The Rhode Island Appliance Turn-in Program

FINAL

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Submitted to:

National Grid

Submitted by:

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Executive Summary

This report summarizes the results of the evaluation of the Rhode Island Appliance Turn-in Program for 2009 and 2010. Evaluation activities consisted of participant telephone surveys and in-depth interviews with program staff and implementation contractors conducted by NMR Group, Inc.

Findings

The Rhode Island Appliance Turn-in program collects and recycles working refrigerators and stand-alone freezers from residential customers, including both primary units that have recently been replaced and secondary units. The main goal of the program is to meet the unit targets for collection to achieve energy savings in a cost effective manner; recycling is a secondary goal.

JACO is a turn-key implementation contractor, providing all aspects of program marketing, scheduling, implementation, recycling, and reporting. JACO has experience running appliance turn-in programs across the country and National Grid said that it relies on them for their expertise in this market.

Program Goals and Collected Units

The Rhode Island Appliance Turn-in Program had an initial goal of recycling 6,215 units in 2009 and was adjusted down to 5,200 units in 2010 to reflect the actual demand (Table 1-1). To date the program has collected and recycled over 10,000 units.

Table 1-1: Rhode Island Annual Goals and Collected Units

(June 2009 through December 2010; Actual through October 2010)

	Projected Units	Actual Units		
		Refrigerators	Freezers	Total
2009	6,215	5,092	1,379	6,471
2010	5,200	3,069	575	3,644*
Total	11,415	8,161	1,954	10,115*

*As of October 2010

Program Satisfaction and Sources of Information

Participants in the program are quite satisfied with the program and National Grid and JACO reported no major problems with the program's launch or its on-going operation. Participants heard about the program from a variety of sources, but the National Grid on-going newspaper ads and the television ads at the program launch were particularly successful in informing participants about the program.

- Overall, respondents were very satisfied with the program; the average rating on a scale from zero to ten was 9.8. About eight out of ten had no recommendations to improve the program, and most of the recommendations given by the remaining respondents involved expanding the program in some way—offering it more often and for a longer period of time, increasing advertising and awareness of the program, and including more appliance types in the program.
- Respondents primarily learned about the program through the Sponsor's advertising efforts, particularly through newspaper and TV ads (62%). Newspaper was the main source of paid media advertising, but there was also a successful TV campaign at the start of the program. About one out of ten learned about the program through bill inserts, and 3% found out about it on the Sponsor website. Another 11% heard about the program from someone they knew.
- About three-quarters of the respondents enrolled in the program over the phone. Whether they had enrolled over the phone or online, in general they found it easy to enroll. The average ease rating, on a scale of zero to ten, was 9.7 for those who enrolled over the phone and 9.2 for those who enrolled online. Scheduling the pick-up time was also experienced as relatively easy (average rating of 9.5), although a few respondents said that no convenient times were available.
- Many respondents were unaware of the fact that the removed appliances were recycled. About one in four said they did not know what happened to them, and one out of ten thought they were sold as used appliances or donated to the needy.

Properties of Removed Appliances

The majority of appliances collected through the program had been used as secondary units by participants. Participants in the survey described the characteristics and use of the refrigerator or freezer that was removed through the program, including the appliance's age, where in the home it was located, and how it had been used before it was turned in.

- About two-thirds of the removed refrigerators were being used as spares before they were picked up, and over three quarters (78%) were over ten years old. The freezers that were picked up tended to be older than the refrigerators: 84% were over ten years old, and over half (53%) were twenty years or older. Nearly all the appliances were in working condition, and close to two-thirds of the appliances had been plugged in all or most of the

time. These results indicate that, for the most part, the appliances that were removed through the program were in line with those targeted by the program—older, in working condition, and plugged in.

- Respondents were split on how necessary they thought it was to have a spare refrigerator or freezer. Among respondents who retired refrigerators, about two out of ten thought it was "absolutely necessary" to have a spare refrigerator and another approximately two out of ten thought it was "not at all necessary." The average importance rating for the refrigerator group was 6.5. Among respondents who retired freezers, roughly a quarter thought having a spare freezer was "absolutely necessary" and another quarter thought it was "not at all necessary." The average importance rating for the freezer group was 8.7, somewhat higher than that for refrigerators. The implication of these relatively high importance ratings is that a significant proportion of respondents either have already replaced the removed appliance or will likely do so in the future.
- Refrigerators and freezers use more electricity when they are located in places that are heated in the winter or that are not cooled in the summer. Between 50% and 60% of the appliances had been located in a location of the home that was heated in the winter, and between 65% and 80% of the appliances were in locations that were not cooled in the summer.

Free Ridership

The survey asked a series of questions designed to characterize what participants would have done with the appliances (if anything) in the absence of the program.

- Free riders to the program (i.e., FRs) are participants who would have removed the appliances from electric service on their own, without any program assistance. This definition includes appliances that would have been removed from the household and disposed of or recycled and appliances that would have been kept and not used at all.
- In contrast, non-free riders (i.e., NFRs) are participants who would have continued to use the appliances and consume energy without the program. This definition includes appliances that would have been kept and used and appliances that would have been removed from a household but used elsewhere (i.e., given away or sold as used appliances).
- Possible free riders (i.e., PFRs) are participants who said "don't know" or "refuse" to certain key questions, or whose responses did not allow us to determine their FR status.

Two methodologies were used to calculate free ridership, which yielded rates of 41% and 33% for refrigerators and 46% and 40% for freezers (Table 1-2). Both methodologies followed a similar pathway of survey questioning about likely actions in the absence of the program to assess the likelihood that participants would have removed the appliance within a year, as well as their likely future usage pattern or likely means of appliance removal.

The first method (FR1) used participants' initial responses to these questions in the analysis. A potential drawback of this method is that these initial responses might reflect respondents' wishes and attitudes, rather than what they actually would have done. People face a number of barriers to removing large appliances that might prevent them from removing the units despite the wish to do so.

The second methodology (FR2) introduced two likely barriers to removal in the absence of the program—the need to pay to have the appliance removed and the need to physically remove the appliance from the home. When participants considered the additional factors, some respondents who initially said they would hire a hauler subsequently said that they would not be willing to pay for a hauler to remove the appliance, and some who initially said they would take the appliance to a dump subsequently said they would not be able to physically remove the appliance from their home. Also, when respondents were asked again what they would have done with the appliance, some said they would have kept using the appliance after all. With these responses incorporated into the analysis for Method 2, free ridership rates decreased for both appliance groups. The two additional questions about the impact of physical and financial barriers on the disposal decision incorporated into FR2 are realistic factors customers would have to take into account before actually disposing of the appliance. Therefore, we consider Method 2 to be a more accurate measure of free ridership than Method 1 and recommend using FR2 rates for program planning and impact analysis.

Table 1-2: Free Ridership Rates

	Refrigerators	Freezers
FR1 (free riders)	**41%**	**46%**
NFR1 (non-free riders)	52	45
PFR1 (possible free riders)	6	7
FR2 (free riders)	**33%**	**40%**
NFR2 (non-free riders)	60	54
PFR2 (possible free riders)	7	6

Free ridership among respondents who used the program to dispose of a primary unit is higher than those who disposed of a secondary unit. Table 1-3 shows FR2 rates for three subgroups within the refrigerator group: Participants who removed a primary fridge, all of whom presumably replaced it with another unit (28% of the refrigerator group); participants who removed a secondary fridge and replaced it with another unit (26%); and participants who removed a secondary fridge and did not replace it (46%). The FR2 rate for the primary group

(44%) is substantially higher than for both secondary groups (27% for the secondary/replaced respondents; 32% for the secondary/not replaced respondents).

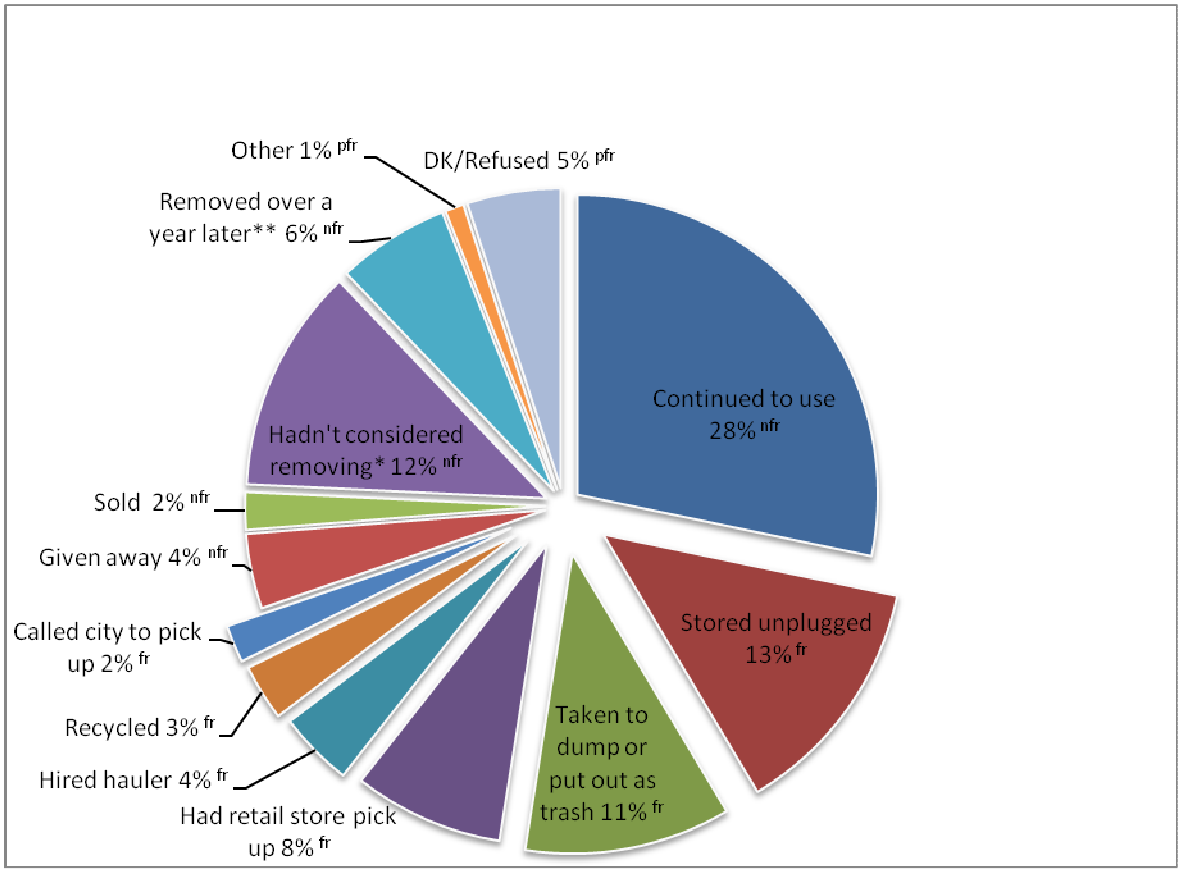
Table 1-3: Refrigerator Free Ridership Rates by Use and Replacement

	Primary (28% of refrigerators)	Secondary—Replaced (26% of refrigerators)	Secondary—Not Replaced (46% of refrigerators)
FR2 (free riders)	**44%**	**27%**	**32%**
NFR2 (non-free riders)	53	73	63
PFR2 (possible free riders)	4	0	4

Disposition of Appliances in Absence of the Program

Figure 1-1 and Figure 1-2 provide a snapshot of the actions that participants would have taken in the absence of the program.

Figure 1-1: Likely Disposition of Refrigerators in Absence of Program



*Respondents who said they would remove the refrigerator without the program but hadn't considered doing so before hearing about the program.

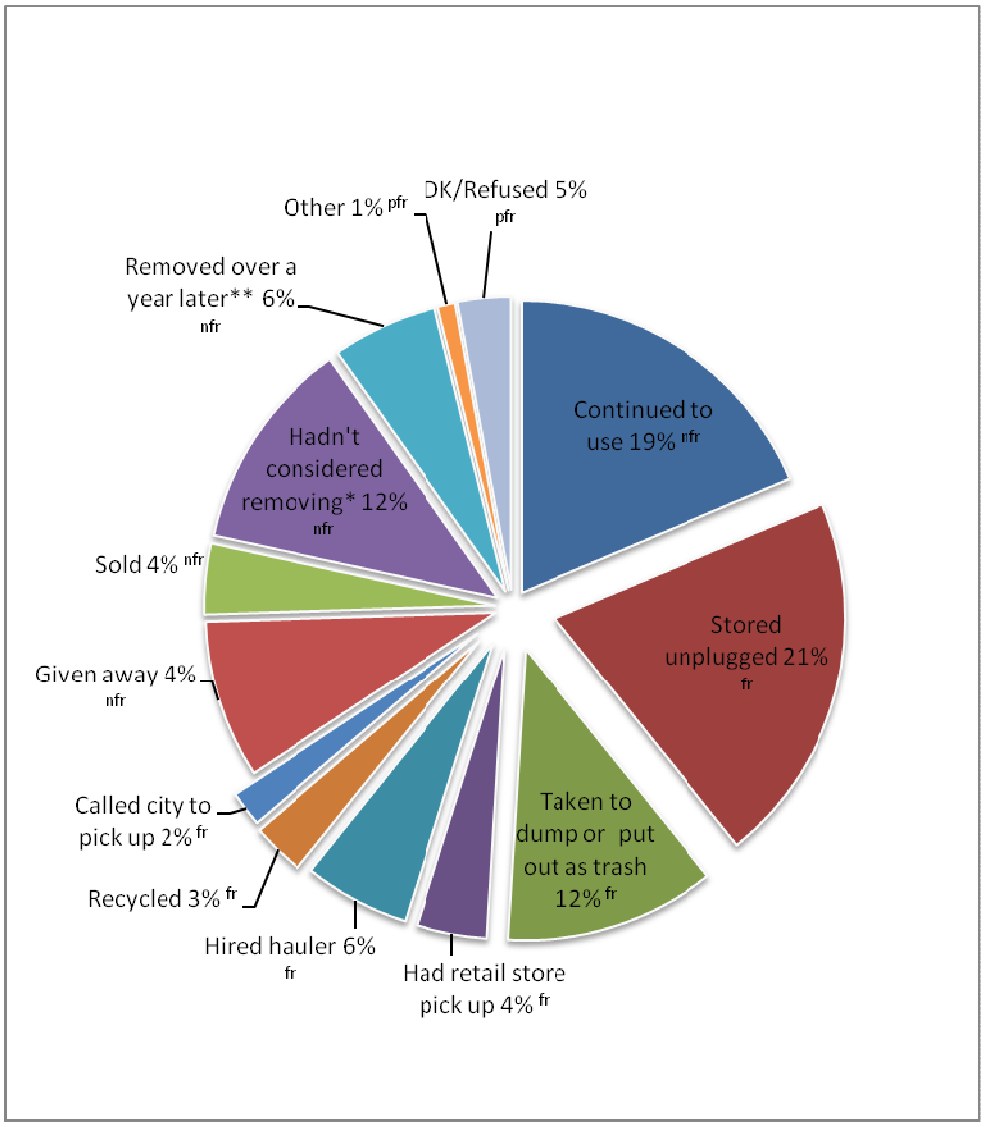
**Respondents who would have gotten rid of the refrigerator in any manner more than a year after the fridge was removed by the program.

[fr] Respondents were considered free riders according to free ridership Method 1.

[nfr] Respondents were considered non-free riders according to free ridership Method 1.

[pfr] Respondents were considered possible free riders according to free ridership Method 1.

Figure 1-2: Likely Disposition of Freezers in Absence of Program



*Respondents who said they would remove the freezer without the program but hadn't considered doing so before hearing about the program.

**Respondents who would have gotten rid of the freezer in any manner more than a year after the freezer was removed by the program.

[fr] Respondents were considered free riders according to free ridership Method 1.

[nfr] Respondents were considered non-free riders according to free ridership Method 1.

[pfr] Respondents were considered possible free riders according to free ridership Method 1.

Key findings about respondents' reported intentions include:

- Approximately six out of ten respondents said that they had considered getting rid of the appliance before learning about the program. However, considering doing something (particularly something that is not easy to do, like getting rid of a large appliance) is not the same as intending to do it, and is even further from actually doing it in the near future.

For the free ridership (FR) analyses, respondents who said they had not considered disposing of the appliance before hearing about the program were considered to be non-free riders (NFRs), unless they indicated in a subsequent response that they would have kept the appliance and stored it unplugged. In accordance with free ridership definitions for energy efficiency programs in general, the timeliness of respondents' intended action was also considered. Respondents who said they would have disposed of the appliance more than a year later (refrigerators: 15%; freezers: 19%) also were determined to be NFRs.[1] One-third of the refrigerator group (33%) and about one-quarter (26%) of the freezer group said they would have gotten rid of the appliance by taking it to a dump or putting it out as trash. About one in ten (12%) in the refrigerator group and about two out of ten (21%) of the freezer group said they would have given it away. Fifteen percen*t of the refrigerator group and less than one out of ten (8%) in the freezer group said they would have had a retail store pick it up, and more than one out of ten (13%) in both groups said they would have hired a hauler to take it away.*

- *Approximately one out of ten respondents who would have disposed of their refrigerator or freezer said they would have had it recycled (8% and 11% respectively). Fewer than one out of ten in each group (refrigerator*s: 5%; freezers: 8%) said they would have sold the appliance. *In the FR1 analysis, respondents who said they would have disposed of it in a way that would lead to its continued use by someone else by selling it or giving it away, or who said they might have kept it after all, were determined to be NFRs. Respondents who said they would have taken it to a dump, taken it out as trash, or had a third party pick it up were determined to be FRs.*

- Twenty seven percent of respondents who said they would have gotten rid of their refrigerator and a similar proportion (30%) of those who said they would have gotten rid of their freezer said that moving and transporting the appliance would have prevented them from actually getting rid of it without the program. *In the FR2 analysis, respondents who said physically moving the unit would have deterred their disposal plan were determined to be NFRs, if they also said in a subsequent question that they would have disposed of it in a way that would necessitate moving it themselves (e.g., taking it to a dump or recycling it).*

- Slightly more than half (53%) of those who said they would have gotten rid of their refrigerator and somewhat less than half (44%) of those who said they would have gotten rid of their freezer claimed they would not pay anything to have it removed from their home. *In the FR2 analysis, respondents who were not willing to pay anything to have the appliance removed, if they also said in a subsequent question that they would hire a hauler to pick it up, were considered to be NFRs.*

[1] Some of the percentages shown for responses to questions about customers' intentions are based on a subset of respondents and are different than those shown in the pie charts above (Figures 1-1 and 1-2), which are based on all respondents.

- After respondents who initially had said they would have disposed of their freezer considered some of the factors involved in disposing of the appliance (i.e., having to physically move it, possibly having to pay to get it hauled away), respondents in the refrigerator group were significantly less likely the second time they were asked what they would have done with the appliance to say that they would have hired a hauler (13% versus 7%; significant at a 90% confidence level), and were somewhat more likely the second time than the first time to say they would have given away the refrigerator (17% versus 12%), although this difference is not statistically significant.
- Compared to the first time the question was asked, respondents in the freezer group who initially said they would have removed the appliance were significantly more likely to respond the second time that they would have kept the appliance after all (8% versus 0%; significant at a 90% confidence level).
- Importance of Rebates—Respondents indicated that the rebates were very important to their decision to participate in the program. The average importance rating (from 0-10) was 8.0 for refrigerators and 9.3 for freezers. Nevertheless, 62% of the refrigerator group and 68% of the freezer group said they would have participated even without any incentive. This seemingly paradoxical result could indicate that, although the rebate was an important benefit of the program, other benefits (such as getting the appliance removed for free and with little hassle, knowing it will be recycled, etc.) might have been important enough without the rebate to merit participating. It should be noted that financial incentives can be very important in the initial consideration of a decision; however, if other benefits are also realized after the decision is made the initial influence of the rebate might be minimized in retrospect.
- Replacement and Remaining Appliances—About half of the refrigerator group and one-quarter of the freezer group replaced the appliance they had turned in with another one of the same type. A large majority of the replacement appliances were new (refrigerator: 82%, freezer: 99%) and for the most part had the ENERGY STAR® label (refrigerator: 88%, freezer: 93%). Thus, although many of the respondents replaced the appliance that was removed, limiting energy savings from the program, the replacements tended to be newer and more energy-efficient than the previous ones. Also, fewer than 15% of the appliances remaining in the home were over 10 years old.
- Primary versus Secondary Refrigerators—There is evidence that the 28% of participants who used the program to dispose of primary refrigerators have different motivations than those who use it to dispose of secondary refrigerators. Participants who disposed of primary units are more likely to be free riders (44%) than those who disposed of secondary units (30%). Respondents who removed primary fridges were more likely than the others to have intended to get rid of the fridge in the absence of the program, to have done so within a year of the program, and to remove it by having a retail store pick it up or by recycling it. They were less likely than the secondary group to have given it away

for free. In addition, the primary group was more likely than the secondary group to say that they participated in the program for the rebate and because they had bought a new fridge, and less likely to say that they participated because it was easy or convenient to do so. It is likely that many of these participants who had primary fridges had another convenient option for removing the fridge—having it picked up by the retail store from which they purchased a replacement fridge. In sum, the primary refrigerator group appears to be a distinct subgroup of participants, many of whom are relatively unlikely to have kept the removed refrigerator on the grid in the absence of the program but participated in the program to obtain the $50 incentive.

- Respondents cited a variety of reasons for participating in the program. About two fifths of both the refrigerator group and the freezer group cited the rebate offered by the program. About one-quarter of the refrigerator group and one-third of the freezer group said they participated because they didn't need the appliance anymore. Fifteen percent of the refrigerator group and 18% of the freezer group noted that the program made it easy and convenient to dispose of it. Fourteen percent of the refrigerator group and 7% of the freezer group cited having bought a new appliance as a reason for participating in the program. Within both groups, about one-quarter of respondents cited one or more energy- or environment-related reason (i.e., to save energy or reduce energy costs, in order to recycle, or to help the environment).

Spillover

Respondents were asked a series of questions about appliances they might have purchased or retired after participating in the program as well as the impact of the program on their home's energy use.

- Fourteen percent had purchased at least one appliance with funding from the American Recovery and Reinvestment Act (ARRA) of 2009 rebates after participating in the Rhode Island Appliance Turn-in Program, and out of these respondents, nearly half (46%) said that the program "definitely" influenced them to make these ARRA purchases. Another 16% said the program "probably" influenced them to make these purchases.
- Eleven percent of respondents stopped using, replaced, removed, or recycled additional appliances after participating in the program. Twenty percent of these respondents said that their participation in the Rhode Island Appliance Turn-in Program influenced their decision to retire the additional appliance(s).
- Nearly half (48%) of the respondents reported that their electricity usage had decreased since participating in the program, and when these respondents were asked how satisfied they were with the reduction in usage 60% gave a satisfaction rating of 8, 9, or 10 on a 0-10 scale.

- Less than 5% of respondents mentioned any drawbacks about having had their appliance removed. Two percent mentioned a loss of food storage space and less than one percent said that usable appliances were thrown away.

Non Energy Benefits

Rhode Island currently does not get credit for the non-energy benefits that the program creates, but they are considerable.

- The program has recovered over one million pounds of metal, plastic, and glass; much of that is diverted from eventual disposal in landfills. Recycling the materials into new goods reduces the need to produce products from virgin materials.
- Additionally, capturing the CFCs from the appliances has prevented the release of ozone depleting substances and greenhouse gases to the atmosphere.
- As the program matures, the number of units collected with CFC-based refrigerant and foam will decrease until the full stock of older units that contain CFCs reaches the end of life. At the same time, more appliances with HFC refrigerant and HCFC-based foams will be collected.

