
DATE: December 31, 2007
TO: Pat Wrice, Operation Fuel
FROM: David Carroll, Jackie Berger, and Roger Colton
SUBJECT: Sponsor Report on Study of Ratepayer Funded Low-Income Energy Programs

Operation Fuel is a sponsor for the national multi-sponsor study of ratepayer-funded low-income energy programs. The final study report – *Ratepayer Funded Low-Income Energy Programs: Performance and Possibilities* – is complete. The purpose of this memo is to furnish information on the findings from the study and provide suggestions for how the study can be used by Operation Fuel other interested parties in Connecticut as they consider ways to improve to ratepayer funded low-income affordability and energy efficiency programs.

Purpose

The purpose of the national multi-sponsor study is to:

- Develop information on the unmet energy needs of low-income households in the sponsor states.
- Identify the program designs and operational procedures that have been effective in meeting the energy needs of low-income households.
- Develop an understanding of the legal and regulatory framework under which ratepayer funded low-income energy programs have been effectively developed.

The purpose of this memo is to furnish Operation Fuel with specific information about the implications of the study findings. Specific issues covered include:

- Energy Needs – What are the energy needs of low-income utility customers in Connecticut? How well do the current Connecticut programs meet the energy needs of low-income utility customers?
- Program Design/Implementation – What are the benefits and limitations of the program model(s) used by Connecticut? What program models have been implemented in other states, and how have they performed? Which program models might be most effective at meeting Connecticut's goals?

Operation Fuel can use this memo as a foundation for policy discussions with state agencies, local program partners, low-income advocates, and other interested parties regarding the need and possible designs for ratepayer funded low-income energy programs.

Low-Income Expenditures, Affordability, and Usage Issues

In this memo we furnish a summary of the energy needs of low-income households in Connecticut. More detailed information is available in the *Connecticut State Appendix* of the main study report.

Energy Expenditures

In Connecticut, households with incomes at or below 150% of the HHS Poverty Guidelines are income-eligible for LIHEAP. A single-person household with an income of \$14,355 or less is eligible for LIHEAP (2005). For a family of four, the income limit is \$29,025 (2005). The following statistics help to define the characteristics of the income-eligible population in 2005.

- 188,138 households were income-eligible for LIHEAP (14% of all Connecticut households).
- 159,297 low-income households paid electric and/or gas bills directly to a utility.
- The estimated median electric and gas burden for low-income households was about 16.4% of income.
- The estimated median baseload electric bill was \$811, and the estimated median electric burden was 8.3% of income.
- For households that heated with electricity, the estimated median electric bill was \$1,083, and the estimated median electric burden was 10.9% of income.
- The estimated median gas heating bill was \$920, and the estimated median gas burden was 10.1% of income.

The statistics show that Connecticut households had energy bills and energy burdens above the national average. The estimated median low-income energy burden at the national level for 2005 was 9.9% of income. The median energy burden for non-low-income households was 2.3% of income.

Energy Affordability – Gross Energy Need

Analysts have developed two important indicators of energy affordability – an affordable energy burden and a high energy burden.

- Affordable Energy Burden - Roger Colton of Fisher, Sheehan, and Colton has recommended using an affordability standard of 6% of income. He cites national research that suggests that a household can afford to spend about 30% of income on shelter costs and his own research that shows that about 20% of shelter costs are used for energy bills. Based on those statistics, he suggests that the maximum affordable level of energy expenditures for the average household would be about 6% of income.
- High Energy Burden – APPRISE has proposed an approach for defining “high energy burden” using a similar model. APPRISE notes that some researchers (Dolbeare, 2001) have defined a severe shelter burden as having shelter costs that are 50% of income or

more. APPRISE research shows that about 20% of shelter costs are for energy expenditures. Using that approach, APPRISE has defined a high energy burden as 10% of income.

Individual households may be able to pay more or less than those targets. For example, an elderly household that has relatively low current costs for housing because the mortgage is paid off might be able to afford a slightly higher amount for energy. At the same time, another elderly household that has significant costs for medicine or home health care might find even 6% too much to pay for energy. However, these statistics are useful as an overall indicator of need.

