

MEASURING LIHEAP'S RESULTS:

RESPONDING TO HOME ENERGY UNAFFORDABILITY

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ABSTRACT

Congress is increasingly requiring federal agencies to address not simply the question "what have you done," but also the question "what have you accomplished." While it is easy to determine what the federal Low-Income Home Energy Assistance Program (LIHEAP) "does" --it distributes financial assistance and reduces low-income home energy burdens-- it is more difficult to determine what it accomplishes. This research identifies a comprehensive list of actions which low-income consumers might take in response to the unaffordability of home energy bills and develops a system of categorizing those consumer reactions. The research finds that: (1) the "affordability" of home energy bills cannot be deduced from the mere fact that bills are being paid by consumers. Bills can be paid but nonetheless still be unaffordable; (2) the "negative" responses available to a low-income customer facing an inability-to-pay far outstrip the available constructive responses. All too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need; (3) for purposes of measuring program outcomes, the concept of bill "affordability" should be replaced with a concept of bill "sustainability." The sustainability of bill payment looks not simply at *whether* a bill gets paid, but at *how* a bill gets paid; and (4) the existence of bill affordability assistance results in objectively measurable outcomes. The presence of negative customer responses to bill unaffordability evidences a need, the elimination or reduction in which represents an outcome of LIHEAP.

In Fiscal Year 1999, the federal government will spend over \$1.0 billion to provide home energy assistance to low-income consumers. Known as the Low-Income Home Energy Assistance Program (LIHEAP),¹¹ this fuel assistance program was first begun in 1981. Since that time, the federal government has spent over \$30 billion on low-income energy assistance.¹²

What has that money bought? That seems to be a legitimate question, particularly given the increasing efforts by Congress to impose performance-based evaluation of government expenditures. Through the Government Performance and Results Act (GPRA) of 1993,¹³ Congress has required federal agencies to address not simply the question "what have we done," but also the question "what have we accomplished?"¹⁴

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We know what LIHEAP "does." We know that LIHEAP distributes "x" dollars of federal aid to "y" number of low-income households each year. We know further that LIHEAP makes home energy bills more "affordable" to recipients of program benefits.¹⁵ We know that LIHEAP reduces the home heating burden¹⁶ imposed on low-income consumers.¹⁷

¹¹ 42 U.S.C. §§ 2601, *et seq.*

¹² The Department of Health and Human Service's *Low Income Home Energy Assistance Program Annual Report to Congress* reports the appropriations and expenditures by year since the inception of federal fuel assistance. The LIHEAP report to Congress indicates that over 70% of all LIHEAP expenditures are used on heating assistance, with smaller amounts being used for crisis intervention, weatherization and administration. A small portion of funding is used for cooling assistance.

¹³ For a good general discussion of GPRA, see, *Executive Guide: Effectively Implementing the Government Performance and Results Act*, Comptroller General of the United States, U.S. General Accounting Office, GAO/GGD-96-118 (June 1996).

¹⁴ See generally, General Accounting Office, *Managing for Results: State Experiences Provide Insights for Federal Management Reforms* (GAO/GGD-95-22) (December 21, 1994); General Accounting Office, *Managing for Results: Experiences Abroad Suggest Insights for Federal Management Reform* (GAO/GGD-95-120) (May 2, 1995); General Accounting Office, *Performance Budgeting: Past Initiatives Offer Insights for GPRA Implementation* (GAO/AIMD-97-46) (March 27, 1997).

¹⁵ Any bill that is offset in whole or part by some type of public aid would be "more" affordable. That does not address the question of whether bills are "affordable" in some objective sense after distribution of assistance.

¹⁶ In some states, LIHEAP is primarily a cooling program.

¹⁷ This assumes there is no "take back" from making bills more affordable. An illustration of a "take back" would involve a person who is living with all but two rooms of his or her home closed off. If bills are made more affordable, the person may decide to "open up" and use the rest of his or her home.

Despite all of this, the answer to the question "what has LIHEAP *accomplished*" by doing all these things remains unclear.

Some would argue that LIHEAP is simply a multi-billion dollar program providing "welfare" to the utility industry. Under this reasoning, all the program *really* does is to offset utility bad debt and collection expenses, thus increasing that industry's net profits. Advocates for this position believe that if a need exists giving rise to low-income payment problems, it should be the responsibility of the industry to respond to that need. Devoting public dollars to low-income fuel assistance, proponents of this line of thought assert, is simply a public subsidy that offsets what otherwise would be utility bad debt. The utility industry, they conclude, is perfectly capable of taking care of itself without public subsidy.

Others argue that LIHEAP is the last line of protection against unaffordable home energy bills and the resulting disconnection or denial of service accompanying unaffordability. Under this reasoning, the disconnection of service denies low-income consumers access to a fundamental necessity of life, thus leading to illness, death, housing abandonment and homelessness. The loss of winter heating service in cold weather states --as well as cooling service in warm weather states--¹⁸¹ poses obvious dangers to health and property. Under this reasoning, a publicly funded fuel assistance program is primarily a mechanism to prevent these dangers by supplementing income to avoid utility bill non-payment.

At their core, both of these lines of reasoning equate, or at least closely associate, the concepts of "unaffordability" and "inability-to-pay" with the concept of "bill nonpayment."

Whether it is accurate to equate "unaffordability" and "bill nonpayment" can be empirically tested. This paper concludes that it is not. The analysis below finds both that: (1) an inability-to-pay does not necessarily lead to nonpayment; and

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that, conversely, (2) actual bill payment does not necessarily imply an *ability* to pay. In fact, what the analysis below finds is that *many* consumer responses exist to an inability-to-pay home energy bills, only one limited set of which involves *not* paying the bill. Rather than using bill nonpayment as the indicator of unaffordability, therefore, the discussion below seeks to identify alternative objective measures to use.

