The Impact of Missouri Gas Energy's
Experimental Low-Income Rate (ELIR)
On Utility Bill Payments by Low-Income Customers:
Preliminary Assessment

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PREPARED BY:

Roger D. Colton
Fisher Sheehan & Colton
Public Finance and General Economics
34Warwick Road, Belmont, MA 02478
617-484-0597 (voice) *** (617) 484-0594 (fax)
roger@fsconline.com

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Kansas City, Missouri

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CHAPTER 1:
INTRODUCTION

This study looks at whether low-income Missouri Gas Energy (MGE) customers receiving energy assistance benefits through the Company's Experimental Low-Income Rate (ELIR) improve their payment patterns relative to low-income customers that do not receive such benefits. Assuming such improvement does in fact occur, the study then examines whether the cost of obtaining such improvement is reasonable given the results.

THE UNAFFORDABILITY OF MISSOURI'S WINTER HOME ENERGY BILLS

The observation that Missouri winters present high and unaffordable home energy bills to low-income households comes as no surprise. "Affordability" in this regard is measured by customer home energy burdens. A home energy burden is simply the household's home energy bill divided by household income. A household with an annual home energy bill of $1,500 and an annual income of $6,000 would therefore have a home energy burden of 25% ($1,500 / $6,000 = 0.25).

Home energy is a crippling financial burden for low-income Missouri households. Data from the National Home Energy Affordability Gap study reports that Missouri households with incomes of below 50% of the Federal Poverty Level pay 38% or more of their annual income simply for their home energy bills. Home energy unaffordability, however, is not simply the province of the very poor. Bills for households between 50% and 100% of Poverty take up 13% of income. Even Missouri households with incomes between 150% and 185% of the Federal Poverty Level often have energy bills above the percentage of income generally considered to be affordable.

TABLE 1
MISSOURI RESIDENTIAL ENERGY BURDENS: BY POVERTY LEVEL

	Poverty Level of Missouri Households				
	Below 50%	50- 74%	75 - 99%	100 – 124%	125 – 149%
Total home energy burden	38.0%	15.4%	10.9%	8.5%	7.0%

National Home Energy Affordability Gap: Missouri Fact Sheet (April 2003).

These, of course, are *average annual* burdens. Winter home energy bills as a percent of winter income impose much higher burdens.

Existing sources of energy assistance do not adequately address the energy affordability gap in Missouri. Actual low-income energy bills exceeded affordable energy bills in Missouri by nearly $273 million at 2001/2002 winter heating fuel prices. In contrast, Missouri received a gross allotment of federal energy assistance funds of $38.7 million for Fiscal Year 2003. Some of those funds will be used for administrative costs, weatherization, and other non-cash assistance.

One impact of the unaffordability of home energy service is the nonpayment of bills. Previous research by the Iowa Department of Human Rights (DHR), however, which is the agency administering LIHEAP in Iowa, found that bill nonpayment is perhaps not even the most significant of the adverse impacts of unaffordable winter home energy bills. A DHR study of Iowa LIHEAP recipients found that:[1]

- Over 12 percent of Iowa LIHEAP recipients went without food to pay their home heating bill. Projected to the total participating LIHEAP population, that meant that about 7,600 low-income households (representing 20,000 Iowa citizens) went without food at times as a result of unaffordable home heating bills.

- More than one-in-five went without medical care to pay for heating bills. This included not seeking medical assistance when it was needed, not filling prescriptions for medicine when a doctor had prescribed it, and/or not taking prescription medicines in the dosage ordered by the doctor.

- Almost 30 percent reported that they did not pay other bills, but did not elaborate as to which bills were not paid. In addition to not paying other bills, many low-income households incurred debt in order to pay both their home heating bills and other basic necessities. They borrowed from friends and/or neighbors or used credit cards to pay for food and other necessities.

Recognizing both the payment problems and health and safety dangers of the lack of home energy during cold weather months, MGE adopted its Experimental Low-Income Rate (ELIR). Through ELIR, MGE provides fixed monthly credits toward MGE bills based on the Poverty Level for a participating customer. Customers with incomes of below 50% of the Federal Poverty Level were entitled to receive a monthly fixed credit of $40, while customers with incomes of between 50% and 150% of Poverty were entitled to a credit of $20 per month. ELIR participants were selected from customers that received federal fuel assistance through the Low-Income Home Energy Assistance Program (LIHEAP). The ELIR initiative was confined to a single geographic region. This allows MGE to compare the payment profile of energy assistance recipients

[1] Joyce Mercier, Cletus Mercier and Susan Collins (June 2000). ***Iowa's Cold Winters: LIHEAP Recipient Perspective***, Iowa Department of Human Rights: Des Moines (IA).

receiving ELIR credits to those energy assistance participants not receiving ELIR in an effort to isolate the impacts of the ELIR credit.

The discussion that follows is based on data from the first 21 months of the program's operation (December 2001 through August 2003). Data from the beginning and ending months (November 2001 and September 2003) was too limited to be useful and was excluded from the analysis.

CHAPTER 2:
THE PAYMENT IMPACTS OF THE EXPERIMENTAL LOW-INCOME RATE (ELIR)

The questions presented in this preliminary assessment are two-fold:

- Does the Experimental Low-Income Rate (ELIR) reduce utility payment troubles and improve payment practices; and

- If so, is the expenditure of money on this improvement reasonable given the results?

If the answer to the first question is “no,” of course, the second line of inquiry becomes moot.

In assessing the payment impacts associated with ELIR, comparisons are made below between three populations:

- The population of MGE customers receiving ELIR credits (hereafter known as the ELIR population);

- A population of MGE customers that have received fuel assistance (and thus are known to be low-income) but that do not receive ELIR credits (hereafter known as the EA population); and

- A population of customers from the general customer base chosen irrespective of income or receipt of energy assistance (hereafter known as the NOEA population).

Data was obtained on customer bills, customer payments, and customer collection history from December 2001 through August 2003. The collection activities ranged from reminder collection letters to the disconnection of service for nonpayment. The "count” of customers in any given month for the three populations was based on the number of bills issued. The number of customers in each population was roughly equal over the course of the project period to date (Table 2).

TABLE 2
NUMBER OF BILLS RENDERED FOR THREE STUDY POPULATIONS
MISSOURI GAS ENERGY EXPERIMENTAL LOW-INCOME RATE

	Dec'01	Mar '02	Jun '02	Sep '02	Dec '02	Mar '03	Jun '03	Aug '03
ELIR population	632	682	706	637	586	559	511	484
EA population	642	689	705	837	579	552	496	455
NOEA population	735	780	834	805	775	751	718	695

NOTE: Selected months

The timing of a bill or payment was designated using the Company's "revenue month." In addition, customer usage data (in units of energy) was provided monthly. Arrears were calculated both at the time a bill was issued (i.e., did a balance at the time a bill was posted exceed the amount of the bill) and at the time a payment was received (i.e., did a balance remain after a payment was posted). While ELIR credits were recorded as a "payment" on the Company's books, they were not considered "payments" within this analysis unless otherwise explicitly noted.

The fixed credit that the ELIR program provided to each customer represented a discount of roughly 30% of a participant's bill on a monthly basis (Table 3). Over the course of the 21 months for which data is available, the program provided a credit of $212,192 toward a combined customer bill of $774,072. No arrearage forgiveness was provided as a component of the program. Customers that participated in the program were subject to the same credit and collection procedures that are directed to all other customers, irrespective of income or energy assistance status.

Because of these substantial bill credits, one additional issue to be examined below involves whether the increased energy assistance can be associated with increased usage on the part of ELIR recipients. The concern to be addressed by this inquiry is whether ELIR participants use their fixed credits to increase consumption beyond that which would otherwise occur. If this occurs, the credit is subsidizing increased usage rather than increasing the affordability of MGE bills by reducing the home energy burden for ELIR participants.

TABLE 3
ELIR FIXED CREDITS IN DOLLARS AND AS PERCENT OF TOTAL MONTHLY BILL

	ELIR Bills	ELIR Fixed Credits	Credit as Percent of Bill
December 2001	$42,523	$0	0%
January 2002	$56,560	$16,556	29%
February 2002	$57,012	$8,538	15%
March 2002	$54,084	$0	0%
April 2002	$48,687	$16,676	34%
May 2002	$42,733	$15,332	36%
June 2002	$43,437	$0	0%
July 2002	$39,878	$27,605	69%
August 2002	$28,026	$11,885	42%
September 2002	$25,732	$11,035	43%
October 2002	$25,160	$10,516	42%
November 2002	$29,081	$9,002	31%
December 2002	$33,202	$10,212	31%
January 2003	$35,221	$9,812	28%
February 2003	$35,013	$9,612	27%
March 2003	$32,093	$9,625	30%
April 2003	$27,268	$9,771	36%
May 2003	$32,652	$9,536	29%
June 2003	$30,208	$9,276	31%
July 2003	$28,250	$8,787	31%
August 2003	$27,250	$8,416	31%
Total	$774,072	$212,192	27%

DEFINING THE "EFFECTIVENESS" OF ELIR

Low-income energy assistance program administrators have struggled for years over how to define when a program has been "effective." The question that presents itself is what level of improvement in payment patterns indicates a "successful" program.

This assessment bases its notions of "effectiveness" on a comparison of the extent to which, if at all, the treatment population (i.e., those receiving ELIR credits) move their bill payment profile toward the bill payment profile of residential customers as a whole. This definition of "success" is inherent with the notion of "affordability."

The stated purpose of ELIR is to make natural gas bills affordable to low-income customers. "Affordability" is defined in terms of "energy burdens" as described above. An affordable total home energy burden (including all home energy end uses) is generally considered to be six percent (6%) of household income.[2] In contrast, an affordable home heating burden is generally considered to be two percent (2%) of household income.[3] The fixed credits provided to ELIR customers were designed to reduce the annual natural gas bills to affordable levels given these boundaries on "affordability."

Reducing bills to an affordable level has a direct impact on how program impacts should be evaluated. The assumed effect of reducing a home energy bill to an affordable level is to remove income as a determinant of payment practices.[4] If affordability is not a factor, low-income payment practices should reflect the payment practices of the population generally. As with the general population, the payment history will not be perfect. Some customers will forget to pay. Others will have competing debts or financial obligations. Others will simply be deadbeats. Without bill unaffordability as a contributing cause, however, the payment profile of the ELIR population should demonstrate two discernible characteristics:

- The ELIR payment profile should be better than the payment profile of the low-income non-ELIR population (i.e., the EA population for this program); and

[2] A household's total shelter burden should not exceed 30% of income to be affordable. A household's total home energy bill should not exceed 20% of the total shelter burden. Putting these two "rules" together yields a total home energy burden of six percent (6%) (20% x 30% = 6%).

