Final Report

Low-Income Arrearage Study

Prepared for:
PacifiCorp

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Executive Summary

PacifiCorp contracted with Quantec, LLC to conduct a study of the low-income population's arrearage problem within PacifiCorp's six-state service territory.

The primary objectives established by PacifiCorp were as follows:

1. Assess the level of low-income arrearages
2. Estimate the impacts of the arrearages on PacifiCorp and its ratepayers
3. Recommend cost-effective strategies to reduce low-income arrearages, and mitigate operational costs

Findings

To undertake the study, PacifiCorp provided Quantec with data for 47,734 households known to have either received energy assistance funds, had their home weatherized through a low-income program, or have participated in a low-income rate discount program between 2002 and 2006. From this group, Quantec identified 13,753 households as having an arrearage in May of 2006. Since the study focused on low-income households *with arrears*, not low-income households in general, all results presented in the report – unless otherwise noted – were generated using data for the sample of 13,753 households.

Level of Arrears

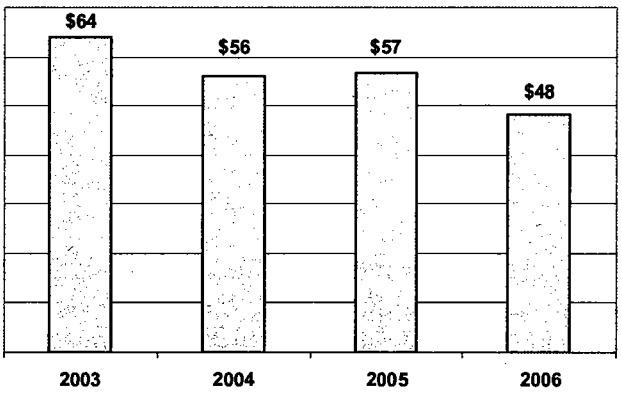
- The average arrearage accumulation over the entire analysis period (2002 to 2006) of low-income households exhibiting an arrearage was determined to be $238 as of December 31st, 2006. The total arrearage generated by these households in 2006 is approximately $660,000, which represents only 2 percent of the total amount invoiced. At the end of the five year study period, these customers have accumulated an estimated $3.3 million in total arrears.

- Synthesizing the observed rate of low-income households exhibiting an arrearage from the analysis sample, as well as Census and PacifiCorp's Energy Survey Decision data, the total number of PacifiCorp's low-income households with electric space or water heat and a potential arrearage in 2006 was estimated as 18,994. This number is an estimate of all low-income households meeting this criteria, not just those identified by PacifiCorp, for potential inclusion in the study. Applying the findings of the analysis above to this estimation of total low-income households, the total estimated arrearage level accumulated is $4.5 million over the five-year analysis period, or an average of $900,000 annually.

- While the numbers provided above refer to the average *total accumulation* of arrearages over the entire study period (2002 to 2006), the average *annual accumulation* of arrearages (January to December) was also determined for 2003, 2004, 2005, and 2006. It should be noted that 2002 was not calculated in order to allow arrearages to approximate their natural level over the course of a full year after being artificially set at 0 at the outset of the study

period. Additional explanation is offered in the body of the report. As shown in Figure 1 the average annual accumulation of arrearages has declined. Again, the numbers provided in the figure below represent the average annual accumulation of arrears over each individual calendar year. For example, when payment histories of customers with arrears in 2006 were analyzed, it was determined that they accumulated an average of $48 over the 12-month period.

Figure 1. Average Annual Accumulation of Arrears



- Oregon is the largest contributor to total arrears. This is primarily driven by the size of the population, as well as by the prevalence of electric load (48,000 households out of 93,000 service-territory-wide according to PacifiCorp's Energy Decision Survey data).

- The average annual invoice in 2006 was approximately $900 with a high of $1,063 in Oregon and a low of $592 in Utah. This wide range is due to electricity usage. A much smaller portion of Utah customers have electric heat and or water heat.

- It is worth noting that part of the arrears problem at PacifiCorp (as well as other utilities) is related to timing of disbursement of energy assistance funds from the community action agencies to PacifiCorp. This process, at time, takes several months to complete. An agency will commit assistance funds to an account, but if the funding is not received for two months, the account detail could indicate that there are arrears during the period.

- State- and utility-sponsored low-income funding levels in some of the states under study have been increasing. For example, there have been significant increases in funding levels in Wyoming and Oregon. Furthermore, PacifiCorp has committed state-specific total contribution levels for low-income bill assistance annually for five years starting July 1, 2006. These contributions may be comprised of donations from employees, customers, the Company or other sources. The amounts vary from $30,000 in California to $400,000 in Oregon and Utah, each. The additional funding targeting low-income households will help to decrease arrears.

Time Value Of Money

- At the current interest rate of 5.3 percent and the cumulative arrears balance of approximately $4.5 million, the carrying cost for PacifiCorp was estimated at nearly $250,000 in 2006.

Bill Coverage

- As shown in Table 1 low-income households with observed arrears were found to have, across PacifiCorp's service territory, covered 75 percent of their annual electric bills in 2006. In 2006, coverage varied from a low of 47 percent in Wyoming to a high of 95 percent in California. As evident, states with established rate discount programs, not surprisingly, exhibited higher customer coverage levels.

Table 1. Customer Bill Coverage

	2003	2004	2005	2006	Overall
CA*	93%	90%	91%	95%	92%
ID	66%	67%	64%	64%	65%
OR	72%	69%	65%	63%	66%
UT*	79%	77%	77%	75%	80%
WA*	76%	76%	70%	73%	75%
WY	60%	55%	52%	47%	57%
Overall	**79%**	**76%**	**74%**	**75%**	**75%**
*Indicates states with an established rate discount program					

- When bill assistance payments are included, overall total bill coverage was estimated at 97 percent (see Table 2).

Table 2. Total Bill Coverage

	2003	2004	2005	2006	Overall
CA	101%	96%	98%	101%	99%
ID	94%	92%	97%	96%	94%
OR	95%	94%	99%	95%	96%
UT	97%	94%	96%	98%	96%
WA	94%	95%	96%	100%	97%
WY	103%	87%	93%	89%	92%
Overall	**97%**	**94%**	**97%**	**98%**	**97%**

- Total cost of providing electricity is composed of energy and non-energy components. When a household does not pay its entire bill, but more than covers the energy cost, the household is contributing to coverage of non-energy costs. In other words, if this household is not on the system, others have to pick up the portion of the non-energy cost, through higher rates, that this household would no longer be covering. Total *energy* cost coverage by low-income households was estimated at 112 percent.

Equal Pay And Time Payment Plans

- Fifty-one percent of the low-income households participated in some form of a payment plan during the analysis period. This includes time payment plans designed to help households pay down arrearages, as well as equal payment plans.

Credit and Collection Expense

- Collection notices add to the cost of collection but make up the smallest portion. Reminder notices and past due notices are added to existing bills, and are not additional mailings. Final notices, mailed separately, cost almost $28,000 in 2006.

- Final notices delivered in the field cost the company an additional $200,000 in 2006.

- Fifty percent of the households in our study group who were scheduled for a termination of service made a payment arrangement to avoid termination.

- PacifiCorp charges customers fees for disconnect and reconnect activities. Over the four-year period, customers were charged a total of approximately $343,000 for such activities, including almost $118,000 in 2006. It is unknown how many such fees were paid by customers since payments for specific fees can not be differentiated from payments on subsequent monthly bills.

- We estimate that in 2006, collection activities aimed at soliciting additional payments from customers exhibiting an arrearage, in addition to the cost of disconnection and reconnection services, cost PacifiCorp approximately $480,000. Assuming customers paid the fees associated with such activities in full, the cost to PacifiCorp drops to about $360,000.

Conclusions

We applaud PacifiCorp for looking into the arrearage problem among low-income households, and for their interest in finding potential cures. The findings in our study are not surprising. We do not find the levels of arrears relative to PacifiCorp's size to be significant. Nevertheless, the problem does exist. On an annual basis, we estimate $900,000 in accumulated arrears, $50,000 in interest expense, and about $360,000 in collection costs. This reflects the *total potential size* of the problem, not necessarily the total either *caused by company billings of collections* or *under the control* of PacifiCorp.

If strategies can be found to cost-effectively reduce the level of the problem, they should be pursued. Not only would that be the compassionate thing to do for PacifiCorp's low-income households, but the strategies will also serve the bottom line.

PacifiCorp already has many programs in place to help low-income households. These programs are intended primarily to help households reduce their energy use. Most also end up helping households keep up with their payments. In fact, as mentioned above, in 2006 PacifiCorp low-income households are remarkably covering nearly 98 percent of their total bill.

Of the current offerings, we especially like the rate discount program in Washington, as it is tailored to households based on their ability to pay. Rate discounts also exist in California and Utah. In both cases, the discounts are flat across all income levels. These three payment programs across the various states appear to be producing desired results.

Recommended Strategies

Although specific cost-effectiveness analyses were not conducted to evaluate each potential strategy, cost-effectiveness was considered when reviewing possible arrearage abatement strategies and subsequently generating a list of recommended strategies for PacifiCorp. Traditionally, programs designed to help low-income clients with their utility bills have targeted the following areas:

- Energy Use—This includes weatherization, appliance efficiency, lighting efficiency, and energy education.
- Cost of Energy—This primarily involves rate discounts.
- Emergency Energy Assistance—Funds from contributing customers, employees and PacifiCorp.

In addition, other utility programs have sought to help low-income households through *better budgeting* (e.g., equal payment programs) or by offering clients a *fresh start* by erasing previous arrearage levels (usually based on ability to achieve certain program-established payment goals). Finally, some utilities have tackled the problem through changes in *operations*.

One distinguishing feature of the various programs implemented by utilities is whether the arrearage levels are used as a screening criterion. When households with high arrears are targeted, the reduction in arrears is significantly better than targeting the general population of low-income households.

Identification of Low-Income Households

The identification, design, implementation, and evaluation of PacifiCorp's responses depends upon the regular periodic generation and analysis of data on low-income households. To accomplish this, PacifiCorp needs to create and implement processes that allow for the identification of confirmed low-income households, the collection of regular data on the billing and payment patterns of those households, the analysis of the data, and the translation of data into company policies and programs. It should be noted that this process is complicated by the fact that PacifiCorp does not currently request income information from its customers so as to not infringe on customer privacy.

The National Association of Regulatory Utility Commissioners, (NARUC) issued a resolution in February 2006 urging ". . . each individual State to gather utility billing and arrearage data from all electric and gas utilities within its State commission jurisdiction." The intent of this ruling is to "support State and federal low-income assistance programs, such as LIHEAP; and to evaluate the impact on customer affordability of essential electric and gas service."

Maximize Use of Energy Assistance

PacifiCorp may want to maximize the external energy assistance available to its individual confirmed low-income households. This process can be enhanced by having better tracking of low-income households.

PacifiCorp unduly restricts its view of public energy assistance to the federal LIHEAP program. Total energy-assistance dollars available through the Excess Shelter Deduction of the federal Food Stamp program, as well as through utility allowances provided to tenants of public and assisted housing, may well be greater than through LIHEAP. PacifiCorp should help its arrearage-confirmed low-income households pursue that assistance, and seek to capture that assistance to help retire low-income arrears. "The fiscal year 2001 agriculture appropriations bill included two significant changes to the Food Stamp Program. The legislation increased the excess shelter cap to $340 in fiscal year 2001 and then indexed the cap to changes in the Consumer Price Index for All Consumers each year beginning in fiscal year 2002. To date, only two States have not taken advantage of this option" (http://www.fns.usda.gov/fsp/rules/Legislation/history.htm).

The Company should make the various agencies aware of assistance resources available to their clients. Program information should be relayed to households by the agencies, not PacifiCorp.

Maximize Use of New Trends

Prepaid meters are another option to consider. Many, for good reasons, are opposed to this solution for low-income clients. We believe that its use, on a *voluntary* basis, can benefit the households as well as the utility. Prepaid meters establish a direct link between price and consumption and, thus, it encourages conservation. Also, with prepaid metering, households do not need significant amounts of capital to get reconnected as they otherwise would under more traditional metering arrangements. Under prepaid metering, if you run out of electricity, you just need few dollars to buy some more. If you get disconnected with regular meters, you need to come up with several hundred dollars to get reconnected.

Rate Discounts

PacifiCorp serves a low-income population, some portion of which will have inadequate resources to pay its home energy bills in a full, regular, timely, and automatic basis. As a result of the absolute mismatch of household resources and home energy bills, the company will incur unnecessary and unproductive expenses, which ultimately also prove to be ineffective in accomplishing its purpose of preventing or resolving arrearages.

We understand that PacifiCorp is operating within a constrained environment. In some states rate discounts already are legislated or commission ordered (e.g., California, Washington, and Utah). In others (Idaho, Wyoming, and Oregon) rate discounts are not allowed without appropriate legislation.

We believe PacifiCorp should encourage passing of appropriate legislation to allow the use of rate discounts (especially in Idaho and Wyoming). We also believe that Oregon Senate Bill 1149 should be modified to use some of the funding for a rate discount program. We believe this is the best and most efficient vehicle for improving affordability of electricity. The cost of intake and delivery is extremely low compared to all other low-income assistance options.

Longer Term Solutions

Finally, PacifiCorp should take a long-term perspective in addressing the arrearages of its confirmed low-income households. One aspect of an appropriate utility response to low-income arrearages is to participate in larger social efforts to address the underlying issue of poverty. Such participation does not call for PacifiCorp to be the sole participant, nor even necessarily the primary participant. Nonetheless, PacifiCorp would benefit by emulating Entergy's financial support of local and/or state Individual Development Account (IDA) programs. Through the IDA asset-building approach, PacifiCorp will not only help individual households move out of poverty and, thus, reduce the need for programs directed toward low-income arrearages, but will also promote more stable and secure communities that reduce the need for public and private energy assistance.

Finally, PacifiCorp should consider working with States on the LIHEAP allocation formula. During our investigation we uncovered interesting patterns in use of energy assistance funds. For example, Utah does not expend all their funds while Oregon funds are exhausted quickly. All interested parties should request that the allocation formula, which has been in place for many years, be reviewed at the federal level.

1. Introduction

Project Objectives

On August 30, 2006 PacifiCorp contracted with Quantec, LLC to, "Provide a study [of low-income customers with outstanding balances] and design for [a] possible implementation of an arrearage management project for low-income customers that could be made applicable to all states that PacifiCorp Serves."

The primary objectives established by PacifiCorp were as follows:

1. Assess the level of low-income arrearages across PacifiCorp's six service territories
2. Estimate the impacts of these arrears on PacifiCorp and its ratepayers
3. Recommend cost-effective strategies to reduce low-income arrears and mitigate associated operational costs

Project Approach

To properly scope the magnitude and impact of low-income arrears on the utility, Quantec offered PacifiCorp a five step approach to be completed over a six-month period as outlined below:

Step 1: Establish and communicate a detailed evaluation plan to PacifiCorp and interested stakeholders

Step 2: Define and collect from PacifiCorp the following datasets: customer demographics, customer billings, and utility collections activity

Step 3: Assess the significance of PacifiCorp's low-income arrearage problem, investigate causative factors leading to unpaid balances, and test key performance metrics

Step 4: Examine credit management and arrearage programs implemented by other utilities

Step 5: Develop and recommend strategies to mitigate risks associated with PacifiCorp's low-income clientele

2. Discussion of Methods

Quantec worked closely with PacifiCorp to define the population to be studied, methods to be employed, and the effort necessary to deliver valued and defensible recommendations to the management team. We conducted two kick-off meetings at the beginning of the project. Our metrics were presented to the advisory group for approval prior to project launch, and the advisory group approved all metrics. Further, we agreed that the focus of the study would be *low-income households with arrears* versus the low-income population in general.

Research Methodology

Review Of Industry Credit Management Strategies

Quantec pulled reference material from our library of industry publications and a searchable repository of more than 200 client mandates. We also downloaded reports and data from online resources and trade associations.

From this review, we developed a summary of best practices as they relate to utility credit management strategies applied to low-income accounts. The resulting findings provide a context within which to assess PacifiCorp's credit management practices.

An Analysis Of PacifiCorp's Credit Management Practices

Quantec requested organizational and departmental data related to the provision of electric service to PacifiCorp's residential customer households. PacifiCorp provided Quantec with key documents relating to its operational efficiency, such as annual reports, FERC 1 filings, market studies, collection workflows, summary of rate tariffs, low-income research reports, and state-level statistics regarding collections performance.

Findings from these documents allowed us to profile the residential class, and the associated level of collection activities. The subsequent analyses also provided comparative benchmarks, allowing us to scope the magnitude of impacts resulting from payment practices of PacifiCorp's low-income households. The results of this inquiry are provided in Appendix B.

Detailed Analysis of PacifiCorp's Low-Income Households

Quantec requested transaction histories for all known low-income accounts within PacifiCorp's service territory. These were accounts that were either active at the time the data were pulled in December 2006, or were inactive but known to have participated in a low-income assistance program since 2002. PacifiCorp selected all accounts that met one or more of the following criteria:

1. Received low-income energy assistance grants
2. Participated in residential low-income energy-efficiency programs

3. Participated in PacifiCorp's low-income bill discount rates (available in Utah, Washington, and California)

Table 3 shows the number of households identified by PacifiCorp utilizing the criteria listed above for each state ('*Selected for Analysis Sample by PacifiCorp*'). Table 3 also displays the estimated total number of PacifiCorp households living under the 150 percent Federal Poverty Guidelines as identified in the 2000 Census for PacifiCorp's service territory.[1] To determine this number, the percentage of total households in each county determined by the Census to be living in poverty was applied to the total number of PacifiCorp residential accounts in that county. The resulting county level data were then aggregated to the state level ('*Households Under 150% of FPG (Served by PacifiCorp)*').

Next, utilizing statewide information from the PacifiCorp Energy Decisions Survey, we limited the number of previously identified PacifiCorp low-income accounts to only those households with electric space or water heat ('*Households with Electric Space or Water Heat*'). These households are more likely to generate significant electric utility bills and, as a result, carry arrears or request energy assistance than households who do not have electric space or water heat. While applying this extra step results in a more conservative estimate of the problem (some non-electric space and water heating households do generate arrearages), it effectively prevents overestimation and limits subsequent extrapolation of analysis results to only households likely to share similar characteristics.

In places where low-income bill discounts are available (Utah, Washington, and California), the hit rate of low-income households is high: 82 percent for California and 29 percent for Washington. Note that in Utah the households identified through the Lifeline rate exceeded the number of low-income households with electric space or water heat. The reason for this is probably due to Lifeline not having any space or water fuel requirement.

Much of the information provided in the table is expanded upon and illustrated graphically in Figure 2. As evident in the figure, several populations of various sizes were considered when conducting this study and, therefore, several populations must be considered when interpreting the study's findings.

[1] Although different program eligibilities vary across states, 150 percent was used as a proxy for all PacifiCorp states.