¹⁸¹ See generally, Roger Colton and Michael Sheehan. (1995). *The Other Part of the Year: Low-Income Households and Their Need for Cooling: A State-by-State Look at Low-Income Summer Electric Bills*, Flying Pencil Publications: Portland (OR); Kathy Kuntz (March 1998). *Heat Related Death: Risk Factors and Prevention Strategies*, Energy Center of Wisconsin: Madison (WI).

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

THE BROAD CATEGORIES OF LOW-INCOME RESPONSES TO BILL UNAFFORDABILITY.

Little empirical work has been undertaken to date examining the consequences of unaffordable home energy bills or measuring the outcomes of public programs designed to address such unaffordability. Program outcomes are often assumed rather than measured or documented.⁹⁾ The

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research presented below represents an effort to define the more broad-based *affordability* "outcomes" of low-income fuel assistance.¹⁰⁾ While the discussion is presented in terms of LIHEAP, it could apply to any type of low-income affordability assistance (including cash assistance, rate discounts and energy efficiency). A generalized description of program planning within an outcome-based measurement scheme is presented in Appendix A.

Consumer responses to the lack of affordable home energy bills can take many forms. A consumer response should be characterized by a verb-noun structure. The verb-noun structure connotes a consumer decision to do or to refrain from doing some action. The consumer "does" (verb) "something" (noun) in response to unaffordability.

⁹⁾ There is a growing body of literature on the *payment* outcomes of low-income programs. These analyses are generally performed within the context of evaluations of utility-based low-income rate and energy efficiency programs. *See e.g.*, H.Gil Peach (September 1996). *Evaluation of Equitable Gas Energy Assistance Program*, Equitable Gas Company: Pittsburgh (PA); David Carroll (January 1993). *Philadelphia Gas Works Energy Assurance Program Year One Report*, Response Analysis: Princeton (NJ); A&C Enercom (1993). *An Extended Analysis of the Columbia Gas 1990 Low-Income Usage Reduction Program*, Columbia Gas Company: Columbus (OH); Merrilee Harrigan (1992). *Evaluating the Benefits of Comprehensive Energy Management for Low-Income, Payment-troubled Customers: Final Report on Niagara Mohawk Power Partnerships Pilot*, Alliance to Save Energy: Washington D.C.

¹⁰⁾ Other research has examined specific outcomes of an inability-to-pay. *See e.g.*, D.A. Frank, *et al.* (Sept. 1992). *Seasonal changes in weight for age in a pediatric emergency room: a heat or eat effect?*, Boston City Hospital: Boston (MA); Temple University Institute for Public Policy Studies (June 1991). *An examination of the relationship between utility terminations, housing abandonment, and homelessness*, Energy Coordinating Agency: Philadelphia (PA); Roger Colton (Sept. 1996). "The Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility and Childhood Education in Missouri." 2 *Journal on Children and Poverty* 23.

This process of identifying household responses is to be distinguished from identifying all of the adverse consequences of unaffordable home energy bills. Property impacts such as "frozen pipes," health impacts such as hypothermia and death, and social/economic impacts such as below-grade educational attainment may all be adverse *consequences* of unaffordability. They are not, however, consumer responses.^{\11\}

In the broadest sense, three categories of consumer responses have been identified:

1. There are before-the-fact actions that consumers take in response to the anticipated future lack of bill affordability. Shutting off substantial parts of a consumer's home while heating or cooling only one or two rooms in anticipation of high bills is such a preventative action.^{\12\}
2. There are contemporaneous actions that consumers take in response to the immediate lack of bill affordability. The action is deemed "contemporaneous" since the customer action and the bill payment are undertaken more or less at the same time.^{\13\} Reducing expenditures for food or medicine in order to pay home energy bills is such a contemporaneous action. In this case, the energy has been used and the bill rendered but not yet paid.
3. Finally, there are after-the-fact actions that consumers take in response to the lack of bill affordability. These actions accept the fact of the bill, as well as the fact of nonpayment, and consider those two circumstances operating in tandem. Transferring delinquent accounts to fictional names is such a retrospective action.

These categories are clearly not mutually exclusive. If a low-income person receives an unaffordable home energy bill, for example, that person may take *both* a contemporaneous action with respect to the existing bill (pay the heating bill and not take medicine) *and* a before-the-fact action with respect to future bills (close off all but one room to lower future bills). Moreover, one contemporaneous action in response to an unaffordable home energy bill is simply nonpayment of the bill.

^{\11\} The adverse consequences of bill unaffordability are not unimportant. They are merely beyond the scope of this inquiry.

^{\12\} A person may close off some rooms after receiving a high winter heating bill. It is nonetheless categorized as a before-the-fact action. Closing off a room cannot lower a previously incurred bill. It can only lower *future* bills.

^{\13\} A reduction in alternative expenditures may also be a before-the-fact action. A person may fail to purchase medicine or food in anticipation of an unaffordable home energy bill.

METHODOLOGY

This research did not engage in direct survey work. Instead, secondary reports were solicited and evaluated. A simple survey form was developed and circulated to nearly 500 individuals involved with the delivery of low-income energy assistance in one form or another throughout the country. Individuals receiving the request included state LIHEAP administrators; state administrators of the federal low-income weatherization assistance program (WAP); state and local community action administrators; and local Legal Services Corporation (LSC) and other community-based low-income advocates. In addition, survey requests were sent to each state office that is a member of the National Association of State Utility Consumer Advocates (NASUCA) as well as to the consumer services staffmember at each state public utility commission.