[3] While heating consumption is generally greater than electric consumption (in terms of BTU's of energy used), electric bills generally comprise two thirds of a household's total home energy bill. Heating bills (including hot water) comprise the other one-third. One-third of an affordable energy burden of 6% is two percent (2%).

[4] One shortcoming in this assumption is that payment practices may well reflect not simply the *level* of income, but the "fragility" of income as well. *See e.g.*, National Fuel Funds Network (March 2002). ***A Fragile Income: Deferred Payment Plans and the Ability to Pay of Working Poor Utility Customers***, National Fuel Funds Network: Washington D.C.

- The ELIR payment profile should be comparable to the payment profile of the customer population as a whole (irrespective of household income status).[5]

In sum, the notion of "affordability" provides a litmus test to use in measuring the effectiveness of the ELIR initiative. Having received ELIR fixed credits, do the payment practices of ELIR customers improve from those experienced by low-income customers not receiving the credits so as to reasonably reflect the payment practices of customers as a whole (irrespective of income)?

EMPIRICALLY MEASURING A PAYMENT PROFILE

While many people believe the only test for payment troubles involves the presence (as well as the aging) of arrears, this evaluation rejects that approach. While the assessment below obviously considers arrears an important indicator of payment troubles, it is not the only aspect of a payment profile. Instead, the discussion below examines the multiple facets of customer payment. The inquiry below will consider the following payment attributes:

- A measurement of *complete* payment of bills;
- A measurement of *prompt* payment of bills;
- A measurement of *regular* payment of bills; and
- A measurement of "*automaticness*" of payment of bills.

The indices proposed below recognize that while MGE is most concerned with the completeness of bill payment received (a $100 payment toward a $100 bill is better than a $50 payment toward a $100 bill), there are other attributes of bill payment, as well, that should be recognized. These include promptness (timely payment is better than late payment), regularity (12 payments of $100 are better than two payments of $600), and "automaticness" (a payment received without utility collection effort is better than a payment coming in response to collection activity). All four of these attributes can be measured.

The Completeness of Bill Payment

The most common indicator of whether complete payment has been received from a utility customer involves measuring both the incidence and extent of arrears. The

[5] This is different from saying the low-income population should reflect the non-low-income population. The low-income population should reflect the total customer base, comprised of both low-income and non-low-income customers.

incidence of arrears considers the proportion of the total population in arrears. The extent of arrears considers the size of arrears at any given point in time. For this evaluation, arrears were calculated as of the date that a bill was rendered. The presence of arrears was determined by examining whether the posting of a bill for current usage yielded a balance due that was larger than the bill for current usage. If a $50 bill for current usage resulted in a total balance of $85, in other words, the account was deemed to have been carrying a $35 arrears.

The alternative to examining arrears at the time of a bill is to consider whether arrears remain on an account at the time a bill *payment* is posted. This approach was not used for several reasons. First, some ELIR customers make multiple payments in a month. Arrears at the time of any one payment, therefore, would misstate the level of arrears the customer was carrying from month-to-month. Second, many payments for ELIR customers represent energy assistance payments. These payments are not intended to be tied to any particular monthly bill. While a $300 energy assistance payment in November may yield a bill credit the following month, that bill credit does not accurately represent the affordability of winter home energy bills to that customer. Third, the question with arrears is not what arrears exist at any given point in time, but rather what arrears are carried from one month into the next month. That determination can only be made by looking at the arrears appearing on the next month's bill. Finally, while every account, by definition, has a bill each month, not every account has a payment each month. Examination of the arrears appearing on bills thus uses the fullest range of available data.

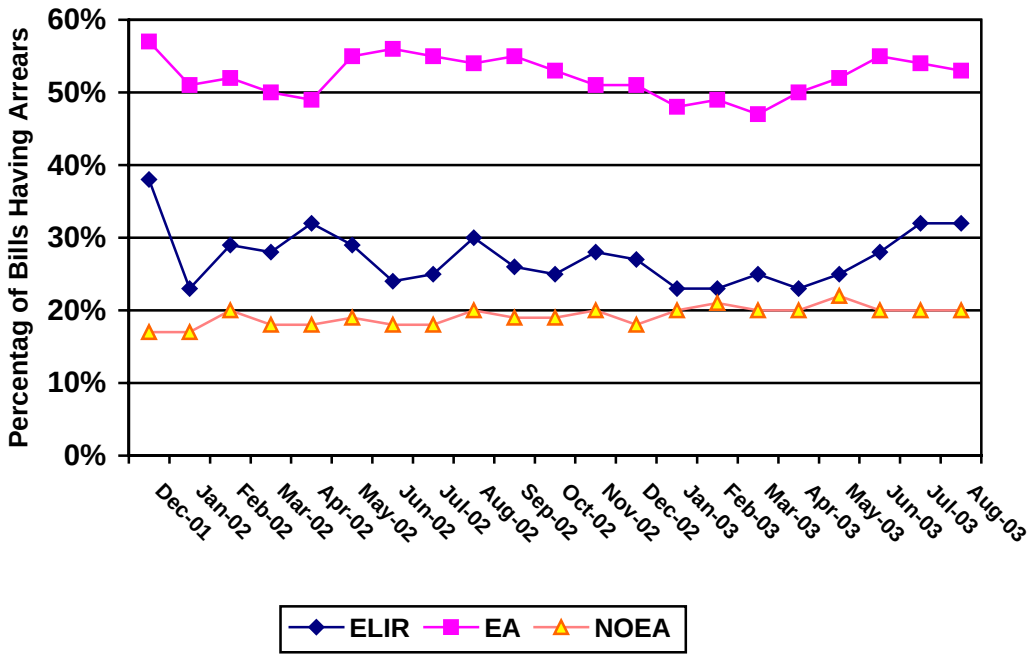
The incidence of arrears: The provision of ELIR fixed credits appears to substantively reduce the incidence of arrears in the low-income population. Figure 1 below presents a comparison of the percentage of bills having arrears in any given month. Again, it is assumed that every account receives one, but only one, bill in a given month. The number of bills thus reflects the number of accounts in each population in each month.

An average of 27% of the ELIR population carries arrears in any given month, compared to the average of 52% of the EA population. While the ELIR fixed credits have the effect of reducing the incidence of arrears in the low-income population, it fails to accomplish two objectives. First, the seasonal variability in low-income arrears remains. Unlike the NOEA population, for whom the incidence of arrears ranges from a maximum of 21.9% of the population to a minimum of 17.1% of the population over the 21 month period, the ELIR population has arrears running from 22.9% to 38.1% of the population.

In addition, the ELIR fails to completely reduce the incidence of arrears amongst fixed credit recipients to the level of arrears in the population as a whole. It appears evident that the ELIR credits *reduce* the incidence of arrears within the low-income population

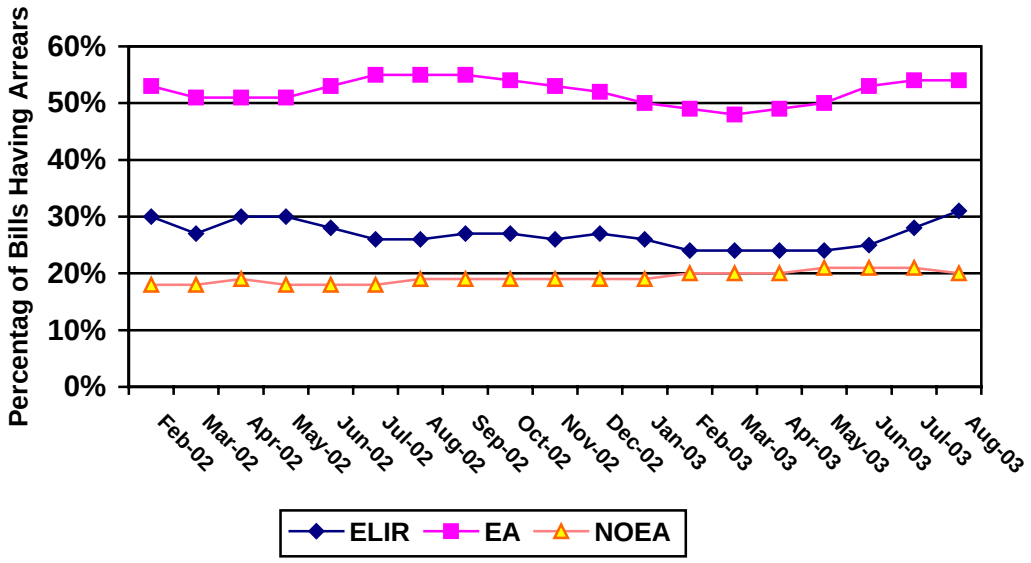
by nearly half. While somewhat over one-in-four ELIR participants have arrears, however, only one-in-five customers in the general population have arrears.

Figure 1
Incidence of Arrears for ELIR, EA and NOEA Populations



Looking at the three-month average arrears presented in Figure 2 helps to smooth out some of the variability. Figure 2 indicates that ELIR has helped to reduce the incidence of low-income arrears, and has helped to keep that incidence of arrears down over the course of the program period. The reason for the increase in arrears for both the EA population and ELIR population in July and August 2003 is beyond the purview of this evaluation.

Figure 2
Incidence of Arrears: ELIR, EA and NOEA
Populations: 3-Month Average



<u>Level of arrears</u>: In addition to considering how many accounts are in arrears, it is important to consider the extent to which each account is in arrears as well (Figure 3). The average dollar of arrears is computed based only on those accounts having arrears. No trimming of arrears was performed either. Hence an account with an arrears of $0.50 was treated the same as an account with arrears of $50. In addition to reducing the number of customers with *any* arrears, the ELIR program helped reduce the level of arrears as well. Arrears within the low-income population was reduced from an average of $173 in the EA population to only $104 in the ELIR population, a reduction of 40% ([$173 - $104 = $69 / $173 = 0.40).

