



PROCESS EVALUATION REPORT FOR CON EDISON'S RESIDENTIAL DIRECT INSTALLATION PROGRAM

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EXECUTIVE SUMMARY

This final report presents the results of the process evaluation for the Residential Direct Install program administered by Con Edison as part of their Energy Efficiency Portfolio Standard (EEPS), as ordered by the New York Public Service Commission (PSC).

Con Edison designed the Residential Direct Installation program as an entry point for residential customers to evaluate their home's energy performance and identify energy savings opportunities. The target market is residential customers defined as single family homes and multi-family homes with 2 to 4 units.

The program offers a home energy survey for \$50. The purpose of the survey is to evaluate the customer's home for energy performance, document existing equipment and then identify and recommend energy efficiency upgrades.

Following the energy survey, the program installs up to nine low-cost, energy efficient measures. The energy efficiency measures include: six compact fluorescent lamps (CFLs), one smart strip, hot water pipe insulation, low-flow showerheads, weather stripping, door sweeps, window air conditioner timers, faucet aerators and setting back the water heater temperature.¹ KEMA's in-depth interviewing and analysis of the BBCS tracking systems in 2011 revealed that the program now allots up to 10 CFLs per participant, and window air conditioner timers are not being installed by the program.

Table ES1 summarizes the RDI program savings goals and reported achievements for Con Edison from program initiation in 2010 through July 2011², which reflects program information when the evaluation team fielded its surveys of participants and non-participants. The table also contains cumulative program achievement information as of 2011 year-end. The program achieved roughly one-third of its survey goal (34%); at 20%, it fell short of its energy savings goals.

¹ Source: DPS Filing (December 16, 2009) and Residential Suite of Programs Implementation Plan (filed March 2010).

² Energy savings achieved are ex ante and have not been confirmed by an independent impact evaluation.

Table ES1. Con Edison–RDI Goals and Reported Achievements*

	Program Goal 2010 – 2011	Progress through July 2011	July Percent of Goal Achieved	Progress through Year-End 2011	Year-End Percent of Goal Achieved
Number of Surveys	8,252	1,848	22%	2,832	34%
Savings (MWh) ³	6,425	868	13%	1,295	20%
Coincident Peak Savings (MW) ⁴	1.56	0.05	3%	.13	9%

Source: Con Edison Monthly Scorecards (July & December 2011)

*Sums within this table include 2010 planned and actual achievements.

EVALUATION OBJECTIVES AND ACTIVITIES

The overall objective of the RDI process evaluation is to assess the effectiveness and efficiency of program design, delivery and implementation processes. The research and the findings expressed in this report are based upon review of program materials and databases, in-depth interviews with many different stakeholders (including utility staff, program implementers, energy survey technicians, and participating customers) and telephone surveys with participating and non-participating customers. Finally, an evaluator participated in ride-alongs with energy survey technicians to observe program delivery.

KEY FINDINGS AND RECOMMENDATIONS

This section presents the key conclusions and recommendations from the findings and analyses presented throughout the report. These conclusions and recommendations are organized around key research areas. Recommendations flagged with a bold asterisk (*) indicate a recommendation that we believe would immediately increase program effectiveness or production if implemented. Additional recommendations within each section are those we believe would better align the program for success but can be characterized as being of secondary consideration and priority.

Some of these recommendations require additional on-going program expenditures. Con Edison must identify which of these costs are possible while maintaining a cost effective program.

1.1 PROGRAM PLANNING AND DESIGN

Key Findings: Program Planning and Design

- The RDI program is intended to serve as an entry point for residential customers wishing to identify opportunities for improved efficiency in their home.

³ Energy savings reported as achieved are ex ante and have not been confirmed by an independent impact evaluation

⁴ Demand savings reported as achieved are ex ante and have not been confirmed by an independent impact evaluation

- Con Edison contracts with Honeywell to deliver the RDI program on their behalf. Honeywell has a large majority of program delivery responsibility and subcontracts energy survey technicians.
- The RDI program did not achieve its 2010-2011 program goals. It achieved 20 percent of its MWh savings goal and 9 percent of MW savings goal by the end of the year.
- The Con Ed RDI program generated its highest totals of savings by month in its first few months of operation (October 2010 through December 2010). The program posted lower monthly savings in 2011.
- Installation of CFLs account for two-thirds of the RDI program savings and were installed in 90 percent of surveyed homes as of July 31, 2011. Smart strips and door weatherization measures are the second and third most commonly installed measures. Program measures relating to water (e.g., faucet aerators, low-flow showerheads, etc) are rarely installed in participant homes. There are relatively few Con Edison eligible customers with electric hot water heaters (about 2-3 percent of eligible residences).
- The program has three straightforward options to increase opportunities to meet its program goals and savings targets. These options include: a) boost the number of installed measures per home visit or change the program measure assortment to create more savings opportunities; b) enhance its marketing efforts to program-eligible customers, and c) monitor the number of energy survey technicians working in the program to assure resources match customer demand.
- There are opportunities to boost program awareness and participation within the boroughs with the largest program-eligible customer population (e.g., Brooklyn) and among residents of multi-family (2-4) buildings.
- The program operations are generally succeeding at addressing energy efficiency barriers as outlined in the program's logic model. The program has opportunities to increase its participant referrals to additional energy efficiency programs and provide additional customer support to participants who implement survey recommendations.

Recommendations for Program Planning and Design

We introduce the following recommendations to improve the achievement of program goals within this section; each of these recommendations is re-emphasized and starred as a priority program change (*) in its appropriate section, below.

- **Focus on increasing the number of installed measures per visit.** Average achieved savings per visit is considerably less than what was anticipated in planning. To improve this rate, installs per visit could potentially be boosted by altering the program measure offerings or realizing opportunities to install more program measures per home visit.
- **Market aggressively to program-eligible customer groups which currently have low program participation compared to their population.** Building program awareness and promoting the program among eligible customers - specifically in areas of high customer

density like Queens and Brooklyn - could provide needed increased program participation.⁵

- **Aim to complete more home energy surveys.** Through increased marketing and subsequent customer program demand, and ultimately, by executing more home energy surveys, the program will increase its energy savings achievements.