The survey form requested recipients to fill in the blank left by the following statement:

***When my clients cannot afford to pay their home energy bills,
the things they do include: _____***

The form provided six illustrative responses, including:

1. Reduce their spending on food.
2. Reduce their spending on medicine.
3. Place their accounts in the name of children (or even pets) after their service has been disconnected for nonpayment.
4. Cut off heating to all of their rooms except one or two.
5. Move from home to home trying to stay ahead of the bill collector.
6. Let their natural gas be disconnected during the summer and then be reconnected during the cold weather months.

Space for ten additional responses was provided. A total of 106 surveys were returned, all of which provided more than one response. Responses that were not individually provided (e.g., if one of the six illustrative responses was simply circled), that circled response was not included in the tabulation.

After tabulating the responses, the responses were then grouped into 14 descriptive categories. Each separately-identified household action was then further categorized as a before-the-fact, contemporaneous, or after-the-fact response to unaffordability. Each of the household actions was also, in turn, categorized as a "constructive," a "negative," or a "neutral" response.^{\14\} Finally, the action was categorized as having its basis in actual bill payment or not. The data is presented in Table 1 below. The number of times each response appeared on one of the 106 forms was tracked and reported.^{\15\}

DISCUSSION OF THE DATA

The process discussed above generated two results. The first result was to identify a comprehensive list of actions which low-income consumers might take in response to the unaffordability of home energy bills.

The second result was to develop a system of categorizing those consumer reactions.

This process should help to define a means to document the accomplishments/outcomes of LIHEAP. This paper presents the following decision rule: the presence of negative customer responses to bill unaffordability evidences a need, the elimination or reduction in which represents an accomplishment of LIHEAP (*i.e.*, an "outcome" in the parlance of GPRA).

Within this context, two primary conclusions can be derived from the data generated in this research.

Conclusion #1: "Constructive" and "Negative" Customer Responses

The presence of negative customer responses to bill unaffordability evidences a need, the elimination or reduction in which represents an accomplishment of LIHEAP.

The range of negative options available to a consumer facing unaffordable home energy bills far outstrips the range of constructive options available to such a low-income consumer.

^{\14\} In some cases, labelling an action as either "constructive" or "negative" was not possible. In other cases, labelling an action as "constructive" or "negative" would depend on the context in which the action was taken.

^{\15\} No particular statistical significance is attributed to the number of appearances or non-appearances of any given response, however. The purpose of this paper is to identify the actions and build the list. The purpose is not to draw conclusions about the prevalence of any particular action.

The range of negative options available to a consumer facing unaffordable home energy bills far outstrips the range of constructive options available to such a low-income consumer. The range of "negative" options available to consumers can be further classified into two categories. Some options "merely" represent a significant degradation in a low-income consumer's quality of life. Other options are counter-productive. Not only do they not solve the consumer's inability-to-pay problem, they affirmatively contribute to or exacerbate that problem.

Negative Actions

Counter-productive actions: Many payment practices not only fail to address a consumer's inability-to-pay problem, but they are actually counter-productive. To the extent that a low-income consumer borrows money to pay current bills, for example, that consumer will face current bills *plus* additional debt service obligations at some point in the future. To the extent that a low-income consumer is forced into a pattern of mobility to stay ahead of bill collectors, that consumer will be faced with the current bills *plus* the out-of-pocket expenses associated with moving (*e.g.*, rental deposits, utility connect charges). Any action that enlarges the financial hole in which a low-income consumer finds himself or herself would seem to be counter-productive.

One of the most common counter-productive actions reported for low-income consumers involves the choice to forego the payment of other bills to free up cash to pay utility bills.¹⁶ The foregone bills reported for low-income consumers include:

- È Failing to pay the electric bill in order to pay the heating bill;
- È Using rent money to pay for utilities;
- È Foregoing payment of other bills (*e.g.*, water/sewer, car payments, auto or home insurance) to pay for utilities.

In this respect, a deferred repair is a type of foregone expenditure. A refrigerator that does not refrigerate will eventually need to be fixed or replaced. A roof that leaks will eventually need to be fixed. A non-working automobile will eventually need to be repaired or replaced.

¹⁶ These reports are consistent with published literature on low-income consumer bill-payment priorities, which place payment of home energy bills second in priority behind rent/mortgage. *See generally*, Roger Colton (1991). *Understanding Why Customers Don't Pay: The Need for Flexible Collection Practices*, National Consumer Law Center: Boston (MA).

In most instances, to the extent that a consumer forgoes payment of a current bill, that consumer will face increased payments at some point in the future. Since the consumer will eventually be called upon to pay current bills *plus* the arrears, "foregone" expenditures tend not to be "foregone" at all. If a person skips a monthly rent payment or a monthly car payment to pay a utility bill, the true effect of this customer action is simply to borrow against future income. At some point, the current month's utility bill will need to be paid in addition to both current and past due rent or car payments.

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This type of foregone expenditure differs from those expenditures that are truly avoidable (whether appropriately or not). Food and medicine, for example, are truly avoidable expenses. If a person does not eat on Monday, it does not follow that he or she eats twice as much on Tuesday. If a person takes two pills in the morning rather than the prescribed three, it does not follow that he or she would take four pills at night.