Table 3. Proportion of Total Low-Income Households Identified For Analysis

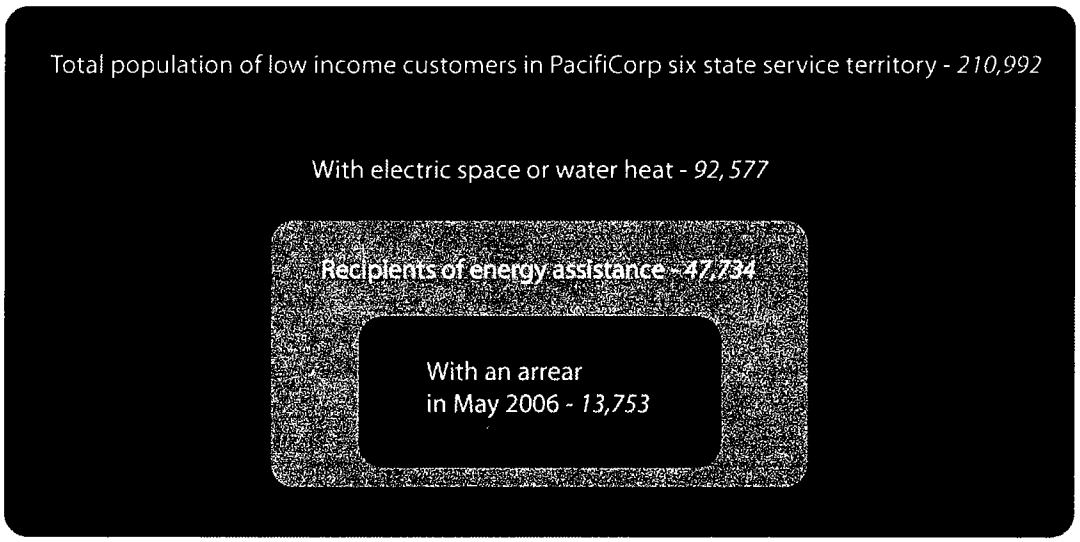
	Households Under 150% of FPG (Served by PacifiCorp)	Households with Electric Space or Water Heat*	Selected for Analysis Sample by PacifiCorp	Proportion of Total Households with Electric Space or Water Heat Included in Analysis
CA**	11,072	9,428	7,713	81.8%
ID	8,874	4,881	267	5.5%
OR	72,092	48,301	9,799	20.3%
UT	80,779	11,309	25,714	227.4%
WA	17,436	13,077	3,728	28.5%
WY	17,439	5,581	513	9.2%
PacifiCorp	**210,992**	**92,577**	**47,734**	**50.4%**

*Estimated using PacifiCorp's state-specific Energy Decisions Survey data
**The prison population (identified by PacifiCorp as 3,300) was removed and excluded from all analysis of Census data.

As shown in both Table 3 above and the figure below, the largest group of households are those identified as living at or below 150 percent of the Federal Poverty Guideline (n=210,992). Within this group, slightly less than half (n=92,577) were determined using utility appliance saturation data to possess either electric space or water heat. Concurrently, for the purposes of this study PacifiCorp was able to identify a sample of 47,734 households (most of which are assumed, due to their need for assistance, to have electric space or water heat) for the analysis. Further, within this sample only a portion of the identified accounts were found to have an arrearage in 2006 (n=13,753).

For the purposes of this study, a household with an arrearage problem was defined as one possessing a May arrear in excess of 31 days. Arrearages are in constant flux as monthly invoices are issued, and payments, both by the customer and by assistance organizations, arrive erratically. Therefore, May was utilized as the snapshot point to assess whether a given household had an arrearage problem. May was selected because it is a shoulder month and it allows sufficient time for winter assistances to be exhausted.

Figure 2. Low-income Customer Population Categories



Selection Bias

Whenever a sample is used to estimate parameters of interest, the potential for introducing bias when extrapolating the results is present. If the sample is random and is not different from the population from which it was drawn, the bias is minimized. In this, as in any statistical analysis, a key question is, how similar is the sample to the population?

Our sample of households is identified as recipients of some form of energy assistance and, thus, are defined as low-income households. If a household has received energy assistance, participated in a low-income energy-efficiency program, or has been placed on a low-income rate, then our sample captured it (47,734 households; see Table 3 and Figure 2).

Little is known with regard to the identity and/or utility bill payment behaviors of the general low-income population identified by the U.S. Census Bureau. As such, we are limited in our ability to extrapolate our findings to the general low-income population.

In fact, we expect the low-income households identified by PacifiCorp to be different than the general low-income population. The fact that our sample is composed of those that received assistance of some sort makes them, by definition, different. Due to the receipt of assistance, their arrears must be *biased downward* compared to those that did not receive assistance. However, another argument can be made. Those that did not receive assistance are managing their bills, and are not seeking assistance. Their arrears must be lower than those seeking help, making our sample estimate of arrears *biased upward.*

Given that the analysis was conducted at the household arrearage problem level (13,753 households in May 2006), the question of extrapolating the results must be carefully considered. Do these estimates apply at the recipients of energy assistance level (47,734 households)? How about to those low-income households known to have electric water or space heat but who did not necessarily

receive energy assistance (92,577 households)? Or, finally, do they apply to the overall low-income population of 210,992 households?

The answer is that the estimates derived from a sample should be applied to a population with which they bear the greatest resemblance. In other words, while our estimates is most accurate for the 13,753 households, each time the estimates derived from this sample are extrapolated to a higher level population group, they become less and less applicable.

Starting at the top, our argument on the appropriate application of the derived sample estimates is as follows:

- Of the overall low-income population of 210,992 households, only those 92,577 households with electric space or water heat are important to this analysis, as they are the ones more likely to have higher energy bills and therefore meaningful arrears.

- If households are accumulating significant arrears, they are likely to seek help. Of the 92,577 low-income households with electric space or water heat, 47,734, slightly more than 50 percent, received help or participated in a low income program. The remaining households did not receive help for a variety of reasons. We believe that extrapolation to this group is warranted. We caution though, that our estimate of this group's arrears is uncertain.

Table 4 provides the distribution of customer with arrearages by state.

Table 4. Low-Income Households in Arrears

	Customers with May 2006 Arrears	Selected for Analysis Sample by PacifiCorp	Percent with May 2006 Arrears
CA	1,720	7,713	22%
ID	40	267	15%
OR	1,546	9,799	16%
UT	9,519	25,714	37%
WA	846	3,728	23%
WY	82	513	16%
PacifiCorp	**13,753**	**47,734**	**29%**

Performance Metrics

We defined a series of performance metrics prior to our data analysis. Each was created and tracked for the households included in our analysis. It is important to note that since PacifiCorp tracks only a customer's current arrearage, the company was unable to provide historical arrearage records (i.e., a specific customer's arrearage balance at the outset of the study period). Since this information was unknown, we established an artificial arrearage baseline of zero for each customer as of January 2002. While not all the identified customers carried an arrear at the start of 2002 it is likely many did. To account for the fact the customer's arrearage at the start of the study was unknown and an

artificial baseline was imposed, arrearage balances were calculated during 2002 but not analyzed in any of the metrics listed below.

Simply put, this method creates a one year buffer for each customer (to account for the full range of seasonality and assistance payments) in which their arrearage level can return to approximately its natural level. After this calibration, a comparison of household arrearage levels and payment activities between years is appropriate. Again, although arrearage levels over the first year were calculated (as to inform the analysis of the following years), none of the metrics below were generated using 2002 data. This problem and approach are not uncommon when assessing utility arrearages.

The specific metrics generated for this report include:

Annual Arrearage Growth. The growth of arrears over a specified 12-month period. For example, if the total cumulative arrears at the end of December 2005 is $500 and at the end of the previous December (2004) the total cumulative arrears was $100, then the annual arrearage growth is $400. Simply, this metric captures the change in a customer's arrearage level over any twelve monthly billing cycles.

Customer Bill Coverage Customer bill coverage is the ratio of the sum of payment divided by sum of utility invoices over twelve monthly billing cycles. For example, if in annual billed amount was $1,000 and the household paid $500, annual bill coverage would be 0.50.

Total Bill Coverage. Total bill coverage differs from the household bill coverage in that this ratio includes energy assistance payments in addition to customer payments.

Energy Cost Coverage. Total cost of providing electricity is composed of energy and non-energy components. When a household does not pay its entire bill, but more than covers the energy cost, the household is contributing to the coverage of non-energy costs. In other words, if this household is not on the system, others have to pick up the portion of the non-energy cost, through higher rates, that this household would no longer be covering. Simply, since the burden of non-energy costs is shared by all households, any contribution to the non-energy cost by another customer lessens the overall burden and merits keep the customer's account active. This ratio is represented in the following equation:

$$\text{Energy Cost Coverage} = \frac{\text{Customer Payment} + \text{Assistance}}{\text{Energy Charge}}$$

The Impact of Arrears

We examined five components thought to encompass the breadth of utility impacts associated with outstanding debt. Pulling discussions from industry literature, we summarize below the following impacts to estimate the cost of low-income arrears on PacifiCorp.

The Cost of Carrying Arrears. Each dollar in credit sales raises the working capital requirements of the utility. To assign the incremental carrying costs associated with low-income arrears, we looked at account balances that have aged 31 days or more.

To calculate the carrying costs, we applied the quarterly weighted interest rate associated with PacifiCorp's short-term debt,[2] obtaining these rates from the company's quarterly financial reports. To calculate the carrying cost on the observed low-income arrears, we required three pieces of information: 1) an estimate of the magnitude of low-income arrears, 2) the terms by which the utility finances its short-term debt, and 3) the number of days the arrears is outstanding.

For our assessment, we calculated the carrying cost using the following equation, assuming the interest expense accrued daily on the balance of low-income arrears:

$$CarryingCost = [Arrears * (1 + APR/365)\text{^}days] - Arrears$$

Where *carrying cost* equals the interest expense associated with arrears, *arrears* is the outstanding balance at the time of calculation, *APR/365* is the daily interest rate for the period of accrual, and *days* is the number of days the arrearage was outstanding.

Collection Activity Expense. PacifiCorp invests resources towards the collection of past-due balances. Collection efforts begin with bill notices and escalate to in-field electric service disconnects. The exact process used to collect these unpaid balances varies by state.

To estimate the collection activity expense, we counted the number of collection activities documented by PacifiCorp over the period of study. A cost, provided by PacifiCorp, was assigned to each collection activity and totaled. Not all activity costs are monetized here because costs are not known. For example, costs to negotiate payment arrangements are not included in activity costs.

PacifiCorp attempts to recover some of the collections-related costs by billing the customer directly for services such as field visits, and reconnect fees.

The calculation is therefore as follows:

$$Collection\ Activity\ Expense = \sum_i Activity\ Count(i) * Activity\ Cost(i)$$

Where *collection activity expense* is the cost to collect past-due accounts, *activity count(i)* is the count of activities *i* occurring within the study period, and *activity cost(i)* is the cost associated with activity *i*.

Write-Off Expense. Revenue that cannot be collected is written off as bad debt 180 days after the closing bill is issued. Typically, a bad debt reserve is built into existing rates. The cost of bad debt impacts both the utility and ratepayers and, therefore, represents an expense. The collections amount written-off by PacifiCorp was reported to us directly for all known low-income households.

[2] PacifiCorp's 10-K (annual) and 10-Q (quarterly) reports to the Securities & Exchange Commission (SEC) for 2004 through 2006.

3. Results

A Profile Of The Low-Income Households

The three figures below show the distribution of low-income households across the service territory. In terms of total number of households, Utah has the highest at 39 percent. Oregon has the largest share when the electric space or water heat screen is applied (at 51 percent). Finally, in terms of receipt of assistance, Utah again is the front-runner. However, it should be noted that the finding is primarily due to Lifeline rate discount participation in Utah.

Figure 3. Distribution of Total Low-income Households by State (n=210,992)

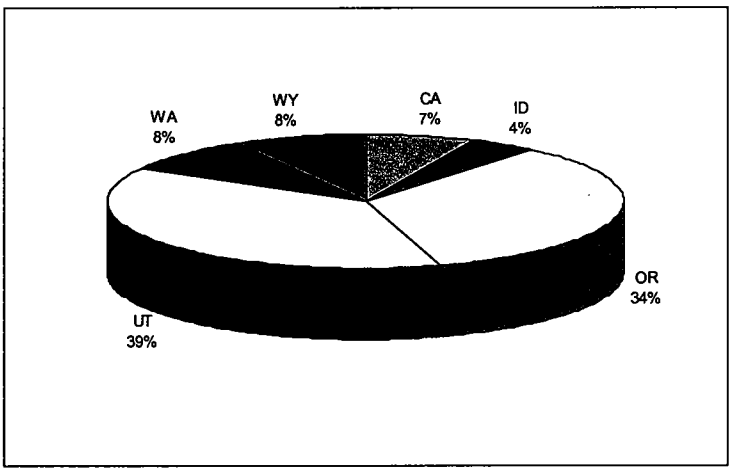


Figure 4. Distribution of Low-income Households with Electric Space or Water Heat (n=92,577)

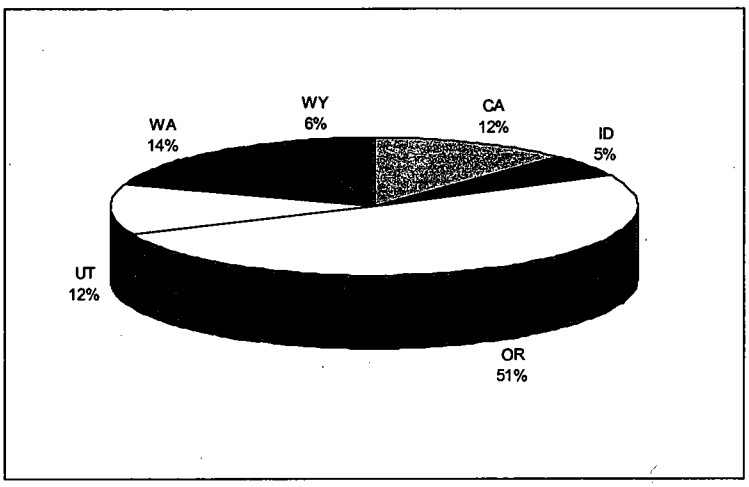
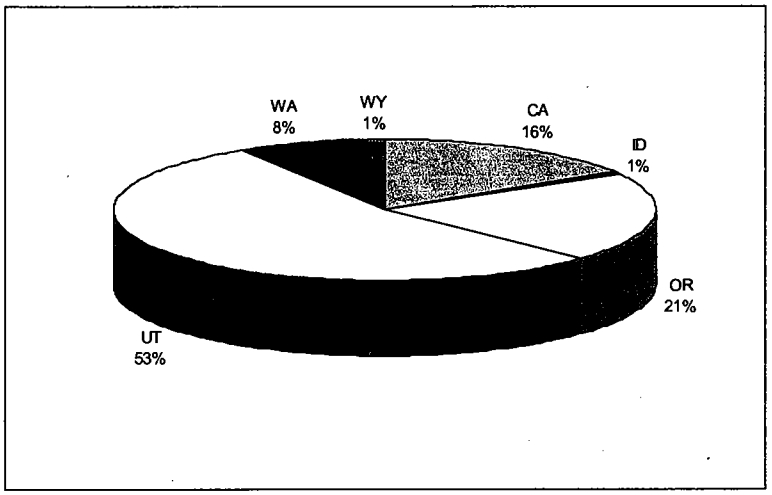
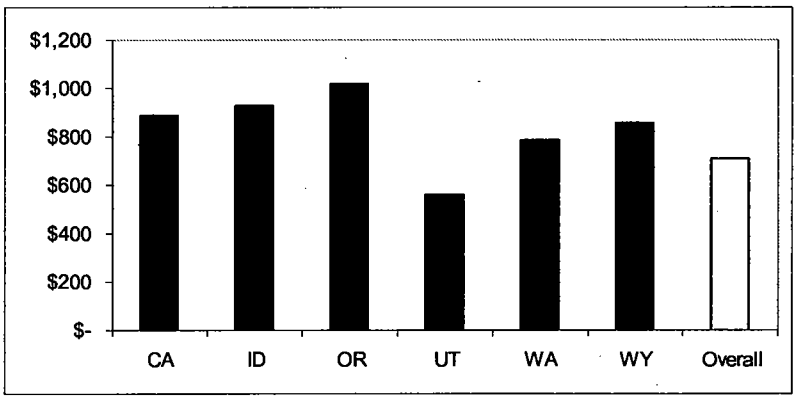


Figure 5. Distribution of Low-income Households in Receipt of Energy Assistance (n=47,734)



Across all years analyzed, the average customer annual bill is approximately $700. The highest annual electric cost to low-income households is in Oregon and the lowest is in Utah. This result is not surprising since Oregon has the most households with both electric space and water heat while Utah has the least. The average annual invoice in 2006 was approximately $900 with a high of $1,063 in Oregon and a low of $592 in Utah.

Figure 6. Overall (2003-2006) Annual Invoice Amount by State (n=13,753)

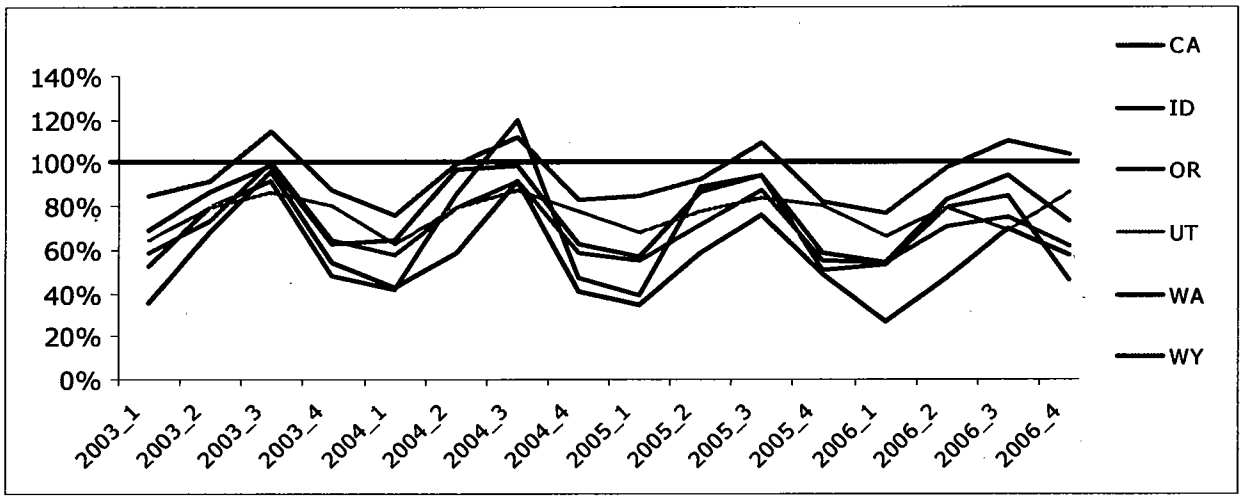


Bill Coverage

Customer bill coverage is simply the ratio of the total amount paid by the households divided by the total bill. This was calculated for the entire group of identified low-income households exhibiting a May arrear for each state and for each quarter beginning in 2003. The numbers were calculated at a quarterly level in order to show the seasonality of bill coverage. The pattern of bill coverage is

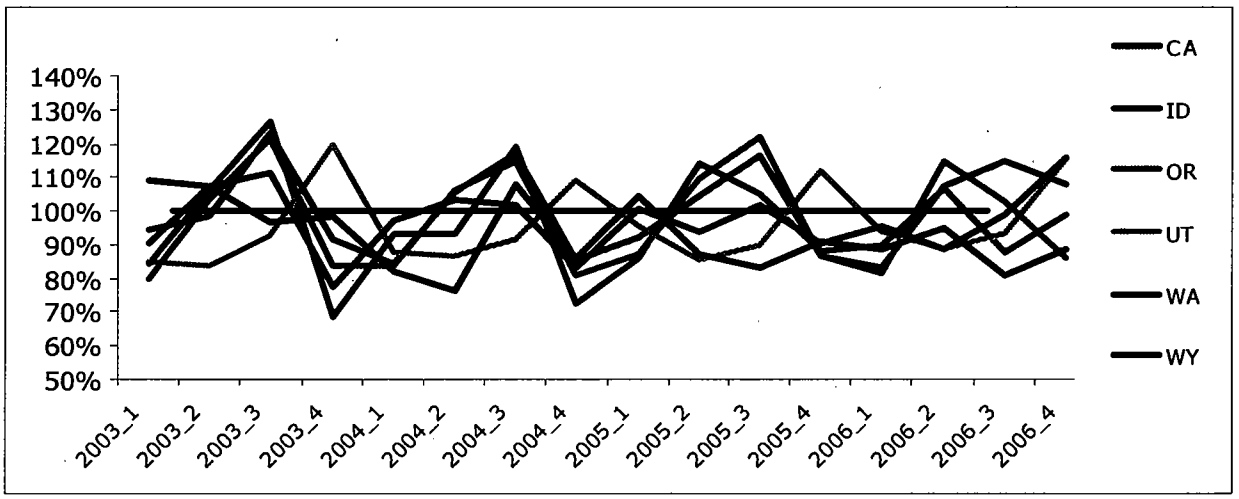
nearly the same for all states with coverage percentage dropping during the winter and increasing during the summer. The exception is California, where bill coverage frequently jumps above 100 percent. The low-income households in the other states are almost always below the 100 percent line, meaning that they do not pay their entire bill. In 2006, coverage varied from a low of 47 percent in Wyoming to a high of 95 percent in California. As evident, states with an established rate discount program, not surprisingly, exhibited higher customer coverage levels. Overall (across all states and years of analysis) the customer coverage was about 75 percent.