1.2 INFRASTRUCTURE DEVELOPMENT

Key Findings: Infrastructure Development

- The structure of the BBCS database is sound and nearly all fields are fully populated; however, savings totals from the database do not match those in the scorecard reports.⁶
- The BBCS database appears to be sufficient for implementation and evaluation needs, and comprehensively tracks complete information for each site, including measures installed during the survey, recommended measures, and tips for behavior changes to save energy.
- Contact information is generally complete and accurate.
- The program database is not consistent regarding measure savings. Examples are as follows:
 - Savings in the database do not match those in the scorecard reports for individual work orders
 - Savings in the database do not use the same per unit savings values for measures of the same type⁷
 - Several records have greater than expected measures savings and/or quantities.

Recommendations for Infrastructure and Development

- **(*) Improve quality control processes regarding savings calculations and transfer of savings values from the database to the scorecard reports.** BBCS accuracy is paramount, as the program's progress towards its energy efficiency goals is based on savings reported in the scorecards.

⁵ Honeywell staff noted during its review of the draft final report that they are focusing 2012 program marketing efforts in Westchester, Queens, and Brooklyn.

⁶ Honeywell noted during its review of the draft final report that BBCS reports gross savings, while Scorecards report net savings. This may account for some of the discrepancies noted within this evaluation.

⁷ Honeywell noted that savings vary within measure, as some savings are based on algorithms with values that can use multiple data points. Savings are not necessarily deemed values.

- **Add a measure-level identification (ID) field to both the customer installs table in the database and the scorecard reports.** Including this ID to both locations will aid in quality control checks which would ensure program reporting accuracy.
- **Track multiple phone numbers in separate fields, either by type of phone (home, work, mobile) or order of preference (phone number 1, phone number 2, etc).** KEMA noted that in some records, the phone number field included multiple phone numbers, making it hard to use. Tracking of multiple phone numbers in multiple fields would be more user-friendly, and it will increase clarity of the database records. It will also improve its usability for future data mining and/or evaluation efforts.
- **Include an interaction ID or some other way to group the records for a single interaction in the customer dates table.** This would add clarity to the tracking of interactions and would allow clearer evaluation of the time elapsed between initial customer program contact and actual completion of a home energy survey in the future.

1.3 MARKETING APPROACHES

Key Findings: Marketing Approaches

- The “Power of Green” (Green Team) marketing campaign is an overall Con Edison branding campaign which highlights a range of energy efficiency program options with a limited amount of program-specific details. Green Team materials promoting the RDI program (including the website) do not provide information that implementers believe are more appropriate for presentation in-person and on-site, such as program participation fees and often do not list measures other than CFLs and smart strips.
- RDI program-related marketing efforts began in March, 2011. Con Edison and Honeywell staff confirmed in 2011 Q1 interviews that marketing plans and responsibilities were still being discussed.
- Only about one-quarter of RDI participants and even fewer non-participants (10%) report hearing about the program through the Con Edison website or using it in the past year.
- The direct mail communications can be improved by including program-specific web landing pages to provide customers more program specifics quickly.
- Both RDI program participants and non-participants most frequently mention hearing about the RDI program through a Con Edison bill insert. Word-of-mouth was not frequently named as a source of program awareness.

Recommendations for Marketing Approaches

- **(*) Develop an agreement between Con Edison and Honeywell about the roles that each entity will be responsible for in marketing the RDI Program.** Coordinate

marketing activities to leverage possible synergies, and make marketing goals and targets specific to and measurable within each organization.

- **(*)Targeted future marketing will allow technicians to work more efficiently in a smaller geographic area.** While the evaluation team acknowledges targeted program marketing appeared underway in 2011, this year's targeted marketing efforts likely began too late in the program year to adequately assess their annual success or impact on the program.
- **Provide clear and direct communication about program offerings throughout the program's website and direct mail messaging. This could increase participation and result in higher customer satisfaction with the program.** Clarity about what the program offers and involved costs will set customer expectations in line with what the programs offers.
- **Streamline website customer call-to-action efforts to reduce customer confusion, and increase the likelihood of contracting the program through the website.** Multiple phone numbers and contact options on the same page can result in customer confusion and non-action.
- **Assess marketing plans to ensure effectiveness of future program messages.** Bill inserts, despite current effectiveness, are likely to be seen by fewer customers over time as customers adopt electronic billing and automated utility bill payment processes.⁸
- **Ensure Con Edison has fully capitalized on the opportunity to market the RDI program at naturally occurring touch points.** Taking advantage of marketing and building awareness of the RDI program at natural customer touch points like customer call centers can further program promotion with little overhead or investment.
- **Create a baseline on number of page views, time on page, and click-through rates as a basis for regular review of web activity before undertaking significant website revisions.** This would provide visibility into the effectiveness of changes made to the Green Team website portal as well as the impact of broader marketing campaigns in generating increased program website activity.

1.4 CUSTOMER ACQUISITION

Key Findings: Customer Acquisition

- Eighty-seven percent of RDI program participants indicated they initiated program contact by phone. Only four percent indicated they contacted the program through its website.

⁸ Honeywell commented during the review period of the final draft report that 2012 program marketing plans do include email campaigns and a mobile website.

- Participants and non-participants alike were generally – but not overwhelmingly -- satisfied with their program contact experience. Sixty percent of participants and 55% percent of non-participants report their satisfaction level at an 8 or higher (out of a possible 10).
- *Saving money and energy* was a major reason for RDI program participation for a strong majority of participants *and* non-participants. *Talking to a knowledgeable energy survey technician* was an additional major participation reason frequently reported by participants. Non-participants were more likely to rank *making their house more comfortable* as a major program participation reason.
- The evaluator noted energy survey technicians in the field asking participants to talk to their family and/or friends about the program if they agreed it was a positive experience. Technicians and the program should continue to encourage customer word of mouth marketing while conducting home energy surveys.