In some instances, whether expenditures are "truly avoidable" is not clear. Failing to obtain medical treatment for an illness may or may not involve a truly avoidable expense. Similarly, deferred maintenance may or may not be truly avoidable. While it is *likely* that the lack of an automobile oil change will create mechanical problems, it is not certain that those problems will occur. While it is likely that continuing to neglect maintenance of a home will result in a future repair, it is not certain. While it is possible that not seeing a doctor for an illness, or not taking medicine for an illness, will lead to a more serious illness, that result is not a certainty. While it is possible that driving while uninsured may result in serious financial (as well as either civil or criminal) consequences, it is not a certainty.

Another type of counter-productive action involves increasing the indebtedness of the household. Borrowing money is one of the most commonly reported mechanisms used to pay unaffordable home energy bills, including:

Borrowing money is one of the most commonly reported mechanisms used to pay unaffordable home energy bills. . . money that is borrowed, of course, must some day be repaid. Borrowing money to pay a utility bill simply substitutes one debt for another.

- È Borrowing from friends and/or family;
- È Borrowing from a loan company;

È Purchasing fuel, food, or medicine on credit cards.

Money that is borrowed, of course, must some day be repaid. Borrowing money to pay a utility bill simply substitutes one debt for another. Borrowing defers unaffordability problems; it does not address them.

In this respect, getting advances on pay checks is simply one type of borrowing. Instead of borrowing from a third party, the consumer is borrowing against his or her own future income. Nonetheless, the advance is a debt that will need to be repaid at some point in the future (as work is performed with no current compensation).

Unsustainable actions: Many payment practices, even if not counter-productive, are not sustainable in the long-term. While these actions might allow a utility bill to be paid in the short-term, they are actions that can not be sustained over time. For a payment practice to be sustainable, it should be stable, repeatable and dependable. If a consumer is selling or pawning household items to generate cash, that source of income will eventually run out. If a consumer is stealing fuel or electricity, whether from a neighbor or from a utility (through meter tampering or fraud), that consumer eventually will be "caught" and the practice terminated.

Non-cost-effective actions: Many payment practices may not be cost-effective in the long-term. Such practices, even if beneficial in the immediate term, quickly leave the consumer worse off. A consumer, for example, may well generate short-term cash by selling the household automobile. The sale of that car, however, may well impose significant limits on the ability of the consumer to maintain employment. In addition, some short-term expense savings will generate even larger longer-term expenditures. Avoiding medical care and the purchase of prescription medicines were both cited as responses to utility inability-to-pay. Both such actions, however, are likely to generate more serious illness in the future, accompanied by increased expenses and lost wages. Neglecting necessary home and appliance maintenance and repairs will likely yield more expensive bills in the future as well.

The trade-off of telephone service for home energy service presents a difficult cost-effectiveness decision for the low-income consumer. A 1988 study conducted by the National Consumer Law Center (NCLC) for the Maine Public Utilities Commission discovered that 80 percent of the Maine households whose energy service was disconnected during the winter months lacked telephone service.¹⁷ The lack of telephone service was

¹⁷ Roger Colton (1988). *Low-Income Utility Protections in Maine An Evaluation of Low-Income Utility Protections in Maine: Winter Requests for Disconnect Permission*, National Consumer Law Center: Boston.

found to jeopardize continuing energy service by denying the household an opportunity to contact the utility so as to enter into payment plans, make contact with social service agencies to receive public assistance and to otherwise respond to the household's inability-to-pay.

Lack of access to a telephone jeopardizes access to public assistance programs as well. According to one study looking at why households do not participate in the Food Stamp program in Vermont, even for those households who knew who to contact for assistance in understanding the application and income reporting requirements, the inability to contact the agencies by phone was one of the most significant problems in obtaining such assistance.^{\18\} Similarly, in *Butte Community Union v. Lewis*,^{\19\} the court found that lack of telephone service was a significant barrier to employment since the types of employment low-income households generally obtain involve jobs offered and accepted via telephone.

It would appear that a choice to drop telephone service in order to generate cash to pay for home energy service may be counter-productive in the long-term.

Quality-of-life degradation: Finally, irrespective of "sustainability" or "cost-effectiveness" considerations, some consumer responses represent an unacceptable degradation in a low-income consumer's quality of life. Disconnecting a hot water heater to reduce home energy bills, spending every day in public places (such as shopping malls or libraries) to allow the home heating to be turned off during the day, and temporarily abandoning one's home during cold weather all represent degradations in quality of life.^{\20\}

Setting "sustainability" and "cost-effectiveness" considerations aside, some consumer responses represent an unacceptable degradation in a low-income consumer's quality of life. . . One aspect of a degradation in quality of life involves a forced reliance on unsafe or dangerous heating strategies.

One particular aspect of a degradation in quality of life involves a forced reliance on unsafe or dangerous heating strategies. Amongst the responses to an inability-to-pay reported were:

^{\18\} Sandage Advertising & Marketing (1989). *Food Stamp Program: Focus Group Research Report*, at 8 - 9, Vermont Department of Social Welfare: Waterbury (VT).

^{\19\} 745 P.2d 1128, 1131 (Mont. 1987).

^{\20\} One report involved a consumer decision to disconnect the hot water heater to save on natural gas bills. The consumer subsequently decided to stop sending her children to school since they could not bathe or wear clean clothes.

- È Turning down the temperature to unsafe temperatures during cold weather;
- È Failing to use cooling equipment during hot weather;
- È Using unsafe heat sources such as ovens, stove-top burners, charcoal grills, and unvented space heaters as the primary source of heating; and
- È Doing without heat altogether.

In addition, several reports were made of low-income consumers sleeping in running cars, campers or vans as an alternative to staying in an unheated home.

