

2007/2008 Appliance Rebate

**Government of Yukon - Energy Solutions Centre and
Natural Resources Canada**

Final Report

April 29, 2008



PROGRAM OVERVIEW

One of the fundamental objectives of the Energy Solutions Centre (ESC) is to serve Yukon's energy efficiency needs by:

1. helping to build capacity in energy efficiency related fields; and,
2. by working to assist the Yukon marketplace to become more energy efficient.

In order to help meet these objectives the ESC has provided a number of market transformation programs over the years including the 2002 Fridge Exchange, the 2006 Yukon Project Porchlight, the 2006/07 washer rebate program, and the ongoing seasonal light exchange program.

The success of these initiatives has encouraged ESC to continue to offer programs focused on transforming the consumer appliance/equipment market to more efficient "best-in-class" technologies.

The focus of our present initiative, the 2007/2008 Appliance Rebate was Refrigerators, Clothes Washers, Dish Washers, and central heating appliances (Furnaces and Boilers). These appliances make up a large portion of the energy consumed in a household. Despite this fact, the most recent "Residential Energy End Use Survey" shows that very few Yukon households have chosen to invest in high efficiency appliances. The survey also shows that a significant number of Yukon households have appliances that are 10 years or older and will likely require replacements in the near future.

The program worked by offering Yukon residents who purchased an Energy Star®-rated Clothes Washer, Dish Washer or Refrigerator between September 1, 2007 and February 29th, 2008 a \$100 rebate (\$150 for residents of diesel powered communities) from the Energy Solutions Centre. Similarly applicants could receive 15% (up to a total of \$400) off the cost of an Energy Star® - rated central heating unit (furnace or boiler). Applicants were required to supply appropriate proof of purchase along with completing an application form and brief program survey.

This program had 589 successful applicants (approximately 5% of Yukon households) receiving rebates for 676 appliances and 83 furnaces/boilers.

PROJECT BUDGET

The total rebate dollars spent over time is shown in chart 1 below. The program averaged a cost of approximately \$515/day in applications over the course of the program. It's clear from this chart that the participation in this program was consistent throughout the year and showed no indications that the market for energy star appliances had been saturated.