Demographics

The typical participant in the Rhode Island Appliance Turn-in Program fits the profile of an "empty nester."

- The typical participant is of retirement age or older, well educated, with a moderate to high salary, who owns and lives in a moderate- to large-sized single family detached home.
- Older and wealthier consumers are more likely than younger consumers and those with lower incomes to own (rather than rent) their homes and appliances, and can therefore make decisions about disposing of them. In addition, people who live in single family homes, rather than apartment buildings or multifamily homes, are more likely to have the space to have a second refrigerator or freezer.

This profile of participants is in line with the type of customer that JACO said is typically attracted to appliance turn-in programs—older, higher income customers, especially empty nesters who have a second refrigerator but might no longer need it because the kids have gone and they are not using the refrigerator as much anymore.

Recommendations

The program seems to be quite successful, with high satisfaction ratings, customer suggestions to continue and expand the program, and evidence that most of the retired appliances were older, working, and in use before removal. Nevertheless, the findings summarized above suggest that improvements can be made to some aspects of the program in order to increase participation and the resulting energy savings and to reduce the few problems experienced by participants. National Grid and JACO are proactive about addressing issues as they arise and have already started to work on some of these areas:

- *Target missed appointments*—About one-third of the scheduled pick-up appointments were cancelled or no-shows. The idea of removing an extra refrigerator or freezer resonated on some level with people who went through the effort of scheduling an appointment but cancelled or missed the pick-up time. Some of these customers may have reconsidered their decision and have found a need that justifies keeping the appliance; others may have forgotten or been too busy to keep the appointment. JACO said that it intends to increase outreach to these customers through post cards, phone calls, and emails in another attempt to reschedule. The point is not to harass these customers, but to facilitate the process for them to participate. This should entail giving these customers priority for pick-up times that might include, early mornings, evenings, next day pick-up, or small, one to two hour windows for pick-up times. As many customers prefer to schedule pick-up on a Saturday rather than on a week-day, Saturday appointments tend to get filled quickly. Some Saturday appointments might be reserved for re-schedules in order to increase the likelihood that these customers are not lost by

failing to re-schedule. Messaging with these customers should reinforce their good decision making for initiating the removal and recycling of an appliance through the program.

- *Weigh the value of removing primary refrigerators*—The Rhode Island Appliance Turn-in Program is open to receiving primary as well as secondary refrigerators. There are several advantages and disadvantages of accepting primary refrigerators that should be weighed in deciding whether to continue accepting these refrigerators. Relevant points to consider in this decision include the following:
    - Accepting primary fridges will help achieve program goals for number of appliances removed.
    - The program ensures that the refrigerators don't end up on the secondary market and that they are properly recycled.
    - Participants who remove primary fridges through the program appear to be more likely than those who remove secondary fridges to get rid of the fridge in the absence of the program, as reflected in their higher free ridership rates. However, some customers might decide to replace their older primary fridges with new ones in part *because of* the opportunity to receive $50 to have their old one removed.
    - The savings of participants who replace their removed appliance with a new one are less than those who do not replace them, although the replacement appliances, on average, will be newer and more energy-efficient than the old ones that are removed.
- *Increase marketing to new appliance buyers*—Although the Rhode Island Appliance Turn-in Program is open to receiving any working refrigerator or freezer, not just secondary appliances, marketing activity has not focused on appliances that will be or have been recently replaced. If the program continues to allow participants to remove primary refrigerators, increasing marketing to purchasers of new appliances would help the program meet its collection goals. Additional outreach to new appliance buyers could include the following:
    - Retailers that sell new appliances are a way to reach customers who likely are reaching a decision point about what to do with an appliance about to be replaced. National Grid and JACO have recently partnered with Sears to pick up appliances replaced by new ones purchased at Sears. Additional partnerships with retailers could be formed; beyond these partnerships, more could be done to promote awareness of the program among retailers who could tell potential purchasers of new appliances about the recycling program. Messaging to new appliance buyers should communicate that even though it is a good idea to reuse or repurpose many household items, the right thing to do with older, inefficient refrigerators and appliances is to take them off the grid completely and to recycle them.

  - All National Grid material that promotes purchases of ENERGY STAR refrigerators and freezers should also present information about the Rhode Island Appliance Turn-in Program, so customers have information about an easy option to remove and recycle an older, inefficient appliance.
  - Younger participants (under 55 years) are more likely than older participants to have turned in a refrigerator after recently buying a new primary refrigerator (59% for under 55 versus 41% for over).

- *Make participants more informed about the program*—A few respondents thought the program was selling the removed appliances or giving them to the needy; others didn't know why the appliance had to be plugged in or running before the scheduled pick-up or why it had to be in working condition.
  - The program should emphasize that the primary goal of the program is to save energy and reduce demand on the electric grid by removing older, less efficient refrigerators and freezers. The program helps customers get rid of the appliances before they might do so on their own. Reductions in energy bills and the participation incentive are additional bonuses for customers.
  - It should also be emphasized that appliances will be recycled in a way that is less harmful to the environment than other disposal options. They will not be sold, donated to charity, or disposed of in a landfill.
  - The collection team should leave information with the customer thanking them for their participation and letting them know their decision to participate was a good one. Emphasize the cost savings, energy savings, and environmental benefits of removing and recycling the appliance. When the rebate check is sent, the messaging should be repeated.

- *Continue promoting the program through existing channels.*—Advertising efforts through local newspapers and media has been the most effective means for reaching customers; more participants heard about the program through paid media than any other source. National Grid's communications network to customers through bill inserts, notations on bills, newsletters, and emails should continue to be used to promote the program on a continuous basis, or when a quick boost in participation is desired. Promotions through schools and community groups and options for rebate donations to these groups help to promote the program and provide a community service.
  - School promotions may be particularly appropriate for younger customers with children in school. Younger participants (under 55 years) were more likely to have turned in a refrigerator after recently buying a new one, heard about the program through word-of-mouth, and signed up for the program online than their older counterparts.

  - Also, although few respondents first learned about the program on the internet, the younger group was more likely to enroll online, showing that they did seek out the program information and enrollment opportunity on the internet and that more online advertising might be fruitful for this younger subset of participants.

- *Let viral marketing work for the program.*—Word-of-mouth has been an effective means for participants to learn about the program. A previous recommendation was to make participants more informed about the program; invite those participants to tell their friends and neighbors about the program. The younger demographic (those under 55 years) is more likely than older participants to have heard about program through word-of-mouth (18% versus 7%) and less likely to have heard about it from an ad on the TV or radio or in the newspaper (39% versus 66%).

- *Reinforce the idea of saving energy and buying product with the ENERGY STAR label*—About half of the participants who removed a refrigerator through the program and one-quarter who removed a freezer replaced the appliance after it was picked up. Tell participants how much energy and money they saved by getting rid of their inefficient model and will continue to save if they do not replace the appliance. If they must replace the appliance, encourage them to consider the more efficient ENERGY STAR labeled units.

- *Promote the non-energy benefits too*—Messages about recycling and the environment resonate with Rhode Island customers. Reducing dependence on foreign oil through energy efficiency also resonates with many people, particularly with older participants. Younger participants (under 55 years) were more likely than older ones to cite wanting to recycle as a reason for participating (8% vs. 3%). Emphasize the good work accomplished through the program's recycling component.

  - Emphasize that ninety-five percent of the components are recycled. Metal, glass, and plastic from the collected appliances is reclaimed and reused for other purposes. Foam insulation is incinerated at a waste to energy plant, producing energy rather using it. Materials have been diverted from landfills. Plus appliances collected through the program are disposed of in a way that prevents the release of ozone depleting substances and greenhouse gases to the atmosphere.

  - Adjust language in marketing materials on the website and elsewhere to reflect Rhode Island specific accomplishments. Over 10,000 units have been taken off the grid in Rhode Island; now the program has a track record of its own that tells a compelling story about savings and the environmental benefits of the program.

1 Methodology

The NMR Group completed a total of 502 telephone surveys with residential customers who participated in the Rhode Island Appliance Turn-in Program from June 2009 through July 2010. The participant survey was conducted from August 19 through August 25, 2010; each interview took 15 to 20 minutes to complete. A total of 256 surveys were completed with participants who had turned in a refrigerator, 246 surveys were completed participants who had turned in a freezer, and 43 surveys were completed with participants who had turned in both types of appliance. This achieved a margin of error of 4.8% for each appliance type (refrigerators and freezers) and an overall margin of error of 3.1% at a 90% confidence level.

Participants in the program were allowed to turn in up to two appliances per year (i.e., two refrigerators, two freezers, or one refrigerator plus one freezer). All survey data are weighted to represent the number of appliances by type (refrigerator only, freezer only, or both) turned in through the program. Program data shows that approximately 80% of the appliances turned in are refrigerators and 20% are freezers (about 7% turned in both). The weighting scheme helps to reflect the opinions of customers according to the type of appliance that they were focused on in the survey. Respondents who had turned in two appliances of the same type were directed in the survey to focus on just one of the appliances (randomly identified by the interviewer in the survey by color, pick-up location, and manufacturing model) and those who had turned in both appliance types were asked about both the refrigerator and the freezer. When presenting results, all results are weighted, while the sample sizes are unweighted.

The evaluation effort also included in-depth interviews conducted by telephone during September 2010 with a program staff member from National Grid and two from JACO Environmental (JACO), the contractor who handles all aspects of program implementation. The discussions covered various aspects of program design, marketing, program delivery, data tracking, and quality control. This effort included a review of documentation from the program that details program tracking milestones. Throughout this report where there is overlap of topic areas, we present findings from the in-depth interviews with the relevant survey findings.

2 Program Description

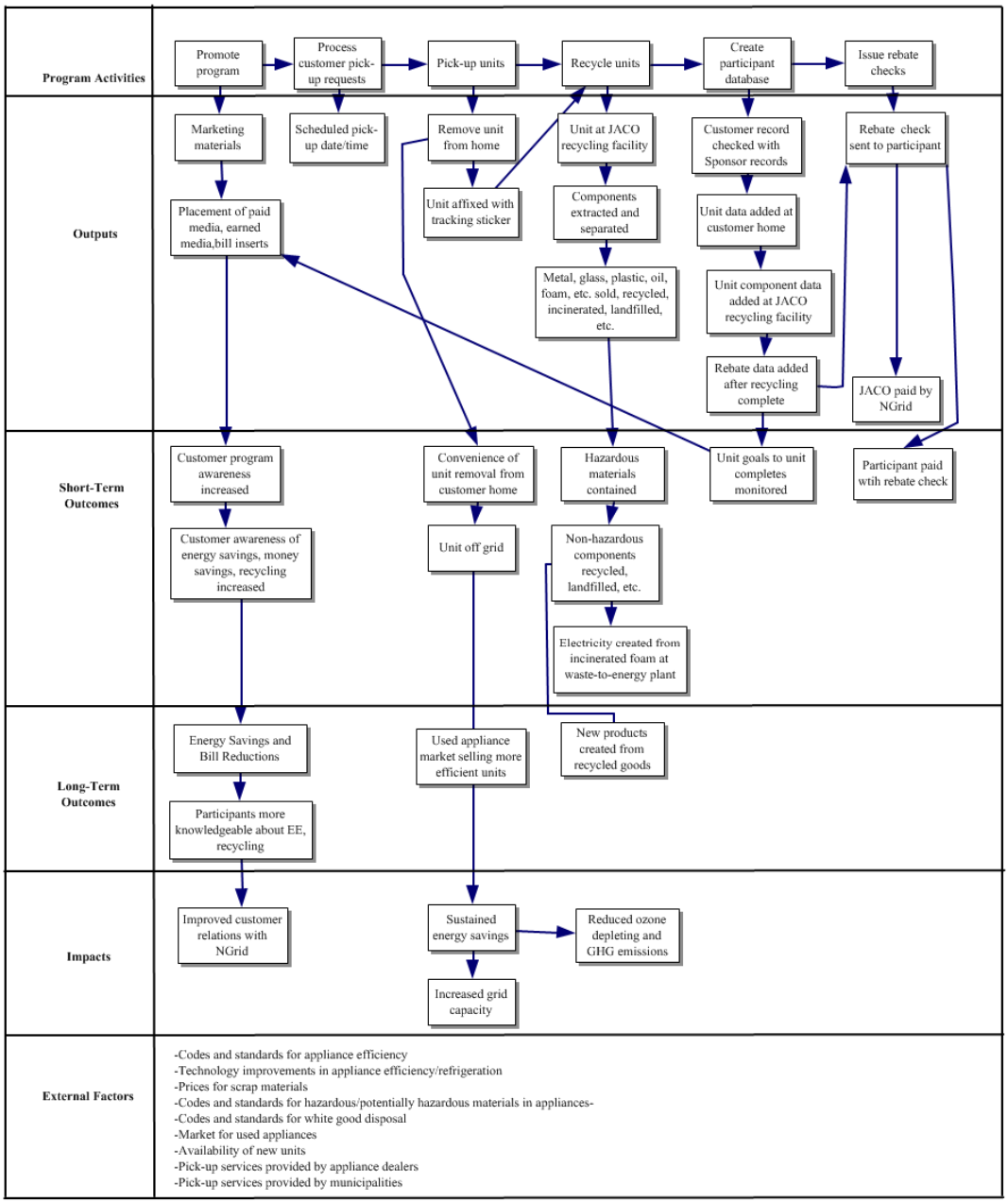
In the spring of 2009, National Grid launched a refrigerator and freezer collection and recycling program for residential customers in Rhode Island. The effort coincided with a similar effort that National Grid launched for its residential customers in Massachusetts, as part of a regional initiative through the Northeast Energy Efficiency Partnerships; other sponsors in Massachusetts include NSTAR Electric, Western Massachusetts Electric Company, and the Cape Light Compact. JACO Environmental, Inc. was secured as a contractor to run the program in a three year contract. JACO handles all aspects of program implementation, including assistance with the marketing, scheduling, pick-up services, and recycling. From June 2009 through October 2010, the program recycled 10,115 units.[2] Due to slow initial response, the customer rebate incentive was raised from $30 to $50 in September 2009 and has remained at that level since.

2.1 Program Logic Model

Figure 2-1 shows the general logic model for the Rhode Island Appliance Turn-in Program. The model outlines the program activities and traces the outputs that are produced from those activities. The sequences of short- and long-term outcomes are identified, ultimately leading to the program impacts. Program impacts include sustained energy savings, increased capacity of the electric grid, reduced ozone depleting and greenhouse gas emissions, and better customer relations. There are a number of external factors, mainly in the form of regulatory changes, technology developments, and market forces that could influence the outcomes of the program or the activities that are chosen for program implementation.

[2] Compiled from program summaries received from JACO and National Grid, dated July 2010 and October 2010.

Figure 2-1: General Program Logic Model



2.2 Program Oversight

JACO's Northeast Regional Manager is responsible for managing programs across five states, including Massachusetts and Rhode Island. The Northeast Regional Manager estimated that he spends about 20% of his time on each state, but the time that is spent on a program at any given time is situation dependent. The responsibilities of the Northeast Regional Manager include working with the client, fulfilling contractual obligations, maintaining communications, managing program promotion and marketing, and providing customer service. The manager in this position is new to JACO in 2010 and has assumed responsibilities that were formerly held by the Program Development Manager, who still maintains oversight of operations on the east coast; during the transition the two managers have worked closely together.

The Program Administrator (PA) at National Grid is responsible for the implementation of multiple programs in both Rhode Island and Massachusetts. This program provides large energy savings for National Grid and is more marketing intensive than other programs. In addition, given the fact that program implementation requires being in customer homes, the program requires strict attention to maintaining a high level of customer satisfaction. The management demands for this program vary depending on the needs of the program at any particular time. Routine management typically includes monitoring program milestones through tracking updates from JACO, while more intensive focus is required during a marketing push or trouble-shooting a customer issue with JACO.

2.3 Program Goals

National Grid reported that the primary goal of the program is to meet the unit targets to achieve energy savings in a cost effective manner; recycling is a secondary goal. Given that the program must enter customer homes for pick-ups, a high level of customer satisfaction also is important in the program delivery. The Rhode Island Appliance Turn-in Program had an initial goal of recycling 6,215 units in 2009 and was adjusted down to 5,200 units in 2010 to reflect the actual demand (Table 2-1).

Table 2-1: Rhode Island Annual Goals and Collected Units

(June 2009 through December 2010; Actual through October 2010)

	Projected Units	Actual Units		
		Refrigerators	Freezers	Total
2009	6,215	5,092	1,379	6,471
2010	5,200	3,069	575	3,644*
Total	11,415	8,161	1,954	10,115*

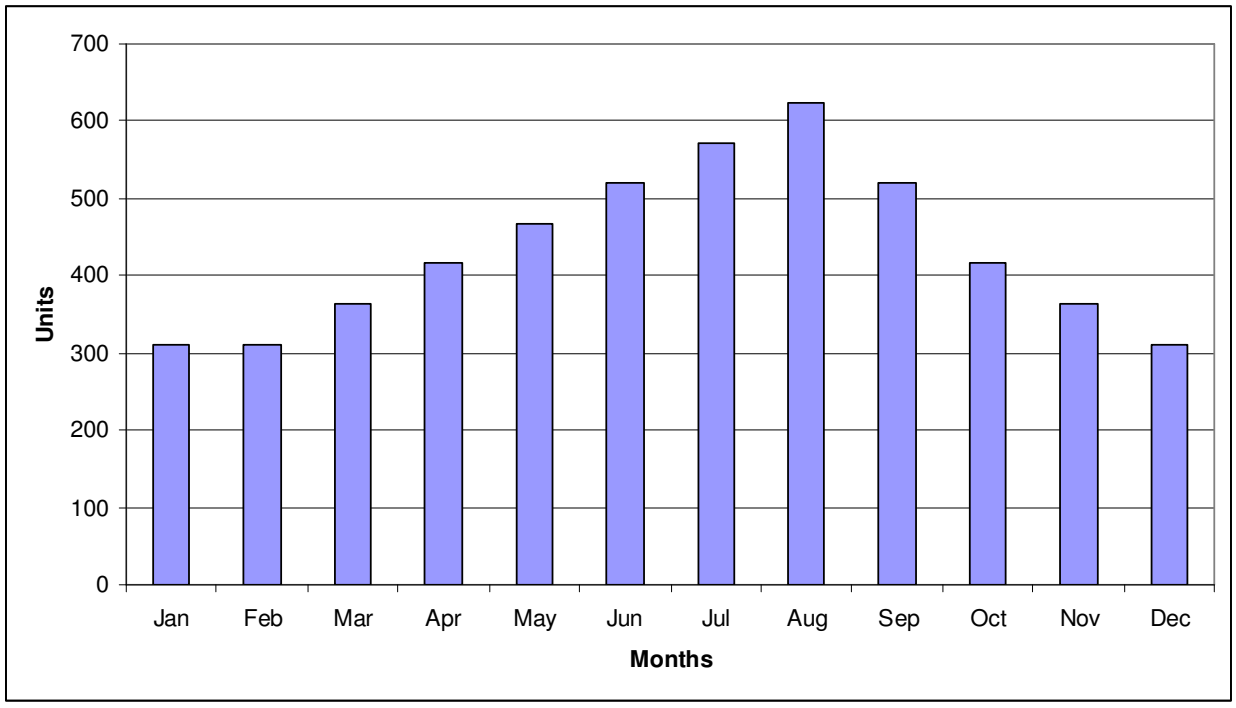
*As of October 2010

2.3.1 Project Flow

Figure 2-2 shows JACO's projection of the flow of unit pick-ups over the course of the year, allowing for seasonal factors that impact pick-up rates. The program predicts that the peak demand for the program occurs in the summer, with demand dropping in fall and winter months, coinciding with the holiday times and events (Thanksgiving, Christmas, New Year's, Super Bowl) when consumers are more reluctant to give up a second unit. Demand tends to increase again in the spring.

Projected demand is also influenced by the course of the program over time. As a program begins, JACO typically sees strong demand from consumers who were ready for an opportunity to remove an extra appliance and the early program adopters; demand typically wanes as the program matures.

Figure 2-2: Projected Monthly Volume Goals for 2010



JACO monitors the targeted number of unit pick-ups with actual pick-ups and adjusts program management to stimulate or suppress demand as necessary. JACO explained that if a program were approaching a maximum target, the sponsor could add more funding, scale back advertising, or start a wait list for interested customers; slower demand requires more marketing or other tactics. The Rhode Island Appliance Turn-in Program has been slow in reaching its program goals so far, and National Grid and JACO have been working to increase participation. A number of factors might contribute to the difficulty of meeting program goals, including the

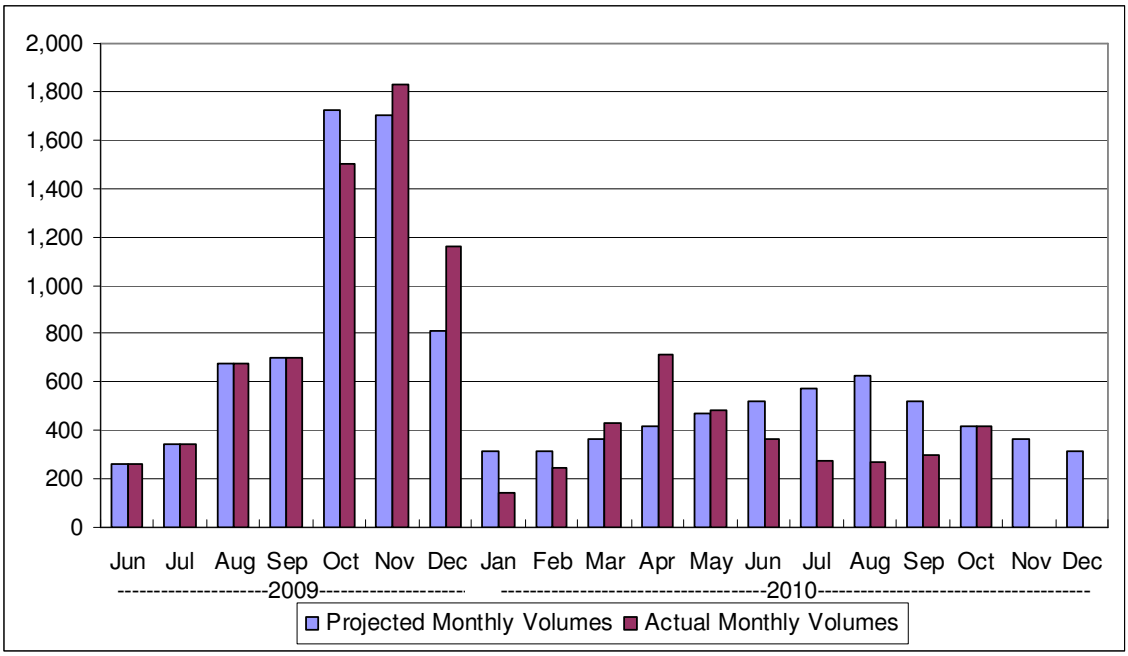
newness of the program, possibly unrealistic goals, insufficient rebate levels, and possibly misallocated or insufficient marketing efforts.

