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January 20, 2014

Oregon Public Utility Commission  
Attn: Kathy Williams  
P.O. Box 1088  
Salem, OR 97308-1088

Re: UG 167 Effectiveness of Cascade's Oregon Residential Low-Income Energy Conservation (OLIEC) and Bill Assistance (OLIBA) Programs

Dear Ms. Williams:

Cascade Natural Gas Corporation encloses for filing the Effectiveness of Cascade's Oregon Residential Low-Income Energy Conservation (OLIEC) and Bill Assistance (OLIBA) Programs. These program evaluations are being made in accordance with the provisions outlined in the Company's Tariff P.U.C. OR. No. 9 Original Sheet No. 33. If you have any questions or concerns, please contact me at (503) 230-9607.

Sincerely,

Thomas James (Jim) Abrahamson  
Manager, Conservation Policy  
Cascade Natural Gas Corporation

attachment

# **Effectiveness of Cascade's Oregon Residential Low-Income Energy Conservation (OLIEC) and Bill Assistance (OLIBA) Programs**

Prepared for:

*Cascade Natural Gas Corporation*

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January 20, 2014

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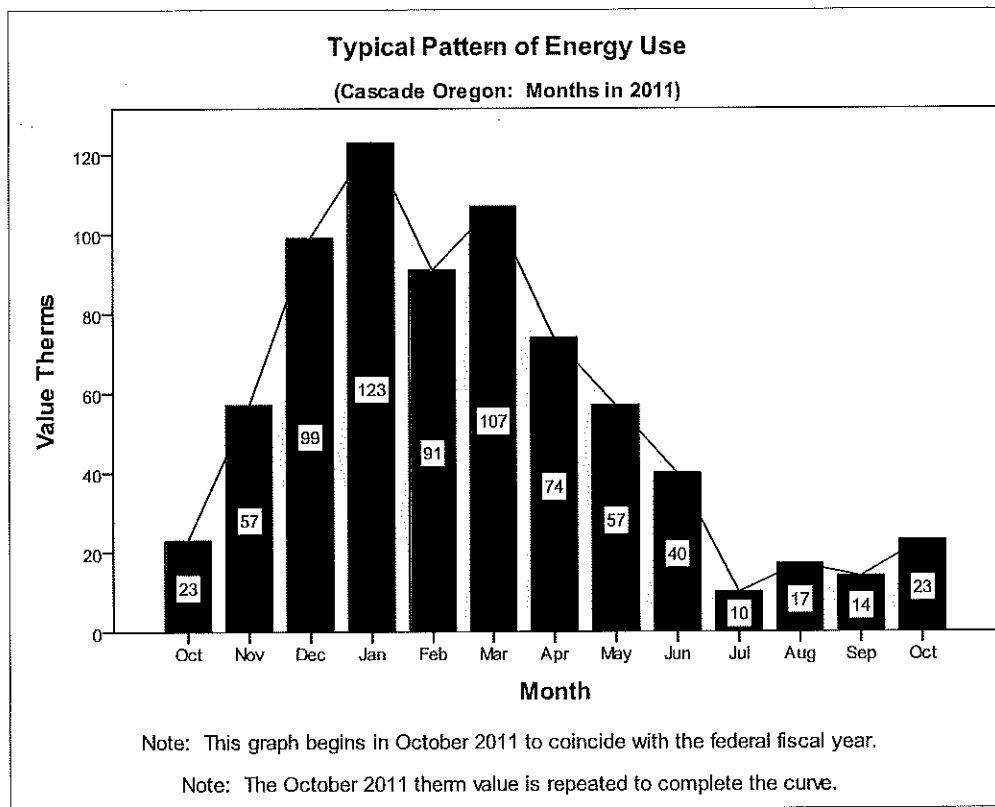
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## I. Introduction

This study is an evaluation of Cascade Natural Gas Corporation's Oregon Low-Income Energy Conservation (OLIEC) and Low Income Bill Assistance (OLIBA) programs. Cascade serves approximately 55,000 residential customers in Oregon. The company does not keep a count of low-income customers but the qualification for OLIEC is 200% of the federal poverty level and the qualification for OLIBA is 150% of the federal poverty level.<sup>1</sup> A little over 27% of the individuals in Oregon are within 150% of poverty and about 38% are within 200% of poverty.<sup>2</sup>

The average energy use of Cascade Oregon residential customers was 723 therms in 2011 and the average annual household bill was \$800.00. For customers not on budget billing, the pattern of use follows the typical pattern for residential natural gas with low summer bills, high winter bills and bills in-between in the spring and fall (Figure 1).



**Figure 1: Typical Pattern of Energy Use (Therms).**

<sup>1</sup> There is a discussion of numbers of qualifying customers in Section VI of this report.

<sup>2</sup> The percentages of households will be slightly smaller but of the same relative size. Incomes that correspond to several federal poverty multiples are shown in the Appendix.

## **The Programs**

Cascade's Oregon Low Income Energy Conservation (OLIEC) program is designed to provide additional public purpose funding to supplement existing funding that is primarily provided by low income weatherization programs governed by federal and state authorities. These programs give preference to homes occupied by the elderly, the disabled and to low-income households with children aged six years and younger. *The program is not intended to meet costs entirely, but to supplement other Community Action Agency funds to increase the number of customers served.* In addition to rebates based on specific weatherization measures installed in each home, the Community Action Agencies receive an overhead amount per project for program delivery and administrative costs. Recently, a supplement for customer education was added.<sup>3</sup>

Similarly, Cascade's Oregon Low Income Bill Assistance (OLIBA) program *is designed to provide additional public purpose funding to supplement existing funding.* The existing funding is primarily from the federal-state Low Income Home Energy Assistance Program (LIHEAP) which assists low income households in paying their energy bills.

## **The Unique Situation**

This study comes at a particularly important moment in the history of both of these programs. The Weighted Average Cost of Gas (WACOG) changed in 2008, dramatically decreasing the cost of natural gas. This change in the fundamental economic structure of the supply cost of natural gas is shown in Figure 1, Percentage Change in Total per Therm Rate.<sup>4</sup>

In Figure 1, the Total per Therm Rate in 2005 is taken as the baseline and subsequent rate revisions in the Total per Therm Rate are shown as percentage changes in relation to the 2005 baseline.<sup>5</sup> As shown in the figure, gas supply cost increased gradually through December 2008 then dropped steeply. Current supply cost is approximately 30% below cost per therm in 2005 and may continue to drop.<sup>6</sup>

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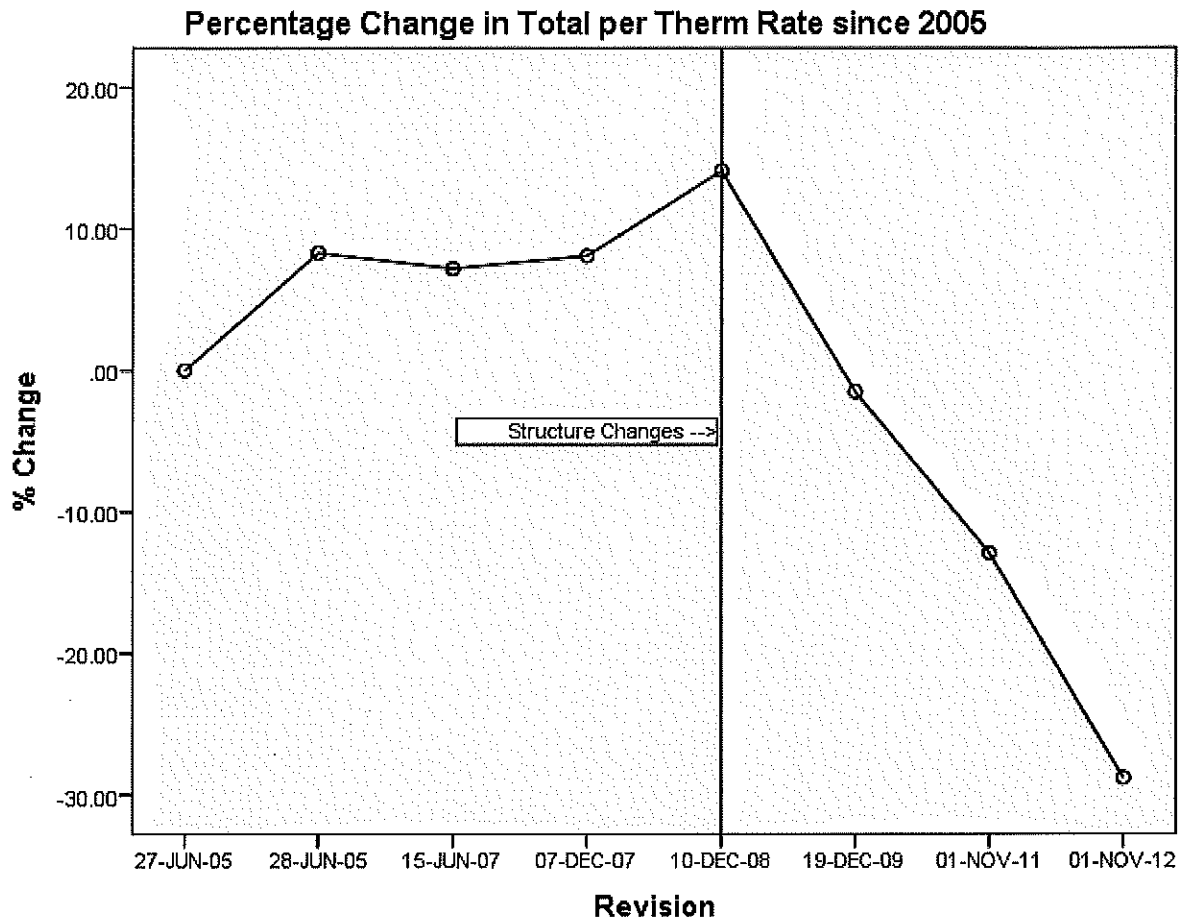
<sup>3</sup> OLIEC is also authorized for new low income construction and major retrofits but those capabilities have not been actualized in projects yet.

<sup>4</sup> The Total per Therm Rate includes WACOG plus all other per therm charges and credits and represents per therm gas supply cost to the customer.

<sup>5</sup> This baseline is chosen to coincide with the start of Cascade's current Oregon Low Income programs.

<sup>6</sup> The 30% drop from the baseline is the same as a drop from the 2008 peak of over 40%. The year in which the economic structure of gas supply changes is 2008.





**Figure 2: Change in Total Cost per Therm Rate.**

This is a unique situation. The drop in gas supply price means:

- (1) Payment assistance dollars will go farther towards helping meet the needs of households with payment problems.
- (2) Since the public purpose funding is expressed as a rate on the cost of gas, the size of the annual public purpose allocation may decrease.<sup>7</sup>
- (3) For weatherization work, the drop in price means the avoided cost from energy savings is decreasing, though the cost of weatherization services and materials is not affected.
- (4) The size of rebates for energy saving measures may also decrease.<sup>8</sup>

<sup>7</sup> Changes in rates directly impact both OLIBA and OLIEC since the public purpose rider is set as a percentage of total residential and commercial revenues plus customer charges. Other things held equal, as rates decline change, the associated revenues may decline. This relation may be offset to some degree by increased use of energy.

### **Looking Ahead: A More Difficult Economic Future**

Yet, there is more to the current situation. The “more” is that difficult times lie ahead. To highlight how special this moment is, we can think of the weakened national economic context. Since at least 1970, the United States has been off-shoring first manufacturing jobs, then lower level technical and professional jobs, then middle and high-level jobs. In addition to this long-term trend, generally referred to as a “hollowing out” of the productive part of the economy, recent economic shocks have hit our weakened economic structure. This series of “bubbles” have now substantially decreased the wealth of American households. In addition, household incomes are generally depressed and are being repressed.

Having presided over the continuing off-shoring of jobs, to keep the economy from interminable economic depression, the government has been printing money and has guaranteed the stability of the banks “too big to fail” not only through direct bailouts but also through an ongoing arbitrage arrangement that guarantees profits to the banks. The financing of an appearance of something sort of like a weak economic normality has also involved incurring huge foreign debt. We have had to borrow from the countries to which our jobs were transferred. Having dropped far down the rankings of countries in measures of health and economic well-being, the US economy is drained by the maintaining of a vastly expensive and yet chronically underfunded worldwide military presence. *The ongoing globalization of jobs and hollowing of the economy have made the future of younger households less economically viable than in the past. The economic and material prospects of most young people are lower than those of their parents.*

The government papers over these severe economic problems by distorting basic economic statistical reporting, using inadequate indicators of economic need for income qualification for programs in the federal safety net. More and more households that need some form of social support are left out. Income insufficiency is greatly undercounted by the government, official unemployment is greatly understated and the impact of inflation on household incomes is currently understated by more than one-half. The economy does not generate enough jobs. In particular, it does not generate enough good jobs. This is an economy in stagnation and long-term decline, where investors seeking high returns on capital keep looking for the next artificial bubble and most households have a harder time getting by. *In this economic context, the situation of working people may slowly get somewhat better, but not much better – and never quickly or completely.*

### **Looking Ahead: The Economy and Climate Change**

Then, separate from the economic considerations above and in interaction with the economy, there are the dramatic impacts as climate change accelerates. We already have intensifying heat and rain storms; intensifying drought; stationary storms that persist and move very slowly, more significant snow storms as ocean energy increases, loss of land to the oceans in low-lying cities,

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<sup>8</sup> Changes in avoided costs may alter the value of the reimbursements agencies can receive for installing measures through the OLIEC program. The reimbursement levels may increase if avoided costs increase. Conversely, reimbursement levels per measure may decrease if avoided costs decline.

decrease in agricultural productivity (examples are corn, grasses and cattle), increased hunger in poorer countries leading to local rebellions and wars, rising prices for beef and field-grown products over the next several years here in the United States; and ever extending ranges of diseases and pestilence far beyond their old ranges worldwide (for example, malaria, yellow fever, Lyme disease, avian malaria, pine beetles). With increasing and sustained drought, dust storms have recently become a fact of life in Idaho and Arizona. Animals and plants are trying to migrate towards areas with more favorable conditions. Migrations of people will follow.

Over the next thirty to fifty years, these conditions will accelerate. The federal government will finally be forced by the scale, frequency and building forces of climate impacts to address climate change. Then, there will be a strong national reallocation of dollars from private consumption to public and private investment to deal with disasters, to adapt to climate change, and to reduce the causes of climate change.

These two “big picture” realities, the decline of the economy and climate change, weave together to frame the question of what will happen to our communities. What will happen to households with insufficient income in this context? Thus, the question is not simply how should low income programs be improved right now, but what changes should be made now to position for a more difficult economic and climate future?

There are no counter-tendencies of sufficient size to make a difference. While we can expect some small improvement, we can expect no general increase in real incomes in the future. *We face a kind of sustained slogging through with economic conditions a little better than today, but without prospect of a return to the healthy economy of the past.* With regard to climate, since the US did not invest to prevent climate change, it is now too late. This means sometime in the not distant future politics will be forced to change due to realities and from that point forward, forced and voluntary investment will absorb public and private funding to repair damages and adjust to changes in order to keep society viable, leaving less for households.

