State Report – Maine

This Appendix furnishes detailed information for Maine, including:

- Statistical Overview – Key characteristics for Maine households and housing units.
- Needs Assessment – Statistics for Maine low-income households and estimates of the need for energy affordability and energy efficiency programs.
- Legal and Regulatory Framework – A description of the legal and regulatory framework for low-income programs and identification of any legal or regulatory barriers to program design enhancements.
- Low-Income Affordability Programs – Information on Maine's publicly funded affordability programs, the ratepayer-funded affordability programs targeted by this study, and an assessment of the share of need currently being met.
- Affordability Program Evaluation – A summary of the available evaluation findings regarding the performance of Maine's affordability programs.
- Energy Efficiency Programs – Information on Maine's publicly funded energy efficiency programs and the ratepayer-funded energy efficiency programs targeted by this study.
- Energy Efficiency Program Evaluation – A summary of the available evaluation findings regarding the performance of Maine's energy efficiency programs.

This report was developed from a number of publicly available sources. We gratefully acknowledge the information received and contributions from Derek Davidson, Maine Pubic Utilities Commission, Consumer Assistance Division, and Denis Bergeron, Energy Division Director, Efficiency Maine. This report was developed by APPRISE and Fisher, Sheehan, and Colton. The statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and Fisher, Sheehan, and Colton. They do not necessarily reflect the views of any individual consulted regarding Maine programs.

I. Statistical Overview

Maine is the 40th largest state in terms of population. It is about average in income and poverty (32nd in median family income and 26th in individuals below poverty in 2005). In 2005, the median housing value was $155,300 and the median rent was $623.

Most housing units (92%) in Maine are heated with unregulated fuels, predominantly fuel oil (78%). Natural gas prices are 26% above the national average, while electricity prices are 3% below and fuel oil prices are 7% below the national averages. The weather is very cold in the winter (8,012 heating degree days compared to the national average of 4,524) and relatively cool in the summer (only 228 cooling degree days compared to the national average of 1,242). Households are most at risk from the cold during the months of October through April.

The following population and housing statistics were developed using data from the 2005 American Community Survey (ACS).

Population Profile

Total Population	1.3 million
Individuals 65 and Over	0.2 million (15%)
Individuals Under 18	0.3 million (23%)
Individuals 5 & Over Who Speak a Language Other than English at Home	0.1 million (6%)
Individuals Below Poverty	13% (26th nationally)

Household Profile

Total Households	0.5 million
Median Household Income	$42,801 (33rd nationally)
Homeowners	
Total Homeowners	0.4 million (72%)
Median Value	$155,300 (24th nationally)
Median Housing Burden	19%
Renters	
Total Renters	0.2 million (29%)
Median Rent	$623
Median Rental Burden	27%

The following energy statistics were derived from a number of sources, including the 2005 American Community Survey (ACS), the Energy Information Administration's (EIA) supplier data collection, and NOAA's National Climatic Data Center (NCDC).

Energy Profile

Home Heating Fuel (Source: 2005 ACS)	
Utility gas	3%
Electricity	5%
Fuel Oil	78%
Other	14%
2005 Energy Prices (Source: EIA)	
Natural gas, per ccf	$1.617
Electricity, per kWh	$0.0920
Fuel oil, per gallon	$1.902
Weather (Source: NCDC)	
Heating Degree Days	8,012
Months of Winter (i.e., average temperature below 50°)	7
Cooling Degree Days	228
Months of Summer (i.e., average temperature above 70°)	0
Days with Temperatures Over 90°	3

[Note: Updates are available for energy prices and weather for 2006. Population statistics updates for 2006 will be available in August 2007.]

II. Profile of Low Income Households

Maine policymakers have chosen to target the publicly funded and ratepayer-funded low income programs at households with incomes at or below 150% of the HHS Poverty Guideline. For 2005, the income standard for a one-person household was about $14,355 and the income standard for a four-person household was $29,025. For the analysis of low-income households in Maine, we will focus on households with incomes at or below 150% of the HHS Poverty Guideline.

Table 1 furnishes information on the number of Maine households with incomes that qualify them for the LIHEAP program and the ratepayer-funded programs. About 21% of Maine households are income-eligible for these programs.

Table 1
Eligibility for Ratepayer Programs (2005)

Poverty Group	Number of Households	Percent of Households
Income at or below 150%	114,034	21%
Income above 150%	425,262	79%
ALL HOUSEHOLDS	539,296	100%

Source: 2005 ACS

Tables 2A and 2B furnish information on main heating fuels and housing unit type for Maine low-income households. Table 2A shows that about 5% of low-income households use natural gas as their main heating fuel and 9% of low-income households use electricity as their main heating fuel. Table 2B shows that less than half of low-income households live in a single family home. These statistics demonstrate the Maine's ratepayer funded low-income programs are more likely to focus on nonheating energy uses and that any energy efficiency program will have to include other housing types in addition to single family homes.

Table 2A
Main Heating Fuel for Low-Income Households (2005)

Main Heating Fuel	Number of Households	Percent of Households
Electricity	10,063	9%
Fuel Oil	81,690	72%
No fuel used	1,178	1%
Other Fuels	14,948	13%
Utility Gas	6,155	5%
ALL LOW INCOME	114,034	100%

Source: 2005 ACS

Table 2B
Housing Unit Type for Low-Income Households (2005)

Housing Unit Type	Number of Households	Percent of Households
Boat, RV, Van, etc	102	0%
Building with 2-4 units	18,807	16%
Building with 5+	27,414	24%
Mobile Home	17,444	15%
Single Family	50,267	44%
ALL LOW INCOME	114,034	100%

Source: 2005 ACS

About 114,000 Maine households are categorized as low-income. However, only those households that directly pay an electric bill or a gas bill are eligible for the Maine ratepayer-funded programs. Table 2C shows that about 83% of low-income households directly pay an electric bill and that about 19% of low-income households directly pay a gas bill.

Table 2C
Low-Income Households
Direct Payment for Electric and/or Gas Bill (2005)

Poverty Group	Number of Households	Percent of Households
Electric Bill - Direct Payment	94,840	83%
Gas Bill - Direct Payment	22,164	19%
ALL INCOME ELIGIBLE	114,034	100%

Source: 2005 ACS

Tables 3A and 3B show the distribution of electric bills and burden for low-income households that do not heat with electricity and reported electric expenditures separately from gas expenditures.[1] Table 3A shows the distribution of electric expenditures for households that do not have electricity as their main heating fuel and Table 3B shows the electric energy burden.[2] Among these households, about 65% have electric bill that is less than $1,000 per year while about 15% have an annual electric bill of $1,500 or more. Electric energy burden is less than 5% of income for about 32% of these households, while it is greater than 15% of income for 19% of households.[3]

[1]The ACS allows respondents who have a combined electric and gas bill from one utility to report the total for both fuels. Those households are not included in these tables.
[2] Electric energy burden is defined as the household's annual electric bill divided by the household's annual income.
[3] About 13% of households have their electric usage included in their rent. These households have a nonzero electric energy burden, since part of their rent is used to pay the electric bill. However, since there is no way to measure the share of rent that is used to pay the electric bill, electric energy burden is unknown for these households.