Rhode Island is a small territory with aggressive unit per customer goals. Both National Grid and JACO acknowledged that the program had a slow initial response from customers. However, since new ad campaigns were created and the incentive was bumped up to $50, the response has improved. JACO said that "*It took some pushing to make it go…but I think that this year we are on goal. The Rhode Island program is more aggressive from a unit per customer perspective.*"

The program increased the incentive rebate level from $30 to $50 in September 2009 to increase participation. Figure 2-3 shows the number of completes jumped in October and November 2009 after the increase, but the program did not sustain that level of demand in the winter months that followed. National Grid and JACO also increased program marketing efforts, but program demand has not matched the projected peak for the summer of 2010. As of October 2010, the program has met 70% of its annual unit goal for the year.

Figure 2-3: Projected and Actual Monthly Unit Volumes

(Projected June 2009 through December 2010; Actual June 2009 through October 2010)



JACO uses a metric that it terms the "Annual Harvest Rate" (AHR) to describe the number of unit pick-ups per households in a particular area. "*We consider that we are harvesting refrigerators, if you will. We run programs in 27 states and 250 utility service territories, so we can map lots of programs. A full scale program is a unit from 1% of the customer base per year; some programs harvest 2% per year. The Rhode Island program is about a 1% harvest rate. But Rhode Island still needs a push to keep it on track.*"

JACO said that they think that the program in Rhode Island can run for a long time. Right now the average age of refrigerators turned in to the program is 26 years old and 30 years old for freezers.[3] The average age of refrigerators will be getting younger over time, but JACO reported that it is still trying to get through a population of refrigerators from 1983 to 1995. National Grid agreed that the program will likely deliver savings for the foreseeable future.

2.4 Interaction with Other Programs

The Rhode Island Appliance Turn-in Program currently has no direct links to any other program offered by National Grid, but customers may utilize some services by programs within and outside of National Grid in tandem to address their appliance needs. For example, customers who purchased a new ENERGY STAR refrigerator in 2009 and received a rebate from National Grid's ENERGY STAR Refrigerators and Freezers Program also could be participants in the Rhode Island Appliance Turn-in Program if they surrendered the older unit. However, there does not seem to be any obvious overlap of the Rhode Island Appliance Turn-in Program with other programs offered by National Grid that would cause double counting of energy savings. For example, the Low Income Appliance Management Program offers qualified customers new ENERGY STAR refrigerators, but to avoid "double dipping," National Grid does not allow customers to participate in both programs and receive an incentive for a turn-in and a new appliance.

The state of Rhode Island received funding from the American Recovery and Reinvestment Act (ARRA) of 2009 and approximately $882,000 was available in March 2010 to consumers purchasing selected ENERGY STAR heating and kitchen appliances, including $150 rebates for refrigerators and freezers; a re-launch of the program commenced in July 2010 to distribute funding not previously claimed.[4] The ARRA Appliance Rebate Program in Rhode Island encouraged, but did not require, recipients to recycle the replaced appliances through retailers at the time of purchase. Given that the ARRA funding was distributed for an array of products that was broader than just refrigerators and stand-alone freezers, that the funding streams were separate, and that National Grid was not a participant in the ARRA process, the Rhode Island ARRA rebates were not integrated with the Rhode Island Appliance Turn-in Program.

[3] Based on JACO program records January 2009 through October 2010.
[4] State of Rhode Island Office of Energy Resources, State Energy Efficiency Appliance Rebate Program. (http://www.energy.ri.gov/arra_appliance/index.php) Accessed October 2010.

2.5 Program Delivery

JACO administers all aspects of program delivery from scheduling to pick-up to recycling. In the in-depth interviews JACO and National Grid described the processes for program scheduling, procedures for pick-up, rescheduling appointments, issuing rebate payments, and quality control.

2.5.1 Program Scheduling

Customers initiate their participation in the program by calling a toll-free telephone number or signing up on-line (through links to JACO from the National Grid web site, www.coolturnin.com, and myenergystar.com). All scheduling is administered by JACO. Customers provide contact information and details about the appliance such as appliance type, size (measuring guidelines are provided), and unit location in home. Customers also must confirm that the unit is in working order. Typically the customer has a choice of a selection of dates to choose an appointment time.

2.5.2 Procedures for Pick-up

The day before an appointment, the JACO call center phones the customer to confirm the appointment and provide a window timeframe (usually a few hours) for when the pick-up will take place. The day of the pick-up, if the crew is behind schedule, they call the customer to let them know that they will be late. At the house, the crew introduces themselves and provides identification; they also have uniformed shirts and the truck is tagged with signage. In the home, the crew locates the refrigerator and confirms that the unit is properly sized (10 to 30 cubic feet), is plugged in and is working, and that there is a clear pathway for removal. Crews are not allowed to move furniture or remove doors or railings for the pick-up. National Grid and JACO noted that obstructions have prevented removals in some homes, so they have tried to better communicate the need for a clear pathway to customers. In a convenient, safe area the pick-up team cuts the power cord, disables the temperature controls, damages the seal, and marks up the side of the appliance as a means to let the customer know that JACO will not resell the appliance. A bar code sticker is affixed to the unit so it can be tracked through the recycling process. The crew has an electronic, handheld device that they use to record both information about the appliance on-site and the customer signature as a final sign-off.

2.5.3 Procedures for Rescheduling Appointments

JACO said that the initial drop-out rate for the program is about 33%, including cancellations and no-shows (the crew shows up for a scheduled pick-up, but the customer is not home). JACO has procedures in place that reduce the drop-out rate to around 15%, but for rough planning purposes, the program estimates that 20% of scheduled units will not be picked up.

If there is a cancellation and the JACO crew notes it in the electronic device carried on the truck and there is an attempt to reschedule the pick-up. If the customer is a no-show, JACO puts a flyer on the door to say that they were there; they take a time-stamped picture of the house to prove

they were there; and the call center calls the customer back to reschedule. The crew often includes their cell phone number on the door hanger, so that if they have just missed the customer, they can return and complete the pick-up that day. On occasion, the JACO crew has not been able to find an address, even with the assistance from a GPS system and maps; this has occurred mostly in rural areas and the crew tries to call the customer to locate the address. According to JACO, "*We do everything possible to keep customers in the system, but you can imagine when you make an appointment a week out and people are working or doing whatever, that there are a significant number of no-shows. And then there are a lot of customers who reschedule because something came up. We have systems to try to capture them when we are there and then capture them after the fact.*"

JACO said that it will be taking a more aggressive approach to go after cancelled orders. Cancelled orders represent a "warm" list of prospective participants: These individuals have already expressed an interest in removing the appliance, but may need more assistance to carry through with the turn-in. JACO said it plans to contact the cancellations through post cards, phone calls, and emails.

2.5.4 Quality Control

In the in-depth interviews, National Grid and JACO described the criteria that they used for accepting appliances through the Rhode Island Appliance Turn-in Program. The Rhode Island program accepts any working refrigerator or stand-alone freezer that meets the size restrictions, including both primary units that have recently been replaced and secondary units. This is less restrictive than the parallel program run by National Grid and other sponsors in Massachusetts that accepts only secondary units, but it allows the Rhode Island Appliance Turn-in Program to set more aggressive turn-in goals.

To verify that the program is serving only its customers, National Grid provides JACO with a customer list that is updated regularly. When a customer requests a pick-up, JACO verifies the account status by customer by name and address. If JACO cannot immediately confirm that the request is from a National Grid customer, they contact National Grid to verify the account. JACO and National Grid said that they can verify most cases, but if not the scheduled pick-up will be cancelled.

JACO makes an appointment reminder call to each customer a day or two prior to pick-up. During the call, JACO confirms some of the information collected during the enrollment process such as the size and working condition of the unit and that someone over 18 years of age will be at the home during the pick-up. JACO also reminds the customer that all units must be clean, plugged in, and running. They also remind the customer that a clear pathway must exist for the appliance removal because the crew is not permitted to move furniture or other obstructions.

National Grid explained that the size restriction limiting refrigerators to units between 10 and 30 cubic feet is designed to prohibit both the turn-in of smaller units that typically do not consume large amounts of electricity (and so have smaller energy savings) and larger commercial-sized

units that may require different collection and recycling processes. Units must also be in working order at the time of pick-up to provide some assurance that the units are being taken off the grid. If the unit is not plugged in when the JACO pick-up team arrives, JACO said that the crew will plug the unit in to verify that it is in working condition. According to program protocol, if the unit does not meet the size requirements or is not in working order, JACO will not pick it up. In other markets JACO said that they will pick-up non-working units for recycling, but the Rhode Island requirements that are focused on energy savings do not allow that.

The Rhode Island Appliance Turn-in Program currently allows for two appliances to be picked up per customer each year. JACO's tracking system allows them to know if someone has made a request previously and they will block the pick-up of any additional units in a given year. This restriction should prohibit customers from using the program as a "dumping" ground for units they may have on-site but that are likely not in use. NMR's review of the participant database revealed no evidence that customers were using the program to turn in more units than the program allows. In the review, NMR noted that a few customers (less than 1%) had arranged for more than two appliance pick-ups; these appear either to be cases where the customer is a landlord or caretaker for more than one property or cases where the customer had arranged for pick-ups in separate years (2009 and 2010) and so fell within the program guidelines.

2.6 Recycling

National Grid reviewed the recycling procedures with JACO when the contract was issued and advises them on procedural questions as they arise. Since the opening of the Franklin, MA recycling facility, National Grid also has monitored operations a couple of times.

JACO explained the recycling process in detail. First, JACO affixes bar code labels for identification as units are collected from customer homes, so that the status of units can be tracked throughout the recycling process. All units are delivered to JACO's Franklin, MA facility where the components of refrigerators and freezers are systematically taken apart along an assembly (or de-manufacturing) line.

Table 2-2 shows the average weight and disposition of the components of a typical refrigerator recycled through the RI Turn-in Program according to an analysis of program records from June 2009 through October 2010.[5] Metals, glass, and plastic are stripped from the unit. JACO sells the metal to scrap metal dealers at market rates and the tempered glass and the plastic are

[5] The weight of each component as represented in the Rhode Island program records is less than those that are presented in some of the program marketing materials, such as the www.coolturnin.com website, which states: "*The average 10 year old refrigerator contains about 160 pounds of steel, 75 pounds of plastic and 10 pounds of glass.*" Now the program has a track record of its own and does not need to rely on average statistics about how much material is diverted from landfills.

recycled. The glass can be reused as aggregate in concrete mixtures, filler in potting soils, and various other purposes, and the plastic can be recycled into various consumer goods.

Materials that are hazardous or potentially hazardous are removed. These materials include oil, chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) gases[6] as well as polychlorinated biphenyl (PCB) and mercury containing switches and relays. The oil is recycled and can be reused as mineral oil and the Freon is destroyed.

Foam insulation is removed and bagged. Because the foam may contain CFCs (units built before 2005 may have used CFCs as a blowing agent in the foam), the bags are taken to a waste to energy plant and incinerated at high temperature, yielding about 7 kWh per unit.

Table 2-2: Components of a Typical Refrigerator Recycled through RI Turn-in Program

Component	RI Average Amount per Unit (from JACO)	Hazardous?	RI Disposal Disposition
Metal	107 pounds	No	Sold as scrap metal, recycled into other goods
Plastic	20 pounds	No	Recycled into other goods
Glass	2 pounds	No	Recycled into other goods
Oil	10 ounces	May be contaminated	Program filters out CFCs, oil can be recycled
Foam insulation	9 pounds	May contain CFC-11, HCFC-14b	Program isolates and incinerates at waste-to-energy facility
Freon	9 ounces	May contain CFC-12, HCFC-141b, HFC-134a	Program collects and destroys

Sources: JACO program records, June 2009 through October 2010 and EPA RAD program (http://www.epa.gov/ozone/partnerships/rad/downloads/RAD_2009_Annual_Report.pdf)

While the U.S. EPA guidelines[7] require that refrigerants (CFCs) be recovered from refrigerators and freezers before the final disposal of the unit, and that waste such as mercury, used oil, and PCBs be properly managed and stored, the guidelines do not regulate other aspects of appliance

[6] Refrigerators and freezers that were manufactured before 1995 typically contained CFCs or Freon as a refrigerant. CFC's and HCFC's were also used as a blowing agent in foams that were used as insulation in refrigerators and freezers manufactured before 2005. CFC's and HCFC's are ozone depleting substances that destroy the protective ozone layer above the earth and greenhouse gases that contribute to global climate change if released to the environment.

[7] Section 608 Refrigerant Recycling Rule of the Clean Air Act of 1990, U.S. Environmental Protection Agency (EPA), Office of Air and Radiation, Stratospheric Protection Division, August, 1995. http://www.epa.gov/ozone/title6/608/ (Accessed October 2010)

recycling, such as the handling of foam containing CFCs. JACO is a partner in the voluntary U.S. EPA Responsible Appliance Disposal (RAD) program[8], however, and follows the RAD program guidelines for proper recovery and disposal of refrigerant, foam, mercury, PCB's, and used oil from the appliances in its Franklin, MA facility, as described above.. Through JACO, the Rhode Island Appliance Turn-in Program therefore recycles appliances to a level that exceeds the mandatory EPA standards.

Describing the consequences of failing to follow these RAD guidelines, JACO explained, "*Typically in the U.S., the fluids would be removed and the shell of the refrigerator would be shredded at a scrap yard and the gases and the foam would be released partially when they are shredded and the rest would leech out at the landfill.*"

In total, JACO estimates that 95% of the materials in the units that it collects for the Rhode Island Appliance Turn-in Program are recycled. Only the rubber gasket around the door and fiber insulation in the door are sent to a landfill. Being RAD compliant, incinerating some of the materials at a waste-to-energy facility to generate electricity and recycling the vast majority of the materials in the appliances differentiates the Rhode Island Appliance Turn-in Program from other options that might be available to consumers.

The Rhode Island Appliance Turn-in Program does not claim credit for any of the non-energy impacts of recycling the appliances. However, as Table 2-3 shows, the program has recovered over one million pounds of metal, plastic, and glass, much of which is diverted from eventual disposal in landfills. Recycling the materials into new goods reduces the need to produce products from virgin materials. Additionally, capturing the CFCs from the appliances has prevented the release of ozone depleting substances and greenhouse gases to the atmosphere. As the program matures, the number of units collected with CFC-based refrigerant and foam will decrease until the full stock of older units that contain CFCs reaches the end of life. At the same time, more appliances with HFC refrigerant and HCFC-based foams will be collected. The program has used some messaging about the benefits of recycling in its marketing materials and on the program website portals. The environmental benefits associated with recycling older appliances appeal to some participants (see Table 6-3 and Table 6-4), but are not the primary motivation for participation.

[8] The RAD Program is a voluntary program sponsored by the U.S. Environmental Protection Agency that is designed to provide guidance for utilities and other interested parties to encourage the retirement of old, inefficient refrigerated appliances and to recycle/dispose of the units using best environmental practices. Program partners document proper recovery and treatment of refrigerant, foam, mercury, PCBs and used oil. Source U.S. EPA Responsible Appliance Disposal Program, http://www.epa.gov/ozone/partnerships/rad/downloads/RAD_Guidance_Web_Doc.pdf (Accessed September 2010)

Table 2-3: Total Materials Recycled by Program
(June 2009 through October 2010)

Component	Total Pounds Recycled (unless otherwise noted)
Metal	1,081,610
Plastic	203,020
Glass	15,227
Oil	767 (gallons)
Foam insulation	83,211
Freon	5,980
Electricity produced at waste-to-energy incinerator	582 (MWh)

2.7 Program Data

JACO described the way that program data is collected and maintained throughout the pick-up and recycling process. The customer and appliance data collected by the JACO pick-up crew is initially populated by customer lists provided by National Grid. When a customer calls in or signs up online, JACO creates an order. Throughout the pick-up, recycling process, and issuing of the rebate check, more data is added to each customer order record. By the end of the process, about 60 fields have been created, which include details such as the date the customer signed up, their contact information, pick-up date, appliance model, make, size, and details about the components that were recycled, and the day and amount of the check that was issued. JACO typically provides National Grid with two types of data: order data, which contain all the customer information, and unit data, which contain details about the appliances collected. JACO sends a data extract along with the monthly invoicing to the clients.

2.7.1 Dashboard

JACO uses an online interface called Dashboard to communicate program activity to clients. Data is updated every eight to twelve hours. Dashboard shows customer pick-up requests, scheduled pick-ups, and completed pick-ups. It includes graphs, charts, and various statistics about the appliances that have been processed through the program.

National Grid said that it uses Dashboard on a regular basis for quick updates on the program status. They said it is particularly useful when they are monitoring goals in relation to marketing efforts because program demand is sensitive to marketing.

While Dashboard provides National Grid with current information about the program status, National Grid asked JACO to provide an additional spreadsheet with more detail about trending and projections for the marketing efforts, scheduled pick-ups, and completes. JACO was able to accommodate this need.

2.8 Program Resources

Resources devoted to the program appeared to be adequate from both National Grid's and JACO's perspective. National Grid noted that during busy periods JACO has had to work very hard to keep up, but the addition of JACO's Northeast Regional Manager has improved that situation, and the fact that he is local is also seen as a plus. JACO said that they currently have an appropriate level of resources to meet the needs of the Rhode Island Appliance Turn-in Program. Twenty-three full-time equivalent employees are shared among the JACO programs across New England: Eight full-time equivalent positions at the warehouse, two at the Call Center, eight field staff (four two-person crews), and between four and twelve management personnel depending on current need.

2.9 Program Marketing

As a turn-key provider for the Rhode Island Appliance Program, JACO, through a marketing subcontractor, is responsible for the primary marketing activities used to promote the program. JACO designs the marketing plan, develops creative print materials, places ads, and organizes events. National Grid supplements the effort with its in-house resources and has developed some of its own marketing materials and promotion activities.

JACO reported that it uses three major strategies for marketing: bill inserts, earned media, and paid media. National Grid and JACO report noticeable increases in pick-up requests when the program is promoted in monthly customer bills. National Grid also reported similar success with email blasts to customers.

Marketing through earned media includes social networking and public relations (PR) events. JACO typically organizes a PR event at the launch of a new program and then once per year. For the launch of the program in 2009, JACO picked up a unit in a customer home in Rhode Island and took it to JACO's new recycling facility in Franklin, MA. The media was invited to cover the event. National Grid also organized school events that draw attention to the program through an interactive display with a turned-in refrigerator that students can paint and by inviting customers to make a charitable donation of their $50 rebate directly to the school if they recycle a refrigerator or freezer through the program. About ten schools in National Grid territory in Rhode Island have held school events and promote the idea of school fund-raising through donations of the rebate. National Grid customers in Rhode Island have the option to designate their $50 incentive directly to a selection of schools from the on-line sign-up interface. National Grid also partnered with the U.S. Environmental Protection Agency (EPA) in October 2009 by hosting the EPA ENERGY STAR campaign tour. The tour promoted energy efficiency in the

home and featured appliance turn-ins as a way for customers to save money and energy. National Grid participated in a fall 2010 Rotary Street Painting Festival in Providence, RI by having two retired refrigerators available for people to paint and educating customers about the program.

Paid media efforts by JACO include local newspaper ads and advertorials (paid placement of ads that look like news articles), direct mail (ValPak mailer with a double sided four-color insert that had a 46% statewide penetration), and digital ads (Table 2-4). JACO described the digital effort as paid media that is "*geo-targeted, meaning zip code based search engine optimization. When you go in and search on Yahoo and Google and for certain key words you will find the program… [on] banner ads for certain areas.*"

Table 2-4: Promotion Activity in Rhode Island (2010)

Activity	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Bill inserts	Various months throughout year									
Email blasts	Various months throughout year									
Digital Media—Pay per Click Campaign	✓	✓	✓	✓	✓	✓	✓	✓		
Direct Mail--ValPak		✓								
Newspaper ads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special events									✓	

National Grid added that marketing messages emphasize saving energy and money, with a focus on the high cost of running a second refrigerator (up to $150 a year), the ease of having the program pick it up for free, and that the customer will receive a $50 rebate. Secondary messages note the environmental benefits of keeping the materials out of landfills and recycling the materials into new products.

Despite the initial broad based marketing efforts, National Grid reported that customer response in Rhode Island has been slower than they had hoped. National Grid set a very aggressive goal for pick-ups in Rhode Island (5,200 units in 2010 compared to 5,000 units in Massachusetts, which has nearly 2.5 times as many households). The increase in rebate amount from $30 to $50 in 2009 was one way they stimulated demand. Bill inserts and messaging on customer communications also has helped. For the near future, National Grid has planned more bill inserts ads, and a new marketing effort to include appliance retailers. As noted earlier, a new marketing effort to include appliance retailers recently has launched, whereby JACO partners with Sears to recycle customers' refrigerators and freezers when they are replaced with new ones purchased from Sears. Given the fact that the Rhode Island Appliance Turn-in Program is open to receiving any working refrigerators and freezers, not just secondary appliances as is the case with the parallel program run in Massachusetts, further marketing through appliance retailers may attract customers who are considering options for their existing unit after they buy a new appliance. With few easy removal options available, consumers may be tempted to keep the displaced refrigerator as a spare when they purchase a new unit, thus increasing overall household energy

consumption. JACO said it has found that retailers in other parts of the country have effectively promoted appliance removal programs when they present it to customers as an easy way to remove an appliance as well as an opportunity to save on electricity bills and obtain an incentive at the same time. National Grid and JACO said that they are revising a counter display for secondary recycling for use by appliance retailers to promote the program.

3 Program Information Sources and Enrollment

Survey respondents were asked how they first became aware of the program (Table 3-1). As they might have heard of the program from more than once source, respondents were given the opportunity to give multiple responses. National Grid advertisements were a key source of information, with more than six out of ten respondents (62%) learning of the program through the on-going newspaper advertisements or the TV ads that were used at the initial launch of the program, nearly one out of ten (9%) through a bill insert or mailing, and 3% through the National Grid website. About one out of ten respondents (11%) said they found out about the program through word of mouth. Only 4% of the sample reported learning about it through the National Grid website or elsewhere on the internet.

Table 3-1: How Participants Found Out About the Program

How did you first find out about this program? (Multiple response)	
Sample size	*502*
Utility/Sponsor advertising in newspaper, TV	62%
Co-worker, family, or friend	11%
Bill insert/mailing from utility/Sponsor	9%
Appliance retailer/dealer	7%
Utility/Sponsor website	3%
Store flyer	3%
Salesperson	1%
Internet-unspecified	1%
Other	2%
Don't know/refused	6%

As shown in Table 3-2, when asked what they think happens to the appliances after the units are removed from their homes, about one-quarter of respondents (24%) said that they did not know. About half of the respondents (51%) knew that the appliances are recycled and nearly one-quarter (22%) knew that hazardous materials within the appliances are disposed of. About ten percent thought the appliances were re-used (re-sold or donated to the needy), and about ten percent thought they were simply trashed.

Table 3-2: What Participants Believe Happens After Pick-up

What do you think happens to appliances after they are picked up by the program? (Multiple response)	
Sample size	*502*
Appliance is recycled	51%
Hazardous materials (CFCs, refrigerants, Freon) within appliance are disposed of	22%
Appliance is sold for reuse	10%
Appliance is trashed	9%
Appliance is destroyed	1%
Appliance is dismantled	1%
Appliance is donated to the needy	1%
Other	<1%
Don't know/refused	24%

Nearly three-quarters (72%) of the respondents said they enrolled in the program over the phone, and about two of ten (19%) said they enrolled online (Table 3-3). According to JACO's records, 81% enrolled by phone and 19% enrolled online. All of the respondents who said "don't know," "both," or "refused" when asked how they enrolled, therefore, had actually enrolled over the phone.

