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**STRUCTURING**

**LOW-INCOME AFFORDABILITY PROGRAMS**

**FUNDED THROUGH SYSTEM BENEFITS CHARGES:**

**A Case Study from New Hampshire**

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# INTRODUCTION

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This workbook introduces the low-income energy community to the important role that a rate affordability program can play in structuring the move to retail choice in the electric utility industry. While the workbook focuses on the electric industry, its lessons are equally applicable to natural gas retail choice.

The workbook is intended to assist the following persons who are considering low-income programs in a retail choice environment:

- ◆ program designers who are seeking guidance on how to structure a low-income rate affordability program;
- ◆ low-income advocates who are seeking guidance on what program design elements are necessary and reasonable;
- ◆ state regulators who are seeking guidance on what program elements are reasonable and prudent; and
- ◆ electric utility staffpersons who are seeking guidance on how to put an affordability program "on the streets."

The workbook strives to stay away from theoretical discussions of policy. Instead, focusing its attention on how the New Hampshire Electric Assistance Program (EAP) was developed

and structured, the workbook is intended to provide assistance on the detailed questions that might arise in actual program design and implementation.

The workbook is set forth in seven sections:

- ◆ Section 1 looks at establishing eligibility guidelines;
- ◆ Section 2 considers how to determine the type of benefit to be delivered;
- ◆ Section 3 considers how to set the actual benefit level;
- ◆ Section 4 discusses how to establish the total program budget;
- ◆ Section 5 discusses how to structure the system benefits charge through which to collect program costs;
- ◆ Section 6 presents fiscal impact tracking documents; and
- ◆ Section 7 introduces program evaluation.

The workbook is based upon actual experience with the New Hampshire EAP. The author of this workbook served as a consultant to the New Hampshire Governor's Office of Energy and Community Services (ECS), the program administrator and to the New Hampshire Public Utility Commission (NHPUC), the program oversight agency.

The views presented in this workbook, however, do not necessarily represent the views of either ECS or the NHPUC.

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## WHO IS ELIGIBLE

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Three primary ways exist to determine the number of households that are eligible for a rate affordability program provided through a system benefits charge:

1. Accepting the LIHEAP recipient population as defining the rate affordability population;
2. Accepting participation in various public assistance programs as defining rate affordability eligibility; and
3. Calculating the number of eligible households based on the number of low-income persons as determined through the U.S. Census.

Each has its advantages and disadvantages.

### **LIHEAP POPULATION AS RATE AFFORDABILITY POPULATION**

Defining recipients of Low-Income Home Energy Assistance Program (LIHEAP) benefits as those households that will also receive rate affordability assistance is the first way to determine program eligibility. In New Hampshire, use of LIHEAP as the defining eligibility criterion was deficient for three major reasons:

- ◆ By statute, LIHEAP benefits are targeted toward three specific populations: (a) the aged; (b) the disabled; and (c) households with children under age six (6). While these households are particularly vulnerable to winter-related heating problems, they may or may not be the same three populations that the state

would wish to target for a rate affordability program. This was particularly true in New Hampshire given that the EAP was not a home heating program, but rather a broader electric affordability program. The vulnerability of particular populations to winter heating problems was not necessarily relevant to a determination of who should receive electric affordability assistance.

- ◆ While LIHEAP is the primary winter heating assistance program in New Hampshire, it nonetheless serves only a small portion of the total low-income population. August 2000 calculations estimated that nearly 70,000 New Hampshire households experienced incomes at or below 150% of the federal Poverty Level. In contrast, the Fiscal Year 2000 LIHEAP program in New Hampshire served roughly 22,000 households (less than one-third of the eligible population).
- ◆ Finally, given LIHEAP's focus on providing winter heating assistance, the program does not maintain the administrative capacity to engage in year-round intake. With electricity rather than home heating being the focus of the rate affordability EAP, the EAP desired to have a year-round intake capability. While the intake would rely upon LIHEAP to the maximum extent practicable, it would not rely exclusively on the receipt of LIHEAP to define the eligible population and to enroll that population in the rate affordability program.

#### **AUTOMATIC ELIGIBILITY DETERMINATION BASED ON PUBLIC ASSISTANCE**

A second model for intake is an automatic eligibility determination. Automatic eligibility would be based on the processes adopted in Ohio and New York for enrolling low-income consumers in telephone Lifeline programs. Through an automatic eligibility process, low-income households that are enrolled in specified public assistance programs would, by the fact of their recipient status, also be automatically enrolled in the telephone lifeline program.

In Ohio, for example, the Ameritech Ohio USA program incorporates an automatic enrollment procedure. The Public Utility Commission of Ohio (PUCO) order extending the automatic enrollment process to become statewide and permanent explains the process as follows:

The current pilot automatic enrollment program enrolls customers in qualifying programs (Medicaid, Food Stamps, Ohio Works First, Disability Assistance) based on data provided by the [Ohio Department of Human Services]. The current pilot program is based on a file of eligible persons supplied by ODHS

using social security numbers as the validation field. Ameritech performs the automatic enrollment process no less than once per quarter or within 30 days of receiving updated information from ODHS.<sup>11</sup>

Similarly, in directing expansion of this approach to all New York telephone companies in 1996, the New York Public Service Commission (PSC) stated that:

we support the automatic enrollment/removal programs for Lifeline service being implemented by New York Telephone Company and Rochester Telephone, and we will direct staff to pursue their expansion to other companies. This program provides assistance to eligible consumers in an efficient manner and ensures that only those who are eligible continue to receive assistance.<sup>12</sup>

While automatic enrollment programs have been found to be easy to implement and an efficient expenditure of administrative dollars, an *exclusive* reliance on such enrollment has been found to exclude particular populations. Among those populations that are excluded are the working poor and legal immigrants in particular. The working poor tend not to participate in public assistance programs. Legal immigrants are, by statute, excluded from receiving most public assistance.

#### **CALCULATING THE NUMBER OF ELIGIBLE CUSTOMERS**

The most acceptable method of calculating the eligible population is to determine the number of customers that live at particular ranges of the federal Poverty Level. Note that the number of *customers* at particular ranges of Poverty differs from the number of *households* at particular ranges of Poverty. Not all households will be utility customers.

The calculation involves the following steps:

1. The number of *persons* can be determined based upon geographic areas within the state. This might be done for the state as a whole, or it might be done based on geographic units within the state.<sup>13</sup> The number of persons living at different Poverty ranges is reported by the U.S. Census Bureau.

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<sup>11</sup>Ohio PUC, Opinion and Order, at 7 - 8, In the Matter of the Application of Ameritech Ohio (Formerly known as the Ohio Bell Telephone Company) for Approval of an Alternative Form of Regulation, Case No. 93-487-TP-ALT, April 27, 2000.

<sup>12</sup>New York PSC, Opinion and Order 96-13, Docket 96-13, I/M/O Issues Related to Continuing Provision of Universal Service and to Develop a Framework for the Transition to Competition in the Local Exchange Market, at 11, May 22, 1996.

<sup>13</sup>Rarely does calculating Poverty data for geographic regions narrower than a county-by-county basis

2. The *number* of persons in each Poverty range must then be translated into the proportion of persons in each Poverty range. This is done simply by dividing the number in each Poverty range by the total number of persons in the geographic area under study. If, for example, there is a total of 20,000 persons and 5,800 live with incomes below 50% of Poverty, the proportion of persons living below 150% of Poverty is 29% (5,800 / 20,000).
3. The proportion of persons living at each Poverty range is then multiplied by the total number of utility customers (as provided by local utility companies) to obtain the number of customers at each Poverty range. The New Hampshire calculation ended up looking as presented in Table 1.

(. . . continued)

generate substantive improvements in the quality of data. Rather than generating data for cities, townships and unincorporated regions of all counties, therefore, county-wide data is appropriate.

Table 1 Number of Low-Income Electric Customers New Hampshire (2000)				
Company	Total Residential Customers /1/	Persons Below 100% Poverty /2/	Persons Below 150% Poverty	Res. Custs Below 150% Poverty /3/
Public Service of NH	362,220	8.4%	13.4%	48,682
Exeter & Hampton	32,651	8.4%	13.4%	4,388
Concord Electric	22,264	8.4%	13.4%	2,992
Granite State Electric	30,894	8.4%	13.4%	4,152
Connecticut Valley Electric	8,938	8.4%	13.4%	1,201
NH Electric Coop	59,263	8.4%	13.4%	7,965
Total	516,230			69,381
Notes:  /1/Table 14, Electric Sales and Revenue 1998, EIA: October 1999. /2/U.S. Census, Historical Poverty Tables: Persons, at Table 19 (3-year average) (Sept. 1999) /3/Ratio of persons below 100% of Poverty to persons below 150% of Poverty assumed to be the same as in the 1990 Census. /4/Column 1 x Column 3.				

While the determination of the number of eligible New Hampshire customers was performed using a statewide ratio (13.4%), a ratio of persons living at or below 150% of Poverty in each utility service territory could have been developed using a list of counties served by each utility.<sup>4)</sup>

### **INCREASING THE MAXIMUM ELIGIBILITY STANDARD.**

One tendency amongst consumer advocates is to argue for an increased maximum eligibility standard. Rather than using the traditional 150% of Poverty Level as the maximum income eligibility standard, for example, these advocates urge that income eligibility should be established at 200% of the federal Poverty Level. The purpose of increasing the standard is to ensure that the working poor are included in rate affordability programs.

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<sup>4)</sup>Some utilities argue that an analysis performed based on zip codes is more accurate. Experience shows, however, that a zip code analysis, even if more *precise*, does not yield numbers that are substantively different from an analysis based strictly on county-wide data.

A decision to increase the maximum eligibility standard must be made recognizing the decreasing usefulness of the increase in programs that are designed to reduce home energy costs to an affordable percentage of income. As income eligibility increases, fewer and fewer households will receive rate affordability benefits. This occurs because the affordable percentage of income times the household income is more and more likely to exceed the household's actual home energy bill.

In New Hampshire, for example, the average general use electric bill is \$827. The affordable percentage of income was determined to be four percent (4%). Using Year 2000 Poverty Levels by household size, the affordable bills would thus be as follows:

Table 2 Affordable Energy Bill at 150% of Poverty (4% Home Energy Burden)			
Household Size	Income (150% Poverty)	Affordable Energy Burden	Affordable Energy Bill
1	\$12,525	4%	\$501
2	\$16,875	4%	\$675
3	\$21,225	4%	\$849
4	\$25,575	4%	\$1,023

As can be seen, assuming an average annual energy bill of \$827, a two person household at 150% of Poverty receives only \$152 in benefits (\$827 - \$675), while neither a three person nor a four person household receives any benefit (since the affordable bills of \$849 and \$1,023 exceed the actual bill of \$827). With incomes of 175% or 200% of Poverty Level, the rate affordability benefits that are delivered are less and less (and to fewer and fewer households).

Table 3 Affordable Energy Bill at 175% and 200% of Poverty (4% Home Energy Burden)					
Household Size	Affordable Burden	175% of Poverty		200% of Poverty	
		Income	Affordable Bill	Income	Affordable Bill
1	4%	\$14,613	\$585	\$16,700	\$668
2	4%	\$19,688	\$788	\$22,500	\$900
3	4%	\$24,763	\$991	\$28,300	\$1,132

4	4%	\$29,838	\$1,194	\$34,100	\$1,364
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As income increases to 200% of Poverty, only one person households would have incomes that generate affordable bills that are less than actual average home energy bills.<sup>151</sup> Even at 175% of Poverty, a two person household would receive less than \$40 a year in benefits (\$827 - \$788 = \$39).