### **Yet, An Opportunity**

So, as we stand in the moment between the “no longer” and the “not yet” in the context of interacting climate and basic economic problems we can look ahead to see the future. For almost all of us, the future will be much harder than the past. *Yet with gas supply costs very low we are also in a moment of possibility if we can carefully think through the design of low income natural gas programs to meet the challenge of tough times ahead.* Given this objective situation, what could and should be done now to ensure the future of practical and workable low income programs?

### **Overview of the Evaluation**

This study focuses first on accomplishments to date. The evaluation reports on achievements, program structure and design, funding, and customer and societal impacts. As the preceding paragraphs suggest, contextual factors are currently as important for the evaluation of these programs as the traditional evaluation of factors under program control. Consideration of the

shape of the future should increase our awareness of next possible steps. In the final section, the evaluation turns to possible innovations for discussion and implementation.

## II. Energy Savings Achievements

In this section of the study, we review program achievements in terms of the number of homes to which weatherization services have been provided since the beginning of Cascade’s Oregon Low Income Energy Conservation efforts and at energy savings (therms saved).

### A. Weatherization Services

- Q1. How many homes served by Cascade Natural Gas have received weatherization services since the launch of the Company’s Oregon Low Income Energy Conservation (OLIEC) efforts?

The number of homes that have received weatherization services is 347. The breakout by year is as follows:

**Table 1: Record of Weatherization Projects.**

<b>Program Year</b>	<b>Number of Homes</b>
2006 - 2007	24
2007 - 2008	42
2008 - 2009	42
2009 - 2010	78
2010 - 2011	113
2011 - 2012	48
<b>Total</b>	<b>347</b>

### B. Applications and Payments

- Q2. What proportion of the rebate applications submitted by qualified Low Income Agencies eligible to receive Oregon Low Income Energy Conservation (OLIEC) funds have resulted in an OLIEC payment by the Company?

Virtually all rebate applications submitted by the Community Action Agencies on behalf of eligible customers result in an OLIEC payment by the Company. The number that does not is too small to be meaningful and nearly all rejected applications are simply corrected and resubmitted, resulting in payment.

### ***C. Energy Savings***

Q3. How many therms have been saved through Company-supported weatherization efforts performed by Low Income Community Action Agencies in CNGC (Cascade Natural Gas Corporation)'s service territory? How was this therm savings level determined?

#### **Cascade's Engineering Method**

The number of therms in energy savings is estimated in three ways. First, Cascade's energy savings results are based on the method specified in the rate schedule for the program. This method gives the best *technical* estimate of energy savings. An engineering estimation approach, the method uses deemed savings from the Stellar Study and other regional deemed values. These values are based on engineering calculations, results of studies and expert judgment.<sup>9</sup> According to this method, a total of 51,881 therms have been saved through Company-supported weatherization projects performed by the Community Action Agencies from the initiation of the Oregon Low Income Energy Conservation program (OLIEC) in October 2006 through the end of September 2012 (Table 2).

**Table 2: Cascade Estimates of Therms Saved by Program Year.**

<b>Fiscal Year</b>	<b>Homes</b>	<b>Energy</b>
	<b>(No.)</b>	<b>(Therms)</b>
<b>Oct 2006 - Sep 2007</b>	24	3,573
<b>Oct 2007 - Sep 2008</b>	42	5,914
<b>Oct 2008 - Sep 2009</b>	42	5,992
<b>Oct 2009 - Sep 2010</b>	78	11,074
<b>Oct 2010 - Sep 2011</b>	113	17,833
<b>Oct 2011 - Sep 2012</b>	49	7,495
<b>Total</b>	<b>348</b>	<b>51,881</b>

These energy savings were determined by summing the deemed savings of individual weatherization measures installed (Table 3).

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<sup>9</sup> The estimates from this approach are precisely tailored to the individual measures, to not take specific household composition or behaviors into account, and are not affected by changes in utility rates or bills.

Table 3: Cascade Measure Basis for Estimates of Therms Saved.

Therms Saved by Fiscal Year and Weatherization Measure							
Weatherization Measure	Fiscal Year (Therms)						Total Therms
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	
Install Ceiling insulation	869	1,182	1,489	2,298	2,862	1,542	10,242
Install Floor Insulation	774	1,151	1,191	2,165	1,349	1,614	8,244
Install Wall insulation	185	592	682	1,229	994	843	4,525
Install Duct Insulation	109	309	92	254	301	143	1,208
Install Duct Sealing	693	1,643	1,617	2,618	6,314	1,540	14,425
Install Infiltration Measures	247	403	442	832	1,326	546	3,796
Install High Efficiency (90%+) Furnace	568	213	142	1,278	3,976	852	7,029
Perform furnace tune-up	0	378	294	189	105	273	1,239
Install high-efficiency water heater (0.62)	129	43	43	172	86	129	602
HE-Water Heater	0	0		39	520	13	572
<b>Total</b>	<b>3,574</b>	<b>5,914</b>	<b>5,992</b>	<b>11,074</b>	<b>17,833</b>	<b>7,495</b>	<b>51,882</b>

The weatherization measure values in Table 3 are computed based on measures installed as reported by the Community Action Agencies to Cascade.

Table 4: Therm Values used in Savings Calculations

Therm Values used in Calculations		
Weatherization Measure		Therms
1	Install ceiling insulation where no ceiling insulation exists	0.088/square foot
2	Install ceiling insulation where ceiling insulation <R-12 exists	0.034/square foot
3	Install floor insulation	0.052/square foot
4	Install wall insulation	0.074/square foot
5	Install duct insulation	0.136/linear foot
6	Install duct sealing	77
7	Install infiltration measures	13
8	Install high-efficiency (90%+) furnace	71
9	Install direct vent spaceheater	21
10	Perform furnace tune-up	43
11	High efficiency water heater (0.62)	13

In Table 4, the deemed therm values for weatherization measures 1-5 are as set forth in the Cascade's Oregon Low-Income Energy Conservation Program Schedule No. 33. The values for measures 6-11 were back-calculated from the set of yearly Cascade Natural Gas Corporation's OLIEC reports. The original source for these values is the Stellar Processes study of resource potential or a similar industry standard.

The method of calculation has been constant since the beginning of the program. In general, engineering estimates are typically higher than savings as measured at the meter because they take into account the physical savings that the measure package is capable of producing but do not take countervailing factors into account. These offsets may result from other changes to the physical structure of a building, changes in the number and ages of people living in the household, behavior and other factors. The deemed value result is a gross estimate of energy savings.

### **USDOE Method**

A second estimate of household energy savings is created by the Community Action Agencies when they model each home weatherized, using software approved by the US Department of Energy (USDOE). In Oregon, the USDOE approved software employed requires a baseline year of actual monthly usage for each home. Oregon uses REM/Rate™ or REM/Design™ software provided by the Architectural Energy Corporation.

In modeling the work to be done in each home, these programs may perform a utility bill analysis with weather normalization. Or, it is possible to run with default values. The results produced include an Improvement Summary, an Economic Summary and an Action Report.<sup>10</sup> Together, these reports indicate relative ranking (priority) to various kinds of improvements for each home. A projected energy savings value is also calculated. The REM value for estimated savings from the beginning of the project through September 2012 is 84,146 therms.<sup>11</sup> The Cascade engineering method value (51,882 therms, from Page 7, above) is about 62% of the REM value. This might be because REM represents all work on the house while the engineering projection includes values only for listed measures, or the REM values might be over-estimates of savings. In many homes, Cascade's Oregon funding is coordinated with federal, state, or other funding to deliver a total weatherization package.

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<sup>10</sup> It can produce other reports, as well.

<sup>11</sup> These represent 277 cases, a few of which do not have a REM result.

- Q4. What was the actual savings achieved through the gas measures performed by the LI WAP (Low-Income Weather Assistance Program) on behalf of Cascade as compared to the estimate developed by the Company and the Community Action Agencies?

PRISM™ Analysis (or the Princeton Scorekeeping Method™) is a software package used by program evaluators. It is a means for implementing a regression analysis on monthly energy usage records while normalizing for the effects of weather on energy use. It is used first to carry out a gross savings analysis and then a net savings analysis. The gross analysis is the appropriate comparison to the REM estimate and the Cascade engineering approach. For the gross analysis, only the treated homes are analyzed.

For this part of the evaluation, the focus had to be limited to single-family homes since there were not enough mobile homes or dwellings in multiple unit buildings to include them in the analysis.<sup>12</sup> Table 5 shows the treated single-family homes included in the analysis. The column for “CASE” contains an identification number for each house so that all of the elements used in the analysis can be aligned by house. “PRE WNAEC” contains the baseline year weather normalized use of therms in each house. “POST WNAEC” contains the weather normalized energy use for each house for the year following weatherization. “DELTA” is the gross energy savings estimated using this information. “REM” is the model (REM) estimate of savings for the same home (as discussed in the previous subsection).

As shown in this table, the estimate of gross natural gas energy savings in treated homes using the PRISM™ method is 139.6 first year therms per year. This is about 58% of the REM estimate of 241.8 first year therms per year. In comparison to the Cascade engineering approach estimate of 51,882 therms for the life of the program, the PRISM™ result is equivalent to 48,581 therms or 94% (using the PRISM™ result of 139.6 therms per home and multiplying by the number of homes reported as treated in the annual Cascade Oregon reports filed with the Oregon Commission. This is a very good fit with Cascade Oregon’s engineering/deemed savings method. The REM estimates are probably over-estimates.<sup>13</sup>

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<sup>12</sup> Homes completed in 2008 and 2009 were excluded from analysis in order to construct a common baseline year. The baseline year is calendar year 2009 and the post-year is calendar 2011. Homes weatherized in 2012 are the comparison group. For these homes the baseline is calendar year 2009 and the (pseudo) post-year calendar year 2011. As is typical in PRISM™ analysis, there are fairly strong rules for data exclusion. Obvious outliers were removed from the energy data prior to analysis; also REM values that were larger than the energy usage of a house were removed. Cases retained for analysis were required to have good energy data and good REM data.

<sup>13</sup> Software estimates of energy savings are not a primary use of audit software. The primary use of software of this type is to develop a ranking of measures for a particular home, so that the most cost-effect bundle of measures may be identified for installation. Decisions on what measures to install are made by skilled energy auditors, taking this kind of information into account. The energy savings estimates produced by audit software are a by-product and generally are not as reliable as the ranking function, which is the primary purpose.



Table 5: Treated Single-Family Homes.

<b>TREATMENT GROUP: SINGLE FAMILY</b>				
<b>CASE</b>	<b>PRE WNAEC</b>	<b>POST WNAEC</b>	<b>DELTA</b>	<b>REM</b>
40	804	256	548	548
43	391	431	-40	156
44	1148	713	435	187
47	603	370	233	846
48	599	597	2	448
54	680	619	61	139
56	523	483	40	266
58	675	479	196	300
60	1166	1140	26	270
61	915	765	150	145
62	523	595	-72	192
63	597	547	50	290
65	642	519	123	433
69	999	696	303	448
76	1010	901	109	350
80	449	456	-7	183
84	411	222	189	317
85	520	617	-97	347
88	413	303	110	288
89	567	378	189	185
96	752	528	224	229
99	471	389	82	182
105	413	341	72	107
109	406	364	42	176
110	924	397	527	207
111	609	348	261	224
114	727	75	652	277
115	1009	347	662	587
121	631	539	92	83
166	421	380	41	234
176	304	463	-159	39
180	423	441	-18	22
	20,302	15,699	5,026	8,705
	563.9	436.1	139.6	241.8
	<b>PRE</b>	<b>POST</b>	<b>DELTA</b>	<b>REM</b>

To extend the analysis to net savings, Table 6 shows results for the comparison group. The comparison group consists of single-family homes treated later and using the same years for baseline and post-year as the treatment group. The “DELTA” is the net natural gas energy savings for each home in the comparison group.

Table 6: Comparison Group.

<b>CONTROL GROUP: SINGLE FAMILY</b>			
<b>CASE</b>	<b>PRE WNAEC</b>	<b>POST WNAEC</b>	<b>DELTA</b>
239	926	1176	-250
243	547	398	149
244	464	444	20
245	128	226	-98
247	402	316	86
248	311	407	-96
249	298	316	-18
250	436	441	-5
251	544	546	-2
252	925	1207	-282
253	271	271	0
254	39	160	-121
255	605	516	89
257	450	405	45
258	467	780	-313
260	704	819	-115
270	497	481	16
271	570	589	-19
272	312	133	179
273	818	787	31
274	932	935	-3
277	41	660	-619
	10,687	12,013	-1326
	411.0	462.0	-51.0
	<b>PRE</b>	<b>POST</b>	<b>DELTA</b>

As shown in Table 6, the comparison group on average increased use of therms by about 51 therms in the absence of the program. Table 7 shows that net savings were about 190.6 therms

(about 136.5% of the gross savings from the treatment group). For the life of the program (multiplying 190.6 by the number of homes completed each year as filed by Cascade Oregon with the Oregon Commission) this is 66,329 therms or about 128% of the therm savings estimated by Cascade’s engineering/deemed savings method.

*These results indicate that the Robison study and other engineering/deemed approaches used to develop the tariffed estimates of measure saving for the program are sound and do not need to be changed for Oregon. They are very good estimates of gross savings, but underestimate net savings which are, in aggregate, about 128% of the Robison study/tariffed values at the overall program level.*

**Table 7: Net Natural Gas Energy Savings.**

<b>NET SAVINGS (THERMS)</b>		
<b>Treated (Gross Savings)</b>	<b>Comparison (Gross)</b>	<b>Net Savings</b>
139.6	-51.0	190.6
<p>Note: For this comparison, Comparison Group homes are required to have pre and post measurements. Treatment Group homes are required to have pre and post measurements plus a REM estimate.</p>		

The available sample size is too small to consider the results of this study to be the final word on savings results. The analysis should be repeated in three or more years, to incorporate more years of data along with the current study data.

***D. Community Action Agency Perspectives on Value and Capacity***

Q5. What do Community Action Agencies report with regard to the value and capacity of CNGC to support and deliver weatherization and bill assist programs?

The Community Action Agencies all have a very high assessment of the value and capacity of CNGC to support the delivery of the weatherization and bill assistance programs:

**Community in Action**

Community in Action (CinA) has had a very positive experience working with CNGC with both the public purpose and the WinterHelp programs. From CinA’s perspective, these added funding streams have lent a flexibility that does not necessarily come with the federal Low Income Home

Energy Assistance Program (LIHEAP). For the most part, CinA processes OLIBA energy assistance using the same criteria that would be used with LIHEAP. However the fact that they can be utilized during months when access to LIHEAP funding is not available has been very helpful in assisting clients. The current spreadsheet process works fine but the addition of an on-line portal for bill payment pledges might enhance efficiencies already in place.