Recommendations for Customer Acquisition

- **(*) Increase awareness of Con Edison energy efficiency programs among Honeywell phone customer service representatives to be sure they can effectively address customer questions.** Customer service representatives create the first program impression, and answering customer questions effectively should be among the primary outcomes of the initial customer call.
- **Marketing messages crafted to recruit customers to the Con Edison RDI program should continue to emphasize saving energy and money.** General savings messages resonate strongly with all surveyed Con Edison customers. Marketing that outlines the benefits of talking to an energy survey technician and housing comfort will also resonate with a majority of Con Edison customers.
- **As program activity increases, consider automating customer information / survey requests between the Con Edison website and the Honeywell program schedulers.** At present levels of program activity, the implementation contactor manages this process through Senior staff and considers this to be an appropriate level of customer service. If program activity increases, an increased focus on automation will reduce the administrative load of forwarding appointment requests through one or more Honeywell staff members.
- **Energy survey technicians should consistently request participants tell friends/family members if they are satisfied with the program.** The program should consider crafting leave-behind cards or flyers to leave with participants along with a technician's business card to give to others. These materials could provide program details and the technician's name. The program should also consider incenting technicians for every completed survey that is tracked through these word-of-mouth suggestions.

1.5 PROGRAM DELIVERY

Key Findings: Program Delivery

- Four energy survey technicians⁹ are currently averaging four completed energy surveys per day, which achieves only half of the yearly program survey goals and roughly 1/3 of its energy savings goals under the best of circumstances (assuming low or no customer cancellations).
- Honeywell is generally servicing customers who request a Home Energy Survey promptly.
- The office meeting between Honeywell program staff and the energy survey technicians is a program asset. The meeting provides valuable time for paperwork adjustment and quality checking and assurance (QC / QA), and the opportunity to share program successes, challenges, or “best practices”. It also provides effective communication and aids in enacting new policies.
- QC / QA procedures are rigorous and taken seriously by the program administrators. The program continued to improve its processes throughout this evaluation period. In fall 2011, the program assessed customer service breakdowns in the manual office QC process and, as a result, updated its report and post-survey customer communications.
- Opportunities exist for Con Edison to accrue the attendant benefits of being fully recognized as the program provider (loyalty, relationship building, etc.) through stronger program branding. For example, this could be accomplished by additional or more visible use of Con Edison logos on technician uniforms.
- Communication between the energy survey technicians, the office staff, and the supervisors was open and sufficient.
- All technicians handled customer introductions similarly upon arriving at appointments. Although the order in which the survey steps were performed was not always the same, we did observe the same standard energy survey elements consistently covered by all technicians; including measurements, exterior and interior examination of home shell and equipment and present opportunities.
- All technicians were consistent in asking customers to sign a work authorization form and in collecting the \$50 program fee before work began.
- Customer questions to the technicians could be categorized into three categories: 1) general questions about their home, 2) residential energy equipment efficiency / replacement need / rebate options, and 3) overall program questions. Technicians

⁹ Honeywell indicated throughout this evaluation that they are capable of adding additional staff if program demand warrants it.

generally answered customer questions directly and adequately; however, multiple customer queries about energy equipment efficiency, replacement value, etc were referred to the quality control coordinator who was present during field observations.

- KEMA calculated additional summary level statistics about installed measures at RDI participant homes through the BBCS database. The statistics highlight an opportunity to garner more energy savings per visit through increasing the number of measures installed per visit.
 - Direct install measures credited to home energy surveys yielded an average energy savings of 539 kWh per home. The program needs to achieve an average savings of 834 kWh per home to make program goals based upon the planned number of surveys.
 - Roughly 10% of program participants have achieved energy savings equal to or greater than 834 kWh.
 - The average number of measure types installed by the program is 2.27 per visit.
 - The average number of CFLs per visit (among customers who receive CFLs) is 8.90.¹⁰

Program Referrals and Survey Wrap-Up

- Three energy survey technicians observed in the field appeared to enjoy educating customers about energy efficiency opportunities during the survey.
- The evaluator noted inconsistencies about program materials that were left behind with Con Edison RDI participants in the field.

Participant Feedback about Program Measures

- Nearly all surveyed participants who had a record indicator for a door sweep or weather stripping installation confirmed a RDI technician installed the measure at their home. These measures also had the highest percent of participants (80%) who ranked their satisfaction with the measure at 8 or more (out of a possible 10).
- Energy survey technicians are not consistently installing program measures. For example, twenty-nine (13%) participants who received a smart strip with the program indicated the technician did not plug equipment into the smart strip during the survey.
- Participants were surveyed about the three most frequently installed program measures: CFLs, smart strips, and weather stripping and/or door sweeps. Participants rated the

¹⁰KEMA staff note this average is based on March 2011 extract from Honeywell Backbone Client Server (BBCS). Honeywell's updated year-end estimate indicated an average of 8.22 CFLs per home visit.

CFL with the lowest mean satisfaction measure rating (7 out of 10) among the three measures surveyed.

Home Energy Survey Results

- Nearly three-fourths of participants recalled the energy survey technician discussing the energy survey results with them after completing the survey. Almost two-thirds (64%) remember receiving written results in the mail after the survey.
- A majority of participants indicated they received a written report of their results in three weeks or less. Most (69%) participants reported the results were easy to understand; fewer (54%) reported that the recommendations were helpful.
- Nearly two-thirds of participants were able to recall receiving any RDI program recommendations. Participants who did recall receiving one or more recommendations indicated they are most likely to implement the following recommendations: 1) replace lights, 2) add insulation to their attic, or 3) add caulking, weather stripping or air sealing measures to their homes.

