

# 2009

## Energy Conservation Program Analysis



### Canby Utility

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9/2009

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## Executive Summary

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In 2009 Canby Utility (CU) hired its first Oregon Fellow, Stacey Glenewinkel, to analyze the Energy Conservation Program. The State of Oregon initiated energy conservation efforts in the 1970s. CU has always strived to meet the state mandates for conservation programming. Although the program is now 30 years old a formal, board adopted, CU Energy Conservation Strategic Plan that makes energy conservation the intended goal has never been created. A strategic plan to outline the intention of the program, set goals and create benchmarks to measure achievement of goals, will lead to greater success of the program. A strategic plan would help guide the organization through periods of change by keeping a focus on the conservation goal and having strategies outlined in advance. This study was conducted because CU is approaching the end of a 3-year BPA rate period and is faced with the option of continuing with BPA incentives or developing their own program. These questions could more easily be answered if the organization had a long term strategic plan in place.

The terms “energy efficiency” and “energy conservation” are often used interchangeably. They are not however, the same concept. If energy is being used efficiently and isn’t being wasted, the amount purchased can go further. There isn’t an incentive to purchase less or to conserve. In fact, if electric bills go down after becoming more energy efficient, consumers have additional money in their budgets which they can then use to purchase more energy to support added electronic devices or simply discontinue the conservation behaviors they may have had before becoming more efficient.

The 2009 Energy Conservation Customer Survey was conducted as part of this analysis to gather information about customer perceptions about the program. CU managers want to know if the Energy Conservation Program incentives had saturated the market, leaving very few customers with the opportunity to take advantage of rebates or weatherization activities. It appears from this study the local Canby market has not been saturated by energy efficiency incentives. Although nearly everyone (99%) tries to conserve energy through behavior changes, only half (51%) of respondents knew there was more they could do by taking advantage of incentives.

Managers also wanted to know, if the market was not saturated, where could the program be expanded and which incentives should be considered for funding first. The data show that in addition to long time customers that weren’t aware of the incentives, almost 44% of the respondents are relatively new to the area and more people move to Canby every year. This data demonstrates there is room to expand the promotional efforts of the existing program as well as expand the incentives to offer some new items customers requested. The survey respondents indicated a strong interest in on-demand hot water heaters (286 requests) and programmable thermostats (246 requests). Customers with electric hot water heaters would experience larger benefits by installing solar hot water panels to pre-heat their water than they would experience with on-demand hot water heaters. Therefore, CU should investigate the feasibility of offering solar hot water panels.

Finally, managers wanted to look at Green Power and find out if people were willing to spend more money for environmentally preferred electricity. The data show that not very many people are buying Green power. Almost half (46%) of the people who aren’t buying it chose not to because of the added cost. However, the people who don’t know what it is and the people who didn’t know it

was available make up a larger percentage of the people who aren't buying it. (46.5%) Further promoting Green Power as a product offering may lead to more people purchasing it, especially when the economy recovers from the current downturn.

Based on the results of the historical analysis and the survey results, the following recommendations are made:

- Develop a CU Energy Conservation Strategic Plan
- Improve record management
- Investigate the cost and benefits of using a different firm for plan management
- Target renters
- Web-based communication
  - Build a website
  - Collect e-mail addresses of customers
- Promotion of the program
  - Utilize program promotional services of plan management firm
  - Change marketing and promotional approach to coincide with the seasons
  - Post incentives on website
  - Increase promotional efforts to reach broader audience
  - Increase educational and outreach efforts
- Invest in high quality translation services
- Track participation by address
- Investigate additional incentives
  - Solar hot water heaters and programmable thermostats
- Improve energy efficiency and conservation within CU
  - Show customers CU is fiscally conservative by becoming more energy efficient
  - Install a demonstration project such as solar hot water or solar electric panels on the CU roof
- Work with City of Canby Community Development and Planning
  - Evaluate building codes and improve efficiency standards. Change land use planning codes to require buildings to meet efficiency standards.
- Commissioning
  - Develop a follow up/commissioning program to verify kWh are actually saved.

This historical study and customer survey is an important first step at making improvements to the Energy Conservation Program. Performing more advanced statistical analysis, conducting intercept interviews, holding focus groups, teaching educational workshops and starting pilot projects will help CU gain even more information about how to design an effective Energy Conservation Strategic Plan for the organization as well as what incentives to offer customers.

## **I. Introduction**

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This report analyzes Canby Utility’s Energy Conservation Program and recommends changes to improve program accountability and success. A successful conservation program aligns the needs of the Canby Utility (CU) customer base with CU’s resources and regulatory mandates.

The analysis begins with a historical retrospective of CU’s conservation programming that summarizes how CU managed its conservation programs and evaluates the successes of that programming with CU customers. A survey, designed and conducted as part of the Oregon Fellowship Program, gathered information directly from customers about their household, perceptions of CU’s program, and interest in additional conservation programs. Over 1,000 responses from residential and commercial customers (out of over 6,300 customers) responded.

The report’s second analysis draws conclusions from the survey tallies and comments. Recommendations follow both the retrospective analysis of past performance and the survey analysis of customer expectations. The report concludes with guidance on next steps for developing a strategic plan for CU’s Energy Conservation Program and includes an appendix with public comments taken from the surveys.

The survey successfully gathered a large amount of new primary data from both residential and commercial customers that will be a valuable strategic planning asset for CU to improve future programming.

Designing the survey instrument revealed an interesting word-choice issue that could impact how customer’s perceptions are measured. The terms “energy efficiency” and “energy conservation” are often used interchangeably. They are not however, the same concept. Conservation is an assumed benefit of energy efficiency upgrades. However, without conservation being the intent of a program, energy efficiency will simply allow us to do more with the same amount of energy. We become more productive while expending the same amount of energy—we’re efficient, but we don’t necessarily conserve.

If energy is being used efficiently and isn’t being wasted, the amount purchased can go further. There isn’t an incentive to purchase less or to conserve. In fact, if electric bills go down after becoming more energy efficient, consumers have additional money in their budgets which they can then use to purchase more energy to support added electronic devices or simply discontinue the conservation behaviors they may have had before becoming more efficient.

This report evaluates Canby Utility’s “Energy Conservation” Program. Historically, this term has been used to describe the incentives offered by the utility even though the incentives are actually intended to increase energy efficiency. To be consistent, “energy conservation” is used when discussing the historical activities of Canby Utility but current and future activities, including the customer survey use the term “energy efficiency”. Recommendations to bring these two distinct concepts together are offered toward the end of the report.

## **II. History**

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Canby Utility's Energy Conservation Program began in 1979 when it began performing energy audits of customer's homes and making recommendations for weatherization upgrades such as insulation and window improvements. Not long thereafter, state mandates for conservation programming led CU to embark on a residential program conservation program. For the first half of the 1990s, CU had a staff member dedicated to conservation programming, but then subsequently contracted out for its Energy Conservation Program.

### **A. State Mandates Begin**

In 1981 the State of Oregon enacted Oregon Revised Statutes section 469.651 that required publicly owned utilities to submit a residential energy conservation program to the Oregon Department of Energy (DOE). The law required that the program outline how customers would be provided information about conservation incentives, offer assistance and technical advice about ways to save energy, and provide financing for cost-effective energy conservation measures when customers asked for financial assistance.<sup>1</sup> Public utilities like CU were made exempt from the rule if they signed a residential weatherization conservation contract with the Bonneville Power Administration (BPA) that met or exceeded the state's provision. CU signed such a contract with BPA in 1981.

By 1983, CU was providing money for customers to make recommended improvements for weatherization upgrades. Between 1983 and 1992, more than 750 homes in Canby took advantage of the weatherization and energy efficiency incentives.

In 1985, CU began the heating system improvement program that offers customers rebates on heat pumps to improve the efficiency of their electric furnaces. Between 1985 and 1992, more than 500 heat pumps had been installed, reducing energy used on heating by approximately 50%.

In 1986, CU added the Super Good Cents (SGC) program to its conservation programming with great success. This program was not connected to the City of Canby Community Development and Planning building codes. It was an independently developed program that offered design assistance and financial incentives to improve energy efficiency in space and water heating for new homes. Over a five year period a higher percentage of new homes in Canby had been built to meet the SGC standard than in any other area in Oregon. In 1990 and 1991, 106 of the 108 new single family homes and all of the 39 multifamily units met the design standard for SGC.

In 1989, CU began a comprehensive program for commercial customers that provided design assistance and financial incentives for energy efficiency improvements in businesses. This program was not as widely used due to the limited number of commercial customers in Canby. However, the program was well received by those businesses that did participate.<sup>2</sup>

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1 Chapter 469 –Energy Conservation Programs, Energy Facilities. Residential Energy Conservation Act. Retrieved July 15, 2009 from <http://www.leg.state.or.us/ors/469.html>

2 Internal draft CU Memo. Author unknown. (1992). Canby, OR: Archived Records. See Appendix.

## B. In-House Staffing and External Collaborations

According to a report issued by a consulting firm in 1995, CU spent nearly \$2 million on conservation efforts as part of BPA's direct-funded conservation programs between 1982 and 1994.<sup>3</sup> Table 1 outlines the amounts spent by BPA in direct funding to CU during this period.<sup>4</sup>

**Table 1: BPA Direct Conservation Funding to CU by Program, 1982-1994**

<b>Program</b>	<b>Amount</b>
Residential Weatherization	\$1,185,356
Long-Term Super Good Cents	\$190,100
Energy Smart Design (Commercial)	\$129,546
Street and Area Lighting	\$98,308
Energy Savings Plan (Industrial retrofits)	\$98,308
Showerheads	\$50,845
Appliance Efficiency	\$20,105
Energy Savings Plan (New Industrial)	\$3,774
Water Heater Wraps	\$2,100
<b>Total</b>	<b>\$1,778,442</b>

In 1994, the Oregon Municipal Energy Conservation Agency (OMECA) was established as an independent agency to fund conservation programs within the territories of municipal electric utilities in Oregon. On January 25, 1994 CU ratified the intergovernmental agreement between OMECA and CU. On August 9, 1994, CU approved the issuance of revenue bonds by OMECA.<sup>5</sup> Through BPA, OMECA received \$239,000 for Canby conservation efforts. An additional \$151,000 was spent by CU for heat pump rebates during that time.