Using data for Connecticut from the American Community Survey (ACS), we developed estimates of the total need by low-income households for assistance with electric and gas bills in Connecticut. In this analysis, “need” for each household is defined as the difference between a household’s actual energy expenditures and a targeted affordability standard. “Energy Gap” is defined as the total need for all low-income households. To give policymakers some understanding of the range of possible estimates of need, we have computed the Energy Gap using three different affordability standards – 5% of income, 10% of income, and 15% of income.

Table 1 shows that about 149,000 low-income utility customers have an aggregate energy bill of 5% or more, and that about \$192 million in energy assistance would be needed to reduce the energy burden for all of those households to 5% of income. About 84,000 low-income utility customers are eligible for program benefits at the 15% need standard, and about \$104 million in energy assistance would be needed to meet the needs of all of those customers.

Table 1
Estimates of Energy Gap – 5%, 10%, and 15% Need Standards

Need Standard	Aggregate Low Income Energy Bill (millions)	Households in Need (Burden Exceeds Standard)	Energy Gap (millions)
5% of Income	\$262	149,446	\$192
10% of Income	\$262	119,895	\$154
15% of Income	\$262	84,456	\$104

In the abstract, it is difficult to get a good sense of the meaning of the three different energy need standards. One way to make the standards more meaningful is to examine the implications of each standard for the average household in Connecticut. In 2005, the median household income in Connecticut was \$60,941. Table 2 shows the annual and monthly energy bill that the median household would pay if they had energy burdens at each of the three need standards. From this table, it is clear that even the 15% of income need standard is quite high. If the median household in Connecticut paid 15% of income for electric and gas service, their combined monthly bill would be \$761 per month. The 5% need standard seems much more affordable. If the median household in Connecticut paid 5% of income for electric and gas service, their combined monthly bill would be about \$274 per month.

Table 2
Energy Bills for Median Connecticut Household – 5%, 10%, and 15% Need Standard

Need Standard	Median Income	Annual Energy Bill at Need Standard Level	Monthly Energy Bill at Need Standard Level
5% of Income	\$60,941	\$3,047	\$254
10% of Income	\$60,041	\$6,094	\$508
15% of Income	\$60,041	\$9,141	\$761

Energy Usage

It is somewhat more challenging to estimate the need for energy efficiency programs. The literature on energy efficiency programs demonstrates that programs that target high users achieve the highest savings levels and are the most cost-effective. For electric baseload, programs that target households using 8,000 or more kWh per year are the most cost-effective. For electric heating, programs that target households using 16,000 or more kWh per year are most cost-effective. For gas heating, programs that target households that use 1,200 or more therms per year are most cost-effective.

Our primary state-level data source, the ACS, does not ask respondents to report on the amount of electricity or natural gas that they use. However, we can develop a proxy for usage based on the respondent's estimate of the household's electric and gas bill, and the cost of electricity and gas in Connecticut. Our proxy indicator furnishes estimates of the number of households that should be targeted energy efficiency programs. Table 3 shows that 36% of households could be targeted for high baseload bills, 21% could be targeted for high electric heat bills, and 23% could be targeted for high gas usage. Clearly, there is significant potential for ratepayer funded energy efficiency programs to improve energy affordability for low-income households in Connecticut.

Table 3
Need for Energy Efficiency Programs for Low-Income Households (2005)

Group	Number of Households with Bills	Number of Households with High Bills	Percent of Households with High Bills
Electric Baseload Services ¹	124,122	44,408	36%
Electric Heating Services	33,800	7,040	21%
Gas Heating Services	51,597	22,844	23%

¹ For households that report electric and natural gas expenditures as one bill, we allocated half of the cost to electricity and half of the cost to natural gas.

Connecticut Energy Assistance Programs

In this memo we furnish summary information on the current energy assistance programs in Connecticut. More detailed information is available in the *Connecticut State Appendix* of the main study report.

Low-Income Affordability Programs

There are currently two sources of funding for low-income energy affordability programs in Connecticut – LIHEAP and electric and gas ratepayer funds.

- LIHEAP – In federal FY 2005, Connecticut received about \$47 million in LIHEAP funding from the federal government.
- Electric and Gas Ratepayer Funds – In FY 2005, electric and gas utility arrearage forgiveness programs furnished about \$14 million in benefits to eligible households.