This is not to say that higher eligibility levels are not appropriate. Households that would not receive rate affordability assistance because their affordable bills exceed their actual home energy bills may still qualify for other program benefits. Energy efficiency assistance, as well as arrearage forgiveness, can be offered whether or not rate affordability assistance is merited. In addition, of course, not all households have average energy bills. Households with high consumption (and correspondingly high bills) may well benefit from rate affordability programs.

Program designers should bear in mind, however, that merely increasing the maximum income eligibility standard to 200% of Poverty will not, in and of itself, provide rate affordability assistance to those households at the higher levels of income.

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<sup>151</sup>This result is exacerbated if a state adopts a tiered affordability structure. Under this program design, persons at lower levels of income pay a smaller percentage of income while persons at higher levels of income pay a larger percentage. A typical tiered design might, for example, involve affordable percentages as follows: 0 - 50% of Poverty: 4%; 51 - 100% of Poverty: 6%; 101 - 150% of Poverty: 8%.



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## **THE TYPE OF BENEFIT TO BE DELIVERED**

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Deciding upon what type of benefit to deliver through a rate affordability program generally presents the issue of whether to adopt a benefit based on energy burdens (a percentage of income program) or an across-the-board discount program. While deciding which type of benefit to deliver involves the resolution of some policy issues, making that determination should also involve making some empirical observations.

A consideration of the relevant factors led to adoption of a benefit in New Hampshire that is designed to reduce home energy burdens to an affordable percentage of income.

### **PRODUCTIVITY AND EFFICIENCY**

The New Hampshire legislature received a review of the delivery of low-income electric affordability benefits in New Hampshire based upon: (1) an across-the-board discount, and (2) an income-based energy burden calculation. This analysis reviewed the two benefit models from both an efficiency and a productivity vantage point.

The primary criterion to use in judging the effectiveness of delivering low-income energy assistance benefits involves a measure of productivity. Judging productivity addresses the issue of "effectiveness" from two different perspectives. On the one hand, evaluating the productivity of the benefit delivery design will help evaluate whether New Hampshire is using a benefit design that is excessive. On the other hand, evaluating productivity will also help evaluate whether New Hampshire is using a benefit design that is insufficient given the level of affordability problems faced by low-income consumers. Consider that:

- ◆ A productivity criterion helps identify when a benefit is being applied that is greater than that which is needed to achieve the desired results. If an excess benefit is delivered, the amount of the excess (i.e., those dollars which exceed that which is necessary to make a bill affordable) is not a "productive" use of resources.
- ◆ In contrast, a productivity criterion also helps identify when a benefit is being applied that is insufficient to achieve the desired results. If a benefit is delivered which is insufficient, the entire amount of the benefit is unproductive. Unlike the determination of excess, a benefit that moves a household's energy bill only partway toward affordability is not partially productive.

Table 4 provides a brief examination of the efficiency and productivity of the use of across-the-board discounts versus the use of a fixed credit designed to reduce low-income energy burdens to an affordable percentage of income. While across-the-board discounts tend to be income-based (with higher discounts provided to the lower income levels), 40% is sufficiently typical to permit this comparison.

Table 4 would seem to indicate, at first blush, that an across-the-board discount would be a substantively less expensive program to administer than the energy burden-based program. The total dollars of direct benefits delivered through the across-the-board discount is \$8.0 million, versus the \$11.8 million cost of the energy burden program. This side-by-side comparison, it was found, did not tell the entire story.

The purpose of an energy affordability program is not simply to redistribute income. If there was a simple need to redistribute income, that need could be addressed through modifications to the structure of the state's public welfare program. The energy affordability program is explicitly designed to serve an *energy* function. It is designed to deliver benefits to address the unaffordability of New Hampshire electric bills. As discussed above, to the extent that a program delivers benefits that are either in excess of those needed to make bills affordable, or insufficient to make bills affordable, the program is not serving its energy objectives.

As Table 4 shows, an across-the-board discount in New Hampshire would have been highly inefficient, and unproductive, in meeting the energy-related objectives of a rate affordability program. Of the \$8.029 million distributed via a discount program in New Hampshire, more than 85% ( $\$6.848 \text{ million} / \$8.029 \text{ million} = 0.853$ ) would be unproductively spent.

Table 4  
Productive Efficiency of Energy Burden Rates vs. Across-the-Board Discount

Line	1995	< \$2000	\$2-3999	\$4-5999	\$6-7999	\$8-9999	\$10-11,999	\$12-14,999	\$15,000+	Totals
1	Top-range	\$2,000	\$4,000	\$6,000	\$8,000	\$10,000	\$12,000	\$14,500	\$18,000	
2	Average NH electric bill (1998) /a/	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	
3	Low-Income electric burden /b/	45%	22%	15%	11%	9%	7%	6%	5%	
4	Discount percent	40%	40%	40%	40%	40%	40%	40%	40%	
5	Affordable burden /c/	4%	4%	4%	4%	4%	4%	4%	4%	
6	Discount amount /d/	\$359	\$359	\$359	\$359	\$359	\$359	\$359	\$359	
7	Fixed credit /e/	\$818	\$738	\$658	\$578	\$498	\$418	\$318	\$178	
8	Burden after discount /f/	27%	13%	9%	7%	5%	4%	4%	3%	
9	Number LIHEAP recipients /g/	3,444	738	3,310	4,361	3,287	2,303	2,192	2,728	22,363
10	Total discount /h/	\$1,236,515	\$264,968	\$1,188,339	\$1,565,717	\$1,180,310	\$827,020	\$786,873	\$979,577	\$8,029,320
11	Total fixed credit /i/	\$2,815,776	\$544,342	\$2,176,515	\$2,518,842	\$1,635,831	\$961,923	\$696,071	\$484,577	\$11,833,877
12	Wasted discount /j/	\$1,236,515	\$264,968	\$1,188,339	\$1,565,717	\$1,180,310	\$827,020	\$90,803	\$495,000	\$6,848,673

**NOTES:**

/a/Energy Information Administration (Oct. 1999). *Electric Sales and Revenue, 1998*, U.S. Department of Energy: Washington D.C.

/b/Average bill / "top range" of income range. To this extent, the energy burdens are *understated*.

/c/Total utility bills are generally held to be affordable at no more than 20% of total shelter costs. Given affordable shelter costs of 30%, *total* utility bills should be 6% or less. Electric bills should thus be 4% or less (electric bills tend to be roughly 2/3 of a household's total energy bill).

/d/Line 2 x Line 4.

/e/Line 2 - (Line 1 x Line 5)

/f/(Line 2 - Line 6) / Line 1

/g/1995 data provided by U.S. Department of Health and Human Services, Administration of Children and Families. LIHEAP Annual Report to Congress (22,363).

/h/Line 9 x Line 10.

/i/Line 9 x Line 7.

/j/Sum of discounts not meeting productivity tests explained in text.

### *Administrative Simplicity/Complexity*

Some argument was made in New Hampshire that across-the-board discounts would be "easier to administer" than rate affordability programs based on energy burdens. That argument was found to have no basis in fact. The determination of benefit levels, and the actual delivery of benefits, was found not to be the major source of administrative complexity or expense in a rate affordability program.

A review of a series of low-income rate affordability evaluations was undertaken for the New Hampshire Public Utility Commission (NHPUC) to determine whether structuring the benefit as a percentage discount, rather than as a percentage of income burden, has been found to have a substantive impact on the administrative cost of the program. The evaluations reviewed for the NHPUC had the following attributes:

- ◆ They all examined programs from Pennsylvania utilities, so differences in the regulatory regime under which they operate would not be a factor driving program differences;
- ◆ They examined programs incorporating different approaches to delivering their universal service benefits, to allow consideration of how such differences might affect the complexity of administration; and
- ◆ They were performed by a variety of evaluation firms so that no particular perspective could be said to color the various conclusions.

The evaluations and company programs included in the review for the NHPUC were:

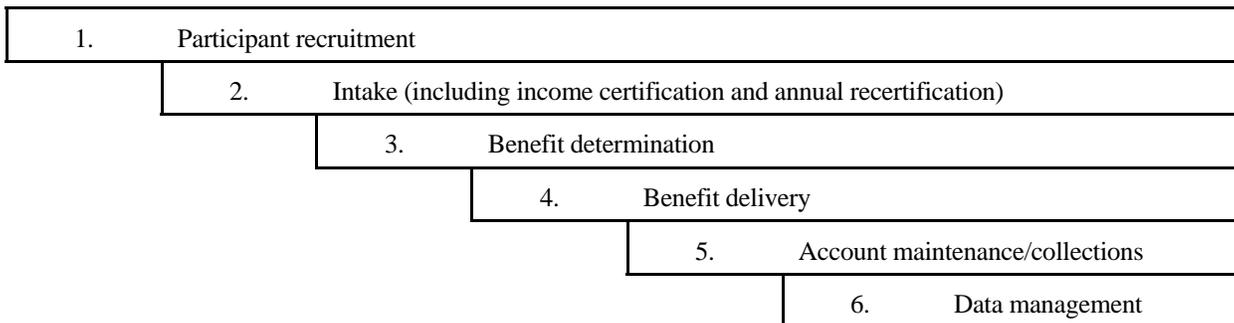
1. Columbia Gas (PA) Customer Assistance Program (CAP). A&C Enercom Inc. (Nov. 1996). Columbia Gas operates an income-based program directed toward reducing bills to an affordable percentage of income (like the New Hampshire EAP).
2. National Fuel Gas (PA) Low-Income Rate Assistance (LIRA) program. Barakat & Chamberlin (March 1999). LIRA involves providing low-income customers a set price per therm discount off of the standard residential rate. No particular energy burden limit is calculated or sought.
3. PECO Energy Company CAP Rate Program. H.Gil Peach and Associates (Aug. 1998). PECO's electric CAP Rate program provides a percentage discount off of a low-income customer's price per kWh. The percentage discount is provided in two tiers (based on the customer's poverty level) and is subject to a usage ceiling up to which ceiling the discount is applicable.
4. Equitable Gas Company Energy Assistance Program. H.Gil Peach and Associates (July 1994). Equitable Gas operates an income-based rate affordability program. Low-income customers are provided with credits in an effort to limit home gas burdens to an affordable percentage of income.
5. Philadelphia Gas Works. Response Analysis (January 1993). PGW offers a percentage of income program designed to reduce low-income bills to a predetermined affordable home energy burden.

As can be seen, of the five programs examined, three based the structured of their benefits on energy burdens (as does the New Hampshire EAP), while two provided rate discounts based on usage, but unrelated to affordability. The review of these five programs generated four conclusions:

***Conclusion #1: Low-Income Programs Have Fundamentally Similar Administrative Structures Irrespective of Benefit Type.***

While not all low-income rate affordability programs are identical, all types of low-income program designs have the same fundamental administrative structure. Some programs have components that others do not. For example, some programs incorporate energy efficiency investments into their design, while others do not. Some programs incorporate a case management component into their program design, while others do not. Some programs incorporate a consumer education/budget counselling component, while others do not. Despite these variations, the administrative structure of a rate affordability program is fundamentally the same between different types of benefit delivery.

A rate affordability program has six basic steps:



Participant recruitment and intake do not involve substantively different steps based upon the type of rate benefit delivered.

- ◆ Recruitment involves identifying eligible households, providing information and education as to why, where and how to apply for benefits, and identifying and redressing potential administrative barriers to enrollment.
- ◆ Benefit determination involves an examination of participant income and a categorization of the customer based on the benefit level appropriate to the customer's income. Whether the income is translated into a percentage of the federal Poverty Level for purposes of determining an appropriate discount level, or whether it is used to calculate an energy burden to underlie a fixed credit has not been identified as imposing different administrative burdens.
- ◆ Benefit delivery involves a computerized application of a particular credit or billing offset. (Programs involving matching credits predicated on a timely bill payment by the customer requires a

substantively different level of effort. Such a matching credit is not proposed in New Hampshire and is thus set aside.)