### **NeighborImpact**

NeighborImpact absolutely values the OLIEC program – it enables federal and state funding to go a bit farther and allows weatherization of more homes. While it would be great to be able to get the money upfront rather than as a rebate, NeighborImpact is never in a spot of not having funding to get a job started. The OLIEC program should definitely be continued. The health and safety costs on a job have become a significant amount of money in the last couple of years and Cascade does not assist with this part of the job expense at this time. OLIBA is a valuable piece of our overall energy assistance program. Administering the program has gotten significantly easier over the past six to twelve months. This is due to simplifying Cascade’s pledge sheet; this has cut down errors at our end. The funds are administered and pledges made using the same guidelines as our LIHEAP and OEAP programs, allowing for seamless work by our intake workers. Oregon Energy Assistance Program (OEAP) is a public purposes bill assistance program for low income customers of Pacific Power and Portland General Electric. The changes made in staffing by Cascade and the simplifying of the pledge sheets makes our work much more efficient.

### **Community Action Program of East Central Oregon**

Community Action Program of East Central Oregon (CAPECO) counts Cascade as valuable partner in supporting the delivery of bill payment assistance and reports that the program is now functioning properly at a more efficient level. CAPECO also reports a greater need for payment assistance than is covered by existing funding. Cascade is seen as a good partner in supporting weatherization projects, and Cascade staff is perceived as addressing problems directly, are professional in interactions as well as good communicators of any changes. The OLIEC rebates can be utilized to buy down measures. However, there is a sense that there is no guarantee what the rebate will be or if it will be approved. A redesign of the program to allow health and safety issues to be addressed would be welcomed since many homes receiving assistance need CO monitors (carbon monoxide) and water heaters need back drafting addressed (these are not currently covered).

### **Community Connection of NE Oregon**

Community Connection sees Cascade Natural Gas as a valuable partner. For OLIEC, reporting is easy and the agency is kept informed of any changes that impact the weatherization program.

The bill payment assistance program, OLIBA, has helped with additional funding to help clients during the winter months. The reporting system is working well once again, making reporting more efficient.

### **III. Program Structure and Design**

This section of the study reviews program outreach and education efforts and changes to the programs over time.

#### ***A. Outreach and Education***

Q1. What were the Company's Low Income outreach and education efforts during the 5 years the OLIEC and OLIBA program have been in operation?

Primary program outreach is through the Community Action Agencies. There are quarterly group meetings which support this cooperation. Separately, the Company provided annual funding of \$12,500 per year for five years (2008-2012) to support agency energy education.<sup>14</sup> When a customer calls Cascade regarding payment problems, they are encouraged to contact their Community Action Agency for assistance. For OLIBA there is a seasonal emphasis at the start of the heating season. Program approaches for outreach and education have been constant from year to year. Following are examples of customer communications in the areas of energy conservation and payment assistance provided by Cascade:<sup>15</sup>

- "Energy Conservation Tips and Ideas," suggests ways that customers can save energy.
- *Community Matters* highlights actions that people can take to save energy, reminds customers of the online Home Energy Review and of rebates for energy saving measures.
- A brochure that explains Low Income Home Energy Assistance and lists the Community Action Agencies that people may contact for help with paying energy bills.
- A brochure that lists customer rights and responsibilities in Oregon. This brochure mentions medical certificates, rules for deposits, payment assistance, rules for notice of disconnection and other consumer information.

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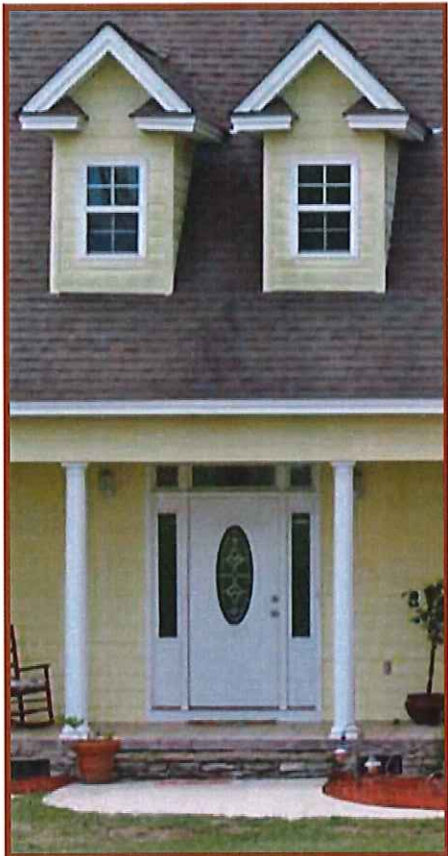
<sup>14</sup> This additional funding was provided per agreement reached during the MDU Resources' acquisition of Cascade Natural Gas.

<sup>15</sup> In addition, Cascade includes bill-stuffers for Energy Trust of Oregon programs available to Cascade customers in Oregon.

In addition, the Cascade Natural Gas website provides links to programs provided by the Oregon Energy Trust and that site provides a link to the programs of the Oregon Department of Housing and Community Services.

## Energy Conservation Tips and Ideas

Help conserve energy and  
reduce your energy bills



*In the Community to Serve®*

### Space heating

- ▶ Adjust thermostats between 65°F and 70°F during the winter and to 58°F when away from the house for more than a few hours. For homes with ill or elderly persons or infants, warmer temperatures are recommended.
- ▶ An automatic setback thermostat is a good investment in homes heated and cooled with forced-air systems. Once programmed, it will automatically adjust the temperature settings for you.
- ▶ Change furnace filters regularly, generally once per month during the heating season. Furnaces consume less energy if they “breathe” more easily.

### Keeping the cold out



Your heating system basically replaces the heat that is lost through your home's shell. The most common places where air escapes in homes can be found in the following places:

- Floors, walls and ceilings.
  - Electrical outlets.
  - Plumbing penetrations.
  - Fans and vents.
  - Ducts.
  - Doors.
  - Windows.
  - Fireplaces.
- ▶ During winter months, open drapes and shades during the day to let in the sun. Close them at night to keep out the cold.
  - ▶ Be careful not to block heating registers – move furniture away from registers to allow heat to circulate freely.
  - ▶ When replacing older appliances, consider replacing

them with high-efficiency models. They use less energy, which will save you money.

- ▶ **Avoid closing** too many heating registers or doors to unused rooms. This can cause your furnace to run inefficiently due to the restriction of air movement through your heating system.
- ▶ **Seal leaks** around doors and windows. Also seal other openings around pipes and ducts with caulk or weather-stripping.
- ▶ **Check** to see if your attic walls, crawl space and basement have recommended levels of insulation.
- ▶ **Install** storm, thermal or double-pane glass doors and windows.

### Water heating

In most homes, water heating is the second largest household energy expense, after heating and cooling. To cut your water heating costs, start with the following tips:

- ▶ **Factors** that affect the amount of hot water a home uses include the number of people using the hot water, how much they use and the size of the tank.
- ▶ **The location** of the hot water heater can affect the amount of energy that is required. One that is located in a heated area will experience less standby heat loss than one located in a cold basement or chilly outdoor shed.
- ▶ **Replace old water heaters** with models that have an energy-efficiency factor of .64 or greater.
- ▶ **Set your thermostat** on your water heater at 120°F. Extremely hot water can lead to scalding accidents. Maintaining a higher-than-necessary temperature uses energy needlessly.
- ▶ **Repair leaky faucets, showerheads** and pipes to significantly reduce hot water use.
- ▶ **In washing machines, use hot water** only on clothing



that requires hot water, and always use a cold-water rinse. Rinsing with warm water is wasteful and rarely, if ever, better than rinsing with cold water.

- ▶ **Run appliances** such as dishwashers, washing machines and clothes dryers with a full load.

### Fireplaces

- ▶ **Consider models** with tempered glass doors and a heat-air exchange system that blows warmed air back into the room. An open fireplace is not an efficient heating source. Most of the heat will go up the flue and out the chimney.
- ▶ **Make sure** your fireplace is properly vented. Fireplaces require a great deal of oxygen. If you do not have an outside source of combustion air, your fireplace will draw air from inside the house, including the air you paid to heat.
- ▶ **Keep the fireplace damper** closed when the fireplace is not in use. An open damper can let as much as 8 percent of your heat go out the chimney.

### Find ways to save

Visit [www.cngc.com](http://www.cngc.com) for additional Conservation Tips and other useful information to make your home more energy efficient. Also available on our website, you will find information about our Conservation Incentive Programs, offering cash-back incentives on energy-efficient upgrades.

#### Customer Service

1-888-522-1130

7 a.m.-7 p.m. Monday-Friday



*In the Community to Serve®*

10/12



# Community Matters

## In this Issue

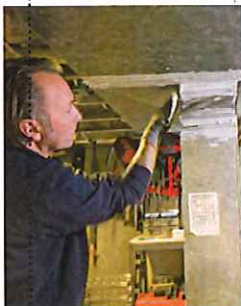
- ▶ Spring into summer projects
- ▶ Cash-back incentives
- ▶ Proud to be in the community



June 2012 ▲ Oregon ▲ In the Community to Serve®

## Insulate your home and seal air leaks to keep cool air inside

With warm weather on the way, insulation probably isn't at the top of your to-do list. But, if your home is usually too warm in the summer months, now is a great time to add insulation and seal air leaks.



These are two of the most affordable ways to make your home more comfortable in every season. They typically pay for themselves within a few years through the money you will save on heating and cooling costs.

### Seal air leaks first

Before adding insulation, it pays to seal air leaks. Sealing cracks and gaps in your home can significantly reduce your heating and cooling costs and make your home more comfortable.

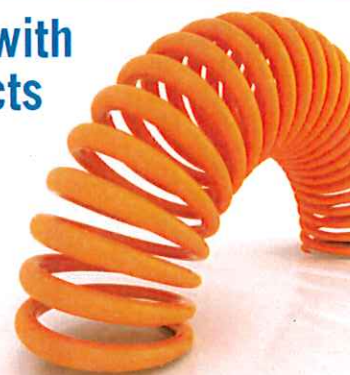
Air leaks are common where different materials meet, such as between brick and wood siding, foundation and walls, and the chimney and siding. Cracks and gaps also are common around door and window frames, mail chutes, electrical and gas service entrances, cable TV and phone lines, outdoor water faucets, plumbing and vents.

## Spring into summer with energy-saving projects

As you prepare your spring cleaning fix-it list, go beyond window washing and include some simple projects that to save money by reducing your energy costs.

Here are some projects to consider:

- **Change your showerheads.** Replace your old showerheads with high-performance models. While still enjoying an invigorating shower, you will see a decrease in your water heating costs.
- **Install faucet aerators.** To save even more, install aerators in your faucets. Like high-performance showerheads, aerators give you plenty of pressure, while conserving water and energy. Together, faucet aerators and high-performance showerheads could reduce your water heating costs by up to 10 percent.
- **Turn down your water heater.** Reduce your water heater's setting to 120 degrees to save more money and energy. If you have a dishwasher without a heater, set the water heater at 140 degrees.
- **Have your furnace serviced.** Now is a great time to have your furnace serviced and tune up your air conditioner. You will enjoy reliable summer cooling, as well as ensure your furnace operates at peak efficiency when fall rolls around.



### Save energy with free services and cash back

Cascade Natural Gas makes it easy to save and improve comfort with cash incentives and services from Energy Trust of Oregon.

To start saving energy right away, complete a Home Energy Review online, by phone or in your home or order a free Energy Savers Kit. Then get cash back when you make qualified improvements such as sealing air and duct leaks, adding insulation, installing high-performance windows or upgrading to an energy-efficient

*Continued on page 2*

## Contacting Cascade

**1-888-522-1130**

- ▶ Emergencies – 24 hours a day
  - ▶ Customer service and billing inquiries – 7 a.m.-7 p.m. Monday-Friday
- Contact us via email at [customerservice@cngc.com](mailto:customerservice@cngc.com) or visit us at [www.cngc.com](http://www.cngc.com)



## Keeping meters clear

Now is a good time to inspect your meter to ensure

it is visible, clear of vegetation or any obstructions and accessible at all times for our service personnel. We need at least two feet of clearance around the meter to provide visibility and access.

If you have a dog, please make sure it is not kept in the near vicinity of the meter to allow for safe access to the meter.

This is a crucial part of being able to safely provide emergency services and routine maintenance. Proper access to the meter also allows for accurate billing reads each month.

Any digging involved around the gas meter could be dangerous, with a possibility of hitting an underground gas line; this would require marking the underground gas line first. Please call Digline at 811 before you dig – a free service to you. Digline will come to your site within two business days of your request to mark underground gas lines with yellow paint, flags or stakes. After utility lines have been marked, hand dig within two feet on either side of the markings to avoid damage.



Know what's below.  
Call before you dig.



## Bend Area – Safety Outreach for Seniors (SOS)

Safety Outreach for Seniors (SOS) is a resource for helping seniors living independently; uncover harmful conditions in their homes. SOS is an innovative technique, using skilled Bend Fire Department volunteers to help reduce these risk factors. This resource offers education and practical safety tips to seniors on a one-on-one basis through a home safety check. SOS uses the fire and fall prevention curriculum recently developed by the Office of State Fire Marshal.

Representatives from Cascade Natural Gas participated in presenting the SOS program at the Pacific Northwest Fire Prevention Workshop. This program also was presented at the State Fire Marshal's office on how to build a SOS program in your area. Part of our ongoing outreach is to offer this information and to support the expansion of this program, while providing training on how to develop this in other communities. For more information, contact the Office of State Fire Marshal and Oregon Life Safety Team (503) 934-8266 or email [osfm.ce@state.or.us](mailto:osfm.ce@state.or.us).

Seniors account for 60 percent of all fire-related deaths in Oregon. In addition, falls are the leading cause of hip fractures and brain injuries among Oregon's older adults.

As items in your home age, they can become hazards. For example, outdated smoke alarms may not operate if there is a fire, and carpet wear patterns could increase your risk of falling. SOS provides a resource for seniors who are living independently and some may be facing many challenges such as decreased memory, sight or hearing. This program could render traditional fire and life safety measures.

If you are one of our senior neighbors (50 years and older), call the Bend Fire Department at (541) 322-6309 to enroll for a free home safety check and they also will provide a working smoke alarm and carbon monoxide alarm when necessary.



The Bend Fire Department is focused on two elements of the SOS Plan involving hazards that place you at risk or physical injury, especially falling. Trained Bend Fire Department volunteers, with your help, can identify these hazards and recommend solutions to correct these dangers.



Sue Potje, District Manager Cascade Natural Gas, Oregon State Fire Marshal, Mark Wallace, Bend Deputy Fire Marshal, Susie Maniscalco and Bend Fire Volunteer, Marie Phillis.

## Save energy free services

*continued from page 1*

natural gas water heater or direct-vent fireplace.

For details about incentives and other energy-saving resources, visit [www.energytrust.org/residential](http://www.energytrust.org/residential) or call 1-866-368-7878.



