too cold. Table 62 shows that respondents in the West and Northeast regions were more likely than those in the Midwest and South to say that someone in their household had been sick because their home was too cold and that someone in their household needed to go to a doctor or hospital because of this illness.

Table 62
Health Problems Due to Energy Bills in Past Five Years by Region

	Someone in household became *sick because home* was too cold	Someone in household needed to go to a doctor or hospital because home was too cold	Someone in household became sick because home was too hot	Someone in household needed to go to a doctor or hospital because home was too hot
All	21%	14%	7%	5%
Northeast	26%	18%	8%	6%
Midwest	16%	9%	7%	3%
South	17%	13%	7%	5%
West	29%	21%	7%	3%

E. Energy Insecurity

LIHEAP recipients were asked a series of questions designed to measure the home energy insecurity of their household. The purpose of these questions is to examine aspects of energy affordability and the experiences of households trying to meet their energy expenses. A scale of home energy insecurity will be presented at the end of this subsection.

Respondents were asked to report the frequency of actions or experiences in FY 2003 that could be considered indicators of energy insecurity. Table 63 shows the percentage of respondents who reported that these experiences occurred almost every month or some months due to not having enough money for the energy bill, by region. Respondents in the West were more likely than those in any other region to report that they skipped paying or paid less than their entire home energy bill. Respondents in the Northeast were least likely to receive a notice or threat to disconnect or discontinue electricity or home heating fuel. This may be due to winter shut off moratoriums.

Table 64 displays whether the respondent reported a loss of electricity, heating, or air conditioning during FY 2003. Respondents in the South were more likely than LIHEAP recipients in any other region to report that they were unable to use their main source of heat because they could not afford to pay for a bulk fuel delivery.

Table 63
Actions and Experiences
Occurring Almost Every Month or Some Months
Due to Not Having Enough Money for the Energy Bill
During Past Year by Region

	Worried about paying home energy bill	Reduced expenses for basic household necessities	Borrowed from a friend or relative to pay home energy bill	Skipped paying or paid less than entire home energy bill	Received notice or threat to disconnect or discontinue electricity or home heating fuel	Closed off part of home because could not afford to heat or cool it	Kept home at temperature you felt was unsafe or unhealthy	Left home for part of the day because it was too hot or too cold	Used kitchen stove or oven to provide heat
All	59%	69%	29%	35%	20%	31%	18%	13%	20%
Northeast	56%	69%	27%	31%	14%	26%	21%	16%	24%
Midwest	57%	67%	26%	36%	20%	33%	14%	11%	14%
South	66%	70%	35%	35%	26%	34%	20%	12%	23%
West	65%	72%	30%	44%	22%	33%	21%	16%	18%

Table 64
Experienced Loss of Electricity, *Main Source* of Heating, or Air Conditioning During Past Year

	Electricity shut off due to *nonpayment*	Heating system broken and unable to pay for repair or replacement	Unable to use main source of heat because unable to pay for a fuel delivery	*Unable to use main* source of heat because utility company discontinued gas or electric service due to nonpayment	Unable to use air conditioner because *it was broken, and* unable to pay for repair or replacement	Unable to use air conditioner because utility company discontinued electric service due to nonpayment
All	8%	10%	10%	11%	12%	6%
Northeast	7%	8%	8%	8%	11%	4%
Midwest	7%	9%	7%	12%	12%	5%
South	11%	15%	17%	13%	16%	9%
West	11%	15%	9%	12%	12%	9%

Respondents who had their electricity or gas shut off or who could not afford to pay for fuel were asked whether they went without showers, baths, or hot meals, and whether they used candles or lanterns. Table 65 shows that experiences due to discontinued energy services were fairly consistent across the regions.

Table 65
Actions and Experiences
Due to Discontinued Energy Services During Past Year by Region

	Went without showers or baths due to nonpayment of energy service or delivery needed for hot water	Went without hot meals due to nonpayment of energy service or delivery	Used candles or lanterns due to nonpayment of energy service
All	9%	5%	8%
Northeast	9%	3%	7%
Midwest	8%	6%	6%
South	11%	7%	10%
West	8%	8%	10%

Table 66 presents a scale that classifies the low-income population based on their level of home energy insecurity. The scale, constructed from some of the previously described NEA Survey questions, is a modified version of the home energy insecurity scale developed in Roger Colton's paper, "Measuring the Outcomes of Low-Income Energy Assistance Programs Through a Home Energy Insecurity Scale."

In summary, the scale classifies respondents as thriving, capable, stable, vulnerable or in-crisis, based on how they answered the questions previously presented in this section. A detailed description of the scale and definitions for each threshold can be found in the text that precedes Table 44.

Table 66 shows that LIHEAP recipients in the Midwest are most likely to be thriving and least likely to be in-crisis, compared to respondents in other regions.

Table 66
Energy Insecurity Scale by Region

	Thriving	Capable	Stable	Vulnerable	In-Crisis
All	9%	1%	4%	24%	62%
Northeast	8%	1%	4%	22%	66%
Midwest	13%	1%	4%	25%	57%
South	7%	1%	2%	27%	63%
West	5%	1%	5%	26%	63%

F. *Importance of LIHEAP*

This section examines respondents' ratings of the importance and influence of LIHEAP by region.

Respondents were asked whether they were unable to use their main source of heat in FY 2003 because they were unable to pay to repair or replace a broken heating system, unable to pay for fuel, or unable to pay to restore disconnected or discontinued energy service. Those who said they did face one of these problems were asked whether LIHEAP helped restore their main source of heat. Table 67 shows that 55 percent of respondents in the South reported that LIHEAP helped to restore use of their main source of heat, compared to 64 percent of respondents in the Midwest, 64 percent in the Northeast, and 71 percent in the West.

Table 67
LIHEAP Helped to Restore Heat by Region[1]

	Yes	No	Don't Know
All	62%	36%	1%
Northeast	64%	32%	4%
Midwest	64%	36%	0%
South	55%	44%	1%
West	71%	29%	0%

[1] 373 respondents

Respondents who reported that they did not encounter some of the energy insecurity problems described in the previous subsection were asked whether they believe they would have faced these problems if LIHEAP assistance had not been available. Table 68 shows that respondents in the West were most likely to say that they would have worried about paying their home energy bill and would have had their electricity or home heating fuel discontinued if LIHEAP assistance had not been available.

Table 68
If LIHEAP Had Not Been Available by Region

	Would you have worried about paying home energy bill?[1]	Would you have needed to keep home temperature at unsafe or unhealthy levels?[2]	Would you have had electricity or home heating fuel discontinued?[3]
All	66%	54%	48%
Northeast	63%	55%	40%
Midwest	64%	53%	50%
South	68%	49%	47%
West	81%	58%	60%

[1] *511 respondents* [2] *1,392 respondents* [3] *1,555 respondents*