Table 3A
Electric Bills for Low-Income Households without Electric Heat (2005)

Electric Bill	Number of Households	Percent of Households
$1 to less than $500	25,941	29%
$500 to less than $1,000	31,514	36%
$1,000 to less than $1,500	17,770	20%
$1,500 or more	12,816	15%
TOTAL	88,041	100%

Source: 2005 ACS

Table 3B
Electric Burden for Low-Income Households without Electric Heat (2005)

Electric Burden	Number of Households	Percent of Households
0% to less than 5%	28,207	32%
5% to less than 10%	30,043	34%
10% to less than 15%	12,755	14%
15% or more	17,036	19%
TOTAL	88,041	100%

Source: 2005 ACS

Tables 4A and 4B show the distribution of electric bills and burden for low-income households that heat with electricity. Table 4A shows the distribution of electric expenditures and Table 4B shows the electric energy burden. Among these households, about 62% have an electric bill that is less than $1,000 per year while about 21% have an annual electric bill of $1,500 or more. Electric energy burden is less than 5% of income for about 22% of these households, while it is greater than 15% of income for 25%.

Table 4A
Electric Bills for Low-Income Households with Electric Heat (2005)

Electric Bill	Number of Households	Percent of Households
$1 to less than $500	2,139	34%
$500 to less than $1,000	1,814	28%
$1,000 to less than $1,500	1,078	17%
$1,500 or more	1,351	21%
TOTAL	6,382	100%

Source: 2005 ACS

Table 4B
Electric Burden for Low-Income Households with Electric Heat (2005)

Electric Burden	Number of Households	Percent of Households
0% to less than 5%	1,398	22%
5% to less than 10%	2,613	41%
10% to less than 15%	775	12%
15% or more	1,596	25%
TOTAL	6,382	100%

Source: 2005 ACS

Tables 5A and 5B show the distribution of gas bills and burden for low-income households that heat with gas and report their gas bills separately from their electric bills. Table 5A shows the distribution of gas expenditures and Table 5B shows the gas energy burden. Among these households, about 77% have a gas bill that is less than $1,000 per year while about 15% have an annual gas bill of $1,500 or more. Gas energy burden is less than 5% of income for about 58% of these households, while it is greater than 15% of income for 20%.

Table 5A
Gas Bills for Low-Income Households (2005)

Gas Bill	Number of Households	Percent of Households
$1 to less than $500	12,502	57%
$500 to less than $1,000	4,340	20%
$1,000 to less than $1,500	1,543	7%
$1,500 or more	3,362	15%
TOTAL	21,747	100%

Source: 2005 ACS

Table 5B
Gas Burden for Low-Income Households (2005)

Gas Burden	Number of Households	Percent of Households
0% to less than 5%	12,590	58%
5% to less than 10%	3,226	15%
10% to less than 15%	1,566	7%
15% or more	4,365	20%
TOTAL	21,747	100%

Source: 2005 ACS

Tables 6A and 6B show the distribution of total electric and gas expenditures for low-income households that pay bills directly to a utility company. Table 6A shows the distribution of electric and gas expenditures and Table 6B shows the electric and gas energy burden. About 83% of households have an electric bill, a gas bill, or both. Almost half of low-income households have

a total electric and gas bill that is less than $1,000 per year while four percent have an annual bill of $2,500 or more. Electric and gas energy burden is less than 5% of income for 22% of low-income households, while it is greater than 25% of income for about one in ten low income households.

Table 6A
Electric and Gas Bills for Low-Income Households (2005)

Electric and Gas Bill	Number of Households	Percent of Households
$1 to less than $500	23,881	21%
$500 to less than $1,000	32,092	28%
$1,000 to less than $1,500	18,980	17%
$1,500 to less than $2,000	10,223	9%
$2,000 to less than $2,500	5,185	5%
$2,500 or more	4,647	4%
No Bill	19,026	17%
ALL INCOME ELIGIBLE	114,034	100%

Source: 2005 ACS

Table 6B
Electric and Gas Burden for Low-Income Households (2005)

Electric and Gas Burden	Number of Households	Percent of Households
0% to less than 5%	24,915	22%
5% to less than 10%	33,318	29%
10% to less than 15%	13,359	12%
15% to less than 20%	7,915	7%
20% to less than 25%	2,882	3%
more than 25%	12,619	11%
No Bill	19,026	17%
ALL INCOME ELIGIBLE	114,034	100%

Source: 2005 ACS

We have developed a series of demographic tables for households that pay an electric or gas bill. Table 7 furnishes information on the presence of vulnerable members in the household and illustrates what share of the population might be particularly susceptible to energy-related health risks. Table 8 shows the household structure for these households, and Table 9 presents statistics on the language spoken at home by these households.

Just over one-third of the low-income households with utility bills are elderly. Almost one-fourth do not have any vulnerable household members. Some programs choose to target vulnerable households with outreach procedures and may offer priority to these households.

Table 7
Vulnerability Status for Low-Income Households with Utility Bills (2005)

Vulnerability Type	Number of Households	Percent of Households
Disabled	28,156	30%
Elderly	33,085	35%
No Vulnerable Members	22,883	24%
Young Child	10,884	11%
Total	95,008	100%

Source: 2005 ACS

More than one in four low-income households have children, about one-third are headed by a person 65 or older, and close to four in ten are other household types. Single parent families with children represent almost one-fifth of low-income households with utility bills.

Table 8
Household Type for Low-Income Households with Utility Bills (2005)

Household Type	Number of Households	Percent of Households
Married with Children	8,225	9%
Other	36,796	39%
Senior Head of Household	32,533	34%
Single with Children	17,454	18%
TOTAL	95,008	100%

Source: 2005 ACS

Only one percent of low income households speak Spanish, while about 9% speak an Indo-European language (e.g., Russian, Polish). In total, program managers might find that about one in ten eligible households speak a language other than English at home.

Table 9
Language Spoken at Home by Low-Income Households with Utility Bills (2005)

Language Spoken	Number of Households	Percent of Households
English	84,878	89%
Spanish	890	1%
Indo-European	8,248	9%
Other	992	1%
TOTAL	95,008	100%

Source: 2005 ACS

III. Legal and Regulatory Framework

A. The Original Maine Programs

Maine's low-income rate affordability programs were adopted pursuant to explicit statutory authorization enacted in 1990 after the Maine Public Utilities Commission had rejected an affordability proposal on the grounds of lack of jurisdiction.[4] In response to that Commission decision, the legislature enacted language providing that:

> The Commission, as it determines appropriate, . . .shall order electric utilities to develop and submit specific. . .proposals that provide for the development and implementation of: (G) rates or bill payment assistance programs for residential customers who have been certified eligible for state or federal fuel assistance that take into account the difficulty these customers have in paying in full for electric service or that target assistance to these customers in the most efficient manner, taking into account the necessity of maintaining electric service.[5]

Arising out of this language were programs promulgated by the state's three major electric utilities: Central Maine Power Company, Maine Public Service Company, and Bangor Hydro. The discussion below focuses on the CMP program since that program was later to serve as the model upon which a statewide program was promulgated.

Central Maine Power Company

The Maine Electric Lifeline Program (ELP) finds its origins in an experimental low-income program adopted by Central Maine Power Company in 1991. The CMP program was expanded to a full low-income rate affordability assistance program by order of the Maine Public Utilities Commission (PUC) in 1992.[6] Presented to the PUC by stipulation,[7] the program proposal was designed to extend the CMP Electric Lifeline Program (ELP) to an average of 18,000 electric customers. The Maine PUC, however, found that "while the record in this case supports an expansion of the existing ELP, CMP's general body of ratepayers cannot afford the doubling of current program costs. . ."[8] The Commission thus rejected the proposed stipulation.