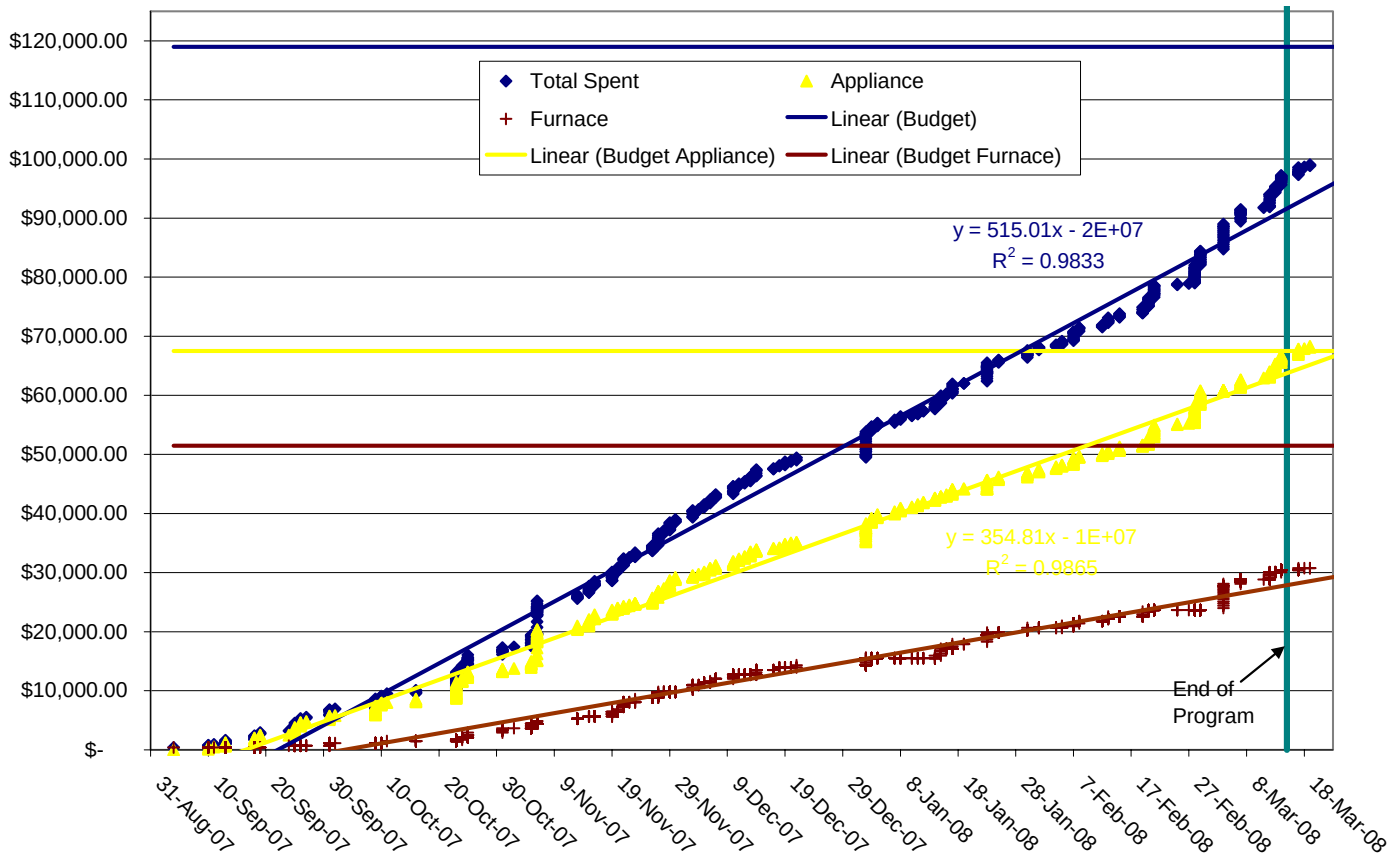


Chart 1: Dollars spent on rebates over time

Total program costs were as follows:

Marketing Costs	\$ 8,739.64
Rebate Costs	\$ 99,734.71
<u>Total:</u>	<u>\$108,474.35</u>

PROJECT RESULTS

General

This program had 589 successful applicants representing approximately 5% of Yukon households. Of the 589 applicants 77% listed the appliance rebate as somewhat or very important in their decision to purchase an Energy Star® rated appliance. Similarly 72% of applicants listed saving money and 61% listed environmental reasons as a significant factor in their choice to buy an energy efficient appliance.

These successful applicants resulted in rebates for 678 Energy Star® appliances and 83 Energy Star® rated furnaces. According to Energy Star® and NRCan's Office of Energy Efficiency, these applicants choice to purchase energy star rated products will result in the following energy and water savings:

Energy Star® Appliances:

		Clothes Washer	Dish Washer	Refrigerator	Total
Energy Consumption (kWh per year)	Conventional (Pre-1993)	1,200	470	1,060	2,730
	Conventional (New)	870	467	532	1,869
	Energy Star	596	331	452	1,379
Savings (kWh per year)	Min.	274	136	80	490
	Max.	604	139	608	1,351
	Average	439	138	344	921
Water Use (litres/year)	Conventional (New)	51,355	4,889	N/A	56,244
	Energy Star	23,286	3,259	N/A	26,545
Savings	Average	28,069	1,630	N/A	29,698
Number of Rebates		235	242	201	678
Est. Total Energy Savings (kWh/year)		103,165	33,275	69,144	205,584
Est. Total Water Savings (litres/year)		6,596,154	394,387	N/A	20,135,542

Cost Savings:

With a total savings of approximately 20,000 kWh/year, this constitutes cumulative electrical bill savings to participating Yukon residences of over \$20,000 per year and more than \$200,000 over the estimated 10 year life span of the appliances.