Recommendations for Program Delivery

- **(*) Con Edison and Honeywell should review the newly implemented HomeSTAR survey report tracking log and customer service courtesy call procedures in the first half of 2012 to assure that it is functioning properly.**
- **(*) Employ more energy survey technicians (based on customer demand).** Con Edison and Honeywell should regularly review the capacity of program staffing levels to meet program goals and consider hiring additional staff as appropriate.
- **(*) Increase the number of installed measures per visit, whenever possible.** Program success in reaching its goals may lie with increasing the savings per home energy survey visit. This can be achieved through installing more existing measures per visit or changing the program measure assortment to include higher energy-savings options.
- **(*) Make appointment groupings more efficient to reduce drive time.** The evaluator acknowledges Honeywell office staff makes an effort to maximize the efficiency of a technician's daily schedule. However, a technician's daily schedule may include travel to and stops across multiple NYC-area boroughs within each work day if the requested survey queue is low and spread out across various boroughs. More scheduling efficiency could be realized through using targeted marketing campaigns in specific neighborhoods, and by delaying a customer appointment by a day or two to group appointments by geography more effectively.
- **(*) Con Edison and Honeywell should closely monitor whether the requested program change to install more smart strips or CFLs translates into additional program savings.** The program should further consider requesting program measure additions that are more relevant to a majority of program participants. For example, the

program may consider assessing the cost effectiveness of introducing one or more residential LED lighting options into the program.

- **Monitor monthly energy savings achievement during and after program changes or updates.** Examining these data monthly will provide rapid feedback on the effectiveness of program revisions. This can be a rudimentary exercise, that might include a simple calculation of monthly savings (see figure 1 later in this report for an example) or the calculation of the distribution of average savings to be sure savings increases as expected.
- **Continue to emphasize to energy survey technicians that program measures must be installed at participant homes.** Ongoing reminders in the field and during office meetings are recommended. If the program adds a post-survey satisfaction survey component to program delivery, a follow-up question about measure installation should be included.
- **Implement program changes and marketing material updates simultaneously.** Customers receiving program literature and marketing materials that do not reflect current program parameters can hurt program and technician credibility and increase customer confusion.
- **Consider emailing Home Energy Survey participants their results.** Emailing results¹¹ could reduce a) administrative burden and b) reported receipt lag by the customer. Emailed reports also have the added benefit of time/date stamp record for QC purposes.
- **Handle important safety announcements and other program changes more formally.** Safety announcements are currently forwarded to the technicians' Field Supervisor, who disseminates the information to the survey technicians. However, more formal presentation of new or updated program information through memos or email would further support the provision of that information among the technicians, and ultimately, to Con Edison customers.
- **Build drive time into the schedules.** Calculating more accurate commute times between appointments will increase the likelihood of a technician arriving on-time for each appointment.
- **Con Edison branding in the field should be strengthened.** The evaluator documented customer confusion or concern that a technician was not affiliated with Con Edison linked to a lack of clear Con Edison program identification in the field.
- **Con Edison and/or Honeywell staff have opportunities to streamline their program payment processes by offering customers more payment options (e.g., PayPal, Square, etc.) than in-person credit card payments.** Further, collecting payment over the phone, or through online payment options, in advance of the appointment, would move this away from the technicians collecting payment face-to-face, reduce their administrative

¹¹ Honeywell currently does this on request and confirms they are planning to implement this process for customers who have active e-mail accounts in the future.

burden, and potentially diminish cancellations. Con Edison and/or Honeywell staff could pilot new payment options with a small subset of customers to test the impact on cancellations or program participation.

1.6 SATISFACTION WITH THE PROGRAM

Key Findings: Program Satisfaction

- Fifty-five percent of RDI program participants ranked their satisfaction at 8 or higher on a 10-point satisfaction scale. Twenty percent of participants rated their program satisfaction lower than 5.
- The twenty percent of participants who ranked their satisfaction lower than 5 most commonly indicated the program was a waste of time, was not helpful to them, or lacked information. Participants were also frustrated by not recalling having received a written report from the program.
- Participants generally rated their satisfaction with their energy survey technician higher than their overall satisfaction with the program. Sixty-eight percent of participants reported they were extremely or very satisfied with their energy survey technician.
- Participants most strongly agreed that energy survey technicians explained the program and answered their questions. Fewer participants agreed that the program provided clear recommendations.
- Nearly three out of four (73%) participants would recommend the program to a friend or family member.

Recommendations for Satisfaction with the Program

Many of the recommendations discussed above will lead to increased participant satisfaction. In addition to implementing previous recommendations to increase customer satisfaction, we also suggest the following options:

- **We recommend that Con Edison verify customer receipt of the HomeSTAR report as part of the ongoing Honeywell online survey effort among participants.** We suggest Con Edison ensure that they are in receipt of the online survey results to track program, technician, and measure satisfaction. As part of this effort, Con Edison might consider follow up calls with respondents who rate their satisfaction at average or low to record and address their source of dissatisfaction.
- **As suggested earlier, we recommend that Con Edison consider emailing reports to customers to ensure they receive them.** Email communications can be readily tracked to ensure that all customers receive their survey report. Emails should include a request for a delivery receipt when it is opened by the customer.

1.7 INTERACTIONS WITH OTHER PROGRAMS

Key Findings: Interactions with Other Programs

- Roughly one out of every five program participants recalled receiving Con Edison program recommendations from their energy survey technician. Nearly two-thirds of program participants who confirmed receipt of program recommendations reported a referral to the Appliance Bounty program.
- RDI participants were more likely to participate in other Con Edison energy efficiency programs (Appliance Bounty, Res HVAC , and/or Room AC) compared to non-participants.
 - RDI participants (15%) most frequently reported participating in the Appliance Bounty program, compared to only 6% of RDI non-participants.
 - RDI non-participants were more likely to have participated in a Con Edison heating/cooling program. Non-participants reported participating in Appliance Bounty *the least* among the three programs of which we inquired.
- Overall energy efficiency program awareness outside of Con Edison program options is low among all surveyed Con Edison customers. Roughly two-thirds of both RDI program participants and non-participants indicated no awareness of other energy efficiency programs outside of Con Edison offerings.