- ◆ Account maintenance requires similar credit and collection efforts, whether the affordability component is a function of energy burdens or a function of an across-the-board discount. Neither the function, form nor timing of credit and collection activity necessarily varies based upon the type of affordability benefit delivered.

***Conclusion #2: The method for delivering benefits to low-income customers is not the most expensive part of program administration.***

In each of the programs, the primary program complexity and expense lay in Step 1 (program recruitment) and Step 2 (program intake), not with the determination or delivery of benefits. This was true for three reasons:

1. The primary expense associated with program administration lies in the time devoted to individual participants, not in the hardware or software devoted to participants. Participant recruitment and income certification is the most time-intensive component of the respective programs. The cost and complexity of program recruitment is often reduced by automation. Computer-generated data with respect to payment-troubles, for example, has been found to be a cost-effective replacement for in-person references from customer call centers. Similarly, automated intake and income certification has been found to simplify program administration. Rather than requiring individual applicants to provide income certification, for example, income certification through state agencies has been found to dramatically reduce costs.
2. A primary expense with program recruitment and intake lies with the unproductive use of time and resources on ineligible customers. In many instances, program recruitment must make contact for three or more customers for each customer that is enrolled in the program. If the recruitment effort costs \$20 per person, therefore, and only one program participant results from each program contact, the cost per program participant is quite high. In contrast, the administrative costs associated with other program administrative steps generally do not involve unproductive contacts.
3. Program recruitment and intake generally does not involve economies of scale. Eliminating the influence of allocated overhead costs, the cost of spending time on the intake of a program participant is the same, whether that participant is Participant #20 or Participant #20,000. In contrast, the processes that involve the development of software and hardware generate an increasingly lower cost as the number of program participants increases.

***Conclusion #3: Program effectiveness cannot be divorced from the cost of program administration.***

It is often said that a rate affordability's "process" issues can and should be assessed apart from the program's "impacts" or effectiveness. While true to a certain degree, it has been found that program effectiveness can not be entirely divorced from program administration. This is true for three reasons:

- 1.A program's fixed administrative costs become less on a per participant basis as the number of program participants increases. One such fixed administrative cost involves the cost of data processing. While initial data processing programming costs are sometimes found to be substantial, when amortized over an expanding program, the per participant cost is found to be reasonable. In contrast, to the extent that customers fall off the program, the numbers of participants needed to amortize the programming costs are more difficult to achieve.
- 2.A program's administrative costs become less on a per participant basis as the length of time a program participant remains in the program increases. Indeed, participant "acquisition" costs have been found to be fully amortized within the second full year of participation. After having reached that cross-over point, the benefits generated by program participation do not go to offset acquisition costs, but instead create system savings, thus redounding to the benefit of nonparticipants.
- 3.A program's *ineffectiveness* creates its own administrative costs, that would not exist in a program that more effectively addressed inability-to-pay. These costs include not only the costs associated with program removal, but include the recruitment and intake costs for program participants who would "take the place" of the exited participant in a program having a fixed number of participants. Moreover, to the extent that the program is designed explicitly to reduce the costs associated with nonpayment, the *ineffectiveness* of the delivery of program benefits has been found to impede the achievement of those benefits.

***Conclusion #4: Specific program design decisions can significantly ease program administration and reduce program administrative costs.***

Specific program design issues can ease program administrative burdens and reduce program administrative costs. Not surprisingly, the steps that are being taken involve efforts to minimize the need for personal contact with the customer. For example:

- 1.One of the primary program cost-cutting mechanisms has been the elimination of in-person application processes. Processes that involve mail-in applications, for example, reduce the front-end cost of the program. Some programs require personal applications for first-time applicants, while providing for a mail-in recertification process.

2. Elimination of the recertification process for customers whose income is not likely to generate substantive changes over time. One program simplification process that has been adopted, for example, is to allow senior citizens and disabled individuals (neither of whose income is likely to change over time) to be placed on a longer recertification period.
3. Cross-cutting program coordination has been found to be an effective means by which to reduce administrative costs. Establishing categorical eligibility (e.g., allowing for the automatic enrollment of participants in other programs having eligibility criteria equal to or stricter) as well as coordination of intake and income certification (e.g., sharing application forms and/or intake staff) have been found to be effective mechanisms to reduce program administration costs.
4. Elimination of in-person contacts that are found to be ineffective or unnecessary has been found to be an effective cost control mechanism. Budget counselling and energy education, for example, have frequently been eliminated as an across-the-board service to be delivered. Instead, these education efforts have been delivered on an exception basis, having determined through other means that such an effort was necessary.

## **SUMMARY AND CONCLUSIONS**

In sum, the analysis presented to the NHPUC concluded that a move from the delivery of rate affordability benefits based on energy burdens, to the delivery of benefits as a percentage discount, has not been found to be a necessary or effective administrative cost reduction strategy. This result has obtained because: (1) the delivery of benefits is not the program component that generates the bulk of the program's administrative costs subject to reduction; and (2) a move to a less effectively targeted program creates its own administrative costs and impedes the reduction of administrative costs in more productive areas.

In addition, even if true that a discount is substantively easier to administer, it would seem ill-advised to seek such simplicity by implementing a program where more than 85% of the expenditures are unproductively delivered. Delivering unproductive benefits in an administratively convenient fashion is not the manner in which government can and should be expected to function.



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## SETTING THE BENEFIT LEVEL

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Setting the benefit level in a rate affordability program involves deciding upon two different numbers:

1. The level of payment toward current bills that will be considered "affordable" (which then drives the amount of assistance to be delivered); and
2. The level of arrearage forgiveness that should be provided.

Each will be considered separately.

### ESTABLISHING THE BASIC AFFORDABILITY BENEFIT

The basic affordability benefit applied against bills for current usage presents two issues of program design:

1. What level of bill should be deemed "affordable"? and
2. What relationship should exist between heating and non-heating bills?

### *Basic Affordability Considerations*

New Hampshire set its basic affordability levels at four percent (4%) of income for non-heating general use electricity and six percent (6%) of income for electric heating.

These burdens are appropriate burdens. An affordable energy burden for low-income customers should be roughly six percent. Consider that according to the U.S. Department of Housing and Urban Development (HUD), a household experiencing total shelter costs in excess of 30 percent of income is likely to be over-extended. HUD defines total shelter costs to include housing (rent or mortgage) plus the cost of all utilities except telephones. Moreover, the Federal National Mortgage Association (FNMA or Fannie Mae) has indicated that utility bills should not generally exceed 20% of total shelter costs. If total shelter costs are "affordable" (i.e., 30% of income), this would yield sustainable utility burdens of 6% (30% x 20%) of income.<sup>16</sup>

The 4% general use electric burden addresses the affordability issue to the extent possible through the EAP. When a low-income non-electric heating burden (natural gas, fuel oil, propane) is added to this electric general use burden, the total home energy burden will probably exceed 6%. New Hampshire non-electric heating burdens, however, are beyond the scope of the EAP. In contrast, the 6% total home energy burden provided for electric space heating customers is, setting aside water/sewer bills, basically consistent with the HUD/FNMA guidelines.

### ***Relationship Between Heating and Non-Heating***

While many persons have the impression that heating bills represent the biggest portion of a low-income household's total home energy bill, that is not the case. While heating may represent the largest portion of home energy *consumption*, home heating represents only 35% to 40% of a low-income customer's total home energy *bill*. In contrast, electricity represents 60% to 65% of a low-income home energy bill.

Table 5 presents information about consumption and bills for low-income households:

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<sup>16</sup>If anything, a 6% burden is somewhat high since it does not allow for water/sewer bills. These bills are posing increasing affordability issues in their own right. Margot Saunders (1992). *Clean Water--Whose to Drink and Whose to Pay For*, National Consumer Law Center: Boston (MA).

Table 5 Low-Income Bills and Consumption Total Home Energy and Home Heating				
Main Heating Fuel	Energy Consumption (mmBtus)		Energy Bills	
	Home Energy	Home Heating	Home Energy	Home Heating
All fuels	90.9	50.6	\$1,062	\$364
Natural gas	110.8	65.4	\$1,072	\$390
Electricity	44.4	13.5	\$890	\$260
Fuel oil	114.6	77.9	\$1,281	\$539
Kerosene	80.9	43.8	\$1,203	\$370
LPG	79.8	43.3	\$1,210	\$449

SOURCE:  
*Low Income Home Energy Assistance Program, Report to Congress for Fiscal Year 1993*, at Tables 7 and 9, pages 17 and 20 (October 1994).

Because of this consumption, the energy burdens underlying New Hampshire's affordable percentages were appropriately set. Low-income households should be expected to pay more for general use electric bills (4%) and less for home heating bills (2%). General use electric bills should represent from 60% to 65% of the total payment made (4% of 6% total).

#### **USING THE AFFORDABLE PERCENTAGE AS A BUDGET CONTROL DEVICE.**

During the year 2000, in response to legislative action establishing a cap on the total system benefits charge to be devoted to low-income and energy efficiency programs, New Hampshire went through a process to assess different ways through which the total budget devoted to affordability assistance paid toward current bills could be reduced. Several important lessons came out of that process:

#### ***Increasing the "Affordable" Percentage of Income Energy Burden.***

#### **Impact on Number of Customers Qualifying**

Increasing the "affordable" percentage of income has consequences with respect to the number of low-income customers who will qualify for benefits, in addition to reducing the level of total benefits to be paid. Indeed, once the affordable percentage of income reaches sufficiently high levels, the *practical* impact is to reduce the maximum income eligibility for the program.

One way to decrease total program costs of a rate affordability program based on energy burdens is to increase the energy burden deemed to be "affordable" to program participants. The New Hampshire EAP, for example, determined that the affordable energy burden for households heating with electric heat was six percent (6%) of income. The EAP paid the difference between the affordable burden and the actual home energy bill. Thus, if a household had an annual income of \$7,000 and an actual home energy bill of \$620, the EAP benefit would be calculated as follows:

Table 6 Calculating EAP Benefits in New Hampshire at 6% Affordable Energy Burden	
\$620	Total home energy bill
- \$420 ( $\$7,000 \times 0.06$ )	Affordable payment (annual income x affordable percentage of income)
= \$200	Dollars of rate affordability assistance

The point at which an affordable percentage of income is set can, as a practical matter, determine the maximum income eligibility for a rate affordability program. Consider, for example, that the average general use electric bill in New Hampshire was \$830. At an affordable electric burden of 4%, persons at 100% of the federal Poverty Level are not only *eligible* for this program, but will receive benefits from the program as shown below:

Table 7 Receipt of Benefits at 4% Affordable Burden and \$840 Annual Bill				
Household Size	Income at 100% of Poverty	Affordable Percentage	Affordable Bill	Rate Affordability Benefit
1	\$8,350	4%	\$334	\$496
2	\$11,250	4%	\$450	\$380
3	\$14,150	4%	\$566	\$264
4	\$17,050	4%	\$682	\$148

Assume, however, that the affordable burden was increased to 8% rather than 4%. The benefits that would be provided would thus be as follows:

Table 8 Receipt of Benefits at 8% Affordable Burden and \$830 Annual Bill				
Household Size	Income at 100% of Poverty	Percentage	Affordable Bill	Rate Affordability Benefit
1	\$8,350	8%	\$668	\$162
2	\$11,250	8%	\$900	\$0
3	\$14,150	8%	\$1,132	\$0
4	\$17,050	8%	\$1,364	\$0

As can be seen, no household with two or more persons would receive benefits under this program (even though they would be "income eligible"). Even households with only one person in them, living at 100% of Poverty, would receive minimal benefits with this program design. The *practical* effect of raising the affordable percentage of income burden is to lower the eligibility standard to less than 100% of the federal Poverty Level.