Manage your energy bills and make it easy on yourself!  
Join our Budget Payment Plan and Automatic Payment Plan together!

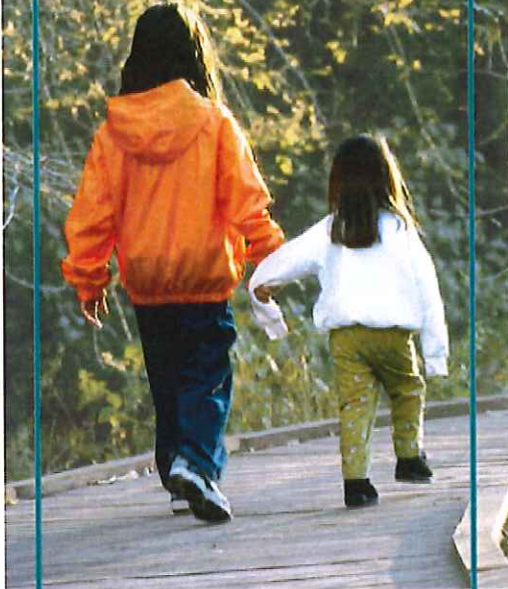
Visit our website for more information at [www.cngc.com](http://www.cngc.com)  
or contact customer service at 1-888-522-1130.



June 2012 ▲ Oregon

Community Matters is published by Cascade Natural Gas Corporation • An Equal Opportunity Employer

Once in awhile  
we all need  
a helping hand.



**LIHEAP**  
helps low-income  
families pay  
their heating bills.

**Oregon Energy  
Assistance**



## We need your help

Do you have friends, relatives or neighbors who may qualify for this program? If so, please show them this pamphlet.

For an appointment or more information,  
please call:

- **NeighborImpact**  
Bend, OR: (541) 749-4947  
Fax: (541) 749-4848  
Madras, OR: (541) 475-7017  
Prineville, OR: (541) 447-6835  
Redmond, OR: (541) 548-2380  
Fax: (541) 548-6013
- **Community Connection**  
Baker City, OR: (541) 523-6591
- **Community in Action (CINA)**  
Ontario, OR: (541) 889-9555  
Fax: (541) 889-0768
- **Community Action Programs of Eastern-Central Oregon (CAPECO)**  
Pendleton, OR: (541) 276-1926  
Fax: (541) 276-7541
- **Klamath Lake Community Action Services**  
Crescent, Chemult, Gilchrist, OR:  
(541) 882-3500 ext 15  
(866) 665-6438 (toll free)  
(541) 882-3674 (fax)



01/12

## What is Energy Assistance or LIHEAP?

Low Income Home Energy Assistance Program is a federally funded program that provides heating assistance for qualified households.

### Essential Energy Assistance Facts


1. Applications may be submitted only to Community Action agencies.
2. The financial eligibility requirement is 60 percent of Oregon's median income, see chart below.
3. Both homeowner and renter households are eligible.
4. Participants must re-apply each year.

### **\*IMPORTANT\***

You must contact your local Community Action Agency or a local senior service agency to receive an application for energy assistance.

### Use this chart to see if you qualify 2011-2012

Family Size	Annual Income 60% of Median	Monthly Income 60% of Median
1	\$22,493	\$1,874.43
2	\$29,414	\$2,451.17
3	\$36,335	\$3,027.92
4	\$43,256	\$3,604.67
5	\$50,177	\$4,181.41
6	\$57,098	\$4,758.16
7	\$58,396	\$4,866.30
8	\$59,693	\$4,974.44
9	\$60,991	\$5,082.58
10	\$62,289	\$5,190.72
11	\$63,586	\$5,298.86
12	\$64,884	\$5,407.00
Each additional member	\$1,298	\$108.17



Si le gustaría recibir esta información en Español, favor de llamar Cascade Natural Gas: 1-888-522-1130.

If you have any questions about any of the matters described in this summary, please contact your local utility company or the PUC Consumer Services Division. If you do not speak English, please try to arrange in advance for an interpreter to help you. While utilities and the PUC are sensitive to special needs of persons who do not speak English, their offices may not have someone available who speaks your primary language.

A version of a consumer rights and responsibilities summary printed in one of the languages below is available by calling Cascade Natural Gas Corp or by contacting the Public Utilities Commission of Oregon. Versions in the different languages are available on the PUC website <http://www.oregon.gov/PUC/consumer/factsheets.shtml>.

La versión impresa, en esta lengua, del sumario de los derechos del usuario y sus responsabilidades está a su disposición llamando al:

Если Вы желаете получить инструкцию о правах и обязанностях потребителя, напечатанную на русском языке, звоните по следующему телефону:

Bản giải thích tóm lược về quyền lợi và bổn phận của khách hàng đã được in bằng tiếng Việt và được cung cấp bằng cách liên lạc với:

ឯកសារសង្ខេបស្តីពីសិទ្ធិអ្នកប្រើប្រាស់សេវាសុខភាពស្រុកប្រាំងសំរាប់អ្នកប្រើប្រាស់  
មានសរសេរជាភាសាខ្មែរ សូមទាក់ទងខ្លួនសិន្យ:

Public Utility Commission of Oregon  
550 Capitol St. N.E. #215  
P.O. Box 2148 • Salem, OR 97308-2148  
1-800-522-2404 • Fax: (503) 378-5743  
[www.oregon.gov/puc](http://www.oregon.gov/puc)



*In the Community to Serve®*

P.O. Box 7608 • Boise, ID 83707-1608  
1-888-522-1130 • Fax: 1-888-649-9912  
7 a.m. - 7 p.m. Monday-Friday  
[www.cngc.com](http://www.cngc.com)

7/11

**CASCADE  
NATURAL GAS**  
CORPORATION®  
A Subsidiary of MDU Resources Group, Inc.

*In the Community to Serve®*

**Rights and  
Responsibilities  
Summary for  
Oregon  
Utility Consumers**

## **Rights and Responsibilities**

If you are applying for service or have service with a utility company in Oregon, you have certain rights and obligations. Following is a summary of those rights and obligations prepared by the Consumer Services Division of the Public Utility Commission. The matter described here applies only to electricity, natural gas, telephone, and water services regulated by the PUC.

The utility company's main obligation is to provide you with reliable services at rates approved by the PUC. Your main obligations are to pay for the services you use, to not damage or tamper with the company's facilities, and to notify the company if you move, if you wish to change your service or if you have a problem.

### **DEPOSITS**

The utility may ask you to pay a deposit. If a deposit is required, you may have the right to pay it in several installments.

### **THIRD-PARTY NOTICES**

You have the option to ask that another person receive your bills and notices if, for some reason, you are unable to receive or understand those bills and notices. Also, you may ask your utility company to furnish you with notices in another language if you do not understand English.

### **FINANCIAL ASSISTANCE**

Several programs provide financial help, depending on your circumstances. The **Low-Income Energy Assistance Program (LIEAP)** provides money to qualified customers who need help with winter heating bills. Also, the major energy utility companies have their own financial assistance programs to help their customers. The **Oregon Telephone Assistance Program (OTAP)** provides reduced phone bills for qualified low-income customers. The **Link-Up America** program provides financial help with telephone service installation charges for qualified persons.

### **DISCONNECTION NOTICES**

Before a utility company can disconnect your service, the company must notify you. Electric and gas companies are required to give you a 15-day notice, another notice five days before disconnection and must try to contact you the day the disconnection is scheduled. Telephone and water utilities must provide written notice at least five days before service is disconnected.

### **MEDICAL CERTIFICATES**

If you or a member of your family has a serious health problem and your utility service is threatened, you may obtain a medical certificate from your doctor or other medical professional who provides your health care. A medical certificate will prevent immediate disconnection of your service and requires your utility to allow you to set up a payment plan to pay any overdue bill. (Medical certificates do not apply to water utilities.)

### **PAYMENT PLANS**

You may take advantage of one of several special payment options designed to make it easier to pay your electricity or natural gas utility bills. You may pay your bills on an equal-payment plan, which will spread out your payments over the year. If you are unable to pay your electricity or gas bills for a period of time and your utility intends to cut off your service, you also may enter into a special agreement to pay the overdue amount over a period of time.

### **LATE CHARGES**

Customers are responsible for paying their utility bills on time. Under certain circumstances, utilities may add late-payment charges to bills not paid on time.

### **TELEPHONE SOLICITATION**

The Federal government has in place a national "No Call" list for persons who do not want to receive unwanted phone calls from persons or companies trying to sell products and services. You will need to register with the Federal Trade Commission (FTC). After you register, your phone number to be placed on the No-Call list it will show up on the registry by the next day. Telemarketers will have up to three months to remove your phone number. Your phone number will remain in the registry for five years from the date you sign up. More details are available at [www.ftc.gov](http://www.ftc.gov).

### **RESOLVING DISPUTES**

If you have a dispute with our utility company that is not resolved by contacting the company, the Public Utility Commission's Consumer Services Division is available to help you. You may contact the PUC by calling toll-free 1-800-522-2404.

### **CONSUMER ORGANIZATIONS**

If you wish to contact one of several organizations that offer help to consumers, the PUC Consumer Services Division maintains a list of organizations and how to contact them. That list is available by calling toll-free 1-800-522-2404.

## ***B. Changes and Expansion***

Q2. Have there been any changes or expansion to the LI (low income) programs since the start of these activities?

There were five major changes or expansions during this time window:

- **2008 Temporary Funding Adjustment:** The payment assistance (Oregon Low Income Bill Assistance, or OLIBA) and weatherization (Oregon Low Income Energy Conservation or OLIEC) programs were set up with public purpose funding and with 75% of yearly funding supporting OLIBA and 25% supporting OLIEC. When a purchased gas adjustment resulted in a temporary rate increase in 2008, the allocation formula for the Public Purpose monies associated with the company's energy efficiency and bill assistance programs was adjusted temporarily to provide 100% of funding to OLIBA. This temporary adjustment began September 1, 2008 and ended effective April 1, 2009. The original 75% - 25% allocation then went back into effect.
- **2010 Name Change:** In early 2010 the name of the weatherization program was changed from the Oregon Low Income Weatherization (OLIW) Program to the Oregon Low Income Energy Conservation (OLIEC) Program.
- **2010 Incentive Adjustments:** In early 2010, high efficiency natural gas water heaters were added to the OLIEC program. Additionally, some rebate levels were adjusted according to the most recent results of the Integrated Resource Plan.
- **2010 Expansion of Capability:** In early 2010, the OLIEC weatherization program was expanded to include support for new construction of low income housing, to provide for inclusion of custom measures and to provide for inclusion of major retrofits.
- **2011 Incentive Adjustments:** In the third quarter of 2011, rebate levels were adjusted according to the most recent results of the Integrated Resource Plan.
- **2012 Incentive Adjustments:** Effective September 12, 2012, rebate levels were adjusted downwards, following the decline in the Total per Therm Rate.

## ***C. Services***

Q3. Has the OLIEC program led more CNGC homes to receive weatherization services through the Weatherization Assistance Program? Please explain. Compare between

the number of LI natural gas customers that have applied for weatherization services in CNGC's service territory during the evaluation period vs. the number of LI homes who actually received these services. Explain the factors (internal and external) that affected these results.

#### ***D. All Efforts***

- Q4. List all conservation programs, initiatives, incentives and associated savings annually since CNG commenced offering such programs. Has there been an appreciable change in these offerings following January 2007?

As a part of Cascade's Oregon decoupling mechanism which was approved by the OPUC (Oregon Public Utilities Commission) in April 2006, Cascade has provided public purpose funds to the Energy Trust of Oregon (Trust) for the provision of all non-low-income related conservation programs and initiatives since May 2006. Since that time, the Trust has offered many programs and incentives to Cascade's Oregon customers. Customers can find these programs and incentives through the link to Energy Trust of Oregon on Cascade's website.

The Trust attempts a "fuel blind" approach. A Cascade customer is not transferred to a Cascade page, but instead is routed to a general Oregon page of combined gas and electric promotions. Some of these include restrictions to either gas or electric customers; most do not. Also, the site is not evenly balanced between electricity and natural gas. For example, the Trust provides an incentive to purchase an electric heat pump but does not provide an incentive for replacement gas furnaces except to moderate income customers.

A summary of "true-up" annual therm savings for Cascade from the portfolio of Trust programs is shown in the table below. The Trust keeps an ongoing record of energy savings per utility on its website.<sup>16</sup>

---

<sup>16</sup> See: <http://energytrust.org/About/policy-and-reports/Reports.aspx> for current reports. Energy Trust of Oregon initial reports are subject to a "true-up" process. For reports that have completed the "true-up" process, see: <http://www.energytrust.org/library>.



**Table 8: Therm Savings reported for Cascade Public Purpose Funding by Energy Trust of Oregon.**

Sector	2006	2007	2008	2009	2010	2011
	(Therms)					
Residential	23,186	129,477	121,388	134,899	73,420	107,431
Commercial	53,908	19,128	48,565	65,277	197,747	208,932
Industrial	0	0	0	46,462	47,436	87,009
Total	77,094	148,605	169,953	246,637	318,603	403,373

Source: Cascade Natural Gas (millions of annual therms) in Energy Trust of Oregon, *True Up 2012: Tracking Estimate Corrections and True Up of 2002 – 2011 Savings and Generation*, Page 17, Table 19. <http://energytrust.org/library>

Small rebates are available to Cascade customers through the Trust. These currently are:<sup>17</sup>

- Seal Air leaks
- Home Performance with Energy Star®
- Windows
- Insulation (attic/ceiling, floor, wall, knee-wall, rim joist, boiler pipes, ducts)
- Water heater – gas tank
- Water heater – electric tank
- Heat pump water heater
- Solar water heater
- Alternative on-site wastewater treatment system
- Outdoor spa cover
- Solar pool heating
- Upgrade a heat pump or replace non-electric heat
- Direct vent gas unit heater
- Direct vent gas fireplace
- Gas boiler
- Gas furnace (for moderate income homeowners only)
- Energy Star® clothes washer
- Home Energy Review (on-line, by phone, in-home with energy advisor)
- Energy Saver Kits
- Recycle old refrigerator or freezer

<sup>17</sup> See: [http://energytrust.org/library/forms/hes\\_doc\\_incentive\\_grid.pdf](http://energytrust.org/library/forms/hes_doc_incentive_grid.pdf). Effective date: January 1, 2013. Other cash rebates for residential customers on the Energy Trust of Oregon website are limited to electric heat or electric hot water customers.

- CFLs (through retailers at reduced price)
- High-performance showerheads (through retailers at reduced price)

Program achievements associated with Cascade’s low income conservation efforts can be found in annual reports which are filed with the Oregon Public Utility Commission. These savings are summarized in the table below.

Table 9: Therm Savings from Annual Reports filed with OPUC.

