An Evaluation of Energy Trust of Oregon's Refrigerator Recycling Program

A Report Prepared for
Energy Trust of Oregon

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Executive Summary

Overview of the Program and the Evaluation

This report presents the results of a process and market evaluation of Energy Trust of Oregon's (ETO's) Refrigerator Recycling Program. The Refrigerator Recycling Program was implemented in the middle of 2008. This report provides an overview of its first full year of operation.

The Refrigerator Recycling Program provides incentives to customers to recycle old refrigerators and freezers. Removing older refrigerators and freezers from the grid can substantially reduce the load on the grid, producing significant electric and environmental benefits.

The units are removed from customer premises without charge. They are taken to a recycling center where they are de-manufactured. The purpose of the evaluation is to examine the results of the first year of operation with an emphasis on the January to June 2009 period, to assess the operation of the program, and to make recommendations for changes and improvements.

This report is based on in-depth interviews with ETO staff, contractors, and other actors. Program participation data obtained from JACO was evaluated and used extensively in producing this report. The results of an August 2009 survey of 307 households that participated in the program between January and June of 2009 are also included.

First Year Accomplishments

From June 2008 to the end of June 2009, the program removed 7,089 units, 5,563 of which were refrigerators (78 percent). The mean consumption at manufacture was 1,087 kWh per unit for refrigerators and 1,070 kWh per unit for freezers. The estimated gross annual savings for the first year of operation for the program using kWh consumption at manufacture is 7.2 GWh, and the consumption assuming degradation is 11.5 GWh. We estimate that without the program, 46 percent of the units would still be on the grid, and 47 percent would have been taken off the electrical grid during the year or at some point in the near future. What would have happened to the remaining 7 percent of units is unknown.

Summary and Recommendations

After a slow start in 2008, the program significantly increased the number of units that it was removing in the first half of 2009. This represents significant progress. The program is achieving its goal of removing older refrigerators. According to the survey, only a small percentage of the units (15 percent) that were removed were working but had not been plugged in.

An important reminder of how much is left to do is the fact that participant households still had an average of 1.37 refrigerators after they participated. **It is recommended that more attention and resources including some research resources be focused on increasing the number of second units being removed.**

A key marketing event was a bill insert in the Pacific Power service territory. The data show that participants are most likely to become aware of the program through bill

inserts and contacts at appliance stores. Media marketing produces many fewer sign ups although it may be important for building awareness and longer-term participation. The bill inserts are particularly important in targeting households for second unit removal. **It is recommended that marketing resources be concentrated on bill inserts, direct mail, and contacts through appliance dealers and to a lesser extent on other forms of marketing.**

Convenience was the most important motivation for participating in the program followed closely by the incentive. Slightly more than 80 percent of participants say they would have participated without an incentive. Concern about the environment is also a factor in people's decision-making. **It is recommended that marketing efforts stress ease of use and the convenience of the program.**

There are information gaps. Slightly more than a third of respondents did not know about the cost of operating a second refrigerator. **It is recommended that cost savings from not operating a second refrigerator be included with the incentive when presenting the benefits of the program.** The annual operating savings may be as much as six times the value of the incentive.

Customers used both the telephone and the Internet to sign up for the program. The telephone was used most frequently. Customers cited convenience as a key reason for using the telephone. There is also a clear correlation between the amount of Internet use and using the Internet to sign up.