The LIHEAP program has two energy assistance program components – heating assistance and crisis assistance. In 2005, about \$27 million was allocated to heating assistance and about \$10 million was allocated to crisis assistance. Since 65% of low-income households heat with electric or gas, we will assume that about \$24 million of the \$37 million in benefits was available to customer that heat with electric or gas.

- Heating Assistance – The heating assistance program offered a lump sum benefit to about 62,000 households, with an average benefit of about \$434.
- Crisis Assistance – The crisis assistance program made winter crisis payments to about 19,000 households, with an average benefit of about \$529.

The Connecticut ratepayer funded programs furnish arrearage forgiveness to low-income households. When a household enrolls in the programs, the household must commit to making payments for their current bills plus part of their outstanding arrears. If the customer makes all required current bill and arrearage payments by certain target dates (April 31 for the winter program and October 31 for the summer program) the utility will match the amount that the customer paid toward their arrears (including the amount of energy assistance) with a bill credit.

There is limited information on the number of customers served by the program and the number who are successful in meeting the requirements and receiving bill credits. For the 2005-2006 program year, it was reported by the Connecticut Department of Utility Control that 46,572 customers enrolled in the program with about \$59 million in arrears. Since the utilities have reported that customers received about \$14 million in benefits, we can calculate a 24% success rate for the program. Assuming that 24% of the customers were successful, we can infer that about 11,000 customers received benefits of about \$1,272 per customer. [Note: Better reporting by the utilities would improve understanding of the program.]

Energy Gap

Using the ACS data, we can make estimates of the participation rates for Connecticut's affordability programs.

- LIHEAP – About 159,000 households were income-eligible for LIHEAP and pay a utility bill. In 2005, about 62,000 households (39%) received LIHEAP benefits.
- Arrearage Forgiveness Program – About 159,000 households are income eligible for the arrearage forgiveness program and pay a utility bill. About 47,000 low-income customers were reported to have enrolled in the arrearage forgiveness program, about 30% of all low-income customers. About 11,000 customers we estimated to have received benefits through the program, about 24% of enrolled customers and about 7% of all low-income customers.

By comparison, we estimate that about 84,000 low-income customers (53%) paid 15% or more for their electric and gas service during 2005.

In total, Connecticut made about \$38 million available for energy assistance for electric and gas customers. In Table 4, we show what share of the energy gap can be covered by the available energy assistance funding. The 2005 funding covered over one-third of the total energy gap at the 15% standard for 2005. However, the 2005 funding would have only covered one-fifth of the energy gap at the 5% standard for 2005.

Table 4
Coverage of Energy Gap by Current Connecticut Programs (2005)

Need Standard	Aggregate Low Income Energy Bill (millions)	Households in Need (Burden Exceeds Standard)	Energy Gap (millions)	Coverage of Energy Gap
5% of Income	\$262	149,446	\$192	20%
10% of Income	\$262	119,895	\$154	25%
15% of Income	\$262	84,456	\$104	37%

Low-Income Energy Efficiency Programs

There are currently three sources of funding for low-income energy efficiency programs in Connecticut – WAP, LIHEAP, and ratepayer funds.

- WAP – In federal FY 2005, Connecticut received about \$2.5 million from the federal Weatherization Assistance Program.
- LIHEAP – In federal FY 2005, Connecticut allocated about \$1.25 million in LIHEAP funding for heating system replacement.
- Ratepayer Funds – In 2005, Connecticut utility energy efficiency programs were funded at a level of about \$7.2 million.

In total, Connecticut made about \$11 million available for low-income energy efficiency programs. NASCSP estimated that about 10,300 households were served with weatherization services in 2005. Since we estimated that there were about 30,000 low-income households with high electric or gas heating usage, about 33% of households in need could be treated each

year. The WRAP and UI Helps programs reported delivering electric services to about 13,600 customers. Since we estimated that about 44,000 households had high baseload electric bills, about 31% of the households in need could be treated each year. The energy efficiency funding in Connecticut covers a large share of low-income households. However, the level of investment per home may be insufficient to have a significant impact on energy affordability for participating households.

Issues with Connecticut Energy Assistance Programs

Based on our review of the Arrearage Forgiveness programs we have identified some important issues that should be addressed by policymakers in Connecticut.