Figure 7. Customer Bill Coverage (n=13,753)



When customer payment is combined with bill assistance, the bill coverage line is above 100 percent most of the time for most states. Overall (across all states and years of analysis) the total coverage was about 97 percent. Overall, California households cover their bills better than do households in other states. This is a remarkable coverage for a low-income customer segment.

Figure 8. Total Bill Coverage (n=13,753)



Bill coverage is greatly impacted by the receipt of energy-assistance payments. The total amount of such payments and the percent of the total invoice assistance payments represented are presented, by state and year, in Table 5. As evident in the table, the total assistance provided, as well as the percentage of the total bill assistance represents, has increased annually since 2003.

Table 5. Assistance Payments By State (n=13,753)

	2003		2004		2005		2006	
	Total Assistance	% of Total Invoice	Total Assistance	% of Total Invoice	Total Assistance	% of Total Invoice	Total Assistance	% of Total Invoice
CA	$ 46,628	7.3%	$ 53,154	5.7%	$ 79,068	7.5%	$ 97,962	6.3%
ID	$ 6,035	26.4%	$ 9,289	24.2%	$ 22,604	31.2%	$ 16,748	31.0%
OR	$ 259,986	22.7%	$ 517,205	24.8%	$ 876,052	33.0%	$ 667,717	30.8%
UT	$ 383,984	17.4%	$ 573,506	17.2%	$ 810,037	17.8%	$ 1,290,947	23.1%
WA	$ 45,225	17.4%	$ 84,797	18.6%	$ 168,913	25.3%	$ 192,667	27.0%
WY	$ 24,881	42.9%	$ 29,086	32.5%	$ 39,353	40.5%	$ 42,012	41.8%
PacifiCorp	**$ 766,739**	**17.7%**	**$ 1,267,037**	**18.3%**	**$ 1,996,029**	**22.0%**	**$ 2,308,052**	**22.7%**

Rate discount programs lower home energy burdens by reducing the amount paid by low-income households. In three states with rate discounts programs, we observed the highest customer bill coverage ratios; namely California (92 percent), Utah (80 percent), and Washington (75 percent). The average customer bill coverage ratios for states without a low-income rate discount are significantly lower, as seen in Idaho (65 percent), Oregon (66 percent), and Wyoming (57 percent). Legislation would be required to initiate a low-income bill discount program in Idaho and Wyoming. In Oregon, due to SB1149, Oregon Energy Assistance Program funds are collected in lieu of a rate discount.

Energy Cost Coverage

Energy cost coverage looks at the household's ability to cover the energy costs. By doing so, we can determine whether the customer, through out-of-pocket and assistance payments, is contributing to the non-energy cost of assets necessary for electric distribution.

The results are presented in Table 6. For each state/year combination, the table shows the proportion of households that are covering their energy cost (for example, in CA in 2003, 79 percent of the low-income households covered their energy cost). The last two columns show the result of applying the equation above for 2006. As evident in the table, 83 percent of the low-income population covered their energy cost. Collectively, the households exceeded energy cost by 13 percent. The 13 percent is their contribution to the utility's non-energy assets. Total energy cost coverage is approximately 113 percent

When energy cost coverage exceeds 100 percent, loss of the load will lead to the need to distribute the non-energy cost of the utility over fewer households and, therefore, to an increase in rates. The low-income population in PacifiCorp territory, while not paying all of its bills, is covering the energy cost and contributing to non-energy cost. Keeping their load on the system, from a pure rate impact perspective, is better than losing them.

Table 6. Energy Cost Coverage--Customer Payments and Energy Assistance (n=13,753)

	2003		2004		2005		2006	
	Percent of Customers Covering Energy	Total Energy Cost Coverage	Percent of Customers Covering Energy	Total Energy Cost Coverage	Percent of Customers Covering Energy	Total Energy Cost Coverage	Percent of Customers Covering Energy	Total Energy Cost Coverage
CA	79%	113%	72%	107%	76%	110%	83%	113%
ID	41%	100%	44%	96%	53%	102%	52%	100%
OR	62%	109%	62%	107%	69%	115%	66%	112%
UT	65%	111%	65%	110%	70%	113%	73%	117%
WA	61%	102%	59%	104%	64%	111%	70%	118%
WY	78%	131%	73%	112%	72%	119%	71%	117%
PacifiCorp	**66%**	**110%**	**65%**	**108%**	**70%**	**113%**	**73%**	**115%**

Equal Pay And Time Payment Plans

Table 7 shows the percent of sampled households that participated in each payment plan. Plan types include equal pay, long term payment, and short term payment plans. The equal pay plan, designed

so that the customer pays an equal amount every month, is not restricted to low-income households and is open to all households without an arrearage. Households can participate in multiple pay plans over time, but not concurrently. Table 7 also shows the contribution of the various program participants to total unpaid balances across the years and states. Forty nine percent of households in the sample were not on any type of payment plan. These households were responsible for 37 percent of all unpaid balances. Table 7 also shows that 41 percent of all households in this group were only on a long term payment plan during the period of study. These households were responsible for 55 percent of the year-end unpaid balance, which was a larger proportion of unpaid balance than incurred by those who were not on payment plans. Households only participating in an equal pay plan (7 percent of households) were responsible for only 3 percent of the year-end unpaid balances.

Table 7. Participation In Various Company Plans

	Percent Of Total Unpaid Balances	Percent Of Households Participating
Equal Pay Plan	3.4%	6.9%
Long Term Pay Plan	54.7%	40.5%
Short Term Pay Plan	1.0%	0.7%
Multiple Plans	4.0%	2.7%
No Plans	36.9%	49.2%

Table 8 shows the average amount of unpaid balance at the end of each of the four study years. Households only on equal pay plans averaged $86 in year-end unpaid balance across the four years. The lower annual unpaid balances exhibited by households on the equal pay plan was expected since the plan is only offered to households without arrears at the time of signup. As evident in the following table, households not participating in any plans show a lower end-of-year balance than those participating in either the short or long term plan. Again, this result is not surprising since households with the greatest arrearage problems are more likely to participate in a payment plan. Regardless, stabilizing households so that they are only on equal payment plans should reduce the overall year-end balance (arrearage). It is likely that moving households that are not on any plan into the equal pay plan will help them stabilize their payments and reduce arrearage.

Table 8. Unpaid Balances by Program Type

Average Unpaid Balance at Year End (December)					
Average	**2003**	**2004**	**2005**	**2006**	**Average**
Equal Pay Plan	$84.50	$85.42	$98.30	$75.47	$85.92
Long Term Pay Plan	$181.72	$232.15	$249.65	$236.31	$224.96
Short Term Pay Plan	$219.88	$289.16	$228.31	$229.83	$241.80
Multiple Plans	$217.83	$265.24	$291.53	$214.62	$247.30
No Plans	$104.58	$130.64	$142.13	$130.88	$127.06

Total Annual Arrears

Ultimately the focus of the analysis is determining the total amount in arrears across PacifiCorp's entire low-income population. Before discussing the applied extrapolation methodology or the extrapolation results, Figure 9 provides another overview of size and relationship between the following groups:

- Entire low-income population in PacifiCorp's service territory (determined utilizing Census data)
- Low-income population utilizing electricity for space or water heat
- Low-income population identified for the study (households that have requested bill assistance, received weatherization services, and/or on a low-income bill discount)
- Low-income population found during the analysis to have an arrearage problem in 2006

Figure 9. Extrapolation Context

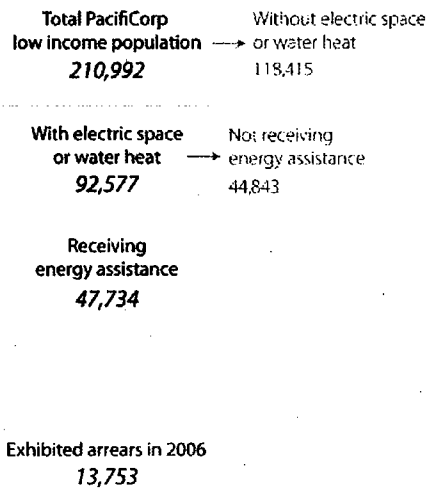


Table 9 builds upon the context of Figure 9, and walks the reader through the analysis and extrapolation steps.

1. The total number of households that are below 150 percent Federal Poverty Guidelines is **210,992**.
2. Of those, we estimated **92,577** households having either electric space or water heat.
3. According to data provided by PacifiCorp, **47,734** households had received some form of low-income energy assistance (between 2002 and 2006).
4. In 2006, **13,753** unique households had an arrearage balance in May.

5. The average accumulative arrearage of these 13,753 households from 2002 to 2006 was **$238**.

6. The total cumulative arrears for this subpopulation is therefore **$3,280,067**.

7. However, this likely does not represent all of PacifiCorp's low-income households that carry arrearages. As noted above, of 92,577 households with electric space or water heat, 47,734 received assistance and **44,843** did not.

8. Of those 44,843 households who did not receive assistance, but have been identified as low-income and utilizing electricity for space or water heat, we estimated the number of households expected to have payment problems is **5,241**.[3]

9. Therefore, the total arrearage problem (**$4,529,991**)is the sum of the outstanding arrearages held by the identified households receiving assistance ($3,280,067) and the unidentified customer who have not received assistances ($238*5,241 or $1,249,024).

Table 9. Total Arrears

Category	Result
1) Total Low-income Population	210,992
2) Total with Electric Space or Water Heat	92,577
3) Total Recipients of Energy Assistance	47,734
4) Households in Sample with an arrearage in 2006	13,753
5) Average Cumulative Arrearage in 2006	$238
6) Total Annual Arrears Among Sampled Households	$3,280,067
7) Number of Households with Electric Heat or Water Heat Not Receiving Assistance	44,843
8) Number Expected to Have Payment Problems	5,241
9) Total Arrears Problem Across All Households with Electric Heat or Water Heat	$4,529,991

It should be noted that we feel very confident in the $3.28 million estimate of total cumulative arrears. The additional $1.249 million, on the other hand, is an extrapolation that is built on assumptions regarding the behavior of households outside of our analysis group. This estimate is uncertain. However, we do feel that the direction of the bias is just as unlikely upward as it is downward.

The timing and magnitude of assistance payments also has an impact on arrearage levels. While most energy assistance in PacifiCorp's service territory is offered during the heating season, the disbursement of such assistance differs by state and is spread out over many months. Although it is not possible to remove the impact of assistance payments from an analysis of low-income arrearages (both households and PacifiCorp respond to the timing and magnitude of assistance payments) it is important to note their potential impact on an analysis of utility arrearages.

[3] Determined for individual states based on proportions of low-income households, those with electric space and water heat, etc. The details of these calculations are not shown in Table 9.

Arrears by State

As shown in Figure 10, Oregon is the largest contributor to total arrears. This is primarily driven by the size of the population, as well as the prevalence of electric load.

Figure 10. Distribution Of Arrears By State (n=13,753)

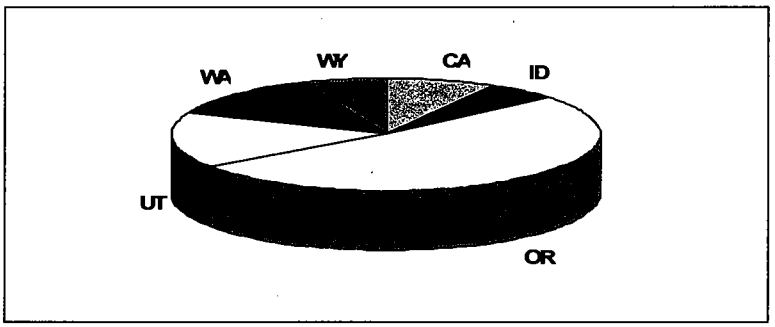


Figure 11 shows that Oregon's average level of accumulated household arrears is among the highest in the service territory.

Figure 11. Average Cumulative Household Arrears By State in December 2006 (n=13,753)

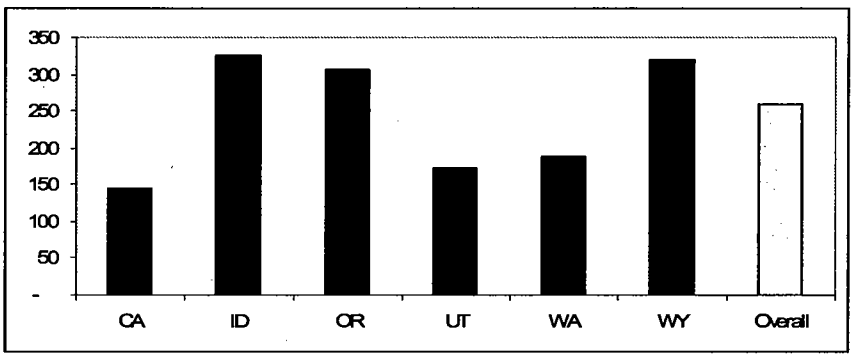
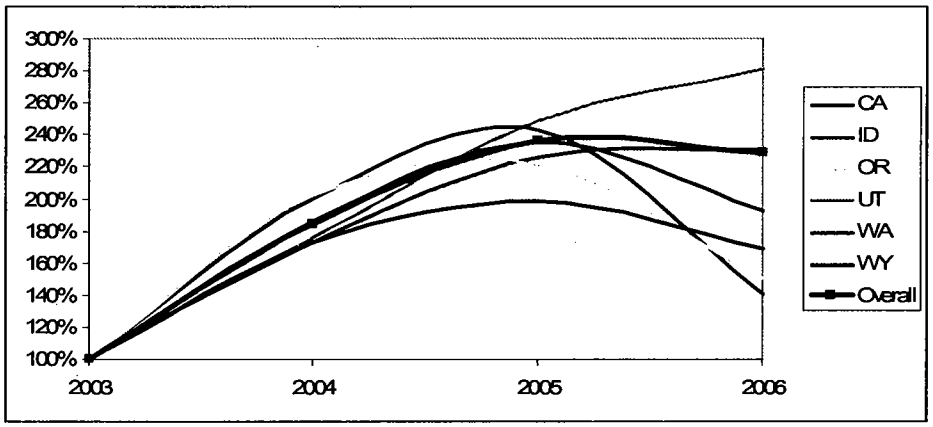


Figure 12 displays the change in total accumulated arrears by state over the analysis period. While overall, the total arrears more than doubled between 2003 and 2006, in Oregon, it increased in 2004 and 2005 and eventually decreased in 2006. The same pattern is observed in all states except Utah. PacifiCorp explains the reduction in overall uncollectibles as due in large part to a greater focus on collection practices. At the same time, spending on energy conservation programs increased significantly in 2004 (along with an increase in energy-assistance funding). The first method collects more money from households, while the second reduces the household consumption and the third lessens the customer's individual burden. Collectively, the factors reduce the amount the customer is expected to pay and thereby decrease observed arrearage levels.

Figure 12. Growth Rates In Total Arrears



Another way of examining trends in arrears is to look at the amount accumulated one year at a time. In other words, to compute the arrears growth in the year January 2006 to December 2006, we took the difference in accumulated arrears in December of 2006 and subtracted those in December of 2005. Table 10 shows the average growth in arrears by state and year. As evident in the table the overall annual growth in per household arrearages has generally declined since 2003 ($48 in 2006 compared to $64 in 2003). As noted above, this is likely due to a number of factors. Overall, arrears have increased by about $55 annually for the last five years across the entire service territory.

Table 10. Per Household Annual Arrearage Accumulation

	2003	2004	2005	2006	Annual Average
California	$45	$40	$ 51	$40	$44
Idaho	$69	$102	$94	$92	$91
Oregon	$113	$89	$83	$94	$93
Utah	$54	$46	$48	$40	$46
Washington	$71	$65	$65	$57	$64
Wyoming	$93	$89	$84	$103	$92
PacifiCorp	**$64**	**$56**	**$57**	**$48**	**$55**

A final note on arrears and their accumulation relates to receipt of assistance. In general LIHEAP does not require that a disconnect notice be issued to qualify for regular assistance. However, in order to qualify for crisis help, a disconnect notice must have been received. This may be contributing to the observed levels of arrears. In some states, such as Washington, the situation may be further exacerbated due to the presence of legislation, such as prior obligation.[4]

[4]Following disconnection, the account holder may request to be reconnected by claiming 'prior obligation'. By doing so, the account holder is not required to pay any outstanding balances before regaining service; however, the account holder may be required to place funds on deposit and pay a reconnection fee.

Cost of Carrying Arrears

We applied the quarterly weighted interest rate associated with PacifiCorp's short-term debt to calculate the carrying cost of low-income arrears. Our discussion begins with a look at the arrearage balances observed over the study period, trends in PacifiCorp's financing of short-term capital, and the accumulated interest expense.

Cost of Capital

Interest rates have risen steadily from a low of 1.3 percent in 2003 to 5.3 percent in the last quarter of 2006.[5] We estimated above that the current arrearage levels across the states for low-income households with electric heat or water heat, would be $4.53 million. At the current interest rate of 5.3 percent, this would result in a cost to PacifiCorp of $246,547 in 2006.

Credit and Collection Activities

An even greater impact on the cost of low-income arrears are the credit management strategies employed at PacifiCorp. Using data recorded in the utility database, we were able to calculate the cost of credit and collection activities.

Count of Collection Events

Each collection activity has a corresponding code in the database to identify which have occurred, and those actions taken to cancel that activity. For example, a disconnect notice (the collection activity) may result in the establishment of an agreeable payment plan (the reason the action was canceled). Table 11 below shows the number and type of collection activities from 2003 through 2006.

Table 11. Frequency of Collection activity

Frequencies	2003	2004	2005	2006	Total
Reminder Notice	12,254	18,605	23,407	25,786	80,052
Past Due Notice	27,556	42,041	56,720	56,444	182,761
Final Notice	23,308	35,296	47,713	47,470	153,787
Final Field Notice	4,641	6,779	9,497	9,863	30,780
Scheduled Disconnect	10,901	16,578	22,722	23,372	73,573
Reconnect/Connect	1,677	3,041	4,286	4,452	13,456
Assigned to Collection	144	299	445	583	1,471
Total	**80,481**	**122,639**	**164,790**	**167,970**	**535,880**

[5] PacifiCorp's 10-K (annual) and 10-Q (quarterly) reports to the Securities & Exchange Commission (SEC) for 2004 through 2006.

We see the frequency of events follow logically from the initial past due notice through the disconnect/reconnect. The reminder notice is sent before the past due notice to households without a history of payment problems. The field final notice is typically used only in Utah.

Key observations from this table include the following:

- 182,761 past due notices were sent, followed by 153,787 final notices; collection activities continued for 84% of the past due notices delivered.
- Of the 153,787 final notices, the electric service for 73,573 homes (47 percent) was scheduled for termination.
- Invoice records show 13,456 households were reconnected[6]. We use this as the estimated number of terminated accounts in our study group.
- There were 1,471 accounts assigned to an external collections agency.
- Over a four year period, 535,880 collection activities were undertaken with a steady rise in activity from 2003 through 2006.

Assigning An Activity Cost

Collection activities are assigned a code in the customer information system to track the status of the collection activity. While all activities have some cost associated with them, PacifiCorp was able to provide costs only for the following services: disconnect/reconnect, field final notice, and estimates on mailed correspondence. Table 12 lists those per activity costs assigned specific collection activities. Readers will note the following:

- For all but the disconnection and reconnection fees, the costs are the same for each state.
- The disconnection and reconnection fees vary by state due to the personnel assigned, the associated time, and hourly rates.