Water Savings:

In addition to these energy savings participants in this program are responsible for a savings of an estimated 20,000,000 litres of water per year or approximately 200,000,000 litres of water over the predicted 10 year lifespan of the appliances purchased. This represents not only significant

savings for consumers, but considerable water savings for municipal governments concerned with the costs of extracting, treating, distributing and disposing of water.

Energy Star® Furnaces and Boilers

In addition to the appliance rebates, 83 applications were approved for the purchase of Energy Star® rated furnaces or boilers. These appliances are 10-20% more efficient than a new non-Energy Star® model and can be even more efficient if replacing an older existing furnace or boiler. At 20% efficiency increase and an average household heating load 100 MBTU/year (an energy efficient home) this is a savings of approximately 500 litres of heating oil per year. At the present cost of heating oil (\$1.27/litre) this represents a savings to the individual of approximately \$600/year. For the 83 Yukon residents that participated in this program this represents a savings of approximately 45,000 litres of heating fuel and over \$50,000 in costs savings per year. Over an estimated lifespan of 10 years (to reasonably assume a 20 year life span for a heating system) this represents a savings of approximately 900,000 litres and \$1,000,000 in costs savings to Yukoners over this time period.

Along with these costs savings, by choosing Energy Star®, participants in this program are helping to prevent global warming and promoting cleaner air. The 45,000 litres of heating fuel saved per year represents approximately 140 tonnes of CO2 savings per year.

In total the Energy Star® products purchased through this program represent a total savings to Yukoners of approximately \$70,000/year or approximately \$700,000 over the life span of the appliances.

As a final comment, the project was not only intended to provide new technology to the public and provide immediate savings, it was also meant to act as a catalyst for additional behavioral changes on the part of Yukon consumers. That is, we anticipate that the project will result in consumers becoming more aware of the benefits of this technology and will help lead to further sales of these energy efficient products. Although it is impossible to calculate with any degree of accuracy the benefit of this "after effect", there will undoubtedly be additional benefits that will result from this in terms of lowering consumer electrical bills, reducing overall demand on the system, and reducing greenhouse gas emissions in communities where they are associated with electrical generation.

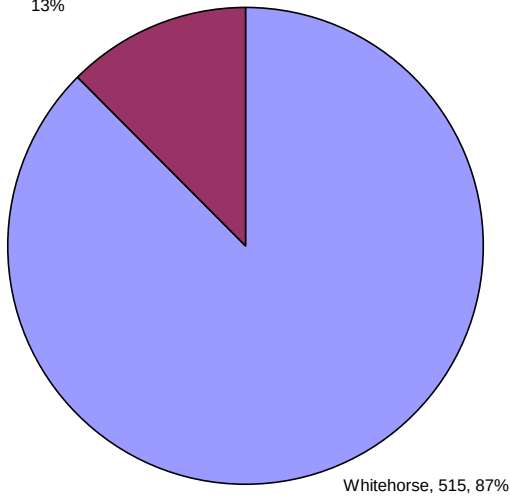
CONCLUSION

Adopting the use of best-in-class energy efficient appliances is a practical way to reduce energy and water consumption - thereby helping to reduce greenhouse gas emissions and both electrical and municipal utility infrastructure costs in the Yukon.

This project illustrated clearly that there is a high level of public interest in these high efficiency machines. It's intended that a project of this nature will help Yukoners keep energy conservation and long-term cost reduction in mind when purchasing major appliances.