Figure 3
Average Dollars of Arrears in the ELIR, EA and NOEA Populations

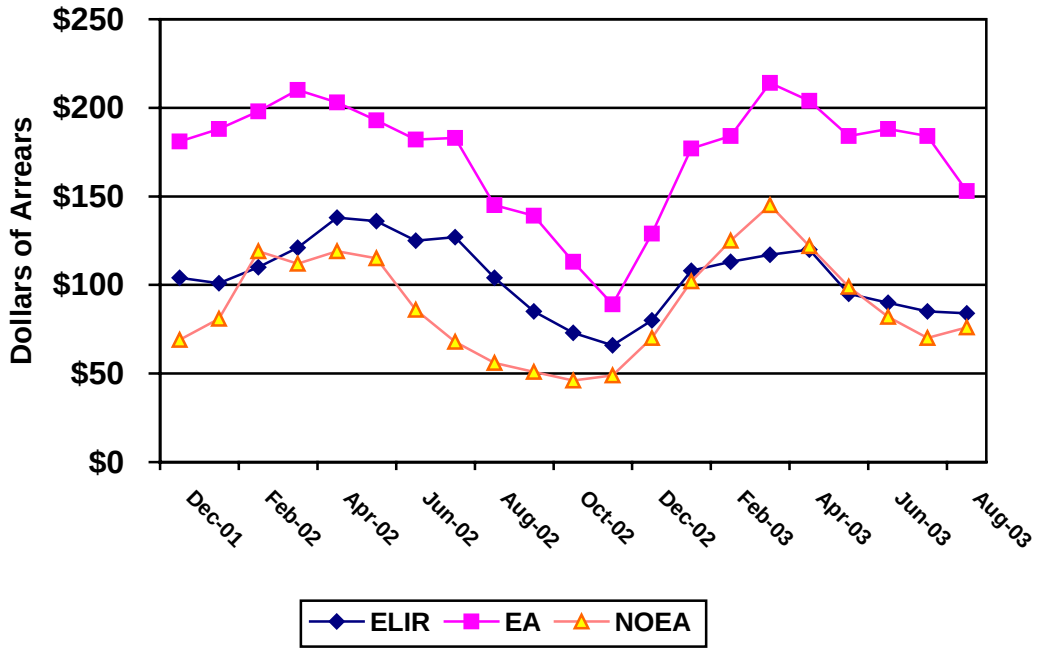
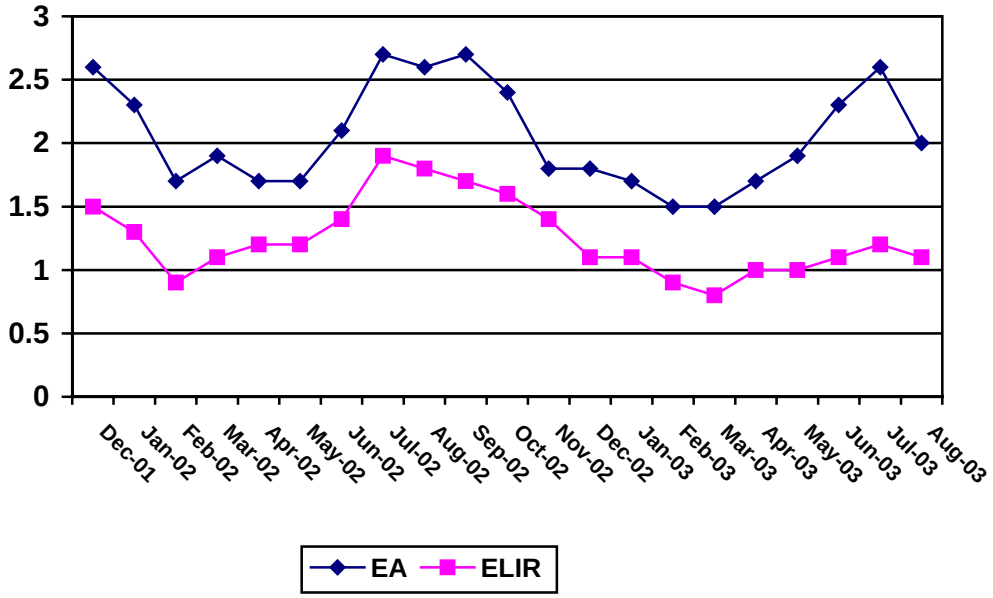


Figure 4 directly presents the success of ELIR in meeting the affordability objective articulated above. Given affordable bills, we have previously posited, ELIR participants should exhibit a payment profile equivalent to the population as a whole. Figure 4 presents an index of the ratio of the low-income dollars of arrears (for the ELIR and EA population) to the total population (NOEA) level of arrears. If the ELIR index is 1.0, the level of ELIR arrears (in dollars) is exactly equal to the level of the NOEA level of arrears on a per account basis. If the index is 2.0, the level of ELIR arrears is twice the level of NOEA arrears. Figure 4 indicates that for the last ten months of the program, the ELIR population has exhibited an almost identical level of performance to that of the population as a whole (NOEA). In contrast, the EA population carries arrears between 1.5 and 2.5 times higher than the population as a whole.

Figure 4
Index of Low-Income Dollars of Arrears to Total Population Arrears



The "Promptness" of Bill Payment.

The promptness of bill payment considers not merely whether a customer pays his or her utility bill in full, but whether the customer pays his or her utility bill on time as well. If a utility renders a bill for $100, that company wants a customer to pay the bill by the due date as well as paying the bill in full. Bill promptness is measured by the use of a "weighted arrears" statistic called "bills behind."

The use of "weighted arrears" as a mechanism to assess payment outcomes is based on a foundation first provided by the Bureau of Consumer Services (BCS) of the Pennsylvania Public Utilities Commission. According to a 1983 BCS analysis, contrary to the argument by that state's utility companies, the Pennsylvania winter shutoff moratorium did not result in an increase in the number of unpaid bills, or the amount of unpaid bills, that would have existed in the absence of a moratorium. The BCS study reported that:

> Average overdue bills are at a low in November and rise to a high point in March or April. The apparent relationship of this pattern to Public Utility Commission regulations is obvious. That is, arrears are greatest at the end of the Commission's winter termination restrictions (December 1 to March

> 31 of the following year) and have been reduced to their lowest point immediately prior to the introduction of those restrictions for the following year. This pattern is consistent with the assertion put forward by utilities that they would be able to control arrearages if there were no winter termination restraints. However, the seasonal fluctuations are substantial only for heating accounts. Arrearages for non-heating accounts show only minor seasonal fluctuations. A comparison of [the data] suggests a simple explanation for this difference, that is, that the size of arrearages is related to the size of monthly bills. Heating customers' bills grow radically in the winter and so do their arrearages. Non-heating customers' bills change very little seasonally and their arrearages follow suit. In other words, if the assertion that winter termination restraints invite nonpayment were correct, then non-heating arrearages should show the same seasonal pattern of variations as do heating arrearages. That they do not casts substantial doubt on the assertion that PUC winter termination restraints are responsible for willful non-payment and consequent collection problems.[6]

This Pennsylvania report introduces the notion that any assessment of arrears must control for the impact of monthly bills. The BCS report is consistent with the BCS recommendation, often stated, to use a "weighted arrears" or "bills behind" statistic to factor out the impact of increased arrears caused by factors other than nonpayment.

BCS explains that its "bills behind" statistic "permits comparisons to be drawn between companies by eliminating the effects of different customer bills on arrearages." Without such a measure, "the interpretation of average arrearages, either over time or in comparison between companies, presents some difficulties."[7]

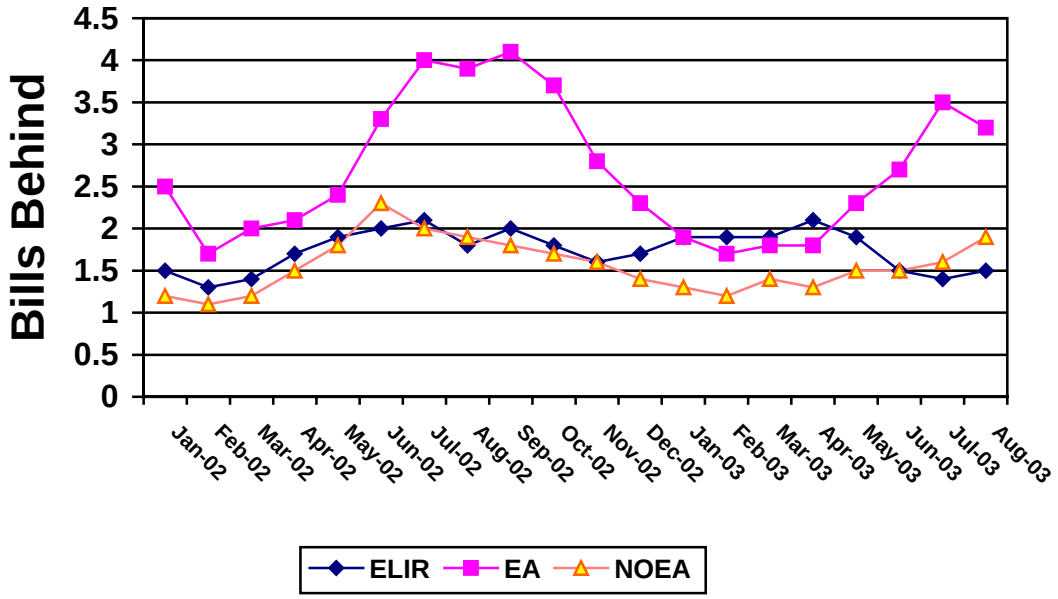
A similar analysis was performed for this evaluation. Figure 5 shows the number of average "bills behind" by month starting with January 2002 and continuing through August 2003.[8]

[6] Joseph Farrell (1983). ***Utility Payment Problems: The Measurement and Evaluation of Responses to Customer Nonpayment***, at 19, Pennsylvania Public Utility Commission: Harrisburg, PA

[7] *Id.*

[8] The need to have a prior month's bill precluded including a weighted arrears statistic for December 2001. No current bill was available for November 2001.

Figure 5
Weighted Arrears ("Bills Behind") for
EA, ELIR and NOEA Populations



While the arrears discussion immediately above might seem to indicate that all three sets of customers (ELIR, EA, NOEA) stopped making payments to some extent during the winter heating season, the bills behind statistic reveals that this conclusion is misleading. The ELIR and NOEA populations have substantially similar payment patterns over the course of each year. What MGE has succeeded in doing for the ELIR population is taking the volatility out of the payment profile of program participants. While the EA population falls multiple bills behind during the summer months (reflecting a continuing high level of arrears through the warm weather months) (see Figure 3), the ELIR population is more successful in paying down its arrears so that even during those low bill months, the population in arrears stays only one or two bills behind at any given time.