- *Affordable Payments* – The programs do not attempt to compute an affordable payment for participating customers, nor do they target the highest program benefits to the lowest income or highest burden customers.
 - *Original Design* – Until recently, customers participating in these programs were required to pay their current bill plus some amount toward their arrearage in order to earn program benefits. The program design limits benefits to those households who can afford to pay current bills. As a result, it is likely that only the highest income program participants actually receive program benefits. Most ratepayer funded affordability programs in other jurisdictions give customers either a discount on the current bills or a fixed annual credit to improve the affordability of current bills. Moreover, the lowest income customers are usually assigned the highest level of benefits.
 - *Alternative Design* – A recent innovation in the program allows lower income customers to pay an amount lower than their current budget bill. However, the difference between the budget amount and the payment amount is added to the customer's arrearages. This program design has been used for more than 20 years in Ohio. As a result, many Ohio PIPP program participants have arrearages that exceed \$5,000.
- *Arrearages* – The programs appear to be successful in helping some low-income customers to reduce or even eliminate their preprogram arrearages. However, the program is only successful in eliminating about one-fourth of the arrearages of households that are enrolled in the program. Moreover, the program design suggests that the highest income program participants are most likely to receive program benefits.
- *Budget Counseling* – The available programs do not allocate funds for working with clients to improve their ability to manage their budgets and access other sources of assistance. Particularly if the programs retain the design that is focused on retinring past arrears rather than current bill affordability, it is important for customer to get assistance in learning how to budget more effectively for paying bills and in identifying other sources of income.
- *Energy Efficiency* – A process evaluation of the ratepayer funded energy efficiency programs recommended that program benefits be targeted to the lowest income customers and that a higher level of investment in each home would have a greater

impact on energy affordability for low-income households. It also would seem to be appropriate to target benefits to participants of the Arrearage Forgiveness programs in order to help them better afford their current energy bills.

Operation Fuel is attempting to find program design solutions that can address these concerns.

Design Options for Connecticut Energy Assistance Programs

In this section of the memo, we examine the choices that Connecticut policymakers will need to make as they attempt to develop more effective ratepayer funded affordability and energy efficiency programs. Where applicable, we draw upon findings from the national study.

Program Funding Levels

In the needs assessment section of this memo, we identified the number of households in need and the energy gap at various need standard levels. As they consider different need standards, Connecticut policymakers will need to consider the funding levels required to serve households at each need standard level.

In other jurisdictions, electric affordability programs target affordability standards of 3%, 5%, or 7% of income. In Connecticut, about 158,000 income-eligible households have an electric bill. Of those, about 78% use electricity for baseload only, while 22% use electricity for heating. Of the approximately 124,000 baseload electric customers, about 114,000 have an electric energy burden that exceeds 3% of income, about 89,000 have an electric energy burden that exceeds 5% of income, and about 68,000 have an electric energy burden that exceeds 7% of income. The total baseload electric energy gap at the 3% need standard is about \$82.9 million, the energy gap at the 5% need standard is about \$62.1 million, and the energy gap at the 7% need standard is about \$48.2 million.

Table 5
Estimates of Baseload Electric Energy Gap – 3%, 5%, 7% Need Standards

Need Standard	Aggregate Low Income Baseload Electric Bill (millions)	Households in Need (Burden Exceeds Standard)	Electric Baseload Energy Gap (millions)
3% of Income	\$124	113,811	\$82.9
5% of Income	\$124	88,740	\$62.1
7% of Income	\$124	67,895	\$48.2

LIHEAP energy assistance is used for space heating and space cooling, so LIHEAP funding would be allocated to assistance with gas heating and electric heating bills and would not be available to address baseload electric energy affordability issues. From that perspective, an electric baseload affordability program would need to be funded at a level that would cover the total energy need. In targeting an appropriate funding level, Operation Fuel should consider the following:

- If 100% of eligible households participated in an electric affordability program at the 3% need standard level, the funding required could be as much as \$82.9 million.