Appendix A: Market Research/Project Evaluation

Outside of Whitehorse, 74,
13%



Outside of Whitehorse
31%

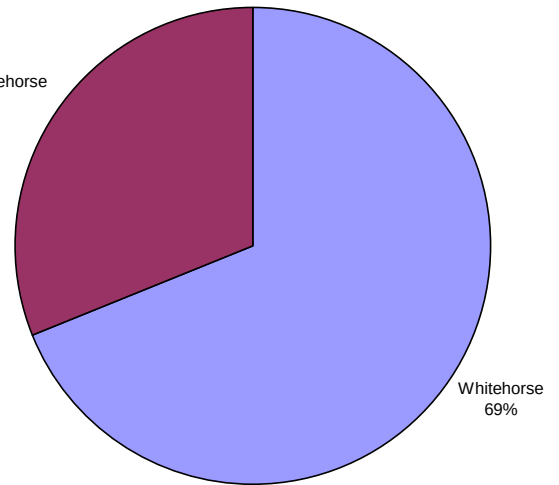


Chart 1:Appliance Rebate Application in/outside Whitehorse

Chart 2: Per-Capita Appliance Rebate in/outside Whitehorse

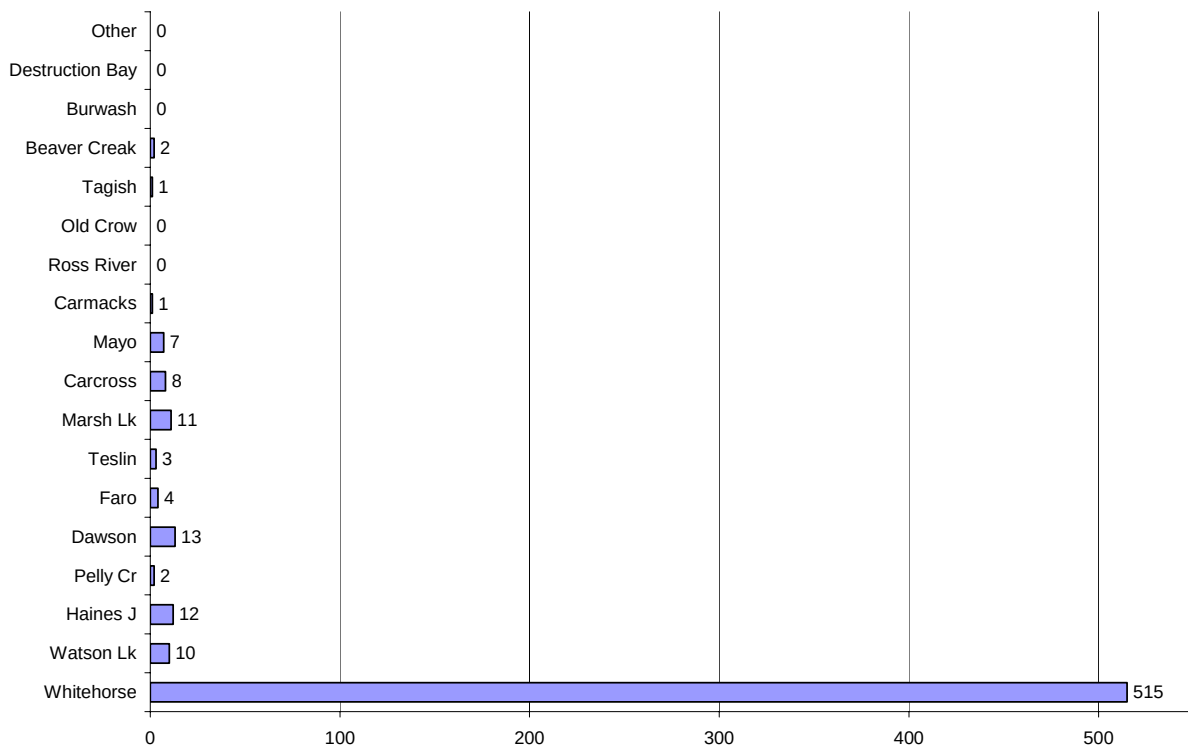
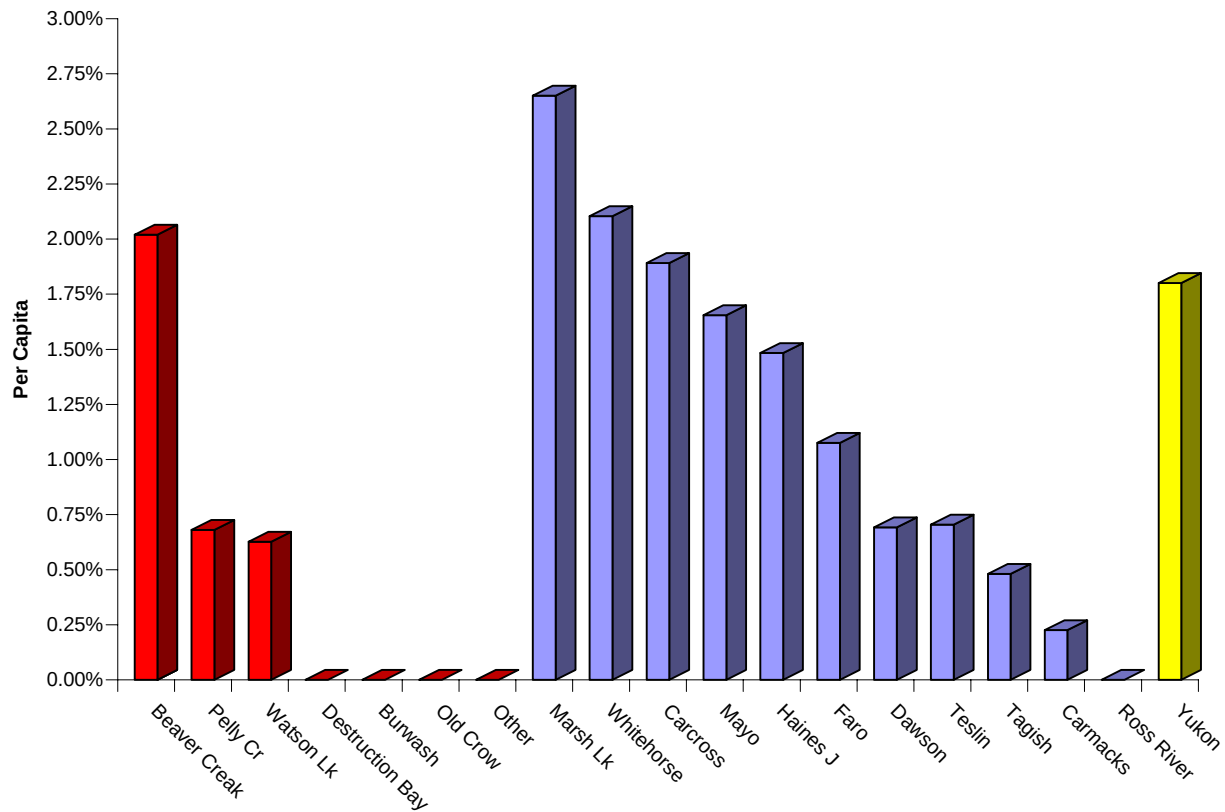


Chart 3: Appliance Rebate Applications by Community



(Legend: red bars: diesel communities, blue bars: hydro communities, yellow bar: Yukon average)