Figure 6
Index of Low-Income "Bills Behind"
to Total Population "Bills Behind"

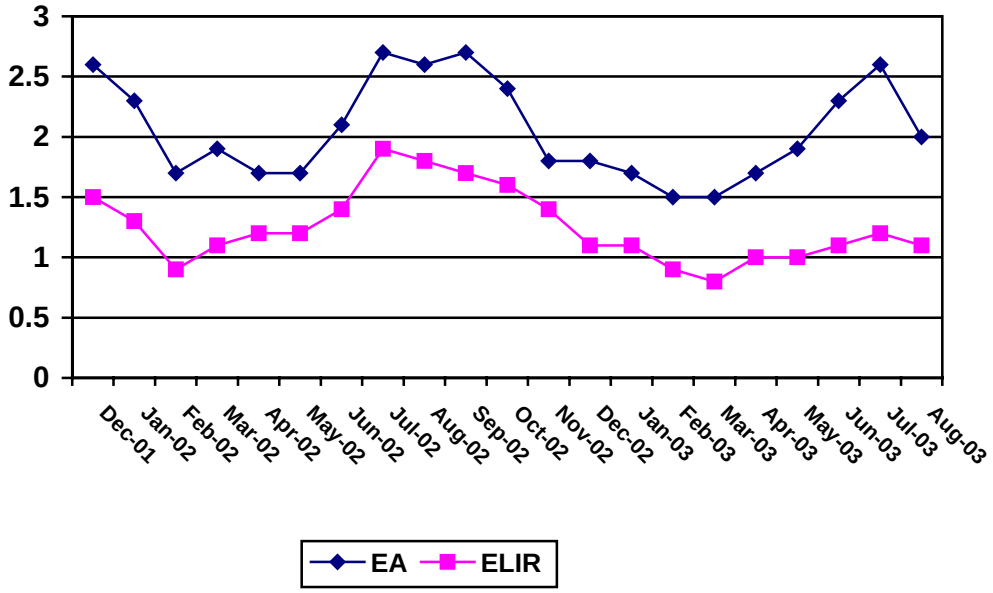


Figure 6 again shows the relationship between the two low-income populations and the population as a whole. An ELIR index of 1.0 indicates that the number of "bills behind" for the ELIR population is identical to the number of "bills behind" for the population as a whole. An ELIR index of 1.5 indicates that the number of bills behind for the ELIR population is 1.5 times higher than the number of bills behind for the population as a whole. Figure 6 indicates that ELIR is succeeding in improving the low-income payment performance so that it reflects the population as a whole (irrespective of income). This level of performance, and the improvement in performance for the ELIR population, is evident in Figure 6.

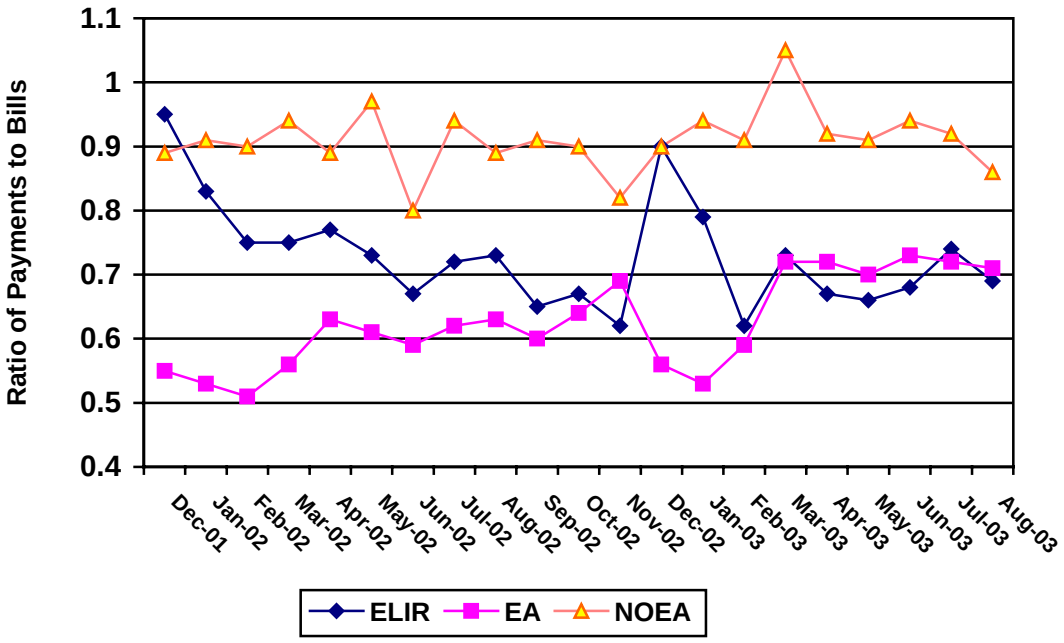
The Regularity of Bill Payment

An examination of the regularity of bill payment measures a different aspect of a customer's payment profile than does an examination of customer arrears. A customer may maintain a relatively low level of arrears by paying multiple months of bills on an infrequent basis. An examination of January arrears, for example, does not distinguish between the customer that has made his or her last twelve monthly payments on time and in full, the customer that has made $0 in payments during August through October (perhaps waiting for the annual

LIHEAP benefit to pay off those arrears), and the customer who makes three payments over the year of amounts equal to the total annual bill. While the "bills behind" statistic has a regularity of payment implicit in it, the regularity of payments can be directly measured.

Payment-to-bill index: The regularity of payments can be measured by indexing the total number payments to the total number of bills rendered each month. A payment-to-bill ratio of 1.0 means that for every bill that is rendered, exactly one payment has been received. More meaningful is to conclude that for every ten (10) bills rendered, ten (10) payments have been received. A payment-to-bill ratio of 0.8 means that for every ten bills rendered, eight payments have been received.

Figure 7
Payment-to-Bill Ratio by Month
for ELIR, EA and NOEA Populations



The payment-to-bill ratio does not consider the size or "completeness" of a payment. Measuring the completeness of payment is accomplished through other aspects of the customer payment profile. The regularity of bill payment is considered important because of the generally accepted proposition that if "some" payment is made on an account in any given month, there is an increased likelihood that the customer will be able to make a future payment sufficient to reduce the account balance to $0. The April bill is easier to

pay in full, in other words, if the customer has made *some* payment toward the March bill, even if that March payment is only a partial payment.

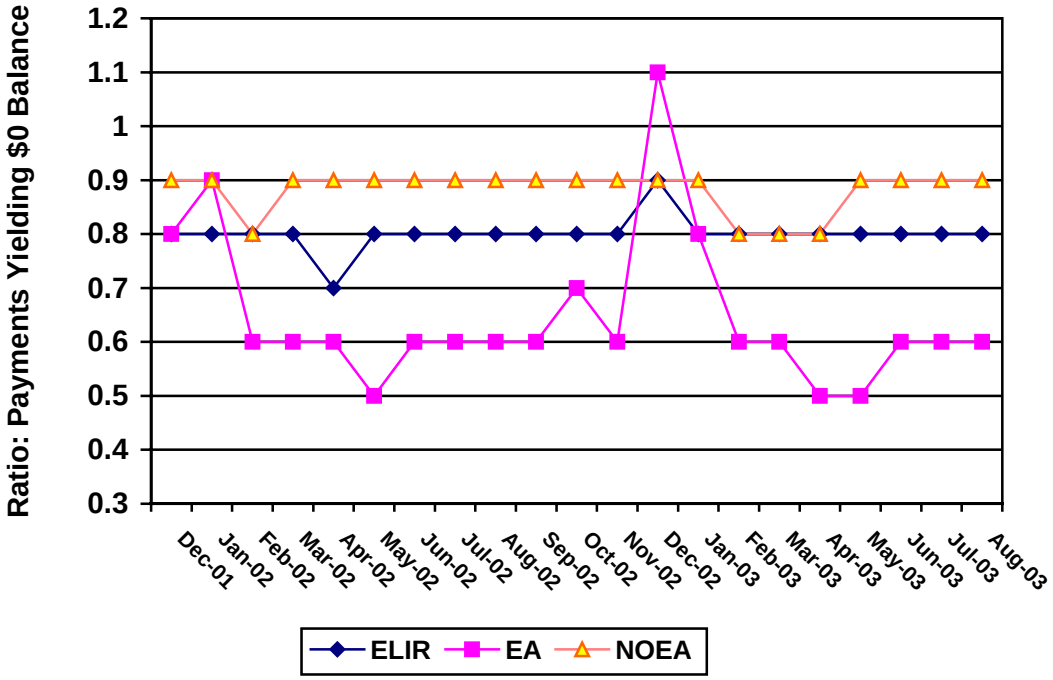
Figure 7 shows that ELIR customers do not have a consistently better payment-to-bill ratio than the EA population. Wile ELIR customers began with payment-to-bill ratios of close to 0.8, that "regularity" performance deteriorated through the program period. Why and how ELIR customers can maintain their performance on arrearage indicators while showing deterioration in payment regularity deserves future study.

Payments resulting in $0 balances: Given the deterioration in the payment-to-bill ratio of ELIR participants, an inquiry into the extent to which those payments that *are* being made succeed in clearing the customer's account becomes more important. Figure 8 shows an index of the number of accounts on which monthly payments were made to the number of accounts on which such payments reduced the account balance to $0. If the index is 1.0, 100% of the payments reduced the balance to $0. If the index is 0.5, 50% of the payments reduced the account balance to $0. Accounts on which no payments were made in a month are not included in this analysis. A $0 balance includes those accounts having credit balances.

While the payment-to-bill index indicates a deterioration in the regularity of payments by ELIR customers, Figure 8 shows that ELIR customers have exhibited a remarkable consistency in using their payments to clear their accounts of arrears. While nearly 80% of all ELIR payments result in a $0 balance on the account,[9] only 60% of EA payments result in the account being free of arrears.

[9] Again, remember that a credit balance is deemed to be a $0 balance for purposes of this index.

