



## MEMO

October 25, 2005

*This memo is preliminary in nature and subject to revision and review. Any views expressed are not necessarily those of the Federal Reserve Bank of Boston or the Federal Reserve System.*

To: Kenneth F. Payne, Senior Policy Advisor, Rhode Island Senate  
From: Antoniya Owens, Research Assistant  
Re: **Energy Assistance for Low Income Households (Part 1)**

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You requested that we research studies on home energy assistance (consumption and payment impact, pricing signals, impact on energy firm economics). I examined several sources, periodicals, and academic journals and spoke with Roger D. Colton of Fisher Sheehan & Colton, a national expert in the field.

With regards to the issue of pricing signals, Mr. Colton mentioned that, according to the literature in the field, energy assistance programs have no detectable impact on pricing signals. Based on theory, one would be justified to expect that they have such an impact, but that does not hold true when tested in practice. For more information, he directed me to a journal article that he wrote in 1979.

Roger D. Colton. "Customer Consumption Patterns within an Income-Based Energy Assistance Program." 24 *Journal of Economic Issues* 1079

A more recent article by the same author may also be useful, with additional information about the consumption patterns of low-income households.

Roger D. Colton. "Energy Consumption and Expenditures by Low-Income Customers." *The Electricity Journal*, Volume 15, Issue 3, April 2002, Pages 70-75

Mr. Colton also mentioned that a variety of studies have been carried out primarily in Pennsylvania which confirm that energy assistance programs do not have impact on pricing signals but do reduce bad debt and working capital expenses of utilities. I am trying to get a hold of some of these reports and will get back to you with any new findings.

Additionally, I located several studies that discuss other aspects of energy assistance programs. Although more general, they may be of use to you as a source of information. They:



- contain statistical information on energy assistance recipients;
- describe the different types of assistance programs run by the federal, state, or local governments, utilities and charitable organizations and identify further assistance needs;
- describe shut-off moratoriums' impact on utility bill paying and overall economic impacts of energy assistance;
- discuss how outcomes of energy assistance programs can/should be measured;
- analyze empirically the relationship between weatherization and energy assistance programs.

Included is also a report by the AARP Public Policy Institute, which may serve as a directory of different energy and telephone assistance programs in each state.

### **Informative:**

**2005 National Energy Assistance Survey**, by the National Energy Assistance Directors' Association (NEADA), September 2005.

This is a final report that summarizes the findings and conclusions from the FY 2005 National Energy Assistance Survey. The survey was conducted by NEADA and funded by the FY 2005 Labor, Health and Human Services and Education Appropriations Act. It encompassed 1,100 LIHEAP recipients and collected information on the choices that households make when faced with high energy bills. The 2005 survey serves to update the information collected by a similar survey conducted in 2003.

The report is largely descriptive rather than analytical and consists of several sections: it presents the methodology used in the survey; it describes the demographic and income characteristics of the LIHEAP recipients who were surveyed as well as the actions they took to meet their energy needs; it discusses the impact and importance of LIHEAP on recipients; and it concludes with a regional analysis.

The section on impact and importance of LIHEAP includes description of the survey results about whether recipients found energy assistance important in helping them meet their needs. 54 percent answered that without LIHEAP their electricity or home heating fuel would have been discontinued (p.84). The regional analysis that concludes the report suggests that problems as a result of unaffordable energy bills are more prevalent in the West and South and less so in the Midwest and Northeast. This may be attributed to the fact that in the South and West, the frequency of shut-off moratoriums, utility low-income programs, and state public benefit programs is lower.

URL: [http://www.neada.org/comm/surveys/NEADA\\_2005\\_National\\_Energy\\_Assistance\\_Survey.pdf](http://www.neada.org/comm/surveys/NEADA_2005_National_Energy_Assistance_Survey.pdf)

**The Growing Need to Help Low-Income Energy Consumers: Government, Charitable, and Utility**, study by the American Gas Association, September 21, 2005

**Executive summary:** "An increasing number of families are having trouble paying their energy bills. The number of low-income homes has grown, as evidenced by the 66 percent jump in households eligible for federal energy aid between 1981 and 2002. The costs of home heating fuels, particularly oil and natural



gas, are currently at historic highs. Thus programs that help low-income households pay their energy bills are more critical than ever.