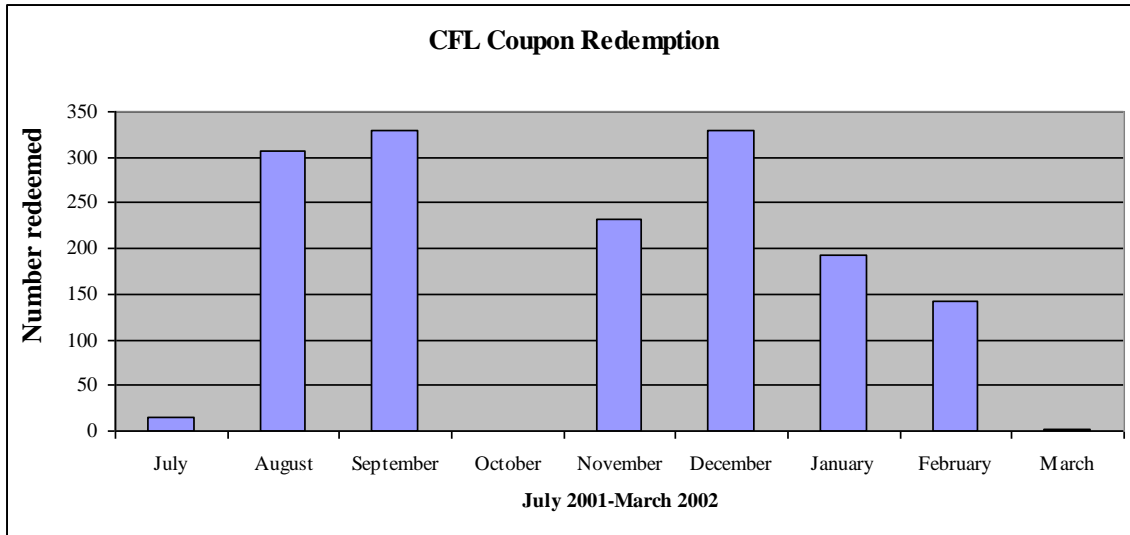
Between 1990 and 1995, Jim Brands handled the conservation program in-house for CU. For about 6 months, an additional part time employee named Ken Gex assisted Jim with audits and inspections. During that period, CU reported program activity to the Oregon Municipal Electric Utilities Association until 1996. In 1996 the program dwindled to be minimally active and CU eliminated Jim Brands' full-time position as conservation program manager. The program became small enough to be funded and managed in-house by Debbie Naab until 2002. Debbie handled the reporting of conservation data to Oregon Department of Energy.

In May of 2001, CU entered in an agreement with BPA to promote the Energy Star Compact Fluorescent Lamp Coupon Rebate Program. The coupons were provided by BPA at not cost to CU. CU earned \$1 for each coupon redeemed. CU records indicate that 1,515 coupons were received earning CU \$1,515 in revenue. The program received a large amount of interest by CU customers in the beginning. Figure 1 shows the number of coupons redeemed in each month of the program. The low periods in July, October and March reflect the expiration dates of each round of coupons.

3 Columbia Research Corporation. (1995). Canby's Conservation Options. Olympia, WA.: D. Seligman. Archived Records. "Canby Conservation 'Payback'"

4 Canby Utility Board Conservation Programs. (1997). See Appendix.

5 Oregon Municipal Energy and Conservation Agency of Marion County Resolution No. 94-3. Intergovernmental Entity (OMECA). (1994). Item J. See Appendix.



**Figure 1. Energy Star Compact Fluorescent Lamp Coupon Rebate Program**

**C. Contracting for Conservation Programming**

In May of 2002, CU contracted with Portland General Electric (PGE), doing business as Efficiency Services Group (ESG), to implement their participation in BPA’s Conservation and Renewable Discount (C&RD) Program. Jim Brands was, at that time, the PGE Public Power Conservation Representative who managed the contract for CU.<sup>6</sup> On August 1, 2005 PGE released the management of CU’s conservation program to ESG. ESG became an independent entity and CU signed a new contract with them in June of 2006. According to the BPA Planning, Tracking and Reporting System (PRT), CU has saved 2,801,707.90 kWh and \$224,264.47 between October 2005 and September 2009 by implementing conservation efforts.<sup>7</sup>

Canby Utility has relied on ESG to manage CU’s Energy Conservation Program for the last seven years, first as part of PGE and then as a private consulting firm. The role of ESG has been an important one for Canby Utility. CU pays ESG \$1,900 per month for the on-going operation and administration of the conservation program. In addition to the monthly administrative fee, CU pays ESG \$70 for each residential energy audit they perform and \$50 for each residential inspection they perform on behalf of CU.

**D. How CU’s Conservation Program Currently Works**

Marketing and promotion of the program is done solely through the *Reporter*, CU’s monthly newsletter. At one point in the past, Jim Brands also visited customer’s homes and offered to install low flow shower heads and aerators for free. When he installed them he also put a sticker on the hot water heater informing the customer to contact CU when they needed a new water heater so they could take advantage of the rebate that was available. Other than that, no other promotional activities have occurred other than news and stories featured in the *Reporter*. ESG lists

<sup>6</sup> Canby Utility memo. *Recommendation for Portland General Electric to Implement and Manage Canby Utility’s Conservation and Renewable Discount Program*. (2002). See Appendix

<sup>7</sup> BPA *Planning, Tracking and Reporting System*. Version 2.0. Retrieved August 28, 3009. See Appendix.

“Development of informational materials” on their list of services but they are not advertising the program for CU.

The *Reporter* encourages customers to contact CU if they are interested in learning more about incentives. When customers contact the office about heat pump or weatherization incentives, their information is passed on to ESG. ESG contacts the customer and sets up an appointment to perform an energy audit of their home so they can recommend upgrades and inform them of what incentives they would be eligible for. The customer arranges the work to be done by their preferred contractor. After the work is completed, ESG returns to the site and performs an inspection of the work to ensure it was done correctly and qualifies for the intended incentives. ESG reports back to CU that the work has been completed. CU then issues rebates directly to the customer.

If customers contact the CU office about rebates for appliances, they are told of the products that qualify. The customer purchases the product, removes the energy sticker from it and returns it to the office with an application for a rebate. The sticker and application are sent to ESG where they are kept on record for BPA audits since BPA audits records stored at ESG, not CU. CU issues the rebates directly to the customer.

ESG is also responsible for maintaining all of the customer conservation records such as the number of audits and inspections performed and rebates issued each period. They report CU’s Conservation Rate Credit (CRC) information as well as kilowatt hours (kWh) saved through conservation to BPA electronically using BPA’s on-line PRT system. They report this data to CU in paper format and CU has the ability to log-in to the PTR system and the view the data. No electronic records about the conservation program are provided to CU by ESG.

## **E. Recommendations**

<p style="text-align: center;"><b>Recommendation #1: Improve record management</b></p>
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CU relies on ESG to maintain records about the program and should be able to utilize those records to measure program performance. No electronic versions of these reports are made available to CU because, according to Jim Brands<sup>8</sup>, ESG considers the spreadsheets they use for tracking and record keeping to be proprietary business information.

Paper copies of ESG reports are stored in the CU archives and were thoroughly analyzed during the development of this report. The quality of the paper ESG reports is poor. They don’t include an ESG logo or contact information or any other ESG identifiers. Many of the records were found to contain conflicting data. Many records appeared to be duplicates with different numbers of customers, dollar amounts or number of rebates but don’t include print dates to allow a reviewer to determine which record precedes another when totals conflict. When comparing invoices against reports, some of the data was also found to be inconsistent. Even when looking at the Program Summary page, data cannot be verified month to month with any level of confidence.

In addition to frequently missing dates, the reports also don’t always clearly indicate what they are reporting and reported tasks are not clearly defined. For example, on some reports tasks are

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8 Brands. J. Efficiency Services Group. Personal telephone interview. August 28, 2009

categorized as “audits requested,” “audits in pipeline,” “audits completed,” “audits outstanding” and “ISM’s installed.” Relying on only undated paper copies of undefined tasks makes it impossible for a researcher to track customers through the reports to ensure items aren’t being double counted and verify that ESG is performing the tasks they are being paid to perform.

If ESG will not release their spreadsheets containing CU customer data, they should be required to provide more accurate and detailed reports so that CU can more easily obtain the information it needs to measure program performance. When asked for a history of kWh saved from CU energy conservation programming since ESG began managing CU’s program, ESG stated this information was too difficult to produce. CU was instructed to sort through paper records and add up the totals for each year. Since the data is often missing dates and records conflict it was not possible to confidently verify this information from paper reports. For purposes of this report, recent data submitted to the PRT system was compared against a report provided by ESG on August 31, 2009. CRC amounts did not match.<sup>9</sup>

Electronic records and detailed, accurate report generation would allow CU to more accurately measure program performance. Detailed reports should contain enough information to stand on their own and not rely on institutional knowledge to be understood. ESG is receiving \$22,800 per year in administrative fees, not including inspections or audits they perform, to manage the energy conservation program for CU. If CU asks for the amount of energy conserved over time, ESG should be able to provide it. CU is responsible for reporting data to BPA. Since ESG performs this task on behalf of CU, they should be willing and able to verify the data is correct and up to date. Their customer service has been poor throughout the analysis for this report.

<p style="text-align: center;"><b>Recommendation #2:</b> <b>Investigate the costs and benefits of using a different firm to manage the Energy Conservation Program</b></p>
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In 2002 there may have been few companies offering the services that ESG offers. Jim Brands' history with CU likely made for a natural partnership between the organizations. Today, interest in energy conservation has grown widely across the region and this interest has spurred the formation of other firms offering similar services. The following firms provide energy efficiency program services to utilities. See the appendix for brochures on each firm.

**Portland Energy Conservation Inc.**

Customizes energy efficiency program management for public utilities  
Dain Nestel, Associate Director  
503-467-0951  
1400 SW 5th Avenue, Ste. 700  
Portland, OR 97201  
[www.peci.org](http://www.peci.org)

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9 Gosvener, M. Efficiency Services Group. *Canby Utility CRC FY07-FY09 Summary*. August 31, 2009. See Appendix.

**Energy Trust of Oregon**

Non-profit organization that can customize services for public utilities  
Steve Lacey, Energy Efficiency Department  
1-866-368-7878,  
851 SW Sixth Avenue, Suite 1200  
Portland, OR 97204  
[www.energytrust.org](http://www.energytrust.org)

**ECOS Consulting**

Portland Office: 503-525-2700

**Conservation Services Group**

508-836-3138

It would benefit CU to investigate the services of other firms who may provide similar services in a more detailed package.

### **III. 2009 Energy Conservation Program Customer Survey**

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#### **A. Purpose**

The 2009 Energy Efficiency Program Customer Survey measured the level of customer interest in energy efficiency incentives by evaluating how many customers knew of CU's Energy Conservation Program, have used the program, what their opinion of the program was, and why some had not used the program. The survey research aimed to gain an understanding of what Canby Utility customers want and need in an Energy Efficiency Program to make participation worth their time and money.