Table 12. Collection Activity Costs by State

Collection Activity	CA	ID	OR	UT	WA	WY
Disconnect/Reconnect Service	$112.15	$19.75	$24.79	$20.34	$25.14	$56.78
Field Final Notice				$20.34		
Mailed Final Notice	$0.59	$0.59	$0.59	$0.59	$0.59	$0.59

Some collections activities, such as reminder notices and past due notices, appear as additional verbiage on a customer's regular bill, and are not separately mailed. Therefore, while these are

[6] Identified through reconnect charges on that account; accounts reconnected under another name and account number cannot be tracked or counted.

known collections activities and have some internal cost, they are not assigned an additional cost here.

We also know that additional costs related to collection activities exist but they cannot be precisely quantified. Estimates would need to be derived from departmental data and internal studies. For example, talking with the household on the phone about its outstanding balance, and eventually negotiating a payment plan, has a cost within the call center. Likewise, an account assigned to a collection agency has empirical cost to the utility, but the costs on a per-household basis are much more difficult to quantify. PacifiCorp does not track these costs, and departmental data were not available. Therefore, while there may be additional well-documented collection related events, the average activity cost could not be provided or estimated. As such, the expenses quantified below will understate the true cost of the collection methods employed by PacifiCorp.

Collection Activity Costs

Using collection activity codes provided in the data extraction, the frequency and costs associated with the activities were computed in a bottom-up approach. It is widely accepted that this type of approach understates the true cost of providing collection services. Table 13 below totals the cost of collection activities from 2003 to through 2006. The following findings were observed:

- Final Field Notices make up the majority of the costs, totaling $626,000 over the course of our study. These are final notices delivered in person rather than mailed to the customer. The database shows almost 31,000 in-field notices delivered at a cost of over $20 per notice.

- Collection notices occur much more frequently than other events, add to the cost of collection, but make up the smallest portion of costs. Reminder notices and past due notices are added to existing bills and are not additional mailings. Final notices, mailed separately, cost almost $91,000 over the study period.

- Past due notices are typically included with regular bill mailings and do not have an additional cost component to mail. Eight percent of households receiving a past due notice made a payment or payment arrangement.

- Fifty percent of sampled households scheduled for a termination of service made a payment arrangement to avoid termination. Activities associated with collection activities cost the PacifiCorp an estimated $1.4 million dollars over the study period (see Table 13).

Table 13. Cost Per Collection Activity

Activities	2003	2004	2005	2006	Total
Mailed Final Notice	$13,752	$20,825	$28,151	$28,007	$90,734
Field Final Notice	$94,397.94	$137,884.86	$193,168.98	$200,613.42	$626,065.20
Disconnect Service/Reconnect[7]	$94,088.96	$163,457.53	$237,733.20	$251,563.19	$746,842.89
Total*	**$202,238.62**	**$322,167.03**	**$459,052.85**	**$480,183.91**	**$1,463,642.42**
*Numerous less significant per collection costs are not presented in the table.					

Cost Recovery Mechanisms

PacifiCorp charges households a fee for service connection and reconnection, as well as for field visits associated with reconnections. The fees charged to the customer were extrapolated directly from the database provided by PacifiCorp.

The costs incurred by the utility for collection activities were estimated using the fee schedule by state provided by PacifiCorp. The fee schedule and database codes distinguished between, for example, reconnections during business hours and those after hours. Costs were estimated by multiplying the per-activity cost (using the state fee schedules) times the number of activities shown in the database.

Table 14 below shows the estimated total gross costs incurred by the utility for delivering final field notices and mailed notices, as well as disconnection and reconnection events. It also shows the amount the customer was charged in related fees as required by the utility, and the estimated net costs to the utility.

Key findings include:

- Customer fees do not cover the full cost of collection activities.
- Over a four year period, a conservative estimate of the fees that were charged to the customer, associated with field visits, disconnection and reconnections, was $343,000.[8]
- Over a four year period, an estimate of the net cost to the utility was $1.1 million.

[7] The number of terminations was estimated using the number of customers charged a reconnection fee. As such, the number of terminations is likely to be underestimated since not all customers reconnect before the account is closed and a new account number is issued. Those terminations cannot be tracked. The cost is estimated by applying both a disconnect and reconnect fee using PacifiCorp's fee schedule for the estimated 13,456 terminated customers.

[8] The fees charged for reconnection are $343,000 and nearly cover the estimated cost to the utility to reconnect service ($373,000).

Table 14. Estimated Gross and Net Costs

	2003	2004	2005	2006	Total
Estimated gross cost to PacifiCorp	$202,238.62	$322,167.03	$459,052.85	$480,183.91	$1,463,642.42
Reconnect/Connect and Field Visit and Disconnect Fees charged customers	$36,074.23	$76,592.66	$112,688.98	$117,692.04	$343,047.91
Estimated net Cost to PacifiCorp	$166,164.39	$245,574.37	$346,363.87	$362,491.87	$1,120,594.51

4. PacifiCorp's Low-Income Programs

This chapter reviews PacifiCorp's low-income programs and initiatives in each state. Recommendations to assist households in addressing their arrearage will work with or build on existing programs, where appropriate, to take advantage of existing infrastructure. Table 15 summarizes the low-income program initiatives by state, which are described below.

Table 15. Low-Income Initiatives By State

State	Cash Assistance	Weatherization	Payment Plans	Bill Discount	Bill Payment Assistance through Fuel Funds
California		√	√	√	√
Idaho		√	√		√
Oregon*	√	√	√		√
Utah		√	√	√	√
Washington		√	√	√	√
Wyoming		√ (Proposed)	√		√
*Only Bill Payment Assistance through Fuel Funds provided by PacifiCorp. All other initiatives administered by Oregon Housing & Community Services.					

State Of California Initiatives

California Low-Income Energy Efficiency

This weatherization program is provided by California utilities to households at or below 175 percent of the federal poverty level. Since 2000, all of California's investor-owned utilities have had standardized services offered to low-income households, and PacifiCorp has partnered with local agencies since 1986. Since the program began, Pacific Power provided funds to weatherize over 1,900 households in their service territory.[9]

California Alternate Rates for Energy (CARE) Residential Discount

Eligible households (income at or below 175 percent of the federal poverty level) receive a 20 percent discount on electric bills.[10] This discount, established by the California Legislature in 1989, is offered by all California-regulated utilities.[11]

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[9] Quantec, LLC, 2004 Care Report Spreadsheet

[10] California Public Utilities Commission Rulemaking 01-08-027 "Interim Opinion: Eligibility Criteria and Rate Discount Level for Low-Income Assistance Programs" January, 2002

[11] http://www.pacificpower.net/Article/Article23256.html

Medical Allowance

Tariff Schedule D provides customers needing the use of a medical life-support device with additional electric service at baseline usage rates. These rates are lower than non-baseline usage rates which are incurred after a household's kWh usage reaches the maximum for baseline rates.

Project HELP

Pacific Power has participated in California's Project Help program for many years, making matching dollar-for-dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and lasting until July 2011, Pacific Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $30,000. Assistance is delivered by The Salvation Army. PacifiCorp solicits donations twice a year from customers through bill inserts.

State Of Idaho Initiatives

Low-Income Weatherization Program

The Idaho Low-Income Weatherization Program, currently operates through Tariff Schedule 21. PacifiCorp began partnering with local agencies in 1988.[12] Households with incomes at or below 150 percent of the federal poverty level qualify for weatherization services which are offered through two local community action agencies. The agencies are reimbursed for 50 percent of the cost of all approved, fully cost-effective measures. In addition, since the agencies receive federal funds as well, they are able to provide their services at no cost to the participants. Since the beginning of the program, over 675 homes have been weatherized.

Lend A Hand

Rocky Mountain Power has participated in Idaho's Lend A Hand Program for many years, making matching dollar for dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and lasting until July 2011, Rocky Mountain Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $40,000. Assistance is delivered by the Eastern Idaho Community Action Partnership and the South Eastern Idaho Community Action Agency.[13] Rocky Mountain Power solicits donations twice a year from customers through bill inserts.

State Of Oregon Initiatives

Oregon HEAT

PacifiCorp has participated in Oregon HEAT for many years, making matching dollar for dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and

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[12] Quantec, LLC, "Idaho Low-income Weatherization Program: Analysis in Support of Tariff Revision", August, 2005.

[13] http://www.rockymtnpower.net/Navigation/Navigation1358.html

lasting until July 2011, Pacific Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $400,000. Assistance is delivered by various community action agencies.[14] PacifiCorp solicits donations twice a year from customers through bill inserts.

Oregon Energy Assistance Program (OEAP)

OEAP provides bill assistance to low-income Pacific Power customers (at or below 60 percent of Oregon median income). The Program is supported through a customer meter charge, and authorized by Tariff Schedule 91. Funds collected are administered by Oregon State's Housing and Community Services Department (OHCS). The Program was created by the state legislature in 1999, and operates today serving over 20,000 households annually.[15] The 2003 OEAP evaluation shows that, approximately one year after payment, participant arrears were roughly $340 less than if the Program had not existed.[16]

Energy Conservation Helping Oregonians (ECHO)

Between 2002 and 2004, Pacific Power contributed, through the public purpose surcharge,[17] $4,633,070 to the ECHO Program, providing weatherization services administered by OHCS. These funds helped weatherize 1,405 homes. OHCS estimates that first year energy savings for weatherized homes equals approximately $358 per household.[18]

Prior to ECHO, PacifiCorp offered a company-funded weatherization program through Tariff Schedule 7. The company reimbursed local community action agencies for 50 percent of the cost of fully cost-effective measures local agencies installed.

State Of Utah Initiatives

Home Electric Lifeline Program (HELP)

Since calendar year 2000, income-eligible households (under 125 percent of the federal poverty level) have been able to receive an $8 monthly credit on their bill. Customers that use life support equipment are provided with an additional $10 discount. Funds are collected through Tariff Schedule 3 and total approximately $1.8 million annually and in 2005 assisted more than 23,000 households.[19] The impact of HELP in reducing arrears was estimated at approximately $77 annually in a recent program evaluation.[20]

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[14] http://www.liheap.ncat.org/Utility/OR/pp.htm

[15] http://www.oregon.gov/OHCS/CRD/SOS/docs/OEAPFactSheetCurrent.pdf

[16] Quantec, LLC, "Oregon Energy Assistance Program Evaluation", January, 2003

[17] Tariff Schedule 290

[18] http://www.oregon.gov/OHCS/CRD/SOS/docs/Pov_Conf_06_Wx_Pres_Final.pdf

[19] http://community.utah.gov/housing_and_community_development/SEAL/HELP/abouthelp.html

[20] Quantec, LLC, "Utah HELP:Program Evaluation", January, 2005

Utah Low-Income Weatherization Program

The Low-Income Weatherization program assists low-income households in controlling energy consumption and heating costs through comprehensive home weatherization. PacifiCorp began involvement with low-income weatherization in the early 1990s. The services are provided through Tariff Schedule 118. The Utah Department of Community and Culture (DCC) is reimbursed at 50 percent of the cost for approved, fully cost-effective measures. PacifiCorp rebates, along with state and federal funds available to DCC allow for the services to be provided at no cost to customers. In 2006, 518 homes received baseload measures and 16 households received full weatherization services.[21]

Lend A Hand

Rocky Mountain Power has participated in Utah's Lend A Hand Program many years, making matching dollar for dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and lasting until July 2011, Rocky Mountain Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $400,000. Assistance is delivered by the America Red Cross.[22] Rocky Mountain Power solicits donations twice a year from customers through bill inserts.

State Of Washington Initiatives

Low-Income Bill Assistance (LIBA) Program

The LIBA program provides a per kWh bill credit for families at or below 125 percent of the Federal Poverty Level (FPL), which matches Washington State LIHEAP eligibility requirements. The program, provided by Tariff Schedule 17, began providing services in 2001 and continues today. Participation in the LIBA program began with 2,400 households annually. Currently, participation is capped at a total of 2,618 households. There are three discount tiers with the lowest income households receiving the largest discount. Arrearages improved for participants at an annual rate of $55/year for the first year based on a 12.7 percent reduction in their home energy burden. Collection actions also decreased as a result of participation in the Program.[23]

Low-Income Weatherization Program

The Low-Income Weatherization Program, provided through Tariff Schedule 114, assists low-income households in controlling energy consumption and heating costs through comprehensive home weatherization. Services, implemented through a partnership with local weatherization agencies, have been provided to qualifying households since 1986. PacifiCorp rebates, along with state and federal funds available to the implementing local agencies allow for the services to be provided at no cost to the customer. As of December 31, 2006, the Program had provided services to a total of to 6,093 Pacific Power households. The most recent Program evaluation showed net annual

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[21] Quantec, LLC Memo, "Utah 2007 Low-income Weatherization Program Enhancements" January, 2007

[22] http://www.liheap.ncat.org/profiles/Utah.htm

[23] Quantec, LLC "Washington Low-Income Bill Assistance Program: Phase II, Impact Analysis" October, 2003

energy savings of 1,840 kWh per completed household,[24] representing 12 percent of pre-Program energy consumption.

Project HELP

Pacific Power has participated in Project HELP for many years, making matching dollar for dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and lasting until July 2011, Pacific Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $80,000. Assistance is delivered by Northwest Community Action Center and The Salvation Army in the Pacific Power service territory.[25] Pacific Power solicits donations twice a year from customers through bill inserts.

State Of Wyoming Initiatives

Low-Income Weatherization Program (Proposed)

The proposed Wyoming Low-Income Weatherization Program will be available to Rocky Mountain Power customers with incomes at or below 215 percent of federal poverty guidelines. The rebate (50 percent of the cost of approved, fully cost effective measures) will be provided directly to three local agencies that will administer the Program.[26] The agencies also receive state and federal funding that allows services to be provided at no cost to participants.

Energy Share Of Wyoming

Rocky Mountain Power has participated in Energy Share of Wyoming for many years, making matching dollar-for-dollar contributions since 2000. An increased commitment is now in place. Beginning in July 2006 and lasting until July 2011, Rocky Mountain Power will cover the shortfall of customer and employee donations to this fuel fund to ensure a total annual donation of $70,000. Assistance is delivered by The Salvation Army.[27] Rocky Mountain Power solicits donations twice a year from customers through bill inserts.

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[24] Quantec, LLC "Washington Low-income Weatherization Program", January, 2007

[25] http://www.liheap.ncat.org/profiles/WA.htm

[26] Quantec, LLC, "Wyoming Low-income Weatherization Program: Analysis in Support of Tariff Filing", November, 2006

[27] http://www.rockymtnpower.net/Navigation/Navigation1358.html

5. Summary Of Industry Best Practices

An understanding of credit management strategies focused upon customer arrearage and bad debt is facilitated by dividing the discussion into three contexts. These contextual bases are: Accessibility to service, Affordability of service, and Continuity of service. Table 16 below provides an overview of these three contextual bases in terms of industry focus and associated efforts and program designs.

Table 16. Industry Approaches Highlighted

Accessibility	Affordability	Continuity
Focus: Maintenance Of Service	**Focus:** Cost Of Service	**Focus:** Terms/Conditions
Industry Approach:	**Industry Approach:**	**Industry Approach:**
Deposit Loans: Third party utility deposited on behalf of customer in need.	*Rate Discounts:* Special tariffs for households meeting income/poverty guidelines.	*Budget Counseling:* Services provided to help prioritize household spending preferences.
Deposit Waiver: Voluntary or mandated wavier of utility service deposit requirements.	*Energy Assistance:* Third party grants to offset home energy burdens; both public and private.	*Prior Notice:* Requires utilities to provide formal notice before disconnecting service.
Crisis Assistance: Third party payment made on behalf of consumer to prevent service termination.	*Conservation Loans:* Third party guarantees for energy efficiency improvement; also, includes the provision of no/low-interest loans	*Negotiated Payment Arrangements:* Extension of utility service based on compliance with payment terms negotiated by the consumer.
Prior Notice: Requires utilities to provide formal notice before disconnecting service.	*Home Weatherization:* Retrofits that lower the cost necessary to heat/cool a home; public/private initiatives.	*Amortized Billing:* Estimated annual billings spread over a fixed period, generally equal monthly payment.
Proactive Reconnections: Utility initiates contact to reconnect service prior to winter heating season.	*Home Energy Audits: A*ssistance provided to inform occupants of energy efficient options/behaviors.	*Partial Payments:* Collection activities are suspended with the receipt of any payment amount.
Winter Moratoria: Regulatory rule preventing the disconnection of service during heating season.	*Targeted Conservation:* Needs-based prioritization of energy efficiency.	*Service Limiters:* Restricts the amount of simultaneous load until outstanding bills are resolved.
Temperature-based Moratoria: Regulatory rule preventing the disconnection of service when temperatures require heating or cooling.	*Arrearage Forgiveness:* Incentives offered households who make regular and timely payments; payments often based on the household's ability to pay.	*Structured Payment Arrangements:* Formulaic payment arrangements that spread existing liabilities across a great number of months; often embedding past due balances.
Dispute Resolution: Consumer-initiated mediation of utility service request.	*Percent of Income Payment Plans:* Monthly installments for utility service based on a person's income.	*Deferred Billings:* Payment holidays; based on improved payment practices.
Prior Approval: Requires utilities to	*Fixed Price Tariff:* Provides	*Referral Services:* Context specific

Accessibility	Affordability	Continuity
get commission approval before utility service is disconnected. *Referral Services:* Context specific referrals to assistance programs can help households gain access to or prevent termination of utility service. *Pre-Payment Solutions:* Advanced metering solutions that allow households to make incremental electricity purchases and to avoid buying energy on credit; eliminates deposit requirements and avoids demand for a large lump sum payments of past due amounts.	households a flat monthly rate for unlimited electric service. *Referral Services:* Context specific referrals to assistance programs can help households gain access to or prevent termination of utility service. *Pre-Payment Solutions:* Advanced metering solutions that allow households to make incremental electricity purchases and to avoid buying energy on credit, often providing real-time feedback on electric use.	referrals to assistance programs can help households gain access to or prevent termination of utility service.

In 1992 Pennsylvania's Bureau of Consumer Services provided 83 detailed and interdependent recommendations concerning alternatives to utility service disconnections. In the following list, we highlight some of the recommendations suggested for utilities:

- Develop systems to identify and track low-income households
- Catalog low-income service providers within the utility service territory
- Inform consumers of available social service agencies
- Tailor referrals based on individual needs and geography
- Conduct follow-up calls regarding active referrals
- Develop consumer energy education and budget counseling programs
- Increase the number of households paying on budget billing plans
- Actively promote the availability of LIHEAP and other energy assistance
- Support and expand available fuel funds initiatives

Soon after these recommendations were published, the Pennsylvania Public Utilities Commission mandated the development of three programs: the Low-Income Usage Reduction Program (LIURP), Customer Assistance Plan (CAP), and the Customer Assistance and Referral Evaluation Service (CARES). Together these programs sought first to lower the cost of utility service through weatherization. Second, the programs sought to provide low-income consumers an incentive to make regular and timely payments through the forgiveness of outstanding arrears. Lastly, the CARES program was designed to ensure that households contacting the utility would receive informed advice regarding the availability of energy assistance options.

This approach was adopted by the Wisconsin Public Service Company, which sought to treat these services not as a separate low-income program, but rather as an integrated approach to customer

care. This represents an early integration of low-income customer assistance into the utilities' credit management strategies.

Quick Highlights Of Successful Programs

The following are general results from a few successful programs. This is not intended to be a comprehensive list of programs, as there are too many to list here. We present PacifiCorp's programs in the previous chapter.

- The three utilities of First Energy began to collect universal service funds in response to Title 52 of the Pennsylvania code. These funds were used to develop Customer Assistance Plans (CAP), Customer Assistance and Referral Evaluation Services (CARES), and Low-Income Usage Reduction Programs (LIURP). MetEd and PenElec included arrearage forgiveness components, and PennPower leveraged a rate discount program. The combination of programs reduced utility collection costs as households increased their payments.

- Columbia Gas of Pennsylvania's Customer Assistance Program, (CAP) generated:

    - 61 percent fewer disputes

    - 53 percent fewer new payment agreements

    - 69 percent fewer canceled payment plans

    - 48 percent fewer termination notices. While about 75 percent of the households were at least one day delinquent in payment, the probability for gas shut off was only about two percent.

- Customers who stayed in the Equitable Gas Energy Assistance Program (EAP) for one full year generated net positive benefits to the company of $262. Those who remained in EAP for a second year generated an additional $206.