A variety of programs provide assistance to these at-risk customers. The Low Income Home Energy Assistance Program (LIHEAP) is a federally funded program that provides grants to assist impoverished households pay fuel and utility bills as well as provide funds for low-cost weatherization and energy-related home repairs. State and local governments provide assistance through taxpayer-funded initiatives. Fuel funds and other charitable groups provide direct assistance, funded by donations, to those in need. Utilities help these customers through discounts, fee waivers, arrearage forgiveness, and efficiency/weatherization programs, funded by customers and stockholders.

In 2004, energy assistance to low-income households reached \$4 billion. Almost half was provided by LIHEAP funds. Another 44 percent was provided through utility rate assistance and efficiency programs enacted through state and regulatory actions. Programs funded through state and local governments, fuel funds, and churches, community, and other groups accounted for the balance.

Despite these efforts, more is needed. While almost five million households benefited from federal energy assistance programs, 87 percent of those eligible did not receive LIHEAP heating assistance.

- Current LIHEAP funding levels are only four percent higher compared to 20 years ago, compared to an 81 percent increase in the consumer price index during that time period.
- The number of families eligible for LIHEAP has increased 66 percent since the program began.
- Despite ongoing conservation efforts, low-income households may be facing their largest heating and cooling bills ever because of current and projected high energy prices – according to the US Energy Information Administration (EIA), this year's heating bills could be 17 percent to 71 percent higher than last winter (depending on fuel used and geographic location), in part due to the devastation of hurricane Katrina.

The federal government can take steps to lessen this burden and help keep households that are behind on their energy bills from getting disconnected. The Energy Policy Act of 2005 reauthorized LIHEAP through 2007 and increased the authorization for the basic grant from \$2 billion to \$5.1 billion. If funded at the full \$5.1 billion, LIHEAP could assist more than twice the current number of beneficiary households. This could provide assistance to 30 percent of those eligible for home heating aid.” (p.1-2)

URL:

[http://www.aga.org/Template.cfm?Section=Consumers\\_and\\_Demand1&template=/ContentManagement/ContentDisplay.cfm&ContentID=17686](http://www.aga.org/Template.cfm?Section=Consumers_and_Demand1&template=/ContentManagement/ContentDisplay.cfm&ContentID=17686)

### **Economic/Payment Impacts:**

**Winter Weather Payments: The Impact of Iowa's Winter Utility Shutoff Moratorium On Utility Bill Payments by Low-Income Customers**, by Roger D. Conlon of Fisher Sheehan & Colton, February 2002



**Excerpt from Intro:** “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. The recipients were gas and/or electric customers of Alliant Energy or Mid-American Energy.” (p.1)

**Excerpts from Conclusion:** “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, does not support the conclusion that the existence of a winter utility shutoff moratorium results in a substantive change in payment practices.” (p.12)

“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.” (p.13)

URL: <http://www.fsconline.com/downloads/iowa%20-moratorium-payment-study.pdf>

**The Economic Impacts of Home Energy Assistance in Colorado**, by Roger D. Conlon of Fisher Sheehan & Colton, February 2003

“The delivery of low-income home energy assistance in Colorado provides a wide range of economic benefits to the state. Frequently thought of exclusively as a way to prevent unpaid utility bills, and to preserve service against termination for nonpayment, in fact, low-income energy assistance can also be viewed as a strategy to promote economic development and employment (particularly in low-income communities). The financial and economic impacts that low-income energy assistance provides to the State of Colorado are quantified” in this report. (p.1)

“Energy assistance benefits induce economic activity in three aspects of the Colorado economy, each of which can be separately assessed.” They are: earnings, employment, and economic activity. (p.2-3)

“The full range of activity added to the Colorado economy as a result of energy assistance includes three distinct types of economic impacts: the benefit impacts, the payment impacts, the behavior impacts” (p.3)

**Summary and Conclusion:**



“The delivery of energy assistance in Colorado accomplishes far more for the State than simply helping low-income residents avoid arrears on home energy bills and preventing the potential loss of home energy service due to nonpayment. The delivery of home energy assistance also serves as a substantial economic stimulant for the Colorado economy.