Therms Saved by Fiscal Year and Weatherization Measure							
Weatherization Measure	Fiscal Year (Therms)						Total Therms
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	
Install Ceiling insulation	869	1,182	1,489	2,298	2,862	1,542	10,242
Install Floor Insulation	774	1,151	1,191	2,165	1,349	1,614	8,244
Install Wall insulation	185	592	682	1,229	994	843	4,525
Install Duct Insulation	109	309	92	254	301	143	1,208
Install Duct Sealing	693	1,643	1,617	2,618	6,314	1,540	14,425
Install Infiltration Measures	247	403	442	832	1,326	546	3,796
Install High Efficiency (90%+) Furnace	568	213	142	1,278	3,976	852	7,029
Perform furnace tune-up	0	378	294	189	105	273	1,239
Install high-efficiency water heater (0.62)	129	43	43	172	86	129	602
HE-Water Heater	0	0		39	520	13	572
<b>Total</b>	<b>3,574</b>	<b>5,914</b>	<b>5,992</b>	<b>11,074</b>	<b>17,833</b>	<b>7,495</b>	<b>51,882</b>

#### IV. Program Funding

This section reports on funding and the adequacy of funding for home energy conservation (OLIEC) and for payment assistance (OLIBA).

##### A. Funding

- Q1. How much funding has been invested in the Company’s Low Income Energy Efficiency and Bill Assistance Efforts to date?

A total of \$596,727 was invested in the acquisition of energy (therms) in Cascade’s Low Income Energy Conservation (OLIEC) program through the close of the 2011-2012 Program Year, including agency administration (Table 7). While the total expended for OLIEC was \$596,727,

the total revenue collected for OLIEC (including interest) since the beginning of the program was \$1,006,408, a difference of \$409,681 or about 41%.

**Table 10: Oregon Low Income Energy Conservation Program -- Funding.**

OLIEC Funding by Fiscal Year and Total						
Fiscal Year	Homes	Energy	Measures	CAP Admin	CNG Admin	Total
	(No.)	(Therms)				
Oct 2006 - Sep 2007	24	3,573	\$ 27,588	\$ 5,400	\$ -	\$ 32,988
Oct 2007 - Sep 2008	42	5,914	\$ 43,577	\$ 9,450	\$ 3,965	\$ 56,992
Oct 2008 - Sep 2009	42	5,992	\$ 45,218	\$ 9,450	\$ 1,137	\$ 55,805
Oct 2009 - Sep 2010	78	11,074	\$ 110,658	\$ 17,325	\$ 806	\$ 128,789
Oct 2010 - Sep 2011	113	17,833	\$ 199,712	\$ 25,650	\$ 700	\$ 226,062
Oct 2011 - Sep 2012	49	7,495	\$ 82,149	\$ 11,025	\$ 2,917	\$ 96,091
<b>Total</b>	<b>348</b>	<b>51,881</b>	<b>\$ 508,902</b>	<b>\$ 78,300</b>	<b>\$ 9,525</b>	<b>\$ 596,727</b>

Funding for Cascade’s Oregon Low Income Bill Assistance (OLIBA) program through the close of the 2011-2012 Program Year, including agency administration was \$518,577, as shown in Table 8. While the total expended for OLIBA was \$518,575, the total revenue collected (including interest) since the beginning of the programs was \$540,712, a difference of \$22,137 or about 4%.

**Table 11: Oregon Low Income Bill Assistance Program - Funding.**

OLIBA Payment Assistance Funding by Fiscal Year								
Payments to Agencies	Fiscal Year							Total Payments
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	
To Customers	\$ 2,018	\$ 67,838	\$ 55,450	\$ 88,783	\$ 126,952	\$ 64,601	\$ 48,540	\$ 454,182
To Agencies	\$ 225	\$ 9,279	\$ 7,661	\$ 13,700	\$ 10,394	\$ 12,668	\$ 10,468	\$ 64,395
<b>Total Payments</b>	<b>\$ 2,243</b>	<b>\$ 77,117</b>	<b>\$ 63,111</b>	<b>\$ 102,483</b>	<b>\$ 137,346</b>	<b>\$ 77,269</b>	<b>\$ 59,008</b>	<b>\$ 518,577</b>
<b>Customers Served</b>	<b>N/A</b>	<b>261</b>	<b>244</b>	<b>358</b>	<b>385</b>	<b>271</b>	<b>181</b>	<b>1,700</b>
<b>Average Assistance</b>	<b>N/A</b>	<b>\$ 260</b>	<b>\$ 227</b>	<b>\$ 248</b>	<b>\$ 330</b>	<b>\$ 238</b>	<b>\$ 268</b>	<b>\$ 266</b>

## ***B. Adequacy of Energy Conservation Funding***

- Q2. Have Oregon Low Income Energy Conservation (OLIEC) funding levels been adequate for effective support of CAA (Community Action Agency) weatherization efforts in Cascade's service territory? Explain.

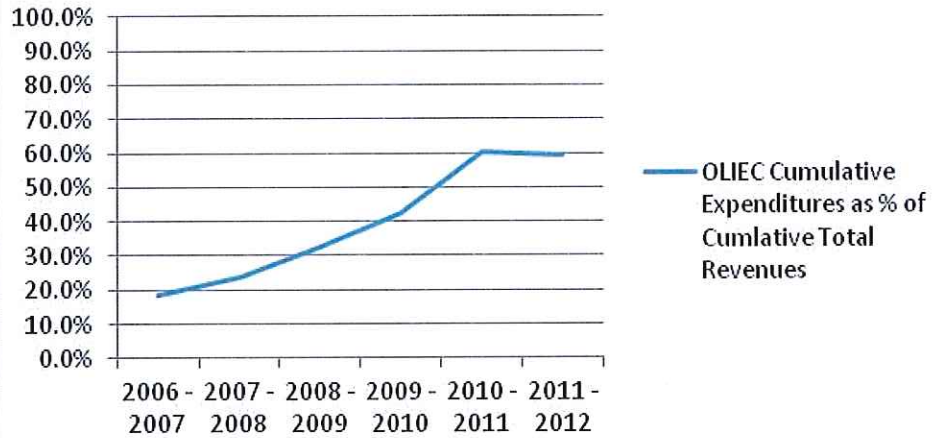
In Program Year 2006-2007, the first year of the program, expenditures on weatherization were 18.4% of revenues as shown in Table 9.<sup>18</sup> This is part of the typical pattern for a first program year since while collection of revenue is easily instituted; setting up program arrangements takes time. For this reason, 86.6% of the first year revenue or \$155,622 was carried over into Program Year 2007-2008 to add to the \$202,057 revenues for the second year. The total available in the second year was \$357,659. As a general rule of thumb it takes new programs about five years to mature into their ongoing operational and spending levels. This maturation is recorded in Table 9 and is more easily seen in the graph of this data shown as Figure 3.

**Table 12: OLIEC Cumulative Expenditures as % of Cumulative Revenue.**

<b>OLIEC Program Year</b>	<b>Total Yearly Revenue</b>	<b>Cumulative Total Revenues</b>	<b>Total Yearly Expenditures</b>	<b>Cumulative Expended</b>	<b>Cumulative Expenditures as % of Cumulative Total Revenues</b>
<b>2006 - 2007</b>	179,702	179,702	32,988	32,988	18.4%
<b>2007 - 2008</b>	202,057	381,759	56,992	89,980	23.6%
<b>2008 - 2009</b>	67,864	449,623	55,805	145,785	32.4%
<b>2009 - 2010</b>	196,402	646,025	128,790	274,574	42.5%
<b>2010 - 2011</b>	187,770	833,795	226,062	500,637	60.0%
<b>2011 - 2012</b>	172,613	1,006,408	96,091	596,728	59.3%

<sup>18</sup> For this discussion, revenues include any interest amounts and expenditures include agency administration.

### OLIEC Cumulative Expended as % of Cumulative Total Revenues, by Year



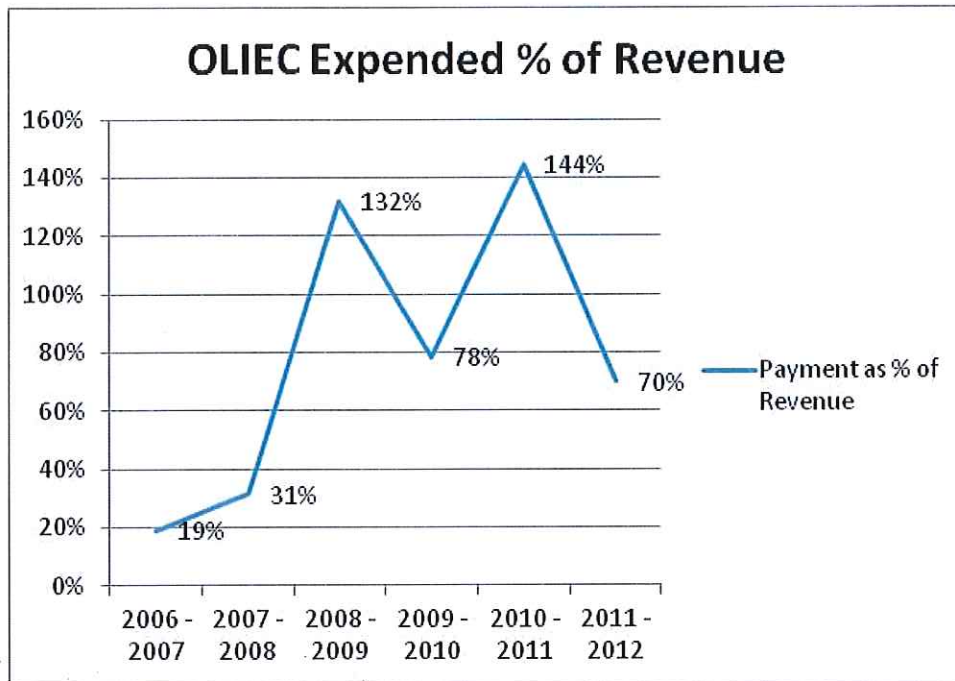
**Figure 3: OLIEC Cumulative Expenditures as % of Cumulative Revenue.**

The cumulative expenditure curve in Figure 2 climbs smoothly before leveling off at about a 60% level in the fifth program year (2010-2011). Yearly adjustments to activity and spending to make this smooth ascent possible are much more erratic. These yearly adjustments are shown in Table 10 and Figure 3. The substantial dip in 2009-2010 is likely in response to the re-direction of all public purposes collections from September 1, 2008 to March 31, 2009 to payment assistance. Although weatherization funding was available due to the backlog, the perceived temporary emphasis on bill payment assistance is likely responsible for this temporary dip in weatherization spending (Table 10 & Figure 4).

**Table 13: OLIEC Yearly Expenditure as a % of Yearly Revenues.**

OLIEC Program Year	Payment as % of Program Year Revenue
2006 - 2007	19%
2007 - 2008	31%
2008 - 2009	132%
2009 - 2010	78%
2010 - 2011	144%
2011 - 2012	70%

Figure 4: OLIEC Yearly Expenditure as a % of Yearly Revenues.



Public purpose monies are collected on a monthly basis to fund the weatherization efforts of the Community Action Agencies in Cascade’s Service Area. All monies are held in a dedicated, interest-bearing account. Weatherization funds are provided to the CAAs upon completion of rebate-qualified energy efficiency improvements. Each qualified CAA in the service territory has access to a specific portion of the weatherization funds accrued in the account. In the event that an agency exhausts its weatherization allotment for the year, the Company is able to transfer monies designated for a less active CAA and/or from the accrued interest category.

Since the beginning of the OLIEC program, no agency has exhausted the monies designated for weatherization. Generally, the weatherization public purpose monies accrue at a faster rate than the CAAs are able to use it for weatherization. Even at the peak of American Recovery and Reinvestment Act (ARRA) special funding, when the CAAs had access to substantial additional weatherization funds, there was no meaningful impact in increased spending from the weatherization account. Based on the spending rate vs. accruals, Cascade believes that weatherization funding has been adequate to support the weatherization efforts of the CAAs. However, Cascade notes that CNGC weatherization dollars are designated specifically for tariff-approved measures and are provided as a rebate. Funds received by the CAAs from other sources may be important in influencing the number of gas weatherization jobs and might in that way influence the number of requests for rebates. Cascade weatherization rebates are intended to be supplementary to other sources when rebates do not cover full measure costs.

Still, the results in Table 10 and Figure 3 show that in a year in which there is an attempt by the CAAs to catch-up with additional budget, the agencies can work at from 132% to 144% of yearly revenue. Yet, in support of the adequacy of the existing level of weatherization funding, for the last two program years (2010-2011 and 2011-2012) the program investment has run at about 60% of the cumulative funding available, suggesting that the agencies may be facing barriers to serving more homes per year. Having shown that they can operate at 132% to 144% of yearly revenue, it appears that funding could be increased within that range for future years to meet the ongoing needs of the low income customer groups, assuming any barriers to use of funds are identified and addressed.

***C. Adequacy of Payment Assistance Funding***

Q3. Have OLIBA funding levels been adequate for effective support of CAA bill assistance efforts in Cascade’s service territory?

OLIBA payment assistance for each program year is shown in Table 11.

**Table 14: OLIBA Payment Assistance by Program Year.**

<b>Cascade Oregon Low Income Bill Assistance Program (OLIBA)</b>			
<b>Year</b>	<b>Number</b>	<b>Average Household Assistance Payment</b>	<b>Total</b>
2006-2007	261	\$ 260	\$ 67,838
2007-2008	244	\$ 227	\$ 55,450
2008-2009	358	\$ 248	\$ 88,783
2009-2010	385	\$ 330	\$ 126,952
2010-2011	271	\$ 238	\$ 64,601
2011-2012	181	\$ 268	\$ 48,540
<b>Overall</b>	<b>1700</b>	<b>\$ 266</b>	<b>\$ 452,164</b>
<p>Note: OLIBA payments to customer bills in the initial 2005-2006 start up period (\$2,018) is not included in this table. The table shows payment to customer bills; agency administration cost is not included.</p>			
<p>Source: Based on Exhibit A, Cascade Natural Gas Corporation's Oregon Low Income Bill Assistance Program Annual Report for Program Year October 1, 2011 through September 30, 2012.</p>			

The average payment over the life of the program is \$266, as shown in the table. The average number of customers served per year is 283, while Cascade serves approximately 55,000 residential customers in Oregon. The service is provided to a little over one-half of one percent of residential customers. The typical Cascade Oregon household gas bill is in the neighborhood of \$800 per year, though household energy use data typically shows wide variation around the average value.