### Impact on Reducing Total Program Costs.

An increase in the "affordable" percentage of income required to be paid by program participants will not necessarily result in a dollar-for-dollar reduction in the program budget. Once the affordable percentage of income payment exceeds typical home energy bills, additional increases in that percentage will not decrease total program costs.

If the 6% affordable energy burden resulted in program expenditures that exceeded available program revenues, however, it is not possible to simply assume that increasing the percentage of income burden to be paid by the household would decrease program expenditures on a dollar-for-dollar basis. Assume, for example, an average home energy bill of \$620. Assume further that the affordable energy burden was increased to ten percent (10%) of income (rather than six percent). The calculation would look as follows:

Table 9 Calculating EAP Benefits in New Hampshire at 10% Affordable Energy Burden	
\$620	Total home energy bill
- \$700 (\$7,000 x 0.10)	Affordable payment (annual income x affordable percentage of income)
= \$000	Dollars of rate affordability assistance

In this scenario, while the household's "affordable payment" increased by \$280 (from \$420 to \$700), the savings in program expenditures only reached \$200. The reason is that when the affordable payment reaches the level of the customer's bill, any additional increase in the affordable burden will not result in program savings.

### ***Changing the Affordable Burdens***

In deciding on the benefits to be delivered to low-income households, two observations should be made about potential budget impacts.

### **Changes in the Heating Burden**

First, changes in the energy burdens in the *heating* component of an affordability program will likely generate a relatively small change in the total program cost. The reason is attributed to the relatively small proportion of the total low-income bill represented by heating costs. While we constantly talk about how non-heating electric costs are a much bigger part of a household energy bill than heating costs are, people continue to seem to be surprised when the impacts of that basic fact show up.

In New Hampshire, for example, the total cost of the EAP program was calculated to be approximately \$14.8 million. The *heating* component of that cost, however, was less than \$3.0 million. The total cost was calculated as follows:

Table 10 EAP Program Cost Given 4% (General Use)/6% (Space Heating) Affordable Energy Burdens						
General Use						
	1998 Low-Income Bill	Low-Income Households	Affordable Burden	Affordable Bill	Cost per Household	Cumulative Cost /a/
0-49%	\$827	13,987	4.0%	\$128	\$699	\$4,886,679
50-100%	\$827	21,564	4.0%	\$384	\$443	\$4,771,331
101-150%	\$827	22,729	4.0%	\$641	\$186	\$2,117,628
Total General Use Cost						\$11,775,638
Space Heating						
	1998 Low-Income Bill	Low-Income Households	Affordable Burden	Affordable Bill	Cost per Household	Cumulative Cost /a/
0-49%	\$1,174	2,664	6.0%	\$192	\$981	\$1,307,387
50-100%	\$1,174	4,107	6.0%	\$576	\$597	\$1,226,327
101-150%	\$1,174	4,329	6.0%	\$961	\$213	\$460,726
Total Space Heating Cost						\$2,994,440
Total Program Cost						\$14,770,078

In setting benefits, therefore, it becomes evident that changes in the affordable heating burden will not substantively affect the cost of the program. If the affordable heating burden in New Hampshire would have been increased from 6% to 8%, for example, the total heating program costs would have decreased only to \$2.1 million, a savings of roughly \$800,000.

Table 11 EAP Space Heating Program Costs Given 8% Affordable Energy Burden						
Space Heating						
	1998 Low-Income Bill	Low-Income Households	Affordable Burden	Affordable Bill	Cost per Household	Cumulative Cost /a/
0-49%	\$1,174	2,664	8.0%	\$256	\$917	\$1,222,065
50-100%	\$1,174	4,107	8.0%	\$769	\$405	\$831,713
101-150%	\$1,174	4,329	8.0%	\$1,281	\$0	\$0
Total Space Heating Cost						\$2,053,778
Total Program Cost						\$13,829,416
NOTES:						
/a/Assumes 50% participation rate.						

### Moving to Tiered Affordability Structure.

While not adopted in New Hampshire, a tiered structure of affordable energy burdens is often considered appropriate as well. Under a tiered structure, households with incomes which place them at lower levels of Poverty are charged a smaller percentage of income, while households at higher levels of Poverty are charged a larger percentage of income.

Table 12 EAP General Use Program Costs Given Tiered Affordable Energy Burdens						
General Use						
Poverty Level	1998 Low-Income Bill	Low-Income Households	Affordable Burden	Affordable Bill	Cost per Participant	Cumulative Cost /a/
0-49%	\$827	13,987	3.0%	\$96	\$731	\$5,110,649
50-100%	\$827	21,564	4.0%	\$384	\$443	\$4,771,331
101-150%	\$827	22,729	5.0%	\$801	\$26	\$297,870
Total general use costs:						\$10,179,850
NOTES:						
/a/Assumes 50% participation rate.						

Two observations quickly jump out of Table 12 above. First, reducing the affordable energy burden for the lowest income households does not significantly increase total program costs. Look at the reduction in the lowest income tier (from 4% to 3%). That reduction is applied against the smallest incomes. The average income for that first tier of program participants is only \$3,203 (let's call it \$3,200). Each 1% reduction in energy burden, therefore, will thus add only \$32 per customer per year to the total program costs. That doesn't add up very quickly.

In contrast, a 1% increase in the upper income tier substantially reduces the cost of the program. The average income in New Hampshire's program for the tier of 100% to 150% of Poverty is \$16,013. The 1% increase in affordable energy thus reduced the cost per participant by \$160. The move from 4% to 5% of income for these households thus reduced total program costs from \$2,117,625 per year to only \$297,870 per year.

As discussed elsewhere, however, there is a limit to which program costs can be reduced by increasing the affordable energy burden for the upper tier. Increasing the affordable burden from 4% to 5% reduces the total cost per participant for that tier of customers from \$186 per customer to \$26 per participant. The maximum additional reduction, therefore, can only be \$26 per participant. To increase the affordable burden from 5% to 6% would *not* gain an additional \$1.8 million program savings. At 5% of income, there is a program cost of only \$297,870 with which to begin.

### ***Decreasing the Maximum Income Eligibility Level***

While not involving a change in the affordable energy burden, a related decision is whether it is possible to decrease maximum income eligibility as a cost control mechanism. When rate affordability program design is based on percentage of income energy burdens, decreasing the maximum income eligibility level may not be an effective means of decreasing total program expenditures. Decreasing the maximum eligibility might involve, for example, reducing eligibility from 150% of Poverty to 100% of Poverty.

A program limitation which eliminates participation by households at 100% to 150% of the federal Poverty Level generates a relatively modest amount of savings for the EAP. This is to be expected. Households at different income levels do not receive equal benefits in a program designed to reduce energy burdens to affordable levels. A household living with income at 140% of Poverty, in other words, does not require as deep a subsidy as a household living at 30% of Poverty. Eliminating the top third of eligible households, therefore, (100% to 150%) does not eliminate one-third of the cost.

The impact in New Hampshire of eliminating households at 101% to 150% of Poverty is illustrative. The cost of providing benefits to general use customers with incomes at or below 150% of Poverty in New Hampshire was approximately \$11.8 million, calculated as follows:

Table 13 Cost of New Hampshire EAP						
Poverty	1998 LI Bill	# Participants	Affordable Burden	Affordable Bill	Per HH Cost	Cumulative Cost /a/
0-49%	\$827	13,987	4.0%	\$128	\$699	\$4,886,679
50-100%	\$827	21,564	4.0%	\$384	\$443	\$4,771,331
101-150%	\$827	22,729	4.0%	\$641	\$186	\$2,117,628
Total						\$11,775,638
NOTES:						
/a/Assumed 50% participation rate.						

If one were to eliminate the participants with incomes between 101% and 150% of Poverty, the total program expenditures would decrease to \$9.7 million.

Table 14 Cost of New Hampshire EAP Without 100 - 150% of Poverty Participants						
Poverty	1998 LI Bill	# Participants	Affordable Burden	Affordable Bill	Per HH Cost	Cumulative Cost /a/
0-49%	\$827	13,987	4.0%	\$128	\$699	\$4,886,679
50-100%	\$827	21,564	4.0%	\$384	\$443	\$4,771,331
Total						\$9,658,010
NOTES:						
/a/Assumed 50% participation rate.						

While this move eliminated 40% of the participants from the program, it reduced program costs by less than 20%. The reason, of course, is that the higher income participants that were eliminated imposed a program cost of only \$186 per participant, leaving the lower income customers imposing program costs of \$699 (0 - 50% of Poverty) and \$443 (51 - 100% of Poverty).





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## ESTABLISHING THE BUDGET

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Aside from estimating the total affordability benefits to be delivered through a system benefits charge program, the program budget must include all other costs as well. The budget components to include are:

- ◆ Start-up costs;
- ◆ Administrative costs;
- ◆ Arrearage forgiveness costs; and
- ◆ Program savings.

### START-UP COSTS

Start-up costs are a legitimate genre of costs to be included in the program budget for a rate affordability program. Start-up costs include costs such as computer programming and stafftime devoted to the initial design and implementation of the program.

There may, however, not need to be a separate funding stream to fund program start-up costs. Just as the start-up of a rate affordability program will generate one-time costs, the start-up will generate one-time expense savings as well. In New Hampshire, for example, the Governor's Office of Energy and Community Services (“ECS”), in implementing its Electric

Assistance Program (“EAP”), funded through the state's electric wire charge found that no specific dollars needed to be budgeted for start-up costs.

ECS recognized that the EAP would not be fully subscribed starting on Day 1 of the program operation. Even setting aside the fact that the physical act of enrolling customers will take time, it is reasonable to assume that not all eligible customers will apply for the EAP on Day 1.

Given the calculation of expenditure outflows based on the ramp-up of the universal service program, there will be a certain sum of budgeted funds (given full enrollment) that will not be spent in the first year of program operation. As a matter of arithmetic, for example, if applications come in at a constant rate over the course of a year, the program will spend exactly one-half of its program budget in that first year.

The significance of all this for start-up costs is that the unexpended program funds resulting from the ramp-up of the universal service program provide a sum of money that can be devoted to program start-up costs without increasing the total program budget. Given a total program budget of \$11.5 million, the ramp-up savings should be sufficient to fund program start-up costs.

Table 15 Calculation of Full-Time Equivalent New Participants (550 new enrollees enrolled at constant rate over 12 months)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
No. Jan Bills	23	46	46	46	46	46	46	46	46	46	46	46	527
No. Feb Bills		23	46	46	46	46	46	46	46	46	46	46	481
No. Mar. Bills			23	46	46	46	46	46	46	46	46	46	435
No. Apr. Bills				23	46	46	46	46	46	46	46	46	390
No. May Bills					23	46	46	46	46	46	46	46	344
No. June Bills						23	46	46	46	46	46	46	298
No. July Bills							23	46	46	46	46	46	252
No. Aug. Bills								23	46	46	46	46	206
No. Sept. Bills									23	46	46	46	160
No. Oct. Bills										23	46	46	115
No. Nov. Bills											23	46	69
No. Dec. Bills												23	23



10.5%.)<sup>7)</sup> It is thus possible to estimate the number of general use customers with arrears (29,000 x .33 = 9,570) and electric space customers with arrears (5,600 x .33 = 1,848).

**Step #2:** Estimating the beginning amount of arrears is *best* done with information on average residential arrears (or average low-income residential arrears). In the absence of such information, an estimate can be based upon experience with other programs. Discussions of residential arrears generally focus on households with 61 - 90 day arrears (known as 90-day arrears in industry parlance). What this means is that a customer has missed three payments and is thus three months behind on his or her bill. Given an average New Hampshire low-income residential general use bill of \$827, an average preprogram general use arrears will be \$207 ( $\$827 / 12 \times 3 = \$207$ ). Given an average New Hampshire low-income residential electric space heating bill of \$1,124, an average preprogram electric space heating arrears will be \$294 ( $\$1,124 / 12 \times 3 = \$294$ ).