Running the constant risk of an "invisible shutoff" is a related type of dangerous degradation in life-style. An invisible shutoff occurs when a consumer runs out of fuel because of an inability to obtain new supplies rather than because of the affirmative action of an energy vendor disconnecting supplies. The danger of an invisible shutoff increases when consumers respond to an inability-to-pay by:

- È Purchasing kerosene or fuel oil in \$5 increments rather than by the tankful;
- È Buying LP cylinders rather than obtaining a tank refill; and
- È Substituting small purchases of diesel fuel for refills of fuel oil.

These small volume purchases represent a dual threat. On the one hand, they mean that any individual purchase of a heat source will be more likely to be inadequate during cold weather. In addition, it means that the consumer is faced with a constant decision of whether sufficient resources exist to heat a home (or to heat hot water) "tomorrow." The number of opportunities for the fuel source to run out increases to once every several days rather than to once a month.

Constructive Actions

Clearly, not all customer responses to inability-to-pay are negative in nature. Consider, for example, the range of before-the-fact actions that have been reported to reduce bills to a level that is capable of being paid. Some of these actions involve a positive restructuring of a low-income consumer's financial obligations:

- È Moving to a living situation where utilities are included in the rent;

- Ë Negotiating rent decreases during the high cost winter heating months;
- Ë Taking on roommates to help share expenses;
- Ë Entering into levelized budget billing plans;
- Ë Seeking out utility low-income assistance programs.

In addition to addressing the expense side of the equation, some actions involve responsible income-enhancing behavior:

- Ë Taking on boarders to generate additional income;
- Ë Asking or requiring children to work to contribute to household expenses;
- Ë Seeking extra hours of work (or an additional job) to generate additional income;
- Ë Applying for public fuel assistance;
- Ë Applying for additional public aid (such as SSI).

Some consumers take actions to directly address the size of their home energy bills:

- Ë Applying for government or utility-sponsored weatherization to reduce energy consumption;
- Ë Covering off-grade foundations to reduce cold air infiltration;
- Ë Placing plastic on windows or rags in cracks.

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

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

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The public policy implications of the division of customer responses into "constructive" and "negative" categories can be substantial. Focusing the attention of LIHEAP (or other low-income energy assistance programs) primarily on bill nonpayment addresses only one small subset of the potential consumer responses to bill unaffordability. From a public policy perspective, there appears to be a three-part need: (1) to encourage consumers not only to engage in full and timely energy bill payment, but to engage in other constructive responses to their inability-to-pay situations as well; (2) to expand the constructive options that are available to consumers; and (3) to provide incentives for consumers to pursue those constructive responses when they are available. An exclusive focus on bill payment not only does not accomplish these three needs, but may impede their accomplishment.

Conclusion #2: Relationship Between Bill Payment and "Affordability"

A second conclusion to be derived from this research is that bill payment and bill affordability are not synonymous terms. Quite simply, it is possible for a person to pay an unaffordable bill. Indeed, it is possible for a person to make continuing, full and timely payments of an unaffordable bill. Merely because a bill has been paid does not mean that it is affordable. This conclusion is subject to objective verification.

Bill payment and bill affordability are not synonymous terms. . . [I]t is possible for a person to make continuing, full and timely payments of an unaffordable bill. . . This conclusion is subject to objective verification.

Public policy might reasonably question as follows: If a particular utility has 100 low-income consumers, none of whom have faced the disconnection of service for nonpayment within the past year, is it accurate to conclude there is no need for low-income fuel assistance on that utility system? Similarly, if a utility has 100 low-income consumers, all of whom have made regular, full and timely payments of their bills for the past year, is it

accurate to conclude that there is no need for fuel assistance on that utility system? The research in this paper leads to the conclusion that the answer to each of these questions is "no."

Full and Timely Payment of Unaffordable Bills

The categorization of before-the-fact and contemporaneous actions helps in the assessment of the relationship between affordability and bill nonpayment. Neither of these categories involves bill nonpayment. By definition, a "before-the-fact" action occurs before energy is consumed and bills are rendered. By definition, a "contemporaneous" action occurs in order for bill payment to be made.

Consider the range of reported actions that households pursue in order to reduce utility consumption to a level capable of being paid in a full and timely fashion:

- È Burning non-utility "fuels" such as furniture, clothes, newspapers, used tires, doors and woodwork in a wood stove or fireplace might allow a utility bill to be paid in full and on time;
- È Doing without heat completely during the day, while spending the day at shopping malls, libraries, friends' homes, or emergency shelters might allow a bill to be paid in full and on time;
- È Doing without heat completely during the day, while spending the day in bed under covers or dressed in outdoor winter clothing might allow a bill to be paid in full and on time;
- È Doing without heat completely during the night (while using extra blankets, heavy coats, and clothes to sleep in) might allow a bill to be paid in full and on time.

In each of these instances, the adverse consequences of bill unaffordability are separate from any full and timely bill payment. The full and timely bill payment does not reveal the hardship or deprivation underlying the payment. It seems wrong, however, to argue that a home heating bill which is paid in a full and timely fashion because the consumer is systematically burning the furniture in his or her home is "affordable-because-paid." It seems wrong to conclude that a natural gas bill paid in a full and timely fashion because the consumer is burning used tires in the fire place to heat his or her home is "affordable-because-paid." It seems wrong to conclude that a natural gas bill paid in a full and timely fashion because the consumer is wearing a coat *inside* his or her home during cold weather is "affordable-because-paid."

So, too, contemporaneous actions assume that bill payment occurs. At the least, bill *non*-payment is not a necessary element to these contemporaneous actions. Consider the range of reported actions that households pursue in order to have sufficient funds to pay their home heating bill:

- È Foregoing taking prescribed medicines;
- È Going one or more days without food;
- È Not buying children's clothes, school supplies, or holiday presents.