Chart 4: Appliance Rebate Applications Per-Capita by Community

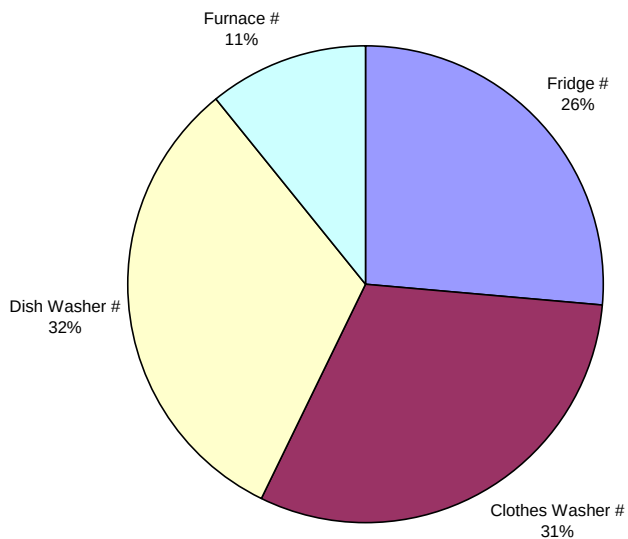


Chart 5: Distribution of Appliance Rebates by Appliance

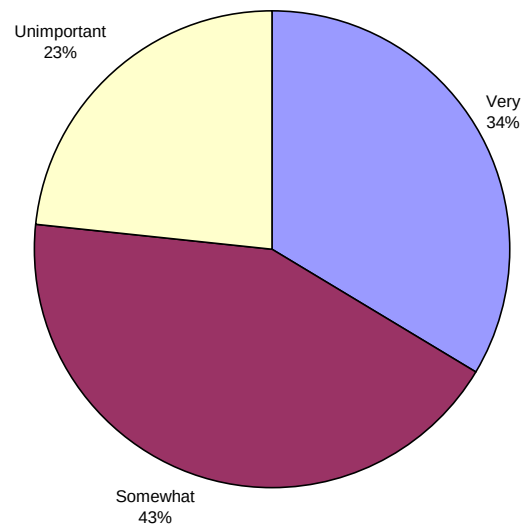