Canby Utility had not done a survey of its customers since 2001. This was the first survey of its kind to specifically target information about energy efficiency and conservation. A distinction is made in the survey design between "energy efficiency" and "energy conservation". Since the incentives offered by CU aim to improve energy efficiency the survey questions were designed using this term instead of "energy conservation".

The results of the survey are an important first step in evaluating how CU's Program could be changed to better fit the needs and interests of the Canby community. A specific concern of CU management was the possibility that the Energy Efficiency Program had been so prolific that the local market may have been saturated by incentives, leaving very few customers with the opportunity to take advantage of rebates or weatherization activities. Management wanted to know, if the market was not saturated, where was there room to expand the program and which incentives should be considered for funding first? Management also wanted to measure customer's interest in conservation through behavior changes to see if customers embraced the idea of conservation. Finally, management wanted to look at Green Power and find out if people were willing to spend more money for environmentally preferred electricity.

#### **B. Design**

Every Canby Utility customer, both commercial and residential received a folded two-page (front and back) anonymous, return postage paid survey.<sup>10</sup> Residential customers received both an English and Spanish survey. Both commercial and residential survey questions were very similar. The commercial survey contained 23 questions and the residential survey contained 24. The extra question for residential customers had to do with their interest in long term loans for home owners investing in energy efficiency upgrades. This question was not applicable to commercial customers.

The questions were carefully designed through a collaborative effort between Oregon Fellow, Stacey Glenewinkel, and Assistant General Manager, Matt Michel, with input from the rest of the Management Team. Close attention to survey question and response phrasing, word choice, patterns of response, and questionnaire flow limited bias and directed responses to achieve robust, primary data.

The survey began with a series of seven demographic questions followed by nine questions targeted toward customers who had used CU energy efficiency incentives in the past and one question asking if they hadn't used them in the past, why not? The survey then concluded with seven

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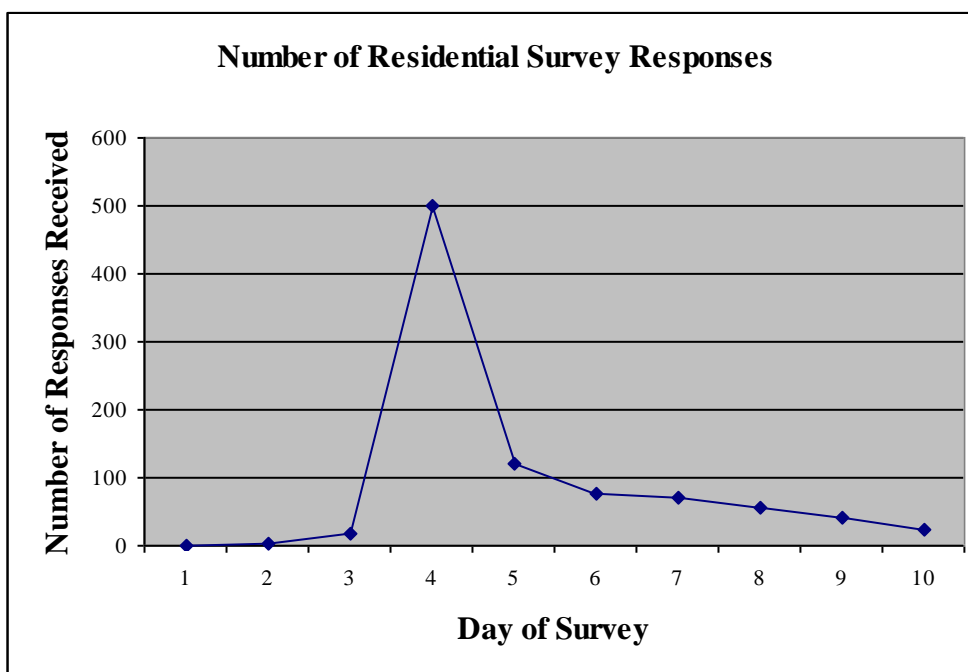
<sup>10</sup> See appendix for surveys and coding manual

questions prompting customers to share what other incentives they would like to see offered and what should be changed about the currently perceived program.

Ten pre-testers filled out the survey as though they were a CU customer. This process helped to identify any undetected problems with questions or responses and helped determine the overall quality of the survey instrument. Testers also helped determine if the survey was an appropriate length by measuring how long it took to fill it out.

After refining the questions the survey was translated into Spanish using the standard CU procedure for translations. A free service on the Internet called Babblefish allows one to cut and paste words, sentences or whole paragraphs into a translation box. It then translates the text into any language selected. After the survey was translated it was reviewed by an in-house Spanish speaking staff member to ensure the translation was done correctly.

The survey was distributed on August 5<sup>th</sup>, 2009 to 6046 residential customers and 342 commercial customers. A 15% response rate would obtain statistically significant results. Therefore, CU needed 906 residential responses and 51 commercial responses. Figure 2 shows the number of residential surveys received on each day of the two-week survey. At the close of the survey on August 21<sup>st</sup>, 2009 CU had received 954 residential responses, surpassing the 15% goal. The 38 commercial responses fell short of the 15% goal. Due to the limited amount of time for data analysis and the low response rate of commercial customers, this report only reports analyses on residential survey data. Further analysis on commercial data, as well as residential data, could be performed on the data in the future.



**Figure 2. Number of Residential Surveys Received**

Additionally, the sampling method and response time prevent CU from generalizing responses as “the will of the customers.” The survey participants were not generated in a random sample. Instead, all CU customers received surveys in an effort to increase the response rate. Since a random sample was not generated, the results cannot be generalized to the larger population. The

opinions of the people that did respond can't be used to predict the opinions of the people who did not respond. The data gathered in the survey simply show the behavior and opinions of the people who chose to respond to the survey. In other words, this is a self-selected survey of customers who elected to respond to CU's mailed survey.

Secondly, there was a very limited amount of time to conduct the survey. After the surveys were sent out, customers only had two weeks to mail their surveys back. Ideally respondents would be given two weeks and then a reminder postcard would be mailed to the people who did not respond asking them to fill out the survey. Another week would allow latecomers to send in their survey before CU analyzed the results. This survey closed after two weeks without a reminder postcard. Although a 15% response rate was achieved, more responses could have been received if respondents were reminded and given more time.

As the responses came in, the data had to be transferred from the paper copy to a MS Excel spreadsheet. This transfer of data increased the probability of data entry errors. It also took a significant amount of staff time, roughly 80 staff hours. Due to the limited time frame for the survey, not all of the responses were used in analysis. Once the 15% response rate was entered in Excel the rest of the responses were set aside and not entered. These survey responses can be entered at a later date and further analysis could be done. For purposes of this report, time did not allow for all the responses to be included.

### C. Descriptive Statistics from Survey Results

After inputting a statistically significant number of raw responses into MS Excel, an upload to SPSS statistical software provided statistical analysis. A series of descriptive statistics on several demographic variables created an image of the typical CU customer who responded to the survey. Table 2 shows the variables and the response categories that contained the most number of responses (mode).

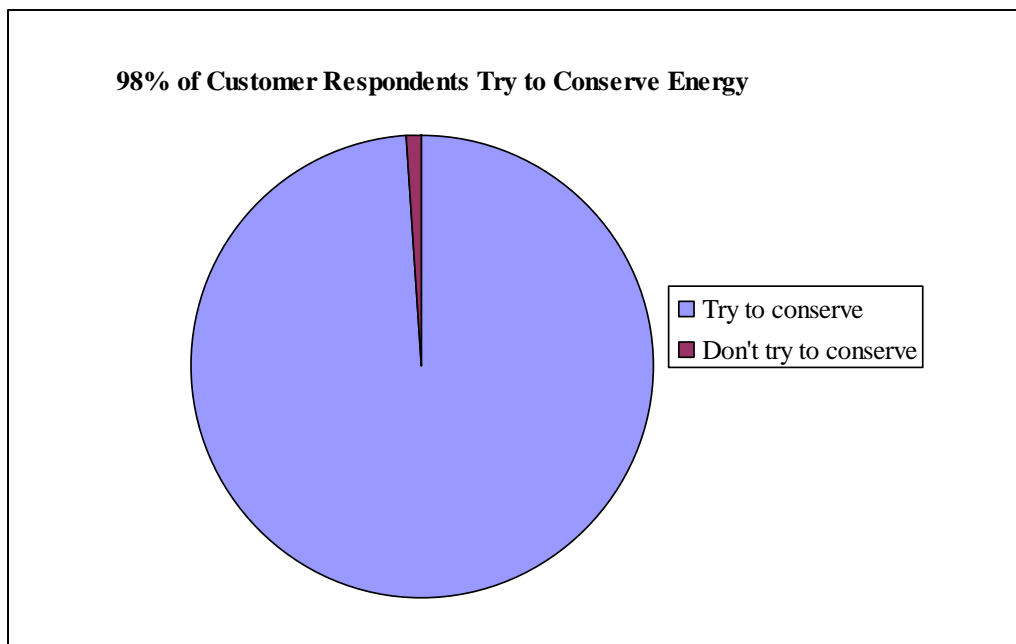
**Table 2. The Typical Canby Utility Customer Survey Respondent**

<b>Variable</b>	<b>Response</b>	<b>Response %</b>
Length of time in Canby	10 or more years	55%
Length of time in current home	10 or more years	42%
Rent or Own	Own	80%
House size	1500-2000 square feet	33%
House age	Built between 1960-1979	28%
Household size	Have 2 adults over 18 yrs, no children	54%

As Table 2 shows, the typical CU customer respondent has lived in Canby and in their current home for a long time, 10 years or more. Their home is of average size, between 1500 and 2000 square feet and it was built sometime between 1960 and 1979. The typical customer respondent owns their home and their household includes two adults and no children.