To fill out the picture of the program, we analyzed a sample of 480 households that received payment assistance (this was not a random sample, but represents the set of households receiving payment assistance from a time of changeover in the data system to the end of Program Year 2012 (September 30, 2012)).<sup>19</sup> Analysis of payment assistance data from the 480 household sample provided an average OLIBA payment of \$270, essentially the same dollar amount (\$266) shown in Table 11, with a maximum of \$700 and a minimum of \$18. About forty percent (196 homes) also received a LIHEAP assistance payment and sixty percent did not. The average LIHEAP payment for the minority of payment assistance homes receiving it was \$248 with a minimum of \$35 and a maximum of \$705. Of the 480 homes receiving OLIBA, a little over six percent (30) also received Winter Help and about ninety-four percent did not. For those receiving it, the average Winter Help assistance payment was \$240, with a minimum of \$52 and a maximum of \$600. In total dollars of assistance for these homes (\$185,408), the OLIBA assistance was \$129,600 (about 70%), LIHEAP assistance was \$48,608 (about 26%) and Winter Help assistance was \$7,200 (about 4%). These percentages show the high importance of the OLIBA in providing payment assistance to Oregon customers.<sup>20</sup>

As shown in Table 12 and Figure 5, the OLIBA program followed the same start-up to maturity pattern as OLIEC, with the revenue stream beginning while the program was being put into place. As noted above, this is the typical start-up pattern for new programs. As with OLIEC, there was a substantial carryover of funding from the first program year to the second. However, OLIBA rapidly adjusted to the funding available. After a rapid advance in program expenditure to catch up to budget, OLIBA has leveled out at approximately 96% cumulative program expenditure as a % of cumulative revenues in the most recent program year (2011-2012).

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<sup>19</sup> The sample includes all households provided OLIBA payment assistance in Program Years 2010-2011 and 2011-2012, plus twenty-eight additional households served in Program Year 2009-2010.

<sup>20</sup> Also, it should be noted that, although an important source of funding for payment assistance, federal LIHEAP funding requires Congressional action each year. Each year neither the amount nor the timing for release of funds to the states can be known in advance and relied upon. This is another reason why OLIBA funding is important.



Table 15: OLIBA Cumulative Expended as % of Cumulative Revenue.

OLIBA Program Year	Total Yearly Revenue	Cumulative Total Revenues	Total Yearly Expenditures	Cumulative Expended	Cumulative Expended as % of Cumulative Total Revenues
2005 - 2006	34,613	34,613	2,243	2,243	6.5%
2006 - 2007	59,976	94,589	77,116	79,359	83.9%
2007 - 2008	69,871	164,460	63,111	142,469	86.6%
2008 - 2009	212,232	376,693	102,483	244,952	65.0%
2009 - 2010	60,585	437,278	137,346	382,298	87.4%
2010 - 2011	57,572	494,850	77,270	459,567	92.9%
2011 - 2012	45,862	540,712	59,008	518,575	95.9%

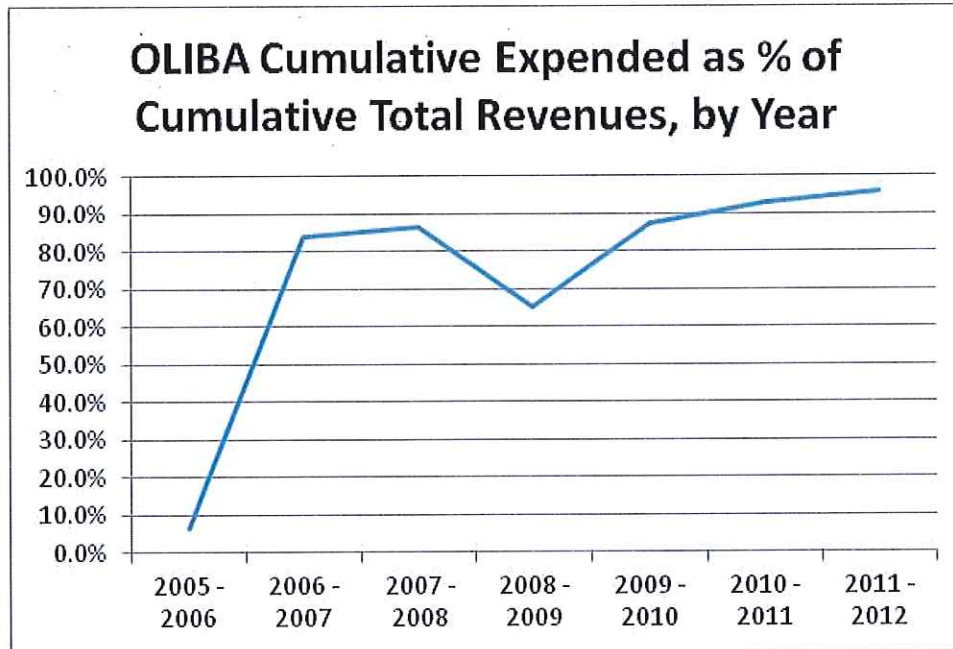


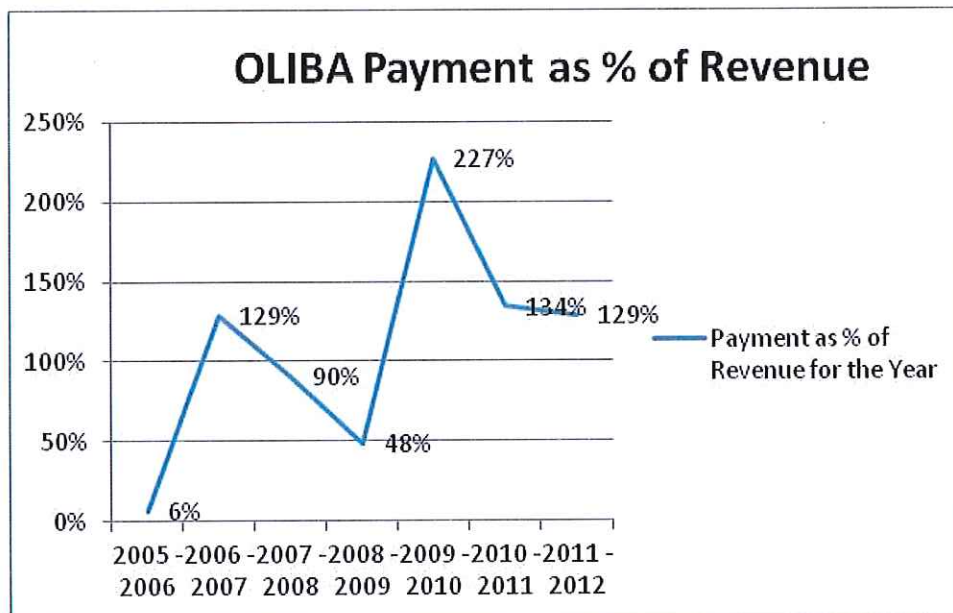
Figure 5: OLIBA Cumulative Expended as % of Cumulative Revenue.

The relatively smooth advance towards a steady state performance level shown in Figure 5 was accomplished by a relatively erratic year-by-year effort (Table 13 and Figure 6). In this effort, during certain year's program spending was from 129% to 227% of yearly revenues. Notably, from September 1, 2008 through March 31, 2009 100% of all low-income public purpose charge collections were designated for bill payment assistance. The somewhat delayed response to this

temporary funding increase can be seen in the jump to 227% of program revenue from 2008-2009 to 2009-2010 (Table 13 and Figure 6).

**Table 16: Yearly Expenditure as a % of Yearly Revenue.**

<b>OLIBA Program Year</b>	<b>Payment as % of Revenue for the Year</b>
2005 - 2006	6%
2006 - 2007	129%
2007 - 2008	90%
2008 - 2009	48%
2009 - 2010	227%
2010 - 2011	134%
2011 - 2012	129%



**Figure 6: Graph of Yearly Expenditure as a % of Yearly Revenue.**

The results shown in Table 12 and Figure 5 suggest that spending has reached a steady state with respect to the OLIBA ongoing funding level (with a small carryover that can be easily made up in the following year). However, efforts for single years over the history of the program suggest that in future years funding could be increased from 129% to 227% of current yearly levels and the agencies could find proper application for increased funding in the low income customer groups.

## V. Customer and Societal Impacts

Customer and societal impacts include environmental benefits, community (social) benefits and benefits to the utility (and indirectly to all of Cascade's customers).

### A. Indirect Environmental Benefits

- Q1. Can CNGC's Low Income Energy Efficiency Programs be tied to a direct or indirect environmental benefit?

Each year, Cascade reports carbon savings from the OLIEC program. Results are shown by program year in Table 14.

Table 17: Carbon Offsets due to OLIEC

Program Year	Energy Saved	Carbon Offset
	(therms)	(lbs)
2006-2007	3,573	41,447
2007-2008	5,914	68,602
2008-2009	5,992	69,507
2009-2010	11,074	128,458
2010-2011	17,833	206,863
2011-2012	7,495	86,942

One of the best references on environmental benefits of Low-Income weatherization programs is a 2002 study conducted by staff of the Oak Ridge National Laboratory.<sup>21</sup> The study assumes whole house weatherization as defined by the guidelines and practices of Weatherization Assistance Program (WAP) funded by USDOE (United States Department of Energy). Results are presented on a per-home weatherized basis. The value of offsets is provided in terms of net present value in 2001 dollars using the Bureau of Labor Statistics Consumer Price Index calculator.<sup>22</sup> These have been converted to 2012 dollars in Table 15 below.

<sup>21</sup> Schweitzer, Martin & Bruce Tonn, *NonEnergy Benefits from the Weatherization Assistance Program: A Summary of Findings from the Recent Literature*. Oak Ridge, Tennessee: Oak Ridge National Laboratory, April 2002; ORNL/CON-484. For Table 14, point estimates have used; ranges are also provided by Oak Ridge.

<sup>22</sup> The Bureau of Labor Statistics (BLS) calculator is at: [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm). Note that the official CPI has been gradually distorted over the years from its original form so that understates actual inflation. However, since it is "official", it is use in this section of the study.

Table 18: Estimate of Value of Environmental Benefits.

Environmental Offset	Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)	Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)
<b>Value of Air Emissions Offsets - Natural Gas</b>		
Carbon (CO <sub>2</sub> )	102	132
Sulfur Oxides (SO <sub>x</sub> )	23	30
Nitrogen Oxides (NO <sub>x</sub> )	48	62
Carbon Monoxide (CO)	46	60
Methane (CH <sub>4</sub> )	92	119
Particulate Matter (PM)	9	12
Heavy Metals	380	493
<b>Value of Other Environmental Benefits</b>		
Fish Impingement	23	30
Waste Water & Sewage	146	189
<b>Total</b>	<b>869</b>	<b>1,127</b>

***B. Direct or Indirect Non-Energy Benefits***

- Q2. Can CNGC's Low Income Programs (both OLIEC and OLIBA) be tied to any direct or indirect non-energy benefits?

For OLIEC, the Oak Ridge study cited in footnote 14 provides a summary of low-income weatherization non-energy benefits (NEBS). These benefit amounts assume whole-house weatherization. While ranges are also reported in the Oak Ridge study, here we report point estimates. These are presented in Table 16, along with value in net present valued 2001 dollars and 2012 dollars. The inflation adjustment is carried out using the Bureau of Labor Statistics Consumer Price Index calculator.

Table 19: Value of Non-Energy Benefits.

Non-Energy Benefits	Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)	Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)
Fewer Gas Emergency Calls	101	130.94
Electric T&D Loss Reduction*	48	62.00
Insurance Savings	1	1.30
Property Value Benefits	180	234.00
Reduced Mobility	278	361.40
Reduced Transaction Costs	37	48.10
Fewer Fires	68	88.40
Fewer Illnesses	55	71.50
Improved Comfort	Not Available	Not Available
Avoided Unemployment Benefits	117	152.10
Direct & Indirect Employment	801	1,041.30
National Security	321	417.30
<b>Total</b>	<b>2,007</b>	<b>2,608.34</b>

\*This is the benefit to the electric system from weatherizing a gas heated home.

### *C. Turn Offs and Arrearages*

Q3. Have the Company's Low Income Programs resulted in a reduction to customer turn-offs and arrearages? Please explain.

According to the Company, customers who qualify for energy assistance provided from Oregon low income programs have reduced arrearage and therefore reduced turn offs. The Oak Ridge study found the following values for benefits to the utility (and so to all customers).

**Table 20: Turn Offs, Arrearage & Related Benefits.**

<b>Turn Offs, Arrearage &amp; Related Benefits</b>	<b>Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)</b>	<b>Point Estimate of Benefits (in 2001 \$ per participating household: Net Present Value)</b>
<b>Rate Subsidies Avoided</b>	21	27.30
<b>Lower Bad Debt Write-Off</b>	89	115.70
<b>Reduced Carrying Charges</b>	57	74.10
<b>Fewer Notices &amp; Calls</b>	6	7.80
<b>Fewer Shut-Off &amp; Reconnects</b>	8	10.40
<b>Reduced Collections Costs</b>	Not Available	Not Available
<b>Total</b>	181	235.30

In summary, non-utility benefits include environmental benefits (\$1,127), a range of other community (social) benefits (\$2,608) and utility/all customer benefits (\$235.30). The total for non-energy benefits of all types is approximate \$3,971 per weatherized home with gas heat. Since the Community Action Agencies do whole house weatherization following USDOE and state guidelines these values apply to a fully weatherized natural gas home. Since the funding applied by OLIEC covers partial measure cost (up to total cost or cost-effective limit as determined in the tariff), OLIEC dollars need to be converted into equivalent whole house weatherization. This adjustment will be done in the final report.

## VI. Conclusions and Recommendations

This final section of the report contains recommendations for modifications to the current payment assistance and weatherization programs, recommendations for changes to funding levels, and recommendations for additional programs. There are seven recommendations in all.

### *A. Recommendations for Modifications*

- Q1. Based on the findings of this examination, would the evaluator recommend any modifications to the low income weatherization (OLIEC) and bill payment assistance (OLIBA) structure and process?

Although much better than the situation that exists in some other companies and service territories, it appears that there is still a barrier for the Community Action Agencies in expending Cascade Oregon Low Income Energy Conservation (OLIEC) funds. Because the funding for doing whole house weatherization for a single family home is only partially provided by OLIEC on a specific fee per measure installed basis with provision for overhead (and without specific provision for health & safety and repairs), the agencies cannot simply do Cascade jobs.

Instead they have to use other funding to start and complete a job and apply Cascade funding to the authorized measures as a supplement to primary funding. The program is designed to be a supplementary program on a measure basis. This is workable, but it means that funding coordination is essential to beginning (and ending) work on each natural gas heated home, which can constitute a significant barrier to the use of Cascade Oregon funding.

Recommendations for OLIEC are on three levels:

- R-1. The highest priority recommendation for the Oregon Low Income Energy Conservation Program is to move OLIEC from conceptualization as a DSM program to conceptualization in the separate category of a fully public purpose program.**

The basis for this recommendation is that there is considerable experience with OLIEC weatherization. There is now also long experience with the federal/state Weatherization Assistance Program (WAP). Since OLIEC funding is now fully coordinated with WAP funding and OLIEC jobs contribute to the whole house single family WAP weatherization which is required to follow federal and state guidelines the fundamental nature of this effort is well established, well defined and proven in practice. The Community Action Agency weatherization work is overseen by the Oregon Department of Housing and Community Service and the Community Action Partnership of Oregon (CAPO) which provides continuous training programs and assists CAAs in quality

control. Since these institutions are parts of a well-established local/state and federal coordination, they provide an adequate and reliably defined public purpose program required by equity considerations to meet the needs of low-income customers. Cascade's program could be tarified as a public purpose program with a particular rate rider separate from DSM considerations. The Community Action Agencies could then use Cascade dollars for whole house weatherization up to their yearly dollar allocation as the limit each year.