- National Fuel Gas Distribution Company's Low-Income Rate Assistance (LIRA) program generated an improvement in collections of $1.5 million (nearly a 40 percent improvement over five years). The number of payments made by participants increased by 30 percent, an average increase of 2.2 payments per participant, and the number of service disconnections decreased by slightly over 80 percent.

- Niagara Mohawk Power Company's rate discount program almost doubled the total number of payments to the utility during the post-treatment period compared to the pre-treatment period. The program increased payments to $1,174 from $883 for one discount group, and to $1,188 from $968 for the second discount group.

- The Clark County (Washington State) Public Utility District's Guarantee of Service Program (GOSP) reduced delinquencies for program participants to 18 percent from 74 percent, reduced disconnections for program participants by 64 percent, and increased average

customer payments to $55 per month during the program from $22 per month prior to program.

- The French have a right to electricity based on the *Electricité de France*'s contract with the state. Within the terms of privatization, *Electricité de France* agreed to certain measures that seek to prevent and cure energy poverty. These measures included a no disconnection policy, a minimum provision of electricity, a supported group of consumer advocacies, energy assistance, dispute mediation, and an energy solidarity fund. Furthermore, the Policy Of The City established specific measures that addressed high-density low-income neighborhoods in their largest urban centers.

- The Belgian National Action Plan for Social Inclusion is part of a EU initiative in response to the common objectives that have been agreed to by members. While not every member state addressed home energy burdens, some states did so, but only modestly. Belgium was an exception, due in large part to the liberalization of its energy market. The Belgian government included various measures that oblige energy providers to address the different situations of those in need. Notable components include a subsistence level of electricity to be provided at no charge to the entire population, a local advisory committee that must rule before utility service is disconnected, and the provision of prepay meters to avoid the requirement of large lump sum payments to reconnect to the electric utility system. These services were offered to low-income households and to middle-income households with extreme levels of utility debt.

- The New Jersey Universal Service Fund (USF) program incorporated an arrearage forgiveness component. To the extent that USF participants made full payments toward current bills for twelve months, their pre-program arrears would be eliminated at the end of that one-year period. The policy basis behind this Fresh Start program was that Fresh Start would serve a critical affordability function within the overall USF framework. Arrearage forgiveness serves to get low-income households on an even footing so they have a chance at future success in making payments. The program designers believed that it would make no difference to have current bills be affordable if the household was subject to disconnection for pre-program arrears, or if the household's total energy bills were unaffordable due to the payment obligation to retire past arrears.

  There can be little question but that the failure to have a Fresh Start program would substantially impede the ability of USF program participants to successfully comply with the payment terms of USF.

  The USF Evaluation expressly found households with higher energy burden have significantly lower ability to maintain payment compliance. Table 17 provides data for gas and electric households.

Table 17. New Jersey Universal Service Fund Distribution of Effective Coverage Rate by Net Energy Burden

Net Energy Burden	Coverage Rate			
	<50%	50% - <90%	90% - <100%	100% or more
Less than 2%	0.0%	2.7%	5.3%	92.0%
2% - 3%	0.0%	6.0%	11.5%	82.5%
3% - 4%	0.0%	10.0%	13.2%	76.9%
4% - 6%	0.0%	11.6%	16.6%	71.6%
6% - 8%	0.4%	16.6%	17.4%	65.5%
Over 8%	1.0%	25.6%	16.1%	57.4%

- Northern Indiana Public Service Company (NIPSCO) Winter Warmth is an energy assistance program directed toward assisting income-eligible households to avoid the disconnection of service, achieve the reconnection of service, and avoid unaffordable winter heating bills. Households may become eligible for Winter Warmth in one of two ways. First, households meeting the State of Indiana's Energy Assistance Program (EAP) guideline are automatically qualified. Second, households who are classified as hardship households by local Gift Of Warmth agencies, the local community-based organizations that administer the program, are also qualified to receive benefits under the Program. These local agencies have the sole discretion for developing criteria that determine whether a household qualifies as a hardship household.

  Through the Winter Warmth program, participants receive benefits of up to $400 per customer, per heating season. The local agencies administering the program may utilize the household's program benefits to pay deposit requirements. The Winter Warmth program provided a noticeable interruption to the disconnection cycle within the population of households receiving Winter Warmth benefits.

  Recognizing that the significant Winter Warmth enrollment began in February, the impact of such payments in helping to interrupt the disconnect cycle was evident. The proportion of accounts that received disconnect notices, and that eventually actually lost their service, decreased after the start of the Winter Warmth program. Similar decreases in the proportionate number of accounts moving from receipt of a disconnect notice to the eventual loss of service is seen, even as the time period during which a disconnection might occur extends out.

  The Winter Warmth population does not experience a substantial rate of service disconnection during the Spring months, despite an ongoing level of arrears. During the Spring months of March through June, while there were roughly 13,000 Winter Warmth accounts each month, service termination was limited to between 382 in March and 206 in June.

  The number of accounts in arrears decreased 11.9 percent from March through June, and the number of accounts in serious arrears decreased much more dramatically. After the

implementation of Winter Warmth, the number of accounts so far in arrears that they received disconnect notices decreased 42 percent while the number of accounts that experienced the actual disconnection of service for nonpayment decreased 46 percent. Eighty percent of the Winter Warmth recipients succeeded in staying out of arrears completely in the months following receipt of their Winter Warmth benefits.

- The Universal Energy Charge and the Fund for Energy Assistance and Conservation provide monies for the State of Nevada Energy Assistance Program and the Weatherization Assistance Program. The program is designed so that eligible households, (150 percent of Federal Poverty Level) of Sierra Pacific, Nevada Power, and Southwest Gas, do not have energy burdens higher than the state median energy burden. The program began in 2003, and the median energy burden is adjusted annually.

  Participants increased the amount of payments from pre-program to the first program year by 18 percent (weighted average across utilities). Analysis in the second program year showed that households tended not to pay when there was a credit on their account, but made up for non-payment in the last two quarters of their enrollment year.

  New with the 2005 program was an arrearage forgiveness component. Customers apply and qualify for a Fixed Annual Credit which is sent to the utility, or divided between participating utilities. When the Fixed Annual Credit is applied to 12 months of a household's utility bills where there is no arrearage, the household will pay the equivalent of the State's median energy burden. When a household enters the program with an arrearage, the credit is applied to the arrearage first.

- Energy Share is one of Eugene Water and Electric Board's original Low-Income Assistance programs. The program is administered by St. Vincent de Paul. Customers can obtain funds up to a maximum of $300 per customer over a rolling 12-month period. Funds can be obtained over a period of several months as needed.

  Energy Share emphasizes providing assistance to households who need help with paying their utility bills. Participants are provided a packet of information on ways to reduce their utility bills. On average, participants decreased their annual arrears by $374. The participation saved the company around $32 per participant in collection costs. See Table 18 below.

Table 18. Annual Cost Savings Due to Energy Share Program (Per Participant)

Savings Category	Savings per Participant
Decrease in Average Annual Arrears	$374.00
Decrease in Annual Carrying Cost	$32.00
Decrease in Door Hanger Notices Cost	$10.50
Decrease in Final Notice Mailing Cost	$0.56
Decrease in Shutoffs	$1.35

Based on 3,077 Energy Share participants in 2002 who did not also participate in another EWEB low-income program, the program produced net benefits to EWEB and ratepayers estimated at over $500,000

Appendix A: Factors Influencing Arrears

Methodology

Factors Influencing Arrears

We used a multivariate regression algorithm to test associations between factors thought to influence utility arrears, such as extreme weather conditions, commodity prices, economic conditions, rate increases, etc.

The study period is longitudinal, and covers the years 2002 through 2006. We began the analysis assigning a $0 balance to identified low-income households and accumulated arrears for each month of service. Accumulated monthly amounts were estimated using regression models to explain the variability among households, and to attempt to establish factors that lead to the accumulation of arrears.

The following model was used to estimate annual arrears faced by the company under normal or expected future conditions:

$$Monthly\ Arrears_{it} = \alpha + \beta_1 Rate_{it} + \beta_2 Weather_{it} + \beta_3 Economic\ Factors_{it}$$

Regression (Causal) Model of Arrears

The regression model included in this study attempts to explain a portion of the variability in monthly arrearage amounts (the dependent variable) based upon the potential relationships of arrearage amounts with other variables (the independent variables) in the data set. This relationship can be expressed mathematically through a theoretical functional relationship like:

Monthly arrearage amounts = f(weather, rates, payment programs, trend)

Regression Model Specifications

The first step in developing the final regression model for this study involved testing alternative model specifications. Each model was checked for 1) statistical significance of the variables and 2) whether the signs of the regression coefficients were intuitively correct.

The final model that was estimated is as follows:

Current Amount Due = f(HDD, CDD, trend, rates, EPP, invoice lagged 5 periods)

The model expressed with the estimated coefficients follows:

Current Amount Due = -16.9+ 0.00454 HDD + 0.04381 CDD + 1.35395 TREND + 127.9 RATE - 42.8 EPP + 0.75 INVLAG1 + 0.40 INVLAG2 + 0.27 INVLAG3 + 0.26 INVLAG4 + 0.20 INVLAG5

All coefficients are statistically significant at the 0.5 percent level. The estimated signs of the coefficients are also as expected. Briefly, the estimated coefficients tell us that for a particular level of arrears (Current Amount Due) the independent variables affect arrearage level as follows:

- For a one unit increase in HDD, average arrears increase $0.0045 dollars.
- For a one unit increase in CDD, average arrears increase $0.0438 dollars.
- For a one unit increase in trend, average arrears increase $1.35 dollars (trend likely captures the impact of several variables not explicitly in the model).
- For a one unit increase in rates, average arrears increase 127.9 dollars.
- The lagged invoice variables indicate the effect of past invoice amounts on current arrearage levels.

Appendix B: PacifiCorp's Residential Customer Class

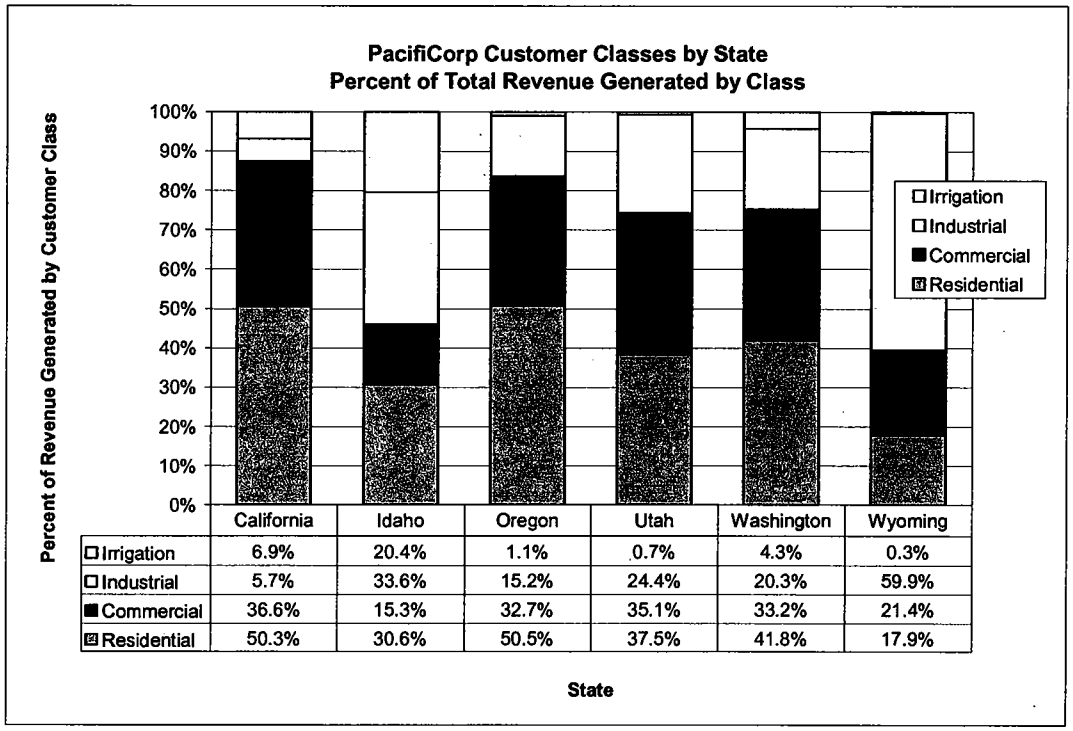
PacifiCorp serves residential, commercial, industrial and irrigation customers in California, Idaho, Oregon, Utah, Washington, and Wyoming. Table 19 shows that Utah has the largest proportion of PacifiCorp residential customers (47 percent), followed by Oregon (33 percent).

Table 19. PacifiCorp Residential Class by State

	Total Residential Customers	Percent of Total Customers
CA	33,878	2.5%
ID	48,592	3.6%
OR	434,244	32.5%
UT	623,182	46.6%
WA	98,192	7.3%
WY	99,242	7.4%
PacifiCorp	**1,337,330**	**100%**

Figure 13 below shows the breakdown of customer classes in each state. In all states except Idaho and Wyoming, the residential class is the largest revenue generator.

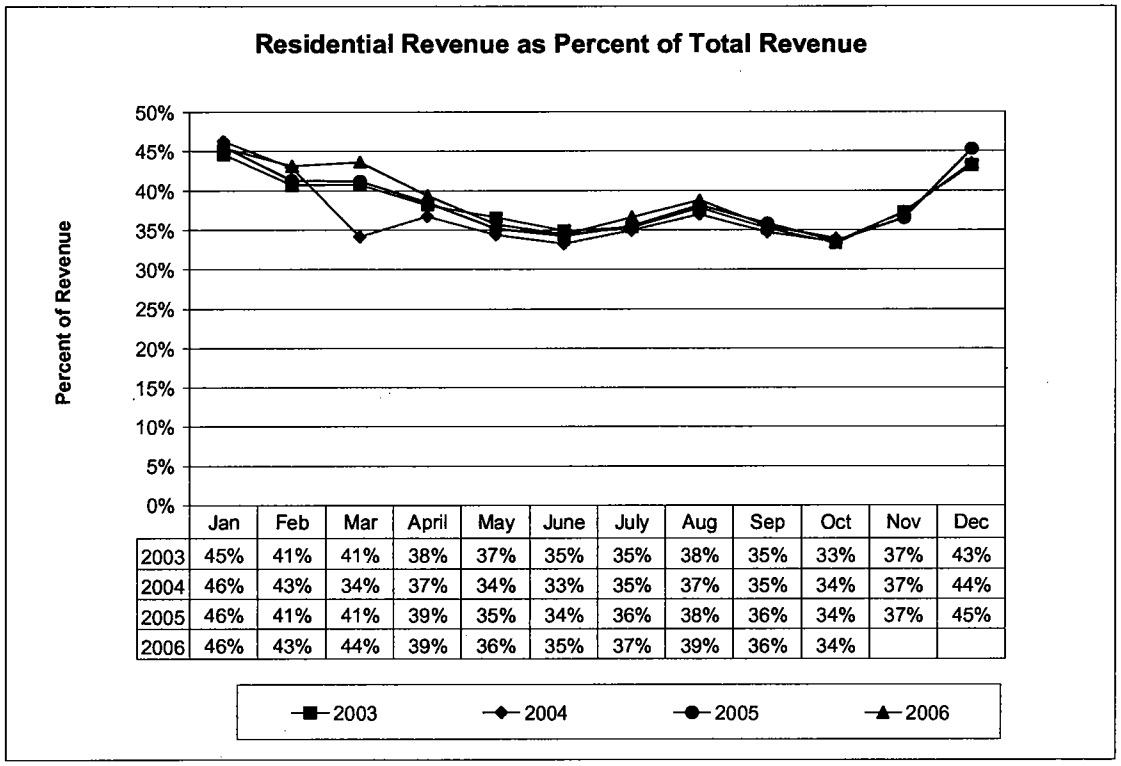
Figure 13. Percent of Total Revenue Generated by Customer Class and State



	California	Idaho	Oregon	Utah	Washington	Wyoming
Irrigation	6.9%	20.4%	1.1%	0.7%	4.3%	0.3%
Industrial	5.7%	33.6%	15.2%	24.4%	20.3%	59.9%
Commercial	36.6%	15.3%	32.7%	35.1%	33.2%	21.4%
Residential	50.3%	30.6%	50.5%	37.5%	41.8%	17.9%

Figure 14 compares revenue billed to the residential class for each month in Fiscal Years 2003 through 2006. The residential class consistently accounts for between 33 percent to 46 percent of the total revenue across all customer classes.

Figure 14. Residential Revenue Years 2003 - 2006



	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2003	45%	41%	41%	38%	37%	35%	35%	38%	35%	33%	37%	43%
2004	46%	43%	34%	37%	34%	33%	35%	37%	35%	34%	37%	44%
2005	46%	41%	41%	39%	35%	34%	36%	38%	36%	34%	37%	45%
2006	46%	43%	44%	39%	36%	35%	37%	39%	36%	34%		

In terms of dollars, residential revenue has been steadily climbing from 2003 through 2006. Consumption and, therefore, revenue is very seasonal in nature, as seen in Figure 15.

Figure 15. Residential Revenue 2003 - 2006

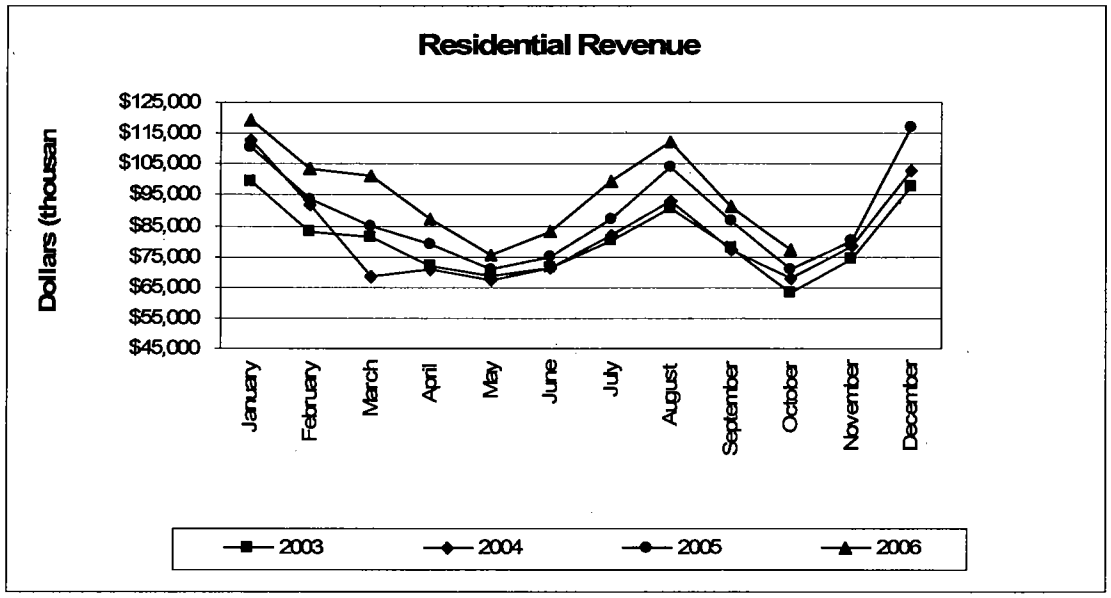
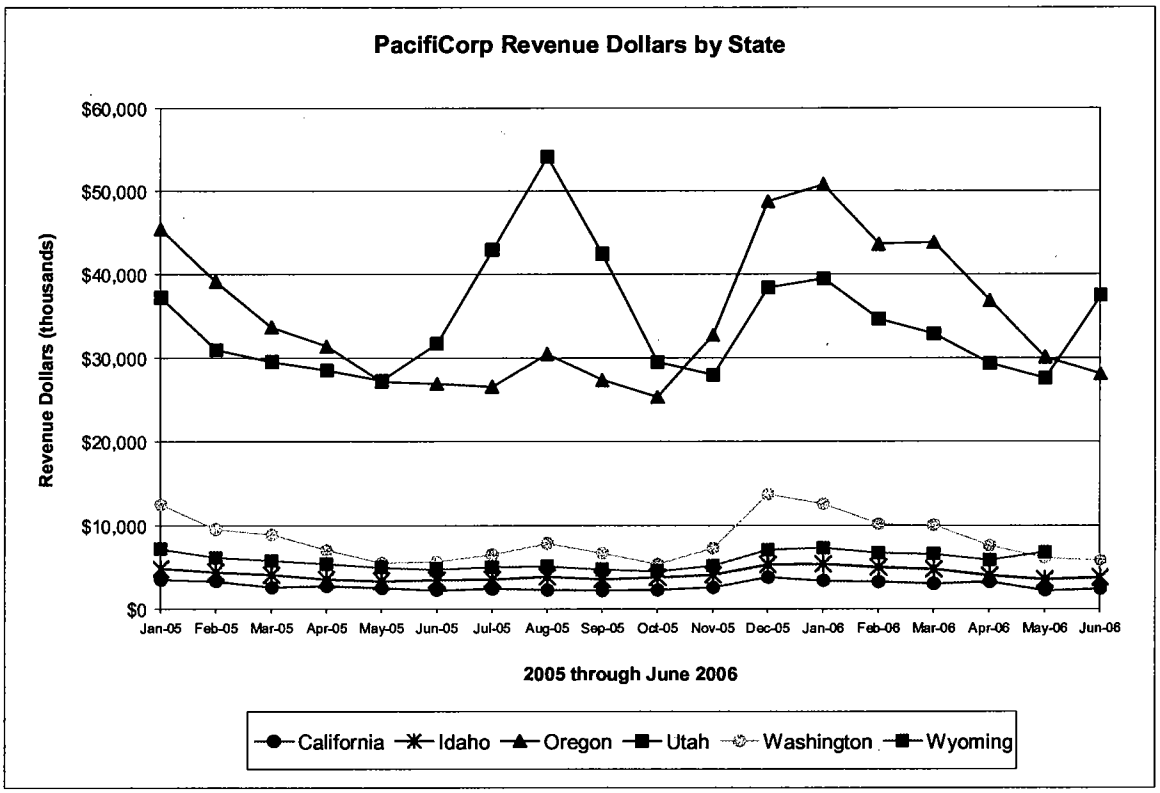


Figure 16 shows again that consumption has a seasonal component, and that Oregon has a heating load while Utah has a cooling load. Figure 16 also shows Washington's customers have a seasonal component to their consumption.