Along these lines, whether some customer actions are "negative," or whether they simply represent "sound money management" for a person of limited income is not evident on its face. Amongst actions that low-income consumers are reported to take include:

- È Freeing up cash for utility bill payments by not buying food, because food is available through a local pantry;
- È Freeing up cash for utility bills payments by not paying rent, because rent crisis benefits are available through a local housing agency;
- È Freeing up cash for utility bills by not buying clothes, because free clothing is available through a local crisis center;
- È Generating cash for utility bills by not paying utility bills, because utility crisis dollars are available in the event of a threatened "shutoff" (or refusal to fill for bulk fuels) once a minimum arrears is obtained.

Whether low-income customers should be "forced" to use food pantries, emergency rental assistance programs, and local emergency clothing programs as a mechanism to generate cash to pay home energy bills seems to depend on one's social/political beliefs as much as anything. Is such an action a degrading solicitation of a "handout," or is it simply taking advantage of the resources which a community makes available to poor people? Regardless of the answer to that question, a home energy bill that is paid in a full and timely fashion because the consumer relies on free food from a

Is forcing a household to use a food pantry in order to free up dollars to pay their utility bill a degrading solicitation of a "handout," or is it simply taking advantage of the resources which a community makes available to poor people?

community food pantry hardly seems to qualify for the term "affordable."

"Sustainability": An Alternative to "Affordability"

In measuring the "outcomes" of a low-income energy assistance program, the concept of a "sustainable" energy bill may be a more appropriate objective than "affordability." This is true for several reasons. While the concept of "affordability" has a sense of subjectivity to

The sustainability of bill payment considers the underlying forces at work behind the bill payment. It looks not simply at *whether* a bill gets paid, but at *how* a bill gets paid.

it, the concept of "sustainability" can be objectively measured; the question becomes: can this payment practice be kept up over time? Moreover, the concept of "sustainability" eliminates the exclusive (or primary) focus on bill payment. The sustainability of bill payment must consider the underlying forces at work behind the bill payment. It looks not simply at *whether* a bill gets paid, but at *how* a bill gets paid.

Substituting this concept of sustainability into our outcome measurement results in the following goal for a low-income energy assistance program such as LIHEAP: to increase/maintain the sustainability of energy bills for low-income consumers. Given this goal, the objectives of a low-income program such as LIHEAP would be four-fold.^{121\}

- Ë To minimize nonpayment manifestations of non-sustainability such as service terminations and arrears.
- Ë To minimize the "before-the-fact" manifestations of non-sustainability.
- Ë To minimize the contemporaneous manifestations of non-sustainability.
- Ë To minimize the after-the-fact manifestations of non-sustainability.

Measuring these outcomes needs to distinguish between "reaching" sustainability and "moving toward" sustainability. In the first instance, there is a line (or a point) that a program is seeking to reach. Where you end up is important. In the second instance, it is the direction of movement which is important, whether or not the program ever reaches the goal. Progress is more important than reaching the goal.

^{121\} Objectives are to be both attainable and quantifiable.

SUMMARY AND CONCLUSIONS

This paper introduces the following important concepts into any discussion of low-income home energy assistance:

- È The "affordability" of home energy bills cannot be deduced from the mere fact that bills are being paid by consumers. Bills can be paid but nonetheless still be unaffordable. Accordingly, low-income bill affordability programs such as LIHEAP should not be focused (or justified) exclusively (or even primarily) on the existence of payment problems, particularly payment problems resulting in the disconnection or denial of service.
- È The "negative" responses available to a low-income customer facing an inability-to-pay far outstrip the available constructive responses. All too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. The focus on resolving the immediate nonpayment problem is more than ineffective, however. It has additional significant individual and institutional ramifications. On an individual basis, the customer may be pushed into a series of "bad" decisions to meet his or her short-term payment needs. On an institutional basis, the system fails to create constructive responses to an inability-to-pay or to provide incentives to pursue those constructive responses when they exist.
- È For purposes of measuring program outcomes, the concept of bill "affordability" should be replaced with the concept of bill "sustainability." Full and timely payment of bills can be the result of consumer actions that cannot be sustained over time. The sustainability of bill payment considers the underlying forces at work behind the bill payment. It looks not simply at *whether* a bill gets paid, but at *how* a bill gets paid. Actions such as borrowing money, selling or pawning household items, and burning alternative "fuels" (such as furniture, old tires, or clothes), along with a host of others, cannot be maintained over the long term.
- È The existence of bill affordability assistance --whether fuel assistance through LIHEAP, or energy efficiency through weatherization or utility programs, or rate discounts-- results in objectively measurable outcomes. These outcomes involve more than merely reducing energy burdens. An appropriate decision rule for low-income assistance is as follows: The presence of adverse or negative customer actions evidences a need, the elimination or reduction in which represents an accomplishment

of LIHEAP (*i.e.*, an "outcome" in the parlance of GPRA).¹²²⁾ The incidence of these negative actions (*i.e.*, how many consumers are forced to engage in such actions), and the frequency of such actions (*i.e.*, how often are such customers forced to take such actions), both lend themselves to measurement.