Table 3-3: How Participants Enrolled in Program

Method of enrollment	
Sample size	*502*
Over the phone	72%
Online	19
Both	1
Don't know/refused	9

On the whole, respondents found it to be relatively easy to enroll in the program, whether they reported enrolling by phone or online (Table 3-4). On a scale of zero ("extremely difficult") to ten ("extremely easy"), nine out of ten respondents who enrolled over the phone, and over three-quarters (77%) who enrolled online, gave a rating of nine or ten. Only one percent of respondents, all of whom had enrolled over the phone, thought enrolling was difficult, giving a rating of two. When asked to describe specific difficulties with enrolling, responses included being put on hold for a long time and having difficulty finding the number to call.

Table 3-4: Ease of Program Enrollment by Phone and Online

(Base: respondents who reported enrolling over the phone, online, or through both*)

Level of Ease	Enrolled Over Phone	Enrolled Online	Enrolled Both Over Phone and Online
Sample size	*379*	*90*	*1*
Average	9.7	9.2	10
0 "Extremely difficult"	0%	2%	0%
1	0	0	0
2	1	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	3	0
7	2	4	0
8	8	14	0
9	8	6	0
10 "Extremely easy"	82	71	100

*Responses from participants who said they didn't know how they enrolled or who refused to answer the question were not included in this analysis.

In general, respondents found it to be relatively easy to schedule a time for their appliances to be picked up by the program (Table 3-5). The average difficulty rating was 9.5 (from zero to ten), with 86% giving a rating of nine or ten. Very few respondents (1%) gave a rating of less than five. These respondents said that the program had no convenient times available to schedule a pick-up.

Table 3-5: Ease of Scheduling Time for Pick-up

Level of Ease	
Sample size	*502*
Average	9.5
0 "Extremely difficult"	0%
1	1
2	0
3	0
4	0
5	2
6	1
7	3
8	8
9	8
10 "Extremely easy"	78

Respondents were asked if they had any recommendations for improving the program in the future (Table 3-6). Two out of ten respondents recommended some type of improvement. Most of the recommendations involved expanding the program in some way, such as including more appliance types, offering a larger incentive, offering the program more often and for a longer period of time, more advertising, and giving rebates for new appliances. Other respondents reported problems with the haulers that they thought should be resolved, such as lack of courtesy as well as insufficient training and knowledge of safety.

Table 3-6: Recommendations for Improving Program in Future

Recommendation (Multiple response)	
Sample size	*502*
No recommendations	81%
Larger incentive	4%
Expand program to other appliances	4%
Offer program more often and for longer	2%
Improve haulers (ability to carry appliances up stairs, training, knowledge about safety, courtesy)	1%
More advertising/publicity	1%
More convenient scheduling times (e.g., pick up sooner, more in advance, on weekends, etc.)	1%
Give rebates for new appliances	1%
Conduct survey closer to time of program	1%
Other	3%

4 Properties of Removed Appliances

Respondents who had a refrigerator removed were asked whether it had been their primary refrigerator, secondary refrigerator, or was not currently being used (Table 4-1). About two-thirds of the respondents (65%) were using the refrigerator as a spare. Over one-quarter (28%) of respondents reported that it was their primary refrigerator and fewer than one in ten (7%) said it was not being used. Participants who retired freezers were not asked this question because it was presumed that stand-alone freezers are generally used for extra storage in addition to their primary refrigerator/freezer.

Table 4-1: Use of Removed Refrigerators

Use of Removed Refrigerator	
Sample size	*299*
Used as primary/main	28%
Used as secondary/spare	65
Not being used	7

When asked how old the appliance was before it was removed, over three quarters (78%) of respondents who had retired refrigerators said that it was over ten years old, with about one in three (34%) reporting that it was over twenty years old (Table 4-2). As shown in Table 4-3, The freezers that were picked up tended to be older than the refrigerators: 84% of respondents who had retired freezers said that it was over ten years old, and over half (53%) said it was twenty years or older.

Table 4-2: Age of Removed Refrigerators

Age of Removed Refrigerator	
Sample size	*299*
0 to 5 years old	1%
6 to 10 years old	17
11 to 15 years old	23
16 to 20 years old	21
More than 20 years old	34
Don't know/refused	6

Table 4-3: Age of Removed Freezers

Age of Removed Freezer	
Sample size	*246*
0 to 5 years old	1%
6 to 10 years old	9
11 to 15 years old	14
16 to 20 years old	17
More than 20 years old	53
Don't know/refused	7

Respondents who had a secondary refrigerator removed were asked how long they had used it as a spare (Table 4-4). Over half said they had used it as a secondary refrigerator for ten or fewer years (57%), and about one-third (35%) for over ten years. Just over one in ten (12%) had used it that way for over twenty years.

Table 4-4: Length of Use for Secondary Refrigerators

(Base: respondents who removed secondary refrigerator)

How long had you been using the refrigerator as a secondary refrigerator when you decided to get rid of it?	
Sample size	*197*
0-2 years	10%
3-5 years	18
6-10 years	29
11-15 years	13
16-20 years	10
>20 years	12
Don't know/refused	7

Respondents who had a non-primary refrigerator or a freezer removed were asked how often in the year before it was picked up that the appliance was plugged in (Table 4-5 and Table 4-6). The majority of respondents in both groups (65% for refrigerators; 60% for freezers) said it was plugged in all or most of the time. However, 7% of respondents with refrigerators and 21% of respondents with freezers said it was never plugged in.

Table 4-5: Amount of Time Refrigerator Plugged in

(Base: Respondents who had a secondary or unused refrigerator picked up)

In the year prior to getting rid of the refrigerator, how often did you have the refrigerator plugged in?	
Sample size	*218*
All the time	50%
Most of the time	15
Occasionally	28
Never	7
Don't know/refused	0

Table 4-6: Amount of Time Freezer Plugged In

In the year prior to getting rid of the freezer, how often did you have the freezer plugged in?	
Sample size	*246*
All the time	55%
Most of the time	5
Occasionally	18
Never	21
Don't know/refused	1

Respondents whose freezers had been plugged in at least occasionally were asked how long they had been using it before it was removed (Table 4-7). Sixty percent of these respondents had been using it for ten or more years, about half of whom had been using it for over twenty years. Over ten percent (12%) said they did not know how long they had been using it or chose not to answer the question.

Table 4-7: Length of Use for Freezer

(Base: respondents who answered that the freezer was plugged in at least occasionally)

Approximately how long had you been using the freezer when you decided to get rid of it?	
Sample size	*195*
0-2 years	7%
3-5 years	5
6-10 years	17
11-15 years	11
16-20 years	20
>20 years	29
Don't know/refused	12

Respondents who removed a refrigerator or freezer that was not being used were asked how long it had been unused when they decided to remove it (Table 4-8 and

Table 4-9). Half of the freezer group and over half (57%) of the refrigerator group had stopped using it in the previous two years. Just under a quarter of each group (24% for refrigerators and 22% for freezers) had not been using the appliance in the past three to five years, and about one out of ten in each group (10% for refrigerators; 11% for freezers) said it had been out of use for six to ten years. Less than ten percent of each group (6% for refrigerators; 8% for freezers) reported that the appliance had been unused for over ten years.

Table 4-8: Length Out of Use for Unused Refrigerators

(Base: respondents who removed a refrigerator that was not being used)

How long had the refrigerator been unused when you decided to get rid of it?	
Sample size	*21*
0-2 years	57%
3-5 years	24
6-10 years	10
11-15 years	0
16-20 years	6
Don't know/refused	3

Table 4-9: Length Out of Use for Unused Freezers

(Base: respondents who removed a freezer that was never plugged in)

How long had the freezer been unused when you decided to get rid of it?	
Sample size	*69*
0-2 years	50%
3-5 years	22
6-10 years	11
11-15 years	4
16-20 years	7
>20 years	1
Don't know/refused	4

One of the criteria for pick-up is that the unit is in working condition; if the unit is not plugged in when JACO arrives for the pick-up, the crew is directed to plug it in to confirm that the unit runs. When asked about the condition of the refrigerator or freezer that was removed, the vast majority of respondents reported that it was in working condition (Table 4-10 and Table 4-11). Few respondents (6% with refrigerators and 2% with freezers) said that it was not working or not working well.

Table 4-10: Condition of Refrigerators

Was the refrigerator in working condition when you decided to have it picked up by the program?	
Sample size	*299*
Yes	94%
Yes, but not that well	5
No	1
Don't know/refused	<1

Table 4-11: Condition of Freezers

Was the freezer in working condition when you decided to have it picked up by the program?	
Sample size	*246*
Yes	96%
Yes, but not that well	2
No	0
Don't know/refused	2

Respondents with a secondary refrigerator or a freezer were asked how important it was to have a spare fridge or freezer for storing food and beverages on a scale from zero "not at all necessary" to ten ("absolutely necessary") (Table 4-12 and Table 4-13). The responses in both groups showed a wide range of views on the appliance's perceived importance: About one in five respondents (19%) who removed a spare refrigerator said it was absolutely necessary, and the same proportion said it was not at all necessary. Another 18% rated its importance as a "five."

Similarly, one-quarter of respondents who removed a freezer thought it was "absolutely necessary" and another quarter (24%) thought it was "not at all necessary." Another 13% gave a rating of "five." Overall, freezers were judged to be somewhat more important than spare refrigerators (mean rating of 7.8 and 6.8 respectively).

Table 4-12: Importance of Secondary Refrigerator

(Base: Respondents with secondary or unused fridges)

How important for your household food and beverage storage needs is it to have a secondary refrigerator?	
Sample Size	*204*
Average	***6.8***
10 "Absolutely necessary"	19%
9	2
8	10
7	7
6	4
5	18
4	5
3	5
2	5
1	5
0 "Not at all necessary"	19
Don't know/refused	2

Table 4-13: Importance of Freezer

(Base: Respondents who removed a freezer)

How important for your household food storage needs is it to have a stand-alone freezer?	
Sample Size	*246*
Average	8.7
10 "Absolutely necessary"	25%
9	5
8	9
7	4
6	3
5	13
4	4
3	6
2	2
1	3
0 "Not at all necessary"	24
Don't know/refused	4

About half (49%) of the refrigerator group and about three-quarters (72%) of the freezer group had kept their appliance in the basement and about two out of ten in both groups (22% who had removed refrigerators and 19% who had removed freezers) had kept the appliance in the garage (Table 4-14 and Table 4-15). One-quarter of the refrigerator group said that it was located in the kitchen.

Table 4-14: Location of Removed Refrigerator

Where in the house was the refrigerator located?	
Sample size	*299*
Basement	49%
Kitchen	25
Garage or shed	22
Porch	1
Laundry room	1
Yard	1
Other room in house	1
Some other place	<1
Don't know/refused	0

Table 4-15: Location of Removed Freezer

Where in the house was the freezer located?	
Sample size	*246*
Basement	72%
Kitchen	2
Garage	19
Laundry room	4
Some other place	1
Refused	2

Over half of the respondents who had removed a refrigerator (58%) had kept it in a space that was heated in the winter, and slightly fewer who had removed a freezer had done so (52%) (Table 4-16 and Table 4-17). Respondents who had removed refrigerators were somewhat more likely than those who removed a freezer to have kept it in a space that was cooled in the summer (35% and 19% respectively).

Table 4-16: Space Heating/Cooling in Location of Removed Refrigerator

	Is the space where the refrigerator was located heated by your heating system in the winter?	Is the space where the refrigerator was located cooled with air conditioning in the summer?
Sample size	*299*	*299*
Yes	58%	35%
No	41	63
Don't know/refused	<1	2

Table 4-17: Space Heating/Cooling in Location of Removed Freezer

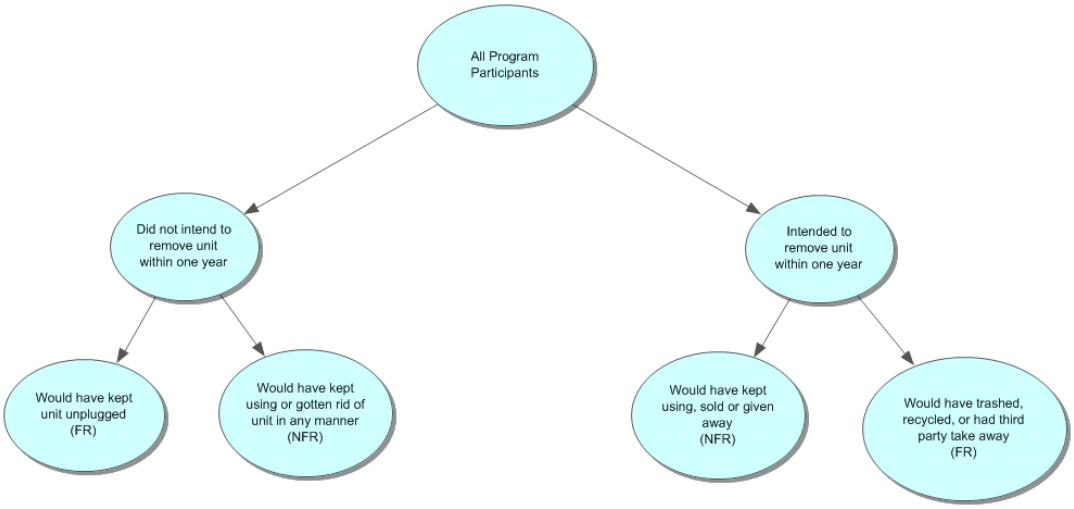
	Is the space where the freezer was located heated by your heating system in the winter?	Is the space where the freezer was located cooled with air conditioning in the summer?
Sample size	*246*	*246*
Yes	52%	19%
No	45	79
Don't know/refused	3	3

5 Free Ridership

In this section of the survey, respondents were asked questions about why they participated in the program, how important the rebate was in their decision to participate, what they would have done with the appliance in the absence of the program, and whether they had replaced the removed appliances with new ones.

Based on responses to these questions, we estimated the extent of free ridership for the program. As Figure 5-1 shows, free riders (FRs) are considered to be participants who either a) would have kept the unit unplugged in the absence of the program, or b) before learning about the program had intended to remove the appliance within one year in a manner that would not lead to its being used by someone else. Non-free riders (NFRs) are participants who either a) would have kept using the appliance, b) would have removed the appliance more than one year after the program, or c) would have removed the appliance in a manner that would lead to its use by someone else. Replacement appliances impact the energy savings of the program, but are not considered in estimating free ridership rates.

Figure 5-1: Determination of Free Ridership Status



5.1 Estimation of Free Ridership Rates

We estimated free ridership rates two different ways (FR1 and FR2) for each appliance. For the analysis of both FR1 and FR2, FR status was determined by questions about the intended disposition of appliances in absence of the program.

FR1 used participants' initial responses to questions about the likely disposition of the appliances in the absence of the program and were estimated in the following way: Respondents who said they would have kept the appliance unplugged were considered to be free riders (FRs). Those who would have disposed of the appliance without the program were considered to be non-free riders (NFRs) if they said they would have sold it or given it away (as the appliance would still

be in use), and FRs if they said they would have recycled it, taken it to a trash dump, or had the appliance picked up by the city or by a third party (i.e., a hauler or a retail store). Respondents who said they would have disposed of the appliance more than a year from the time it was picked up by the program were considered to be NFRs. In addition, respondents who said they had not considered removing the appliance before they heard about the program, but later said they would have either gotten rid of it without the program or that they would have kept it and continued using it, were determined to be NFRs. Respondents whose responses did not allow them to be categorized as either FR or NFR (e.g., respondents who said "don't know" to certain questions or gave responses that didn't clearly determine their FR or NFR status) were considered to be possible FRs (PFRs).

A potential drawback of this method is that these initial responses might reflect respondents' wishes and attitudes, rather than what they actually would have done. The ability to physically move a large appliance and the financial costs associated with hiring a hauler or paying disposal fees are among the barriers that might prevent people from removing the units despite the wish to do so.

FR2 rates were estimated along similar principles. However, the analysis of FR2 incorporated two additional questions about the impact of physical and financial barriers on the disposal decision, allowing the analysis to more accurately capture what respondents would actually have done rather than their attitudes about what they would like to have done. One of the questions asked how much, if anything, respondents would be willing to pay a hauler or someone else to take away the appliance if the program were not available. The second question asked whether the need to physically remove the appliance would prevent them from getting rid of it. Respondents who initially said they would have gotten rid of the appliance in absence of the program were again asked, now that they had considered these additional factors involved in disposing of it, what they would have done with the appliance. These responses were used in estimating FR2 in place of the responses to the same question asked initially. In addition, respondents who said they would have hired a hauler to remove the appliance but that they would not pay to do so, or that they would have trashed or recycled the appliance but that the need to physically move the appliance would prevent them from getting rid of it, were determined to be NFRs for the FR2 analysis. Although we recommend using FR2 rates for the impact analysis, in this report we present FR1 rates as well.

5.2 Free Ridership Rates

As shown in Table 5-1, the initial free ridership rate (FR1) was 41% for refrigerators and 46% for freezers. Among the refrigerator group, 52% were non-free riders (NFR) and 7% were possible free riders (PFRs); among the freezer group 45% were NFRs and 7% were PFRs.

When respondents who initially said they would have gotten rid of the appliance were asked again what they would have done, after considering additional factors, their responses changed somewhat. When these new responses were incorporated into the analysis, FR2 rates for the refrigerators and freezers dropped to 33% and 40%, respectively.

Table 5-1: Free Ridership Rates

	Refrigerators *(N=299)*	**Freezers** *(N=246)*
FR1 (free riders)	**41%**	**48%**
NFR1 (non-free riders)	52	45
PFR1 (possible free riders)	6	7
FR2 (free riders)	**33%**	**40%**
NFR2 (non-free riders)	60	54
PFR2 (possible free riders)	7	6

Table 5-2 through Table 5-5 provide a more detailed illustration of the FR1 analysis for refrigerators and freezers, showing the questions that were used to determine FR status, the responses that determined respondents to be FR or NFR, and the percent of respondents with each response.

Table 5-2: Refrigerators—FR1 Responses

(Base: Respondents who had refrigerators removed through program)

Survey question	Free Riders		Non-Free Riders	
	Response	*N=299*	**Response**	*N=299*
What would have done with refrigerator without program?	Kept unplugged	13%	Kept and continued using	28%
	Trashed or recycled; picked up by city or 3rd party	28%	Sold or given it away	6%
Had considered removing refrigerator before heard about program?	Yes	*	No	12%
When would have removed refrigerator without program?	Less than one year later	*	More than one year later	6%
Total**	**Refrigerator FR1**	**41%**	**Refrigerator NFR1**	**52%**

*The FR status of respondents who gave this response was determined by the question asking what they would have done with the fridge without the program.
**Possible free riders (6%) are respondents who said "don't know" or "refuse" when asked what they would have done with the fridge, or whose intended action did not clearly determine their FR status.

Table 5-3: Freezers—FR1 Responses

(Base: Respondents who had freezers removed through program)

Survey question	Free Riders		Non-Free Riders	
	Response	*N=246*	**Response**	*N=246*
What would have done with freezer without program?	Kept unplugged	21%	Kept and continued using	19%
	Trashed or recycled; picked up by city or 3rd party	27%	Sold or given it away	8%
Had considered removing freezer before program?	Yes	*	No	12%
When would have removed freezer without program?	Less than one year later	*	More than one year later	6%
Total**	**Freezer FR1**	**48%**	**Freezer NFR1**	**45%**

*The FR status of respondents who gave this response was determined by the question asking what they would have done with the fridge without the program.
**Possible free riders (7%) are respondents who said "don't know" or "refuse" when asked what they would have done with the fridge, or whose intended action did not clearly determine their FR status.

Table 5-4: Refrigerators—FR2 Responses

(Base: Respondents who had refrigerators removed through program)

Survey question	Free Riders		Non-Free Riders	
	Response	**N=299**	**Response**	**N=299**
What would have done with refrigerator without program?	Kept unplugged	13%	Kept and continued using	28%
	Trashed or recycled; picked up by city or 3rd party	*	Sold or given it away	*
Had considered removing refrigerator before program?	Yes	*	No	12%
When would have removed refrigerator without program?	Less than one year later	*	More than one year later	6%
What would have done with refrigerator without program (considering additional factors)	Trash or recycled; picked up by city or 3rd party	20%	Kept, sold, or given away	10%
Would physically moving refrigerator prevent from removing?	No	**	Yes (for respondents who would have trashed or recycled refrigerator)	4%
How much would be willing to pay hauler?	$0-100	**	Nothing (for respondents who would have hired hauler)	1%
Total* **	**Refrigerator FR2**	**33%**	**Refrigerator NFR2**	**60%**

*The FR status of respondents who gave this response was determined by subsequent questions.
** The FR status of respondents who gave this response to this question was determined by previous questions.

***Possible free riders (7%) are respondents who said "don't know" or "refuse" when asked what they would have done with the fridge, or whose intended action did not clearly determine their FR status.

Table 5-5: Freezers—FR2 Responses

(Base: Respondents who had freezers removed through program)

Survey question	Free Riders		Non-Free Riders	
	Response	*N=246*	**Response**	*N=246*
What would have done with freezer without program?	Kept unplugged	21%	Kept and continued using	19%
	Trashed or recycled; picked up by city or 3rd party	*	Sold or given it away	*
Had considered removing freezer before program?	Yes	*	No	12%
When would have removed freezer without program?	Less than one year later	*	More than one year later	6%
What would have done with freezer without program (considering additional factors)	Trash or recycled; picked up by city or 3rd party	19%	Kept, sold, or given away	10%
Would physically moving freezer prevent from removing?	No	**	Yes (for respondents who would have trashed or recycled freezer)	5%
How much would be willing to pay hauler?	$0-100	**	Nothing (for respondents who would have hired hauler)	2%
Total	**Freezer FR2**	**40%**	**Freezer NFR2**	**54%**

*The FR status of respondents who gave this response to this question was determined by subsequent questions.** The FR status of respondents who gave this response to this question was determined by previous questions.

***Possible free riders (6%) were respondents who said "don't know" or "refuse" when asked what they would have done with the fridge, or whose intended action did not clearly determine their FR status.

6 Program Influence

Table 6-1 through Table 6-46 show the results of survey questions asking respondents why they participated in the program, how important the rebate was in their decision to participate, what they would have done with the appliance in the absence of the program, and whether they had replaced the removed appliances with new ones. Many of these questions were used to assess free ridership.

6.1 Likely Outcome of Appliances in Absence of Program

Respondents were asked if they had already considered getting rid of the refrigerator or freezer before they heard about the program. About six out of ten in each appliance group (57% for fridges; 60% for freezers) agreed that they had considered it. *For the FR analyses, respondents who said they had not considered disposing of the appliance before hearing about the program were considered to be NFRs, unless they indicated in a subsequent response that they would have kept the appliance and stored it unplugged.*

Table 6-1: Whether Participants Had Considered Disposing of Refrigerator

Had you already considered disposing of the refrigerator before you heard about the Appliance Turn-in Program?	
Sample size	*299*
Yes	57%
No	41
Don't know/refused	3

Table 6-2: Whether Participants Had Considered Disposing of Freezer

Had you already considered disposing of the freezer before you heard about the Appliance Turn-in Program?	
Sample size	*246*
Yes	60%
No	36
Don't know/refused	4

Respondents were also asked why they decided to dispose of their refrigerator or freezer. As Table 6-3 and Table 6-4 show, the most frequently cited reason for both groups was the incentive. Thirty-seven percent of respondents who removed a refrigerator and 38% of those who removed a freezer cited this reason. The second most frequently cited reason for both groups was no longer needing it or no longer using it, with one-quarter of the refrigerator group and roughly one-third (31%) of the freezer group giving this response. Within both groups, about one-quarter (23%) of respondents cited one or more energy- and environment-related reason (i.e., to save energy or reduce energy costs, in order to recycle, or to help the environment).