**1. Survey Question: Did you know about incentives?**

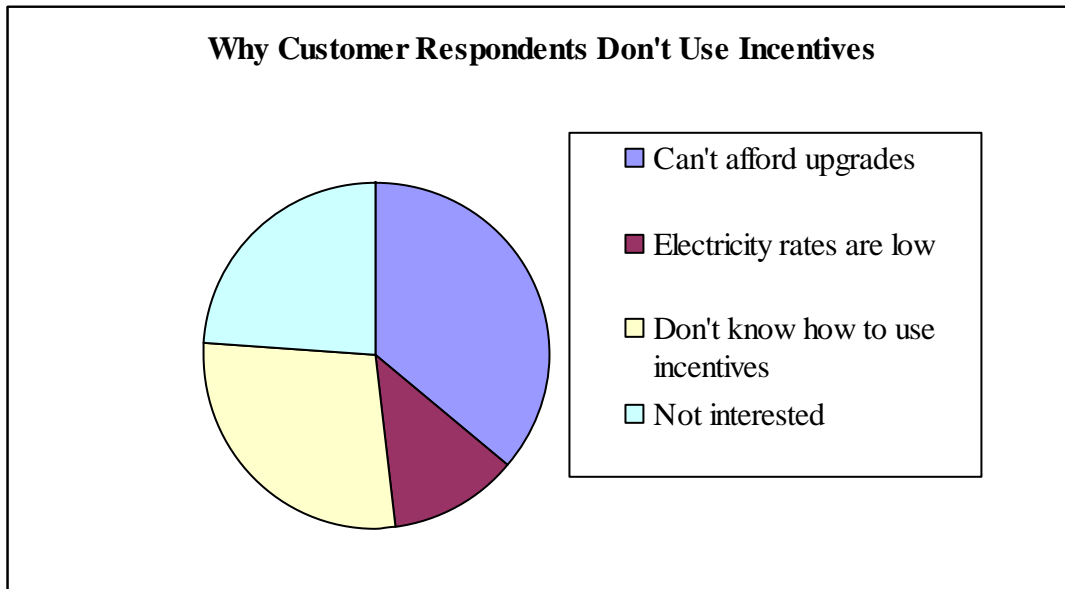
When asked if they knew that CU offered energy efficiency incentives, 51% of respondents said “No”. Although more than half of CU customer respondents didn’t know about the incentives, nearly every respondent said their households try to conserve energy through behavior changes. Figure 3 shows the percentage of respondents who answered the survey question “Which answer below best describes your household’s conservation behavior?” by saying “Everyone in my household tries to conserve energy” and “Only some members of my household try to conserve energy.” Combining these two responses shows 98% of respondents try to conserve energy on their own.



**Figure 3. 98% of Customer Respondents Try to Conserve Energy**

**2. Survey Question: Have you ever used the incentives?**

Of the respondents who knew incentives were available, 63% had never used any. When asked why, 36% said they simply couldn’t afford to make upgrades even with the incentives. 28% said they didn’t know how to take advantage of the incentives. 24% said they weren’t interested and 12% said they felt electricity rates were low enough that they didn’t need to use incentives to be more efficient with the energy they buy. Figure 4 shows the reasons people have not used incentives.



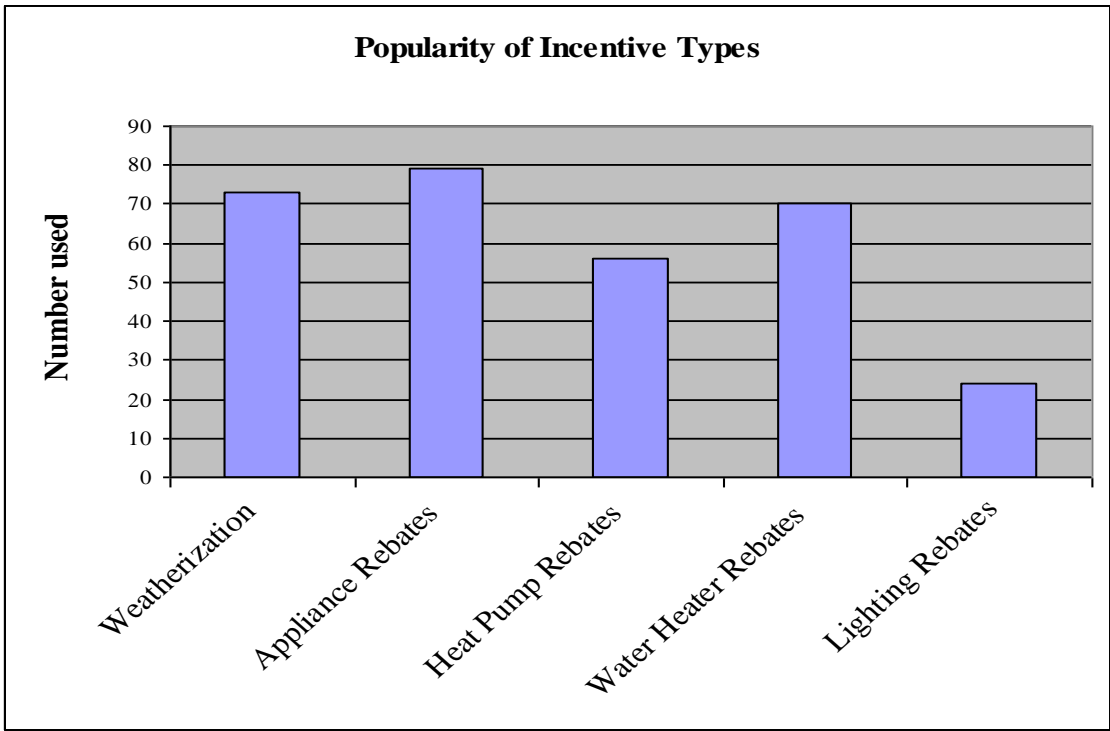
**Figure 4. Why Customer Respondents Don't Use Incentives**

**3. Survey Question: What made you decide to use incentives?**

The 37% of respondents who had used incentives at some point in the past were asked: Why? The survey question stated “Which answer best describes the reason you decided to use an incentive?” Three response choices were given: “to save money on the product”, “to use energy more efficiently” or “to conserve energy”. The question and response choices were designed to force respondents into choosing the primary reason they used incentives, recognizing that all three response choices are beneficial. The response choices “to use energy more efficiently” and “to conserve energy” were designed to determine if respondents saw a difference between these two benefits. Many respondents marked all three responses even though the survey asked for them to choose one. Of those that didn't mark all three, responses were split by 1/3<sup>rd</sup> between each response. The data show that respondents don't see a difference between efficiency and conservation. Further, they value all three benefits equally.

**4. Survey Question: Which incentives have been used the most and the least?**

Appliance rebates are the most popular with 79 respondents saying they have used them. Weatherization and water heater rebates are also quite popular. Figure 5 below shows that lighting rebates were the least used incentive. Only 24 respondents said they had used them.



**Figure 5. Popularity of Incentive Types**

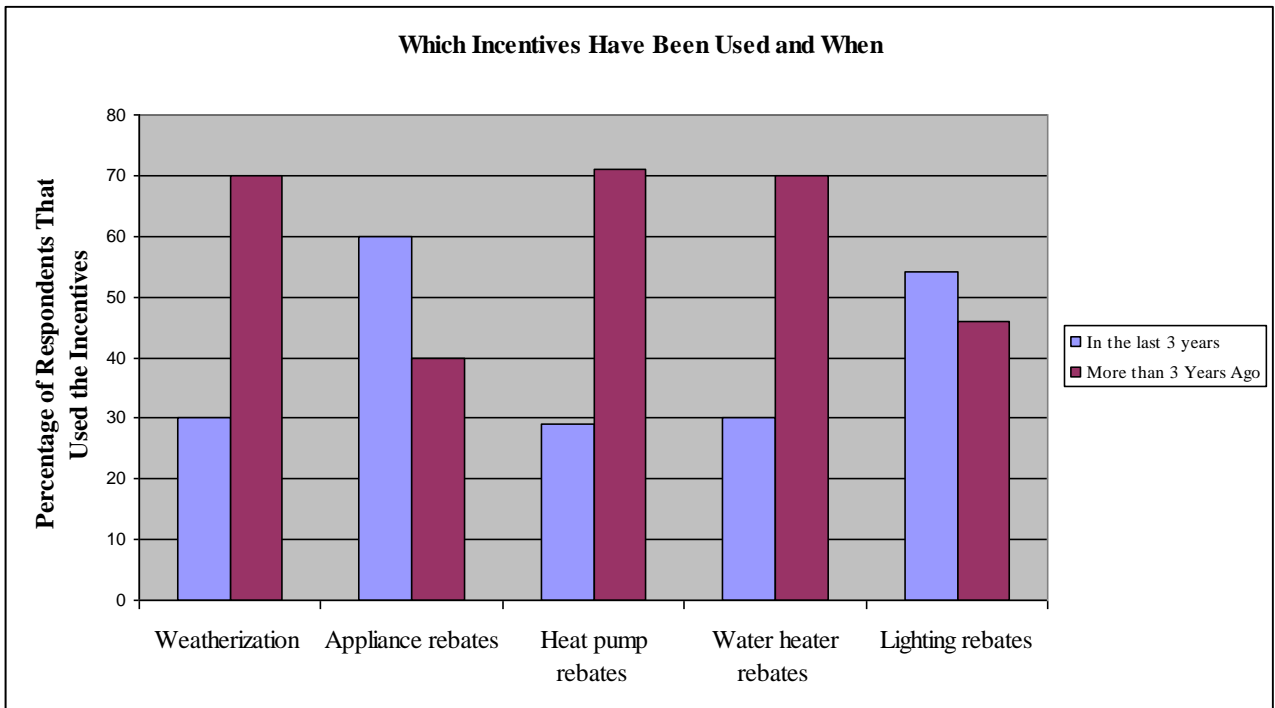
**5. Survey Question: When did you use incentives?**

With a majority of respondents as long-time CU customers, a time-lapsed snapshot of the popularity of conservation incentives indicates the life-cycle of programs and what programs appear to have a lasting appeal. Table 3 below shows the number of respondents who have used each incentive and when they were used as a percentage of the people who had used them.

**Table 3. Popularity of Incentives Used**

Incentive Type	Number of respondents who used	In the Last 3 Years	More Than 3 Years Ago
Weatherization	73	30%	70%
Appliance rebates	79	60%	40%
Heat pump rebates	56	29%	71%
Water heater rebates	70	30%	70%
Lighting rebates	24	54%	46%

Figure 6 shows most incentives have been used by CU customer respondents more than three years ago. Appliance and lighting rebates have higher percentages of redemption in this most recent BPA rate period which began in 2007 and ends in 2009. The other incentives seem to have been much more popular in the past.