Recommendations for Interactions with Other Programs

- **Con Edison should ensure that all opportunities to broker other programs as an integral part of the home energy survey are fully leveraged.** Sixty-five percent of participants indicated their survey technician did not refer them to other Con Edison energy efficiency programs. Energy survey technicians should be promoting additional Con Edison energy efficiency programs during *every* Home Energy Survey.
- **Both Con Edison and Honeywell should communicate with customers more directly about RDI program specifics.** Directly outlining what the RDI program provides will allow customers to select the program that is appropriate for them, and increase satisfaction with Con Edison and its programs.
- **Promote examples of RDI program excellence for participants that inspires others to recommend the program.** Highly satisfied RDI program participants may be the program's strongest marketing and promotional asset.

2 INTRODUCTION

This report presents the results of the process evaluation for the Residential Direct Install program administered by Con Edison.

2.1 BACKGROUND

In May 2007 the New York Public Service Commission (DPS) initiated a proceeding to design an electric and natural gas energy efficiency portfolio standard (EEPS). This order was in response to then-Governor Eliot Spitzer's goal of reducing energy usage 15 percent by 2015. The responsibility for administering the new programs was split between the investor-owned utilities and the New York State Energy Research and Development Authority (NYSERDA). On June 23, 2008 the PSC issued an order establishing the EEPS target, which approved the EEPS programs and required utilities to file their program proposals within 90 days.

After the RDI program was approved by the DPS on December 16, 2009, Con Edison filed its implementation plan for the program in March 2010. Honeywell Utility Solutions (Honeywell) also submitted its scope of work and cost proposal to Con Edison for the RDI program in March 2010. By June 30, 2010, Con Edison had finalized its purchase order for Honeywell to begin implementing the RDI program.

2.2 PROGRAM DESCRIPTION

Con Edison designed the Residential Direct Installation program as an entry point for residential customers to evaluate their home's energy performance and identify energy savings opportunities. The target market is residential customers defined as single family homes and multi-family homes with 2 to 4 units.

The program offers a home energy survey for \$50. The purpose of the survey is to evaluate the customer's home for energy performance, document existing equipment and then identify and recommend energy efficiency upgrades.

Following the energy survey, the program installs up to nine low-cost, energy efficient measures. When the program began, these energy efficiency measures were included¹²:

- Six compact fluorescent lamps (CFLs)
- One smart strip
- Weather stripping
- Door sweeps
- Window air conditioner timers
- Hot water pipe insulation
- Low-flow showerheads
- Faucet aerators
- Setting back the water heater temperature.

¹² Source: DPS Filing (December 16, 2009) and Residential Suite of Programs Implementation Plan (filed March 2010).

KEMA's in-depth interviewing and analysis of the BBCS tracking systems in 2011 revealed that the program now allows up to 10 CFLs per participant. Window air conditioner timers are no longer offered through the program.

Program Goals and Objectives

The RDI program is designed to cost-effectively contribute to New York State's and New York City's energy efficiency goals.

Objectives associated with this program include:

- Reducing energy use, peak demand, local air pollution impacts and carbon dioxide emissions in Con Edison service territory.
- Effectively driving the adoption of low-cost, but high value energy efficiency measures in customer facilities.
- Increasing customer awareness of energy efficiency opportunities available in their residence, from both equipment upgrades and behavioral changes.
- Generating customer awareness of energy efficiency programs available through Con Edison, NYSEERDA and other entities to support their energy efficiency objectives.
- Building higher-level customer relationships by providing value-added energy efficiency services, training, education, hardware, verification and customer support.
- Supporting the local economy by helping to reduce residential customer costs, utilizing local labor, and promoting the adoption of high-quality equipment.

2.3 EVALUATION OBJECTIVES

The overall objective of the RDI process evaluation is to assess the effectiveness and efficiency of program design, delivery and implementation processes to achieve the program's outcomes. The evaluation seeks to provide clear and actionable recommendations to support the program in improving operations and meeting its savings goals.

The process evaluation addressed the following program areas:

- Program planning and design
- Infrastructure development
- Marketing and customer acquisition
- Program delivery through the program implementer
- Satisfaction with the program
- Interactions with all other available programs.

Con Edison is committed to meeting its program goals and is most interested in process evaluation findings that will assist them in accelerating program activity. With this in mind, KEMA has prioritized process evaluation activities that are likely to result in program recommendations that meet that objective.

Within each of the evaluation objectives, research questions specific to the RDI program were identified. Appendix A presents the research area, specific research questions within each area and the section of the report that addresses each question.

2.4 OVERVIEW OF METHODOLOGY

The research and the findings expressed in this report are based upon the following evaluation activities:

- Review of program planning and marketing materials,
- Review of program tracking system, data, and other program delivery documents,
- In-depth interviews with:
 - Con Edison staff (two completed, June 2010 and February 2011, respectively)
 - Honeywell staff (six completed, July 2010 to August, 2011)
 - Honeywell subcontracted energy survey technicians (four completed, August, 2011 to October, 2011)
 - Program participants (five completed, May and June 2011)
- Customer telephone surveys with:
 - Program participants (293 completed, October and November 2011)
 - Program non-participants (297 completed, November and December 2011), and
- Field and office observations of implementation staff and energy survey technicians (August 18th and 19th, 2011).

A full description of the evaluation methodology is provided in Appendix B.

2.5 ORGANIZATION OF REPORT

This report is organized around the six broad research areas. Two sections follow this introduction:

- Chapter 3. Analysis and Findings, discusses the key findings of the research conducted; and
- Chapter 4. Conclusions and Recommendations, provides the recommendations for modifications to the program.

3 ANALYSIS AND FINDINGS

This chapter discusses the analysis and process evaluation findings, beginning with an examination of program participation and achievements to date. We then assess program processes according to the program areas identified in the evaluation objectives:

- Program planning and design
- Infrastructure development
- Marketing and customer acquisition
- Program delivery through the program implementer
- Satisfaction with the program
- Interactions with all other available programs.