Energy assistance serves as an economic stimulant for the Colorado economy in three distinct ways. In total, the Fiscal Year 2002 distribution of energy assistance in Colorado:

- Created more than \$103 million in economic activity;
- Created more than \$37 million in added earnings for Colorado workers; and
- Created more than 2,300 new jobs for the state.” (p.20)

URL: <http://www.fsconline.com/downloads/ceaf-economic-impact-study.pdf>

### **Measuring Program Outcomes:**

**Measuring LIHEAP Results: Responding to Home Energy Affordability**, by Roger Colton of Fisher, Sheehan & Colton, May 1999.

#### **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.”

URL: <http://www.fsconline.com/downloads/measuring-liheaps-outcomes.pdf>

**Measuring the Outcomes of Low-Income Energy Assistance Programs through a Home Energy Insecurity Scale**, by Roger Colton of Fisher, Sheehan and Colton, May 2003



Similarly to the study above, this paper discusses the measuring of energy assistance program outcomes, this time by introducing and developing the concept of Home Energy Insecurity Scale. **Excerpt from intro:** “The extent to which an energy assistance program improves the energy self-sufficiency of a low-income household can be captured through the use of the Home Energy Insecurity Scale. Accordingly, the Home Energy Insecurity Scale can be used to quantitatively measure outcomes for home energy assistance programs.”

URL: <http://www.acf.dhhs.gov/programs/liheap/perform.htm>

### **Other:**

**Weatherizing the homes of low-income home energy assistance program clients: a programmatic assessment**, By Bruce Tonn, Richard Schmoyer, and Sarah Wagner, Energy Policy, v.31, iss.8, June 2003.

### **Abstract:**

“The purpose of this project was to assess the relationships between two United States (US) federal-level programs that support low-income households, the Weatherization Assistance Program and the Low-Income Home Energy Assistance Program (LIHEAP). The study area for this project was Boston, Massachusetts, which is a representative of large northern urban areas in the US. Data were collected for three groups of households that received both weatherization and LIHEAP assistance and for one control group that only received LIHEAP assistance. The clearest impact of weatherization assistance on changes in LIHEAP assistance is shown in decreases in eligibility for high-energy benefits post-weatherization. A further statistical test also suggests that weatherization has a significant impact in reducing the overall needs for LIHEAP subsidies. However, it cannot be concluded that weatherization reduced the need for standard LIHEAP subsidies. Households in the sample that did drop out of the LIHEAP program had relatively higher incomes, younger household heads, and fewer years in home than those who stayed in the program. These demographics suggest that the households that dropped out of the program were more likely to experience income increases to make them ineligible for the program and were more likely to move out of the study area. Additionally, for no group for no time period did LIHEAP benefits cover all primary heating fuel bills. Thus, the overall conclusions of this study are that weatherization decreased the need for high-energy benefits but did not lead to low-income households relinquishing the need for standard LIHEAP benefits.” (p.735)

**Energy and Telephone Assistance in the States: Public Programs That Help Low-Income Households**, by Ann McLarty Jackson, Christopher Baker, and Robert Wilden of AARP Public Policy Institute, 2002

“Energy and Telephone Assistance in the States: Public Programs That Help Low-Income Households identifies and describes current programs that federal and/or state governments have developed, authorized, funded, or administered to help low-income households initiate and maintain home energy and telephone service. The publication is an easy-to-use reference book for policymakers, public officials, consumer advocates, policy analysts, and anyone else interested in the availability or design of low-income utility assistance programs.” (p.1)



The report includes a by-state directory of energy and telephone assistance programs. The energy assistance section on **Rhode Island** includes short descriptions of LIHEAP, the Weatherization Assistance Program, the Rhode Island Utility Discounts, and the Seasonal, Health, and Income-Related Disconnection Policy (p.217-220). In addition, the Rhode Island Good Neighbor Energy Fund is briefly described on p. 279.