- Most programs of this type tend to reach only about 50% of eligible households. So, a more realistic estimate of the cost for this program might be \$41.5 million.
- Electric utilities find that they are unable to collect a certain share of the bills rendered to low-income customers. To the extent that those uncollectibles are already reflected in rates and are reduced through the implementation of such a program, the net cost of the program to ratepayers would be less than the cost of an electric affordability program.
- The average annual cost per household of a program that serves 50% of the eligible households at the 3% need standard would be about \$18 per year or about \$1.50 per month. [Note: We assume that there are about 1.3 million residential electric ratepayers in Connecticut. We assume that the residential sector represents about one-third of total electric usage and that all classes pay for the costs of an electric affordability program. $1/3 * \$41.5 \text{ million} / 1.3 \text{ million residential ratepayers} = \18]

In other jurisdictions, electric heating affordability programs target affordability standards of 6%, 10%, or 14% of income. In Connecticut, about 158,000 income-eligible households have an electric bill. Of those, about 78% use electricity for baseload only, while 22% use electricity for heating. Of the approximately 34,000 electric heating customers, about 26,000 have an electric energy burden that exceeds 6% of income, about 19,000 have an electric heating energy burden that exceeds 10% of income, and about 14,000 have an electric heating energy burden that exceeds 14% of income. The total electric heating energy gap at the 6% need standard is about \$27.8 million, the energy gap at the 10% need standard is about \$20.4 million, and the energy gap at the 14% need standard is about \$16.0 million.

Table 6
Estimates of Electric Heating Energy Gap – 6%, 10%, 14% Need Standards

Need Standard	Aggregate Low Income Electric Heating Bill (millions)	Households in Need (Burden Exceeds Standard)	Electric Heating Energy Gap (millions)
6% of Income	\$47	25,891	\$27.8
10% of Income	\$47	19,364	\$20.4
14% of Income	\$47	14,454	\$16.0

LIHEAP energy assistance is used for space heating and space cooling. We estimate that electric heating households represent about 25% of all low-income households in Connecticut that have a heating bill. In 2005, Connecticut has received enough LIHEAP funding to furnish about \$37 million in home energy assistance. For purposes of this analysis, we will assume that about \$9 million is available for electric heating customers. The remainder of the energy gap would need to be funded through the electric affordability program. In choosing an appropriate funding level, Operation Fuel should consider the following:

- If 100% of eligible households participated in the electric heating affordability program at the 6% need standard level, the funding required could be as much as \$19 million (\$28 million in energy gap minus \$9 million in LIHEAP funding).

- Most programs of this type tend to reach only about 50% of eligible households. So, a more realistic estimate of the cost for this program might be \$5 million. (\$14 million in energy gap minus \$9 million in LIHEAP funding.)
- Electric utilities find that they are unable to collect a certain share of the bills rendered to low-income customers. To the extent that those uncollectibles are already reflected in rates and are reduced through the implementation of such a program, the net cost of the program to ratepayers is less than the cost of an electric affordability program.
- The average annual cost per household of a program that serves 50% of the eligible households at the 6% need standard would be about \$1.28. [Note: We assume that there are about 1.3 million residential electric ratepayers in Connecticut. We assume that the residential sector represents about one-third of total electric usage and that all classes pay for the costs of the PIPP program. $1/3 * \$5 \text{ million} / 1.3 \text{ million residential ratepayers} = \1.28 per year]

In other jurisdictions, gas affordability programs target affordability standards of 3%, 5%, or 7% of income. In Connecticut, about 68,000 income-eligible households have a gas bill. Of those households, about 55,000 have a gas energy burden that exceeds 3% of income, about 41,000 have a gas energy burden that exceeds 5% of income, and about 30,000 have a gas energy burden that exceeds 7% of income. The total baseload gas energy gap at the 3% need standard is about \$66.5 million, at the 5% need standard is about \$49.2 million, and at the 7% need standard is about \$37.2 million.

Table 7
Estimates of Gas Energy Gap – 3%, 5%, and 7% Need Standards

Need Standard	Aggregate Low Income Gas Bill (millions)	Households in Need (Burden Exceeds Standard)	Gas Energy Gap (millions)
3% of Income	\$90	55,315	\$66.5
5% of Income	\$90	41,004	\$49.2
7% of Income	\$90	29,830	\$37.3

LIHEAP energy assistance is used for space heating and space cooling. We estimate that gas heating households represent about 40% of all low-income households in Connecticut that have a heating bill. In 2005, Connecticut received enough LIHEAP funding to furnish about \$37 million in home energy assistance. For purposes of this analysis, we will assume that about \$15 million is available for gas heating customers. The remainder of the energy gap would need to be funded through a gas affordability program. In targeting an appropriate funding level, Operation Fuel should consider the following:

- If 100% of eligible households participated in a gas affordability program at the 3% need standard level, the funding required could be as much as \$51 million (\$66 million in energy gap minus \$15 million in LIHEAP funding).