3.1 SUMMARY OF PARTICIPATION AND PROGRAM ACHIEVEMENTS TO DATE

The RDI program was significantly behind target for meeting the 2010-2011 goals in July 2011, when the evaluation team entered its survey fielding operation stage. At that time, the program had only achieved 13 percent of MWh and 3 percent of MW savings goals¹³. Savings improved slightly by the end of 2011 to 20 percent of MWh and 9 percent of MW savings goals. This achievement was based on the performance of more than one-third of the planned surveys. Program performance indicates that the savings achieved per survey is less than planned. Table 1 summarizes the RDI program goals compared to achievements in two program year snapshots: a) program start to July 2011 and b) cumulative program achievements as of December 2011. Due to program start-up delays, the implementation plan annual goals for 2010 through 2011 were combined into a single goal to be achieved by December 31, 2011.

¹³ Energy savings achieved are ex ante and have not been confirmed by an independent impact evaluation.

Table 1: Con Edison–RDI Goals and Reported Achievements*

Benefit/Cost Component	Total Program Goal 2010 – 2011	Progress through July 2011	July Percent of Goal Achieved	Progress through Year-End 2011	Year-End Percent of Goal Achieved
Number of Surveys	8,252	1,848	22%	2,832	34%
Savings (MWh) ¹⁴	6,425	868	13%	1,295	20%
Coincident Peak Savings (MW) ¹⁵	1.56	0.05	3%	.13	9%

Source: Con Edison Monthly Scorecards (July & December 2011)

*Sums within this table include 2010 planned and actual achievements.

Honeywell provided the following reasons for low program participation and savings numbers in its monthly reports¹⁶ from 2011:

1. Competition for participants from similar non-Con Edison programs offering free home energy audits or surveys (e.g., NYSERDA). Honeywell also noted that Con Edison offers a separate program which offers customers free high-efficiency light bulbs, with a wider variety of bulb options.
2. Savings per visit is lower than plan due to a) a low number of electric domestic hot water customers in the program, and b) removal of the air conditioning timer from the program offerings.

Program Spending Levels

Con Edison expenditures through July are ahead of progress in survey completions and savings. Program administration, planning and implementation include the costs of developing Con Edison's RDI program procedures, manuals and overseeing contractor work. These activities occurred during the beginning of the program funding cycle. Similarly, the marketing budget was spent early in the program to create awareness and develop the necessary marketing materials. Training was also conducted early in the program cycle. It is not clear, however, how much money was spent on marketing compared with training.

¹⁴ Energy savings reported as achieved are ex ante and have not been confirmed by an independent evaluation

¹⁵ Demand savings reported as achieved are ex ante and have not been confirmed by an independent evaluation

¹⁶ Honeywell Monthly Report to Con Edison, July 2011.

Table 2: Con Edison – RDI Program Spending (through July 2011)

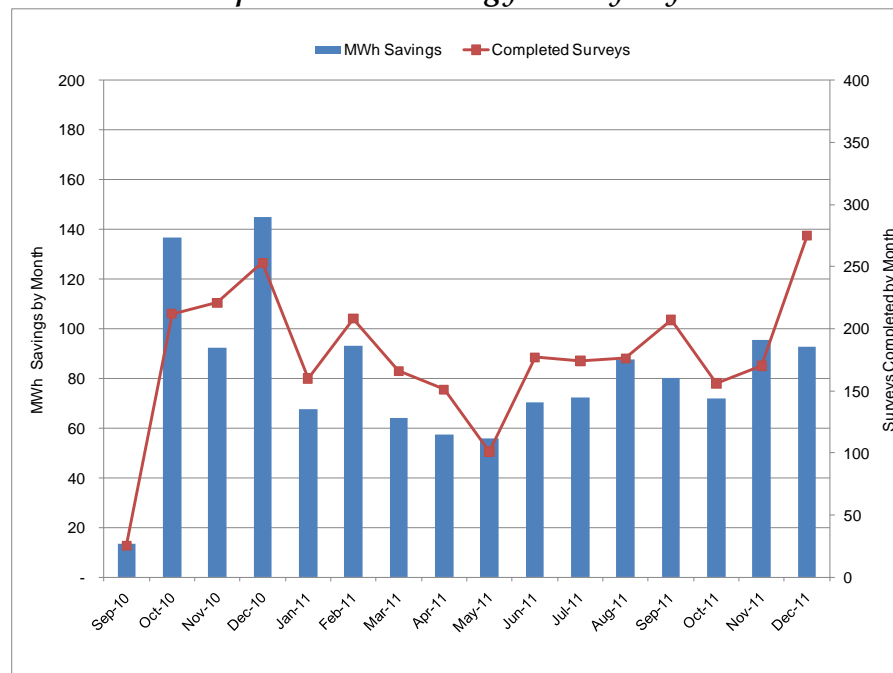
Budget Category	Con Edison Program Budget	Con Edison Program Expenditures	Percent of Budget
Incentives	\$2,572,050	\$211,155	8%
Administration & Planning	289,953	311,912	108%
Implementation	765,697	755,803	99%
Marketing & Training	402,200	832,307	207%
Evaluation	212,100	54,365	26%
Total Program Budget	\$4,242,000	\$2,165,541	51%

Source: EEPS Budget vs. Actual Program Cost Comparison by Cost Component, July 2011

Program Activity Levels

The RDI program experienced implementation delays, with the Honeywell contract being finalized in mid-2010. Since then, program activity peaked at the end of 2010, but has since decreased and remained relatively flat. Figure 1 illustrates the monthly program savings acquired by Con Edison during the 2010-2011 program period. To achieve the overall energy savings goal, starting from September 2010 through 2011, the Con Edison RDI program needed to obtain an average savings of more than 430 MWh each month. To achieve the survey goals, the program needed to complete roughly 515 surveys each month. Figure 1 shows the number of home energy surveys completed by month within the program; the program averaged 177 completed surveys per month. Neither the monthly rate of completed home energy surveys, nor the monthly amount of acquired savings, has been sufficient to achieve program goals.