In the in-depth interview, JACO said that they do not specifically ask customers why they participate in the program. However, anecdotally they hear about the reasons that customers participate from other programs that they manage. Ease of participation ("*I want to get rid of a unit*"), energy savings, financial savings (including the $50 incentive and the longer term savings on their electricity bill), and environmental savings (various components that are removed and recycled help the environment) are among the main reasons that JACO cited as motivation for participation. National Grid similarly thought that customers are attracted to the program for the convenience it offers for easy appliance removal and the opportunity to both save money through the electricity bill savings and the $50 rebate check.

Table 6-3: Why Participants Decided to Dispose of Refrigerator

Why did you decide to get rid of the refrigerator through the Appliance Turn-in Program? (Multiple Response)	
Sample size	*299*
Rebate/incentive	37%
Didn't need/use it any more	24%
Easy/convenient to turn it in	15%
Bought new refrigerator	14%
Old unit was not working well	10%
Better for the environment	7%
They would pick it up	6%
Wanted to recycle	6%
Reduce energy/electricity costs	5%
Save energy/electricity	5%
Cost too much to have it picked up	2%
Remodeling/expanding	1%
Did not want to pay disposal fee at dump/recycling center	1%
Other	3%
Don't know/Refused	1%

Table 6-4: Why Participants Decided to Dispose of Freezer

Why did you decide to get rid of the freezer through the Appliance Turn-in Program? (Multiple Response)	
Sample size	*246*
Rebate/incentive	38%
Didn't need/use it any more	31%
Easy/convenient to turn it in	18%
They would pick it up	10%
Bought new freezer	7%
Save energy/electricity	7%
Old unit was not working well	6%
Reduce energy/electricity costs	6%
Wanted to recycle	6%
Better for the environment	4%
Remodeling/expanding	1%
Cost too much to have it picked up	1%
Did not want to pay disposal fee at dump/recycling center	1%
Seemed like a good program	1%
Other	4%
Don't know/Refused	2%

Respondents were asked what they would have done with the appliance if the program had not been available. Nearly six out of ten in each group (58% of those who removed refrigerators and 59% who removed freezers) said they would have gotten rid of it in some way (Table 6-5 and Table 6-6).

Table 6-5: Action in Absence of the Program—Refrigerators

If the Appliance Turn-in Program had not been available to you, what would you most likely have done with your refrigerator?	
Sample size	*299*
Gotten rid of it in any manner	58%
Kept it	39
Don't know/refused	3

Table 6-6: Action in Absence of the Program—Freezers

If the Appliance Turn-in Program had not been available to you, what would you most likely have done with your freezer?	
Sample size	*246*
Gotten rid of it in any manner	59%
Kept it	36
Don't know/refused	5

Respondents who said they would have kept the appliance in the absence of the program (refrigerators: 39%, freezers: 36%) were asked whether they would have continued to use it, stored it unplugged, or done something else with it. As Table 6-7 shows, two-thirds (67%) of respondents who would have kept their refrigerator through the program said that they would have continued to use it and about one-third (32%) said they would have stored it unplugged. Table 6-8 shows that among those who would have kept their freezer, slightly less than one-half (45%) would have continued to use it and about one half would have stored it unplugged (51%) or used it to store non-food items (1%). *In the FR analysis, respondents who would have continued to use the appliance were considered to be NFRs, whereas those who would have stored the appliance unplugged were considered to be FRs.*

Table 6-7: Outcome for Refrigerators Kept in Absence of Program

(Base: Respondents who indicated that they would have kept the refrigerator in the absence of the program)

If the Appliance Turn-in Program had not been available to you, what would you have done with the refrigerator?	
Sample size	*127*
Continued to use it	67%
Stored it unplugged	32
Don't know/refused	2

Table 6-8: Outcome for Freezers Kept in Absence of Program

(Base: Respondents who indicated that they would have kept the freezer in the absence of the program)

If the Appliance Turn-in Program had not been available to you, what would you have done with the freezer?	
Sample size	*103*
Continued to use it	45%
Stored it unplugged	51
Used it to store non-food items	1
Don't know/refused	3

Eight out of ten respondents who would have gotten rid of their refrigerators and nearly three-quarters (74%) of those who would have gotten rid of their freezers said they would have disposed of the appliance within a year of when they had it removed by the program (Table 6-9 and Table 6-10). *In the FR analysis, respondents who said they would have disposed of the appliance more than a year later (refrigerators: 15%, freezers: 19%) were determined to be NFRs.*

Table 6-9: Refrigerators—Timing of Disposal in Absence of the Program

(Base: respondents who answered that they would have gotten rid of the refrigerator in the absence of the program)

If the Appliance Turn-in Program had not been available, how soon do you think you would you have gotten rid of your refrigerator?	
Sample size	*179*
Within a year of when the program took it	79%
More than a year later	15
Don't know/refused	7

Table 6-10: Freezers—Timing of Disposal in Absence of the Program

(Base: respondents who answered that they would have gotten rid of the freezer in the absence of the program)

If the Appliance Turn-in Program had not been available, how soon do you think you would you have gotten rid of your freezer?	
Sample size	*145*
Within a year of when the program took it	74%
More than a year later	19
Don't know/refused	7

Respondents who said they would have gotten rid of the appliance were asked how they would have disposed of it. One-third of the refrigerator group (Table 6-11), and about one-quarter (26%) of the freezer group (Table 6-12), said they would have taken it to a dump or put it out as trash. About one in ten (12%) in the refrigerator group and about two out of ten (21%) of the freezer group said they would have given it away. Fifteen percent of the refrigerator group and less than one out of ten (8%) in the freezer group said they would have had a retail store pick it up, and more than one out of ten (13%) in both groups said they would have hired a hauler to take it away.

Approximately one out of ten respondents who would have disposed of their refrigerator or freezer said they would have had it recycled (8% and 11% respectively). Fewer than one out of ten in each group (refrigerators: 5%; freezers: 8%) said they would have sold the appliance. *In the FR1 analysis, respondents who said they would have disposed of it in a way that would lead to its continued use by someone else by selling it or giving it away, or who said they might have*

kept it after all, were determined to be NFRs. Respondents who said they would have taken it to a dump, taken it out as trash, or had a third party pick it up were determined to be FRs.

Table 6-11: Refrigerator—Method of Disposal in Absence of the Program

(Base: respondents that answered that they would have gotten rid of the refrigerator in the absence of the program)

If the Appliance Turn-in Program had not been available to you, what would you have done to get rid of the refrigerator?	
Sample size	*179*
Taken it to a garbage dump or put out as trash	31%
Had a retail store pick it up	15
Hired hauler to take it away	13
Given it away for free	12
Recycled it	8
Called the city to pick it up	4
Sold it	5
Other*	5
Don't know/refused	7

* "Other" responses include "might have kept," "put on sidewalk," and "apt. maintenance."

Table 6-12: Freezer—Method of Disposal in Absence of the Program

(Base: respondents that answered that they would have gotten rid of the freezer in the absence of the program)

If the Appliance Turn-in Program had not been available to you, what would you have done to get rid of the freezer?	
Sample size	*156*
Taken it to a garbage dump or put out as trash	26%
Given it away for free	21
Hired hauler to take it away	13
Recycled it	11
Had a retail store come and pick it up	8
Called the city to take it away	5
Kept it	3
Sold it	8
Don't know/refused	6

Out of the respondents who said they would have had a retail store or a hauler pick up the appliance, 30% in each group said they thought it would probably have been recycled and about 20% in each group thought it would have been sent to a garbage dump. Nearly one-half of the refrigerator group (46%) and somewhat fewer in the freezer group (38%) did not know what would happen to the appliance (Table 6-13 and Table 6-14).

Table 6-13: Ultimate Outcome for Refrigerators Picked Up by Hauler or Retailer

(Base: respondents who answered that they would have "hired hauler to take it away," "had a retail store come and pick it up," or "other" when asked how they would have gotten rid of the refrigerator in the absence of the program)

As far as you know, would the refrigerator have been recycled, sold for scrap, or sent to a garbage dump?	
Sample size	*77*
Recycled	30%
Sent to garbage dump	19
Sold as scrap	3
Sold as a used appliance	1
Don't know/refused	46

Table 6-14: Ultimate Outcome for Freezers Picked Up by Hauler or Retailer

(Base: respondents who answered that they would have "hired hauler to take it away," "had a retail store come and pick it up," or "other" when asked how they would have gotten rid of the freezer in the absence of the program)

As far as you know, would the freezer have been recycled, sold for scrap, or sent to a garbage dump?	
Sample size	*57*
Recycled	30%
Sent to garbage dump	20
Sold as scrap	11
Sold as a used appliance	2
Don't know/refused	38

Out of the very few respondents who said they would have sold the appliance in the absence of the program, one-quarter of the refrigerator group and one-half of the freezer group said they would have sold it to a friend or family member. Other responses included posting it for sale it on an internet site and selling it to an appliance dealer (Table 6-15 and Table 6-16).

Table 6-15: Ultimate Outcome for Refrigerators Sold

(Base: respondents who answered that they would have sold the refrigerator in the absence of the program)

Would you have sold the refrigerator to a private party, to a used appliance dealer, or someone else?	
Sample size	*9*
Private party, such as a friend or family member	25%
Sold on an Internet site, such as Craig's List	25
Used appliance dealer	13
Someone else	6
Don't know/refused	31

Table 6-16: Ultimate Outcome for Freezers Sold

(Base: respondents who answered that they would have sold the freezer in the absence of the program)

Would you have sold the freezer to a private party, to a used appliance dealer, or someone else?	
Sample size	*12*
Private party, such as a friend or family member	50%
Whoever wanted it	24
Sold on an Internet site, such as Craig's List	7
Don't know/refused	20

As Table 6-17 and Table 6-18 show, about one-third (34%) of respondents who would have given their refrigerator away, and a somewhat larger percent (43%) of respondents who would have given their freezer away, said they would have given it to a friend or family member. Approximately one-quarter of each group would have given it to charity (refrigerators: 24%; freezers: 29%).

Table 6-17: Ultimate Outcome for Refrigerators Given Away

(Base: respondents that answered that they would have given the refrigerator away for free in the absence of the program)

Who would you have given the refrigerator to?	
Sample size	*22*
Given it to a private party, such as a friend or family member	34%
Given it to a charity, such as Goodwill Industries or a church	24
Put it on the curb with a 'Free' sign on it	17
Given it away on an Internet site, such as Craig's List	10
Anyone who would take it away for free	10
Don't know/refused	5

Table 6-18: Ultimate Outcome for Freezers Given Away

(Base: respondents that answered that they would have given the freezer away for free in the absence of the program)

Who would you have given the freezer to?	
Sample size	*30*
Given it to a private party (e.g., friend, co-worker or family member)	43%
Given it to a charity, such as Goodwill Industries or a church	29
Put it on the curb with a 'Free' sign on it	9
Given it away on an Internet site, such as Craig's List	6
Whoever wanted it first	5
Don't know/refused	9

About two-thirds of respondents who said they would have recycled their appliance said they would have done so by taking it to a recycling center (refrigerators: 65%; freezers: 69%), and about one of six said they would put it out for pick-up (refrigerators: 14; freezers: 17). Nearly two of ten respondents who would have recycled refrigerators (18%) and one of ten respondents who would have recycled freezers (10%) said they would have done so by hiring someone to take it (Table 6-19 and Table 6-20).

Table 6-19: Method of Recycling

(Base: respondents who answered that they would have recycled the refrigerator in the absence of the program)

How would you have recycled the refrigerator?	
Sample size	*22*
Take it to a recycling center	65%
Hired someone to take it	18
Put it out for pick-up	14
Other	3
Don't know/refused	0

Table 6-20: Method of Recycling

(Base: respondents who answered that they would have recycled the freezer in the absence of the program)

How would you have recycled the freezer?	
Sample size	*13*
Take it to a recycling center	69%
Put it out for pick-up	17
Hired someone to take it	10
Don't know/refused	5

Respondents who had previously said they would have gotten rid of their appliance in the absence of the program were asked if the need to physically move the appliance out of their house and transport it would have prevented them from getting rid of it. Twenty seven percent of respondents who said they would have gotten rid of their refrigerator and a similar proportion (30%) of those who said they would have gotten rid of their freezer agreed that moving and transporting the appliance would have prevented them from actually getting rid of it (Table 6-21 and Table 6-22). *In the FR2 analysis, these respondents (giving a "yes" response) were determined to be NFRs if they also said in a subsequent question that they would have put it out as trash or taken it to a garbage dump.*

Table 6-21: Impact of Moving/Transporting Refrigerator in Absence of Program

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

If the Appliance Turn-in Program had not been available, would the need to physically move the refrigerator out of your house and/or transport it have prevented you from getting rid of it?	
Sample size	*179*
Yes	27%
No	66
Maybe	3
Don't know/refused	4

Table 6-22: Impact of Moving/Transporting Freezer in Absence of Program

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the freezer in absence of program)

If the Appliance Turn-in Program had not been available, would the need to physically move the freezer out of your house and/or transport it have prevented you from getting rid of it?	
Sample size	*156*
Yes	30%
No	65
Maybe	4
Don't know/refused	1

The respondents who said that they would have gotten rid of their appliance in any manner were asked how much (if anything) they would have been willing to pay for someone to remove the appliance from their home. Slightly more than half (53%) of those who said they would have gotten rid of their refrigerator and somewhat less than half (44%) of those who said they would have gotten rid of their freezer claimed they would not pay anything to have it removed (Table 6-23 and Table 6-24). *In the FR2 analysis, these respondents who were not willing to pay anything to have the appliance removed were considered to be NFRs even if they said in a subsequent question that they would have hired a hauler to remove it.*

About two out of ten in the refrigerator group (21%) and slightly more than one-quarter of the freezer group (27%) said they would have paid a maximum of 25 dollars. About one out of ten respondents in each group (2% to 3%) said that 50 dollars was the maximum amount they would pay, and very few in either group claimed they would have paid more than that amount.

Table 6-23: Amount Willing to Pay to Remove Refrigerator

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

If the Appliance Turn-in Program had not been available, how much, if anything, would you have been willing to pay your city, town, or someone else to remove or recycle your refrigerator for you?	
Sample size	*179*
$0	53%
1-25	21
26-50	10
51-75	1
76-100	2
Don't know/refused	13

Table 6-24: Amount Willing to Pay to Remove Freezer

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the freezer in absence of program)

If the Appliance Turn-in Program had not been available, how much, if anything, would you have been willing to pay your city, town, or someone else to remove or recycle your freezer for you?	
Sample size	*156*
$0	44%
$1-25	27
$26-50	9
$51-100	2
Don't know/refused	17

The same respondents were again asked, now that they had thought about some of the factors involved in disposing of the appliance (i.e., having to physically move it and possibly having to pay to get it hauled away), what they would have done with the appliance in the absence of the program. Table 6-25 shows that compared to the first time the question was asked, respondents in the refrigerator group were significantly less likely the second time to say that they would have hired a hauler (13% versus 7%), and were somewhat more likely the second time to say they would have given away the refrigerator (12% versus 17%), although this difference is not statistically significant.

Table 6-26 shows that compared to the first time the question was asked, respondents in the freezer group were significantly more likely to respond the second time that they would have kept the appliance after all (8% versus <1%). (*In the analysis of FR2, respondents who said they would have kept, sold or given away the appliance were determined to be NFRs; those who said they would have trashed it, recycled it, or had it removed by a third party, were determined to be FRs.)*

Table 6-25: Refrigerators—Action in Absence of Program after Considering Additional Factors

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

Now that you have considered some of the additional factors involved with getting rid of the refrigerator, what would you have most likely done with the refrigerator had you not disposed of it through the Appliance Turn-in Program and received the $50 rebate?	
Sample size	*179*
Taken it to a garbage dump or put out as trash	30%
Given it away for free	17
Had a retail store come and pick it up	11
Recycled it	10
Call city to take it away	8
Sold it	7
Hired hauler to take it away	7*
Kept it	5
Other	<1
Don't know/refused	6

*Significant at a 90% confidence level.

Table 6-26: Freezers—Action in Absence of Program after Considering Additional Factors

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

Now that you have considered some of the additional factors involved with getting rid of the stand-alone freezer, what would you have most likely done with the freezer had you not disposed of it through the Appliance Turn-in Program and received the $50 rebate?	
Sample size	*156*
Taken it to a garbage dump or put out as trash	23%
Given it away for free	16
Recycled it	14
Hired hauler to take it away	11
Had a retail store come and pick it up	10
Sold it	7
Called the city/town to pick it up	3
Kept it	8*
Other	1
Don't know/refused	6

*Significant at a 90% confidence level.

Respondents who indicated in the previous question that they would have had the appliance picked up by a hauler or a retail store were asked what they thought would happen to the appliance after it was picked up. Almost half of each group said "don't know." Nearly one-third (31%) of the refrigerator group and nearly one-quarter (24%) of the freezer group thought the appliance would be recycled, and nearly one out of five respondents in the refrigerator group (18%) and one out of four in the freezer group (25%) believed it would end up in a garbage dump or would be sold for scrap (Table 6-27 and Table 6-28).

Table 6-27: Ultimate Outcome for Refrigerators Picked Up by Hauler or Retailer

(Base: respondents who answered that they would have "hired hauler", "had a retail store pick it up", or "other" when asked how they would have gotten rid of the refrigerator in absence of the program after considering additional factors)

As far as you know, would the refrigerator have been recycled, sold for scrap, or sent to a garbage dump?	
Sample size	*56*
Recycled	31%
Sent to garbage dump	14
Sold as a used appliance	4
Sold as scrap	4
Don't know/refused	47

Table 6-28: Ultimate Outcome for Freezers Picked Up by Hauler or Retailer

(Base: respondents who answered that they would have "hired hauler", "had a retail store pick it up", or "other" when asked how they would have gotten rid of the refrigerator in absence of the program after considering additional factors)

As far as you know, would the freezer have been recycled, sold for scrap, or sent to a garbage dump?	
Sample size	*51*
Recycled	24%
Sent to garbage dump	20
Sold as a used appliance	5
Sold as scrap	5
Don't know/refused	46

6.2 Appliance Rebate

JACO issues a $50 rebate check per unit to each customer after the final salvaging of the appliance in its Franklin, MA recycling facility. A bar code sticker that is affixed to each unit at the customer site tracks the status of each unit through the recycling process.

National Grid and JACO reported in the in-depth interviews that the rebate incentive originally was $30 per unit, but the program did not seem to get much traction at that level, so National Grid in consultation with JACO raised the incentive to $50 per unit in September 2009. The $50 rebate level seems to be adequate according to both parties. JACO reported that incentives are important in motivating customers, as evidenced by the increase in participation when they raised the incentive from $30 to $50 as an end of year push in 2009. JACO noted that when asked about the reasons why they choose to participate, customers "*may not always say incentives are number one, but it does increase participation.*" Participant survey results (Table 6-3 and Table 6-4) confirm the importance of the rebate in customers' decision to participate—27% of refrigerator participants and 38% of freezer participants said that the rebate was a reason why they decided to dispose of their appliance through the program.

6.2.1 Survey Findings on Rebate

All respondents were asked two questions about the importance of the rebate in their decision to participate in the program: The first question asked them to rate the importance of the rebate on their decision to participate, using a scale of zero ("Not at all important") to ten ("Extremely important"). Next, they were asked whether they would have participated in the program without the rebate check (Table 6-29 through Table 6-32).

Within the refrigerator group (Table 6-29), 60% gave an importance rating of six or higher, with half of those (31%) giving the highest rating. The mean rating was 8.0. In contrast, only 13% gave a rating of four or lower, with about half of those (7%) giving an importance rating of zero.

Although the refrigerator group as a whole indicated that the rebate was important to their decision to participate, when asked whether they would have participated in the program without any incentive, more than six out of ten (62%) said they would have participated in the program even if no rebate had been offered and less than one-quarter (24%) said they would not have participated in that case (Table 6-30).

Responses within the freezer group were similar (Table 6-31). Nearly six out of ten (58%) gave an importance rating of six or higher, with half of those (29%) giving the highest rating. The mean rating was 9.3, somewhat higher than the importance rating for refrigerators. Only 15% gave a rating of four or lower, with about half of those (8%) giving an importance rating of zero. Although the freezer group as a whole indicated that the rebate was important to their decision to participate, when asked whether they would have participated in the program without any incentive, more than two-thirds (68%) said they would have participated in the program even if no rebate had been offered and only 15% said they would not have participated in that case (Table 6-32).

Table 6-29: Refrigerators--Importance of Rebate

Importance of Rebate	
Sample Size	*299*
Average	8.0
10 “Extremely important”	31%
9	3
8	13
7	8
6	5
5	25
4	1
3	2
2	2
1	1
0 “Not at all important”	7
Don’t know/refused	2

Table 6-30: Refrigerators--Participation in Absence of Rebate Check

Would you have participated in the program without the rebate check altogether?	
Sample size	*299*
Yes	62%
No	24
Maybe	10
Don’t know/refused	4

Table 6-31: Freezers--Importance of Rebate

Importance of Rebate	
Sample Size	*246*
Average	9.3
10 "Extremely important"	28%
9	3
8	11
7	8
6	8
5	24
4	2
3	2
2	2
1	1
0 "Not at all important"	8
Don't know/refused	3

Table 6-32: Freezers--Participation in Absence of Rebate Check

Would you have participated in the program without the rebate check altogether?	
Sample size	*246*
Yes	68%
No	15
Maybe	15
Don't know/refused	2

National Grid and JACO reported that customers are told to expect the rebate check four to six weeks after the pick-up, but JACO said that the rebate often is issued in less time. "*Once the appliance is recycled through the system, it is cleared, addresses are checked and the check is mailed out. This typically takes two to three weeks. We tell customers to expect that the check may take four to six*." According to JACO and National Grid, customers have followed up after the pick-up to ask when they will receive the check, but the inquiries tend to be more out of curiosity about how the process will work, rather than complaints about the timeliness of the rebate.

The survey asked participants how much time it took to receive their rebate after the appliance was picked up. Over three out of four respondents in both groups (refrigerators: 77%, freezers: 78%) reported that they received it within six weeks. Less than 10% of each group (7%, 6%) said they waited longer than six weeks before receiving the check (Table 6-33 and Table 6-34).

Table 6-33: Refrigerators--Length of Wait for Rebate Check

After you had your appliance(s) picked-up, how long did it take to receive the rebate check from the program?	
Sample size	*299*
Less than 4 weeks	40%
4 to 6 weeks	37
7 to 8 weeks	4
More than 8 weeks	3
Have not received the rebate check yet	1
Don't know/refused	16

Table 6-34: Freezers--Length of Wait for Rebate Check

After you had your appliance(s) picked-up, how long did it take to receive the rebate check from the program?	
Sample size	*246*
Less than 4 weeks	37%
4 to 6 weeks	41
7 to 8 weeks	4
More than 8 weeks	2
Have not received the rebate check yet	2
Don't know/refused	15

6.2.2 Replacement Appliance

Approximately one-half (52%) of the respondents who removed a refrigerator and one-quarter (24%) of those who removed a freezer replaced the appliance with another appliance of the same type after it was picked up by the program. Respondents who replaced the removed appliance were asked a series of questions about the nature and origin of the new appliance (Table 6-35 and Table 6-36).

Table 6-35: Replacement of Refrigerators

Did you replace the refrigerator that you turned in through the Appliance Turn-in Program?	
Sample size	*299*
Yes	52%
No	48

Table 6-36: Replacement of Freezers

Did you replace the freezer that you turned in through the Appliance Turn-in Program?	
Sample size	*246*
Yes	26%
No	74
Don't know/refused	1

Most of the replacement refrigerators (82%) and nearly all of the replacement freezers (99%) were new rather than used appliances (Table 6-37 and Table 6-38).