**Step #3:** Estimating the payments to be made toward preprogram arrears involves first deciding upon the structure of customer arrearage copayments and then estimating the frequency with which those payments will be made. Customer copayments can either be set equal to an arbitrary figure (e.g., \$5/month, \$3/month) or can be set equal to an affordable percentage of income. The recommended mechanism is to set copayments equal to an affordable percentage of income. A one percent (1%) copayment is appropriate.

**Step #4:** The final step is to decide over what period of time pre-program arrears should be forgiven. Once this is decided, it is possible to determine the annualized cost of an arrearage forgiveness program. Arrearages should be forgiven over a period not exceeding two years. The purpose of arrearage forgiveness is to help get low-income customers "even" so they have a chance at future success in making payments. Forgiving arrears over a period of time longer than two years frustrates this purpose. In appropriate circumstances, since lengthening the period of forgiveness lowers the annual cost (e.g., a \$300 preprogram arrears spread over three years costs only \$100/year rather than \$150/year if forgiven over two years), it might be acceptable to forgive arrears over a three year period.

Given this set of assumptions, it is possible to calculate the total costs of an arrearage forgiveness program as follows:

Table 16 Electric Arrearage Forgiveness Cost Given 90-day Beginning Arrears and 1% Annual Household Copayment
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<sup>7)</sup>U.S. Census Bureau, *Extended Measures of Well-Being: 1992*, P70-50RV (November 1995).

Baseload Electric Use								
	Beginning Arrears	No. LI HHs	# LI HHs in Arrs	% LI HHs in Arrs	HH Payment (%) /a/	HH Payment (\$)	Per HH Cost/Year /b/	Aggregate Cost/Year
0-49%	\$207	6,994	33%	2,308	2.0%	\$64	\$72	\$166,176
50-100%	\$207	10,782	33%	3,558	2.0%	\$192	\$8	\$28,464
101-150%	\$207	11,365	33%	3,750	2.0%	\$320	\$0	\$0
Total annual general use electric:								\$194,640
Electric Space Heating								
	Beginning Arrears	No. LI HHs	# LI HHs in Arrs	% LI HHs in Arrs	HH Payment (%) /a/	HH Payment (\$)	Per HH Cost/Year /b/	Aggregate Cost/Year
0-49%	\$294	1,332	33%	440	2.0%	\$64	\$115	\$50,600
50-100%	\$294	2,051	33%	677	2.0%	\$192	\$51	\$34,527
101-150%	\$294	2,165	33%	714	2.0%	\$320	\$0	\$0
Total annual electric space heating:								\$85,127
Total annual electric arrearage forgiveness cost								\$279,767
NOTES:								
/a/A 1% annual copayment for two years equals a 2% customer payment toward the preprogram arrears.								
/b/Total preprogram arrears cost divided by two years forgiveness period.								

## PROGRAM SAVINGS

The final aspect of program budgeting involves estimating the savings which the rate affordability program will generate for participating utilities.

In particular, two offsets are necessary to prevent a utility from double-collecting costs in a state rate affordability program. In New Hampshire, for example, when a utility collects its rate affordability benefit along with the customer payments obtained from EAP participants, it collects 100% of its billed revenue. However, already included in rates are two cost elements that assume that it will *not* collect 100% of its billed revenues. First, a company already has, as part of its revenue requirement, a working capital return associated with unpaid arrears. Second, a company already has a certain level of uncollectibles. To the extent that those unpaid arrears and uncollectibles no longer exist through a combination of the recovery of rate affordability benefits and participant payments, a failure to calculate an offset for those cost components would allow a utility to collect those costs twice. Each of

these offsets -- both the working capital and bad debt -- occur with reasonable arithmetic certainty.

### ***Bad Debt Set-Offs***

A bad debt offset attributable to arrearage forgiveness must also be designed to ensure that New Hampshire utilities do not collect twice for the same costs. Some portion of the arrears subject to forgiveness would, even without EAP, have been written off as bad debt. If the NHPUC were to allow New Hampshire utilities to collect their entire arrearage forgiveness (through the arrearage credits), without subtracting those dollars that were already going to be collected as bad debt in any event, the state's utilities would be collecting some of the same dollars twice: once through the bad debt allowance already in rates and then again through the arrearage forgiveness costs of the EAP.

Assume, for example, that EAP participants will bring \$400 in arrears to the EAP program. Assume further that 80% of those arrears will either be paid by the customer (through copayments) or will be forgiven.<sup>181</sup> Accordingly, for each EAP customer with arrears, \$320 of his or her preprogram arrears will either be paid or forgiven under the program ( $\$400 \times 80\% = \$320$ ). At the rate of 15% of low-income arrears that would normally be written off as bad debt, that means that a total of \$48 ( $\$320 \times 0.15$ ) in preprogram arrears that would otherwise have been written off as bad debt will now either be collected from EAP customers in the form of copayments, or will be collected as part of the arrearage forgiveness program cost of the EAP.

In addition to the bad debt offset that is associated with the arrearage forgiveness, there is a "going forward" bad debt offset as well. The arrearage forgiveness offset addresses arrears that were incurred prior to the time that an EAP participant enters the program. However, in addition to that bad debt associated with preprogram consumption, some portion of the *ongoing* bills for *current* consumption would, in the absence of the program, already be included in current rates as bad debt. To allow the state's utilities to collect the entire EAP benefit on a going forward basis, and in addition to collect all of the bad debt that would have been associated with bills for current usage on a going forward basis, would be to allow those companies to collect the same dollars twice. Stated another way, the EAP credit is not entirely an incremental cost to the utility. Some portion of that credit is already in rates.

### ***Working Capital Set-Offs***

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<sup>181</sup>In Pennsylvania, between 80 and 83% of all Customer Assistance Program (CAP) payments are made on a full and timely basis. CAP is the Pennsylvania equivalent to EAP.

Unlike the bad debt offset, the working capital offset attributable to arrearage forgiveness is designed to ensure that the state’s utilities do not collect for costs that have been eliminated by the EAP. Many EAP participants enter the program with some level of preprogram arrears. We assumed above that the average preprogram arrears is \$294 for electric space heating customers (we'll round that to \$300 for subsequent analysis). Even without EAP, those arrears would be causing a utility to incur a working capital expense.

Under the EAP program, those arrears will be written off as “arrearage forgiveness.” As a result, the working capital associated with those arrears will be removed from each company’s cost-of-service as the arrears are written off.

A working capital savings arising from arrearage forgiveness takes into account the aging of arrears. Each age of arrears will have a certain number of lag days associated with it. Each number of lag days will have a certain working capital allowance associated with it.

Assume, for example, that of the average \$400 in arrears, \$50 was 31 - 60-days in arrears; \$75 was 61 – 90-days in arrears and \$275 was 91+ days in arrears. If the weighted pre-tax cost of capital is 12%, the working capital allowance could be calculated as follows:

Preprogram Arrears	Lag Days	Dollar Lag Days /a/	Daily Return /b/	Monthly Cost /c/
\$50	45	2,250	.000329	\$0.74
\$75	75	5,625	.000329	\$1.85
\$175	105	18,875	.000329	\$6.04
\$300	xxx	xxx	xxx	\$8.63
NOTES:				
/a/Dollars of arrears x lag days.				
/b/Annual return (12%) / 365 days per year.				
/c/Dollar lag days x daily return.				

Under these assumptions, if 10,000 EAP participants had preprogram arrears, and again assuming an 80% payment rate, the program would generate over \$70,000 in avoided bad debt over the course of the arrearage forgiveness ( $\$8.63 \times 10,000 \times .83 = \$71,630$ ).

A similar working capital offset would be appropriate for a "going forward" working capital savings as well. The going forward savings would be associated with arrears that would have been incurred after the start of the program, rather than with the preprogram arrears subject to forgiveness.

### *Summary and Conclusions*

In establishing a total program budget, utilities should be required to net the expense *offsets* that are specific to the program against program expenses. The two sets of offsets explained above—those associated with working capital and bad debt—are easily identifiable and easily quantifiable. One set of offsets (bad debt) is designed to prevent the utilities from double recovering costs that are already in rates. The second set (working capital) is designed to reflect cost savings generated by the program.

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## STRUCTURING THE CHARGE

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To decide merely that a state will impose a "wires charge" (or "system benefits charge") to fund rate affordability assistance does not complete the decisionmaking process. Innumerable questions march forward even after a decision has been made to impose a wires charge. Developing a charge to fund low-income energy efficiency measures, or cash affordability assistance, should respond to the following questions:

- ◆ **On what basis?** Three alternative forms of a wires charge are frequently discussed. A first option is to impose a fixed fee per customer. A second option is to impose a volumetric charge, which varies based on the amount of energy consumed. A third option is to base the wires charge on revenues. Under this third option, a percentage exaction would be imposed on each dollar of revenue.
  
- ◆ **On whom?** This question goes beyond the issue of whether a wires charge should be imposed on natural gas or electric consumers. The issue addresses whether a wires charge should be imposed on residential consumption only, or whether it should be imposed on residential, commercial and industrial consumption.

The purpose of this section is not to present a funding proposal for a system benefits charge, but rather to present illustrative scenarios in sufficient detail to allow the advocate to replicate the calculations in his or her own state. The purpose of the tables below is to demonstrate the calculations and information sources necessary and available to allow advocates to evaluate alternative funding structures on their own. While the tables are limited to one particular state (New Hampshire), each information source has data on every state available. Every

number presented below can be looked up, or calculated, based on the information presented in the tables.

It would, of course, be impossible to present *all* of the various scenarios that public policymakers might consider when considering a system benefits charge. For every scenario presented below, unquestionably there might be an additional three scenarios that have been excluded. The marginal benefits from additional information not contained below, however, are outweighed by the additional size and complexity of the overall document.

The basic funding approaches presented below include:

- ◆ **Table 17**: An approach that is based on a per kWh charge for electricity;
- ◆ **Table 18**: An approach that is based on a percentage of revenue exaction imposed on electricity;
- ◆ **Table 19**: An approach that is based on a designated millage rate being applied on a per unit of energy basis;
- ◆ **Table 20**: An approach that is based on a fixed fee per electric customer, differentiated by customer class.

Funding scenarios that involve imposing a fee on other than electricity are not considered. For illustrative purposes, the calculations below assume a need to raise \$15 million in low-income energy affordability assistance through a system benefits charge. The \$15 million figure approximates, in round terms, the amount of rate affordability assistance found to be necessary in New Hampshire.