Chart 6: Importance of Rebate in Purchase Decision

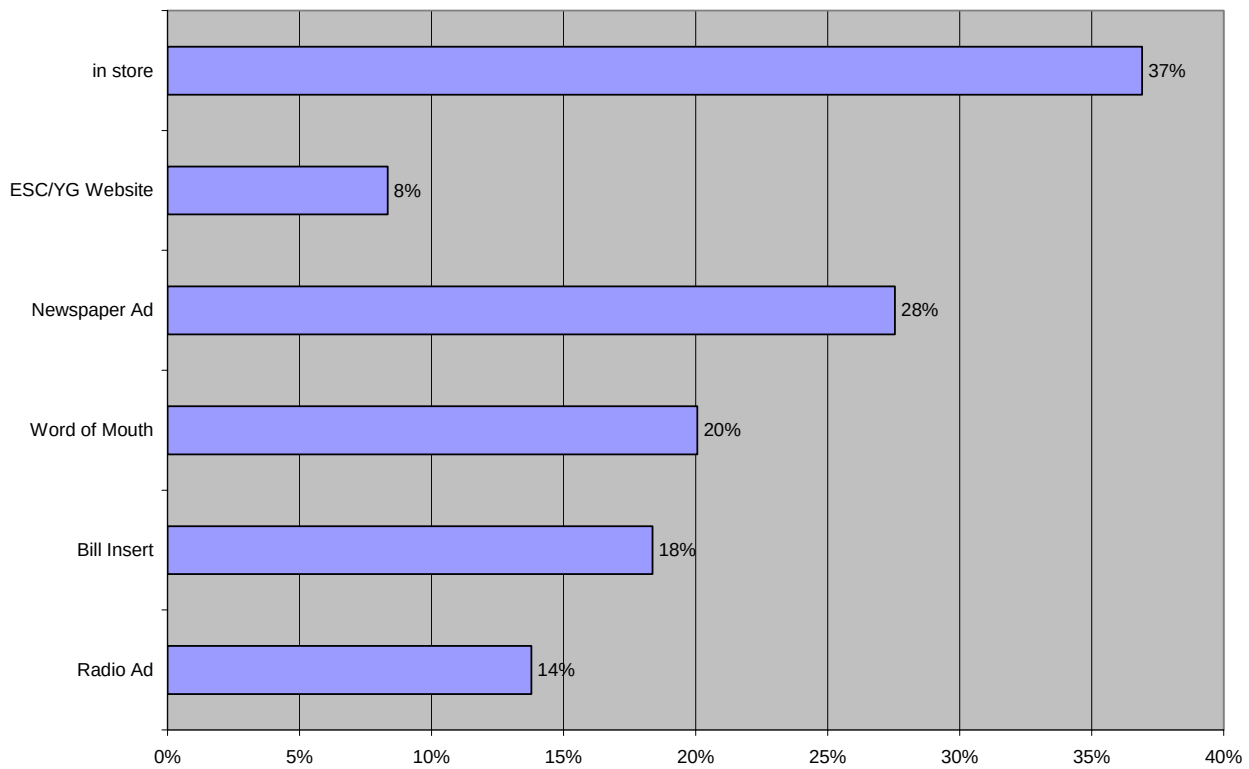


Chart 7: Where Applicants found Program Information

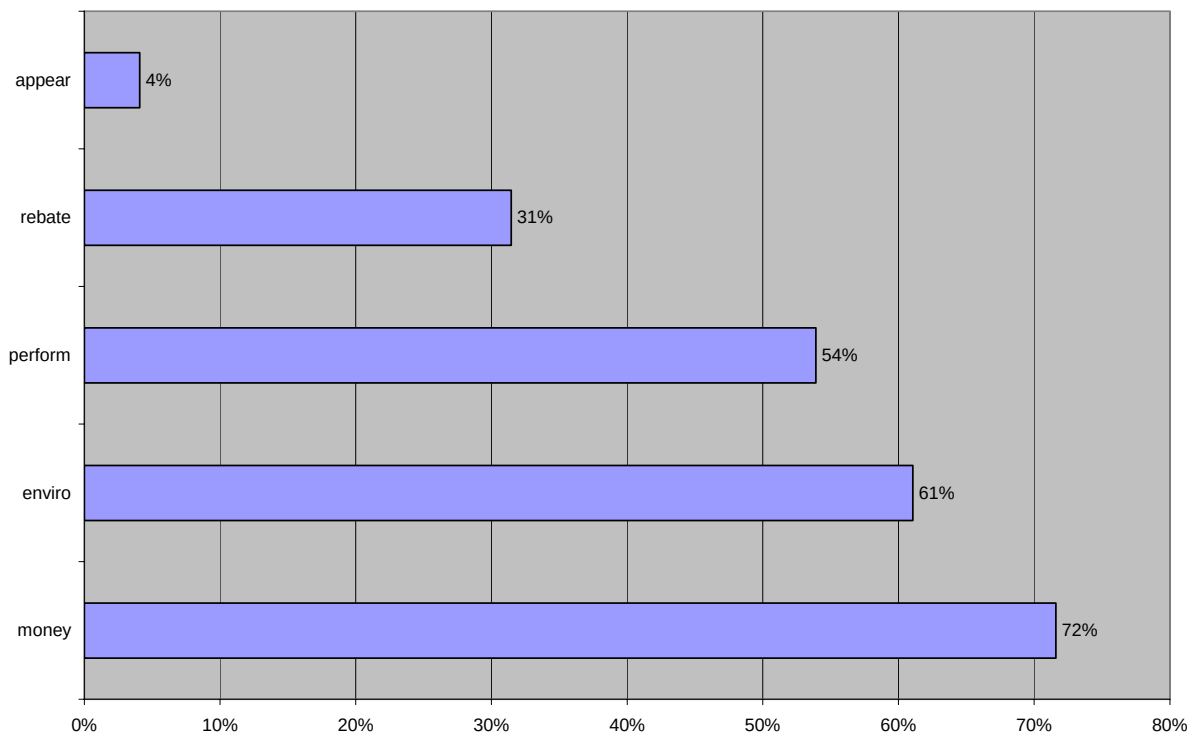


Chart 8: Reasons Given for Buying Energy Star Appliances