- Most programs of this type tend to reach only about 50% of eligible households. So, a more realistic estimate of the cost for this program might be \$16 million. (\$33 million in energy gap minus \$15 million in LIHEAP funding.)
- Gas utilities find that they are unable to collect a certain share of the bills rendered to low-income customers. To the extent that those uncollectibles are already reflected in rates and are reduced through the implementation of such a program, the net cost of the program to ratepayers is less than the cost of the gas PIPP.
- The average annual cost per household of a program that serves 50% of the eligible households at the 3% need standard would be about \$11. [Note: We assume that there are about 560,000 residential gas ratepayers in Connecticut. We assume that the residential sector represents about one-third of total gas usage and that all classes pay for the costs of a gas affordability program. $1/3 * \$16 \text{ million} / 560,000 \text{ million residential ratepayers} = \11 per year.]

Program Funding Sources

One of the issues for any program is which ratepayer classes should pay for the program. In Pennsylvania, the Commission decided to pay for the ratepayer-funded low-income programs with funding from the residential class. However, most states have recognized that the costs of low-income payment problems are a more general cost of business that should appropriately be shared by all ratepayers.

Consider, for example, the costs imposed on electric distribution systems by commercial buildings. Such buildings only operate for about 10 hours per day and have peak usage in the afternoon. The costs to furnish that peak electric demand are significant. However, in most jurisdictions, including Connecticut, all ratepayers pay for that peak capacity through their rates, not just commercial building customers.

Meeting the needs of low-income residential customers and furnishing universal access to electric and gas service is generally considered to be one of the responsibilities associated with granting a franchise for electric or gas service. It is appropriate for all ratepayers to bear the costs of meeting that responsibility, since the granting of an exclusive franchise for service furnishes benefits for all ratepayers.

Program Targeting

Policymakers will need to decide what types of problems they want to address. Some programs focus their funds on payment-troubled customers (i.e., those that are behind in their energy payments) while others deliver benefits to the broader population of LIHEAP recipients because of a concern for health and safety problems linked to high energy bills.

- Targeting Payment-Troubled – By targeting payment-troubled customers, the program is likely to have the greatest impact on utility collection costs and uncollectibles. In this way, the program can furnish benefits to both customers with affordability problems and other ratepayers. However, there is some concern that by limiting the program to payment-troubled customers, it would encourage other low-income households to stop paying their utility bills.

- Targeting Vulnerable Populations – By targeting vulnerable households (i.e., households with elderly individuals, handicapped individuals, or children under 5), the program is likely to have the greatest impact on public health and safety, since it would help those households maintain a safe and healthy home environment. Since most elderly households pay their energy bills on time, this population would not be well-served by a program that targets payment-troubled households.
- Broad-Based Program – The advantage of a broad-based program is that a customer would not have to change his/her usage and/or payment behavior to qualify for program benefits. However, such a program might not focus program funds where they have the greatest impact on affordability issues.
- Compromise Approach – In Washington State, one utility program allocates program funds to three different program components – one for senior households, a second for payment-troubled customers, and a third for general distribution. Such an approach allows the program to serve all types of households, but also ensures that certain types of problems are addressed by the program.

Operation Fuel is seeking a low-income affordability program that meets the needs of all low-income Connecticut households with energy affordability problems. From that perspective, it appears to be appropriate for electric and gas affordability programs to focus on identifying households that are having problems paying their bills, whether or not they have outstanding arrears. In that way, the program can work proactively with customers to establish an affordable payment level and ensure that customers pay consistently throughout the year.

Benefit Type

From the review of programs in the multi-sponsor study we see that there are three components of benefit design that result in the ratepayer programs with the lowest administrative cost and the highest level of effectiveness.

- LIHEAP Integration – Programs that are integrated with LIHEAP are able to take advantage of the intake infrastructure to minimize administrative costs and to use information from LIHEAP and the utility to measure energy burden and target benefits.
- Equal Monthly Payments – Programs that ask clients to make equal monthly payments appear to have the most success in improving client payment patterns and reducing collection expenses, shutoffs, and write-offs.
- Segmentation – It appears that programs need to explicitly consider client demographics and preprogram payment behavior when setting benefit levels, since different population segments appear to have different needs for assistance.