Figure 8
Ratio of Payments Yielding $0 Balance by Month
for EA, ELIR and NOEA Populations



The index in Figure 8 does not indicate how many payments have been made. The extent of payments is discussed above. Figure 8 demonstrates, however, that not all payments are equal. While Figure 7 would appear to indicate that the payment performance of EA and ELIR participants is virtually identical in the months of January 2003 through August 2003 (and, indeed, they are from a regularity of payment perspective), Figure 8 shows that those ELIR payments far more frequently reduce account balances to $0. Far more EA payments, in other words, are partial payments than are ELIR payments.

Figure 8 shows that the failure of low-income customers to bring their accounts current through a monthly payment in a particular month is not even necessarily bad news from the perspective of MGE. The Figure demonstrates that the Company's customers will make "some" payment on their accounts, even if the payment is only in partial satisfaction of their total outstanding arrears. If the index of payments resulting in a $0 balance is 0.4, in other words, what this means is that while 40% of the payments made

reduced account balances to $0, 60% of the households making payments made their payments even though the account still had a balance remaining after the payment.[10]

Finally, it is interesting to see how the LIHEAP benefits flow through this data. The jump in payments resulting in a $0 balance in December might at first seem counter-intuitive. It would not be immediately evident, in other words, why the number of customer payments resulting in a $0 balance amongst EA customers would actually *increase* when the higher-cost cold weather months came around. The explanation lies with LIHEAP. LIHEAP payments made in November and December reduce total balances for recipients to the point where an increased number of those recipients can zero out their account balance in that month or in the ensuing month.

The "Automaticness" of Bill Payment.

The final set of metrics involves measuring the extent to which bill payments are made without resort to collection activity on the part of the company. The need to initiate collection activity in response to bill nonpayment is evidence first of a risk of possible long-term nonpayment (and write-off). As arrears become older and larger, the risk of the need ultimately to write-off the revenue as uncollectible increases. These write-offs directly increase a utility's cost of service. In addition, as arrears become older and larger, the need increases for a company to incur out-of-pocket collection expenses. Again, the result is an increase in the cost of service.

Nonpayment shutoffs (NPSOs) amongst all accounts: The disconnection of service for nonpayment (referred to by MGE as a nonpayment shutoff, or, NPSO) is considered by most to be the ultimate collection device by a natural gas utility. An NPSO not only costs the utility money in direct out-of-pocket expenses, however, but it also increases the likelihood that the arrears underlying the NPSO will be lost to uncollectibles as well as costs the utility money in lost revenue that would have been generated from sales that would have occurred during the time the customer was off the system.

Nonpayment shutoffs are measured using two different indices. The first index considers NPSOs per 100 bills rendered each month. A bill is used as the proxy for each separate account. This ratio of NPSOs per 100 bills permits an examination of the relative rate of NPSOs within the three study populations (the ELIR population, the low-income population, and the population as a whole) at any given point in time as well as over and within a period of time.

[10] The amount due for budget billing customers is the budget billing amount, not the bill for current usage.

Figure 9
Ratio of NPSOs to Total Accounts
for EA, ELIR and NOEA Populations

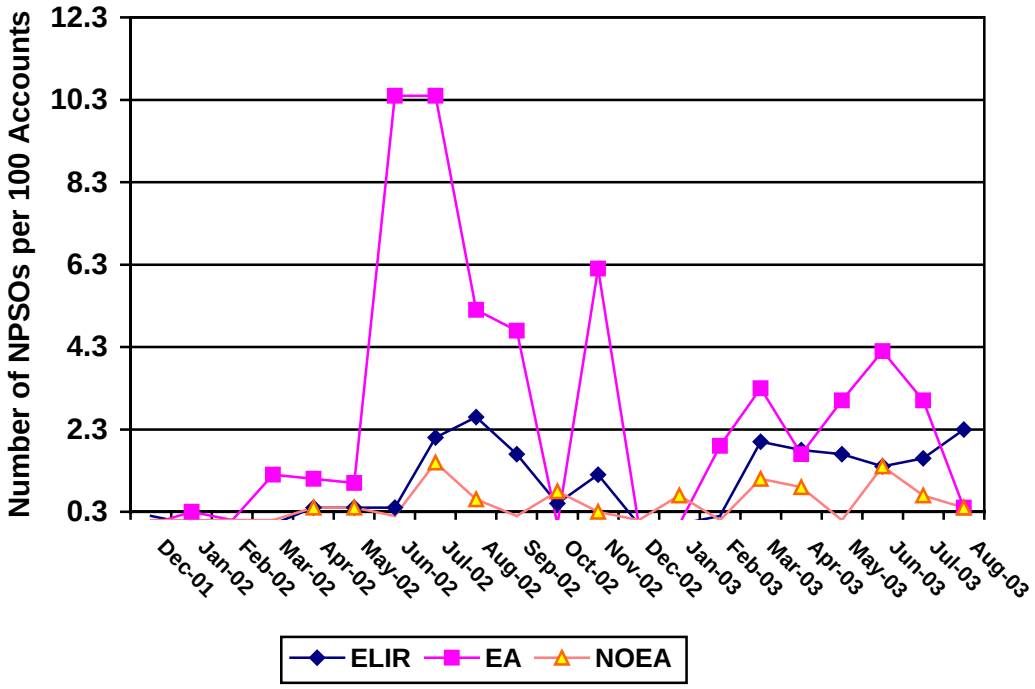
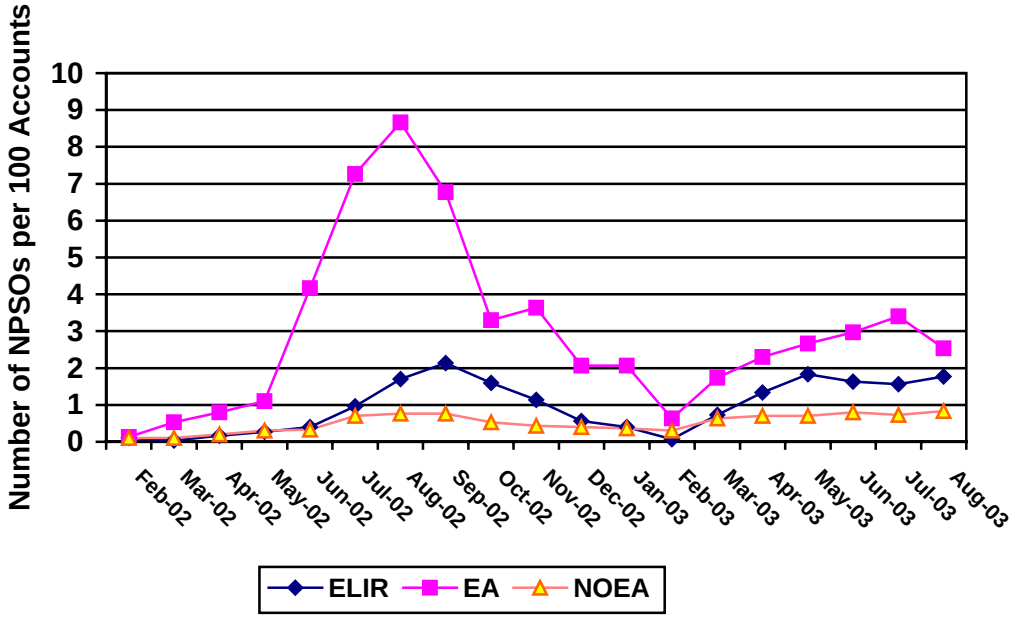


Figure 9 shows that ELIR has reduced the rate of NPSOs within the ELIR population well below that of the low-income population that does not receive ELIR credits. Over the 21-month period, ELIR reduced the overall rate of service terminations for nonpayment by 65%, from 2.8 per 100 accounts to only 1.0 per 100. Indeed, Figure 10, which presents the same data except on a three-month rolling average basis, shows the relationship even more clearly.

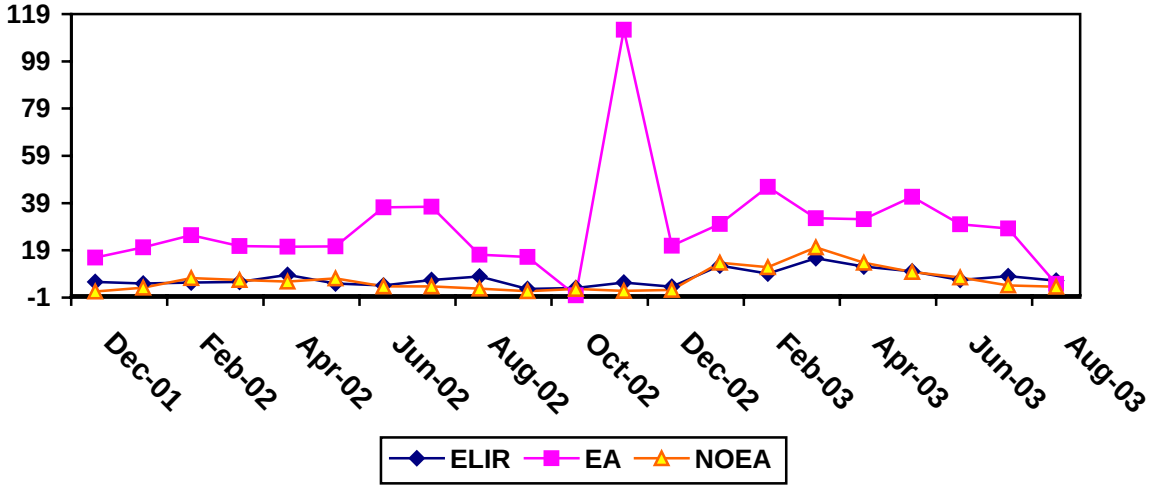
While the rate at which accounts are disconnected for nonpayment within the EA population is at or above 2-in-100 for 13 of the 19 months for which 3-month rolling average data is available, the three month rolling average not once ever reaches 2-in-100. Indeed, the rate at which EA customers are disconnected for ELIR customer for nonpayment reaches 3-in-100 on a three month rolling average basis in eight of the 21 months of data.

Figure 10
Ratio of NPSOs to Total Accounts
for EA, ELIR and NOEA Populations
on a 3-Month Rolling Average



Collection letters per 100 accounts: A "low-level" activity by the Company undertaken to collect past due accounts is the generation of a collection letter. While the expense of each letter is not great, the quantity generated contributes to their overall cost. For example, with an average number of EA accounts of roughly 700, the Company generated more than 3,100 collection letters in a 21-month period. The Company generated 891 collection letters for its ELIR population in the same time period.