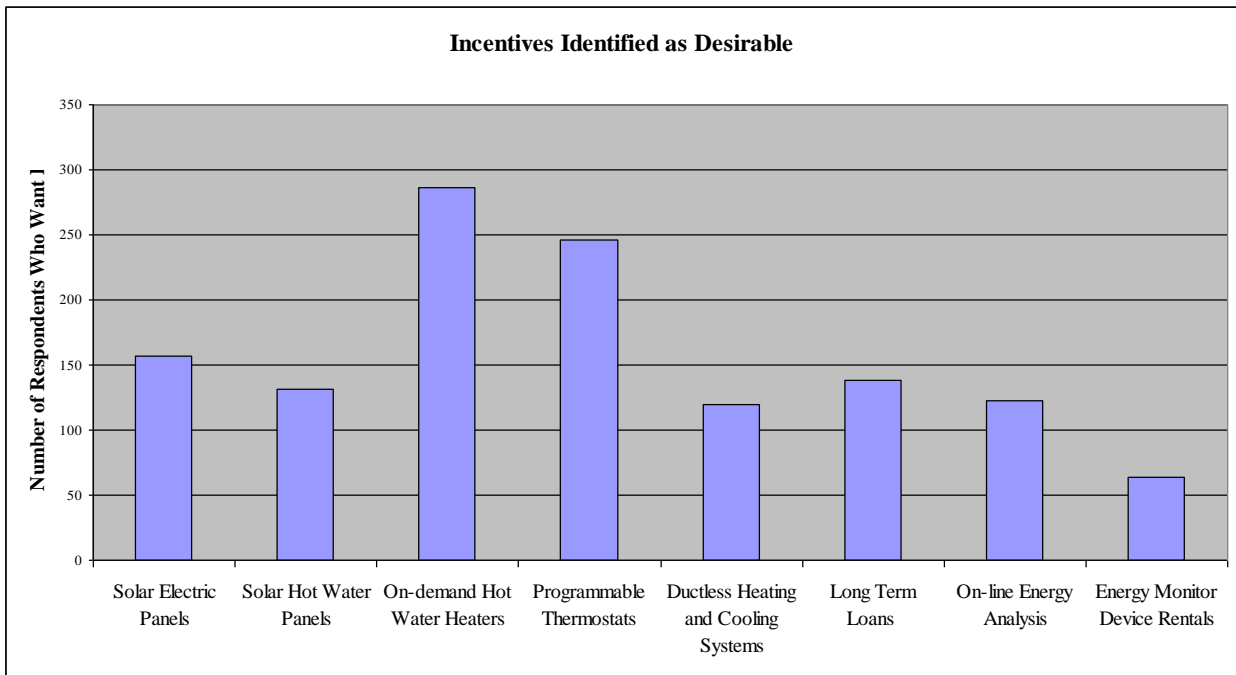
**Figure 6. Which Incentives Have Been Used and When**

**6. Survey Question: Market Saturation**

It appears that CU has not saturated the local market with energy efficiency incentives. The decline in participation in recent years can be attributed to several factors. First, the data show that marketing and promotional efforts have not been reaching the intended audience since 51% of respondents didn't even know there were incentives available. The *Reporter* may be lagging as an effective way to inform customers of incentives without having a convenient second media, like a website. Secondly, the data show a large number of customers are relatively new to Canby. Approximately 43.8% of respondents have lived in Canby less than 10 years and 15.5 % for less than 3 years. As more new people move to Canby and become customers it is important to promote the incentives to them, perhaps with a welcome kit that includes information about the energy efficiency incentives that are available.

**7. Survey Question: Which incentives do people want?**

Since the market is not saturated and there is room to grow, it's important to determine which incentives customers want so CU can invest in offering valued incentives. In order to answer this question, survey respondents were asked: "If Canby Utility offered any of these incentives would you take advantage of any of them?" The response choices were: solar electric panels, solar hot water panels, on-demand hot water heaters, programmable thermostats, ductless heating and cooling systems, long-term loans for upgrades, on-line energy analysis and energy monitor device rentals. The responses were analyzed by counting frequencies for each incentive category. Figure 7 shows how many responses fell into each category.



**Figure 7. Incentives Identified as Desirable**

The data show that the incentive customer respondents want the most is rebates for on-demand hot water heaters. At least 286 respondents requested this product. Programmable thermostats also scored high with 246 respondents requesting them. If CU decides to add incentives to their energy efficiency program these two items should be investigated further.

On-demand hot water heaters must be gas in order for customers to qualify for federal tax credits. Since customers have to have an electric hot water heater in order to qualify for CU rebates, investigating the benefits of offering incentives for solar hot water panels may be a better choice. Although they didn't score very high on the survey responses, with further education efforts, especially about any cost savings potential, CU could gain more support for this incentive.

According to the DOE, customers who have electric hot water heaters experience the largest cost savings benefit from installing solar hot water panels to heat or pre-heat their water and then use their water heater tank to store the heated water for use. DOE estimates that a family of two could save about 50% on their electric bill annually after installing a solar hot water system. Another benefit to CU customers is that a solar hot water system is something they could install now without having to wait for their hot water heater to need replacing. They could take advantage of both CU incentives and federal tax credits on qualifying heaters. A solar hot water system for a family of two is estimated to reduce the load of an electric water heater by about 2500 kWh per year and the life expectancy of qualified systems is 20 years, much longer than standard water heaters.<sup>11</sup>

**a. Energy Monitors**

Energy monitor device rentals received the lowest incentive score. CU is in the process of implementing a pilot program using *The Energy Detective* (T.E.D.) devices to measure how

<sup>11</sup> Save Money and More with Energy Starr Qualified Solar Water Heaters. U.S. Energy Star. Retrieved August 30, 2009 from [http://www.energystar.gov/index.cfm?c=solar\\_wheat.pr\\_savings\\_benefits](http://www.energystar.gov/index.cfm?c=solar_wheat.pr_savings_benefits)

customer awareness and behavior may change when they can see the electricity they are consuming as they use it. The low score for energy monitors may be an indicator that there will be little interest in the devices after the pilot phase. Another possibility however, is that respondents didn't like the idea of renting the device or didn't understand what "energy monitoring" meant. Further education and research should be done on this incentive to measure customer interest during the pilot phase.

***b. Long-term Loans***

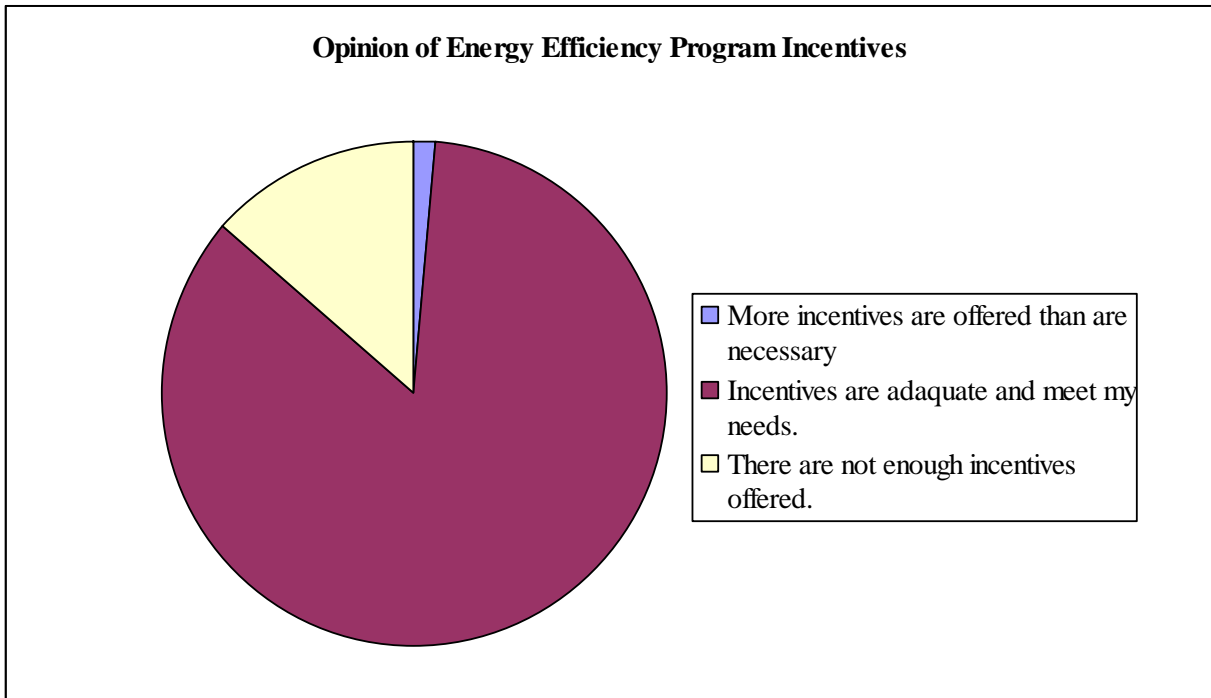
Some municipalities are working with banks to offer customers loans on renewable energy and energy efficiency projects. These loans will be longer term loans, 15-20 years, and will allow many people who don't have large amounts of cash to install projects like solar electric systems on their homes. These loans will stay with the property and if it is sold the new owner would take over payments when they take possession of the house and system. To measure the level of interest in long-term loans, the survey explained the concept and then asked if they would be interested if CU offered this type of program. 37% of respondents said "maybe." 21.6% said "yes" and 34.3% said "no." 7.1% did not answer the question. Combining those that said "yes" with those that said "maybe" gives a potential level of support of 58.6%.

***c. Time of Use***

CU is also working on a rate study that will allow a CU bill to show fixed costs and variable costs so customers can more easily see which part of their bill they can control by using less energy. Implementing Time-of-Use (TOU) billing is an option that would allow customers to switch their consumption to off-peak periods when energy is less expensive. To measure the level of customer interest in TOU billing, the survey gave background information about TOU stating that off-peak usage would be charged a lower rate and peak usage would be charged a higher rate. The survey then asked: "Would you like it if you electricity rates depended on when you used electricity?" 47.9% said "maybe". 31.3% of respondents said "no" and 14.9% said "yes". 5.9% did not respond. Combining the people who said "maybe" with those that said "yes" gives a potential level of support of almost 63%. The residential customers who said they did not want TOU may not have understood what times were peak and off-peak times and how the rates would be applied. Again, educating customers on the benefits and how it could affect them could produce a more receptive customer interest.

***8. Survey Question: Opinion of the program***

Finally, survey respondents were asked how they felt about CU's current energy efficiency program. Even though 51% of respondents didn't know CU offered energy efficiency incentives, 85% said there were enough incentives for their needs. 14% said they wanted more incentives to be offered.



**Figure 8. Opinion of Energy Efficiency Program Incentives**

**9. Survey Question: Green Power**

CU management wanted to know how willing people were to buy Green Power knowing had to pay more for it. Survey respondents were asked if they were currently purchasing Green Power and 79% of respondents said they were not. When asked why, 46% said it was because they didn't want to pay more for it. 37% said they weren't purchasing it because they didn't know what it was. 9.5% said they didn't know it was available and 7.2% weren't interested.

**10. Public Comments Written on Surveys**

The survey contained three questions that allowed respondents to write in their own comments. The comments provide some additional insight about the public's perception of CU's energy efficiency program. Survey respondents were asked for their comments regarding their experience using CU energy efficiency incentives (if they had used them). They were asked what other incentives they would like CU to offer and they were asked what more CU could do to help them conserve energy. All of the comments were compiled and divided into subject categories.