If Connecticut's LIHEAP office administered ratepayer-funded electric and gas affordability programs, they could effectively integrate LIHEAP and ratepayer-funded benefits. In New Jersey, customers apply for the LIHEAP and USF programs using one application form. The LIHEAP office gets customer demographic information from the LIHEAP application and estimated electric and gas bills from the utility companies. If Connecticut used that system, they could estimate the customer's bill, subtract the customer's LIHEAP payment, and then assign

the customer a fixed payment that is the lesser of the customer's estimated net monthly bill and the targeted monthly percentage of income.

This procedure is an enhancement over the New Jersey system because it allows the utility to charge the customer a fixed monthly amount for electric and/or gas service. In New Jersey, the customer's benefit is translated into a fixed credit which leaves the customer at risk for higher costs due to price increases, colder weather in the winter, or warmer weather in the summer. In a Connecticut program, we would recommend that the LIHEAP office inform the utility on how much to charge the customer, rather than telling the utility how much credit to give the customer.

Arrearage Forgiveness

From our study, we find that programs need to develop some form of arrearage forgiveness, since customers with large preprogram arrears do not appear to have the ability to pay off those debts, even with a more affordable monthly bill. The evaluation findings suggest that customers are likely to fail on the program if no arrearage forgiveness is available. Many different options have been tested, but there is no clear evidence on which approach is most effective.

- Program Enrollment Forgiveness – Advocates sometimes suggest that arrearages should be forgiven at the time of program enrollment. They believe that the “clean slate” approach relieves the customer of past problems and allows the customer to focus on paying current bills. However, others are concerned that such an approach would just encourage customers to disregard future utility bills with the expectation that they would be forgiven again.
- Monthly Noncontributory Forgiveness – Some programs allow customers to earn preprogram forgiveness by making consistent monthly payments on current bills. The theory is that the forgiveness will encourage customers to establish good bill payment habits. Evaluations of these programs find that many customers achieve full arrearage forgiveness. However, the evaluations also find that many customers did not actually understand the arrearage forgiveness program, raising questions as to the effectiveness of this incentive.
- Monthly Contributory Forgiveness – Some programs allow customers to earn preprogram forgiveness by making consistent monthly payments on current bills and a small payment on their arrears. The theory is that it is appropriate for customers to make some payment toward their preprogram debt. Evaluations of these programs find that many customers achieve full arrearage forgiveness. However, as with the noncontributory monthly forgiveness programs, the evaluations also find that many customers did not actually understand the arrearage forgiveness program, raising questions as to the effectiveness of this incentive.

Connecticut's current program is a contributory forgiveness model that requires customers to make a fixed number of payments prior to receiving arrearage forgiveness. While it appears that a contributory forgiveness program offers customers an incentive for making payments and for avoiding future arrears, survey research evidence suggests that customers are more likely to understand a monthly forgiveness model, rather than one that requires a certain number of payments before any forgiveness credits are granted.

Communications

If Operation Fuel is successful in making changes to the utility arrearage forgiveness programs, communication of those changes will be critical to the success of the new program designs. Our research found that many programs have faced challenges in communicating program requirements and opportunities to clients and that a program must develop an effective communication plan program that goes beyond simple mailings from the LIHEAP office or utilities if they wish to effectively communicate with clients.

Energy Efficiency Programs

Our research demonstrates that ratepayer-funded energy efficiency programs can effectively complement ratepayer-funded affordability programs. Our national research shows that the following are best practices with respect to ratepayer-funded energy efficiency programs.

- **Data Management and Quality Control** – Energy efficiency programs need an effective data system that tracks service delivery and a quality control procedure in which state or third party inspectors examine the work for a sample of treated homes. These procedures ensure that the program meets appropriate quality standards.
- **Targeting to Affordability Program Participants** – If a state has a low-income affordability program, they may find that it is most beneficial to ratepayers to give the highest priority for energy efficiency services to affordability program participants. Depending on the structure of the affordability program, such targeting may result in savings that accrue to other ratepayers in the short run.
- **Targeting to High Users** – Policymakers need to consider how aggressively to target high users. This decision is made easier if there is a low-income affordability program. With such a program, energy bills can be made affordable for program participants through a subsidy. From that perspective, there is less controversy associated with targeting the highest users for energy efficiency services.
- **Level of Investment** – The program may want to determine a maximum level of investment per home. However, if it does, the maximum should be much higher for the highest usage homes. In addition, the program may also want to consider which measures deliver the greatest benefits to other ratepayers. Other things being equal, measures that help to reduce energy system peak demand are of greater value to other ratepayers than measures that do not affect peak demand.