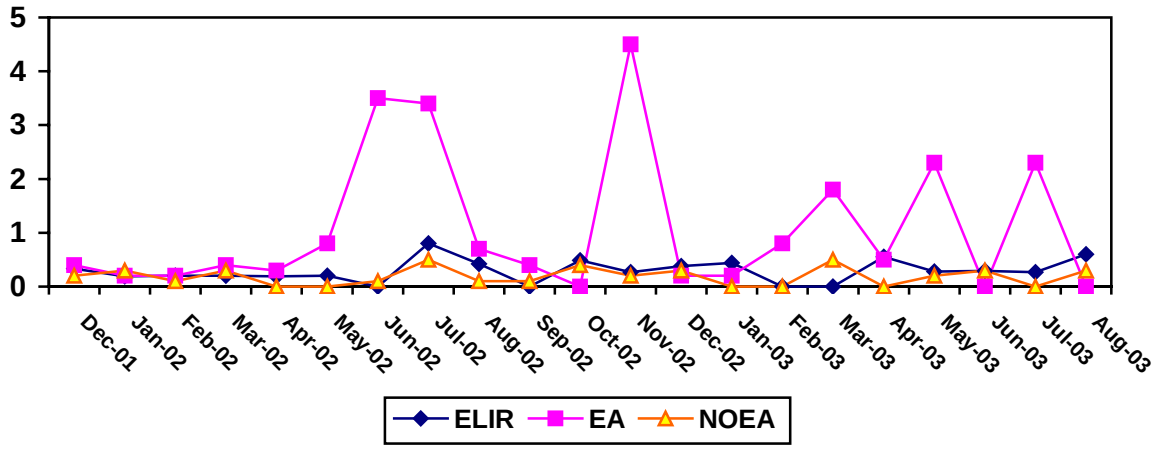
Figure 11
Collection Letters per 100 Accounts
for EA, ELIR and NOEA Accounts



The data in Figure 11 demonstrates that while the ELIR population experienced 7.1 collection letters per account on an average monthly basis, the NOEA (total population irrespective of income) experienced a rate of collection letters of only 6.4 per 100 accounts. These both stand in sharp contrast to the collection rate of 29.0 collection letters per 100 accounts within the low-income, non-ELIR (EA) population. As can be seen, the ELIR program reduced the generation of collection letters by more than 75%.

Returned checks for insufficient funds: The final collection activity tracked for purposes of this evaluation involves the incidence of checks that are returned to the company due to the lack of sufficient funds. Figure 12 presents the data. ELIR succeeds in bringing the rate at which the low-income population issues returned checks down to the level of the overall population. While the general population produced 0.2 returned checks for every 100 payments made to the company, the ELIR population produced 0.3 returned checks per 100 payments. In contrast, the low-income population not receiving ELIR produced 1.1 returned checks for every 100 payments. ELIR appears to have reduced the incidence of returned checks within the low-income population by more than 70%.

Figure 12
Returned Checks per 100 Payments
for NA, ELIR and NOEA Populations



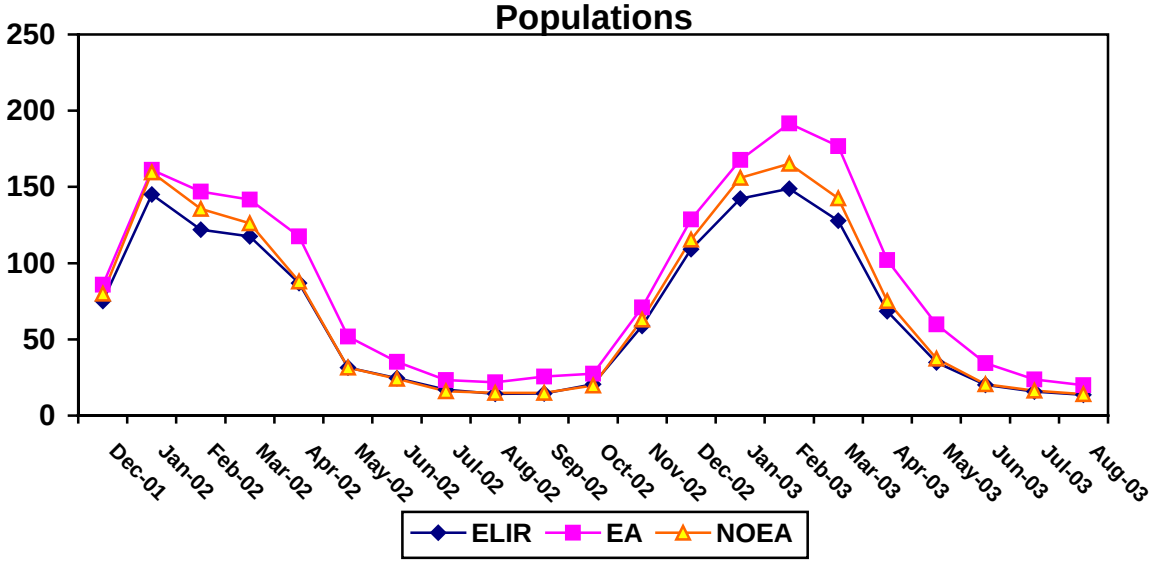
A CONSIDERATION OF USAGE IMPACTS

The grant of fixed credits to the ELIR population does not appear to provide an incentive for those customers to systematically increase their energy consumption. Figure 13 presents the monthly consumption data. While the EA population has a total average monthly consumption of 86 therms per month, the ELIR population has a total average consumption of 68 therms. The ELIR population has consumption that is roughly 20% lower than the EA population. The consumption of the ELIR population is much closer to the total population average monthly usage of 72 therms than to the comparable low-income population not receiving ELIR credits.

The consumption for the ELIR and EA populations was tested for statistical significance at the 0.05 level. With an average consumption of 86 therms (RSE = 0.92), the EA population had a statistically significant *higher* consumption than did the ELIR customers, who had an average consumption of 68 therms (RSE=0.81).

It cannot be concluded that the MGE ELIR program resulted in an increase in consumption relative to those customers not receiving ELIR fixed credits.

Figure 13
Average Monthly Usage for EA, ELIR and NOEA Populations



SUMMARY OF PAYMENT IMPACTS

Based on the above data, the following conclusions are proffered with respect to the payment impacts generated by the Missouri Gas Energy Experimental Low-Income Rate (ELIR):

- ELIR improved the completeness of bill payment, as measured by the incidence and level of arrears.
- ELIR improved the promptness of bill payment, as measured by a weighted arrears ("bills behind") statistic.
- While ELIR did not improve the regularity of bill payment as measured by a payments-per-bill statistic, ELIR did improve the extent to which payments made reduced account balances to $0.
- ELIR improved the "automaticness" of bill payment, as measured by collection activities and returned checks.
- ELIR did not induce an increase in consumption amongst customers receiving fixed credits.

CHAPTER 3:
THE FINANCIAL IMPLICATIONS OF MGE'S EXPERIMENTAL LOW-INCOME RATE (ELIR)

Having found that the ELIR program generates substantial payment benefits for the participant population, this section of the analysis turns its attention to an examination of whether those changes in the payment profiles of ELIR participants can be achieved at a reasonable cost to the customer base.

IDENTIFYING THE COSTS OF NONPAYMENT

The building blocks to be used in considering the financial impacts of the ELIR program involve assessing the costs associated with nonpayment. The cost of non-payment of a residential utility bill generally consists of three separate components:

- The cost of collecting the past-due bill (collection costs);
- The cost of obtaining replacement revenue (either internally or externally) for the time the billed revenue goes uncollected; and
- The cost of revenue ultimately written off as uncollectible.

The discussion below will separately consider each of these components.

The Cost of Collection

The cost of collecting unpaid bills depends on both the collection interventions that are put into play and the point in time at which the interventions are activated. Little collection activity occurs within the first 30 days after a bill is first rendered. This occurs for three reasons:

- The billed revenue is not overdue; or
- The size of the receivable is not sufficiently large to cost-justify incurring collection expenses; and/or
- The age of the receivable is not sufficiently old to place the receivable at risk of long-term non-collection or eventual uncollectability.

The longer a receivable ages, the more subsequent bills will pancake on top of the oldest arrears[11] and the greater the long-term risk accrues of eventual uncollectability. On a per account basis, therefore, an older arrears imposes greater costs in three ways:

- It generates a larger number of dollar lag days giving rise to working capital expense;
- It generates more intense (and thus more expensive) collection interventions; and
- It creates high levels of charge-offs.

Reducing both the level and age of arrears, therefore, should result in direct dollar savings to the utility experiencing the reductions.

In reaching this conclusion, resource expenditures that are not avoided altogether but that are redirected to other productive tasks are considered to be "saved" in this analysis. If a half-time full time equivalent (0.50 FTE) can be moved from collecting 90-day old residential arrears to performing other productive work, the labor cost associated with that 0.50 FTE is deemed a "savings" to the collection activities of a company.

Collection Timeline: Assuming a bill is rendered on Day 1 of a collection timeline, and is due on Day 20, significant intervention costs begin to accrue to the utility at around Day 40. The following interventions occur along the collection timeline:

- If a customer-initiated in-bound calls occurs, it will generally occur before the due date of the second bill;
- An out-bound collection call will happen within ten days of the date of the second bill (which first contains the Bill 1 arrears);
- A written disconnect notice is issued within ten days of the out-bound reminder telephone call;
- A written disconnect notice generally generates a response by the customer. If a payment is not made, an in-bound call is handled;
- A field disconnection notice is delivered within ten to fourteen days of the presumed receipt of the written disconnect notice;

[11] For an arrears to be 90-days old, the immediately two preceding bills must be in arrears in their entirety. A 30-day or 60-day arrears will not be paid prior to the 90-day arrears being retired.

- A service termination occurs within three days of the delivery of the field disconnection notice;

- If service is reconnected, the reconnection generally occurs within one day of the service termination;

- Write-offs are presumed to occur at day 180 after the initial bill.