The subject that received the most number of comments was "Need more information/Want more education/Have questions". 75 comments were submitted saying they needed more information before they could decide if they wanted to use incentives or they didn't know any incentives were available or they wanted to learn more and wanted CU to teach them. Many people want to know more about the energy efficiency program and what incentives are offered. Relying only on the *Reporter* to inform the community of the program may not be enough now that so many people rely on the Internet for their information and take little time to read mail inserts.

The survey also received 28 comments about weatherization. Some people shared that they had already had weatherization done on their home and were enjoying the results. Many others

requested windows, insulation and other weatherization rebates from CU. These respondents may not know what “weatherization” means or don’t know CU offers these rebates already. CU should improve the marketing and promotion of the energy efficiency program beyond the *Reporter*.

**D. Correlative Statistics: Chi-Square Statistical Analysis**

A more sophisticated analysis determined if there was a statistically significant correlation between the likelihood customers would use incentives and demographic information. A series of chi-square or cross-tab tests were performed on the variables listed in Table 4.

This type of statistical test allows comparisons to be made between variables and calculates a score used to determine whether or not a relationship between variables is due to chance or due to something beyond chance. In order for a relationship to be considered statistically significant the Chi-square p-value must be less than .05. A score below .05 indicates there is less than a 5% chance that the relationship between two variables is due purely to chance. In other words, there is something else going on and further analysis should be done to determine the strength of that correlative effect.

The dependent variable for the entire series of chi-square tests was the survey question: “Have you ever used any of Canby Utility’s energy efficiency incentives?” The independent variables include the length of time respondents have lived in Canby and in their current home, the size and age of their home and whether they rent or own their home. Comparing whether customers are currently purchasing Green Power against whether or not they’ve used incentives is the final variable used in this analysis.

**Table 4. Table of Variables Used in Chi-Square Analysis**

Variable	Question Wording	Coding
<b><u>Dependent Variable</u></b>		
Used Incentives Yes No	Have you ever used any of Canby Utility's energy efficiency incentives?	Usedincentives
<b><u>Independent Variable</u></b>		
Time in Canby	How long have you lived in Canby?	Livedincanby
Time in current home	How long have you lived in your current home?	Livedcurnthome
Rent or Own	Do you rent or own your home?	Rentorown
Size of home	What is the square footage of your home?	Sqfthome
Age of home	What decade was your home built?	Decadehmblt
Green Power	Are you currently purchasing Green Power from Canby Utility?	Greenpowerpurch

The analysis revealed a high level of significance between some of the variables. Table 5 shows the significance level for each of the independent variables.

**Table 5. Chi-square Level of Significance, must be <.05**

Independent Variable	Significance Level	Interpretation
Time in Canby	.000	High
Time in current home	.000	High
Rent or Own	.000	High
Size of home	.051	Not high
Age of home	.000	High
Purchasing Green Power	.250	Not high

The data show that there is in fact a strong relationship between using incentives and the following factors:

- length of time a customer lives in Canby - The longer they live in Canby the more likely they'll use incentives
- length of time a customer lives in their current home - The longer they live in their home the more likely they'll use incentives
- renting vs. owning - Owners are more likely to use incentives
- the age of the house - The older the house the more likely they'll use incentives

There is not a high level of significance (no relationship) between using incentives and the following factors:

- size of the house
- purchasing green power

#### **IV. Recommendations for Strategic Realignment of CU's Conservation Program**

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<p style="text-align: center;"><b>Recommendation #3: Target renters for conservation education</b></p>
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The survey received a lot of feedback from renters. 52 people commented about the questions not applying to them or that they wanted to take advantage of incentives but they don't have control over the property. People requested we contact property owners, especially Hope Village, to inform them about incentives so tenants could become more energy efficient.

A common social problem exists with renters and energy conservation. Typically renters have less income than home owners and could benefit greatly from energy efficiency. A larger percentage of their budgets go toward heating and cooling costs than those with higher incomes. They often live in less energy efficient housing as well. However, the property owners would have to invest money in the property in order to increase efficiency. Since renters typically pay their own utilities, there is little incentive for property owners to invest their own capital.

CU could address this difficult problem two ways. First, property owners could be targeted with promotional information about the incentives that are available and the social benefits of improving the energy efficiency of their properties. CU could also develop some new incentives for property owners who rent to CU customers. Second, educational programs about conservation through behavior changes should target renters. Many people requested help learning more about conservation from CU. Renters may be very receptive to learning what they can do to reduce their electric bills.

<p style="text-align: center;"><b>Recommendation #4: Collect e-mail addresses and move toward web-based communication</b></p>
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In the public comments section some people requested information about the program published on a website. A CU website could be used to promote the program, accept on-line bill payments and quickly communicate with customers during emergencies or extreme weather conditions. It could also be used to post an on-line version of the *Reporter* in English and in Spanish as well as post a full version of this report for public viewing of the survey results.

In addition to a website, CU should begin collecting e-mail addresses from their customers. Having e-mail addresses would allow future surveys to be performed for a fraction of the cost. The total cost of conducting this survey was \$7,303. For those customers without e-mail addresses a mail survey could still be sent but by collecting the bulk of responses electronically the cost could be significantly reduced.

Many surveys today are done through on-line services like Survey Monkey<sup>12</sup>. Survey Monkey allows one to develop customized web surveys and allows up to 1000 responses for about \$20.00. Responses over 1000 are charged at \$.05 each. By utilizing a web survey, respondents simply click

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<sup>12</sup> Survey Monkey Pricing. Retrieved August 20, 2009 from <http://www.surveymonkey.com>

on a link and answer questions on-line. Data is collected by Survey Monkey in electronic format so the staff time involved in transferring data is eliminated. Since there is no paper to mail the cost of paper and envelopes, printing, folding, stuffing and postage is eliminated as well. Survey Monkey provides all of the survey response data in an Excel spreadsheet which can then be used for analysis. A cost comparison is shown in Table 6 below.

**Table 6. Cost of Survey**

<b>Task</b>	<b>Cost (\$)</b>	<b>Cost (hours)</b>	<b>100% Web-based Survey</b>
Question Design		16	16
Layout		8	3
Printing, folding, stuffing of envelopes	\$4,749.00		\$0.00
Business Reply Permit	\$185.00		\$0.00
Outgoing Postage	\$1,227.00		\$0.00
Postmaster Accounting Fee	\$585.00		\$0.00
Postmaster Incoming Postage	\$557.00		\$0.00
Data Entry (Transfer data from paper to electronic format)		81	0
Web Survey Cost - 1000 responses			\$19.95
<b>Total</b>	<b>\$7,303.00</b>	<b>105 hours</b>	<b>\$19.95</b>

**Recommendation #5:  
Invest in reaching Spanish speaking customers in writing**

Only seven Spanish language surveys were received and included in the analysis for this report. If Canby Utility is sincere in their desire to include their Spanish speaking customers, a consistent financial investment should be made in professional written translation services. An on-line service like Babblefish, although free, often provides literal translations and doesn't reflect the same degree of meaning that would be provided by a human translation. Translations can often include grammatical errors and use words that aren't appropriate for the intended purpose. To demonstrate the deficiencies of an on-line service like Babblefish, simply translate a passage from Spanish to English. Often the translation is so poor it is impossible to even decipher the intended meaning of the passage.

Using an in-house Spanish speaker to review Babblefish translations may not correct these problems if that person's job description doesn't include translation services. They may be more comfortable saying a translation is acceptable than taking time out of their regular responsibilities to re-translate material. Also, if an in-house Spanish speaker has not been trained in using a certain language style or level of education they may not know what Canby Utility is really looking for in the translation. Specifically, writing survey questions requires a degree of skill in order to avoid bias and produce robust survey results. Without training in how to write survey questions, an in-

house translation reviewer won't be able to provide the same high quality survey language that an English survey would contain.

In addition to professional written translation services, Canby Utility should consider other methods of communicating with Spanish speaking customers. Cultural differences make it likely that fewer Spanish speaking people will respond to surveys. Performing focus groups or intercept interviews may be a better way to gather information from this population.

Although investing in professional written translation services will increase costs, it should also be considered simply because of the image that CU is creating in the Spanish speaking community. Poor grammar, mis-use of words and incorrect sentence composition makes it appear that CU is unprofessional, has uneducated Spanish speaking staff or is inconsiderate of Spanish speaking people. It would benefit the organization to invest in improving their public image to their Spanish speaking customers.

**Recommendation #6:  
Tracking by address**

Tracking energy efficiency program participation by property address in addition to customer name would allow for data to be geo-coded and displayed spatially. Since many program incentives stay with a property when the property ownership changes, this would be a better way to keep track of how much of the property in Canby has been weatherized and upgraded over time. Spatially analyzing program participation could also be useful in more accurately measuring participation because it would override those customers who are renters and are not tied to their property. Since renters do not have control over using incentives or not, being able to analyze the property itself and target the property owner when advertising incentives, would be a more effective way at increasing participation. Spatial analysis would also allow for measuring changes over time and identifying neighborhoods or pockets of customers who could benefit from incentives but may not know what is available.

**Recommendation #7:  
Develop an Energy Efficiency Strategic Plan**

The State of Oregon initiated the energy conservation effort in the 1970s and CU has always strived to meet the state mandates for conservation programming. However, CU has not yet fully incorporated the idea of conservation as an energy resource into the mission of the organization. A formal, board adopted, CU Energy Conservation Strategic Plan that makes energy conservation the intended goal has never been created.

As discussed in the introduction of this report, “energy efficiency” is different than “energy conservation”. Energy can be used more efficiently without conserving any. As Dirk Borges, CU General Manager said, conservation only works when customers are educated and on board with the intent and know how to behave after upgrades are made. If they have more money in their budgets because they are using energy more efficiently they may increase their consumption.

A strategic plan would help guide the organization through periods of change by keeping a focus on the conservation goal and having strategies outlined in advance. This study was conducted because CU is approaching the end of a 3-year BPA rate period and is faced with the option of continuing with BPA incentives or developing their own program. These questions could more easily be answered if the organization had a long term strategic plan in place.

The Plan should include a vision statement, a set of goals and objectives as well as a set of metrics to be used as performance indicators. Whether managing the program in-house, through ESG or another consultant, using BPA's program or developing its own, CU needs a formal plan that will guide the organization, make the intentions clear and have a way of looking back and measuring the results.

## V. Conclusion

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This report provides informed answers to the questions posed by the CU Management Team. It appears from the survey that the local Canby market has not been saturated by energy efficiency incentives. Although nearly everyone tries to conserve energy through behavior changes, only half of respondents knew there was more they could do by taking advantage of incentives.