**RAISING \$15 MILLION THROUGH A KWH CHARGE IN NEW HAMPSHIRE**

Table 17A: Calculating the Price per Unit of Energy	
Residential use (kwh) /a/	3,572,139,000
Commercial use (kWh) /b/	3,512,195,000
Industrial use (kWh) /c/	2,510,497,000
Total consumption (kWh) /d/	9,594,831,000
Price per kWh /e/	\$0.001563
Total revenue to be generated /f/	\$14,996,720
<p><b>SOURCES:</b></p> <p>/a/Energy Information Administration (October 2000). <i>Electric Sales and Revenue: 1999</i>, at Table 14.            /b/Energy Information Administration (October 2000). <i>Electric Sales and Revenue: 1999</i>, at Table 15.            /c/Energy Information Administration (October 2000). <i>Electric Sales and Revenue: 1999</i>, at Table 16.            /d/Residential + Commercial + Industrial Use            /e/Total revenue to be generated (\$15,000,000) / total consumption            /f/Starting assumption</p> <p><b>NOTE:</b></p> <p>This table uses consumption for the entire state. EIA's <i>Electric Sales and Revenue</i> book, however, provides data for each state disaggregated by electric utility. An assessment could be made, therefore, based on various factors, e.g., all electric utilities but rural electric cooperatives; all electric utilities but RECs and municipals; all electric utilities with sales exceeding some minimum level.</p>	

## RAISING \$15 MILLION THROUGH A kWh CHARGE IN NEW HAMPSHIRE

Table 17B: Calculating the Annual Bill Impacts	
Residential use (kwh) /a/	3,572,139,000
Commercial use (kWh) /b/	3,512,195,000
Industrial use (kWh) /c/	2,510,497,000
Residential customers /d/	531,875
Commercial customers /e/	82,245
Industrial customers /f/	3,302
Price per kWh /g/	\$0.00156
Average annual bill impact per residential customer /h/	\$10/year
Average annual bill impact per commercial customer /i/	\$64/year
Average annual bill impact per industrial customer /j/	\$1,140/year
<p><b>SOURCES:</b></p> <p>/a/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 14.            /b/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 15.            /c/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 16.            /d/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 14.            /e/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 15.            /f/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 16.            /g/Table 17A.            /h/Total residential use / total residential customers x price per kWh.            /i/Total commercial use / total commercial customers x price per kWh.            /j/Total industrial use / total industrial customers x price per kWh.</p>	

**RAISING \$15 MILLION THROUGH A PERCENTAGE OF REVENUE EXACTION IN NEW HAMPSHIRE: ELECTRICITY**

Table 18A: Calculating the Overall Revenue Impact	
	Electricity
Residential revenue	\$494,489,000 /a/
Commercial revenue	\$400,130,000 /a/
Industrial revenue	\$231,160,000 /a/
Total revenue	\$1,125,779,000 /b/
\$15 million as percent of residential electric revenue:	3.0% /c/
\$15 million as percent of electric revenue (all customer classes):	1.3% /d/
<p>SOURCES:</p> <p>/a/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Tables 14 (residential), 15 (commercial) and 16 (industrial).</p> <p>/b/Residential + commercial + industrial revenues.</p> <p>/c/\$15,000,000 / residential electric revenue.</p> <p>/d/\$15,000,000 / (residential electric revenue + commercial electric revenue + industrial electric revenue).</p>	

**RAISING FUNDS THROUGH A PERCENTAGE OF REVENUE EXACTION IN NEW HAMPSHIRE: ELECTRICITY**

Table 18B: Calculating the Annual Bill Impacts	
	Electricity
Average bill per residential customer	\$930/year /a/
Average bill per commercial customer	\$4,865/year /a/
Average bill per industrial customer	\$70,006/year /a/
One percent charge (average bill x 1.0%)	
Residential annual bill impact	\$9/year
Commercial annual bill impact	\$49/year
Industrial annual bill impact	\$700/year
One and one-half percent charge (average bill x 1.5%)	
Residential annual bill impact	\$14/year
Commercial annual bill impact	\$73/year
Industrial annual bill impact	\$1,050/year
SOURCES:	
/a/Total revenue by customer class (Table 18A) / Total number of customers by customer class (Table 17B).	

**RAISING FUNDS THROUGH A MILLAGE CHARGE IN NEW HAMPSHIRE: ELECTRICITY**

Table 19A: Calculating the Revenue Impact	
	Electricity
Residential consumption:	3,572,139,000 /a/
Commercial consumption:	3,512,195,000 /b/
Industrial consumption:	2,510,497,000 /c/
Total consumption:	9,594,831,000 /d/
Revenue raised: 1.0 mil per kWh: Residential electric only:	\$3,572,139
Revenue raised: 1.0 mil per kWh: All classes electric only:	\$9,594,831
Revenue raised: 1.5 mils per kWh: Residential electric only:	\$5,358,209
Revenue raised: 1.5 mils per kWh: All classes electric only:	\$14,392,247
<p>SOURCES:</p> <p>/a/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 14.</p> <p>/b/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 15.</p> <p>/c/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 16.</p> <p>/d/Residential + commercial + industrial consumption.</p>	

**RAISING \$15 MILLION THROUGH A MILLAGE CHARGE: ELECTRICITY**

Table 19B: Calculating the Annual Bill Impacts	
	Electricity
Average use per residential customer	8,741 /a/
Average use per commercial customer	46,986 /a/
Average use per industrial customer	2,563,234 /a/
1.0 mil x average use (kWh)	
Residential annual bill impact	\$9/year
Commercial annual bill impact	\$47/year
Industrial annual bill impact	\$2,563/year
1.5 mil x average use (kWh)	
Residential annual bill impact	\$13/year
Commercial annual bill impact	\$70/year
Industrial annual bill impact	\$3,845/year
SOURCES:	
/a/Total consumption by customer class (Table 19A) / Total number of customers by customer class (Table 17B).	

**RAISING \$15 MILLION THROUGH A METERS CHARGE IN NEW HAMPSHIRE: ELECTRICITY**

Table 20A: Calculating Customer Class Contribution toward \$15 Million	
	Electric
Residential use	3,572,139,000 /a/
Commercial use	3,512,195,000 /a/
Industrial use	2,510,497,000 /a/
Charge per kWh	\$0.001563 /b/
Residential revenue	\$5,583,253 /c/
Commercial revenue	\$5,489,561 /c/
Industrial revenue	\$3,923,907 /c/
Total revenue	\$14,996,721 /d/
<p>SOURCE:</p> <p>/a/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 14 (residential), Table 15 (commercial), and Table 16 (industrial).                      /b/Table 17A.                      /c/Class use x charge per kWh.                      /d/Residential + commercial + industrial revenue.</p>	

**RAISING \$15 MILLION THROUGH A METERS CHARGE IN NEW HAMPSHIRE: ELECTRICITY**

Table 17B: Calculating Annual Revenue and Monthly Bill Impacts				
	No. of Accounts	Months in Year	Monthly Meter Chg	Total Revenue
Electric				
Residential	531,875 /a/	12	\$0.85	\$5,425,125 /b/
Commercial	82,245 /a/	12	\$5.30	\$5,230,782 /b/
Industrial	3,302 /a/	12	\$110.00	\$4,358,640 /b/
Total meters charge revenue				\$15,014,547 /c/
<p>SOURCES:</p> <p>/a/Energy Information Administration (October 2000). Electric Sales and Revenue: 1999, at Table 14 (residential), Table 15 (commercial) and Table 16 (industrial).</p> <p>/b/Total class revenue approximates what would have been generated by class by volumetric charge (see, Table 20A).</p> <p>/c/\$15 million total revenue: By assumption.</p>				









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## PROGRAM FISCAL REPORTING

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### PERIODIC REPORTING

This section presents a brief synopsis of the financial information<sup>9)</sup> that will be reported on a quarterly basis with respect to New Hampshire's Electric Assistance Program (EAP). There will be five issues addressed in this quarterly report. The issues are as follows:

Query 1:**Program participation**: Program participants will track the flow of participants through the EAP. For financial reporting purposes, the flow will be tracked in a form that takes into account both the new participants in the program and the participants that have been removed from the program.

Query 2:**Obligated funding**: Obligated funds represent bill credits that the EAP has *committed* to spend. Credits come in two forms: (1) a credit toward an EAP participant's current bill, and (2) a credit toward an EAP participant's pre-program arrears. Fund obligations are important for future budgeting purposes. Actual expenditures are discussed in a separate section. Obligated funds must be supported by both the annual budget and the projected revenues until and unless they become "deobligated."

Query 3:**Program expenditures**: Merely because funds are obligated does not mean that they are actually spent. Since obligated current bill credits are provided

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<sup>9)</sup>This excludes non-financial data that will be used in evaluating the operations of the program.

automatically each month, obligated current bill credits are spent as the EAP participant receives his or her monthly bill. Obligated current bill credits will become deobligated as program participants are removed from the EAP. Upon removal of the participant, credits obligated for the month following the removal, going forward, will become deobligated. These deobligated credits are then available for obligation to another program participant

In contrast, obligated *arrears* credits can go *unexpended*. Because arrears credits are provided only if customer bills are paid in a full and timely fashion, a customer making a late payment or a partial payment will not receive his or her matching credit for that month. Hence, the funds that have been set aside for that month's credit will go unexpended.

One additional aspect of program expenditures involves funds that are expended but not obligated. A credit can be "spent but not obligated" in the event that a customer has not recertified by his or her anniversary date, but the EAP has not issued an order to the utility providing electric service to remove the customer from EAP. Since credits are obligated only for 12 months, each month the customer remains on the program after failing to recertify will involve the expenditure of unobligated funds.

Query 4:**Budget**: Each year's annual EAP budget must be sufficient to cover three financial commitments: (1) the program expenditures to date (both current bill credits and arrears credits); (2) future obligated current bill credits; and (3) future obligated pre-program arrears credits. The sum of program expenditures and program obligations are compared to the total program year budget. Program expenditures are reported year-to-date. Program obligations are from the reporting date to the end of the program year.

One aspect of the budget reporting each quarter will be the "budget left for obligation." The "budget left for obligation" is the line item that indicates whether, and to what extent, continued enrollment of new EAP participants is possible. When new participants cannot be added without causing the "budget left for obligation" to become negative, program enrollment ceases.

Query 5:**Revenues**: Revenues must be sufficient to pay for the EAP's projected annual budget. Revenues are a function of two items: (1) the EAP surcharge established annually by the state PUC; and (2) kWh of sales. In the event that annual sales are less than that which is necessary to cover the annual budget (as cushioned by whatever reserves exist), program participation adjustments will

need to be made. In the event that sales are greater than that which is necessary to cover the annual budget, a determination will be required with respect to whether an expansion of program participation is sustainable in light of expected future normal sales.

Data for the five queries are incorporated into the following three quarterly reports:

Quarterly Report: _____ (date) Enrollment (page 1 of 3)	
	Months #__
Beginning enrollment:	
New entrants during month:	
Program removals during month	
Month-end enrollment	

Quarterly Report: _____ (date) Budget/Expenditures (page 2 of 3)	
	Months #__
Current bill credits	
Spent year to date:	
Obligated to end of current fiscal year:	
Obligated in next fiscal year:	
Total annual:	
Arrears credits	
Spent year to date:	
Obligated to end of current fiscal year:	
Obligated in next fiscal year:	
Total annual:	
Total FY credits (spent + obligated):	
Spent year to date:	
Obligated to end of current fiscal year:	
Obligated in next fiscal year:	
Total annual:	
Budget:	
Year to date for current fiscal year:	
To end of current fiscal year:	
Total annual for current fiscal year:	
Next fiscal year:	
Budget left for obligation:	
Current fiscal year	
Next fiscal year	

Quarterly Report: _____ (date) Revenues (page 3 of 3)	
	Month #__

Actual revenue to date:	
Revenue to date annualized (estimate):	
Excess/(deficit) revenue over budgeted revenue:	

A copy of a model periodic fiscal report prepared for the New Hampshire Governor's Office of Energy and Community Services is presented below.

## SAMPLE PERIODIC REPORT

This report presents our (annual/semi-annual/quarterly) tracking of the New Hampshire Electric Assistance Program (EAP) for the \_\_\_\_\_ months of \_\_\_\_\_ through \_\_\_\_\_, 200\_\_\_. The report is presented in six parts, including:

- ◆ Part 1: Program participation
- ◆ Part 2: Obligated funding
- ◆ Part 3: Program expenditures
- ◆ Part 4: Revenues
- ◆ Part 5: Budget
- ◆ Part 6: Payment compliance

Each part is supported by data tables as appropriate.