Table 6-37: Replacement Refrigerators: New vs. Used

(Base: respondents who replaced refrigerators turned in through the program)

Was the replacement refrigerator new or used when you started using it as the replacement refrigerator?	
Sample size	*150*
New	82%
Used	18
Don't know/refused	1

Table 6-38: Replacement Freezers: New vs. Used

(Base: respondents who replaced freezers turned in through the program)

Was the replacement freezer new or used when you started using it as the replacement freezer?	
Sample size	*71*
New	99%
Used	1

Approximately one-quarter (23%) of the replacement refrigerators and 40% of the replacement freezers were bought at a home improvement store (i.e., Lowe's or Home Depot). Roughly one-quarter of each appliance type (refrigerators: 22%; freezers: 26%) were bought from Sears. Nearly two out of ten refrigerators (17%) and about one out of ten freezers (11%) were bought at an appliance store (Table 6-39 and Table 6-40).

Table 6-39: Where Replacement Refrigerators Were Obtained

(Base: respondents that replaced refrigerators turned in through the program)

Where did you get the replacement refrigerator?	
Sample size	*150*
Sears	22%
Lowe's	12
Appliance store (other than Wickford)	12
Home Depot	11
Friend/relative	7
Got new main/primary refrigerator and now using the older one as spare/secondary refrigerator	6
Wickford Appliance	5
Bernie's	4
Best Buy	2
Wal-Mart	1
BJ's	1
Other	4
Don't know/refused	12

Table 6-40: Where Replacement Freezers Were Obtained

(Base: respondents that replaced freezers turned in through the program)

Where did you get the replacement freezer?	
Sample size	*71*
Lowe's	31%
Sears	26
Home Depot	9
Bernie's	6
Appliance store (other than Wickford's)	6
Wickford's Appliance	5
Sam's Club	3
Internet (Gills.com)	3
Best Buy	1
Friend/relative	1
Other	9
Don't know/refused	1

For the most part, the replacement appliances (88% of refrigerators and 93% of freezers) were ENERGY STAR labeled (Table 6-41 and Table 6-43).

Table 6-41: Replacement Refrigerators with ENERGY STAR Label

(Base: respondents who replaced refrigerators turned in through the program)

Does your replacement refrigerator have the ENERGY STAR label?	
Sample size	*150*
Yes	88%
No	7
Don't know	6

Table 6-42: Replacement Freezers with ENERGY STAR Label

(Base: respondents who replaced freezers turned in through the program)

Does your replacement freezer have the ENERGY STAR label?	
Sample size	*71*
Yes	93%
No	6
Don't know/refused	1

6.2.3 Remaining Refrigerators/Freezers

Respondents were asked how many appliances of the type that was removed through the program were currently in their home (Table 6-43 and Table 6-44). Among those who had removed a refrigerator, about two out of three (64%) had one remaining fridge and about one out of three (32%) had two remaining fridges. Among the freezer group, about two out of three (65%) had no remaining stand-alone freezers, and about one out of three (31%) had one.

Table 6-43: Refrigerators Remaining in Home after Program

How many refrigerators are currently in use in your home after you removed a refrigerator through the program?	
Sample size	*299*
0	1%
1	64
2	32
3	2
4	<1

Table 6-44: Freezers Remaining in Home after Program

How many stand-alone freezers are currently in use in your home?	
Sample size	*246*
0	65%
1	31
2	3
3	<1
Don't know/refused	1

Respondents with at least one remaining appliance of the type removed through the program were asked to give the age of the remaining appliances (Table 6-45 and Table 6-46). Out of the primary refrigerators, more than one-half (56%) were five years old or newer, and about one-quarter (23%) were six to ten years old. Two out of ten were eleven years or older. The second fridges were somewhat newer; over two out of three (68%) were five years old or newer, and only 13% were eleven years or older. More than two out of three of the remaining freezers were five years old or newer and roughly one out of ten were eleven years or older.

Table 6-45: Age of Remaining Refrigerators after Program

(Base: respondents with one or more refrigerators remaining after the program)

Years of age	First Refrigerator	Second Refrigerator	Third Refrigerator
Sample size	*296*	*100*	*6*
0 to 5 years old	56%	68%	50%
6 to 10 years old	23	16	17
11 to 15 years old	12	6	17
16 to 20 years old	5	3	0
Over 20 years old	3	4	17
Don't know/refused	2	4	0

Table 6-46: Age of Remaining Freezers after Program

Years of age	First Freezer	Second Freezer	Third Freezer
Sample size	*94*	*8*	*2*
0 to 5 years old	71%	36%	0%
6 to 10 years old	15	28	28
11 to 15 years old	3	28	0
16 to 20 years old	3	0	0
More than 20 years old	3	8	0
Don't know/refused	6	0	72

7 Primary versus Secondary Refrigerators—Free Ridership and Program Influence

The program accepts freezers and refrigerators, regardless of whether the units had been used as primary or secondary appliances. As shown in Table 4-1, just over a quarter (28%) of the refrigerator group removed primary fridges. To gauge whether respondents who had used the removed refrigerator as a primary fridge (the "primary group") differed from those who had used it as a secondary fridge (the "secondary group")—in terms of free ridership and the influence of the program on their disposition of the appliance—selected analyses were performed for the two groups. Table 7-1 through Table 7-10 show the results of these analyses. The general picture that emerges from these results is that the primary group largely comprises participants who had other options besides the program for removing the fridge, and in the absence of the program they were willing and able to make use of those options.

Table 7-1 shows that those who used the program to dispose of a primary refrigerator were more likely to be free riders than those who disposed of a secondary unit. The FR2[9] rate for the Primary group (44%) is substantially higher than for both Secondary groups (30% overall), and the FR2 rate for the Secondary/Replaced group (27%) is somewhat lower than for the Secondary/Not replaced group (32%).

Table 7-1: Refrigerator Free Ridership Rates by Use and Replacement

	Primary (28% of refrigerators)	Secondary—Replaced (26% of refrigerators)	Secondary—Not Replaced (46% of refrigerators)
FR2 (free riders)	**44%**	**27%**	**32%**
NFR2 (non-free riders)	53	73	63
PFR2 (possible free riders)	4	0	4

[9] We used free ridership Method 2 for these analyses because, for reasons explained in Section 5 of this report, we believe this method more accurately measures respondents' actions in absence of the program than does Method 1.

As shown in Table 7-2, the primary group was more likely than the secondary group to say that they removed the fridge through the program because of the rebate (42% versus 35%) and because they bought a new refrigerator (21% versus 11%), and less likely to have used the program because it was easy or convenient to turn in the unit (8% versus 18%). Since retailers often haul away the old fridge when a new one is purchased, it is likely that many of the primary group had the option of having a retailer remove it (for free or for a fee), but used the program in order to receive the $50 incentive.

Table 7-2: Why Participants Decided to Dispose of Refrigerator

Why did you decide to get rid of the refrigerator through the Appliance Turn-in Program? (Multiple Response)	Overall	Primary (28%)	Secondary (72%)
Sample size	*299*	*81*	*218*
Rebate/incentive	37%	42%	35%
Didn't need/use it any more	24%	13%	28%
Easy/convenient to turn it in	15%	8%	18%
Bought new refrigerator	14%	21%	11%
Old unit was not working well	10%	19%	7%
Better for the environment	7%	6%	7%
They would pick it up	6%	1%	7%
Wanted to recycle	6%	6%	7%
Reduce energy/electricity costs	5%	8%	5%
Save energy/electricity	5%	--	7%
Cost too much to have it picked up	2%	1%	3%
Remodeling/expanding	1%	3%	1%
Did not want to pay disposal fee at dump/recycling center	1%	--	1%
Other	3%	4%	3%

Table 7-3 and Table 7-4 show that the primary group was also more likely to say that they would have gotten rid of the fridge in the absence of the program (77% versus 50%), and of those who would have gotten rid of it, they were more likely to have done so within a year of the program (92% versus 70%).

Table 7-3: Action in Absence of the Program—Refrigerators

If the Appliance Turn-in Program had not been available to you, what would you most likely have done with your refrigerator?	Overall	Primary (28%)	Secondary (72%)
Sample size	*299*	*81*	*218*
Gotten rid of it in any manner	58%	77%	50%
Kept it	39	20	47
(Continued to use it)	(26)	(16)	(31)
(Stored it unplugged)	(13)	(4)	(16)
Don't know/refused	3	3	3

Table 7-4: Refrigerators—Timing of Disposal in Absence of the Program

(Base: respondents who answered that they would have gotten rid of the refrigerator in the absence of the program)

If the Appliance Turn-in Program had not been available, how soon do you think you would you have gotten rid of your refrigerator?	Overall	Primary	Secondary
Sample size	*179*	*65*	*114*
Within a year of when the program took it	79%	92%	70%
More than a year later	15	6	21
Don't know/refused	7	2	9

As shown in Table 7-5, out of the respondents who said they would have gotten rid of the fridge in the absence of the program, the primary group was more likely than the secondary group to say they would have done so through a retail store (23% versus 6%) or by recycling it (11% versus 7%), and less likely to have given it away for free (6% versus 17%). Responses to the same question, asked after additional factors were considered, show a similar pattern (Table 7-7).

Table 7-5: Refrigerators—Method of Disposal in Absence of the Program

(Base: respondents that answered that they would have gotten rid of the refrigerator in the absence of the program)

If the Appliance Turn-in Program had not been available to you, what would you have done to get rid of the refrigerator?	Overall	Primary	Secondary
Sample size	*179*	*65*	*114*
Taken it to a garbage dump or put out as trash	31%	34%	30%
Had a retail store pick it up	15	23	6
Hired hauler to take it away	13	11	15
Given it away for free	12	6	17
Recycled it	8	11	7
Called the city to pick it up	4	--	7
Sold it	5	2	6
Other*	5	2	5
Don't know/refused	7	6	7

* "Other" responses include "might have kept," "put on sidewalk," and "apt. maintenance."

Table 7-6: Amount Willing to Pay to Remove Refrigerator

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

If the Appliance Turn-in Program had not been available, how much, if anything, would you have been willing to pay your city, town, or someone else to remove or recycle your refrigerator for you?	Overall	Primary	Secondary
Sample size	*179*	*65*	*114*
Nothing	53%	58%	49%
Would pay some amount	34	30	37
Don't know/refused	13	10	14

Table 7-7: Refrigerators—Action in Absence of Program after Considering Additional Factors

(Base: respondents who answered "gotten rid of it in any manner" when asked what they would have done with the refrigerator in absence of program)

Now that you have considered some of the additional factors involved with getting rid of the refrigerator, what would you have most likely done with the refrigerator had you not disposed of it through the Appliance Turn-in Program and received the $50 rebate?	Overall	Primary	Secondary
Sample size	*179*	*65*	*114*
Taken it to a garbage dump or put out as trash	30%	31%	29%
Given it away for free	17	12	20
Had a retail store come and pick it up	11	17	8
Recycled it	10	16	6
Call city to take it away	7	5	8
Sold it	7	4	8
Hired hauler to take it away	7	3	10
Kept it	5	5	5
Other	<1	--	2
Don't know/refused	6	8	5

As Table 7-8 through Table 7-10 show, not surprisingly, the primary group was far more likely to have replaced the fridge (91% versus 36%), and out of respondents in both groups who replaced it, the primary group was more likely to have replaced it with a new (as opposed to a used) fridge (94% versus 69%) with an ENERGY STAR label (94% versus 81%).

Table 7-8: Replacement of Refrigerators

Did you replace the refrigerator that you turned in through the Appliance Turn-in Program?	Overall	Primary	Secondary
Sample size	*299*	*81*	*218*
Yes	52%	91%	36%
No	48	9	64

Table 7-9: Refrigerators: New vs. Used

(Base: respondents who replaced refrigerators turned in through the program)

Was the replacement refrigerator new or used when you started using it as the replacement refrigerator?	Overall	Primary	Secondary
Sample size	*150*	*74*	*76*
New	82%	94%	69%
Used	18	6	30
Don't know/refused	1	--	1

Table 7-10: Replacement Refrigerators with ENERGY STAR Label

(Base: respondents who replaced refrigerators turned in through the program)

Does your replacement refrigerator have the ENERGY STAR label?	Overall	Primary	Secondary
Sample size	*150*	*74*	*76*
Yes	88%	94%	81%
No	7	3	11
Don't know	6	3	8

8 Spillover—Influence of Program on Subsequent Actions

The state of Rhode Island received funding from the American Recovery and Reinvestment Act (ARRA) of 2009 and distributed rebates to in March 2010 to consumers purchasing selected ENERGY STAR heating and kitchen appliances, including $150 rebates for refrigerators and freezers; a re-launch of the program commenced in July 2010 to distribute funding not previously claimed. Respondents were asked whether they had used ARRA Rebates to buy new appliances during the spring or summer of 2010 (Table 8-1 and Table 8-2). Of the 14% of respondents who had bought at least one appliance with the ARRA Rebates, about two-thirds (65%) purchased a refrigerator, 20% purchased a freezer, and about one-quarter (24%) purchased a dishwasher. About 25% of these respondents bought more than one type of appliance.

Table 8-1: Use of ARRA Rebates to Purchase New Appliances

Did you use the ARRA rebates to purchase any new appliances recently?	
Sample size	*502*
Yes	14%
No	83
Tried to, but could not get through/Program closed out	<1
Tried to, but they told my application was rejected/I wasn't eligible	<1
Don't know/refused	3

Table 8-2: Type of New Appliances Purchased Using ARRA Rebates

(Base: respondents who used ARRA rebates to purchase new appliances)

What new appliances did you buy using the ARRA rebates? (Multiple Response)	
Sample size	*62*
Refrigerator	65%
Freezer	20%
Dishwasher	24%
Water heater	8%
Boiler or furnace	7%
Don't know/refused	<1%

Nearly one-half (46%) of the respondents who purchased appliances using ARRA rebates said that the Appliance Retirement Program "definitely" influenced them to apply for the rebates and another 16% said that it "probably" influenced their decision (Table 8-3). Less than one-quarter (23%) said that the Program "probably" or "definitely" did *not* influence their decision.

Table 8-3: Influence of Program to Apply for ARRA Rebates

(Base: respondents who used ARRA rebates to purchase new appliances)

Did your participation in the Appliance Turn-in Program influence your decision to apply for the ARRA Rebates?	
Sample size	*62*
Definitely yes	46%
Probably yes	16
Maybe	2
Probably not	8
Definitely not	15
Don't know/refused	13

Respondents were asked whether they retired any additional appliances after participating in the program (Table 8-4). Roughly 10% of respondents reported retiring at least one additional appliance. Appliances retired include air conditioners, clothes washers, ovens/stoves, and others.

Table 8-4: Additional Appliances Retired Following Program Participation

After participating in the Appliance Turn-in Program, did you replace, remove, recycle, or stop using any of the following additional major appliances in your home that you did not receive a rebate for? (Multiple response)	
Sample size	*502*
Clothes washer	4%
Oven/stove	3%
Room air conditioners	2%
Dishwasher	2%
Water heater	2%
Central air conditioners	1%
Dehumidifier	1%
Heating system	1%
Other major appliances	2%
None	88%
Don't know/refused	1%

Respondents who retired at least one appliance since the program were asked whether their participation in the Appliance Turn-in Program had influenced their decision to do so (Table 8-5). Two out of ten respondents said the program had "probably" or "definitely" influenced the

subsequent retirement of the appliance, whereas nearly seven out of ten (69%) said the program had no influence.

Table 8-5: Influence of Program on Additional Appliance Retirements

(Base: Respondents who retired at least one additional major appliance without a rebate after participating in the program)

Did your participation in the Appliance Turn-in Program influence your decision to retire any of these appliances?	
Sample size	*46*
Definitely yes	15%
Probably yes	5
Maybe	6
Probably not	5
Definitely not	64
Don't know/refused	6

Responses to the survey questions about the influence of the Rhode Island Appliance Turn-in Program on subsequent appliance purchases through ARRA and on additional appliance retirements indicate that the spillover effects of the program are minimal. Eight percent of respondents were influenced by the program to purchase energy efficient appliances through ARRA, and only 1% were influenced by the program to retire additional appliances.

8.1 Program Satisfaction

The survey asked participants several questions to assess program satisfaction and impressions about the impact of the program on their electricity usage. It also asked participants to identify any drawbacks to participation. In the in-depth interviews, both National Grid and JACO discussed their overall impressions of program satisfaction, including what was good about the program and areas for improvement.

8.1.1 Participant Satisfaction

Respondents were very satisfied with the program overall (Table 8-6). On a scale of 0 ("extremely dissatisfied") to 10 ("extremely satisfied"), nearly nine out of ten respondents gave a rating of nine or ten. None of the respondents were dissatisfied (i.e., gave a rating of less than five).

Table 8-6: Satisfaction with Program Overall

Satisfaction with Program Overall	
Sample Size	*502*
Average	9.8
10 "Extremely satisfied"	80%
9	9
8	7
7	2
6	2
5	1
4	0
3	0
2	0
1	0
0 "Extremely dissatisfied"	0
Don't know/refused	0

The survey then asked respondents whether they had noticed any change in their electricity use since the program (Table 8-7). About one-half (48%) said that it had decreased and about one-quarter (27%) said it was about the same. Nineteen percent didn't know whether it had changed.

Table 8-7: Impact of Program on Electricity Usage

Would you say that your electricity usage has decreased or increased after participating in the Appliance Turn-in Program?	
Sample size	*502*
Decreased a lot	12%
Decreased a little	36
Stayed about the same	27
Increased a little	4
Increased a lot	3
Don't know/refused	19

Respondents who reported a decrease in their electricity use were asked to rate their satisfaction with the change on a scale of zero ("extremely dissatisfied") to ten ("extremely satisfied") (Table 8-8). The average satisfaction rating was 7.3, with 36% giving the top rating of "10."

Table 8-8: Satisfaction with Electricity Savings

(Base: respondents that indicated that electricity usage had decreased)

Satisfaction with Electricity Savings	
Sample Size	*238*
Average	7.3
10 "Extremely satisfied"	36%
9	8
8	16
7	13
6	7
5	14
4	1
3	1
2	<1
1	0
0 "Extremely dissatisfied"	<1

The survey asked respondents to report any drawbacks they experienced from removing the appliance through the program (Table 8-9). The vast majority (95%) said they experienced no drawbacks. It is interesting to note that very few respondents (<1%) mentioned the potential drawback of knowing that their usable appliance was thrown away.

Table 8-9: Program Drawbacks

What, if any, potential drawbacks have you experienced from removing your appliances through the Appliance Turn-in Program?	
Sample size	*502*
No drawbacks	95%
Loss of food storage space	2%
Usable appliances are thrown away	<1%
Other	2%
Don't know/refused	1%

8.1.2 Sponsor and Contractor Perspective on Program Benefits

In the in-depth interviews, National Grid and JACO were asked to comment on the benefits and drawbacks of program design and delivery. National Grid noted that the program provides a service to customers that makes the removal of refrigerators and freezers possible and convenient for customers that could not or would not get rid of them on their own. Customers do not have to purchase anything to participate. All customers need to do is initiate the appointment and make sure that the JACO team has access for removing the unit. In addition, customers get the rebate, the energy savings, and a good feeling knowing the units are recycled.

National Grid noted that a benefit of the program design is that it is a turn-key program, with all aspects of program marketing, scheduling, implementation, recycling, and reporting done by JACO. National Grid said that JACO has experience running appliance turn-in programs across the country and it relies on them for their expertise in this market. JACO said that its turn-key service to National Grid and its expertise in delivering similar programs across the country has provided National Grid with the ability to deliver the program—including marketing, pick-up, recycling, and program management relatively easily.

Both National Grid and JACO noted that the Dashboard interface provides the clients with access to program information on an as needed basis. JACO also sends a data extract along with the monthly invoicing to National Grid.

JACO indicated that their customer service is strong and that they deliver the energy savings to Sponsors, while providing a benefit from the recycling service. JACO noted that because their contract with National Grid is performance based, it is in their interest to keep the flow of participants in the program strong and consistent. JACO charges the Sponsors only after a unit has been collected and recycled. The bill includes all marketing, implementation, and recycling.

8.1.3 Areas for Program Improvement

When asked to comment on program delivery, National Grid said that JACO does a good job delivering all aspects of the program. National Grid acknowledged that small tweaks have been necessary, and that JACO has been responsive to their needs. One change made to the program was increasing the rebate levels from $30 to $50 in September 2009 to increase customer interest in the program after a slow start. National Grid also noted that constant attention must be given to customer service in this program because program delivery takes place in customer homes and the JACO pick-up crew has personal interaction with every participating customer. National Grid noted that they have made an effort to communicate clearly to customers that the appliances must be accessible to the pick-up crew; some customers mistakenly assumed that JACO would move furniture, take off doors or railings, etc. to remove the appliances from the homes. National Grid also noted that they have worked with JACO to modify marketing language and make adjustments to the flow of marketing materials to manage the demand of turn-in requests.

JACO has also customized the data reporting to address information needs for National Grid.

Both JACO and National Grid commented in general about the barriers to participation. The primary barriers they noted include the timing for pick-up and the fact that some benefit or convenience is lost when customers give up the second refrigerator or freezer. The need to have someone 18 years or older in the household at the time of pick-up can be another barrier, particularly if the customer must take time off from work. To alleviate this issue, JACO said that it offers Saturday pick-ups and gives customers a window of time that they will show up, but sometimes it is difficult for JACO to have an accurate estimate of that timeframe. JACO said that they want to reduce the four hour window for arrival of the crew on any scheduled pick-up day. Also, while the wait for an appointment is a week or two, ideally they would also like to make that timeframe shorter.

9 Demographics

The in-depth interviews asked respondents to describe the types of customers that the program serves and the telephone survey asked respondents a series of standard questions to categorize participant demographics.

9.1 Targeted Customer Groups

National Grid reported that the Rhode Island Appliance Turn-in Program is open to all of National Grid's residential customers, with no specific demographic targets. Based on its experience delivering the program in different areas across the country, JACO reports that the program has a "*sweet spot*" and typically attracts older, higher income customers, especially empty nesters who have a second refrigerator but no longer need it because the kids have gone and they are not using the refrigerator as much anymore. One of the primary reasons why National Grid may have seen a slower response in Rhode Island compared to the response it sees in a similar program it administers in Massachusetts is the population is much smaller, and with fewer households, it is difficult for the program to find customers who have refrigerators that they are willing to discard.

Participant survey demographics presented in Table 9-1 through Table 9-8 confirm that a majority (61%) of program participants is 55 years of age or older and 60% has a household size of just one or two people. Many are retired (41%). The vast majority (88%) live in a single family, detached home that they own (94%).

The approximately one-quarter of respondents who were under 55 years of age have somewhat different characteristics from the three-quarters who are 55 or older, and thus might be considered a separate sub-group of participants. They tend to be more highly educated than the older group, with close to half (45%) holding a college or graduate/professional degree compared to fewer than three out of ten (29%) for the older group. Not surprisingly, they also tend to have higher incomes and larger-sized households compared to the older group, with a smaller percentage of households with one or two people and a greater percentage of households with three or four people.

9.2 Demographic Characteristics of Survey Participants

The large majority of respondents live in a single-family detached home that they own (Table 9-1 and Table 9-2).