In addition to long-time customers that weren't aware of the incentives, almost 44% of the respondents are relatively new to the area and more people move to Canby every year. There is room to expand the promotional efforts of the existing program as well as expand the incentives to offer some items customers requested. The survey respondents indicated a strong interest in on-demand hot water heaters and programmable thermostats. Customers with electric hot water heaters could experience benefits by installing solar hot water panels to pre-heat their water than they would experience with on-demand hot water heaters. Therefore, CU should investigate the feasibility of offering solar hot water panels.

Finally, the survey data show that not very many people are buying Green Power. Almost half (46%) of the people who aren't buying it chose not to because of the added cost. However, the people who don't know what it is and the people who didn't know it was available make up a larger percentage of the people who aren't buying it. (46.5%) Further promoting Green Power as a product offering may lead to more people purchasing it, especially when the economy recovers from the current downturn.

This report is an important first step at making improvements to CU's Energy Conservation Program. Combining data about the program's history and lessons learned from the past with fresh customer survey data forms, a good foundation to build upon. Performing intercept interviews, focus groups, educational workshops and pilot projects will help CU gain even more information about how to design an effective Energy Conservation Strategic Plan for the organization as well as what incentives to offer customers.

The next phase of research may be to educate customers about the upcoming changes to power pricing including "Tier-2" power and how they can help Canby mitigate the effects of market-based Tier 2 rates. After learning that rates are going to increase, are there more incentives they'd like to have? Does having appropriate price signals create an interest in becoming more proactive about energy use? Do customers want to learn more about conservation methods at workshops? Further research is needed.

## **VI. Recommendation Summary**

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- Develop a CU Energy Conservation Strategic Plan
- Improve record management
- Investigate the cost and benefits of using a different firm for plan management
- Target renters
- Web-based communication
  - Build a website
  - Collect e-mail addresses of customers
- Promotion of the program
  - Utilize program promotional services of plan management firm
  - Change marketing and promotional approach to coincide with the seasons
  - Post incentives on website
  - Increase promotional efforts to reach broader audience
  - Increase educational and outreach efforts
- Invest in high quality translation services
- Track participation by address
- Investigate additional incentives
  - Solar hot water heaters and programmable thermostats
- Improve energy efficiency and conservation within CU
  - Show customers CU is fiscally conservative by becoming more energy efficient
  - Install a demonstration project such as solar hot water or solar electric panels on the CU roof
- Work with City of Canby Community Development and Planning
  - Evaluate building codes and improve efficiency standards. Change land use planning codes to require buildings to meet efficiency standards.
- Commissioning
  - Develop a follow up/commissioning program to verify kWh are actually saved.

## VII. Public Comments

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### *Want Education/Have Questions/Need more information (75)*

1. We are thinking of selling a big 2 story and either buying or building a one story in Canby. We would like info on green bldg - this is really important to us.
2. All are good ideas but would depend on initial capital cost and how much the rebate would be.
3. Ductless heating and cooling; What is that and how does it work?
4. Don't understand process
5. Don't know if any apply already have energy efficient appliances, extra house insulation, gas heat, water heater, etc. use fluorescent lights, etc
6. Ads to help educate on what savings could be done. House calls educating. I have been VERY happy with CU and the staff is awesome to work with. A little more education on the products offered would be beneficial.
7. Advertise and promote the program better. We've only seen the state and BPA type programs.
8. Advertise programs more
9. Announce programs more. Solar, new furnace etc.
10. I don't know what is available I would like to hear more.
11. Communicate with the community. Stop charging extra fees for everything. The fees you charge are ridiculous.
12. Continue making customers aware of conservation need. Have high school students present conservation practices to elementary schools.
13. Continue the energy conservation tips in the newsletter.
14. Continue to educate.
15. I have to call tomorrow to find out if you have rebates for insulation and vinyl windows & double paned, and attic fans.
16. Could some go to schools and give classroom talks to our children?
17. I would like to know more about the incentives.
18. If I could afford to weatherize, I certainly would
19. Need an update on incentives available and how to take advantage of them.
20. Need to publicize more what they are - how they work - how to get or use them
21. Not sure what it's all about. Need more information
22. Educate
23. Educate on what's available and how to use it.
24. Educate us
25. Education

26. Education in schools, by example and lessons, teach youth.
27. Education literature for Spanish speaking tenants.
28. Emphasize where the rate breaks are, their benefits, make it visible. Actively present energy incentives and rebate, rate breaks - make it visible
29. Give further advice regarding what incentives you offer.
30. Have education classes on energy conservation. New product releases and how too
31. Help us by giving more information on how to save energy.
32. We have been satisfied with rebates received. Didn't know there were lighting rebates.
33. Would take advantage of any incentive as part of an upgrade decision
34. Not sure what would serve us best.
35. I need more information.
36. We need more information sharing on what's available.
37. Will have to look into this when upgrading.
38. I don't know what green power is. Could you send me information about it?
39. Identify cost effective, real opportunities to save energy and money.
40. Inform us of rebates and such.
41. Just keep us informed about energy savings methods.
42. Just send reminders once in awhile about behavior changes at home save energy & money
43. Keep asking us to conserve.
44. Keep putting tips and ideas in the newsletter.
45. Make people aware of savings they could achieve.
46. Mention energy saving tips more often in newsletter (i.e. Encourage programmable thermostats)
47. Monthly hints even if repetitive. I didn't know it saved to unplug things. I thought having it "off" was enough.
48. Monthly updates on how much energy was used from month to month and monthly reminders on how to conserve energy.
49. More info on incentives and long term loans.
50. More information on net savings on energy by using various products afore mentioned.
51. Offer classes to educate us how to DIY or show us how the energy savings effects our bill.
52. People need to be made more aware of the incentives and how they work. I already try to not use a lot of electricity during peak demands; at this time I don't think there is much difference in either rate.
53. Please advise me.
54. Provide data that shows the potential savings of installing energy efficient products.
55. Provide names of people that weather strip doors and do caulking etc.

56. Public education about tips to remember info on top 5 or 10 energy wasters. Publish peak vs. low cost times of usage during the day and week. What are the less expensive or cheaper times of usage? This will encourage people to use the low cost time for laundry, watering lawns etc.
57. Put incentives on webpage so people know they exist and will be willing to buy energy efficient appliances. Provide rebates for energy efficient freezers.
58. Send a monthly energy tip on our monthly bill.
59. Somehow show what difference it would make to do the little things
60. Send out monthly e-mail tips to remind people to turn off lights etc.
61. Send out more info on how to conserve. Offer more incentives or send out comparisons so people can see small changes do make a difference.
62. Tell us about incentives and how we can apply. We installed all new energy efficient appliances, heater, air conditioner and water heater 8 years ago.
63. I would need more information for any incentives
64. Didn't understand process
65. Don't know how to tell if I'm buying green power. I didn't see a color code on the electricity.
66. Don't know if we are currently buying Green Power
67. Can't answer [what incentives I want] without knowing the cost to benefit ratio in years.
68. Would have been great that some incentives were offered at time we make changes.
69. I would like to know more about incentives.
70. I would be interested in learning about above rebates. I was told you can't use programmable thermostats with heat pumps.
71. If the rebate is large enough I may be interested.
72. I'm planning on getting solar panels and Sunwise who I'm going through says you don't offer the incentives for solar panels.
73. Might be interested but I have no idea of the costs.
74. Maybe others listed.
75. Maybe but would have to know how much the rebates would help.

***Weatherization (27)***

1. After we had our house weatherized our utility bill went from level payment of \$122 to \$91 a month. I call that very impressive!
2. CU had a weatherization program in the 80s. We took advantage of it, more insulation in the crawl space and attic. We installed vinyl windows in 2005. It helps with heat saving.
3. Did use weatherization, insulation. Home was heated with electric until 2000 then changed over to gas and a/c.
4. Had an audit. As a result I replaced the sliding glass door. Replaced all the windows with energy efficient windows and added insulation to my attic.
5. Replaced windows, no incentive in 2008

6. The weatherization program was the best! It helped a lot!
7. Give discounts to those who best conserve energy in their house size category of 1501-2000 square feet etc.
8. Have CU analyze my home to see what energy efficient programs are for us!
9. Help me weatherize my home.
10. We had all outside walls covered with ½ inch foam under new siding, but it did not qualify for incentive money because the crawlspace was not insulated.
11. We had an energy audit prior to replacing siding and windows. As I recall, there were strings attached that either dictated a particular type of window or that it be installed by a contractor. We did the project ourselves so it would have actually cost us money to take the rebate. Hopefully, future incentives will not come with so many strings.
12. Want Insulation - Wall, Floor, Ceiling
13. Want insulation
14. Want rebates for energy efficient windows
15. Want additional insulation
16. Summer cooling such as window treatments or other things.
17. Send someone out to survey my house and tell me where I could conserve.
18. My house is already pretty conservation minded.
19. Insulation for new windows and solar.
20. Weatherization was my primary goal.
21. Want home evaluations.
22. Want rebates for duct replacement.
23. Upgrade insulation.
24. Weatherization
25. Weatherization
26. Windows
27. Windows

***Renters (52)***

1. As renters we are the users and pay the bills but the owner probably takes the incentives.
2. Because I rent I will not put my own money into energy rebates
3. Can't use incentives because we rent.
4. Can't do additional things to our homes in Hope Village unless given approval by the board.
5. We rent, [upgrades] would be up to the owner
6. Apartment
7. Can't take advantage because I rent.

8. Check with the Meadows manager regarding what you can do to help. The A/C in the summer seems to be too cool sometimes.
9. Depends on landlord
10. I am a renter. Won't invest in owner's property.
11. I am renting. Talk to the landlord.
12. I live in an apartment.
13. I live in government controlled housing.
14. I rent an apartment.
15. I rent.
16. I'm a apartment renter
17. I'm not interested because I rent.
18. I live in a senior mobile home park and quite a few neighbors have availed themselves of your services and all I've heard has been praise for the work and the workers. Keep it up!
19. I live in an apartment.
20. Don't know year of home, not a homeowner.
21. I rent.
22. I live in Hope Village. Have no control over changes
23. The incentives are for the building I live in and the people I rent from.
24. Rental doesn't do incentives
25. Information to give to landlord.
26. Landlord controls all of the above. Therefore, we could not take advantage.
27. Landlord controls this
28. You can have the apartments explain in a letter, etc. to all people living here
29. We rent so we can't use incentives. We really try to conserve.
30. Work w/ owners of apt buildings to upgrade, weatherize, etc energy efficiency in apts. Great survey for homeowners not so much for renters. Renter's hands are tied as to what they can install in their home, especially apts. Would be great to see a program designed for apt dwellers and owners
31. Send information to my landlord.
32. Please note that I am an 82 year old woman living in a senior complex (renting). If I were a home owner many of the options would be very attractive but I cannot make changes here.
33. Nothing. We conserve energy very well and our monthly bill is around \$40.00! We rent an apartment.
34. Not applicable for renters
35. Live in Hope Village, the residents have no control over appliance etc. - life time lease - all is furnished. Management furnishes all appliances, repairs them and the house. Had a programmable thermostat put in when we bought our home.