NECESSARY FUTURE RESEARCH

Having reached the foregoing conclusions, several next steps become evident:

- È A systematic set of "baseline" data needs to be collected documenting the extent to which low-income consumers engage in negative actions as a result of non-sustainable home energy bills.
- È The baseline data, as well as data collection over time, needs to document both the breadth and depth of the problem. The breadth of the problem involves measuring the number of households engaging in such negative or adverse actions. The depth of the problem measures how often customers are engaging in negative or adverse actions in response to unaffordable home energy bills. "Breadth" and "depth" are different measurements.
- È The baseline data should be evaluated to determine to what extent, if at all, the negative actions resulting from non-sustainable home energy bills can be associated with specific levels of home energy burdens. Such research would query whether some specific level of burden results in an identifiable change in either the breadth or the depth of "negative" responses as identified above. The identification of such a point might provide important insights into a determination of an objective measurement of "affordability" based on energy burden.
- È An experimental set of data should test whether specific types of affordability assistance (*e.g.*, LIHEAP, Weatherization, discount rates) result in a reduction in either the breadth or depth (or both) of the negative responses identified above.
- È An experimental set of data should test whether *particular* energy affordability programs (*e.g.*, LIHEAP, Weatherization, discount rates) are *more* effective at reducing either the breadth or depth (or both) of the negative outcomes. Comparisons should be made to each other (*e.g.*, is weatherization more effective than fuel assistance, or *vice versa*) as well as to a more generalized income transfer program (*e.g.*, is fuel assistance more effective than a general income transfer program).

¹²²⁾ A similar decision rule could be adopted for any other energy assistance program as well. It is not unique to LIHEAP.

Table 1
Low-Income Customer Responses to Unaffordable Home Energy Bills

Activity/Number of Mentions		Non-Payment Prerequisite	Constructive/Negative/Neutral	Before/After/Contemporaneous
Change fuel, suppliers				
14	Burn wood, kerosene	N	0	B / A
15	Request/obtain space heaters	N	-	B / A
12	Change energy suppliers	Y	0	A
Restructure (positively) their expenses and debts				
8	Move to (subsidized) housing with heat included in rent	N	+	B
4	Sign up for utility low-income program	N	+	B / A
11	Negotiate budget payments or payment extension with vendors, try to get reasonable and affordable payment plans	Y	+	A
1	Ask landlord for lower rent in winter	N	+	B
1	Declare bankruptcy	Y	-	A
4	Put children in foster homes/give up children to family members	N	-	B / A
Increase their indebtedness				
23	Borrow from friends and/or family	N	-	A / C
4	Borrow from loan company	N	-	A / C
3	Try to get advance on pay check	N	-	A / C
3	Skip payments until tax time	Y	-	A / C
1	Cash in life insurance	N	-	A / C
4	Purchase fuel, food, medicine on credit cards	N	-	B / A / C
3	Give up: don't pay and worry about later	Y	-	A / C

Decrease/compromise quality of life				
2	Don't make needed purchases: kids clothes, eye glasses, dentures	N	-	B / A
2	Forego home, appliance repair and maintenance	N	-	B / A
2	Sell car/do without transportation	N	-	B / A
1	Keep kids out of school due to lack of bathing or clean clothes	N	-	A
17	Pawn/sell valuables to pay energy bills (TVs, bikes, clothes, vehicles, furniture)	N	-	C
Seek emergency shelter (short and long run)				
4	Spend day time in public spaces (malls, grocery stores, libraries)	N	-	B
5	Abandon own dwellings to move in to temporary housing (shelters)	N	-	B
4	Seek emergency shelter on coldest days	N	-	B
3	Nothing: get evicted; become homeless	Y	-	C
Resort to unsafe heating strategies/techniques				
12	Turn down thermostat to dangerously low temperatures; stay in house with no heat; don't run a/c in hot weather	N	-	B
29	Use alternate (unsafe) heat sources (ovens, burners, electric blankets), change fuel types, electric space heaters	N	-	B
7	Do without heat	N	-	B
8	Burn furniture, clothes, siding, tires, doors, woodwork in wood stove or fireplace	N	-	B

Make energy/ use "pay as you go"				
4	Sleep in (running) car; campers; vans	N	-	B
8	Purchase kerosene, fuel oil in \$5 increments; buy LP cylinders rather than fill tank; buy small quantities of diesel fuel	N	-	C
Cut back on usage				
7	Spend a lot of time in bed (all day)	N	-	B
10	Wear multiple layers of clothing; use lots of blankets	N	-	B
9	Let gas/electric be disconnected in winter/summer, reconnected in warm/cold weather, live without heating or cooling	Y	-	A
4	Cover off grade foundations to reduce cold air infiltration; plastic on windows; rags in cracks	N	+	B
1	Don't use lights	N	- / 0	B
12	Reduce heating to 1 or 2 rooms	N	-	B
1	Turn off heat at night	N	-	B
2	Turn off hot water heater completely	N	-	B
Steal fuel/energy/commit fraud				
9	Illegal reconnect after disconnect	Y	-	A
7	Tamper with meter	Y	-	A
5	Write bad checks to get fuel/maintain service	Y	-	C
6	Lie about income to get assistance/commit fraud to get assistance	N	-	C
16	Open new accounts under new names or false names (children, pets)	Y	-	C
8	Move around to avoid bill collectors	Y	-	A
3	Wait for disconnect and then move	Y	-	C
Defer or avoid other legitimate expenses (play creditors off against each other)				