### 1 PROGRAM PARTICIPATION

#### *1.1 Program Enrollment Levels*

At the end of Month \_\_\_\_\_ of the EAP, the program had \_\_\_\_\_ participants. Over the course of the \_\_\_\_\_ month period, \_\_\_\_\_ customers have enrolled in EAP and \_\_\_\_\_ have been removed.

\_\_\_\_\_ of those participants entered the program in the \_\_\_\_\_ month of the year. In \_\_\_\_\_ of the past \_\_\_\_\_ months, including \_\_\_\_\_ of the last \_\_\_\_\_ months (\_\_\_\_\_), the number of new participants was \_\_\_\_\_ (constant/variable/highly variable).

As a result of new program entry and removal, participation in the EAP \_\_\_\_\_ (varied/remained constant) from month to month. Program participation was as follows:

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Beginning enrollment:						
New entrants during month:						
Program removals during month						
Month-end enrollment						

**1.2 Reasons for Program Exits.**

EAP participants drop off of the program for a variety of reasons. Some of these reasons should be of concern to the program. If participants drop off due to payment problems or non-compliance with program requirements, the program should seek to determine whether these reasons can be remedied. In contrast, if the reasons for exit are due to death, mobility (the need for which is not forced or substantially contributed to by unaffordable home energy bills), or a positive change in income, there is no cause for program concern.

Reasons for the exit of EAP participants in the preceding six months include:

Reason for Exit	Months					
	1	2	3	4	5	6
Default exits						
9100 (Defaults for nonpayment)						
6 months or less of participation						
0-50% of Poverty						
51-110% of Poverty						
111-150% of Poverty						
7 months or more of participation						
0-50% of Poverty						
51-110% of Poverty						
111-150% of Poverty						
9200 (Default exits for no reevaluation interview)						
9300 (Default exits for "other")						
Exits other than default						
8100 (Moving exits)						
8200 (Graduation exits)						
8300 ("Other" non-default exits)						
Total exits (default and other than default)	0	0	0	0	0	0

**2 FINANCIAL OBLIGATIONS**

This section reports on fund obligations for the last \_\_\_\_\_ months. Obligated funds differ from expended funds. Obligated funds represent a commitment to provide a bill credit. Credits come in two forms: a credit toward an EAP participant's current bill or a credit toward an EAP participant's pre-program arrears. Fund obligations are important for future budgeting purposes. Actual expenditures are discussed in a separate section.

## **2.1 Current Bill Credits**

### **2.1.1 Funds Obligated for Current Bill Credits**

As of the end of month \_\_\_\_\_, the EAP had obligated \$\_\_\_\_\_ in funds toward current bill credits, as follows:

Funds obligated for preceding six months of fiscal year: \$\_\_\_\_\_

Funds obligated for succeeding six months of fiscal year: \$\_\_\_\_\_

Total funds obligated for total fiscal year: \$\_\_\_\_\_

The difference between the funds obligated in the preceding \_\_\_\_\_ months and those obligated in the succeeding \_\_\_\_\_ months reflects \_\_\_\_\_ (analysis of reason for variance). (More/Fewer/The same number) of customers will be participating in EAP in the succeeding \_\_\_\_\_ months of the year.

Funds are obligated for 12 months going forward from the time a participant enters the EAP. Every participant entering after the EAP's first month, therefore, involves obligating funds from the next fiscal year. By the end of Month \_\_\_\_\_, the EAP had obligated \$\_\_\_\_\_ of next year's EAP budget for current bill credits.

The total funds obligated for the next 11 months is \$\_\_\_\_\_. The total funds obligated for the past 11 months was \$\_\_\_\_\_. The difference between the total funds obligated for the 11 months going forward and the 11 months going backward is \_\_\_\_\_.

The average current bill credit in Month \_\_\_\_\_ was \$\_\_\_\_\_ per participant. The maximum credit was \$\_\_\_\_\_. The number of participants with credits 200% of the total EAP average was \_\_\_\_\_; the number with 150% of the total EAP average was \_\_\_\_\_. Directing energy efficiency toward these EAP participants with high current bill credits would reduce the cost of the program. At an estimated average expenditure of \$\_\_\_\_\_, it would cost \$\_\_\_\_\_ to treat all participants with credits more than 200%/150% with energy efficiency.

**2.1.2 Funds Deobligated for Current Bill Credits**

Merely because funds are obligated for current bill credits under the EAP does not necessarily mean that they will be actually spent. Obligated current bill credits will become deobligated as program participants are removed from the EAP. Upon removal of the participant, credits obligated for the month following the removal, going forward, will become deobligated. These deobligated credits are then available for obligation to another program participant.

By the end of month \_\_\_\_\_, the following current bill credits had been deobligated for the current fiscal year for the following reasons:

Reason for removal	No. of Participants	Deobligated Current Bill Credits (\$)
9700		
9800		
9900		
Total this fiscal year		\$

In addition to affecting this year's budget, the deobligation of future credits will affect the budget for the next fiscal year as well. As of month \_\_\_\_\_, the total deobligated current bill credits from the next fiscal year is \$\_\_\_\_\_.

**2.1.3 Total Outstanding Obligations for Current Bill Credits**

The current status of the EAP current bill credit funding obligation is obtained by combining the obligated and deobligated funds. As of the end of Month \_\_\_\_\_, the current status of current bill credit funding obligations is as follows:

	Total Fiscal Year	Remaining Fiscal Year
Total funds obligated	\$	\$
Total funds deobligated	\$	\$
Total remaining obligated funds	\$0	\$0

At the time of this \_\_\_\_\_ month report, therefore, \$\_\_\_\_\_ in funding has been obligated for current bill credits for the entire fiscal year, with \$\_\_\_\_\_ of those dollars being obligated in the months from the end of this month through the end of the fiscal year.

**2.2Pre-Program Arrears Credits**

**2.2.1Funds Obligated for Pre-Program Arrears Credits**

EAP provides credits toward EAP participant preprogram arrears. The credit is \$10. As of the end of Month \_\_\_\_\_, EAP had enrolled \_\_\_\_\_ participants (out of \_\_\_\_\_ total participants) with pre-program arrears as follows:

Level of Preprogram Arrears	Number of Participants
\$0	
\$1 - 120	
\$121 - 240	
\$241 - 500	
\$501 - 1000	
\$1001+	
Total	

The sum of customer payments plus matching arrears credit may not exceed the beginning pre-program arrears balance.

During the immediately preceding \_\_\_\_\_ months, EAP had obligated \$\_\_\_\_\_ in pre-program arrears credits for the current fiscal year as follows:

Funds obligated for preceding six months of year:\$\_\_\_\_\_

Funds obligated for succeeding six months of year:\$ \_\_\_\_\_

Total funds obligated this fiscal year:\$ \_\_\_\_\_

The EAP obligated credits toward preprogram arrears is smaller than twelve times the number of EAP participants with pre-program arrears. \_\_\_\_\_ EAP participants will, with the help of the credit, retire their pre-program arrears without need of 12 payments and 12 credit matches. A pre-program arrears of \$120, for example, would be retired in only six months (6 months x (\$10 payment + \$10 credit)).

The difference between the funds obligated in the preceding six months and those obligated in the succeeding six months reflects the \_\_\_\_\_ (analysis of variance). (More/Fewer/The same number of) customers will be participating in EAP in the succeeding \_\_\_\_\_ months of the year.

Funds are obligated for 12 months going forward from the time a participant enters the EAP. Every participant entering after the EAP's first month, therefore, involves obligating funds from the next fiscal year. By the end of Month \_\_\_\_\_, the EAP had obligated \$ \_\_\_\_\_ of next year's EAP budget for pre-program arrears credits.

The total funds obligated for the next 11 months is \$ \_\_\_\_\_. The total funds obligated for the past 11 months was \$ \_\_\_\_\_. The reason(s) that a difference exists between the last 11 months and the next 11 months is \_\_\_\_\_ (analysis of variance).

### **2.2.2 Funds Deobligated for Pre-Program Arrears Credits**

Merely because funds are obligated for pre-program arrears credits under the EAP does not necessarily mean that they will be actually spent. Obligated pre-program arrears credits will become deobligated as program participants are removed from the EAP. Upon removal of the participant, credits obligated for the month following the removal, going forward, will become deobligated. These deobligated credits are then available for obligation to another program participant.

By the end of month \_\_\_\_\_, the following pre-program arrears credits had been deobligated for \_\_\_\_\_ participants for the current fiscal year for the following reasons:

Reason for removal	No. of Participants	Deobligated Pre-Program Arrears Credits (\$s)
9700		
9800		
9900		
Total this fiscal year		

In addition to affecting this year's budget, the deobligation of future credits will affect the budget for the next fiscal year as well. As of month \_\_\_\_\_, the total deobligated pre-program arrear credits from the next fiscal year is \$\_\_\_\_\_.

**2.2.3 Total Outstanding Obligations for Pre-Program Arrears Credits**

The current status of EAP pre-program arrears credit funding obligation is obtained by combining the obligated and deobligated funds. As of the end of Month \_\_\_\_\_, the current status of pre-program arrears credit funding obligations is as follows:

	Total Fiscal Year	Remaining Fiscal Year
Total funds obligated	\$	\$
Total funds deobligated	\$	\$
Total remaining obligated funds	\$0	\$0

**3 PROGRAM EXPENDITURES**

Program expenditures represent dollars actually applied to EAP participant accounts. Dollars can be applied against current bills as well as against pre-program arrears.

**3.1 Current Bill Expenditures**

Every customer who is a participant in the EAP in a given month will receive a current bill credit as determined at the time of the participant's enrollment. In the event that the current bill credit is estimated to exceed the distribution portion of the participant's bill, the EAP credit will be split between the participant's distribution and supply bill.

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Total participants receiving credits						
Total number of participants receiving credits toward supplier bill						
Total dollars in current bill credits						
Total current bill credits provided against supplier bill						

### ***3.2 Pre-program Arrears Expenditures***

Merely because funds are obligated does not mean that they are actually spent. Only obligated arrears credits can go unexpended. Because arrears credits are provided only if customer bills are paid in a full and timely fashion, a customer making a late payment or a partial payment will not receive his or her matching credit for that month.

As of the end of month \_\_\_\_\_, EAP would have provided \_\_\_\_\_ arrears credits costing \$\_\_\_\_\_ had all obligated arrears credits been earned. In the immediately preceding \_\_\_\_\_ months, due to late or partial payments, EAP *actually* provided \_\_\_\_\_ arrears credits costing \$\_\_\_\_\_. Incomplete or untimely payments thus resulted in \$\_\_\_\_\_ obligated arrears credits going unexpended.

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Total participants eligible to receive pre-program credits						
Total number of participants actually receiving pre-program arrears credits						
Total dollars in pre-program arrears credits subject to being paid:						
Total dollars of pre-program arrears credits actually paid						

#### 4REVENUE

Total revenue for the EAP is calculated by multiplying total electric sales (kWh) times the per-kWh surcharge as determined by the New Hampshire public utility commission for the year. In turn, sales can be affected by factors ranging from economic activity within the state, to the number of customers, to the weather experienced in the state. "Sales" within the state include all kWh delivered to ultimate end users, whether or not sold off of the distribution or off of the transmission network.

Total EAP revenue for the immediate past \_\_\_\_\_ months reached the following levels:

	Month__	Month__	Month__	Month__	Month__	Month__
Sales						
Company 1						
Company 2						
Company 3						
Company 4						
Company 5						
Total kWh sales	0	0	0	0	0	0
PUC EAP per-kWh surcharge	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total EAP revenue	\$0	\$0	\$0	\$0	\$0	\$0

In addition to the *actual* revenue from the first \_\_\_\_\_ months in the fiscal year, the total annual revenue is a function of the *projected* revenue for the next \_\_\_\_\_ months of the fiscal

year. Projections of electric sales (kWh) are based on weather normalized sales from previous years. The projected sales for the remainder of this fiscal year are as follows:

	Month__	Month__	Month__	Month__	Month__	Month__
Sales						
Company 1						
Company 2						
Company 3						
Company 4						
Company 5						
Total kWh sales	0	0	0	0	0	0
PUC EAP per-kWh surcharge	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total EAP revenue	\$0	\$0	\$0	\$0	\$0	\$0

Total estimated EAP revenue for the fiscal year is thus estimated to be \$\_\_\_\_\_.