Table 9-1: Type of Home

Type of Home	
Sample size	*502*
Single-family detached house	88%
Single-family attached house (townhouse, row house, or duplex)	6
Apartment building with 2-4 units	3
Apartment building with 5 or more units	<1
Mobile home or house trailer	<1
Other [SPECIFY]	<1
Don't know/refused	2

Table 9-2: Ownership Characteristics

Tenure	
Sample size	**502**
Own	94%
Rent/lease	3
Occupied without payment of rent	<1
Don't know/refused	3

When respondents were asked the size of their home, the most frequently cited range was 1,400 to 1,499 square feet. (Table 9-3). Twelve percent said their homes were less than 1,400 square feet and 15% reported that they were between 2,000 and 2,500 square feet. Four out of ten respondents didn't know the size or chose not to answer the question.

Table 9-3: Size of Home

Square Feet	
Sample size	*502*
Less than 1,400	12%
1,400 - 1,999	19
2,000 - 2,499	15
2,500 - 3,499	7
3,500 – 3,900	2
4,000 - 4,999	1
5,000 or more	4
Don't know/refused	40

Nearly one-quarter of respondents (23%) reported having six rooms in their house (Table 9-4). Another approximately four in ten respondents had either five rooms or seven rooms (19% each).

Table 9-4: Number of Rooms in Home Excluding Bathrooms

Number of rooms	
Sample size	*502*
1	<1%
2	<1
3	2
4	6
5	19
6	23
7	19
8	13
9	3
10 or more	6
Don't know/refused	8

The great majority (85%) of respondents graduated from high school (Table 9-5). Forty-two percent have at least an Associates or Bachelor's degree and nearly two out of ten (18%) have a graduate or professional degree.

Table 9-5: Highest Level of Education

Degree attained	
Sample size	*502*
Less than ninth grade	1%
Ninth to twelfth grade, no diploma	2
High school graduate (includes GED)	23
Technical or trade school graduate	3
Some college, no degree	18
Associates degree	8
Bachelors degree	18
Graduate or professional degree	16
Don't know/refused	12

Almost half of the respondents (44%) have a two-person household (Table 9-6). Another 15% live alone and about one-third (31%) have a household of three or more people.

Table 9-6: Household Size

Number of people living in home	
Sample size	*502*
1	16%
2	44
3	17
4	9
5	4
6 or more	1
Don't know/refused	9

The majority (61%) of respondents was 55 years or older and only 13% are under 45 years (Table 9-7).

Table 9-7: Age

Age of respondent	
Sample size	*502*
18 to 24	<1%
25 to 34	2
35 to 44	10
45 to 54	17
55 to 64	24
65 or over	37
Don't know/refused	11

About forty percent of the respondents are retired and another one-third are employed full-time (Table 9-8).

Table 9-8: Head of Household Employment Status

Employment status	
Sample size	*502*
Employed full-time	34%
Self-employed full-time	5
Employed part-time	4
Self-employed part-time	1
Temporarily unemployed	3
Not employed	2
Retired	41
Don't know/refused	12

Nearly all the respondents who gave a valid response pay their electric bills directly to the electric company (Table 9-9).

Table 9-9: Method of Electric Bill Payment

Do you pay your electric bill directly to your electric company, or is your electricity included in your rent or condo fee?	
Sample size	*502*
Pay directly to electric company	90%
Electricity included in rent or condo fee	0
Paid for in some other way	<1
Don't know/refused	10

Nearly all the respondents who gave a valid response speak English as the primary language in their home, and only 4% have a household member who is Hispanic or Latino (Table 5-10). The vast majority of respondents who chose to report their race were white; very few (less than 4%) reported any other race or ethnicity (Table 9-11 and Table 9-12).

Table 9-10: Primary Language Spoken in Home

Language	
Sample size	**502**
English	90%
Portuguese	<1
Tagalog	<1
Other [SPECIFY]	<1
Don't know/refused	10

Table 9-11: Spanish, Hispanic, or Latino

Are any members of your household Spanish, Hispanic, or Latino?	
Sample size	**502**
Yes	4%
No	86
Don't know/refused	10

Table 9-12: Race and Ethnicity

Race and Ethnicity	
Sample size	**502**
White	83%
Black or African American	2
Filipino	<1
Other	<1
Don't know/refused	15

Half of the respondents chose not to report their household income (Table 9-13). Out of the half who chose to report it, nearly two-thirds make $50,000 or more and about one-third make $49,000 or less.

Table 9-13: Household Income

Household income	
Sample size	*502*
$9,999 or less	1%
$10,000 to $14,999	2
$15,000 to $19,999	1
$20,000 to $29,999	4
$30,000 to $39,999	5
$40,000 to $49,999	5
$50,000 to $74,999	12
$75,000 to $99,999	11
$100,000 to $149,999	6
$150,000 or more	2
Don't know/refused	51

Women made up the majority (58%) of the respondents (Table 9-14).

Table 9-14: Gender

Sample size	*502*
Female	58%
Male	42

Appendix: Participant Survey Instrument

50-2 Howard St., Somerville, MA 02144
Phone: (617) 284-6230 Fax: (617) 284-6239
www.nmrgroupinc.com

Participant Survey
2009-10 MA/RI Appliance Turn-In Program

NMR will cross-reference by telephone number to make sure same respondents not called in lighting survey currently being conducted.

SCREENING QUESTIONS

Could I speak with [INSERT NAME]?

1. Yes [GO TO INTRODUCTION]
2. No [SAY "Perhaps you can help me anyway." GO TO INTRODUCTION]

Hello, my name is _____ I am calling on behalf of:

[Choose sample: MA or RI]

[IF MA] The Massachusetts ENERGY STAR Appliance Turn-In Program. [If respondents ask, say: "The group of sponsors includes National Grid, NSTAR [SAY "N-star"] Electric, Cape Light Compact, and Western Massachusetts Electric Company."]

[IF RI] The Rhode Island Second Refrigerator/Freezer Recycling Turn-In Program with National Grid.

[ALL] We are calling customers who used the program to remove and recycle refrigerators and freezers during 2009 or 2010. Are you the person who was most involved and familiar with the decision to have your old refrigerator or freezer picked up and recycled through the program?

[IF NO, ASK TO SPEAK TO THE APPROPRIATE PERSON: "May I please speak to the person who knows the most about having the appliance picked up?"]

[IF APPROPRIATE PERSON] We are trying to get feedback from customers about the appliance turn-in program to make the program better. Your responses will be kept

strictly confidential—that is, your name will not be associated with any of your responses. **[IF NECESSARY, OFFER THE CONTACT NAME FROM BELOW AS THE PERSON TO CONTACT WITH ANY QUESTIONS ABOUT THE VALIDITY OF THE RESEARCH.]**

Massachusetts Sponsors		
Philip Moffit	Cape Light Compact	508-744-1279
Angela Li	National Grid/Mass. Electric	781-901-1568
Gail Azulay	NSTAR Electric	781-441-8024
Gene Fry	Western Massachusetts Electric Company (WMECO/Northeast Utilities)	860-832-4802
Rhode Island Sponsor		
Wendy Todd	National Grid	781-907-2232

This survey will take about 15 minutes of your time. Would that be okay?

[IF REFUSE, ASK] "Can we schedule a more convenient time for you to conduct this survey?"

[SCHEDULED, IF NECESSARY, FOR: _____]

Notes for interviewer
[Timing. This survey should take about 15 or 20 minutes. If now is not a good time, we can set up a more convenient call back time]
[Who are you? I am from ISA, a survey data collection firm, calling on behalf of NMR Group, Inc. based in Somerville, MA]
[**Why are you doing this study?** We are calling customers who had refrigerators and freezers picked up and recycled through the program to better understand how customers used the program.]

[**Sales concern.** I am not selling anything. We are just asking for feedback about your experience with the program.]

Verification and Recall

V1. Our records indicate that your household participated in the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] Appliance Recycling Turn-In program, which removed and recycled up to two refrigerators or freezers from your home and paid you a $50 rebate for participating. Our records indicate that you had the program remove:

[INSERT NUMBER FROM VARIABLE "RF" IN THE SAMPLE] refrigerator(s) (and)

[INSERT NUMBER FROM VARIABLE "FZ" IN THE SAMPLE] stand-alone freezer(s)

from your home sometime during 2009 or 2010. Is this correct?

1. Yes [GO TO P1]
2. No, does not recall participating [PROBE: "Are you certain? Someone would have come to your home and picked up your old appliance to recycle it. You would have received a $50 rebate also."] [IF PERSIST AS NO, THANK AND TERMINATE)
3. No, different quantities (GO TO V2)
4. (Don't know) [PROBE: "Are you certain? Someone would have come to your home and picked up your old appliance. You would have received a $50 rebate also."] IF PERSIST AS NO, THANK AND TERMINATE.

V2 [ASK IF V1=3) Let me clarify, I am talking about the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] ENERGY STAR Appliance Turn-In program, which removed and recycled up to two refrigerators or freezers from your home and paid you a $50 rebate for participating. This was not a program that gave any rebates for purchases of new or replacement refrigerators or freezers.

[IF RESPONDENT NOW AGREES WITH PROGRAM RECORDS, RECODE V1=1 AND CONTINUE TO P1]

Thinking only about any appliances that were picked up through the Appliance Turn-In Program, which quantities are wrong? The number of refrigerators picked up, the number of freezers picked up, or both?

1. Number of refrigerators
2. Number of freezers
3. Both

V3. [IF V2=1 or 3] How many refrigerators were picked up through the Appliance Turn-in Program? [Record number, 98 (Don't Know) 99 Refused] _____ [IF V2 = 1 GO TO P1]

V4. [IF V2 = 2 or 3] How many stand-alone freezers were picked up through the Appliance Turn-in Program? [Record number, 98 (Don't Know) 99 Refused]_____ [GO TO P1]

Program Information and Satisfaction [P series]

Now I would like to ask you some general questions about the Appliance turn-in program.

P1. How did you find out about this program? (DON'T READ; ALLOW MULTIPLE RESPONSE BUT DO NOT PROBE FOR MULTIPLE)

Program Administrator Sources

1. (Bill insert/mailing from utility/Sponsor)
2. (Utility/Sponsor website)
3. (Utility/Sponsor advertising in newspaper, radio, TV)

Retailer Sources

4. (Appliance retailer/dealer)
5. (Store flyer)
6. (Salesperson)

Other Sources

7. (Co-worker, family, or friend)
8. (Internet—unspecified)

97. (Other [SPECIFY_____])
98. (Don't know)
99. Refused)

P2. What do you think happens to appliances after they are picked up by the program? [DON'T READ; MULTIPLE RESPONSE]

1. (It gets recycled)
2. (They get rid of the hazardous materials—CFCs, refrigerants, Freon)
3. (They trash/get rid of it)
4. (They sell it to be reused)

97. (Other [SPECIFY _____])
98. (Don't know)
99. (Refused)

[IF RESPONDENT ASKS WHAT HAPPENS READ "After the program picks up an appliance, they take it to a facility and remove all environmentally hazardous materials, such as capacitors, mercury switches and refrigerants. The remaining materials—mostly steel, along with smaller amounts of other metals, and rubber and plastic—are recycled."]

P3. Using a scale from 0 to 10 where 0 is "extremely dissatisfied and 10 is "extremely satisfied" how would you rate your satisfaction with the program overall? [RECORD NUMBER, 98=Don't know, 99 Refused]

P4. [IF P3 < 5] You indicated that you were dissatisfied with some aspect of the program. What are the main reasons you weren't satisfied? [DON'T READ; MULTIPLE RESPONSE]

P5. How did you initially sign up for the program? Did you sign up over the phone with a toll free number or did you sign up online?

1. (Over the phone)
2. (Signed up online)
3. (Both)
98. (Don't know)
99. (Refused)

P6. Using a scale from 0 to 10 where 0 is "extremely easy" and 10 is "extremely difficult" how easy or difficult was it for you to…? [RANDOMIZE ORDER OF A-C, ASKING A-C BASED ON SKIP PATTERNS; ASK D LAST]

A. [IF P5=2 or 3] Fill out the sign-up form and sign up online
B. [IF P5=1 or 3] Call the program and sign up over the phone
C. [IF P5 GE 98] Sign up for the program
D. Schedule the time for the pickup

P7A. [IF P6A > 5] Please describe any difficulties you had in signing up online. [MULTIPLE RESPONSE]

1. (Did not know appliance size/dimensions)
2. (Site was confusing)
3. (Technical difficulties with computer/Internet service)
97. (Other)—[SPECIFY]
98. (Don't know)
99. (Refused)

P7B. [IF P6B > 5] Please describe any difficulties you had in signing up over the phone. [MULTIPLE RESPONSE]

1. (Did not know appliance size/dimensions)
2. (Put on hold/long wait)
3. (Technical difficulties with automated phone system)
97. (Other)—[SPECIFY]
98. (Don't know)
99. (Refused)

P7C. [IF P6C > 5] Please describe any difficulties you had in signing up for the program. [MULTIPLE RESPONSE]

1. (Did not know appliance size/dimensions)
2. (Site was confusing)
3. (Technical difficulties with computer/Internet service)
4. (Put on hold/long wait on telephone)
5. (Technical difficulties with automated phone system)

97. (Other)—[SPECIFY]
98. (Don't know)
99. (Refused)

P7D. [IF P6D > 5] Please describe any difficulties you had in scheduling the pick-up of your appliance(s). [MULTIPLE RESPONSE]

1. (No convenient time available)
2. (I needed to reschedule pick-up)
3. (Program rescheduled pick-up)
4. (They did not show up on time)

97. (Other)—[SPECIFY]
98. (Don't know)
99. (Refused)

P8. Please tell us if there is anything that could be done in the future to improve the program. (INTERVIEWER: CLARIFY RESPONSES AS NEEDED) [OPEN END, 96=NO RECOMMENDATIONS, 98=Don't know, 99=Refused]

[PROGRAMMER: EACH RESPONDENT WILL BE ASKED ABOUT ONE OR TWO APPLIANCES. NO RESPONDENT WILL BE ASKED ABOUT TWO OF THE SAME APPLIANCE (E.G., NOT TWO REFRIGERATORS).

REFRIGERATORS [R SERIES]

[IF V1 = 1 and RF = 0 OR IF V3=0 GO TO FZ1 (FREEZERS)]

[READ IF V1 = 1 and RF = 1 OR IF V3=1], Now, I'd like you to think about the refrigerator you had removed through the program.

[READ IF V1 = 1 and RF > 1 OR IF V3>1] I know you had more than one refrigerator removed through the program. For purposes of this survey, please think about the [RANDOMLY CHOOSE ONE OF THE REFRIGERATORS FROM SAMPLE. INSERT DESCRIPTIVE FIELDS.]

[INSERT COLOR] (Unit color) unit,

With [INSERT TYPEDETAIL] (Side by side doors, Top freezer, bottom freezer)

That was manufactured by [INSERT BRANDUNITMAKE]

That was located in your [INSERT LOCPRIOR] prior to pick-up.

Keep only that one refrigerator clearly in your mind as you answer the next few questions.

RF1.Was the refrigerator removed through the program the main one used in the home, a second refrigerator that was being used at least part of the time, or a refrigerator that was not being used at all? [IF CLARIFICATION NECESSARY: "A main or primary refrigerator would typically be located in the kitchen, plugged in or "on" all the time, and used for regular household purposes. A secondary or spare refrigerator is typically located somewhere other than in the kitchen and may be plugged in or "on" all or only part of the time." [NOTE: If respondent recently bought a new refrigerator and was just waiting for the previously used one to be picked up by the program, it should be classified as "Main/Primary"]

1. Used as Main/Primary
2. Used as a Spare/Secondary
3. Not being used

98. (Don't know) [PROBE: READ CLARIFICATION AND TRY TO CLASSIFY STATUS OF REFRIGERATOR]
99. (Refused)

RF2. Approximately how old was the refrigerator you had removed through the program? Was it [READ, CHECK ONE]:

1. 0 to 5 years old
2. 6 to 10 years old
3. 11 to 15 years old
4. 16 to 20 years old
5. More than 20 years old

98 (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE AGE?']

99 (Refused)

RF3. [IF RF1=2 or 98 or 99] Approximately how long had you been using the refrigerator as a secondary refrigerator when you decided to get rid of it? [RECORD]

1. Months [RECORD 1 to 11 months]
2. Years [RECORD 1 to 50 years; round to the nearest year]

98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE LENGTH OF USE?']
99. (Refused)

RF4. [IF RF1 = 3] Approximately how long had the refrigerator been unused when you decided to get rid of it? [RECORD]

1. Months [RECORD 1 to 11 months]
2. Years [RECORD 1 to 50 years; round to the nearest year]

98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE LENGTH OF USE?']
99. (Refused)

RF5. Was the refrigerator in working condition when you decided to have it picked up by the program?

1. Yes
2. Yes, but not that well
3. No

98. (Don't know)
99. (Refused)

RF6. [IF RF1=2 or 3, OTHERWISE GO TO RF7] In the year prior to getting rid of the refrigerator, how often did you have the refrigerator plugged in? Was it plugged in [READ, CHECK ONLY ONE]:

1. All the time
2. Most of time
3. Occasionally
4. Never [GO TO RF8]
5. (Don't know) [GO TO RF8]

RF7. [IF RF6< 4] How important for your household food and beverage storage needs is it to have a secondary refrigerator? Answer on a scale of 0-10, where 0 is 'not at all necessary' and 10 is 'absolutely necessary.' [RECORD NUMBER, 98 don't know, 99 Refused]:

RF8. Where in the house was the refrigerator located? [RANDOMIZE AND READ 1-5, THEN 97]

1. Basement
2. Kitchen
3. Garage
4. Porch
5. Laundry room
6. Yard
97. Some other place [SPECIFY_____]
98. (Don't know)
99. (Refused)

RF9. Is the space where the refrigerator was located heated by your heating system in the winter?

1. Yes
2. No
98. (Don't know)
99. (Refused)

RF10. Is the space where the refrigerator was located cooled with air conditioning in the summer?

1. Yes
2. No
98. (Don't know)
99. (Refused)

REFRIGERATOR FREE RIDERSHIP SECTION [RFR Series]

Please continue thinking about just that one refrigerator.

RFR1. Had you already considered disposing of the refrigerator before you heard about the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program? By dispose of, I mean getting the appliance out of your home by selling it, giving it away, having someone pick it up, or taking it to the dump or a recycling center yourself.

1. Yes
2. No
3. (Don't know)
4. (Refused)

RFR2. Why did you decide to get rid of the refrigerator through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program? [DO NOT READ; MULTIPLE RESPONSE]

Age/Need

1. (Old unit was not working well)
2. (Didn't need/use it any more)

Replacing unit

3. (Bought new refrigerator)

Housing change

4. (Remodeling/expanding)
5. (Moving soon/just moved)

Financial

6. (Reduce energy/electricity costs)
7. (Rebate/incentive)
8. (Cost too much to have it picked up)
9. (Did not want to pay disposal fee at dump/recycling center)
10. (Reduce maintenance costs/appliance needed repairs)

Logistical

11. (Easy/convenient to turn it in)
12. (They would pick it up)
13. (Trash collection would not accept)

Energy/Environment

14. (Better for the environment)
15. (Wanted to recycle)
16. (Save energy/electricity)

Other

97. (Other [SPECIFY_____])
98. (Don't know/Refused)

RFR3. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you most likely have done with your refrigerator? Would you have [READ]:

1. Gotten rid of it in any manner
2. Kept it [SKIP TO RFR11]

98. (Don't know)
99. (Refused)

[ASK IF RFR3=1 (Gotten rid of it)]

RFR4. If [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available, how soon do you think you would you have gotten rid of your refrigerator? Would you have gotten rid of it ***within a year*** of when the Program took it, ***or more than a year later***?

1. Within a year of when the program took it
2. More than a year later
98. (Don't know)
99. (Refused)

RFR5. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you have done to get rid of the refrigerator? Most likely, would you have: [RANDOMIZE AND READ 1-6, THEN 7, ALLOW ONLY ONE RESPONSE]

1. Sold it [GO TO RFR6]
2. Given it away for free [GO TO RFR7]
3. Recycled it [GO TO RFR7a]
4. Taken it to a garbage dump or put out as trash [GO TO RFR8]
5. Hired hauler to take it away [GO TO RFR5a]
6. Had a retail store come and pick it up [GO TO RFR5a]
7. Or would you have done something else? [SPECIFY]_____] [GO TO RFR5a]

98. (Don't know) [GO TO RFR5a]
99. (Refused)

[ASK IF RFR5=5, 6, 7, or 98 DK]

RFR5a. As far as you know, would the refrigerator have been recycled, sold for scrap, or sent to a garbage dump?

1. Recycled
2. Sold as a used appliance
3. Sold as scrap
4. Sent to garbage dump
5. (Other) [Specify]_____
98. (Don't know)
99. (Refused)

[ASK IF RFR5=1 (Sold it)]

RFR6. Would you have sold the refrigerator to a private party, to a used appliance dealer, or someone else?

1. Private party, such as a friend or family member
2. Used appliance dealer
3. Sold on an Internet site, such as Craig's List
4. Someone else, specify: _____
98. (Don't know)
99. (Refused)

[IF RFR5=1 GO TO RFR8]

[ASK IF RFR5=2 (Given it away for free)]

RFR7. Who would you have given the refrigerator to? Would you have: [READ; ALLOW ONLY ONE RESPONSE]

1. Given it to a private party, such as a friend or family member
2. Given it to a charity, such as Goodwill Industries or a church
3. Put it on the curb with a 'Free' sign on it
4. Given it away on an Internet site, such as Craig's List
5. Or would you have given it away some other way? [Specify] _____
98. (Don't know)
99. (Refused)

[ASK IF RFR5=3 (Recycled it)]

RFR7a. How would you have recycled the refrigerator? Would you have taken it to a recycling center, put it out for recycling pick-up, hired someone to take it to be recycled, or done something else? [READ; ALLOW ONLY ONE RESPONSE]

1. Take it to a recycling center
2. Put it out for pick-up
3. Hired someone to take it
4. Done something else [SPECIFY]_____
98. (Don't know)
99. (Refused)

[ASK IF RFR3=1(Would have gotten rid of unit)]

RFR8. If [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had ***not*** been available, would the need to physically move the refrigerator out of your house and/or transport it have prevented you from getting rid of it?

1. Yes
2. No
3. Maybe
98. (Don't know)
99. (Refused)

RFR9. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had ***not*** been available, how much, if anything, would you have been willing to pay your city, town, or someone else to remove or recycle your refrigerator for you?

1. $0—Would not pay any amount
2. [RECORD DOLLARS $1 to $999] $_____
98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE ESTIMATE OF HOW MUCH YOU WOULD PAY?']
99. (Refused)

RFR10. Now that you have considered some of the additional factors involved with getting rid of the refrigerator, what would you have most likely done with the refrigerator had you not disposed of it through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program and received the $50 rebate? [IF RESPONDENT ASKS 'WHAT FACTORS?' SAY 'THE NEED TO MOVE A BULKY APPLIANCE AND POSSIBLY PAY TO HAVE IT REMOVED.'] [READ LIST UNLESS RESPONDENT INDICATES CHOICE WITHOUT READING THE LIST]

[RANDOMIZE AND READ 1-7, THEN 8, ALLOW ONLY ONE RESPONSE]

1. Kept it
2. Sold it
3. Given it away for free
4. Recycled it
5. Taken it to a garbage dump or put out as trash
6. Hired hauler to take it away [GO TO RFR10a]
7. Had a retail store come and pick it up [GO TO RFR10a]
8. Or would you have done something else? [SPECIFY]_____] [GO TO RFR10a]
98. (Don't know) [GO TO RFR10a]
99. (Refused)

[ASK IF RFR10=6, 7, 8, or 98 DK]

RFR10a. As far as you know, would the refrigerator have been recycled, sold for scrap, or sent to a garbage dump?