Figure 1: Con Edison RDI Program: Monthly Savings Acquired (MWh) vs. Completed Home Energy Surveys by Month



Source: Con Edison Monthly Scorecard (December 2011)

Program Demographics

As part of this evaluation effort, Navigant and KEMA surveyed RDI program participants and eligible Con Edison customers who were not program participants according to Con Edison database records. RDI program participants were surveyed by phone during October 2011; Non-participants were similarly surveyed by phone during November and December of 2011. The surveys yielded eligible responses¹⁷ from 293 participants and 297 non-participants, respectively.

Table 3 highlights basic demographic information about surveyed RDI program participants, and Con Edison RDI-eligible non-participants. A majority of RDI program participants were homeowners (~94%). Participants are generally college educated and live in single family homes. The same could be stated about non-participants; however, a greater proportion of non-participants rent and have not achieved a Bachelor's degree.

¹⁷ The actual number of surveyed respondents for both participants and non-participants is larger. However, some of the data included survey responses from customers who live in multifamily buildings with five or more units. These respondents are not eligible for the RDI program; therefore, they were excluded from the analysis.

Table 3: Con Edison RDI Program Participant and Non-Participant Demographics*

Demographic Variable	Participant		Non-Participant	
	N	Percent	N	Percent
Type of Home				
Single Family	201	69	154	52
Multifamily (2 to 4 units)	90	31	138	47
Rent vs. Own				
Rent	13	4	70	24
Own	276	94	223	75
Income				
< \$60K	56	19	83	27
\$60K +	164	56	127	43
Education				
Less than college	78	26	118	40
College +	206	70	162	55
Average length in current home (yrs)	18		18	

**Responses do not sum to 100% due to respondents who indicated they did not know, or who refused to respond.*

Characterization of Program Measures Installed

As of July 31, 2011, CFLs made up 67 percent of RDI program savings and were installed in 90 percent of surveyed homes. The program installed smart strips in 88 percent of homes and door weatherization measures in 43 percent of homes; each of these measures represented 15 percent of program savings. No other measures type accounted for more than one percent of program savings or was installed in more than two percent of homes. Table 4 shows the number of participating homes and the program savings from each of the measure types tracked by the program. As noted earlier, the savings referenced in this report are estimates from program tracking systems that are based on the technical manual and have yet to be fully evaluated.

Table 4: Number of Homes receiving RDI Installed Measures, through July 31, 2011¹⁸

Measure Type	Number of Homes Receiving Measure	Percent of Participating Homes	Total kWh Saved	Percent of kWh Saved
CFL 15 Watt	1,669	90%	644,425	67%
Smart Strip	1,637	88%	152,875	16%
Door Weatherization	806	43%	146,440	15%
Low Flow Showerheads	22	1%	7,000	1%
Hot Water Pipe Insulation	29	2%	4,445	0%
Kitchen Aerator	24	1%	2,811	0%
Bathroom Aerator	21	1%	2,394	0%
Water Heater Set Back	5	0%	75	0%
Total	4,213	227%	960,465	100%

Source: Honeywell Backbone Client Server (BBCS) Database

Implementation Staff

Con Edison contracted with Honeywell to deliver the RDI program on Con Edison's behalf. Honeywell has most of the program delivery responsibility. The in-depth interviews conducted with both Con Edison and Honeywell staff during this evaluation confirmed there is regular communication between the parties, and that both Con Edison and Honeywell each have marketing responsibilities for the program.

Honeywell dispatched a number of its staff in its Plainview, NY office to implement the program; in addition, Honeywell subcontracts energy survey technicians to administer the energy surveys. Honeywell also relies on its call center in Georgia to field some of the incoming Con Edison calls and route customers into the program.

Table 5 provides a description of the key program roles. KEMA interviewed the staff currently responsible for each role during this program evaluation. The structure of high-level staff (Program Administrator and implementers) appears adequate to deliver the RDI program. However, we note that there has not been enough energy survey technicians completing the number of surveys, to assure that the program reaches its goals. This finding will be discussed in more detail later in the report.

¹⁸ Honeywell emphasized during its review of the draft final report that BBCS reports gross savings; therefore, the BBCS gross savings data used within this table may not match Program Scorecard reporting, which reports net savings data. Further, Honeywell noted that individual BBCS database records rolled up for use within this table may include multiple measure installations, as they may not be readily apparent to other users of the database. This may impact this table's totals.

Table 5: Description of Program Staffing and Roles

Role	Responsible Party
Utility / Program administrator	<p>Con Edison Program Staff</p> <ul style="list-style-type: none"> • <u>Program Manager</u>: Oversight for five residential programs for 1-4 unit buildings (Excludes Multi-Family). Program examples include: <ul style="list-style-type: none"> ○ HVAC electric/gas ○ Appliance Bounty ○ Room A/C ○ RDI (Home Energy Survey). • <u>Program Assistant</u>: Aids the Program Manager • The program manager also has oversight over program implementer, Honeywell. • <u>Implementation Manager / Marketing Logistics</u>: This manager is responsible for the procurement and implementation of efficiency programs. This includes issuing and working on statements of work for the contractor, and reviewing their proposals. The Implementation Manager also creates the statement of work for the purchase orders.
Implementation contractor	<p>Honeywell Utility Services</p> <ul style="list-style-type: none"> • <u>Residential Program Manager</u>: Responsible for program oversight for all residential programs Honeywell implements on behalf of Con Edison. Examples include RDI, Appliance Bounty, Res HVAC electric/gas, and Room AC. • <u>District/Senior Program Manager</u>: Responsible for all Honeywell Energy Solutions operations out of Long Island, NY office. • <u>Senior Coordinator</u>: Manages and supports the day-to-day survey operations of all field staff. Assists in efficient scheduling overall, and interfaces with Con Edison in taking customer survey requests. • <u>QC / QA Inspector</u>: Manages and supports the day-to-day survey operations of the field supervisor and the energy survey technicians. Leads team office meetings and trainings on Tuesdays and Thursdays. QCs / QAs program paperwork, home energy survey processes and program measure installations. • <u>Program Coordinator</u>: Collects and files program forms, enters data collected through HomeSTAR forms, schedules home energy surveys for customers and for the technicians. Oversees customer report distribution.