The Commission directed the implementation of a scaled-down version of the ELP. While the original stipulation had proposed to extend the program to all customers ***eligible*** for the federal Low-Income Home Energy Assistance Program (LIHEAP), the Commission-ordered program extended only to customers actually participating in the program. Contracting the program in this manner reduced the program cost from $5 million to $4 million dollars. This participation level, the Commission found, "constitutes approximately 0.52% of CMP's annual retail revenues [and] is a reasonable balance between the interests of affected low-income ratepayers and the general body of ratepayers."[9] The Commission subsequently noted, however, that the 0.5%

---

[4] Re. Central Maine Power Company Proposed Increase in Rates and Rate Design, Docket No. 89-68, Final Order, October 31, 1990); see also, Re. Commission Inquiry into Establishment of Low Income Discount Rate for Residential Households and to Allocate Water Supply Costs Among Customer Classes on a Volumetric Basis, Docket No. 94-430 (September 1, 1998) ("unlike electric and telephone companies, there is no legislative authority for water utilities to consider income of customers in establishing rates. . .Utility rates cannot be designed to give preference to any particular person or class of customers.")

[5] PL 1991, c. 253, at 35-A MRSA, section 3153-A(1)(G).

[6] Re. Investigation into Development of Proposals for Pilot Low-Income Programs for Central Maine Power Company, Docket No 91-151-C, Summary of Decision and Short Order, October 1, 1992) (hereafter CMP ELP Order).

[7] The stipulation was agreed to by the Commission staff, the Public Advocate, the state association of Community Action Agencies, the American Association of Retired Persons (AARP), and a coalition of community-based low-income advocacy groups.

[8] CMP ELP Order, at 1.

[9] Id., at 2.

figure was merely a guide to determining the reasonableness of program costs.[10] It was neither a floor nor a ceiling on funding.

The CMP participant population was divided into two income tiers. The lowest income tier included customers with income at or below 75% of the Federal Poverty Level.[11] A second tier reached customers up to 150% of the Poverty Level.[12] In turn, these income tiers were divided into heating and non-heating customers. Any customer with an estimated annual usage of 12,000 kWh or more was deemed to be a heating customer. Not only did these heating customers pay a higher percentage of income as their copayment under the ELP, but the utility-provided ELP benefits for these customers were reduced by the participant's LIHEAP benefit whether or not that benefit was applied to his or her CMP account.[13] Customers were required to enter into a levelized budget payment plan.[14] Customers whose percentage of income payment would yield a benefit of less than $50 were not enrolled in the ELP.

The CMP Electric Lifeline Program was the first program in the country to distribute percentage-of-income based benefits on a fixed credit basis. Under the program design presented by stipulation and adopted by the Maine PUC, a household copayment was calculated by applying the required percentage of income payment to the customer's income. This household copayment was subtracted from the customer's expected bill (estimated by applying current rates against projected usage) to determine the annual benefits necessary to reduce the bill to the affordable percentage of income. Those benefits were provided on an equal monthly basis, thus reducing the total bill to an affordable amount, so long as the customer's consumption remained at its past levels.

The CMP ELP did not incorporate an arrearage forgiveness program. Rather, preprogram arrears were made subject to a 12-month deferred payment arrangement, the payments on which were added to the customer's percentage of income based copayments. The monthly arrears payment, however, could not exceed the participant's copayment amount. Any arrearage still remaining at the end of the 12-month payment arrangement would be subject to a second payment arrangement for which the customer would be eligible at that time.

Finally, the Commission held that the Company was authorized by statute to use some part of its rate affordability benefits to fund energy usage reduction efforts –other than fuel switching—

---

[10] "When the Commission established 0.5% of annual jurisdictional revenues as the 1991/92 ELP benefit level, we were designing a program from scratch. The Commission viewed the 0.5% as a reasonable balance between providing assistance to low-income customers and the expense to the general body of ratepayers. We believe that future growth in ELP benefit levels will be a function of changes in federal poverty guidelines as well as changes in CMP's revenues. There is little justification to tie ELP benefit levels exclusively to CMP's revenue increases and decreases. To do so would create undesirable volatility in the ELP from year to year." Re. Modifications to Central Maine Power Company's Electric Lifeline Program for the 1993-94 Program Year, Docket No. 93-156, Order, at 8 (October 22, 1993) (hereafter Modification Order).

[11] It is important to remember, however, throughout that the program was limited to the LIHEAP participant population.

[12] These two tiers represented a change from the original CMP program. The original CMP program, approved by the Maine PUC in October 1991, was directed exclusively to customers with income at or below 75% of the Federal Poverty Level. Re. Investigation into the Development of Proposals for Pilot Low-Income Programs for Central Maine Power Company, Docket No. 91-151-C, Summary of Decision and Short Order, October 23, 1991.

[13] This program requirement was subsequently eliminated. Modification Order, at 14 – 16. The Maine LIHEAP program had adopted program regulations assigning LIHEAP benefits to the primary heating provider. "The policy of imputing HEAP benefits began in the first year of the Electric Lifeline Program. The Company was concerned that, in principle, ELP benefits should not duplicate benefits provided under HEAP." Modification Order, at 15. Given the change in LIHEAP assignment policy, however, and the fact that the imputation of benefits was preventing some customers from entering the program, the PUC eliminated this requirement, with the proviso that should LIHEAP change its policy back, the PUC would revisit the issue.

[14] This requirement was subsequently limited only to customers who entered the program with greater than 30-day arrears. Re. Modifications to Central Maine Power Company's Electric Lifeline Program for the 1993-94 Program Year, Docket No. 93-156, Order, at 10-11, October 22, 1993). The Company estimated that roughly 33% of its 9,100 total ELP customers, or about 3,000, had arrears of this magnitude.

for high use ELP customers. "The Commission agrees," it said, "with the Company and the other parties that using ELP benefits to fund measures that reduce electric usage for ELP customers is in keeping with our legislative directive to implement low-income programs in an efficient manner, and the Commission's goal of operating least-cost low-income programs."[15] The Commission noted:

> Expending ELP benefits to finance electric reduction measures may reduce the long-term costs of the ELP, make electric bills more affordable for low-income customers, and cause less adverse rate impacts for the general body of ratepayers than continuing to provide high ELP benefits. CMP, [Bangor Hydro], and [Maine Public Service] are all entering into their third year of operating low-income programs. While we may modify one or more of the low-income programs, the Commission has no plans to discontinue the programs. This is another reason why it makes sense to use ELP funds to finance energy efficiency measures that reduce electric consumption over a number of years.[16]

While the CMP program served as the model for the subsequent proposed statewide program, the initial programs of Maine's other two investor-owned utilities substantially differed.

Maine Public Service Company

The Maine Public Service (MPS) program, known as PowerPACT, was directed exclusively toward electric heating and electric water heating customers, with the purpose of excluding low-use customers from receiving benefits.[17] Under the PowerPACT program, the utility would provide a fixed benefit to low-income customers who made agreed-upon payments throughout the winter heating season. In order to participate in the program, customers were required to negotiate individual payment plans for their winter bill. Those payment plans were often less than what the bill at full rates would be. If the customer made his or her payments, the utility would then grant a bill credit for the customer's account.

The bill credit provided through PowerPACT was not explicitly designed to yield an affordable bill to program participants. While customers with lower incomes received larger credits – a participant with income below 75% of the Federal Poverty Level received a credit of $160 while a customer with income between 125% and 150% of Poverty Level received a credit of $85— the credit did not vary based upon actual income or upon customer consumption.