Note that the implication of this recommendation is that as a public purpose program the traditional measures-based DSM cost tests as originally specified in the California Standard Practice Manual are not applicable. Instead, cost-benefit assessment would rely on the federal Savings to Investment Ratio (SIR) analysis,<sup>23</sup> the separate cost-benefit approach used during the American Recovery and Reinvestment Act weatherization programs or a Utility Cost Test. The point is to provide dollars to the Community Action Agencies for whole-house gas heated home weatherization on the same basis as the CAA's federal dollars so they can do whole houses with Cascade Oregon funding.

**R-2. Alternatively, if a full redefinition to public purpose without DSM considerations is not achievable, the recommendation is to move the program design from a supplementary program on a measure basis to a supplementary program on a whole house basis program, covering all costs for homes in the program according to an appropriate whole house proportion.**

This would involve converting the current funding from a measure basis to a house basis. For example, if the Community Action Agency completes three homes with federal or other funding, they would be permitted to do the fourth home on Cascade funding (the exact proportion would have to be determined). This would keep the coordinated savings approach at an appropriate proportion of Cascade dollars to other (usually federal/state) dollars but free the Community Action Agencies to treat OLIEC as whole house funding.

The proportion of Cascade dollars to other dollars would be maintained on a yearly basis with a "true-up" at the end of each year. If an agency completed one or two extra

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<sup>23</sup> Generally, approved low-income program software overestimates energy savings compared with analysis of utility billing data by about 20% on average and for a specific home the variation can be from 0% to 80%. This is because the original purpose of the software used by the Community Action Agencies was to determine the measure package for the home and the savings estimate was generated but was not important in decision-making. The software used in Oregon is better than most low-income program software because it requires an actual year of billing data for each home for the base year. This should make the variation much smaller. The difference in values is the difference between technical savings capability and the actual home usage which includes changes in numbers of persons in the home, behavior and other factors.



Cascade homes, it would have to wait for additional Cascade funding until it completed the required number of homes on other dollars in the next program year. Though based on ratio in this case, the point is to provide dollars to the Community Action Agencies for whole-house gas heated home weatherization on the same basis as the CAA's federal dollars so they can do whole houses with Cascade Oregon funding.

**R-3. If the program is continued essentially as at present, as a supplementary DSM program on a measure basis, the recommendation is for addition of a specific allowance to cover health & safety checks of gas appliances on a per home basis. Additionally, a repair allowance should be added on a per home basis. These would be provided on a similar basis to current funding for overhead and administration.**

### ***B. Changes to Funding Levels***

Q2. Based on the findings of this examination, would the evaluator recommend any changes to the Company's low income weatherization (OLIEC) and bill payment assistance (OLIBA) funding levels?

Based on the record since the beginning of each program, the Community Action Agencies have demonstrated that they can meet payment assistance needs at from 129% to 227% of the yearly funding level. For the Oregon Low Income Energy Conservation program, the record shows that the Community Action Agencies can work at 132% to 144% of the yearly funding level.

**R-4. Funding for both programs should be increased within the range of 129% to 227% for OLIBA and within the range of 132% to 144% for OLIEC. However the increase for OLIEC is recommended to be accompanied by a redefinition of funding from a DSM justification to a fully public purpose justification outside Cascade's DSM plan and evaluated using the SIR ratio so that funding may be used for whole-house weatherization, identical to the use of federal funding.**

### ***C. Additional Low Income Programs***

Q3. What, if any, additional Low Income Programs might be considered by the Company? Explain the additional benefits by each modification and the basis in determining these additional benefits.

Currently, in addition to the Oregon Low Income Billing Assistance Program (OLIBA) and the Oregon Low Income Energy Conservation Program (OLIEC), Cascade offers three billing arrangements. The first is a Budget Pay program that provides even bills throughout the year. The monthly bill for this program is reset every three months. The second, for customers who are behind in payment but are able to catch up quickly is the Pay Plan. Customers in the Pay Plan have short term arrangements to pay off an overdue bill or arrearage in multiple payments, usually before the next bill is due. The third is the Pay Arrangement. A payment arrangement is an agreement with a customer to pay off severely overdue debt in installments over a period of up to twelve months. The monthly bills sent to the customer contain charges for both current service and their payment arrangement installment amount. The past due amount is sheltered debt.

Payment assistance is provided through the Community Action Agencies which have three sources of funding: public purpose funds, Winter Help (Cascade customer and company donations) and the federal Low-Income Home Energy Assistance Program.<sup>24</sup> There are no low-income rates.

There are several additional possible program concepts. Some are rate programs and others are modifications to the program approach. One concern with rate design programs is that Oregon may not currently authorize taking ability to pay into account in the design of tariffs. Some jurisdictions have very highly developed rate programs, either ordered independently by the public utility commission or as directed by the legislature. In others, for example, Kentucky, commissions say that they lack enabling legislation to make rate programs a dimension of customer services for low-income customers. Usually, this is framed in terms of the concept of discriminatory rates. So, providing a different bill to a household of five with an income of \$20,000 than to a household of five with an income of \$200,000 is considered discriminatory. Typically there is no legislation that actually says a commission may not take income or ability to pay into account, but in some states commission attorneys interpret the prohibition of discriminatory rates to include consideration of ability to pay in determining monthly bills.

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<sup>24</sup> The Salvation Army and other faith-based organizations also provide funds to help. All of the current payment assistance tools available are essentially means of helping customers with short term financial needs, for example during the heating season. Households that are not able to pay with the help of these tools – those who have long-term affordability problem that cannot be offset with existing means of assistance go into default status and are eventually disconnected following established regulatory procedures. Re-connection becomes possible under OAR 860-021-0335 upon payment of one-half of any overdue amount (except deposits which must be paid in full) provided the customer has made reasonable payments on the account during the time service has been disconnected. To maintain service, the customer must pay the balance within thirty days of being re-connected. If the customer does not meet these conditions, the utility may refuse re-connection until it receives full payment, including past due bill, reconnection fee and late payment fee.

Pennsylvania provides an interesting case example of this type, moving independently of the legislature from a discriminatory rates concept to an ability to pay concept. Originally, the Pennsylvania commission did not authorize rates related to ability to pay (household income). However, at one point a major manufacturing company said that it would leave the state unless it was provided a lower (electric) energy rate because due to changing market conditions it could not afford to pay at the standard tariff. At that time, the state was at a disadvantage because other countries and some other states offered a more competitive market situation.<sup>25</sup> In order to retain the companies in the state, the governor at that time was pushing economic development for which one of the ideas was economic development rates. In this context and in a proceeding, the commission seemed receptive to the concept of a special economic development rate. That is, the company would be defined into a special class (of which it might be the only member) that would not pay the full cost of service tariff for its original rate class. When it appeared that this rate request would be approved, low-income and consumer advocates intervened in the case stating that a similar situation existed for many low-income residential customers. They, similarly, lacked the ability to pay at the cost of service rate. The matters were joined and from that point forward, the commission ordered utilities to provide rate design programs that would work in parallel with existing payment assistance.

**Why are rate programs important?** Rate programs are important because the US was opened by its leaders of both parties to global markets. This placed many working people and their households into difficult situations because suddenly they were forced to compete in a worldwide labor market rather than the familiar labor market of their community, state, and country. The way our leaders of both parties opened the market was to permit free movement to capital (so that plants are easily relocated, following the profit motive) while labor was constrained. This drained away the most of best blue collar jobs and then many of the good analytic, management, and high level research positions followed. This leaves work primarily employment in service industries.

**Working Age Adults:** The jobs lost generally paid a living (or family) wage with a reasonable benefit package and a defined benefit pension. The new jobs created in the United States since approximately 1970 typically do not pay a living wage, typically do not offer an affordable benefit package and the defined benefit pension is almost an institution of a past age. In 2010, according to the Northwest Job Gap study, Oregon had fourteen job seekers for every job opening that would support a living wage for a single adult; twenty-six job seekers for every job opening that would support a single parent with a child; forty-three job seekers for every job

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<sup>25</sup> Today we understand this as a forerunner case of the classic deindustrialization of the United States through changes in law that unleashed the forces of globalization. Pennsylvania was affected in advance of most other states since it was a major center of the steel industry and of mining, industries with a family wage and excellent benefits for household in which the wage earner(s) do not need a college education.

opening that would support a single parent with two children; and forty-seven job seekers for every opening that would support two adults (with one working) and two children.<sup>26</sup> Further, of all job openings in Oregon, 52 percent pay less than the \$15.20 an hour living wage for a single adult; 74% pay less than the living wage for a single parent with a child; 84% pay less than the \$27.31 an hour living wage for a single adult with two children, and 86% pay less than the living wage for a four person household with two adults and two children (with one adult working).<sup>27</sup> While there are jobs of a sort, the good jobs are generally not there for most Oregonians. Edelman puts it this way:

“Surprising as it may be, we do not have – nor are we going to have anytime soon – enough good jobs for all people to earn a decent living. In 2010, 103 million people in this rich country had incomes that did not ensure their regular ability to pay for such essentials as food, housing and health care, much less accumulate any savings – incomes of less than twice the poverty line, or less than \$44,000 for a family of four.”<sup>28</sup>

Well educated workers in other countries compete in the same employment markets as American workers since plants are moved to provide the best return to shareholders. This, in turn, creates a permanent pressure on those employed in the US to accept wage and benefit cuts and prevents most efforts to raise wages or restore benefits for fear of losing jobs. Also, the financial sector of the economy (large banks and hedge funds) has expropriated the investment funds of the middle class through market manipulation (savings and loan crisis, dot-com bubble, housing derivatives bubble) so that periodically the slow long-term investments of non-specialist “main-street” investors are wiped out. As noted, the defined benefit pension has all but disappeared and most households find that the savings plans offered by service employers, for example, fast food places, are essentially mirages. And, they often must be used up anyway due to moves between jobs or family needs long before retirement. The wages of the service sector are often below the normal cost of living for a household, forcing workers onto food stamps and other government programs to get by during their working years. In summary, changes in law by leaders of both

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<sup>26</sup> Chinitz, Julie, Scott Harrah & Dennis Osorio, *Search for Work that Pays: 2010 Job Gap Study*. Seattle, Washington: Alliance for a Just Society, 2011, Page 7.

<sup>27</sup> *Ibid.*, Page 18.

<sup>28</sup> Edleman, Peter, *So Rich, So Poor: Why it is so hard to End Poverty in America*. New York, NY: The New Press, 2012, Page 70.

major political parties since the 1970s have destroyed and weakened much of the job structure<sup>29</sup> of the United States. This affects Oregon and Oregon communities.

**Senior Citizens:** Turning from the plight of younger workers and their households to senior citizens and putting these changes together, the “three-legged stool” promoted by the Social Security Administration (Social Security, private investment income, and defined benefit pension) no longer exists for most seniors.

**Situation of Two-Income Families:** What about the middle class and the upper middle class? Almost all middle and upper middle income families are now two-income families. A two-income household lives better than a similar single income single-income household of a previous generation:<sup>30</sup>

The average two-income family earns far more today than did the single-breadwinner family of a generation ago. And yet, once they have paid the mortgage, the car payments, the taxes, the health insurance, and the day-care bills, today’s dual-income families have less discretionary income – and less money to put away for a rainy day – than the single-income family of a generation ago.<sup>31</sup>

As Warren and Tyagi show, in this context the loss of one income in a two-income middle class or upper middle class family easily leads quickly to trouble paying bills and to possible bankruptcy unless the second income is fairly quickly restored.<sup>32</sup> The allocation of household income to Oregon households, based on data from the 2000 Census is shown in Figure 7. If this table were to be updated, somewhat more income would be assigned to the upper twenty percent of households by income and a little less to the lower income groups. The trend of reducing the

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<sup>29</sup> “Job Structure” is an analytic concept introduced by the economist, David Gordon. Think of a job structure like the organizational chart of a large company showing the various filled and open positions; but for a city or a county or a state, containing all the job positions at one point in time. Whole sections of the best paying portions of the job structure for people with some high school or a high school diploma have been off-shored. They are simply gone. Of the remaining parts of the job structure, there are many new service jobs for full time work but for less than a family wage. Many of the jobs in the job structure have undergone downsizing and right-sizing to eliminate positions. Many of those that remain are problematic with respect to pay, benefits and pensions. White collar, management and research jobs have also been similarly affected more recently.

<sup>30</sup> But not the very top income groups, in the top approximately five percent of households by income or above.

<sup>31</sup> Warren, Elizabeth & Amelia Warren Tyagi, *The Two-Income Trap: Why Middle-Class Mothers & Fathers are Going Broke*. Basic Book, New York, New York, 2003, Page 8.

<sup>32</sup> Ibid. Warren & Tyagi also note that this relatively new two-income household pattern places single parent families in a very difficult position.

income of those who have less and increasing income to those who have more becomes dramatic for the upper five percent and especially the upper one percent of households by income.

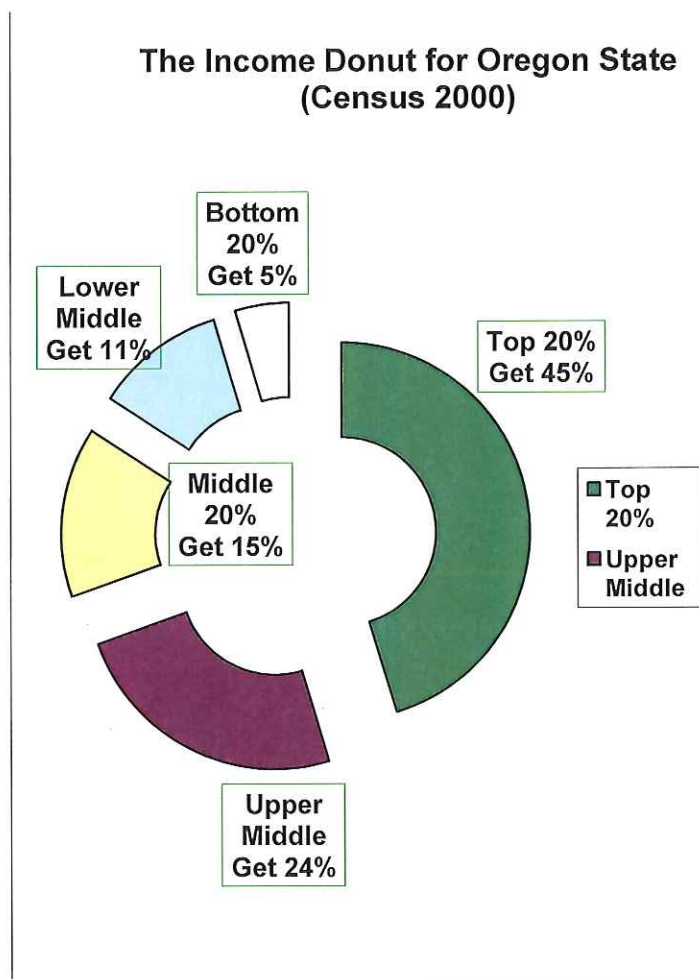


Figure 7: Income Donut - Shares for Oregon Households in 2000.