Figure 16. Residential Revenue by State 2005 - 2006



The states vary in terms of the presence of electric space and water heat. For example, in Utah only 11 percent of the households have electric space heat, while in Washington the proportion is at 49 percent. This information is not available at the account level. We used PacifiCorp's Energy Decision Survey data to create the macro level estimates provided in Table 20.

Table 20. Electric Heat and Electric Water Heat By State

State	Percent with Electric Space Heat	Percent with Electric Water Heat
California	32%	81%
Idaho	31%	55%
Oregon	41%	67%
Utah	11%	14%
Washington	49%	75%
Wyoming	16%	32%

Credit and Collection Activities

The following sections describe PacifiCorp's credit and collection activities by state as applied to the overall residential households (not necessarily low-income). Table 21 describes collections policies for households that have demonstrated some payment problem or risk in the past.

This set of procedures offers several junctures where the household is given time to pay its bills in order to stop future collections actions. Households that have demonstrated good payment practices, and who have not presented payment risk follow nearly the same collections procedure. However, those typically good-paying households receive a reminder notice prior to the first past due notice. The reminder notice essentially gives these households an additional month to pay before the collections process begins.

Regulatory Protections

Regulatory bodies establish consumer protections that must be followed by utilities operating in those states. When the timeline of collection activities is coupled with the consumer protections offered by each state, customers have several opportunities to avoid service termination.

The LIHEAP Clearinghouse published a summary of regulatory protections associated with PacifiCorp's service territory (see Table 21 below). This summary was compared to each state's regulatory Website. Note that Idaho excludes explicit protections for households that agree to deferred or extended payment plans. Oregon does not have a seasonal moratorium on utility service disconnects. Other states have limited prohibitions on shutoff or seasonal moratoriums.

Table 21. State Regulatory Termination Protections

CA	Utilities are prohibited from shutting off service during winter to residential customers who make regular payments of at least 50 percent of their bills or where detrimental to health or safety of household member. The utilities may require such customers to comply with a levelized payment plan to avoid shutoff, or otherwise must provide such customers with 9-month repayment plans starting at the end of the winter. No disconnect if customer enters into deferred or extended payment agreement. http://www.turn.org/article.php?id=465
ID	During the months December through February there is a disconnect ban for households with children under 18, elderly age 62 or older, or infirm. If the customer establishes a deferred payment plan before Nov 1, they cannot be shut off between November and March. http://www.puc.state.id.us/webrules/Utility%20Customer%20Relations%20Rules_06.pdf
OR	A medical certificate will prevent disconnection for up to 6 months for a non-chronic condition, up to 12 months for chronic condition and requires the customer to set up a payment plan. Customers cannot be disconnected on a weekend or holiday or any day prior to the weekend or the holiday. No disconnect if customer enters into a deferred payment plan. http://arcweb.sos.state.or.us/rules/OARS_800/OAR_860/860_021.html
UT	30-day disconnect delay if detrimental to the health of a household member; must have physician certification. Utilities must have commission permission to discontinue service to a household where someone is dependant on life-saving equipment. Utilities must offer payment plans. http://www.rules.utah.gov/publicat/code/r746/r746-200.htm#T7
WA	Between Nov 15 and March 15, customers may not be disconnected if they notify the utility of their inability to pay, and within 5 days of a delinquency notice. The customer must be certified as LIHEAP eligible by presenting income statements to a grantee such as a community action agency. The customer must apply for any bill payment assistance and weatherization programs. The utility may require a payment of 7% of customer's income during this period. The customer must agree to pay all amounts currently owed by the following Oct 15. Disconnection will be immediately delayed if a household member has a medical condition that could be aggravated by loss of utility service. The utility must be supplied with written notification 5 days after first request for medical waiver. Utilities may be disconnected when the threat of medical endangerment has passed. Utility may require payment of 10% of balance within 5 days and may require customer to enter into an agreement to pay all the balance within 120 days. Following disconnection, the account holder may request to be reconnected by claiming 'prior obligation'. By doing so, the account holder is not required to pay all outstanding balances before regaining service; however, the account holder may be required to place funds on deposit and pay outstanding arrears via a payment arrangement. http://apps.leg.wa.gov/wac/default.aspx?cite=480
WY	22-day disconnect delay if physician certifies that a household member is disabled or seriously ill. 30-day delay if a household member is on life support equipment; customer must enter into payment plan. November 1 – April 30 "weather extremes" restrictions on disconnections if customer is unable to pay and has exhausted available assistance or is actively seeking assistance, or can pay, but only in installments. http://soswy.state.wy.us/RULES/6185.pdf

FERC Form 1 Filings

The Federal Energy Regulatory Commission (FERC), regulates the interstate transmission of natural gas, oil, and electricity. Each major utility must submit Form 1, the annual regulatory support document that collects financial and operational information. Form 1 is a nonconfidential public use form.

FERC Form 1 filings include electric operations and maintenance expenses for each customer class. There are several residential entries of interest in this study. These include the following:[28]

[28] Full definitions found in Electronic Code of Federal Regulations. <http://ecfr.gpoaccess.gov/>

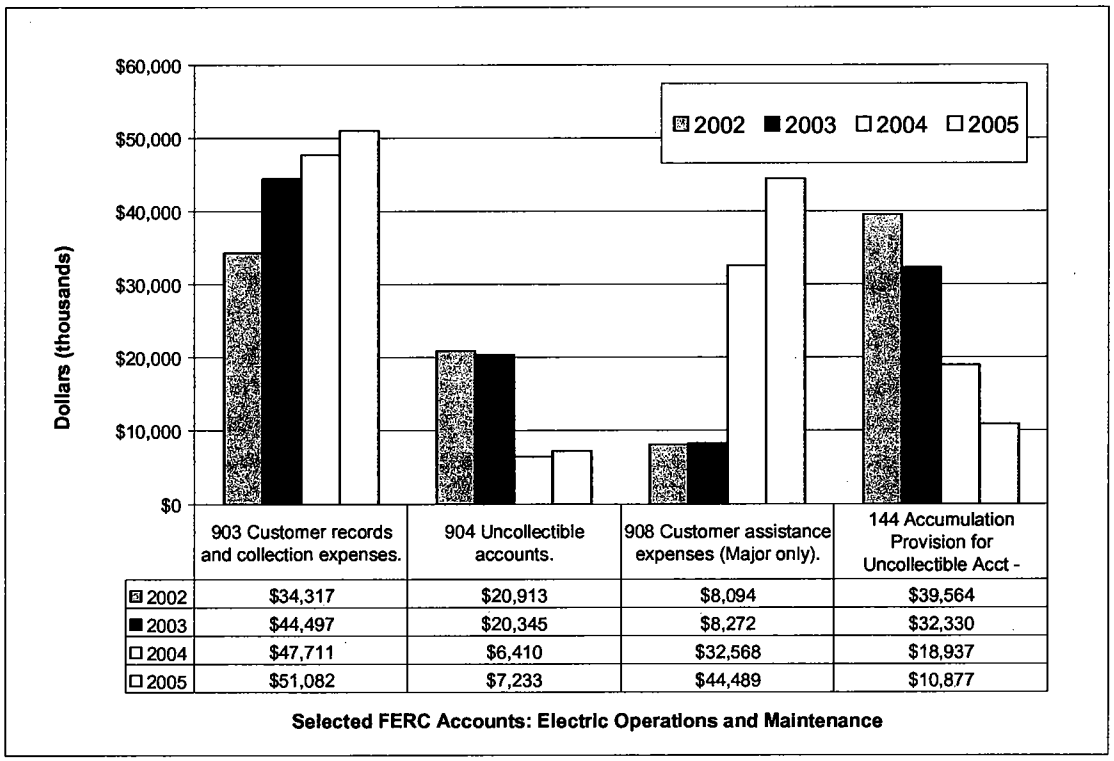
- Electric operations and maintenance expenses for customer records and collection expenses (Account 903). This includes the cost of labor, materials used and expenses incurred in work on customer applications, contracts, orders, credit investigations, billing and accounting, collections and complaints. This account also includes activities associated with delinquent accounts, including preparing and delivering delinquent notices, disconnecting and reconnecting service because of nonpayment of bills. The actual amount expended for activities associated with delinquent accounts is not delineated.

- Uncollectible accounts (Account 904). This account is "charged with amounts sufficient to provide for losses from uncollectible utility revenues."

- Accumulated Provision for Uncollectible Accounts—Credit (Account 144). Losses from uncollectible accounts are charged to Account 144 as concurrent credits to amounts charged to Account 904. Account 144 is "credited with amounts provided for losses on accounts receivable which may become uncollectible, and also with collections on accounts previously charged."

- Customer assistance (Account 908). This includes the cost of labor, materials used and expenses incurred in providing instructions or assistance to customers, to encourage safe, efficient and economical use of the utility's service. It also includes, "Demonstrations, exhibits, lectures, and other programs designed to instruct customers in the safe, economical or efficient use of electric service, and/or oriented toward conservation of energy." Account 908 also includes, "Engineering and technical advice to customers, the object of which is to promote safe, efficient and economical use of the associate utility company's service."

Figure 17. Summary Of FERC Form 1 Accounts



	903 Customer records and collection expenses.	904 Uncollectible accounts.	908 Customer assistance expenses (Major only).	144 Accumulation Provision for Uncollectible Acct -
2002	$34,317	$20,913	$8,094	$39,564
2003	$44,497	$20,345	$8,272	$32,330
2004	$47,711	$6,410	$32,568	$18,937
2005	$51,082	$7,233	$44,489	$10,877

Selected FERC Accounts: Electric Operations and Maintenance

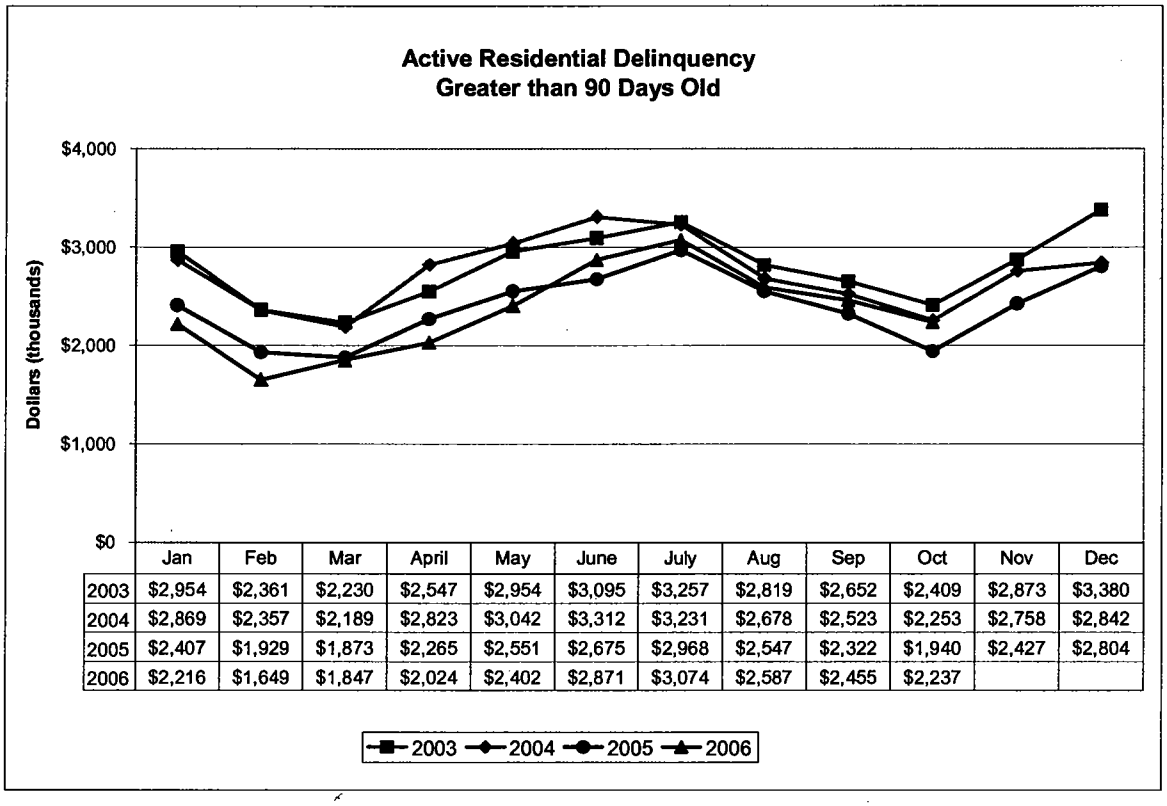
FERC filings show a steady increase in Account 903 which includes the cost of keeping customer records and the expenses related to account collection. Over the four year period 2002 through 2005, 903 accounts rose 33 percent. Uncollectible accounts were dramatically reduced from a mean of $20.6 million in the years 2002 and 2003, to a mean of $6.8 million in calendar years 2004 and 2005. PacifiCorp suggests that its change in collection practices, as well as changes in the collection agencies providing service, resulted in the sharp decrease in the amount of 904 accounts from 2003 to 2004. Corresponding declines are seen in the 144 accounts in years 2004 and 2005.

A sharp increase in the customer assistance expenses is seen in 908 accounts, moving from an average of $8.2 million in 2002 and 2003, to an average of $38.5 million in 2004 and 2005. The increase reflects expenditures for conservation- and energy-related programs for all residential customers. This includes for example, weatherization programs and DSM programs.

Aging of Accounts Receivables

PacifiCorp reports on aging arrears show that the overall amount of arrearage has decreased from 2002 to 2006. For example, in January 2003 account delinquencies aged over 90 days totaled $2.9 million, while in 2006 the amount was $2.2 million. This represents a reduction of 30 percent over a four-year period. This trend is reflected in Figure 18 below.

Figure 18. Dollars Delinquent, Fiscal Years 2003-2006



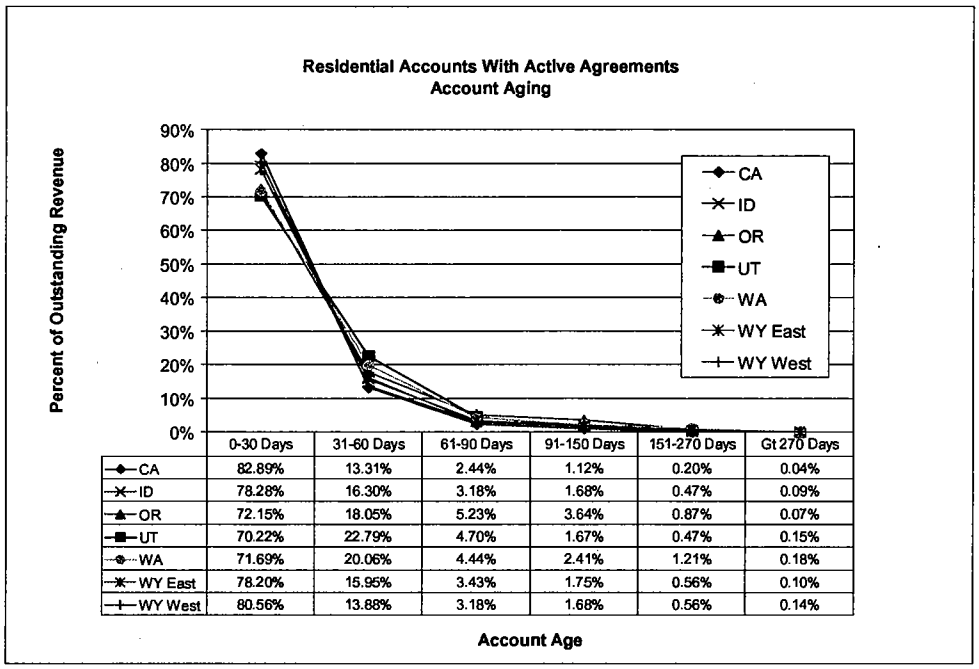
	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2003	$2,954	$2,361	$2,230	$2,547	$2,954	$3,095	$3,257	$2,819	$2,652	$2,409	$2,873	$3,380
2004	$2,869	$2,357	$2,189	$2,823	$3,042	$3,312	$3,231	$2,678	$2,523	$2,253	$2,758	$2,842
2005	$2,407	$1,929	$1,873	$2,265	$2,551	$2,675	$2,968	$2,547	$2,322	$1,940	$2,427	$2,804
2006	$2,216	$1,649	$1,847	$2,024	$2,402	$2,871	$3,074	$2,587	$2,455	$2,237		

The amount at least 90 days delinquent peaks in July, drops to a low point in October, and increases again in December. The seasonal nature suggests people catch up during the summer months. Accounts delinquent over 90 days creep up again going into winter, peak in December, and drop again from January through March. Utah, which experiences a summer peak in usage, experiences a peak in delinquency in December, and a second but much smaller peak in delinquency in June.

Revenue billed that is zero to 30 days old is considered the current amount due. Figure 19 is a snapshot of the aging of accounts in September 2006, by state. This plots all active accounts with at least one active agreement. Between 70 percent and 83 percent of all revenue due the company has aged 30 days or less. The largest portion of delinquent revenue occurs between 31 and 60 days. Figure 20 shows between 13 percent and 23 percent of amounts billed have aged 31 to 60 days. In these accounts with active agreements, the amount due continues to drop as the accounts age.