2	Disconnect telephones	N	-	B
2	Don't pay electric to pay heat	Y	-	C
5	Use rent money for utilities (because eviction is more difficult than disconnect)	N	-	C
13	Don't pay other bills (water, rent, car payments, car or house insurance)	N	-	C
3	Don't buy Christmas or birthday presents for kids	N	- / 0	C
7	Buy less food/stop special diets	N	-	C
4	Don't treat illness until it is advanced	N	-	C
7	Stop purchasing medicine/don't use all medicine	N	-	C
Get someone else to pay for energy/other expenses				
9	Run extension cord to neighbors	Y	-	B
25	Request government assistance	N	+	C / A
25	Move in with friends or family who have service	Y	- / 0	A
18	Get private fuel assistance (church, Salvation Army, etc.)	Y	+	C
8	Free up cash by going to food pantries, clothing centers, emergency rent programs	N	+ / 0	B / A / C
Seek permanent use/cost reduction				
6	Request weatherization/utility energy audit	N	+	B

Increase income				
2	Expect children to work and contribute to housing costs	N	+ / 0	B
3	Take in friends, family, boarders, tenants for extra income	N	+	B
4	Look for (more or extra) work	N	+	B
1	Seek SSI	N	+	B
Use system protections				
4	Don't pay bills because of winter moratorium protection	Y	-	C
2	Quit paying in summer and wait for LIHEAP to start	Y	-	C
1	Run up arrears high enough to qualify for emergency crisis assistance	Y	-	C
3	Get doctor's note to prevent shutoff	Y	-	C
4	Agree to deferred payment arrangement they know they can't keep	Y	-	C
2	Use electric space heaters since electricity cannot be disconnected in winter	Y	-	C

**APPENDIX A:
A CONCEPTUAL OVERVIEW OF PROGRAM PLANNING AND OUTCOME REVIEW**

LIHEAP is but one of a variety of energy affordability programs.^{123\} Basic planning principles dictate that certain steps occur in the planning and implementation of *any* program. These planning steps are as applicable to LIHEAP as they are to any program of any nature. The fundamental planning principles involved in program design include the following steps:

1. **Articulating the program goal:** The program goal is the ultimate end-in-view resulting from the program. (**Illustration:** To maintain better contacts within one's family.)
2. **Establishing one or more program objective(s):** Program objectives are to be both attainable and measurable. It is against program objectives that program performance is subsequently measured. (**Illustration:** To be home for holidays.)
3. **Identifying the strategy to accomplishing the objective(s):** The "strategy" of a program is the overall direction in which the program intends to move. The strategy is important in that it is disconnected from tactics. A tactic may be effective and yet still not accomplish the program goal if the strategy is flawed with which to begin. (**Illustration:** To acquire frequent flyer miles to fund airplane tickets for holiday trips home.)
4. **Identifying one or more tactics through which to implement the strategy:** Program "tactics" are the specific action steps through which a strategy is implemented. Tactics are those program elements which would be included in a work plan. A program may, and likely will, have multiple tactics to implement the strategy. (**Illustration:** To limit all business trips solely to a single airline to increase the accumulation of frequent flyer miles.)
5. **Measuring program performance:**^{124\} Measuring a program's performance involves

^{123\} "A 'program' may be any activity, project, function, or policy that has an identifiable purpose or set of objectives." U.S. General Accounting Office, *Performance Measurement and Evaluation: Definitions and Relationships, Glossary*, at 1 (April 1998). Other affordability programs might involve weatherization or baseload energy efficiency, utility rate discounts, and the like.

^{124\} "Performance measures may address the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), and/or the results of those products and services (outcomes)." *Performance Measurement and Evaluation, supra*.

measuring outcomes.^{125\} Measuring outcomes is different from measuring outputs or activities. **(Illustration (outcome measure):** Was I home for New Year's Day, Labor Day, Father's Day?). **(Illustration (activity measure):** Did I fly all my business trips on one airline?). **(Illustration (output measure):** Did I accumulate sufficient frequent flyer miles to fund a trip home for the holidays?) It is important to notice that, in this illustration as is true generally, neither the output measures nor the activity measures contribute to a determination of whether the program objective is being met. Accomplishment of an objective can only be measured through an analysis of program outcomes.

- 6. Evaluating program performance in light of the program objectives:** Program performance should be measured relative to the program objective.^{126\} This involves creating a feedback loop. The feedback loop provides the planner with the ability to determine if the objective was met, and if not, what changes need to be made to improve performance.^{127\}

Two important observations need to be made about this planning process. First, it is critical to distinguish between strategy and tactics. Even successful tactics fail if the strategy is flawed in the first place (*e.g.*, I flew enough business trips on one airline to accumulate sufficient miles for an airline ticket, but my home town does not have an airport; *e.g.*, I flew enough trips on one airline to accumulate sufficient miles for an airline ticket, but one cannot use frequent flyer miles for trips over holidays). If a strategy is in error, the effectiveness of the tactics becomes irrelevant, since successful tactics cannot be used within a flawed strategic framework to accomplish program objectives.

Second, an appropriate strategy can fail due to unsuccessful tactics (*e.g.*, the airline on which I took all my business trips does not fly to my home town; *e.g.*, I flew 100% of my business trips on a single airline, but I took only three business trips). Under these circumstances, the appropriate planning response is to determine whether the tactics had some underlying flaw, or whether they were simply poorly implemented.

^{125\} "Performance measurement focuses on whether a program has achieved its objectives, expressed as measurable performance standards." *Performance Measurement and Evaluation, supra*. As is thus evident, it is possible to know that a program reduces energy burdens and/or energy bills, without documenting what *outcome* that program result generates.

^{126\} "Performance measurement is the ongoing monitoring and reporting of program accomplishments, particularly progress towards preestablished goals." *Performance Measurement and Evaluation, supra*.

^{127\} "A program evaluation's typically more in-depth examination of program performance and context allows for an overall assessment of whether the program works and identification of adjustments that may improve its results." *Performance Measurement and Evaluation, supra*.