**Government Distortion of the CPI:** Federal statistics on consumer prices are not sound. If the consumer price index (which used to be called the cost of living index) were to be computed methodologically the same way it was computed in the 1965, Social Security checks would have to be slightly more than double in dollar amount than the checks actually issued to Social Security recipients today.<sup>33, 34</sup>

<sup>33</sup> Williams, John, Shadow Government Statistics, Analysis Behind and Beyond Government Economic Reporting, No. 515, Public Comment on Inflation Measurement and the Chained-CPI (C-CPI), April 8, 2013. See: <http://www.shadowstats.com/article/no-438-public-comment-on-inflation-measurement?display=pdf>. The federal calculation today violates the economic textbook definition of a Consumer Price Index as a fixed basket of goods. The original federal calculation was sound. Changes to the way the ratio is calculated over the years have led to a small effect each year, but cumulatively the net effect is large for senior citizen households. A good example that illustrates the corruption of the CPI is given in Figure 5, CPI-Measured Inflation Underestimates Real Cost of

In summary, in material terms the level of living in the United States for all but the uppermost income households is now often depressed or relatively good but precarious. Many of the previous good jobs are missing from the economy's job structure; there are strong market forces under current laws that make it very difficult for incomes to go up; for seniors, increasingly only Social Security is available to support retirement because savings and stock values are periodically wiped out prior to retirement and defined benefit pensions are largely an artifact of a more economically healthy past. In addition, the government index that carries out price adjustments to Social Security checks has been modified to provide smaller increases. The cumulative effect of these changes is large. Also, the situation is unlikely to change. These are all reasons why tools for long-term assistance (such as a rate program) should be considered for addition to the tools for short-term assistance (such as payment assistance, budget billing and payment agreements).

**Climate change:** If the economic decline of all but the highest income groups were the only problem, we might think of it as an economic decline that began about 1970 and continues, but from which we might, with considerable effort recover. But we have to pay the price for our leaders not leading us to avert climate change. The overarching problem as we look ahead for the next forty years is climate change.<sup>35</sup> Since the US and other nations did not invest to prevent climate change when they might have successfully done so, it is now too late to prevent it. It has

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Living Increases: A Comparison of the Self-Sufficiency Standard and the Consumer Price Index, 2008-2011, on Page 13 of Pearce, Diana, M., *The Self-Sufficiency Standard for Oregon 2011*. Center for Women's Welfare, School of Social Work, University of Washington, Prepared for Worksystems, Inc., 2011. In this example, for Washington County, Oregon, the official CPI fails to track \$5,227 of increased costs in comparison with the family budget method which tracks actual costs. This is over a period of only five years, but it gives a good sense of how the government has distorted the CPI methodology from the original correct method. The CPI is simply not reliable for determining anything as important as determining changes in the cost of living.

<sup>34</sup> For the argument that the government has not damaged the CPI calculation, see the Bureau of Labor Statistics website ("Common Misconceptions about the Consumer Price Index: Questions and Answers" at <http://www.bls.gov/cpi/cpiqa.htm>). The chained CPI (C-CPI) is currently debated. This is one more step proposed by the government to further lower CPI adjustments. Like the previous switch from arithmetic means to geometric means, it simply lowers results but is not based in reality as experienced by the people who have pay at higher prices than the government chooses to acknowledge. This problem with the CPI is similar to the more familiar problem with the construction of federal unemployment statistics which is discussed from time to time in the media. To get actual unemployment, multiply the federal number by two and add three percent. That will approximate the unemployment rate as if it were calculated by the original method and corresponds to actual unemployment in the commonsense definition of people who are out of work (including those who have stopped searching for a job). If your uncle Joe has given up searching, he is still unemployed no matter how the government classifies him to get a more rosy number.

<sup>35</sup> This discussion on climate change is based on a review of the last four years of climate studies and projections.

started and will accelerate. This means that forced and voluntary investment (public and private) will be increasingly necessary to repair damages and adjust to changes. Whether you are repairing storm damage to your own home, paying more for basic food items or paying additional taxes to rebuild and protect coastal cities in another part of the country the result is dollars out of pocket that are not available to pay other bills.

The federal government will finally be forced by the scale, frequency and increasing force of climate impacts to substantially address climate change. Then, there will be a strong national reallocation of dollars from private consumption to public and private investment to deal with disasters, to adapt to climate change, and to reduce the causes of climate change. The resource efficiency portion of building and equipment upgrades will be essential in adapting to a harsher environment. While we do not have a full picture of climate change impacts, we know enough to anticipate problems. While life will be harder for almost everyone, one good thing about the climate emergency is that at some point, the government will have to create jobs to be able to help us adapt. Still, all of these climate change related forces and events will take money out of the consumer economy. So, looking ahead, based on the climate change problems "...the United States will experience material stagnation over the next forty years."<sup>36</sup>

In summary, we have a forecast of stagnation based on demonstrated economic trends since about 1970 and a separate forecast of stagnation based on the necessity of adapting to climate change. If we combine these forecasts and consider what they imply for utility customers, it is good to consider rate programs. Yet for many households, the model of a temporary (perhaps seasonal) economic problem that can be addressed by short-term assistance will work. For others, there will have to be a model that permits ongoing assistance. Rate programs give up on the model of recovery from a temporary episode of poverty and recognize that while there will always be some escape from poverty, long-term poverty will be increasing.

**Do rate programs mean a change to payment assistance programs?** No, they mean an additional set of programs. These programs are likely best served through the Community Action Agencies which can determine qualification for a rate program and do periodic checks (perhaps every two years) to ensure continued eligibility. Also, they mean that payment assistance dollars can go farther because the bill to pay is smaller.

**Possible programs:** There are several possible programs to consider, among them rate programs. Program concepts are discussed below.

- 1) **Senior Discount Program (Rate Program).** The Philadelphia Gas Works (PGW), the largest municipal gas company in the US, for many years offered a senior citizen

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<sup>36</sup> Randers, Jorgen, 2052, *A Global Forecast for the Next Forty Years*. Vermont: Chelsea Green Publishing, 2012, P. 270.



discount, similar to the familiar discounts offered for senior citizens in restaurants (for example, 10% off). PGW had to cancel this discount when it was moved from regulation by the City of Philadelphia Gas Commission to regulation by the Pennsylvania Public Utility Commission which does not permit senior citizen discounts. The program logic for this type of program is that senior citizens generally have less income than they had during their working years. So, it would make sense to collect a little bit more for residential customers during their working years and a little bit less from the same customers when they became senior citizens. The theory is that the program inherently cannot be considered discriminatory because it is open to all residential customers and it is a given of biology that all customers gradually age and become senior citizens. So, the transfer is simply from yourself when you are younger to yourself when you are older (not taking into account moves in and out of the service territory). This program concept is essentially the same model as Social Security in that it applies to all residential customers and you pay more when you are younger and get it back when you are older. It is also to Swedish programs set up to include everyone regardless of need, for example, the child allowance which pays the cost of raising a child through high school and is paid for through high taxes which transfers money from those who have money to be distributed evenly to all households with children (including upper income households.)<sup>37</sup> The operative principle is a robust concept of fairness at the level of community (society). In this case, it is a transfer from one part of the arc of life to another.

- 2) **Tiered Rate Program (Rate Program):** Many gas and electric utilities, depending in jurisdiction, are expected to offer tiered rate programs. A good example is PECO Energy of Philadelphia, an Exelon company and a combined natural gas and electric utility. PECO currently has a seven category tiered rate in addition to its standard residential cost of service rates. The program is called a Customer Assistance Program (CAP) and customers from zero to 150% of poverty are eligible. For six of the seven tiers, the criterion for eligibility is household income. For the lowest tier (0-25% of poverty) if the household is undergoing one or more of a set of stressful conditions (such as unemployment, death, a serious injury or sickness in the household), they are moved to "CAP A" for which the monthly bill is set as essentially a token bill. The principle of this program is that *every household must pay what it can but that it makes no sense for the household or the utility to send households bills that they cannot afford to pay*. This works for the utility because the commission pre-approves a fund from which the bill subsidies are paid. Due to this pre-approval, the utility collects from a rider on all customers in real-time the amounts that would otherwise become uncollectible and not be recovered from other customers until the next rate case.

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<sup>37</sup> Sweden also has several needs-based programs, but the decision was made in the 1930s to make most social programs universal.

- 3) **Percentage of Income Payment Plan (Rate Program):** A Percentage of Income Payment Plan (PIPP) is like a tiered program but with an individual bill tailored to the household income of each participating household. *This program design is more economically efficient than a tiered program design* because in a tiered program rates are set for large groups of customers within a certain income range (for example, 100%-150% of poverty). The tiered structure inherently presents bills which are too much for households in the bottom half of their tier and too little for household in the top half of their tier. Both the tiered program and the PIPP require a determination by the commission of guidelines for affordable rates. Illinois utilities are currently running a PIPP. There are two basic designs: a “fixed credit” PIPP where there is a cap on the subsidy based on the previous year’s energy use and a “straight” PIPP which does not have the cap.
- 4) **Median Energy Burden Program (Rate Program):** In Nevada, the State Welfare Division uses funds from a Universal Service rate rider to provide payment to gas and electric utilities for customer energy costs that exceed the median household energy burden for the state.<sup>38</sup> The median household energy burden is calculated each year by the State Demographer using census information and cost and usage data provided by the utilities. Such a program is an indirect PIPP and could be run by an individual utility.
- 5) **Percentage of Bill Program (Rate Program):** California requires a fixed bill discount of 20% to qualifying income-limited customers. According to evaluations this program works for California.
- 6) **Moderate Income (Weatherization Program):** Work led nationally by Diana Pierce of Washington University has demonstrated that income insufficiency is a much better indicator of household need than the federal poverty level. Generally income insufficiency includes more customers than are covered by 200% of poverty, the usual criterion for weatherization services. A moderate income weatherization program would operate like WAP but, translated to the poverty framework, would include customer households at a higher multiple of poverty, for example 300%). For example, for many years, Nevada Energy (an electric company with a small amount of gas service) operated what they called a “Gap Program” beginning where WAP leaves off and running to a fixed higher level of poverty.

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<sup>38</sup> This program worked well until the economic crisis and “Great Recession.” Since then, collections from the rate rider have not been sufficient to meet the needs of the expanded number of households qualifying for the program and subsidies provided under the program have had to be reduced in order to serve more households. The lesson here is that Universal Service or Public Purpose rate riders should be constructed so as to automatically adjust to need.

The self-sufficiency standard for Oregon provides information at the county level. Self-sufficiency is determined by income and type of household (for example, one adult, one adult and one preschooler and one school-age child, etc.). To operate this program the Community Action Agencies would need to consult the county level tables for different family types provided in the most recent study.<sup>39</sup> If we take into account actual need rather than use the federal poverty level or a multiple it turns out need is much greater than the federal numbers suggest.

- 7) **Insurance program (Payment Assistance Program):** Some utilities have offered insurance programs for replacement of water heaters. For example, Pacific Power operated a water heater insurance program for several years. This required an additional small payment on each bill and when your water heater had to be replaced, Pacific would provide a pre-screened dealer service and the cost of the new water heater and its installation would be covered by the insurance. It would be possible to explore an insurance concept for skipping monthly payments if there should be a stressful condition in the household such as unemployment, a death, or a serious accident or illness. There are no examples of this program concept, but it could be explored.
  
- 8) **Solar Water Heater Program (Fuel Substitution Program):** Several utilities have run solar water heater programs for low-income customers. If the solar water heater is kept off the electric grid, it can provide free hot water all summer and often in much of the spring and fall seasons. This type of program has typically worked well but has generally not proven cost-effective. It is a form of pre-paid full substitution that will work independently of gas and electric service for much of the year.

**R-5 Addition of a rate program is recommended.** In addition to the general economic trends indicated by economic changes since approximately 1970 and the anticipated economic stagnation anticipated in adapting to climate change, there is the fact that the energy burden of households below 100% of poverty is often too high to afford utility bills at the residential cost of service rate. In particular, in 2009, Colton reports that “Oregon households with incomes of below 50% of the Federal Poverty Level pay 36.4% of their annual income simply for their home energy bills.”<sup>40</sup> Perhaps the place to begin is a rate program for households at or below 100% of poverty, but certainly there should be a program for households at or below 50% of poverty.

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<sup>39</sup> Pearce, Diana, M., *The Self-Sufficiency Standard for Oregon 2011*. Center for Women’s Welfare, School of Social Work, University of Washington, Prepared for Worksystems, Inc., 2011.

<sup>40</sup> Fisher, Sheehan & Colton, *On the Brink: 2009, Oregon*. Belmont, Massachusetts: Fisher, Sheehan & Colton, 2010, Page 1, Finding 1.

**R-6 Addition of a moderate income weatherization program is recommended.**

The basis for this recommendation is that the current 200% of poverty income qualification level is too low. In addition, a “gap program” is required that would cover households with income insufficiency as determined by the classic social work family budget method.<sup>41</sup>

**R-7 It is recommended that the other program concepts be discussed and assessed by the Weatherization and Bill Assistance Advisory Group.**

## VII. References

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<sup>41</sup> Ibid.

(C-CPI), April 8, 2013. See: <http://www.shadowstats.com/article/no-438-public-comment-on-inflation-measurement?display=pdf>

## VIII. Appendix: Incomes Corresponding to Eligibility.

The table below shows the federal poverty level (FPL) and multiples of the FPL used for health program eligibility.

**Table 21: Income Levels Corresponding to Poverty and Multiples of Federal Poverty Level.**

Household Size	Household Income Equal to Percentage of Federal Poverty Level				
	100%	150%	200%	300%	400%
1	\$11,490	\$17,235	\$22,980	\$34,470	\$45,960
2	15,510	23,265	31,020	46,530	62,040
3	19,530	29,295	39,060	58,590	78,120
4	23,550	35,325	47,100	70,650	94,200
5	27,570	41,355	55,140	82,710	110,280
6	31,590	47,385	63,180	94,770	126,360
7	35,610	53,415	71,220	106,830	142,440
8	39,630	59,445	79,260	118,890	158,520
For each additional person, add	\$4,020	\$6,030	\$8,040	\$12,060	\$16,080

Note: The 100% column shows the federal poverty level for each family size, and the percentage columns that follow represent income levels that are commonly used as guidelines for health programs. Source: Calculations by Families USA based on data from the U.S. Department of Health and Human Services.

See: <http://www.familiesusa.org/resources/tools-for-advocates/guides/federal-poverty-guidelines.html>