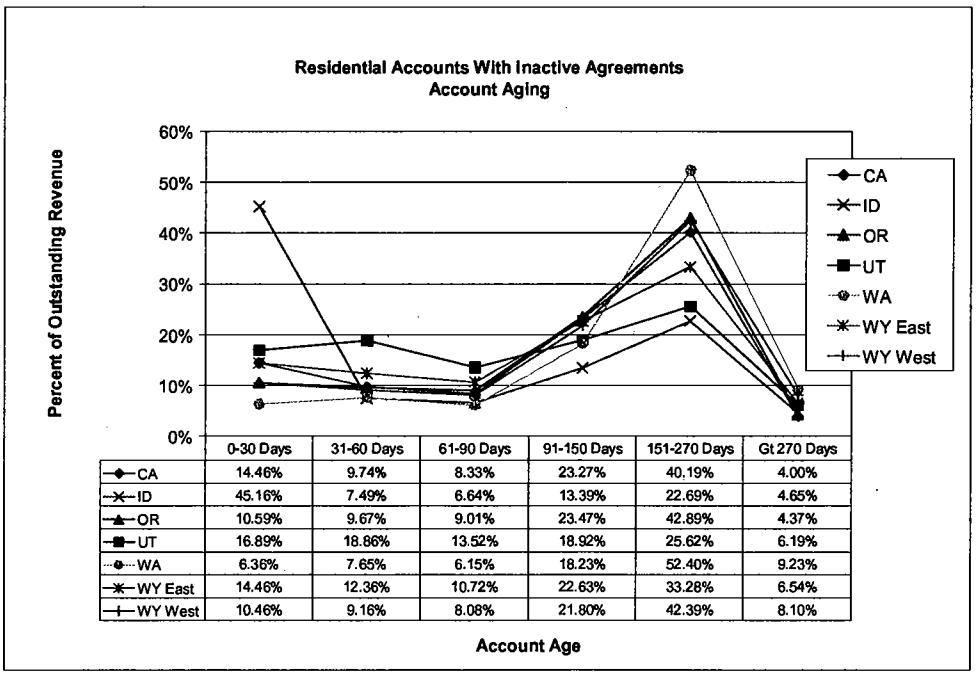
By contrast, the accounts with inactive agreements, that is, accounts that are closed, show a different pattern. With the exception of Idaho, as seen in Figure 20, most outstanding revenue is 151 to 270 days old. In terms of the cost of capital, those with closed accounts cost the company much more than active accounts with agreements since active accounts have a much greater incentive to pay down past debt.

Figure 19. Aging Account with Active Agreements By State, Sept. 2006



	0-30 Days	31-60 Days	61-90 Days	91-150 Days	151-270 Days	Gt 270 Days
CA	82.89%	13.31%	2.44%	1.12%	0.20%	0.04%
ID	78.28%	16.30%	3.18%	1.68%	0.47%	0.09%
OR	72.15%	18.05%	5.23%	3.64%	0.87%	0.07%
UT	70.22%	22.79%	4.70%	1.67%	0.47%	0.15%
WA	71.69%	20.06%	4.44%	2.41%	1.21%	0.18%
WY East	78.20%	15.95%	3.43%	1.75%	0.56%	0.10%
WY West	80.56%	13.88%	3.18%	1.68%	0.56%	0.14%

Figure 20. Aging Accounts With Inactive Agreements, By State, Sept. 2006

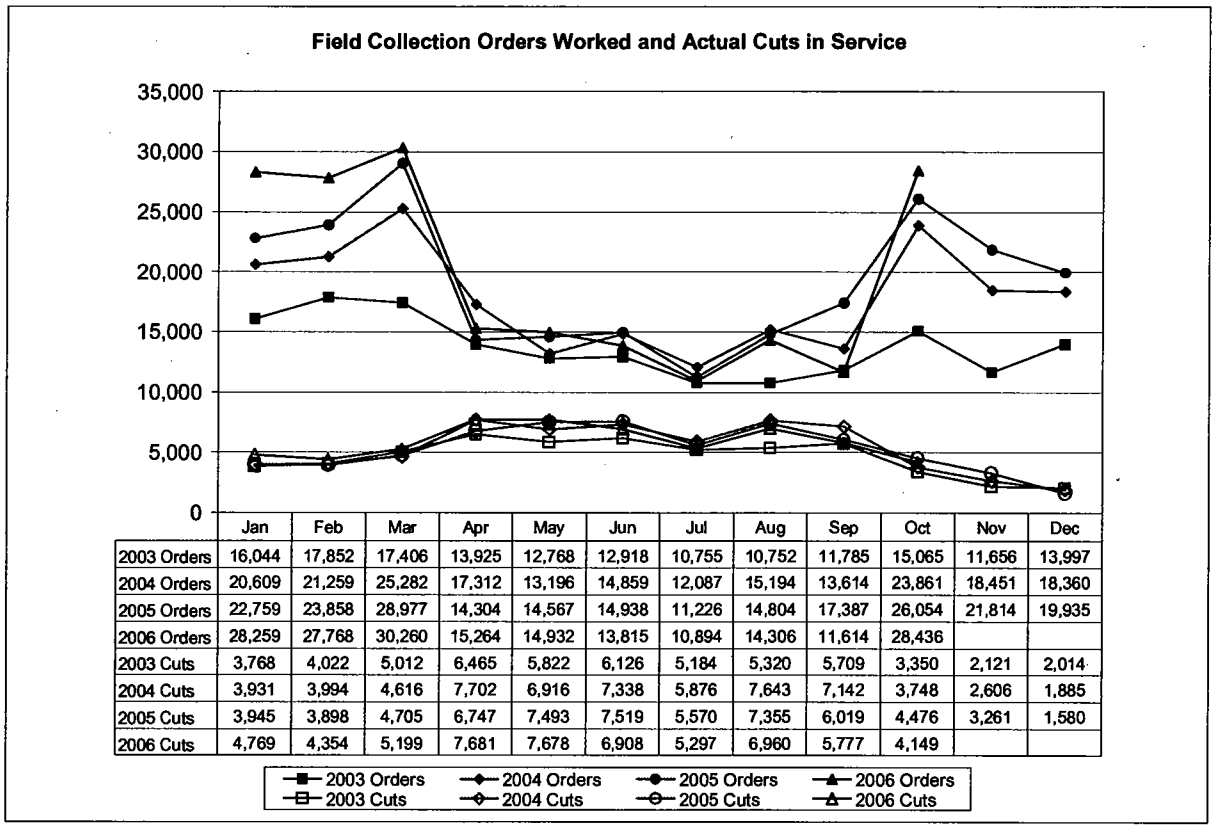


	0-30 Days	31-60 Days	61-90 Days	91-150 Days	151-270 Days	Gt 270 Days
CA	14.46%	9.74%	8.33%	23.27%	40.19%	4.00%
ID	45.16%	7.49%	6.64%	13.39%	22.69%	4.65%
OR	10.59%	9.67%	9.01%	23.47%	42.89%	4.37%
UT	16.89%	18.86%	13.52%	18.92%	25.62%	6.19%
WA	6.36%	7.65%	6.15%	18.23%	52.40%	9.23%
WY East	14.46%	12.36%	10.72%	22.63%	33.28%	6.54%
WY West	10.46%	9.16%	8.08%	21.80%	42.39%	8.10%

Disconnect Orders and Cuts in Service

As shown above, households receive past due notices one or two months after the amount was due. Orders to disconnect service are typically issued two weeks after a past due notice. Before and after the disconnect order, households have opportunities to contact the company to pay the balance or make a payment arrangement before the disconnect is issued and sometimes directly with the person performing the disconnect. Figure 21 shows both the number of disconnect orders (field collection orders) and the number of actual cuts in service (disconnections). The number of field collection orders was substantially lower in 2003 than in any other year. All years show that the numbers of field orders worked are lowest April through September, jump in October, fall in November and December (but still to levels higher than September), and rise again through March.

Figure 21. Residential Class Disconnect Orders by Year

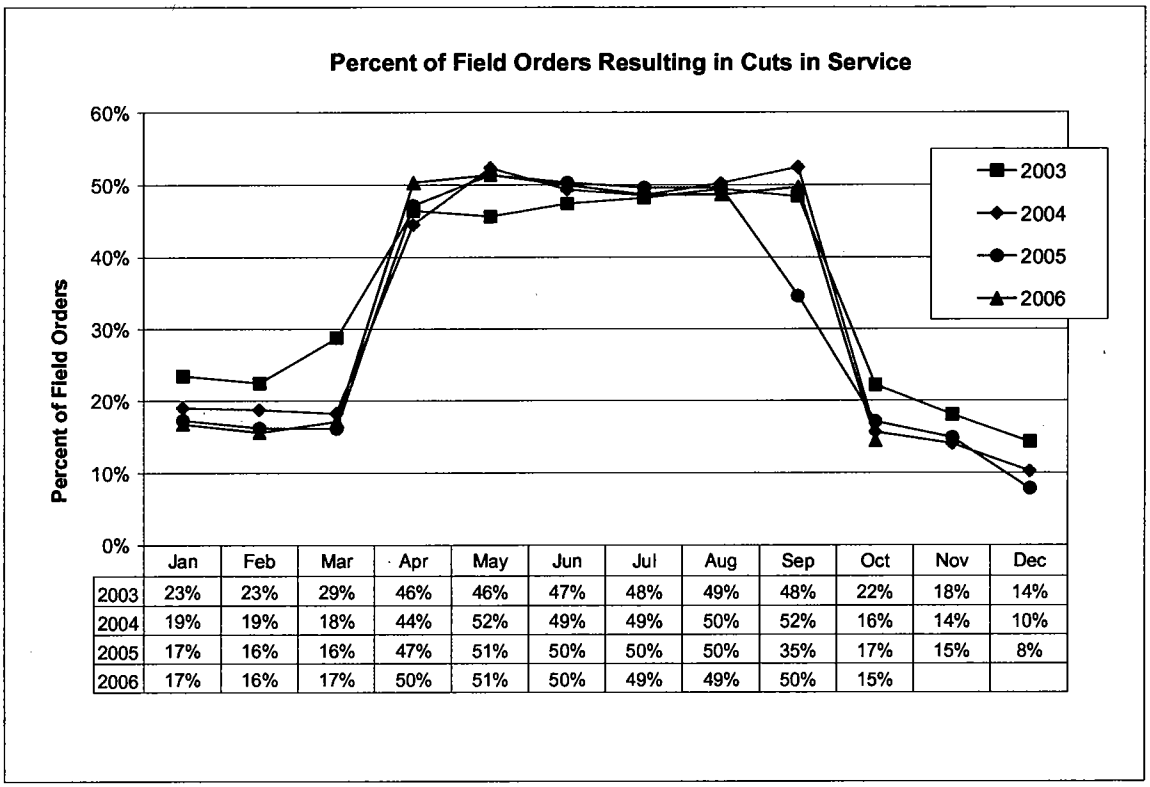


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003 Orders	16,044	17,852	17,406	13,925	12,768	12,918	10,755	10,752	11,785	15,065	11,656	13,997
2004 Orders	20,609	21,259	25,282	17,312	13,196	14,859	12,087	15,194	13,614	23,861	18,451	18,360
2005 Orders	22,759	23,858	28,977	14,304	14,567	14,938	11,226	14,804	17,387	26,054	21,814	19,935
2006 Orders	28,259	27,768	30,260	15,264	14,932	13,815	10,894	14,306	11,614	28,436		
2003 Cuts	3,768	4,022	5,012	6,465	5,822	6,126	5,184	5,320	5,709	3,350	2,121	2,014
2004 Cuts	3,931	3,994	4,616	7,702	6,916	7,338	5,876	7,643	7,142	3,748	2,606	1,885
2005 Cuts	3,945	3,898	4,705	6,747	7,493	7,519	5,570	7,355	6,019	4,476	3,261	1,580
2006 Cuts	4,769	4,354	5,199	7,681	7,678	6,908	5,297	6,960	5,777	4,149		

Figure 22 shows the percent of field orders issued in one month that result in cuts in service in the same month.[29] From April through September about half the orders issued to cut service resulted in actual cuts in service. From October through March, the numbers dropped by about half.

[29] Since there are a maximum of about 2 weeks between the order issued and service cut, the percent was computed using orders and cut data for the same month.

Figure 22. Percent Field Orders Resulting In Cuts

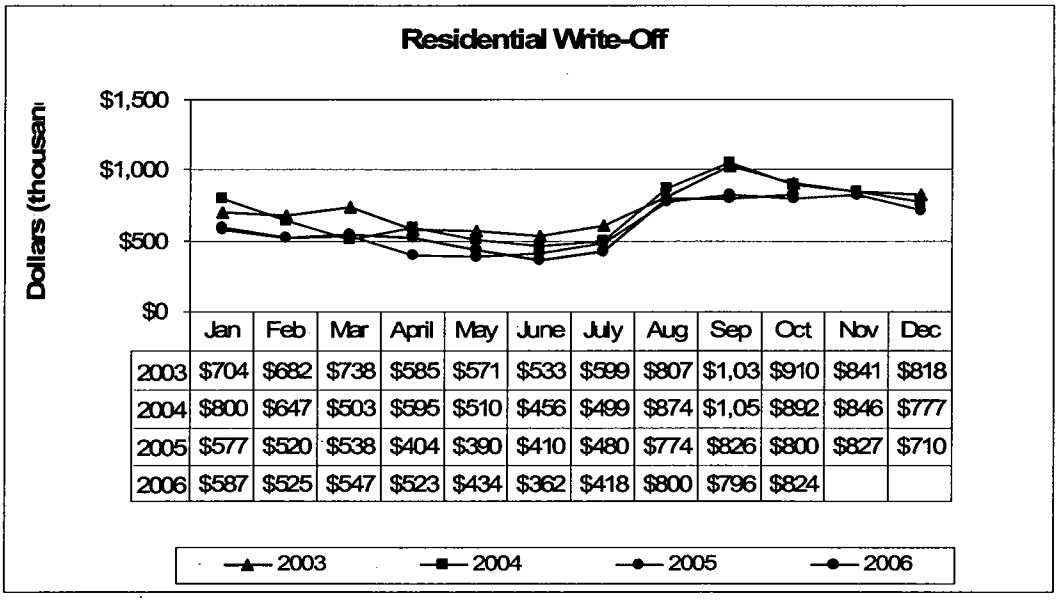


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003	23%	23%	29%	46%	46%	47%	48%	49%	48%	22%	18%	14%
2004	19%	19%	18%	44%	52%	49%	49%	50%	52%	16%	14%	10%
2005	17%	16%	16%	47%	51%	50%	50%	50%	35%	17%	15%	8%
2006	17%	16%	17%	50%	51%	50%	49%	49%	50%	15%		

Write-Offs

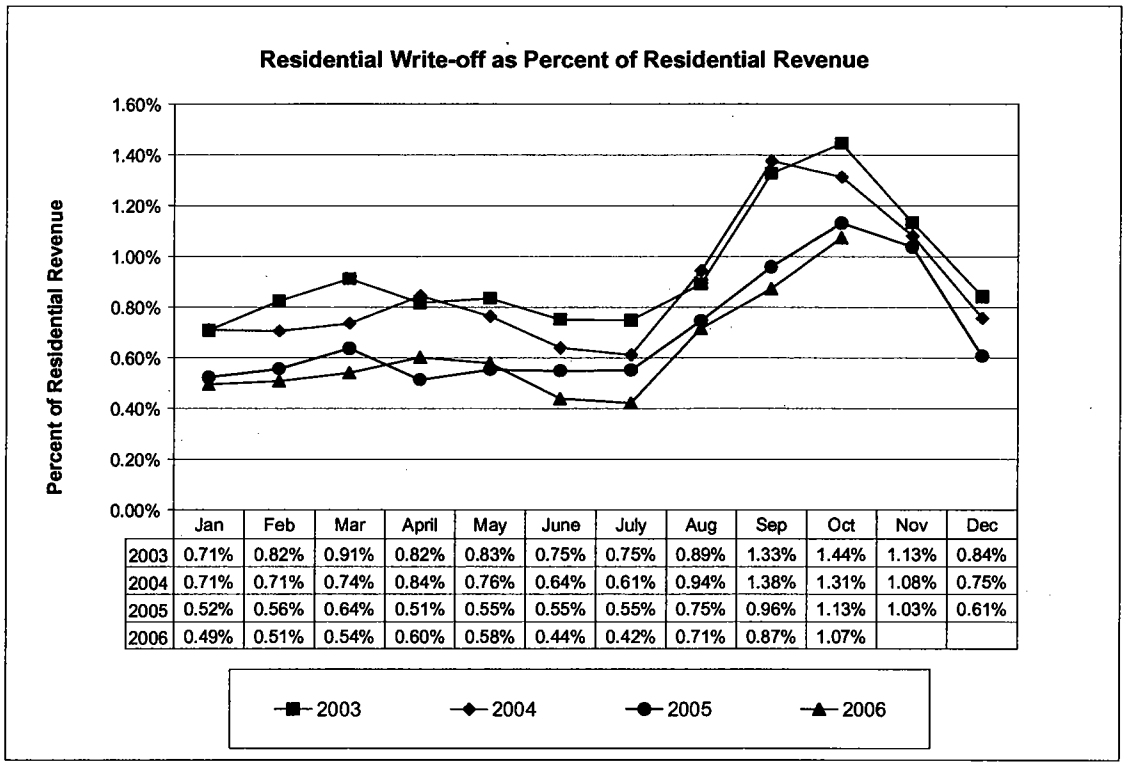
Once the arrearage is 180 days beyond the closing bill, the company writes off the amount past due. Figure 23 shows that the percentage of residential revenue written off has steadily decreased since 2003. Write-off as a percent of total revenue peaked in October at about 1.3 percent in 2004. In 2006, October peaked at one percent of total residential revenue. Note that the total revenue is the amount billed to households during that month. The write-off occurring in the same month is not related to that month's revenue. In effect, the write-off further reduces the month's net revenue. Overall, PacifiCorp's rate of write off is quite low, with all but one month in 2006 below one percent, and steadily decreasing over time.

Figure 23. Residential Class Write-Off 2003-2006



	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2003	$704	$682	$738	$585	$571	$533	$599	$807	$1,03	$910	$841	$818
2004	$800	$647	$503	$595	$510	$456	$499	$874	$1,05	$892	$846	$777
2005	$577	$520	$538	$404	$390	$410	$480	$774	$826	$800	$827	$710
2006	$587	$525	$547	$523	$434	$362	$418	$800	$796	$824		

Figure 24. Write-Off As Percent Of Revenue



	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
2003	0.71%	0.82%	0.91%	0.82%	0.83%	0.75%	0.75%	0.89%	1.33%	1.44%	1.13%	0.84%
2004	0.71%	0.71%	0.74%	0.84%	0.76%	0.64%	0.61%	0.94%	1.38%	1.31%	1.08%	0.75%
2005	0.52%	0.56%	0.64%	0.51%	0.55%	0.55%	0.55%	0.75%	0.96%	1.13%	1.03%	0.61%
2006	0.49%	0.51%	0.54%	0.60%	0.58%	0.44%	0.42%	0.71%	0.87%	1.07%		

Collections On Payment Plans

PacifiCorp offers time payment plans to assist households in paying their arrearage, typically plans are 90 days or longer. One of the metrics PacifiCorp uses to assess payment on the time payment plans is the amount of the past due balance collected within the first 30 days of establishing the plan. Figure 25 shows activity from January 2005 through September 2006, and includes the amount (thousands of dollars) entered into payment plans, and the amounts collected within the first 30 days of the plan. Typically this amount collected in the first 30 days is the amount collected up front as the plan is first established. This figure shows that the amounts entered into payment plans has increased 56 percent from January 2005 to September 2006. Note that both July 2005 and July 2006 experienced a jump in amounts entered into payment plans. During this time period, $37.5 million was entered into payment plans. A total of $12.9 million was collected within 30 days of establishing the plan during the same time period.