The Connecticut ratepayer funded energy efficiency programs are funded at a level where they could make a significant impact on the energy needs of low-income households. However, an evaluation of these programs recommended that they be targeted to the lowest income, highest burden households, and that the programs make a more significant investment in each home treated.

Summary and Recommendations

Our study found that a significant number of low-income households in Connecticut have a need for additional energy assistance beyond LIHEAP and WAP.

- Energy Affordability – To reduce energy burden to 5% of income for all low-income households in Connecticut, about \$192 million billion in energy assistance funds would be needed. To reduce energy burden to 15% of income, about \$104 million would be needed. In 2005, funding from LIHEAP and the ratepayer-funded arrearage forgiveness program was about \$51 million.
- High Usage – We estimate that about 30,000 low-income households in Connecticut have high electric or gas heating usage that could be effectively addressed with energy efficiency programs, and that about 44,000 households have high electric baseload usage that could be effectively addressed with energy efficiency programs. Low-income energy efficiency programs in Connecticut serve a large number of low-income households. However, the programs do not adequately target the households with the highest level of energy usage or deliver a sufficient level of services to have a significant impact on affordability for low-income households.

While the current programs deliver significant benefits to a large number of households, there are some important issues with the current programs.

- LIHEAP Integration – The Connecticut arrearage forgiveness programs are coordinated with LIHEAP in that they require that a household receive a LIHEAP grant in order to enroll in the program. However, they do not consider how the combined value of LIHEAP and ratepayer benefits affects the overall affordability energy bills for customers.
- Affordable Payments – The original design of the Connecticut arrearage forgiveness programs does not consider whether the targeted payment level is affordable to the customer. The revised design allows customers to pay less than their budget bill if they can demonstrate a need. However, under this model, unpaid balances accrue as arrears rather than be forgiven.
- Targeting – The structure of the arrearage forgiveness program makes it likely that the highest income households will be most likely to receive program benefits. Most ratepayer-funded programs target benefits to the lowest income, highest burden customers.
- WAP Integration – The Connecticut ratepayer-funded energy efficiency programs are only partially integrated with the delivery of WAP funded services. The program evaluation found that additional coordination could enhance the value of program services to low-income customers.

Operation Fuel is advocating major changes in the ratepayer funded affordability and energy efficiency programs. We recommend that they consider the following directions for the Connecticut programs.

- Affordability and Funding – Using the statistics available in the memo, Operation Fuel can assess the level of funding that would be required to serve low-income households at targeted energy affordability levels. Operation Fuel should select an affordability standard that it believes will be effective in meeting the needs of low-income households and should advocate funding levels required to serve at least 50% of households with energy needs at the defined standard.

- Integration with Publicly Funded Programs – Integration of ratepayer-funded programs with publicly-funded programs reduces program administration costs and increases the consistency of benefits delivered to low-income customers. Further, a centralized program database is a powerful tool to improve program operations and effectiveness. A fully integrated program would be able to apply the resources from the federal government and ratepayers in a way that best meets the needs of low-income households in Connecticut.
- Affordability and Sustainability – Operation Fuel should advocate changes in the ratepayer-funded affordability and energy efficiency programs that target benefits to customers with the greatest need and use the program designs that have been demonstrated to be the most effective in serving low-income customers. For affordability programs, best practices include furnishing higher benefits to higher burden customers and establishing fixed payment levels on a year round basis. For energy efficiency program, best practices include targeting the highest usage households and delivering the highest level of service to those households with the greatest savings opportunities. In addition, on-going communications with customers stressing the importance of making consistent payments and informing customers of their other program responsibilities are critical to ensuring the success of the program.

Policymakers have the opportunity to significantly improve energy affordability for low-income households in Connecticut by working to improve the existing set of ratepayer-funded low-income affordability and energy-efficiency programs.