Rather than seeking to promote affordability, as measured by energy burden, the purpose of the PowerPACT program was to provide incentives for low-income customers to maintain current winter bill payments. As originally proposed, a customer was required to make each of his or her winter bill payments in a full and timely fashion in order to receive the PowerPACT benefits. Under this approach, if a customer missed his or her December payment, the benefit would not be granted whether or not that December payment was subsequently made and irrespective of the payment pattern during the remainder of the winter. The program was quickly modified, however, to provide that so long as the winter payments had been paid by the time the credits were granted in May, program participants would receive their PowerPACT credits.[18]

---

[15] Modification Order, at 30.
[16] Modification Order, at 30.
[17] See, Re. Investigation of Modifications to Maine Public Service Company's PowerPACT Program for the 1993-1994 Program Year, Order, at 2, Docket No. 93-158 (Maine PUC 1993). (hereafter MPS Modification Order).
[18] The Company had argued that no benefits should be paid if all payments had not been made in a timely fashion, since "the original purpose of this program was to improve payment behavior." The Public Advocate had argued that a "residual benefit" should be paid, after subtracting the missed payments from what benefits would otherwise have been provided. The Commission ultimately accepted staff's recommendation that "customer be allowed to cure a default on winter payments at any time prior to the award of the credit in the Spring." Modification Order, at 8.

Early in the program development, the state Office of Public Advocate's office recommended that the program be changed to a burden-based program. "The OPA argues that all three utility-sponsored programs should be similarly designed, except to the extent that demonstrably different customer needs exist. In addition, the OPA argues that as a general matter of policy the percentage-of-income approach that targets benefits to customers as a function of income and usage is a more efficient use of program dollars."[19] The Commission rejected that argument, however, holding that "while continued experience may lead us to decide to institute a uniform program for each of the three major electric utilities in the State at some point in the future, for now we are satisfied that MPS's PowerPACT Program adequately responds to the requirements of the Electric Rate Reform Act."[20]

Perhaps one of the most significant developments in the MPS PowerPACT program was its system of cost-recovery. The Commission approved the creation of a PowerPACT reserve.

> By establishing this reserve, both MPS and its ratepayers will be protected against significant departures between the PowerPACT allowances included in rates and actual cost expenditures. MPS shall design this PowerPACT reserve account to automatically account for differences between the cash flows received from ratepayers to fund the reserve (e.g., 0.54% of Maine-jurisdictional electric revenues) relative to the amount expended for the PowerPACT program costs. Any reserve surplus will be treated as a deduction from rate base on future rate cases. Net reserve deficiencies, if this situation were to occur, would be treated as a rate base addition in future years.[21]

In its inaugural year, the deferred account would equal 0.54% of Maine jurisdictional revenues from the last calendar year prior to the PowerPACT program year. The deferred account would be collected in rates "subject to the standard prudence review" and as an addition to rate base. "Thereafter, expenditures that exceed or fall short of the deferred account will be added to or deleted from rate base in a subsequent rate case."[22] The Commission made clear, however, that only benefits given, not administrative costs, were to be included in the deferred account.

Bangor-Hydro Electric Company

Bangor Hydro-Electric Company (BHE) adopted a Low-Income Rate (LIR) in response to the Maine Commission's directive to promulgate low-income assistance programs. Under the BHE program, the utility offered four tiers of discounts based upon the income of participating customers:

- Participants with income at or below 50% of the Federal Poverty Level received a 33% discount on monthly consumption above 100 kWh.
- Participants with income between 50% and 75% of Poverty Level received a 25% discount on monthly consumption over 100 kWh.
- Participants with income between 75% and 100% of the Federal Poverty Level received a 17% discount on usage above 100 kWh; and

[19] Id.
[20] Id.
[21] MPS Modification Order, at 6.
[22] Id., at 6 – 7.

- Participants with income between 100% and 150% of the Federal Poverty Level received a 10% discount on usage above 100 kWh.[23]

While the BHE program was designed to provide higher benefits to lower income customers, the company did not seek to tie its discounts to any determination of what was required to achieve affordability.

Despite the statutory language directing the Commission to develop "rates or bill payment assistance programs" for LIHEAP recipients "that take into account the difficulty these customers have paying in full for electric service. . .taking into account the necessity of maintaining electric service," Bangor Hydro asked the Commission to terminate its LIR program for "business-based reasons."[24] The Company argued that "the impact of LIR's cross-subsidies on its rates in a competitive environment are undesirable."[25] Bangor-Hydro argued that low-income rate affordability programs must have one of two mutually exclusive goals. According to the Company:

> The goal of the Program must either be: (1) to pay for itself and therefore be justified on cost-effectiveness grounds, or (2) to provide assistance to low-income ratepayers and therefore be justified as a "social program." The Company insists that the Program can have no overlap or mixing of goals.[26]

The Maine PUC rejected this argument, cautioning the Company not to "let its distaste for what it views as a social program cloud its judgment." The Commission noted that "we understand that the Company would prefer to discontinue its LIR Program," but warned that "the legislature has directed the Commission to pursue assistance programs for low-income electric ratepayers. The Commission has ordered Bangor Hydro to implement and modify its LIR Program. These are facts that the Company must accept."[27]

The goals of Maine's low-income programs are two-fold, the PUC told Bangor Hydro:

- "One goal is to provide assistance to low-income residential electric ratepayers;" and

- "Another goal is to deliver that assistance in as efficient a manner as possible."

The Commission noted further that "these goals are not at all times consistent and must, in certain contexts, be weighed and balanced by the Commission."[28] Parties must be careful not to confuse "the exercise of ***identifying*** goals with the act of ***balancing*** these goals." (emphasis in original). The Commission ultimately told the Company that "we expect Bangor Hydro to design and implement its LIR Program in a cost-effective way that targets benefits to low-income residential ratepayers that most need assistance while maintaining Program delivery costs to the overall body of ratepayers."[29]

B. The State Regulatory Framework after Electric Restructuring

The Maine regulatory approach to low-income bill payment assistance substantively changed when the state legislature approved the restructuring of Maine's electric industry in 1997. In that

[23] Re. Investigation of Modifications to Bangor Hydro-Electric Company's Low Income Rate Program for the 1993 – 1994 Program Year, Docket No. 93-157, Order, at 7 – 10 (ME PUC October 21, 1993). (hereafter BHE Modification Order).
[24] BHE Modification Order, at 3.
[25] Id.
[26] Id., at 4.
[27] Id.
[28] Id., at 5.
[29] Id., at 12.

restructuring statute, the legislature explicitly directed the Maine Commission to implement a statewide assistance program. The legislation was directed not simply toward the state's three investor-owned electric utilities, but to Maine's consumer-owned electric utilities as well.[30]

The Maine electric restructuring statute set forth several basic policy directions for the Commission to pursue in implementing the new low-income assistance programs. The legislation provided:

- The new program was to "continue existing levels of financial assistance for low-income households";
- The new program was to provide "comparable benefits for electric customers throughout the State";[31]
- A single administrative entity (the Maine State Housing Authority) for a statewide program, using a common set of rules and administrative procedures, will be more efficient than alternative administrative structures; [32]
- The program is to be paid for by "funds collected by all transmission and distribution utilities in the State."[33]

Original Statewide Program Proposal

While not directed by legislation to adopt a percentage of income approach to the "new" statewide Electric Lifeline Program, the Maine Commission initially chose to pursue such a design. The basic decision to make, the Commission said, was whether to adopt a percentage of income model such as the existing CMP program or to adopt a tariffed rate discount such as the existing Bangor-Hydro program. The Commission noted that "the discount rate model and the percentage of income model each contain many aspects similar to the other; the major difference is the targeting of funds under the percentage of income model to customers with the greatest need."[34] The Maine PUC reasoned:

> We prefer the percentage of income model for several reasons. First, under the percentage of income model, eligible customers will receive a benefit that is directly related to the customer's annual electricity bill as a function of their household income. Second, the percentage of income model better targets limited benefits dollars to those customers who need it most. We acknowledge that the statewide application of the percentage of income model will produce fewer eligible customers and larger average benefits than would the statewide application of a tariffed discount rate. However, such a distribution of limited program dollars is the best way to provide the assistance required by section 3214. Finally, while a statewide program employing a targeted rate discount design would be somewhat simpler and less costly to administer, the superior results of the deployment of a percentage of income model more than justify the associated administrative costs.[35]

[30] The PUC ultimately exempted three "island" utilities from the "statewide" program. The Commission found that these utilities had been exempted from the electric restructuring generally, and approved their exemption from the low-income program requirement as well. Re. Rulemaking to Create the Electric Lifeline Program (Chapter 314), Notice of Rulemaking, at 3, Docket No. 2001-42, February 6, 2001 (ME PUC).
[31] Notice of Rulemaking, at 4, quoting Section 3214(1) as articulating a policy that "electricity is a basic necessity to which all residents of the State should have access. . ."
[32] The Commission noted, however, that it could not direct the state LIHEAP agency to administer the program. The MSHA would need statutory authority to become the program administrator. Notice of Rulemaking, at 4.
[33] Id., citing 35-A, M.R.S.A. §3214(2)(A).
[34] Notice of Rulemaking, at 5.
[35] Notice of Rulemaking, at 5 – 6.

The Commission proposed adopting the fixed credit approach of the CMP program.

Moreover, the Commission set the "affordable" payment levels at 6% of income for households at or below 75% of the Federal Poverty Level and 11% for households with income between 75% and 150% of Poverty. The Commission noted that the percentage of income-based customer payment involved a balancing of customer affordability and program cost. "The percentage of income used to calculate the customer's co-payment directly affects the overall cost of the ELP. We have considered a variety of percentage of income combinations and assessed their corresponding benefit levels and costs. Based on the Needs Assessment and our additional analysis to date, the percentage of income structure in the proposed rule will provide financial assistance levels consistent with section 3214 and will do so within an affordable framework."[36]

Finally, the proposed statewide Maine program incorporated an arrearage forgiveness program for the first time. None of the three utility low-income programs had provided for the forgiveness of preprogram arrears. Nonetheless, the Commission found that an arrearage forgiveness program was necessitated by statute:

> If a customer enters the program with a high arrears balance, the risk of non-payment and resulting collection activity is increased. The impact of a large arrears balance can totally wipe out the "affordability" of a participant's required co-payment under a percentage of income program design, sometimes doubling the required payment amount so that the participant is paying more than 20% of his or her income to maintain electric service. Payments of such magnitude are incompatible with the 35-A §3214(1) requirement of "adequate" financial assistance to "all residents of the State."
>
> Under the proposed rule, an eligible customer's pre-program arrears will be deferred during the term of the payment plan. This is a change from CMP's program which provided for pre-program arrears to be included in the calculation of the customer's payment plan up to a point where the customer's expected monthly payments are double what the amount would have been without the inclusion of the pre-program arrears. The inclusion of pre-program arrears in the customer's payment plan defeats the purpose of the PIP program, i.e., to establish a customer's co-payment that is affordable based on that customer's income level.[37]

The Commission directed each transmission and distribution utility "to offer a participating customer with deferrable pre-program arrears the option to obtain a forgiveness of some or all of the participant's deferred arrears balance." The Commission proposed a matching program, under which the utility would forgive $2 for every $1 of deferrable pre-program arrears paid by the participant.[38]

Revised Statewide Program

In response to comments on its initial program proposal,[39] the Maine Commission substantially altered its approach to the low-income program designs. The Commission noted that, while its

[36] Notice of Rulemaking, at 6.
[37] Notice of Rulemaking, at 10.
[38] Id.
[39] The Commission noted that its ultimate program design "represents a series of compromises that were necessitated, in part, by the need to get the statewide program in place by October 1, 2001." Re. Rulemaking to Create a Statewide Low-Income Assistance Plan (Chapter 314), Docket No. 2001-42, Order Adopting Rules, at 2 (ME PUC, July 31, 2001).

rulemaking setting forth a statewide program would be completed in the spring, it had established a deadline of having new programs on-line for the coming winter heating season. Bowing to the pressure of that impending deadline, rather than mandating a uniform statewide program, therefore, the Commission adopted regulations providing that each utility could promulgate a program specific to its service territory so long as the program was consistent with PUC-prescribed standards. Moreover, rather than looking at needs on an aggregated statewide basis, the Commission said:

> The purpose of the Statewide Low-Income Assistance Plan and the LIAPs is to establish a series of bill payment assistance programs for low-income residential customers that will (1) make participants' electric bills more affordable; (2) make assistance available to low-income customers throughout the State; and (3) ensure that each of Maine's transmission and distribution utilities has the funds necessary to implement a LIAP that addresses the need that exists in that particular utility's service territory.[40]

Noting that the statute "does not require a single, uniform statewide low-income assistance program," the revised rule allowed each of the state's three investor-owned utilities to continue their existing programs.[41] The Commission stated that "we expect that each of the new LIAPs will be modeled after one existing low-income program, although the amended rule does not require this."[42] The Commission did include, however, "several basic design features that all [low-income assistance programs] must incorporate."[43] Amongst those design features were:

- That benefits be designed so that participants with the greatest needs receive the highest benefits;
- That benefits be tiered so that higher benefits will be paid to households with incomes that place them at lower levels of Poverty;
- That each program which does not employ a percentage of income benefit structure must have a minimum of four separate benefit categories that are based on the federal poverty guidelines; and
- That each program must include a provision that tracks changes in the federal LIHEAP program which may affect a customer's eligibility for the program (such as an increase in LIHEAP eligibility).[44]

The new Commission regulations dropped any requirement of an arrearage forgiveness program, "primarily because of a lack of information regarding the cost to utilities, and ultimately to ratepayers."[45] The Commission subsequently noted that "while the concept of arrears forgiveness has been discussed in this rulemaking, the details regarding design and cost have not been sufficiently developed in this proceeding. Therefore, we are not prepared to incorporate a provision into the adopted rule that requires transmission and distribution utilities to implement a pilot pre-program arrears forgiveness program."[46]

---

[40] Re. Rulemaking to Create a Statewide Low-Income Assistance Plan, Docket No. 2001-42, Notice of Further Rulemaking and Request for Comments, at 8 (May 15, 2001).
[41] Notice of Further Rulemaking, at 5.
[42] Id
[43] Id.
[44] Id., at 9.
[45] Id., at 3.
[46] Order Adopting Rules, at 3.

C. Summary and Conclusions

The state of Maine was one of the early pioneers in implementing rate affordability programs for low-income utility customers. In many ways, the state helped create the framework for what other states would follow for years (if not decades) to come. Many of the decisions reached, as well as the rationales utilized, helped to define future discussions about low-income rate affordability programs. The Maine PUC's use of 0.5% of revenue as a touchstone for balancing the interests of low-income program participants and the ratepayer population as a whole has been since cited. The Maine percentage, of course, was on total retail revenue not merely residential revenue.