Figure 25. Amounts Entered Into Collection; Amounts Paid Within 30 Days

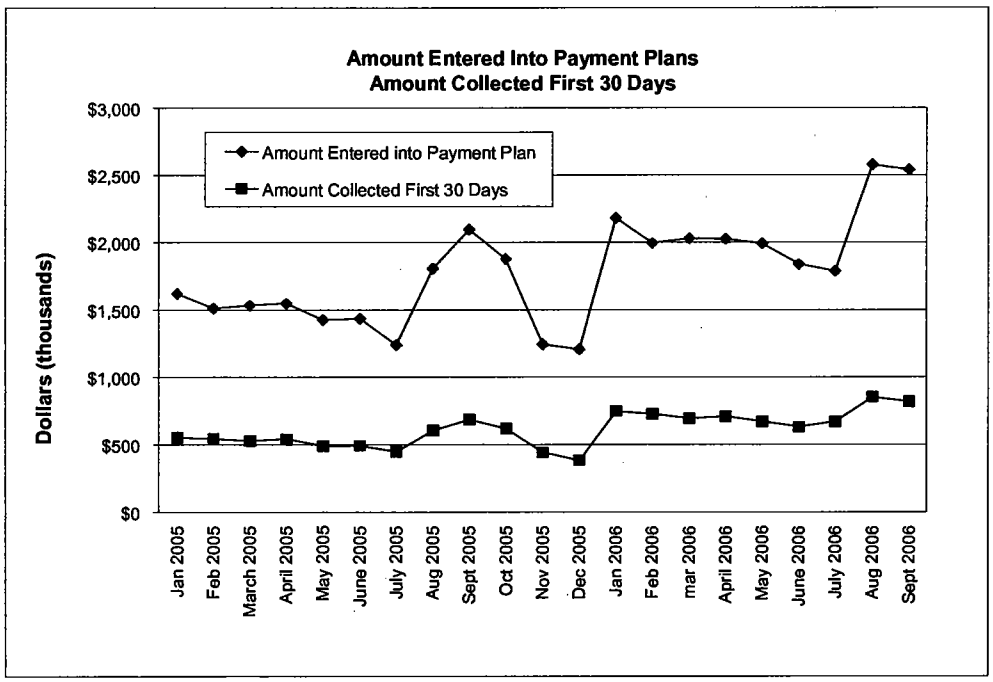
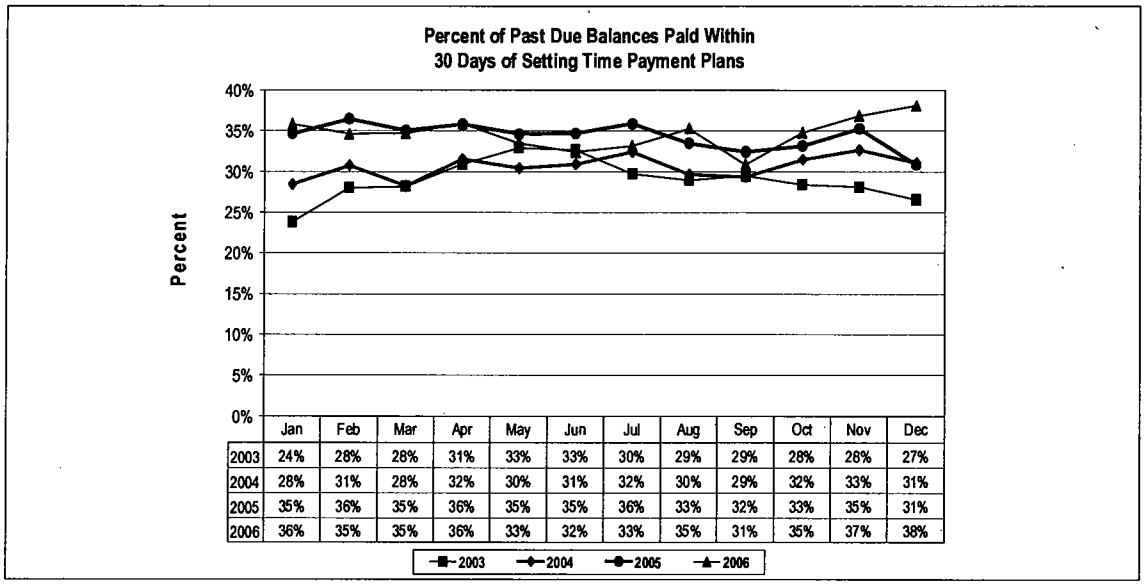


Figure 26 shows the percentage of past-due balances collected in the first 30 days of establishing a time payment plan. In 2004 through 2006, about 30 percent of the past-due amount was collected in the first 30 days. In 2003 the amount was much lower, about 20 percent. PacifiCorp changed and tightened its collection practices from 2003 to 2004; the effect of these changes in collection practices may be what we see in Figure 26.

Figure 26. Amount Collected First 30 Days, Time Payment Plans



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003	24%	28%	28%	31%	33%	33%	30%	29%	29%	28%	28%	27%
2004	28%	31%	28%	32%	30%	31%	32%	30%	29%	32%	33%	31%
2005	35%	36%	35%	36%	35%	35%	36%	33%	32%	33%	35%	31%
2006	36%	35%	35%	36%	33%	32%	33%	35%	31%	35%	37%	38%

Appendix C: Residential Service Fees

The table below shows PacifiCorp's residential service fees state by state.

Table 22. Residential Service Fees by State

	CA	ID	OR	UT	WA	WY
Deposit	Twice the maximum monthly bill	Not to exceed 1/6 of annual billing	1/6 of estimated annual billing	Estimated average 60 day billing period	Not to exceed 1/6 of annual billing	Up to 90 days bill
Late payment fee	1.5% of total unpaid balance if balance > $20	1% of delinquent balance	1.7% of amount not paid in full each month	1% of delinquent balance	1% per month of delinquent balance	1.5% of delinquent balance
Returned payment fee	$12	$20	$20	$20	$20	$30
Reconnect fee	$30 regular business hours; $60 5pm to 8pm; $75 all other times	$25 regular business hrs; $50 evenings, wknds & holidays	$30 regular business hrs; $75 non-regular business hrs; $175 wknds & holidays	$30 regular business hrs; $100 all other times	$20 regular business hrs; $40 evenings, wknds & holidays	$20 regular business hrs; $100 other times

Appendix D: Low Income Arrearage Study Working Group

Washington

Roger Kouchi, Washington Utilities & Transportation Commission

Steve Moss, Blue Mountain Action Council (BMAC)

Michael Karp, A World Institute for a Sustainable Humanity (A.W.I.S.H.)

Idaho

Beverley Barker, Idaho Public Utilities Commission

Teri Ottens, Community Action Partnership Association

Wyoming

Bryce Freeman, Wyoming Office of Consumer Advocates

Jeff Doctor, State of Wyoming Department of Family Services

Oregon

Deborah Garcia, Oregon Public Utilities Commission

Jim Abrahamson, Community Action Directors of Oregon

Donna Kinnaman, Community Action Program of East Central Oregon

California

Jeannine Elzey, California Public Utilities Commission

Michael Flannery, Great Northern Corp.

Utah

Rea Peterson, Utah Division of Public Utilities

Cheryl Murray, Committee of Consumer Services

Betsy Wolf, Salt Lake City CAP

Appendix E: Working Group Comments on Draft Report

The following are comments received on the draft report, included here in chronological order.

From: Michael Karp [mailto:michael@awish.net]
Sent: Thursday, March 08, 2007 10:37 AM
To: Anne West
Subject: Re: PacifiCorp Low-Income Arrearage Study -- Draft Final Report

Dear Anne et al,

Thanks so much for sending the draft report. . . . And kudos to the team for an excellent analysis. There were some very interesting conclusions.

I do hope you can convey a dual message here. On the one hand, the study was restricted to Company low-income in arrears. However, the conclusion states that "in 2006 PacifiCorp low-income households are remarkably covering 98% of their bill" . . . . . I believe this needs further clarification. Commissioners and others will get the message that there are adequate resources out there and that low-income are getting along just fine. In fact, as the study was restricted to only those known to have gotten energy assistance, weatherization or rate reduction assistance and that I would be surprised if that combination accounted for more than 20-25% of the eligible low income population pool in the Company service area . . . . There is a boggling unmet need for low-income energy services. After all, the program in Washington State for rate assistance is capped at 2,618 households. I think the overall message of need should go hand in hand with the results of arrearage coverage so that there is no confusion on the part of the report reader that does not know the ins and outs of these programs. Please consider amending the executive summary to this end, and of course call if you would like to discuss it further.

Thanks again for the opportunity to comment

Michael

Comments of the Community Action Directors of Oregon and the

Oregon Energy Coordinators Association on the Draft Low-Income Arrearage Management Study Prepared by Quantec, LLC

March 19, 2007

The Community Action Directors of Oregon (CADO) and the Oregon Energy Coordinators Association (OECA) appreciate the opportunity to participate in the preliminary stages of this project and to have the opportunity to comment on the Draft Report.

Our thanks go out to M. Sami Khawaja, Kevin Monte de Ramos, Anne West, Doug Bruchs, and Roger Colton for their work on this study. This study was initiated and completed in accordance with a settlement condition in the Mid-American Energy Holdings Company acquisition of PacifiCorp. This ambitions study covered each of the six states served by PacifiCorp. The study was funded at a level of $66,000 – an extremely modest level for a study of this much potential magnitude and scope. The very diverse nature of the PacifiCorp service territory, and the differences that each individual state brings to the regulation of low-income programs, highlights the difficult nature of the challenge that Quantec, LLC must have encountered as they amassed the information contained in this report and tackled the challenges of recommending cost effective cost mitigation strategies.

The funding, and time, limitations may have led, inadvertently, to a situation where there was not sufficient time or resources available to more fully engage the multi-state review team in ongoing progress updates or to share preliminary report conclusions. We suspect that many reviewers have scrambled to produce comments that will be of value to the various state commissions and to PacifiCorp. Further, there was no opportunity to provide comment and input into the report itself. As a consequence, comments by the multi-state review team will be included in the appendix of the report and not reflected in the report's conclusions.

We believe that this effort should be built upon and utilized as a springboard to further needed analysis and investigation into further state and/or multi-state-level analysis of the problems of arrearages of low-income households and a more in-depth evaluation of cost-effective strategies to reduce these arrearages and lower operational costs.

Report Observations

Our comments are presented as a series of observations, questions and issues that emerged upon our reading of this draft report. These comments are not presented in any order of importance.

- The report highlights the positive impact that existing low-income payment programs have had (over the study period of 2002 to 2006) on the level of customer's arrearages and upon their ability to pay their electricity bills. The decline in the Average Annual Accumulation of Arrears (Figure 1) and the total bill coverage displayed on Table 2 demonstrates this progress.

- We are in agreement with the observation Michael Karp submitted upon the release of this draft report. He noted that the positive impact metrics are good news for those low-income customers fortunate enough to receive assistance. However, these programs are of limited value to low-income customers who qualify for (and need) assistance but do not receive any due to the lack of available funds. By limiting the study to customers who had received energy assistance, rate reductions, or weatherization it may lead decision makers to the false conclusion that "low-income (customers) are getting along just fine". In Oregon, we estimate that as many as 75 to 80 percent of the total low-income customer base do not receive assistance. The success story of programs already on the ground should not deflect our attention from the large proportion of households whose needs are unmet.
- The California CARE rate discount program and the Home Electric Lifeline Program (HELP) in Utah provide a 20 percent and 16 percent ($96 per year divided by an average Utah PacifiCorp invoice of $592) discount to electricity customers respectively. The Low-Income Bill Assistance (LIBA) program in Washington State has a total participation pool that is capped at 2,618 households per year. In contrast, the Oregon Energy Assistance Program (OEAP) which came into being with Oregon Senate Bill 1149 provided average assistance of $321 in Program Year 2006 to customers, which translates to over 28 percent of the annual Oregon PacifiCorp invoice of $1,063.
- The third bullet on Page 3 of the draft report requires additional investigation. It refers to a period of "several months" to complete the process of committing assistance funds to an account and the funding being received by the utility. This inefficiency needs to be explored in more detail and rectified.
- At the beginning of the section titled "Recommended Strategies" on Page 5 it is noted that specific cost effectiveness analyses were **not** conducted to evaluate each potential strategy. This fact can be laid at the feet, we believe, of the limited budget and large scope of this project. This valuable analysis needs to be conducted in subsequent analysis.
- Also on Page 5 is a brief section on the Identification of Low-Income Households. The critical issue of customer privacy notwithstanding, the need to gather additional low-income customer information and metrics is not only of great value, but is also a two-way street. Utilities will require additional information and data to support their program and funding efforts. At the same time, we would be supportive of the NARUC resolution to gather utility billing and arrearage date from all electric and gas utilities within Commission jurisdiction in support of State and federal low-income assistance programs.
- Quantec mentions prepaid meters in the section titled Maximize Use of New Trends. They correctly note that many are opposed, for good reason, to this solution for low-income clients. We agree with this notation – and are in opposition to their use for low-income clients. We are not swayed by the argument made by some that prepaid meters eliminate arrearages. Of course they do – through the elimination of electric service. Simply making a prepaid meter program "voluntary" is insufficient protection for low-income customers. We find the inclusion of prepaid meters as a possible arrearage management tool to be unsupported by the data presented in the study and would urge decision makers to discount it as a possible tool unless, and until, sufficient protections for low-income customers are developed and implemented.
- Quantec is quite open with their support for rate discount programs. However, our reading of the results of the report does not necessarily draw us to that conclusion. Further, they

mention that Oregon Senate Bill 1149 should be modified to allow a rate discount program. We have a couple of observations on this issue.

First, Oregon Senate Bill 1149, as currently written, may already possess that flexibility. Second, and more importantly, we are not supportive of the call to divert some of the existing funding from the previously mentioned OEAP program to fund a rate discount program.

On Page 22 of the report Quantec notes the difference in customer bill coverage ratios for the three states that currently have rate discount programs compared to the three states that do not. When the impacts of current energy assistance programs are added to the analysis in states without rate discounts the bill coverage ratios not only become quite close, they also each approach 100 percent. This "before and after" impact is clearly identified on Tables 1 and 2 on Page 3.

- In the final section on Page 7 titled "Longer Term Solutions", Quantec mentions two important points. The first calls upon PacifiCorp to participate in larger social efforts to address the underlying issue of poverty. Quantec mentions Entergy's support of local IDA programs. In Oregon, there is an effort being launched called ***Oregon Thrives*** which aims at supporting legislative action that addresses the very heart of the poverty issue. CADO would welcome PacifiCorp's support of the ***Oregon Thrives*** initiative.

  The second point is the call for PacifiCorp to work through its various States on the review and modification of the federal LIHEAP allocation formula to that it adequately reflects the low-income needs of the states PacifiCorp serves. We would strongly encourage PacifiCorp's efforts on this vital issue.

- Table 3 on Page 13 displays the Proportion of Total Low-Income Households Identified for Analysis. One of the metrics contained on this table is an estimate of the total number of households under 150 percent of the Federal Poverty Level (FPL) served by PacifiCorp. The number that is shown for Oregon is 72,092. This number is significantly different than figures we have been using. The following discussion highlights this possible anomaly. Oregon's threshold of qualification for low-income energy assistance (and weatherization) is 60 percent of state median income – which is roughly equivalent to 150 percent of the FPL. In our recently released Low-Income Energy Assistance Snapshot we cite a figure of 419,000 Oregon households that are at, or below, 60 percent of state median income. This figure comes from the 2005 American Community Survey. In 2005 (according to Oregon PUC data) PacifiCorp served 28.9 percent of the average number of total residential customers (both investor-owned and consumer-owned utilities). Taking 28.9 percent of the 419,000 household figure one arrives at an estimate of over 121,000 low-income households served by PacifiCorp – a significantly higher figure than provided in the Quantec study.
- We would like to have seen additional documentation of the calculation of Total Arrears that appears on Table 9, on Page 26. (Please note: this analysis does not include the data anomaly mentioned above.) Quantec identifies a total PacifiCorp low-income customer base (with electric space or water heat) of 92,577, of which 47,734 received some form of energy assistance. The subset of the population receiving assistance that exhibited arrears in 2006 was 13,753 households. The proportion of the subset of customers who received assistance and exhibited arrears is 28.8 percent. These households have an average accumulated arrearage of $238. Our question relates to the "other" customers who did not receive assistance. It is calculated that 44,843 low-income customers with electric space or water

heat did not receive assistance. Of these, Quantec states that only 5,241 (or 11.7 percent) were expected to have "payment problems". Why is this proportion significantly lower that the proportion of customers who had received assistance? A further question emerges when the figure of 5,241 is multiplied by the same average accumulated arrearage figure of $238 in arriving at the estimate of Total Arrears. Our understanding from this analysis is that the $238 average accumulated arrears figure includes the impact of currently available assistance programs which were not enjoyed by these customers. Quantec acknowledges that these estimates are uncertain, but then goes on to state that they foresee no upward or downward direction to the bias of the estimates. We would like to see some additional clarification of these figures because we see a possibility that the Total Arrears estimate of $4.5 million may be significantly understated.

In conclusion, we urge that PacifiCorp, upon filing the final report with their respective regulatory commissions, do not view this work as complete. This study should be viewed as the beginning of a journey that we can all take together to explore tangible avenues of addressing the nagging problem of low-income arrearages faced by PacifiCorp and its entire customer base.

Thank You,

Jim Abrahamson, Oregon Energy Partnership Coordinator

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From: GARCIA Deborah [mailto:Deborah.Garcia@state.or.us]
Sent: Monday, March 19, 2007 1:20 PM
To: DeCristoforo, Marisa; Jim@cado-oregon.org; rkouchi@wutc.wa.gov; stevenm@bmacww.org; Michael Karp; beverly.barker@PUC.Idaho.gov; ams@cableone.net; bfreem@state.wy.us; soxley@state.wy.us; JDOCKT@state.wy.us; Donna Kinnaman; JME@cpuc.ca.gov; energy@snowcrest.net; ReaP@utah.gov; cmurray@utah.gov; bwolf@slcap.org; bobc@bmacww.org; dhemmert@seicaa.org; DURRENBERGER Ed; eileen_silvey@hotmail.com
Cc: Eberle, Becky; Hoffman, Jason; Doug Bruchs; M. Sami Khawaja; rcolton101@aol.com; Anne West; BUSCH Ed; CONWAY Bryan; JOHNSON Judy; Rockney, Carole
Subject: RE: Deadline Extended for Low-Income Arrearage Study

Based on my review of this report I do not believe that all of the assumptions used to derive the statistics and conclusions of this report are valid. In addition, the report includes inaccuracies regarding Oregon law relating to discounted rates and collection practices. I would be happy to share my specific concerns and suggestions with others at some later date as part of this or some other process.

Deborah Garcia
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From: Donna Kinnaman [mailto:dkinnaman@CAPECO-WORKS.ORG]
Sent: Monday, March 19, 2007 4:36 PM
To: DeCristoforo, Marisa
Subject: RE: Deadline Extended for Low-Income Arrearage Study

I am sorry I have been out of the office so my response is late. After reading the draft copy of the arrearage study, I do have a few concerns. I will keep my comments short.

I am reluctant to assume the conclusion on the benefit of rate discount. There is nothing in the document that can substanciate the unmet need and how that factors into the cost benefit. The pay as you go meters, would prevent arrearage but at what cost to the household? This is more or less an observation, the pie charts in most illustrations appear to be a copy from one page to another and don't necessarily represent the percentage outlined.

From: B WOLF [mailto:daveandbetsy1@msn.com]
Sent: Tuesday, March 20, 2007 8:50 AM
To: Anne West
Cc: bwolf; shermr@utah.gov
Subject: Comment on Low Income Arrearage Study Draft Report

Anne,
Thank you very much for your assistance and patience - I really appreciate it. If you have any questions, please call me on my cell phone at (801) 891-5040.
Betsy

Comment by Betsy Wolf, Salt Lake Community Action Program
We will need to make further comments on the report at a later date due to time constraints but need to correct one factual error. Regarding the recommendation on Longer Term Solutions and the LIHEAP allocation formula on p. 7 in the Executive Summary: The report asserts that Utah does not expend all its federal LIHEAP funds while Oregon funds are exhausted quickly. State LIHEAP Director Sherm Roquiero asserts that Utah DOES expend all its LIHEAP funds each year. However, each state has the discretion of how it expends its LIHEAP dollars. Utah estimates the number of households it expects to serve in a heating season and divides its allocated funds by that number. In so doing, it does not calculate the amount that would cover a household's heating needs but an amount that will allow it to serve all eligible applicants with some assistance. Therefore, a household in Utah receives an average $290 LIHEAP payment and a maximum of $500 as compared with some states that operate on a first come, first served basis, allocating more money on a per household basis but running out of funds earlier in the season.