36. Live in apt., Not interested in learning more at this time
37. Letting landlords know about programs.
38. I rent an apartment so I can't use incentives.
39. I live in Hope Village. Even though I paid for my home it is a lease.
40. I live in Hope Village. All taken care of for us. Have no say so on changes.
41. I live at Hope Village and have no control over what is done here.
42. When buy home will do more.
43. We rent.
44. We rent so these questions aren't applicable.
45. We rent so most of this is up to the landlords.
46. We live in rental apartment
47. We don't own a home so we're not in a position to replace these things.
48. Not sure. This is a rental house.
49. Not my decision. I rent my housing.
50. None apply to renters
51. My landlord would have to install them.
52. We live in an apartment and can't use incentives

***Appliances (5)***

1. Want a rebate for a new fridge
2. Want rebates for efficient appliances, siding
3. Want energy efficient appliance rebates
4. Appliances
5. Front loader washer and dryer (high efficiency)

***Heat Pumps/Attic Fans – Rebates wanted (6)***

1. Heat pump
2. Heat pump to replace "electric" heat.
3. Furnace rebates
4. Rebates for heat pumps
5. Attic fan
6. Attic fans (solar)

***Solar/Wind Wanted (6)***

1. Wind
2. Wind energy
3. Wind power for homes

4. Encourage solar panels - recommend company and installer, give rebates and loans
5. Wind Power
6. Put solar panels on public buildings.

***TOU/Long-term loans/TED (12)***

1. TOU! It punishes people for use during hours you select to charge more. Everyone should pay the same rate period!
2. I'd like to know more about TOU.
3. How would you know when we use the most electricity in a day?
4. How would TOU work for people who are always home due to retirement?
5. I need more facts on TOU to know for sure if I want it.
6. Low interest loans for upgrades-windows, insulation, heat pumps, on-demand water heater etc.
7. Maybe offer loans to customers with good credit to upgrade their heating systems.
8. Please don't do TOU. I live in a mobile home.
9. Provide energy measuring devices.
10. We think you do a great job already.
11. I'd like an energy monitor if it's available at no charge.
12. I'd need to see current data on TOUs to know if I want it.

***Rates (8)***

1. If rates group I would probably get more careful than I presently am.
2. Just keep the rates where they are, nice and low!
3. Keep costs and taxes low.
4. Keep costs low!
5. Keep minute charge down.
6. Lower the basic price of \$9 to maybe \$7. Also show price of each kilowatt on bill. Rate scale
7. Reduce the cost of green power so more people could afford to purchase it.
8. Threaten to increase prices. It might make people conserve at peak times.

***Can't afford incentives (4)***

1. Couldn't afford any of them
2. Can't afford any at this time
3. Can't afford it.
4. Can't afford much.

***Website (2)***

1. Provide this survey and incentives on-line, unless you already do this. I haven't looked yet.

2. Put forms on-line. I lost paperwork.

***Already have energy efficient home (9)***

1. New home, energy efficiency not necessary
2. My house is new.
3. New house
4. Newer home, already have energy efficient devices
5. We have an energy efficient home.
6. Our home is new and has energy efficient appliances and technology.
7. Have a house is new
8. Just bought the house, its in great shape energy-efficiency-wise
9. We remodeled last summer and have all new high efficiency appliances as well as a heating/cooling system with auto thermostat (new furnace and heat pump. How do we qualify?

***Other Comments (65)***

1. Teach kids to turn off lights.
2. Have more blackouts.
3. All savings have been used up by the greedy bastards from Texas.
4. At age 83 I'm not interested in change.
5. AC/heat, water heat, dryer and refrigerator and freezer probably use the most energy in my home. None of these appliances show signs of wearing out any time soon. Incentives would have to be large enough to justify throwing away perfectly good appliances to replace with more efficient equipment.
6. Afraid more incentives will just increase taxes.
7. CFL bulbs cause severe headaches for some people (like fluorescent) need to improve/fix before we can use them, would insulate attic more with weatherization help
8. Easy to apply for and quick payment. Canby Utility is extremely helpful.
9. I don't like tax write offs because I'm retired and can't use it.
10. Have friends that have used them. They were happy. I built my house with the high efficiency windows, heating and appliances.
11. I tried-they said I couldn't on a new heat pump and furnace, got a new hot water heater-don't even want to ask and get turned down again
12. I used incentives from Energy Trust of Oregon after I built my home.
13. Convince my wife we need to conserve energy.
14. I think you are doing a great job.
15. I think you're great – free fluorescent bulbs.
16. I'm satisfied.

17. Incentives are always great!
18. It worked and was worthwhile.
19. I never got my rebates back!
20. I have been using low energy light bulbs but have found them not lasting as long (life of the bulb). Therefore, they are more expensive to use. Difficult to justify from a cost standpoint.
21. Needs more money to make worthwhile.
22. I haven't needed to replace anything yet.
23. Recently redid our lighting. You were very speedy in inspection and reimbursement. Easy to work with. Thanks
24. We took out our electric heat panels, water heater and electric stove 15 years ago! We put in new energy saving windows. We have never been given a "credit" for these elective savings investments! Replaced with natural gas!
25. Credits for meeting conservation goal on a monthly basis.
26. Have some type of an adaptor to plug into outlets that will shut off the household appliances or equipment. When item is already turned off you wouldn't have to unplug it to reduce power running through the appliance or equipment.
27. Have energy saving refrigerator and stoves in kitchen.
28. Was told when purchasing washer - rebate for energy efficiency - possible had to "work" at finding source
29. We bought a new heat pump from S&J Heating in Canby on 4/13/09 but didn't qualify for incentives because S&J heating isn't an approved HVAC contractor. We feel if it a new heat pump it should qualify.
30. Keep May-like weather here year round.
31. Help! I see Canby Utility trucks and workers almost daily. Do they have time for advice? They seem to have plenty.
32. I have an older house with ceiling electric heat. It switches the heat 110V directly at the thermostats, does not use a low voltage control circuit. I cannot find a 110V timer thermostat. If CUB would help with these type issues, (help find this type equipment, for example) this would help. Have you looked at auto load mgmt (demand side mgmt)? Not sure if this really works yet
33. If we could afford it.
34. Incentive rewards for reduced energy consumption. Encouragement of tax incentives at state level.
35. Install a more efficient heating system.
36. Installed new windows, but because I didn't do them with early install of insulation, there was no rebate. I think there should have been.
37. Invest in and build a hydrogen power plant, using bonds etc.
38. When we moved into our home & landscaped, we used the incentive for using 'or having' less grass less than a certain square footage and putting in a drip system.

39. Let us rent device to check what different appliances use.
40. Live on fixed income.
41. Obtain brighter screw-in bulbs that are efficient.
42. Offer energy efficient light bulbs etc at cost.
43. Offer rebates
44. On line energy analysis
45. Rate (by brand & model) energy efficiency of water heaters, clothes washers & dryers, refrigerators, light bulbs, etc.; Don't want to pay for the facilities to make it possible. You could us it to charge a premium rate for peak use times.
46. Put locks on thermostats so wife cannot get to it! Motion sensors in rooms so when wife leaves lights go out!
47. Put a meter on my kids room and make them pay the bill.
48. Present program is very productive
49. Probably [could do] nothing [to help] that isn't too costly for my allotment. I do not go into debt.
50. We have done several things to increase efficiency, such as double panes, high-efficiency furnace, CFDs, etc. We received tax breaks on some but did not know we could also get \$ from CUB.
51. Take out your door hanger fee of \$25 for late payment. It is a form of further oppression for the poverty stricken in our Canby community. Now that we are in an economic down turn your policy of putting people further in debt to you does not help people!
52. The incentives you provide already cover our specific needs otherwise I believe the bulk of the responsibility resides with us.
53. Depends if I need to replace something then I might look for an incentive.
54. Upgrade water heater, furnace and insulation/windows
55. Solar pump for our little fish pond and water fall.
56. We are retired and will replace water heaters, appliances etc when needed with energy efficient models.
57. We are satisfied.
58. More and higher incentives
59. Share information in Spanish. For consumers have in Spanish every month in the billing statements.
60. What I believe that Hispanics don't know that there are incentives, what are they? When one makes a new contract, customers are not told about them.
61. Informing what forms are there and what benefits there are for the growing Hispanic community here in Canby. The information will be very helpful in Spanish....Many people don't understand English.
62. I didn't know they offered this energy incentive program.

63. Putting in glass in the all of the houses, self-employed?
64. Reduce somewhat the charges of service of low-income.
65. Save energy = save money

***Water – Survey did not ask about water but comments were received anyway. (5)***

1. Those little things that go in the faucet spouts to help save water are not good. Slows the flow and we have to run the water longer.
2. Collect and save rain water for gardening
3. Gray water irrigation.
4. Rainwater collection rebates
5. Water efficiency

## VII. Appendix

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Internal draft CU Memo. Author unknown. (1992). Canby, OR: Archived Records

Canby Utility Board Conservation Programs. (1997).

Oregon Municipal Energy and Conservation Agency of Marion County Resolution

Canby Utility memo. Recommendation for Portland General Electric to Implement and Manage Canby Utility's Conservation and Renewable Discount Program

BPA Planning, Tracking and Reporting System. Version 2.0. Retrieved August 28, 2009

Gosvener, M. Efficiency Services Group. Canby Utility CRC FY07-FY09 Summary

Residential Survey – English

Residential Survey – Spanish

Commercial Survey

Coding Manual

Energy Efficiency Program Management Firms

Portland Energy Conservation, Inc.

ECOS Consulting

Conservation Services Group

Canby Utility Board Conservation Programs

Miscellaneous Memos

**S**tacey Glenewinkel conducted the Energy Conservation Program Analysis for Canby Utility as an Oregon Fellow with Portland State University during the summer of 2009.

After graduating cum laude with a BA in Economics and Environmental Studies from Western Washington University, Stacey moved on to pursue a Master's degree in Urban and Regional Planning and a Graduate Certificate in Real Estate Development at Portland State University.

In addition to her formal education, her experience as a high-volume project manager in a fast paced, deadline driven industry gave her the skills necessary to produce this high quality product in only 10 weeks. She brought her knowledge of many types of innovative sustainability practices together with her planning and research experience to develop a series of recommendations to help Canby Utility improve their Energy Conservation Program.



Stacey, a LEED AP, currently holds a position on the Board of Directors of the Air and Waste Management Association. A&WMA is a professional, non-profit, organization that promotes global environmental responsibility and increases the effectiveness of organizations to make critical decisions that benefit society.