The Maine program adopted requirements, both for participating customers and participating utilities, that deserve emulation. On the one hand, ELP participants were required to enter into a levelized budget payment plan, a not unreasonable requirement in exchange for substantial affordability discounts. On the other hand, the ELP, while ultimately not adopting an arrearage forgiveness program, set a cap on the monthly payment amounts that utilities could require from low-income customers as part of any deferred payment plan.

The Maine program recognized that combining energy efficiency with the affordability program could be justified over the course of time. Noting that it had "no plans to discontinue the programs," the Commission found that it "makes sense" to finance efficiency programs that reduce electric consumption "over a number of years."

While not ultimately adopted, the Maine program generated an observation from the state Office of Public Advocate that could well serve other states. A common debate within a state considering rate affordability programs is whether to adopt a single statewide program or to allow utilities to adopt individual programs. According to the OPA, there should be a rebuttable presumption that single statewide program design is appropriate. The OPA argued that "all three utility sponsored programs should be similarly designed, except to the extent that demonstrably different customer needs exist." The ultimate decision to allow different program designs for each utility within the context of state-prescribed standards, including prescribed design features, was not entirely inconsistent with the OPA proposal.

The Maine Commission also acknowledged that its role was to balance the goal of providing affordability assistance with its role of protecting the interests of non-participating customers. That balance might occur in defining the participant tiers (and the corresponding percentage of income contributions). It encompassed whether to promulgate an arrearage forgiveness program as well.

IV. Low-Income Affordability Programs

The two major affordability programs available to low-income households in Maine are the LIHEAP Program and the Maine Low-Income Assistance Program (LIAP).

- LIHEAP Program – In 2005, the Maine LIHEAP program received about $31.8 million in funding from the Federal government.[47] Since about 14% of low-income households use natural gas or electricity for their home heating fuel, we will estimate that about $4.5 million was made available to gas and electric customers for LIHEAP benefits.

[47] Source: LIHEAP Clearinghouse

- Maine Low-Income Assistance Program – In 2005, the Maine Low-Income Assistance Program furnished about $6.3 million in electric and gas benefits to eligible households.[48]

In total, about $11 million was available to help pay the electric and gas bills for low-income households. Using the ACS data, we estimated the following statistics regarding the aggregate electric and gas bills for low-income households in Maine.

- Aggregate Electric and Gas Bill – The total electric and gas bill paid directly by low-income households is estimated to be about $103 million. The available funding of $11 million in benefits would cover about 11% of the total bill for low-income households.

- 5% Need Standard – Some analysts suggest that 5% of income is an affordable amount for low-income households to pay for the energy needs. The aggregate value of electric and gas bills that exceeds 5% of income is estimated to be about $68 million. The available funding of $11 million in benefits could cover about 16% of the unaffordable amount for low-income households. [Note: If benefits from either of these two programs are allocated to households with an energy burden less than 5% of income, the program would not cover 16% of the estimated need.]

- 15% Need Standard – Some analysts suggest that 15% of income is an affordable amount for low-income households to pay for the energy needs. The aggregate value of electric and gas bills that exceeds 15% of income is estimated to be about $28 million. The available funding of $11 million in benefits could cover about 39% of the unaffordable amount for low-income households if it were targeted to only those households with energy bills greater than 15% of income.

- 25% Need Standard – Many low-income households pay more than 25% of income for energy service. Among the ratepayer-funded low-income programs that have used a percent-of-income guideline in their benefit determination process, none have been as high as 25% of income for combined use of electric and gas. The aggregate value of electric and gas bills that exceeds 25% of income is estimated to be about $16 million. The available funding of $11 million in benefits could cover about 69% of the unaffordable amount for low-income households if it were targeted to households with energy bills greater than 25% of income.

These statistics demonstrate that the Maine programs cover a significant share of the total low-income need, but do not meet the entire need from the three need standards examined. In addition, since we know that the programs do not require households to exceed these need thresholds to receive benefits, some of the funding is being allocated to households that do not exceed these need standards.

The Maine LIAP program was targeted for analysis by this study. As noted earlier, the program is implemented differently by each utility. Some important features of the overall program include:

- PUC Oversight – The Maine Commission has overall responsibility for setting LIAP policy. However, each utility sets policies for the program within the broad guidelines set by the Commission.

- Program Operations – Each utility is responsible for operation of the program, including the development of systems for program intake, benefit determination, and financial reporting.

[48] Source: LIHEAP Clearinghouse

- Program Funding/Participation – Overall program funding for 2006 was about $6.9 million and served about 30,000 electric customers.

- Targeting – The program is targeted to the lowest-income customers.

- Benefit Type – The benefit type varies by utility. MPS furnishes a fixed credit as an incentive for paying winter electric bills. CMP furnishes a fixed credit payment that is based on a percent of income calculation. BHE furnishes a variable rate discount, depending on income level.

The following table furnishes detailed information on the LIAP program.

Program State	Maine.
Program Name	Low-Income Assistance Program (LIAP).
Utility Company (If Applicable)	Each transmission and distribution utility offers their own individual energy assistance program. Ten Maine regulated utilities offer a LIAP: Maine Public Service Bangor Hydro-Electric Central Maine Power Houlton Water Company (Electric Department) Van Buren Light and Power Kennebunk Light and Power Swan Island Cooperative Fox Islands Cooperative Town of Madison Eastern Maine Electric Cooperative Some data items herein are documented for Maine's three largest utilities – Maine Public Service, Bangor Hydro-Electric, and Central Maine Power – together serving over 95% of the state.
Program Goals	Establish a series of bill payment assistance programs through the state's transmission and distribution utilities to help eligible low-income residential customers make their electric bills more affordable.
Funding Source (SBC or Rates)	LIAP is funded by Maine's transmission and distribution utilities. Funding level is based upon the number of LIHEAP-eligible customers residing in individual utility service areas.
Annual Program Funds – Allocated (2006-2007)	$6.9 million budget (PY2006-2007; program year runs October 1 through September 30). Each transmission and distribution utility must contribute annually to the cost of the LIAP. The amount that each utility contributes is based upon the number of residential customers it serves. The funds are apportioned to the utilities based upon the amount of LIHEAP eligible customers that reside in each utility's service territory. These amounts are established annually by Commission Order.
Annual Program Funds – Expended (2005-2006)	$6.5 million (PY2005-2006). [NOTE: Program dollars expended as required by the Commission were $5.7 million but one utility voluntarily increased their contribution by $800,000.]
# of Households Served (2005-2006)	Approximately 30,000 (PY2005-2006).
Participation Limit (Maximum # of Enrollees)	None, all eligible customers may participate.
Eligibility – % of Poverty Level	The customer or a member of the customer's household must be eligible to receive a LIHEAP benefit. 150% of federal poverty guidelines. If the household has an elderly member or a child under 24 months, 170% of federal poverty.
Eligibility – Other Criteria	Utility customers must receive residential electric service on a continuing year-round basis. The customer does not receive a housing subsidy that limits the household's total housing costs, including utilities, to a fixed percentage of the household's income. Additional eligibility criteria will vary depending on the program being offered by the customer's utility. [NOTE: Each transmission and distribution utility offers their own individual assistance program.]
Targeted Groups	Low- and very low-income households who receive residential electric service on a continuing year-round basis.
Benefit Calculation Type (% of Income, Benefit Matrix, etc.)	Each utility operates its own LIAP within an overall program design framework established by Commission rule. The LIAPs offered vary from a PIP (Percentage of Income Plan) to a reduced-rate program to a lump-sum benefit program.