1. Recycled
2. Sold as a used appliance
3. Sold as scrap
4. Sent to garbage dump
5. (Other) [Specify]
98. (Don't know)
99. (Refused)

[ASK IF RFR3=2 OR RFR10=1(Would keep)]

RFR11. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you have done with the refrigerator? Most likely, would you have:[READ]

1. Continued to use it
2. Stored it unplugged
3. Or would you have done something else? [SPECIFY. IF RESPONSE INDICATES WOULD HAVE GOTTEN RID OF UNIT AND RFR3=2, GO BACK TO RFR3 AND CLARIFY RESPONSE, ASKING RFR4 THROUGH RFR7 IF NECESSARY]

98. (Don't know)
99. (Refused)

REFRIGERATOR BOUNTY [RB Series]

I am now going to ask you some questions about the rebate you received for recycling this same refrigerator.

RB1. How important was the rebate money in your decision to recycle the refrigerator? Please use a scale from 0 to 10, where 0 is 'not at all important' and 10 is 'extremely important.' [RECORD NUMBER, 98 Don't know, 99 Refused]

RB2. Would you have participated in the program without the rebate check altogether?

1. Yes
2. No
3. (Maybe)
98. (Don't know)
99. (Refused)

RB3. After you had your appliance(s) picked-up, how long did it take to receive the rebate check from the program? Was it [READ]:

1. Less than 4 weeks
2. Between 4 to 6 weeks
3. Between 7 to 8 weeks
4. More than 8 weeks
5. Have not received the rebate check yet
98. (Don't know)
99. (Refused)

Replacement Refrigerator (RE Series)

RE1. Did you replace the refrigerator that you turned in through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program?

1. Yes
2. No [GO TO RRF1]
98. (Don't know) [GO TO RRF1]
99. (Refused) [GO TO RRF1]

RE2. Was the replacement refrigerator new or used when you started using it as the replacement refrigerator?

1. New
2. Used
98. (Don't know)
99. (Refused)

RE3. Where did you get the replacement refrigerator? [DON'T READ]

1. (Sears)
2. (Home Depot)
3. (Best Buy)
4. (Lowe's)
5. (Bernie's)
6. (Wal-Mart)
7. (Target)
8. (Sam's Club)
9. (Costco)
10. (BJ's)
11. (Yard/garage sale)
12. (Friend/relative)
13. (Got new main/primary refrigerator and now using the older one as spare/secondary refrigerator)
14. Internet [SPECIFY site name/address_____]
97. (Other [SPECIFY_____])
98. (Don't know)
99. (Refused)

RE4. Does your replacement refrigerator have the ENERGY STAR label? There would usually be a blue and white sticker on the appliance that says "ENERGY STAR."

1. Yes
2. No
98. (Don't know)
99. (Refused)

REMAINING REFRIGERATORS (RRF SERIES)

RRF1. How many refrigerators are currently in use in your home after you removed a refrigerator through the program?

[RECORD NUMBER]_____ [RECORD NUMBER, 98 Don't know, 99 Refused] [IF 0 GO TO FZ1 (Freezer Series)].

RRF2a through RRF2c. [FOR EACH REFRIGERATOR, ASK "Approximately how old is your refrigerator." [IF MORE THAN ONE REFRIGERATOR, ASK ABOUT UP TO THREE REFRIGERATORS INSERTING "first", "second," or "third" BEFORE "refrigerator" AS APPROPRIATE.]

1. 0 to 5 years old
2. 6 to 10 years old
3. 11 to 15 years old
4. 16 to 20 years old
5. More than 20 years old

98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE AGE?']
99. (Refused)

FREEZER [FZ SERIES]

[IF V1 = 1 and FZ > 0 OR IF V4>0 (had freezer removed) ASK FZ SERIES, OTHERWISE SKIP TO SO1 (Spillover Series)]

[READ IF V1 = 1 and FZ = 1 OR IF V4=1] Now, I'd like you to think about the stand-alone freezer you had removed through the program.

[READ IF V1 = 1 and FZ > 1 OR IF V4>1] I know you had more than one stand-alone freezer removed through the program. For purposes of this survey, please think about the [RANDOMLY CHOOSE ONE OF THE FREEZERS FROM SAMPLE. INSERT DESCRIPTIVE FIELDS.]

[INSERT COLOR] (Unit color) unit,

That was manufactured by [INSERT BRANDUNITMAKE]

That was located in your [INSERT LOCPRIOR] prior to pick-up.

Keep only that one stand-alone freezer clearly in your mind as you answer the next few questions.

FZ1. In the year prior to getting rid of the freezer, how often did you have the freezer plugged in? Was it plugged in [READ, CHECK ONLY ONE]:

1. All the time
2. Most of time
3. Occasionally
4. Never

98. (Don't know)
99. (Refused)

FZ2. Approximately how old was the freezer you had removed through the program? Was it [READ, CHECK ONE]:

1. 0 to 5 years old
2. 6 to 10 years old
3. 11 to 15 years old
4. 16 to 20 years old
5. More than 20 years old

98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE AGE?']
99. (Refused)

FZ3. Was the freezer in working condition when you decided to have it picked up by the program?

1. Yes
2. Yes, but not that well
3. No
98. (Don't know)
99. (Refused)

FZ4. [IF FZ1 = 4 (Never used)] Approximately how long had the freezer been unused when you decided to get rid of it? [RECORD]

1. Months [RECORD 1 to 11 months]
2. Years [RECORD 1 to 50 years; round to the nearest year]
98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE LENGTH OF USE?']
99. (Refused)

[IF FZ1=4 GO TO FFR1-Freezer Free Rider Series]

FZ5. [IF FZ1 NE 4 (Used at least occasionally or DK/Ref)] Approximately how long had you been using the freezer when you decided to get rid of it? [RECORD]

1. Months [RECORD 1 to 11 months]
2. Years [RECORD 1 to 50 years, round to the nearest year
98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE TIME OF USE?']
99. (Refused)

FZ6. How important for your household food storage needs is it to have a stand-alone freezer? Answer on a scale of 0-10, where 0 is 'not at all necessary' and 10 is 'absolutely necessary.' [RECORD NUMBER, 98 don't know, 99 Refused]:

FZ7. Where in the house was the freezer located? [RANDOMIZE AND READ 1-5, THEN 97]

1. Basement
2. Kitchen
3. Garage
4. Porch
5. Laundry room
6. Yard
97. Some other place [SPECIFY_____]
98. (Don't know)
99. (Refused)

FZ8. Is the space where the freezer was located heated by your heating system in the winter?

1. Yes
2. No
98. (Don't know)
99. (Refused)

FZ9. Is the space where the freezer was located cooled with air conditioning in the summer?

1. Yes
2. No
98. (Don't know)
99. (Refused)

FREEZER FREE RIDERSHIP [FFR Series]

Please continue thinking about just that one freezer.

FFR1. Had you already considered disposing of the freezer before you heard about [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program? By dispose of, I mean getting the appliance out of your home by selling it, giving it away, having someone pick it up, or taking it to the dump or a recycling center yourself?

1. Yes
2. No

98. (Don't know)

99. (Refused)

FFR2. Why did you decide to get rid of the freezer through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program? [DO NOT READ; MULTIPLE RESPONSE]

Age/Need

1. (Old unit was not working well)
2. (Didn't need/use it any more)

Replacing unit

3. (Bought new freezer)

Housing change

4. (Remodeling/expanding)
5. (Moving soon/just moved)

Financial

6. (Reduce energy/electricity costs)
7. (Rebate/incentive)
8. (Cost too much to have it picked up)
9. (Did not want to pay disposal fee at dump/recycling center)
10. (Reduce maintenance costs/appliance needed repairs)

Logistical

11. (Easy/convenient to turn it in)
12. (They would pick it up)
13. (Trash collection would not accept)

Energy/Environment

14. (Better for the environment)
15. (Wanted to recycle)
16. (Save energy/electricity)

Other

97. (Other [SPECIFY_____])
98. (Don't know)
99. (Refused)

FFR3. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you most likely have done with your freezer? Would you have [READ]:

1. Gotten rid of it in any manner
2. Kept it [SKIP TO FFR8]
98. (Don't know)
99. (Refused)

[ASK IF FFR3=1 (Gotten rid of it)]

FFR4. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available, how soon do you think you would you have gotten rid of your freezer? Would you have gotten rid of it ***within a year*** of when the Program took it, ***or more than a year*** later?

1. Within a year of when the program took it
2. More than a year later
98. (Don't know)
99. (Refused)

FFR5. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you have done to get rid of the freezer? Most likely, would you have: [RANDOMIZE AND READ 1-6, THEN 7, ALLOW ONLY ONE RESPONSE]

1. Sold it [GO TO FFR6]
2. Given it away for free [GO TO FFR7]
3. Recycled it [GO TO FFR7a]
4. Taken it to a garbage dump or put out as trash [GO TO FFR8]
5. Hired hauler to take it away [GO TO FFR5a]
6. Had a retail store come and pick it up [GO TO FFR5a]
7. Or would you have done something else? [SPECIFY]_____] [GO TO FFR5a]
98. (Don't know) [GO TO FFR5a]
99. (Refused)

[ASK IF FFR5=5, 6, 7, or 98 DK]

FFR5a. As far as you know, would the freezer have been recycled, sold for scrap, or sent to a garbage dump?

1. Recycled
2. Sold as a used appliance
3. Sold as scrap
4. Sent to garbage dump
5. (Other) [Specify]_____
98. (Don't know)
99. (Refused)

[ASK IF FFR5=1 (Sold it)]

FFR6. Would you have sold the freezer to a private party, to a used appliance dealer, or someone else?

1. Private party, such as a friend or family member
2. Used appliance dealer
3. Sold on an Internet site, such as Craig's List
4. Someone else, specify: _____
98. (Don't know)
99. (Refused)

[IF FFR5 = 1 GO TO FFR8]

[ASK IF FFR5=2 (Given it away for free)]

FFR7. Who would you have given the freezer to? Would you have: [READ; ALLOW ONLY ONE RESPONSE]

1. Given it to a private party, such as a friend or family member
2. Given it to a charity, such as Goodwill Industries or a church
3. Put it on the curb with a 'Free' sign on it
4. Given it away on an Internet site, such as Craig's List
5. Or would you have given it away some other way? [Specify] _____
98. (Don't know)
99. (Refused)

[ASK IF FFR5=3 (Recycled it)]

FFR7a. How would you have recycled the freezer? Would you have taken it to a recycling center, put it out for recycling pick-up, hired someone to take it to be recycled, or done something else?

1. Take it to a recycling center
2. Put out for pick-up
3. Hired someone to take it
4. Done something else [SPECIFY]_____
98. (Don't know)
99. (Refused)

[ASK IF FFR3=1(Would have gotten rid of unit)]

FFR8. If [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had ***not*** been available, would the need to physically move the freezer out of your house and/or transport it have prevented you from getting rid of it?

1. Yes
2. No
3. Maybe
98. (Don't know)
99. (Refused)

FFR9. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had ***not*** been available, how much, if anything, would you have been willing to pay your city, town, or someone else to remove or recycle your freezer for you?

1. $0—Would not pay any amount
2. [RECORD DOLLARS $1 to $999] $_____
98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE ESTIMATE OF HOW MUCH YOU WOULD PAY?']
99. (Refused)

FFR10. Now that you have considered some of the additional factors involved with getting rid of the stand-alone freezer, what would you have most likely done with the freezer had you not disposed of it through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program and received the $50 rebate? [IF RESPONDENT ASKS 'WHAT FACTORS?' SAY 'THE NEED TO MOVE A BULKY APPLIANCE AND POSSIBLY PAY TO HAVE IT REMOVED.'] [READ LIST UNLESS RESPONDENT INDICATES CHOICE WITHOUT READING THE LIST]

[RANDOMIZE AND READ 1-7, THEN 8, ALLOW ONLY ONE RESPONSE]

1. Kept it
2. Sold it
3. Given it away for free
4. Recycled it
5. Taken it to a garbage dump or put out as trash
6. Hired hauler to take it away [GO TO FFR10a]
7. Had a retail store come and pick it up[GO TO FFR10a]
8. Or would you have done something else? [SPECIFY]_____] [GO TO FFR10a]
98. (Don't know) [GO TO FFR10a]
99. (Refused)

[ASK IF FFR10=6, 7, 8, or 98 DK]

FFR10a. As far as you know, would the freezer have been recycled, sold for scrap, or sent to a garbage dump?

1. Recycled
2. Sold as a used appliance
3. Sold as scrap
4. Sent to garbage dump
5. (Other) [Specify]
98. (Don't know)
99. (Refused)

[ASK IF FFR3=2 OR FFR10=1 (Would keep)]

FFR11. If the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program had not been available to you, what would you have done with the freezer? Most likely, would you have:

1. Continued to use it
2. Stored it unplugged
3. Or would you have done something else? [SPECIFY. IF RESPONSE INDICATES WOULD HAVE GOTTEN RID OF UNIT AND FFR3=2, GO BACK TO FFR3 AND CLARIFY RESPONSE, ASKING FFR4 THROUGH FFR7 IF NECESSARY]

98. (Don't know)
99. (Refused)

Freezer Bounty Questions [FB Series]

I am now going to ask you some questions about the rebate you received for recycling this same freezer.

FB1. How important was the rebate money in your decision to recycle the freezer? Please use a scale from 0 to 10, where 0 is 'not at all important' and 10 is 'extremely important.' [RECORD NUMBER, 98 Don't know, 99 Refused]

FB2. Would you have participated in the program without the rebate check altogether?

1. (Yes)
2. (No)
3. (Maybe)

98. (Don't know)

99. (Refused)

FB3. After you had your appliance(s) picked-up, how long did it take to receive the rebate check from the program? Was it [READ]:

1. Less than 4 weeks
2. Between 4 to 6 weeks
3. Between 7 to 8 weeks
4. More than 8 weeks
5. Have not received the rebate check yet

98. (Don't know)
99. (Refused)

Replacement Freezer Questions (FE Series)

FE1. Did you get another freezer to replace the one you turned in through the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program?

1. Yes
2. No [GO TO RFZ1]
98. (Don't know) [GO TO RFZ1]
99. (Refused) [GO TO RFZ1]

FE2. Was the replacement freezer new or used when you started using it as the replacement freezer?

1. New
2. Used
98. (Don't know)
99. (Refused)

FE3. Where did you get the replacement freezer? [DON'T READ]

1. (Sears)
2. (Home Depot)
3. (Best Buy)
4. (Lowe's)
5. (Bernie's)
6. (Wal-Mart)
7. (Target)
8. (Sam's Club)
9. (Costco)
10. (BJ's)
11. (Yard/garage sale)
12. (Friend/relative)
13. (Got new main/primary freezer and now using the older one as spare/secondary freezer)
14. Internet [SPECIFY site name/address_____]
97. (Other [SPECIFY_____])
98. (Don't know)
99. (Refused)

FE4. Does your replacement freezer have the ENERGY STAR label? There would usually be a blue and white sticker on the appliance that says "ENERGY STAR."

1. Yes
2. No
98. (Don't know)
99. (Refused)

REMAINING FREEZERS [RFZ SERIES]

RFZ1. How many stand-alone freezers are currently in use in your home?

[RECORD NUMBER]_____ [RECORD NUMBER, 98 Don't know, 99 Refused] [IF 0 GO TO FB3].

RBZ2a through RFZ2c. [FOR EACH FREEZER, ASK "Approximately how old is your freezer." [IF MORE THAN ONE FREEZER, ASK ABOUT UP TO THREE FREEZERS INSERTING "first", "second," or "third" BEFORE "freezer" AS APPROPRIATE.]

1. 0 to 5 years old
2. 6 to 10 years old
3. 11 to 15 years old
4. 16 to 20 years old
5. More than 20 years old

98. (Don't know) [PROBE: 'CAN YOU GIVE AN APPROXIMATE AGE?']
99. (Refused)

SPILLOVER [SO Series]

SO1. The federal American Recovery and Reinvestment Act, also known as ARRA [SAY 'air-ah'] funded the Cash for Appliances which paid for appliance rebates in the state during the spring and summer of 2010. [IF Rhode Island SAY 'In Rhode Island, the program is called the Appliance Rebate Program and it is run through the Office of Energy Resources.'] Did you use the ARRA rebates to purchase any new appliances recently?

1. Yes
2. No
3. (Tried to, but could not get through/Program closed out)
4. (Tried to, but they told my application was rejected/I wasn't eligible)
98. (Don't know)
99. (Refused)

[ASK IF SO1=1, OTHERWISE SKIP TO SO5]

SO2. What new appliances did you buy using the ARRA rebates [RANDOMIZE AND READ A-E]:

A. Refrigerator
   1. Yes
   2. No
   98. (Don't know)
   99. (Refused)
B. Freezer
   1. Yes
   2. No
   98. (Don't know)
   99. (Refused)
C. Dishwasher
   1. Yes
   2. No
   98. (Don't know)
   99. (Refused)
D. Water Heater
   1. Yes
   2. No
   98. (Don't know)
   99. (Refused)
E. Boiler or Furnace
   1. Yes
   2. No
   98. (Don't know)
   99. (Refused)

SO3. Did your participation in the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program influence your decision to apply for the ARRA Rebates? [READ, ALLOW ONE RESPONSE]

1. Definitely yes
2. Probably yes
3. Maybe
4. Probably not
5. Definitely not

98. (Don't know)

99. (Refused)

SO4. [IF MONTH/YEAR FROM SAMPLE=MARCH 2010 OR LATER] Did your participation in the ARRA Rebate program influence your decision to participate in [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program?

1. Definitely yes
2. Probably yes
3. Maybe
4. Probably not
5. Definitely not

98. (Don't know)

99. (Refused)

[RANDOMIZE ORDER IN WHICH SO5a-c ARE ASKED; THEN ASK SO1d last]

SO5 a-d. [INTRO TO SO5 SERIES; READ] "After participating in the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program, did you replace, remove, recycle, or stop using any additional major appliances in your home that you did ***NOT*** receive a rebate for? [IF YES CONTINUE; IF NO, GO TO SO3] Did you replace, remove, recycle, or stop using a …

a. Room air conditioners
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
b. Central air conditioner
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
c. Dehumidifier
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
d. Dishwasher
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
e. Clothes Washer
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
f. Water Heater
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
g. Heating System
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)
h. Any other major appliances? [SPECIFY]_____
    1. Yes
    2. No
    98. (Don't know)
    99. (Refused)

SO6. [IF ANY SO5=1, YES] Did your participation in the [INSERT (Massachusetts or Rhode Island) FROM SAMPLE] appliance turn-in program influence your decision to replace, remove, recycle, or stop using any of these appliances?

1. Definitely yes
2. Probably yes
3. Maybe
4. Probably not
5. Definitely not
98. (Don't know)
99. (Refused)

SO7. Would you say that your electricity usage has decreased or increased after participating in the Appliance Turn-In program? Has it:

1. Decreased a lot
2. Decreased a little
3. Stayed about the same [GO TO SO9]
4. Increased a little [GO TO SO9]
5. Increased a lot [GO TO SO9]
98. (Don't know) [GO TO SO9]
99. (Refused) [GO TO SO9]

SO8. [IF SO7=1 or 2 (Electricity usage decreased), OTHERWISE GO TO SO9] How satisfied are you with the electricity savings you have seen after participating in the Appliance Turn-In program? Please use a scale from 0 to 10 where 0 is "extremely dissatisfied" and 10 is "extremely satisfied."

SO9. What, if any, potential drawbacks have you experienced from removing your appliances through the Appliance Turn-In program? [DON'T READ, PROBE; MULTIPLE RESPONSE]

1. (No drawbacks)
2. (Loss of food storage space)
3. (Loss of other storage space)
4. (House no longer cool)
5. (Usable appliances are thrown away)
97. (Other SPECIFY _____)
98. (Don't know)
99. (Refused)

DEMOGRAPHICS [D Series]

D1. What type of home do you live in? Is it a . . .?

1 Single-family detached house
2 Single-family attached house (townhouse, row house, or duplex)
3 Apartment building with 2-4 units
4 Apartment building with 5 or more units
5 Mobile home or house trailer
6 Other [SPECIFY]_____
98 (Don't know)
99 (Refused)

D2. Do you or members of your household own this home or do you rent?

1. Own
2. Rent/lease
3. Occupied without payment of rent
4. Other [SPECIFY]_____
98 (Don't know)
99 (Refused)

D3. Approximately how many square feet is your home?

1. Less than 1,400
2. 1,400 – 1,999
3. 2,000 – 2,499
4. 2,500 – 3,499
5. 3,500 – 3,999
6. 4,000 – 4,999
7. 5,000 or more
98. (Don't know)
99. (Refused)

D4. How many rooms are in your home, not counting bathrooms?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 or more

98 (Don't know)

99 (Refused)

D5. What is the highest level of education that you have completed? [READ CATEGORIES]

1. Less than ninth grade
2. Ninth to twelfth grade, no diploma
3. High school graduate (Includes GED)
4. Technical or trade school graduate
5. Some college, no degree
6. Associates degree
7. Bachelors degree
8. Graduate or professional degree
9. [Don't know]

98 (Don't know)

99 (Refused)

D6. Counting yourself, how many people live in your home?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6 or more

98 (Don't know)

99 (Refused)

D7. What is your age?

1. 18 to 24
2. 25 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 or over

98 (Don't know)

99 (Refused)

D8. How would you describe the head of the household's employment status? Would you say the head of household is . . .?

1 Employed full-time

2 Self-employed full-time

3 Employed part-time

4 Self-employed part-time

5 Temporarily unemployed

6 Not employed

7 Retired

98 (Don't know)

99 (Refused)

D9. Do you pay your electric bill directly to your electric company, or is your electricity included in your rent or condo fee?

1 PAY DIRECTLY TO ELECTRIC COMPANY

2 ELECTRICITY INCLUDED IN RENT OR CONDO FEE

3 PAID FOR IN SOME OTHER WAY

98 (Don't know)

99 (Refused)

D10. Please tell me the primary language spoken in your home.

1 ENGLISH
2 SPANISH
3 PORTUGUESE
4 MANDARIN
5 CANTONESE
6 TAGALOG
7 KOREAN
8 VIETNAMESE
9 RUSSIAN
10 JAPANESE
11 OTHER (SPECIFY): _____
98 (Don't know)
99 (Refused)

D11. Are any members of your household Spanish, Hispanic, or Latino?

1. YES
2. NO
98. (Don't know)
99. (Refused)

D12. Is the head of the household . . .?

[SELECT ONE RESPONSE ONLY. IF MIXED RACE OR MULTIPLE RACES, RECORD IN 'OTHER']

1 White
2 Black or African-American
3 American Indian, Native Hawaiian, or Alaska Native
4 Chinese
5 Japanese
6 Korean
7 Vietnamese
8 Filipino
9 Other (Specify): _____
98 (Don't know)
99 (Refused)

D13. Which category best describes your total household income in 2009 before taxes? Please stop me when I get to the appropriate category.

1 $9,999 or less
2 $10,000 to $14,999
3 $15,000 to $19,999
4 $20,000 to $29,999
5 $30,000 to $39,999
6 $40,000 to $49,999
7 $50,000 to $74,999
8 $75,000 to $99,999
9 $100,000 to $149,999
10 $150,000 or more
98 (Don't know)
99 (Refused)

D14. [RECORD SEX]
1. Male
2. Female