## **5BUDGET**

### ***5.1Financial Obligations***

This section provides a snapshot of the status of the EAP's financial expenditures and obligations relative to the budgeted obligations and expenditures. The EAP budget must be sufficient to cover:

- ◆ Actual expenditures on current bill credits, *plus*
- ◆ Actual expenditures on pre-program arrears credits *plus*
- ◆ Future obligated current bill credits, *plus*
- ◆ Future obligated pre-program arrears credits

Future obligated current bill credits involve current bill credits that have been obligated minus those which have been deobligated. Future obligated pre-program arrears credits involve pre-program arrears credits that have been obligated minus those that have been deobligated. Unlike current bill credits, which can be deobligated only when an EAP participant is removed from the program, a pre-program arrears credit can also be deobligated when an EAP participant does not make a timely bill payment to earn his or her arrears credit.

Each of these financial figures have been determined in a prior section of this semi-annual report.

	Prior 6 Months (expended)	Next 6 Months (obligated)	Total
Current bill credits			\$0
Pre-program arrears credits			\$0
Total financial obligation			\$0

### 5.2 Financial Obligation Coverage

Given existing financial obligations combined with existing revenue projects, the EAP is estimated to end this fiscal with a balance of \$\_\_\_\_\_.

Total Estimated Obligations	Total Estimated Revenue	Estimated Surplus/(Deficit)
\$	\$	\$0

### 6 PAYMENT COMPLIANCE

The purpose of this section of the report is to provide summary information on the compliance of EAP participants with the payment terms on utility bills rendered during their EAP participation. Through EAP, customers are expected to make:

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

#### 6.1 Full Payments.

In the preceding \_\_\_\_\_ months, EAP customers paid \_\_\_\_\_% of the total bills rendered to them, including both bills for current service and bills for the portion of pre-program arrears due to be paid in that month.

Number of EAP Accounts	Total EAP Revenue Billed	Total EAP Revenue Collected

	\$	\$
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The collection of EAP revenue did not vary significantly by month.

	Month__	Month__	Month__	Month__	Month__	Month__
Total EAP Revenue Billed (\$s)						
Total EAP Revenue Collected (\$s)						
Percent of EAP Billed Revenue Collected						

### ***6.2 Regularity of Payments***

The objective of obtaining "regular payment" should be measured by an index of the number of billing periods in which a minimum proportion of a customer's bill is paid divided by the number of bills rendered. A utility isn't interested simply in receiving all of its revenue on an annual basis. A utility wants regular payments in response to each bill rendered.

The regularity of payments is measured by the proportion of billing periods in which some payment is made toward the bill. In the past \_\_\_\_\_ months, EAP participants made full payments \_\_\_\_\_% of the time.

	Month__	Month__	Month__	Month__	Month__	Month__
Total Number of EAP Billing Periods						
Total Number of Accounts where Some Payment Made						
Percent of Accounts where Sum of Payments Equals 100% of Billed Revenue						

### ***6.3 Timeliness of Payments***

#### **6.3.1 Aging of Arrears**

The timeliness of payments is measured by the age of arrears. As timely payment increases, the proportion of arrears that are in the older tiers of arrears should decrease.

	Month__	Month__	Month__	Month__	Month__	Month__
Total dollars of receivable (other than pre-program arrears).						
Total dollars current bill						
Total dollars <30 days in arrears						
Total dollars 30 - 60 days in arrears						
Total dollars 60 - 90 days in arrears						
Total dollars 91+ days in arrears						

In addition to the dollars of arrears, the extent to which EAP accounts are not making timely payments is important to track. The aging of arrears can be determined as follows for the first \_\_\_\_\_ months of this fiscal year:

	Month __	Month __	Month __	Month __	Month __	Month __
Total accounts with receivables (other than pre-program arrears).						
Total no. of accounts with current bill						
Total no. of accounts with <30 days in arrears						
Total no. of accounts with 30 - 60 days in arrears						
Total no. of accounts with 60 - 90 days in arrears						
Total no. of accounts with 91+ days in arrears						

### 6.3.2 Bills Behind Statistic

A weighted arrears score is calculated by dividing the total residential monthly arrears not subject to deferred payment agreements by the average residential monthly customer bill. The score, known as a Bills Behind statistic, is a weighted arrears for all households who are not in deferred payment agreements. Comparisons of arrears between companies, as well as between time periods, can be misleading because of the difference in the level of bills. For this reason, a weighted arrears statistic is calculated so that the effect of different average bills is taken into consideration. The weighted arrears factor compares the performance of a customer to the average "weighted arrears" rate for a specified period to the average rate for a base period.

The lower the total "bills behind" a company experiences, the more regular and timely bill payment is.

	Bills Behind by Month					
	Month __	Month __	Month __	Month __	Month __	Month __
Total EAP Participants						
Company 1						
Company 2						
Company 3						
Company 4						
Company 5						
Company 6						

In addition to the average bills behind, the lower the proportion of total EAP participants with substantial bills behind, the better the payment regularity.

Total EAP Participants	Month					
	__	__	__	__	__	__
0 - 1 bills behind						
1 - 2 bills behind						
2 - 3 bills behind						
3 - 4 bills behind						
4 - 5 bills behind						
4 - 5 bills behind						

### 6.4 Summary

The statistical information presented above is not intended to represent a complete evaluation of the performance of the EAP participants relative to compliance with payment terms and other program requirements. The information is intended to present a statistical snapshot of certain aspects of performance as of the date of this report.

### 7 CONCLUSIONS AND RECOMMENDED ACTION STEPS

Based on the information and data presented above, the immediate action steps recommended for the EAP for the next \_\_\_\_\_ months are as follows (may be nothing):

- ◆ \_\_\_\_\_
- ◆ \_\_\_\_\_
- ◆ \_\_\_\_\_

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## PROGRAM EVALUATION

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The indices outlined below represent mechanisms to use in *measuring* the performance of a rate affordability program throughout its early years. The performance indices presented below are not intended to involve making subjective judgments about the program. They instead allow evaluators to measure objective program attributes.

Six performance criteria are proposed below

- ◆ A measurement of the *amount* of bill payment;
- ◆ A measurement of *prompt* payment of bills;
- ◆ A measurement of *regular* payment of bills;
- ◆ A measurement of *complete* payment of bills;
- ◆ A measurement of *continuing* payments (through contribution to fixed costs);
- ◆ A measurement of *net-back*.

**Index #1: Measuring Customer Cash Payments:** The first performance index measures whether customers increase the dollars paid toward current usage as a part of the program. This performance index involves four components. It measures:

(1) the dollars, (2) paid "by the customer," (3) toward current usage, (4) as part of the program.

**Index #2: Measuring Prompt Payment of Bills:** The second performance index measures whether the customer pays his or her bills more promptly. This performance index involves four components. It measures: (1) the dollars, (2) paid by the customer, (3) relative to the dollars *asked* to be paid by the customer, (4) relative to the date on which the dollars are first billed. This, of course, is precisely what a "payment pattern analysis" measures (see attached Status Report).

**Index #3: Measuring Regular Payment of Bills:** The third performance index measures whether the customer makes his or her payments more regularly. This performance index involves four components. It measures: (1) the payments, (2) made by the customer, (3) toward current or past due bills requested to be paid by the customer, (4) relative to a total time period. In this regard, the measurement is in terms of "payments" rather than dollars. A more frequent number of smaller payments is a more desirable outcome than a smaller number of payments of larger amounts, even if over time both streams of revenue generate the same number of dollars.

Either one of two performance measurements can capture the regularity of payments: (1) the payments made as a percent of the number of bills rendered by the Company in a given time period; or (2) the payments *per customer* in a given time period.<sup>10\</sup>

**Index #4: Measuring Complete Payment of Bills:** The fourth performance index measures whether the customer pays his or her bills more completely. This performance index involves three components. It measures: (1) the dollars left unpaid,<sup>11\</sup> (2) relative to the dollars billed to the customer, (3) relative to a particular point in

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<sup>10\</sup>In this regard, the use of annual data would fail in two different respects in this measurement. First, it does not capture cross-period bills and payments. Second, the use of the limited number of data points generated by annual data does not permit the identification, let alone the analysis of, trends over time. A three month rolling average used to develop monthly data points for this measure, or the use of a three month period (number of payments made per each three months) would allow an evaluation to examine whether an improvement in payment regularity had occurred.

<sup>11\</sup>This phraseology involves a conscious change from the "by the customer" language in previous performance indices. Unlike those other situations, in *this* performance index, the program should be concerned only with total bill payment coverage. Evaluators should be indifferent as to the source of the dollars.

time. This performance measurement should incorporate the "bills behind" statistic developed by the Pennsylvania Bureau of Consumer Services.

**Index #5: Measuring Contribution to Fixed Costs:** The fifth performance index measures whether customers make an increased contribution toward system fixed costs if his or her bills are paid more completely. This performance index involves three components. It measures: (1) the dollars paid by the customer, (2) relative to the variable costs of providing service to the customer, (3) relative to the fixed costs of the system charged to the customer. This performance measure does more than simply look at whether customer payments increase. The index picks up the benefits from keeping customers on the system. If customers stay on the system rather than being disconnected (or moving), they will continue to make payments and thus increase their fixed cost contributions.

**Index #6: Improved "Net Back":** The seventh performance index measures whether the company experiences an increased "net back" if customer bills are paid in either a more complete or more timely fashion. While generally viewed as a measure of cost-effectiveness, in fact, "net back" combines "effectiveness" and "cost-effectiveness" into one comprehensive evaluation criterion. It provides not only a measurement of the effectiveness of a program (through the "collection rate" measure), it provides for a measurement of the costs of the process as well. Finally, by combining the two measurements into one criterion, "net back" provides for a balancing of both factors --effectiveness of the process on the one hand and costs of the process on the other hand-- as well. The "net back" performance criterion involves three components. It measures: (1) the revenue that is billed to the customer, (2) the collection rate (which involves the percentage of billed revenue that is actually collected); and (3) the cost of collection.

In measuring whether a company experiences an increased "net back" as part of the pilot program, this performance index examines the revenue billed relative to the revenue collected and the cost of collection.

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**TABLE 21**  
**STATUS REPORT ON RECEIVABLES OUTSTANDING**  
**AS A PERCENT OF ORIGINAL SALES**


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	MONTH											
	J	F	M	A	M	J	J	A	S	O	N	D
<b>Percentages outstanding for 1970 from sales of:</b>												
<b>Same month</b>	90%	89%	91%	95%	97%	93%	86%	92%	91%	90%	91%	90%
<b>One month before</b>	60	62	59	68	73	69	59	54	62	63	61	60
<b>Two months before</b>	20	19	18	35	37	33	23	20	17	21	22	20

**NOTE**

To ascertain the payment figures for one month's original sales, see the numbers in a descending left-to-right diagonal pattern. Thus, the sequence 86%-54%-17%, singled out for July-August-September of 1970, refers to balances originating in July's sales as they remain outstanding as of the end of three consecutive months.

**SOURCE:**

Wilber Lewellen and Robert Johnson, "Better way to monitor accounts receivable," *Harvard Business Review*, at 101, 107 (May-June 1972).





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## **SUMMARY AND CONCLUSIONS**

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To come.