Benefit Calculation (Document Formula)

Maine Public Service

Benefit matrix:

Income (% of FPG)	Benefit
Up to 75%	$220
76-125%	$145
126-150%	$120
151% and Over	$105

If more than $20,000 remains in the fund at PY-end, the balance is distributed among program participants. The funds are allocated among the four income groups proportionate to the amount of funding paid to that group in the current PY. The group allocation is paid in equal amounts to all program participants in the income group.

From November through March, customers are encouraged to pay the smaller of their bill or an individualized special payment amount assigned by the utility.

Customers with high usage (> 4,000 kWh) in the prior year's November – March period and an arrearage of at least $100 are required to accept a free home energy audit.

Central Maine Power

Calculate % of Income Factor

If income is at or below of 75% of FPG and annual usage is . . .

- 5,000 kWh or less, % of Income Factor is 4%
- 9,000 kWh or more, % of Income Factor is 9%
- Between 5,000 and 14,000 kWh, % of Income Factor is:
  [(((Estimated annual usage in kWh - 5,000) / 9,000) * .05) + 4.0]

If income is over 75% of FPG and annual usage is . . .

- 5,000 kWh or less, % of Income Factor is 5.1%
- 9,000 kWh or more, % of Income Factor is 10.1%
- Between 5,000 and 14,000 kWh, % of Income Factor is:
  [(((Estimated annual usage in kWh - 5,000) / 9,000) * .05) + 5.1]

Calculate Co-Payment

Annual household income * % of Income Factor.

[NOTE: The annual participant co-payment shall not be less than 12 times the rate for the first 100 kWh under the Rate A – Residential Service Schedule.

Calculate Annual Credit

Estimated annual bill minus participant co-payment = annual credit.

The annual credit shall be reduced by any HEAP benefit the participant applies to his or her account, except for supplemental HEAP benefits.

If the annual credit is less than $50, the customer is ineligible for the program.

Cap Annual Credit

The annual is capped at $756 if the calculated benefit exceeds that amount.

Calculate Monthly Credit

Annual credit / 12.

Credit Adjustments

The customer's credit amount may be adjusted under the following conditions:

- Customer moves to a new location
- Electrically powered life support equipment in installed at the customer's location
- Adults who reside in an ELP household separate
- When it is determined that the usage used to calculate the original ELP credit includes nonresidential use, the amount of monthly credit may be adjusted accordingly.

Benefit Calculation (Document Formula)

Bangor Hydro-Electric Company

Income 50% of FPG or Below

Distribution Service	$5.34 for the first 100 kWh or less used per month $0.00798 per kWh for all kWh in excess of above used per month
Stranded Cost	$2.01 for the first 100 kWh or less used per month $0.02007 per kWh for all kWh in excess of above used per month
Transmission Service	$0.01176 per kWh for all kWh
Bundled Delivery Service month	$7.35 per month plus $0.01176 for the first 100 kWh or less used per $0.03981 per kWh for all kWh in excess of above used per month.

Income 51-75% of FPG

Distribution Service	$5.34 for the first 100 kWh or less used per month $0.02249 per kWh for all kWh in excess of above used per month
Stranded Cost	$2.01 for the first 100 kWh or less used per month $0.02007 per kWh for all kWh in excess of above used per month

	Transmission Service	$0.01176 per kWh for all kWh
	Bundled Delivery Service month	$7.35 per month plus $0.01176 for the first 100 kWh or less used per month $0.05432 per kWh for all kWh in excess of above used per month.
	Income 76-100% of FPG	
	Distribution Service	$5.34 for the first 100 kWh or less used per month $0.02601 per kWh for all kWh in excess of above used per month
	Stranded Cost	$2.01 for the first 100 kWh or less used per month $0.02007 per kWh for all kWh in excess of above used per month
	Transmission Service	$0.01176 per kWh for all kWh
	Bundled Delivery Service month	$7.35 per month plus $0.01176 for the first 100 kWh or less used per month $0.05784 per kWh for all kWh in excess of above used per month.
	Income100-175% of FPG	
	Distribution Service	$5.34 for the first 100 kWh or less used per month $0.03347 per kWh for all kWh in excess of above used per month
	Stranded Cost	$2.01 for the first 100 kWh or less used per month $0.02007 per kWh for all kWh in excess of above used per month
	Transmission Service	$0.01176 per kWh for all kWh
	Bundled Delivery Service month	$7.35 per month plus $0.01176 for the first 100 kWh or less used per month $0.06530 per kWh for all kWh in excess of above used per month.
	Program participants must accept no-cost energy management measures and programs offered by the utility, the Maine State Housing Authority, or other federally or state-funded programs, except when the participant is a renter and the landlord withholds required consent.	
Benefit Amount (Mean Subsidy)	**<u>Maine Public Service</u>** $170. **<u>Central Maine Power</u>** $285. **<u>Bangor Hydro-Electric Company</u>** $168.	
Benefit Limit	**<u>Maine Public Service</u>** $220. **<u>Central Maine Power</u>** $756. **<u>Bangor Hydro-Electric Company</u>** None.	
% of Program Dollars Spent on Administrative Costs	Approximately 3%.	
Benefit Distribution (Fixed Payment, Fixed Payment with a Limit, Fixed Credit, Fixed Credit with Budget Billing, etc.)	**<u>Maine Public Service</u>** One-time annual credit on the June or July bill. [NOTE: A supplemental payment will issued if at least $20,000 remains in the fund at PY-end.] **<u>Central Maine Power</u>** Fixed monthly credit with budget billing (ELP Budget Plan). See “Benefit Calculation,” above. <u>NOTES</u> The payment arrangement will be adjusted periodically to reflect the difference between actual and estimated usage. The customer must remain on their budget plan to retain the monthly credit. Customers must also accept all no-cost DSM measures proposed by the utility. This does not apply if a landlord will not consent to the measures. **<u>Bangor Hydro-Electric Company</u>** Program participants pay reduced rates for their electricity.	
Arrearage Forgiveness Plan – Y/N	No.	
Amount Eligible for Forgiveness	n/a	

(Dollars, %, or Unlimited)	
Forgiveness Requirement (Payments, On-Time Payments)	n/a
Forgiveness Period (One-Time, 12 months, 24 months, etc.)	n/a
Program Manager (PUC, State, Utility)	Maine State Housing Authority.
Data Manager (PUC, State, Utility, Other)	Maine State Housing Authority.
Enrollment Responsibility (Utility, CAP, etc.)	Local community action agencies.
Application Method (Mail, In-Person, Phone)	In-person and over the phone. [NOTE: Other options may be available at the discretion of the community action agency taking the application.]
Joint Application	No. [NOTE: However, the LIAP application will be completed during the LIHEAP application appointment.]
Recertification Required – Y/N	Yes.
Recertification Frequency	Annually. [NOTE: Bangor Hydro-Electric sends notification to prior-year low-income rate customers of the need to recertify their HEAP eligibility by January 1.]
Recertification Method (Agency, Automatic Enrollment, Self-Certification)	Through the community action agencies.
Recertification Procedures	LIAP recipients must complete a new LIAP application for the new program year. The application is typically completed along with the customer's LIHEAP application.
Removal Reasons	When the customer no longer has active electricity service.
Other Communications	n/a
Budget Counseling	No.
Evaluation Frequency	None. The program has not been evaluated. [NOTE: Utilities, however, are required to submit annual statistical reports (dollars spent, households served, etc.]
Coordination with LIHEAP	Yes. The LIAP application will be completed during the LIHEAP application appointment.
Coordination with WAP	No.
Coordination with Energy Efficiency Programs	No.
Coordination with Other Energy Affordability Programs	No.

V. Affordability Program Evaluation Findings

The LIAP program has not been evaluated.