The collection time line assumed for this analysis is as follows:

A TYPICAL COLLECTION TIME LINE AND COSTS

	Days from Bill Date			
	1 - 30	31 - 60	61 - 90	91 – 150
Bill #1 rendered	Day 1			
Bill past due	Day 21			
In-bound call	Day 25 ($8)			
Out-bound call		Day 40 ($5)		
Written DNP notice		Day 50 ($0.50)		
In-bound query		Day 53 ($8)		
Deliver DNP notice			Day 64 ($35)	
Disconnect service			Day 67 ($40)	
Reconnect service			Day 68 ($45)	
Final bill issued			Day 74 ($6)	
Write-off				Day 180
Total cost	$8.00	$13.50	$126.00	$0.00

The costs presented in this time line are rounded to eliminate any sense of false precision. Clearly, also, individual customers may deviate from the norm.

The data presented above have been combined into a model that considers the financial impact of the ELIR initiative. The model considers the change in costs to MGE that arise from the implementation of ELIR. Based on the discussion above, the cost savings are estimated assuming that in the absence of ELIR, the ELIR population would demonstrate the same payment profile as the non-ELIR low-income population.

Assuming that an account traverses the entire range of collection interventions once, that account will cause MGE to incur nearly $150 in costs exclusive of any final write-off amount. Of the total collection costs, 85% ($126 of $147.50) are incurred in the period running form 60 to 90 days after a bill is first issued. Keeping an arrears from entering the 61 – 90 day age bucket will thus provide a substantial cost savings to a utility. However, the bulk of the costs arise from an account entering the active disconnect process. Even if an account enters the 61 – 90 day age bucket, therefore, unless the arrears progresses to the beginning of field services, substantial savings will not arise from collection savings.

The Cost of Replacement Revenue

Whenever a utility bills a dollar of revenue without collecting it, that utility will incur a cost of money associated with the unpaid bill. The cost of money will manifest itself in one of two ways. Either:

- The utility will *procure* money to replace the unpaid revenue (external sources); or

- The utility will use *internal cash* to replace the unpaid revenue (internal sources).

In the first instance, the company will incur a cost at the weighted rate of return. Since working capital is a capital expense for ratemaking purposes, the equity portion of the return will have an income tax component associated with it.[12] In the second instance, in the absence of the need to use the internally-generated cash to meet cash working capital needs, the company would have presumably have invested that cash. Again, the cost consequence of the unpaid revenue is thus quantified at the rate of the weighted cost of capital (grossed up for taxes).

A customer will bring two revenue components into play in any given month:

- The unpaid arrears from prior months' bills;[13] and

- The bill for current usage.

[12] Since arrears are a relatively permanent aspect of a utility's operations, the working capital reserve is a part of the company's permanent capital requirements. Accordingly, the funds procured from an external source are costed out at a company's weighted cost of capital.

[13] This unpaid arrears may be $0, but to maintain some conceptual consistency, the presence of unpaid arrears must be recognized in all instances. To try to distinguish between a customer with "no arrears" and a customer with an arrears of $0 leads to difficulty in application.

The Cost of Arrears: The unpaid arrears will fall into the various aging buckets that a company maintains. For purposes of analysis, the discussion below will assume that ELIR arrears would be placed into one of three aging buckets: (1) 30-day arrears; (2) 60-day arrears; and (3) 90+-day arrears.

The working capital costs imposed by arrears are based on the number of revenue lag days created by the arrears. The revenue lag days represent the incremental number of days that a bill remains unpaid from the day the bill is first rendered. The days from the day a bill is rendered to an on-time payment is supplied by assumption (15 days, assuming that bills are paid three-quarters of the way through a 20-day payment period). The incremental lag days are then calculated by placing the arrears at the mid-point of each aging bucket.

- A 30-day arrears thus adds 20 days to the initial billing period (the final five days of the payment period plus one-half of the 30-day arrears period).

- A 60-day arrears adds 30 more incremental days (the final 15 days of the 30-day arrears period plus one-half of the 60-day arrears period);

- A 90-day arrears adds 105 more days. Since the 90-day bucket is open-ended, it is unreasonable to assume that the arrears fall within the first 30-days of this age bucket. This analysis supplies the age of 90+-day arrears by taking the arrears out to one-month short of the time at which they are written off as uncollectible (at Day 180). This process adds the final 15 days of the 60-day arrears period plus the 90 more days to 150 days).

The dollar lag days are computed by multiplying the dollars in arrears times the incremental lag days for that month. The dollar lag days are then multiplied by a daily cost of capital to determine the working capital expense.

Table 4 below presents the working capital expense associated with arrears within any given month.

Table 4
Calculation of Working Capital for Any Given Month

	Bill Date to Due Date	30-Day Active	60-Day Active	90-Day Active
Arrears	$100	$100	$100	$100
Incremental Age	15	20	30	105
Dollar Lag Days	1,500	2,000	3,000	10,500
Annualized Weighted Return	8.5%	8.5%	8.5%	8.5%
Gross Up Factor for Taxes	40.0%	40.0%	40.0%	40.0%
Weighted Return (GUFT)	11.9%	11.9%	11.9%	11.9%
Days per Year	365	365	365	365
Daily Return (GUFT)	0.0308%	0.0308%	0.0308%	0.0308%
Working Capital	$0.46	$0.62	$0.93	$3.29
Annualizing Factor	12	12	12	12
Annualized Working Capital	$5.56	$7.42	$11.14	$39.45
WC per $1,000 Receivables	$55.58	$74.16	$111.41	$394.48

Per $1000 0.0326%

It is important to note that the working capital expense is not additive, but incremental. With a 60-day arrears appearing on a July bill, for example, the working capital associated with those dollars in the month they were billed would have been determined in May. The working capital associated with them when they were 30-day arrears would have been calculated in June. The working capital expense above is presented on a dollars-per-arrears basis.

The working capital expense for a particular month would thus need to be determined as follows (in a hypothetical illustration):

Table 5
Illustration of Working Capital Calculation

	Bill Date to Due Date	30-Day Active	60-Day Active	90-Day Active	Total
WC per $1,000 Receivables	$55.58	$74.16	$111.41	$394.48	
Dollars of receivables	$30,000,000	$3,600,000	$2,000,000	$6,700,000	
Receivables ($1000 increments)	30,000	3,600	2,000	6,700	
Working capital	$1,667,277	$266,970	$222,818	$2,643,006	$4,800,071

The Cost of Current Bills: Current bills in any particular month must be divided into two buckets. The first bucket captures those bills that are paid by the due date. The second bucket captures those bills that are not paid by the due date and thus will be reflected as 30-day arrears in the next month. Both buckets are limited to those dollars that are eventually paid and do not proceed to charge-off.

The significance of the two buckets is simply that dollars in the first bucket are assumed to be paid before the due date. The working capital associated with these current bills thus includes only those days between the billing date and the payment date. In contrast, the dollars that proceed to become arrears go full-term, and thus have a full 20-days of working capital associated with them. For current bills that eventually become arrears, the incremental days of working capital are recognized and calculated in the working capital calculations relating to arrears.

On a per $1,000 basis, the working capital associated with current bills not subject to eventually being charged-off is as follows:

Table 6
Working Capital Grossed Up for Taxes per $1,000 in Receivables

	Bill Date to Due Date
Current bill not in arrears	$100
Incremental Age	15
Dollar Lag Days	1,500
Annualized Weighted Return	8.5%
Gross Up Factor for Taxes (GUFT)	40.0%
Weighted Return (GUFT)	11.9%
Days per Year	365
Daily Return (GUFT)	0.0308%
Working Capital	$0.46
Annualizing Factor	12
Annualized Working Capital	$5.56
WC per $1,000 Receivables	$55.58

The significance of this calculation lies in the ability to reduce the incremental age of the current bill at the time it is paid in the current month. The same calculation, assuming that bills are paid at Day 10 rather than Day 15, would result in the following cost determination:

Table 7
Working Capital Grossed up for Taxes
Assuming Bill Payment at Day 10

	Bill Date to Due Date
Current bill not in arrears	$100
Incremental Age	10
Dollar Lag Days	1,000
Annualized Weighted Return	8.5%
Gross Up Factor for Taxes	40.0%
Weighted Return (GUFT)	11.9%
Days per Year	365
Daily Return (GUFT)	0.0308%
Working Capital	$0.31
Annualizing Factor	12
Annualized Working Capital	$3.70
WC per $1,000 Receivables	$37.02

As can be seen, reducing the bill payment date from Day 15 to Day 10 would save nearly $20 per $1,000 of current receivables.

The Cost of Charge-offs

The final cost component to be considered is the cost of charge-offs. The first out-of-pocket cost of charge-offs is the rate at which bills are to be written-off. Charge-offs have both a prospective and a retrospective component to them.

- The prospective component consists of applying the charge-off rate to all future bills rendered for current usage;

- The retrospective component consists of applying the charge-off rate to the arrears that are brought into the ELIR program.

While by its nature, the prospective rate will be repeatedly applied (as each month's current usage is billed), the retrospective component involves a one-time application to the arrears that exist on the books as arrears at the beginning of the program. Data does not exist to disaggregate the rate of charge-off based on the age of arrears.

The rate of charge-off differs depending on the age of arrears. Experience counsels that 95% of 30-day arrears are collectable, 90% of 60-day arrears are collectable, and 85% of 90+-day arrears are collectable. As an arrears ages, only the incremental charge-off should be considered. Under the circumstances identified above, the incremental charge-off rate is five percent for each age bucket.

In addition to the charged-off revenue itself, the working capital associated with carrying bills until they are finally charged-off is an expense to be considered. Some portion of each age bucket of arrears will proceed along the collection time line until it is charged off. By having those bills paid in a particular month, rather than proceeding to charge-off, a utility would avoid the working capital from the point in time in question to the date of charge-off. Thus, for example, the time remaining until charge-off would be as follows by age bucket:

- Current receivables: 165 days
- 30-day arrears: 145 days
- 60-day arrears: 115 days
- 90+-day arrears: 10 days

If a company has $100 in current receivables, 2.5% of which will eventually be charged-off (at day 180), then having the entire $100 paid in Month 1 will avoid $0.13 in future working capital simply for the charge-off amount. A 30-day arrears of $100 would result in an avoided working capital of $0.11 simply for the charge-off amount. The calculation translating this into a cost per $1,000 of receivables is set forth below:

Table 8
Working Capital Associated with Charge-offs

	Bill Date to Due Date	30 Day Active	60 Day Active	90 Day Active
CHARGE-OFF WORKING CAPITAL				
Maximum Age of Charge Off	180			
Potential charge-off rate	2.5%			
Potential Charge Off Dollars	$2.50	$2.50	$2.50	$2.50
Days Remaining until Charge Off	165	145	115	10
Dollar Lag Days	413	363	288	25
Potential Working Capital	$0.13	$0.11	$0.09	$0.01
Annualizing Factor	1	1	1	1
Annualized Working Capital	$0.13	$0.11	$0.09	$0.01
WC per $1,000 Receivables	$52.14	$45.68	$36.06	$3.09

Summary of the Costs of Nonpayment

In summary, the costs associated with nonpayment can be categorized into three elements:

- The cost of collection, which involves the expenses associated with interventions which the utility triggers in response to nonpayment;
- The cost of replacing the revenue that is billed but not collected. This cost arises whether the company generates its replacement revenue externally or internally; and
- The costs of charge-offs. This expense involves both the charge-off itself and the working capital associated with the billed revenue carried to the charge-off date.