URL: [http://assets.aarp.org/rgcenter/consume/d17577\\_energy.pdf](http://assets.aarp.org/rgcenter/consume/d17577_energy.pdf)

**Useful web sites:**

The National Energy Assistance Directors' Association  
<http://www.neada.org/>

LIHEAP Clearinghouse  
<http://www.liheap.ncat.org/>

Fisher, Sheehan & Colton: Public Finance & General Economics  
<http://www.fsconline.com/>







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October 27, 2005

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To: Kenneth F. Payne, Senior Policy Advisor, Rhode Island Senate  
From: Antoniya Owens, Research Assistant  
Re: **Energy Assistance for Low Income Households (Part 2)**

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Dear Ken,

I corresponded with another expert in energy assistance analysis, Dr. Sami Khawaja of Quantec LLC, a consulting firm based in Oregon. I obtained several evaluation reports performed by his team as well as his position on some of the questions that interest you.

Regarding the relationship between low income energy assistance programs and the amount of energy consumed, Dr. Khawaja has consistently found that such programs usually do not increase energy consumption. The most recent evaluations (WA, UT, and OR) again found no evidence that energy use of assistance-recipients increases. The specific discussion of assistance-consumption relationship can be found in the Impact Analysis/Findings sections of the attached evaluations.

Regarding the pricing signals of different types of assistance and their effects on consumption, Dr. Khawaja had the following opinion:

“The form of the assistance does matter. Straight energy assistance (cash) does not alter the marginal cost of energy to the consumer. It is not different from straight income increase. Rate discounts, on the other hand, do alter the price. However, in neither case have I seen an increase in consumption (e.g., in the Washington program, PacifiCorp offered rate discount that varied by income level with no impact on consumption; Utah Power offers a straight \$8 discount with no impact on consumption). I always thought that Percent of Income Program (PIP) offered in the Midwest primarily would lead to increase in consumption (there is no relationship between consumption and cost, participants just pay a % of their income toward the bill).

I am just finishing an evaluation in Ohio for the state weatherization program. The report is not yet complete; however, we found that after weatherization PIPs average consumption dropped 318 therms



while the weatherized non-PIPs only saved 233 therms. This is partially due to the fact that PIP recipients were more likely to live in old leaky homes.

In an evaluation for Eugene Water and Electric Board, we also examined impacts on consumption of different types of energy assistance programs (see attached)."

The attached reports can also be useful in the analysis of the impact of energy assistance programs on the economics of energy firms, utilities, and ratepayers. The studies estimate the impact on arrears, shutoffs, collections, bad debts, and ultimately rates, and find that in most cases energy assistance programs lead to improved payment patterns and a decline in arrearages and collection costs.

"The most important benefit of energy assistance is reduction in arrears. Arrears sit on utilities account while unpaid and before turning into bad debt. While that is going on, they cost utilities (and ratepayers) interest rate equivalent to the utility cost of capital. At some point they may go to collection agencies with small probability of recovering cents on the dollar. When they become bad debt, they go directly against the utility revenue requirement and directly increase rates."

The discussion of financial impact and cost-effectiveness issues is usually located in the Impact Analysis/Findings sections. In addition, the attached ORNL report summarizes the findings of recent literature on the financial/payment and other non-energy related impacts of energy assistance projects.

## Bibliography

"Final Report: Washington Low-Income Bill Assistance Program: Phase II, Impact Analysis." *Prepared for:* Rebecca Eberle, PacifiCorp. *Prepared by:* M. Sami Khawaja, Ph.D., Shon Kralej, Ph.D., Quantec, LLC. October 17, 2003

"Final Report: 2002 Low-Income Assistance Programs Evaluation." *Prepared for:* Eugene Water & Electric Board (EWEB). *Prepared by:* M. Sami Khawaja, Ph.D., Allen Lee, Ph.D., Lauren Miller, Shon Kralej, Ph.D., Doug Bruchs, Jill Shoen, Quantec, LLC. August 26, 2003

"Final Report: Utah HELP: Program Evaluation." *Prepared for:* PacifiCorp. *Prepared by:* M. Sami Khawaja, Ph.D., John Willey, Quantec, LLC. January 27, 2005

"Final Report: Oregon Energy Assistance Program Evaluation." *Prepared for:* Bob Repine, Director, Oregon Housing and Community Services. *Prepared by:* M. Sami Khawaja, Ph.D., Sharon Baggett, Ph.D., Quantec, LLC. January 10, 2003

Martin Schweitzer, Bruce Tonn. "Non-Energy Benefits from the Weatherization Assistance Program: A Summary of Findings from the Recent Literature." Oak Ridge National Laboratory. April 2002.