VI. Low-Income Energy Efficiency Programs

The three major sources of funding for energy efficiency programs available to low-income households in Maine are the DOE Weatherization Assistance Program (WAP), the LIHEAP Program, and the Maine Low-Income Appliance Replacement Program.

- DOE WAP Program – In 2005, Maine received about $3.1 million in funding for the Weatherization Program. These funds were distributed to local agencies to deliver weatherization services to low-income households.[49]

- LIHEAP Program – In 2005, Maine elected to use $4.8 million (15%) of its LIHEAP funding for weatherization.

- Maine Low-Income Appliance Replacement Program – In 2005, the Maine Low-Income Appliance Replacement Program was funded at a level of about $1.7 million.[50]

In total, about $9.6 million was available to help furnish energy efficiency services to low income households in Maine.

It is a little more challenging to estimate the need for energy efficiency programs. In general, we would suggest that energy efficiency programs should be used in place of affordability programs when the energy efficiency programs result in cost-effective savings to the household. The literature on energy efficiency programs demonstrates that programs that target high users achieve the highest savings levels and are the most-effective. For electric baseload, programs that target households that use 8,000 kWh or more are most cost-effective. For electric heating, programs that target households that use 16,000 or more kWh are most cost-effective. For gas heating, programs that target households that use 1,200 or more therms are most cost-effective.

Our primary state-level data source, the ACS, does not ask respondents to report on the amount of electricity or natural gas that they use. However, we can develop a proxy for usage based on the respondent's estimate of the household's electric and gas bill. [Note: kWh price = 9.20 cents, therm price = 1.617].

Using the ACS data, we developed estimates of the number of households that would be eligible for energy efficiency programs using the cost-effectiveness targets. Table 10 shows that 48% of households could be targeted for high baseload bills, 21% could be targeted for high electric heat bills, and 23% could be target for high gas usage.

Table 10
Need for Energy Efficiency Programs for Low-Income Households (2005)

Group	Number of Households with Bills	Number of Households with High Bills	Percent of Households with High Bills
Electric Baseload Services[51]	88,305	42,744	48%
Electric Heating Services	6,382	1,351	21%
Gas Heating Services	2,435	564	23%

Source: 2005 ACS

Most Maine households heat with delivered fuels. As shown in Table 10, the number of high use electric and gas heating households is relatively small. Rather, the focus for the LIARP program is on baseload electric usage. The program is funded at about $2 million per year and serves about 3,400 customers. Our analysis suggests that about 43,000 low-income households have high electric baseload bills and would be cost-effective targets for the program. Therefore, on

[49] Source: LIHEAP Clearinghouse
[50] Source: LIHEAP Clearinghouse
[51] For households that report electric and natural gas expenditures as one bill, we allocated half of the cost to electricity and half of the cost to natural gas.

an annual basis, LIRAP is serving about 8% of the households that represent good targets for the program and about 4% of all low-income customers.

Some important features of the LIARP program include:

- WAP Program Administration – The Maine State Housing Agency administers this program.
- Service Delivery – Program services are delivered by 10 community action agencies.
- WAP Office Collaboration – The program is coordinated with WAP service delivery.
- Demographic/Program Targeting – Since the LIARP program is coordinated with WAP service delivery, it is targeted in the same way as WAP.
- Usage Targeting – Since the LIARP program is coordinated with WAP service delivery, it is targeted in the same way as WAP.
- Funding/Service Delivery – The LIARP program was funded at the level of about $2.0 million. It delivered electric baseload services to about 3,400 customers.

The following table furnishes detailed information on the LIARP program.

Program State	Maine.
Program Name	Low-Income Appliance Replacement Program.
Utility Company (If Applicable)	n/a
Program Goals	Reduce customer electric usage. Increase understanding of energy conservation and energy options. Enhance customers health and safety.
Funding Source (SBC or Rates)	Rates – Maine Public Utilities Commission.
Annual Program Funds – Allocated (2006)	$2 million.
Annual Program Funds – Expended (2006)	$1,953,685.
# of Households Served (2006)	3,370. The program delivered more than 2,565 refrigerators and 30,916 CFLs. [NOTE: The program replaces only one refrigerator per home. Homes can receive CFLs without getting a refrigerator. Thus, the program has served a minimum of 2,565 households.]
Participation Limit	None.
Eligibility – % of Poverty Level	150% of federal poverty guidelines. If the household has an elderly member or a child under 24 months, below 170% of federal poverty.
Eligibility – Home Type	All.
Eligibility – Energy Usage	n/a
Eligibility – Participation in Energy Assistance	The customer or a member of the customer's household must have applied and been approved for LIHEAP benefits.
Eligibility – Other Criteria	None.
Targeted Groups	None.
Measure Determination	Refrigerators are replaced when the estimated energy savings are 750 or more kWh per year. Compact fluorescent lamps (CFLs) – approximately 10 per home – are installed in locations where they will provide the greatest energy savings.
Mean Costs per Home	$480.

(2006)	
Targeted Average Cost (2006)	None.
Cost Limit	None.
Landlord Contribution	n/a – refrigerators are replaced only if they are owned by the household, not the landlord.
% of Program Dollars Spent on Administrative Costs	5%.
Efficiency Measures	Delivery of education services – review of utility bills, home energy conservation tips, appliance inventory, and printed materials such as a Saving Energy calendar, "Do Your Part" weatherization pamphlet, and "Bundle Me Up" brochure. Replacement of 1995 and older inefficient refrigerators. "Inefficient" is defined as a refrigerator that, after metering and when replaced, will save 750kWh annually. Replacement refrigerator size is 18 cubic feet. Replacement of incandescent light bulbs with compact fluorescent light bulbs in commonly used lights. Replacement of halogen lamps/torchieres with compact fluorescent lighting. Replacement of electrically heated waterbed mattresses with conventional innerspring mattresses.
Customer Education – Y/N	Yes.
Education as Part of Service Delivery – Y/N	Yes. Education is done by the auditors.
Education Separate from Service Delivery – Y/N	No.
Follow-Up with Customers – Y/N	None.
Program Manager (PUC, State, Utility)	Maine Public Utilities Commission, Efficiency Maine.
Data Manager (PUC, State, Utility, Other)	Maine State Housing.
Enrollment Responsibility (Utility, CAP, etc.)	The CAPs, during intake, recommend households for either federally funded weatherization service or service under this program. Additionally, the energy auditors make service decisions as regarding this program when doing federal WAP audits.
Number of Provider Agencies and/or Contractors	10 community action agencies.
Type of Provider (For-Profit, CAA, etc.)	Maine's Community Action Programs.
Application Method (Mail, In-Person, Telephone)	[For LIHEAP/WAP] In person.
Joint Application	Yes, for federal LIHEAP and WAP, but not for the LIAP or LIARP.
Reasons for Service Denial	None.
Type of Follow-Up	n/a.
Quality Control (Inspections?, etc.)	None.
Evaluation Frequency	Every third year. The program has not yet been evaluated as it's currently in its third year of operation.
Coordination with LIHEAP	Program participants must receive LIHEAP.
Coordination with WAP	Yes. Efficiency Maine, under a memo of understanding, authorizes CAP energy auditors to order replacement of inefficient refrigerators and install CFLS in homes where they will provide the greatest energy savings. This is often done in conjunction with other weatherization work.
Coordination with Energy Affordability Programs	No.

Coordination with Other Energy Efficiency Programs	None.

VII. Energy Efficiency Program Evaluation Findings

No evaluation has been conducted of the LIARP program.