THE COSTS AND NET COSTS OF THE ELIR INITIATIVE

The total direct costs of the fixed credits provided through the ELIR initiative reached $212,192. These dollar figure were taken directly from the data provided by MGE through its data base. Spread over an average ELIR participation rate of 610 accounts, the per participant cost was $348 per participant. The ELIR program generated $135,000

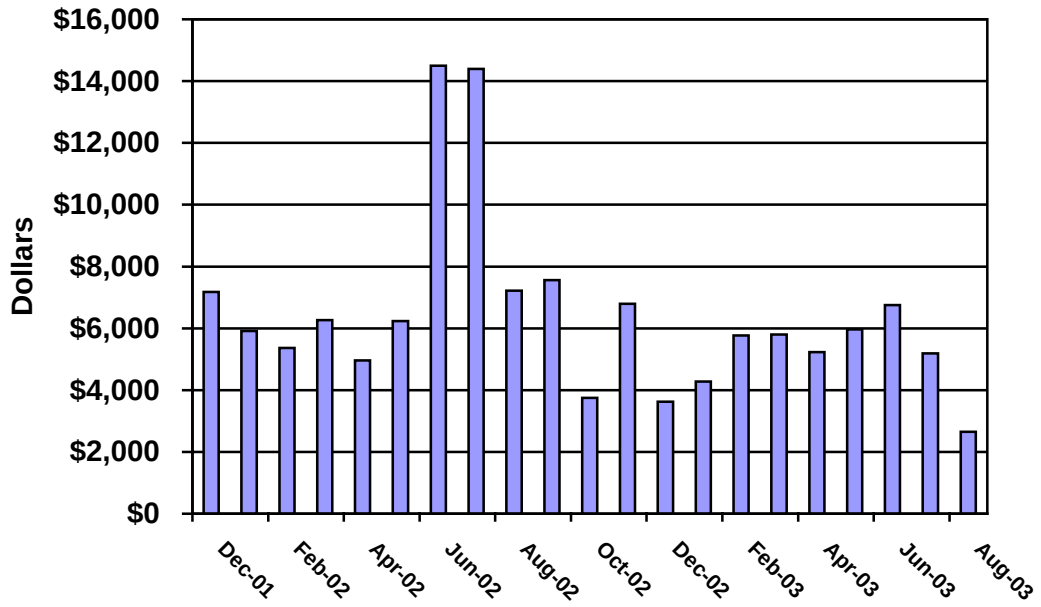
in offsetting program savings. The total net program cost was accordingly $77,000, or a net program cost of $126 per participant. A calculation of the program cost offsets is presented in Appendix A.

The bulk of the cost savings accrued in three primary areas:

- Avoided charge-offs ($38,639);
- Avoided collection costs ($41,273); and
- Avoided nonpayment shutoffs (NPSOs) ($35,974).

Savings were relatively constant throughout the program by month. Savings, in other words, did not substantially increase in either the winter or summer months. Total savings by month are presented in Figure 14.

Figure 14
Total Cost Savings by Month
MGE Experimental Low-Income Program (ELIP)



The detailed financial analysis is presented in Appendix A. Three general observations will help explain the sources of the savings. While this data is embedded in the impact discussion above, it is presented again below.

Customers in Arrears

Substantial savings arise from the ELIR program because significantly fewer ELIR accounts experienced arrears. Table 9 shows the percentage of accounts in arrears by month for the ELIR and the EA populations.

Table 9
Percent of Accounts in Arrears: ELIR vs. EA Populations

	EA Accounts	ELIR Accounts
December-01	57%	38%
January-02	51%	23%
February-02	52%	29%
March-02	50%	28%
April-02	49%	32%
May-02	55%	29%
June-02	56%	24%
July-02	55%	25%
August-02	54%	30%
September-02	55%	26%
October-02	53%	25%
November-02	51%	28%
December-02	51%	27%
January-03	48%	23%
February-03	49%	23%
March-03	47%	25%
April-03	50%	23%
May-03	52%	25%
June-03	55%	28%
July-03	54%	32%
August-03	53%	32%
Average over program period	52%	27%

A reduction in the number of accounts in arrears has multiple implications:

- It reduces the working capital required for arrears.
- It reduces the amount of revenue subject to charge-off.
- It reduces the number of accounts subject to disconnection of service for nonpayment.
- It reduces non-service termination collection costs associated with nonpayment.

The reduced number of accounts in arrears is one of the most significant factors affecting the reduction in costs arising as a result of ELIR.

One impact of a reduction in the number of accounts in arrears is the reduction in the cost of collection (not associated with the termination of service). Use August 2002 as an illustrative month. In August 2002, there were 662 ELIR participants. If these accounts experienced an incidence of arrears at the rate of the EA population, 54% would have been in arrears (357 accounts). At an average collection cost of $12.94, MGE would have spent $4,625 on collections. In fact, only 30% of ELIR accounts were in arrears (199). At an average collection cost of $12.94, the company spent only $2,569 on collections, a savings of more than $2,000.

Dollars in Arrears

Not only are there fewer accounts in arrears as a result of ELIR, but those accounts that are in arrears carry lower arrears in terms of dollars. ELIR customers ran substantially lower arrears every month of the program. Table 10 presents the data by month. Only in November 2002 did the arrears approach each other ($89 for EA customers; $86 for ELIR customers). No ready explanation is available for this clearly anomalous month.

The dollars of arrears and accounts in arrears do not operate independently. It is important to remember that they have their individual effects, but the combined effect is even greater. For example, consider the month of August 2002. There were 662 ELIR participants during August 2002. If those customers reflected the EA population, 54% would have been in arrears with an average arrears of $145. The total arrears would have been $51,835. In fact, under ELIR, only 30% of the accounts were in arrears with an average arrears of $104. The total arrears was only $20,654 for the ELIR population. Because of the lower arrears, there was both a substantial working capital savings as well as a reduction in the dollars subject to charge-off.

Table 10
Dollars in Arrears by Month: ELIR vs. EA Populations

	EA Accounts	ELIR Accounts
December-01	$181	$104
January-02	$188	$101
February-02	$198	$110
March-02	$210	$121
April-02	$203	$138
May-02	$193	$136
June-02	$182	$125
July-02	$183	$127
August-02	$145	$104
September-02	$139	$85
October-02	$113	$73
November-02	$89	$66
December-02	$129	$80
January-03	$177	$108
February-03	$184	$113
March-03	$214	$117
April-03	$204	$120
May-03	$184	$95
June-03	$188	$90
July-03	$184	$85
August-03	$153	$84

Service Terminations per 100 Accounts in Arrears

A final illustration of how and why cost savings arise lies in the rate at which customers have service terminated for nonpayment. Two factors reduce the number of terminations. First, the rate at which service terminations per 100 accounts in arrears is reduced. Even those customers that fall into arrears, in other words, are not in arrears so far that they experience the loss of service for nonpayment. Second, there are fewer customers in arrears with which to begin. Table 11 presents the monthly data on the rate of service termination per 100 accounts in arrears.

Table 11
Service Terminations per 100 Accounts in Arrears: ELIR vs. EA Populations

	EA Accounts	ELIR Accounts
December-01	0	0.7
January-02	0.6	0
February-02	0.3	0.3
March-02	2.3	0
April-02	2.3	0.5
May-02	1.8	0.6
June-02	18.6	4.2
July-02	18.8	1.9
August-02	9.7	5
September-02	8.4	4
October-02	0	1.2
November-02	12.2	3.2
December-02	0	0
January-03	0	0
February-03	4	0.5
March-03	6.9	4.5
April-03	3.4	4.2
May-03	5.7	3
June-03	7.6	2.3
July-03	5.5	2.6
August-03	0.8	3.9

To illustrate, use again the August 2002 data used above. In August 2002, there were 662 ELIR accounts. If the incidence of arrears was at the rate experienced by the EA population, there would have been 357 accounts in arrears. In August 2002, service terminations occurred at the rate of 9.7 per every 100 accounts in arrears. With 357 accounts in arrears, 34.7 terminations could be expected. In fact, however, service terminations for ELIR customers occurred at the rate of only 5.0 per every 100 accounts in arrears. Moreover, in fact, only 30% of ELIR customer accounts were in arrears. Given these reduced collection rates and reduced numbers of arrears, the ELIR population experienced only 9.9 terminations (662 x 0.30 * 5/100 = 9.9).

The month-by-month calculation of actual ELIR collection activity, as well as the actual level and incidence of ELIR arrears is presented in Appendix A. This analysis compares

this actual data to what the performance of the ELIR population would have been had ELIR reflected the EA performance instead.

SUMMARY OF FINANCIAL IMPACTS

Base don the above data and discussion. The following conclusions are proffered with respect to the financial impacts generated by the Missouri Gas Energy Experimental Low-Income Rate (ELIR):

- The improved payment profile of ELIR customers generates significant financial savings to the company. These savings arise primarily in the areas of reduced collection costs, reduced charge-offs, and reduced carrying costs. The Company's ELIR generates a cost offset of more than $135,000.

- In particular, the reduced incidence and rate of nonpayment shutoffs generates a cost savings to the company.

- In particular, the reduced incidence and level of arrears within the ELIR population generate cost savings to the company.

- Cost savings arose almost equally during every month of the program period. The savings were not isolated either to the warm weather months or to the cold weather months.

- While the savings from the ELIR do not completely offset the costs of the program, the net cost of the ELIR program to the Company was reduced to $77,000 for an average participation rate of 610 customers. The net cost was roughly $126 per participant over the entire 21-month period ($77,000 / 610 = $126). The net annualized cost per participant was thus $72 ($126 / 21 x 12 = $72).