Many people were not aware that they could sign up online and indicated that if they had known that, they might have used the Internet. There are also some hints that people may prefer the human interaction. We believe that the telephone option will continue to be the preferred method for the foreseeable future. **It is recommended that ETO maintain the telephone option and enhance it if possible. It is recommended that the ETO make the Internet option more visible to potential participants.**

Without a nonparticipant disposer survey, it is difficult to judge the value of the collaboration with Sears to remove appliances and recycle them when new appliances were delivered. There is good evidence that information provided by the retailer is an effective way to reach one segment of customers. There is also evidence that there are benefits for both ETO and Sears. It appears that JACO and Sears worked together effectively. The process evaluation shows that some of the concerns about reducing net-to-gross when working with retailer appliance dealers can be effectively addressed. **It is recommended that ETO continue to work with Sears to recycle appliances. It is recommended that ETO consider including one or two additional new appliance dealers. It is also recommended that ETO conduct a nonparticipant disposer survey that will provide data to help assess the degree of free-ridership associated with working through appliance retailers.**[1]

Customer satisfaction with the program is quite high. Ninety percent or more of the respondents said that they were completely satisfied. On the flip side, only one percent expressed complete dissatisfaction with the program. Compared to other types of programs, these satisfaction scores are quite good. One hundred percent of respondents said that they would participate again. Scheduling and removal received

[1] Free-ridership occurs when customers who would have had their units removed by the appliance dealer without an incentive receive an incentive to have it removed. More generally, the appliance program should result in an increased number of units removed from the market that wouldn't have been removed through some other channel.

good ratings. There are a few areas where improvements may be possible. One of these is increasing the percentage of people who are contacted shortly prior to the scheduled removal. **It is recommended that ETO examine the ratings and see if there are other areas where improvements could be made.** We warn against spending significant resources to make improvements that may result in few gains in satisfaction. It is important to address the concerns of people who complain but they are literally the one in one hundred.

The tracking system and the data flows were examined. Currently the resources expended on quality control are necessary, but some basic changes would reduce the need for these requirements. **It is recommended that some method of obtaining customer names and addresses be worked out with the utilities as soon as possible.** Not having the names of account holders is a serious detriment to good customer service.

It is recommended that if it has not already happened that addresses be normalized before they are sent to JACO.

There are capabilities in the JACO software to conduct brief surveys with customers. In fact, we believe that JACO may already do some of this for its own purposes. **It is recommended that ETO take advantage of these capabilities to gain real time feedback. We have provided some recommended survey questions to be asked of customers when they call. It is recommended that a rigorous protocol be established to do this.**

We have provided some detailed recommendations concerning the structure of JACO's databases. **It is recommended that these or something similar be implemented if the capabilities are not already incorporated into the software.**

It is strongly recommended that ETO and PECI staff visit the JACO call center to see how the operation works. It is also recommended that ETO provide briefings to the JACO call center staff on their needs and reasons for needing quality data. These steps will lead to an increased understanding and better operations.

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MEMO

Date: February 22, 2010
To: Board of Directors
From: Sarah Castor, Evaluation Project Manager
Kendall Youngblood, Residential Sector Manager, Efficient New Homes and ENERGY STAR® Products Program
Subject: Staff Response to the Evaluation of the Refrigerator Recycling Program

Since the Refrigerator Recycling initiative began in June 2008, it has become one of Energy Trust's most popular offerings for residential customers. Evaluation findings noted that the majority of refrigerators and freezers collected were more than 20 years old, representing significant energy savings for the program and electric bill savings for participants.

As recommended, the program plans to place emphasis on secondary units, and bill inserts will be used to do this when space is available, given the effectiveness of this form of advertising. Current marketing materials promote the potential bill savings of recycling and the convenience of participation and will continue to do so.

The online sign-up option is currently featured on our website, along with phone sign-up information, so we see limited options for making the web option more visible.

Based on the success of coordination with Sears, the program is in the process of developing recycling arrangements with other new appliance retailers.

The lack of normalized address data for utility customers, and to a lesser extent customer names, was identified as a source of difficulty in scheduling pick-ups and processing incentives. Program staff have begun work to ensure addresses are normalizes before they are sent to JACO, and we anticipate that this will resolve most errors.

With the success of the Fast Feedback survey for commercial programs, Evaluation will be rolling out Fast Feedback for refrigerator recycling participants this spring. The survey will provide quick results on program satisfaction and customer feedback.