Subcontractor (Energy survey technicians)	<ul style="list-style-type: none"> • <u>Field supervisor</u>: Oversees survey operations relating to inventory, program vehicles, weather challenges and more. “Floats” in the field to relieve scheduling challenges and provide field support / QC when needed. Helps to resolve customer service issues. • <u>Energy survey technicians</u> (3): conducts the Home Energy Survey, captures survey data, interfaces with program participants by answering questions and educating, and provides energy efficiency equipment and program recommendations.
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3.2 PROGRAM PLANNING AND DESIGN

The RDI program is intended to serve as an entry point for residential customers wishing to identify opportunities for improved efficiency in their home. The program is envisioned as having the potential to serve as a conduit for customers to familiarize themselves with Con Edison’s other program offerings in the residential sector.

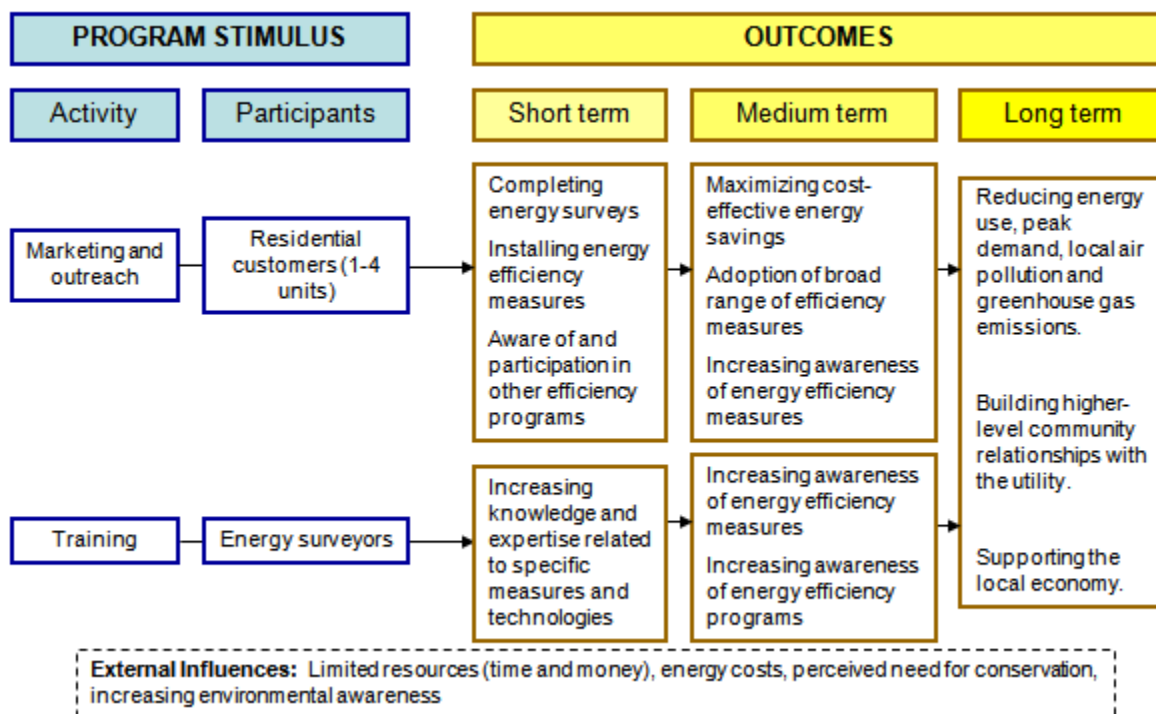
The program is designed to address several market barriers to energy efficiency in the residential customer segment. Market barriers include high costs, low awareness of energy efficiency opportunities, and limited time, resources and awareness regarding energy efficiency recommendations. Direct installation programs, such as RDI, are intended to facilitate energy efficiency retrofits by installing low cost measures and providing customized recommendations for energy upgrades and energy-efficiency equipment. Table 6 summarizes the market barriers and program design approaches to overcome the barriers.

Table 6: Market Barriers and Program Strategies to Overcome

Market Barriers	Mitigation Strategies
High cost of efficient equipment and declining economic conditions	<ul style="list-style-type: none"> • Direct installation of measures for immediate savings; • Provide information on additional rebates to help offset the cost of efficient equipment; • Help customers implement a phased approach to installing larger upgrades.
Lack of customer awareness of programs and energy efficiency actions	<ul style="list-style-type: none"> • Low-cost, third-party analysis and recommendations; • General education and information about simple energy efficiency retrofits; • Information and referrals to other energy efficiency incentive programs.
Limited time, resources and awareness on how to act on recommendations	<ul style="list-style-type: none"> • Immediate direct installation of certain measures; • Referral program to help channel residential customers to other rebate programs; • Provide simple maintenance tips for ongoing savings.

A RDI program logic model is presented below in Figure 2. The program logic model presents the goals of the program, the activities that are necessary to accomplish those goals, and causal relationships between the program activities and its effects.

Figure 2: Residential Direct Install Logic Model



Program Design Challenges and Opportunities

Given that the Con Edison RDI program did not achieve its program savings or survey goals for 2010–2011, this report provides a timely opportunity to reflect on possible reasons for the deficits. The evaluation team identified several program delivery barriers hindering the short term outcomes detailed in the program logic model (above). The remainder of this report will explore those barriers and make recommendations to improve program delivery. KEMA identifies three program barriers as key program challenges and opportunities. These barriers will be explored in greater detail later in the report.

Program Marketing: The program lacks adequate customer leads to convert to completed energy surveys and installed program measures. The need for timelier, organized, aggressive marketing was a repetitive theme throughout the in-depth interview process with Con Edison and Honeywell staff. Despite a targeted marketing push by Honeywell in the middle of the program year, the increased customer outreach did not significantly raise program participation before year's end. Program-specific marketing executed earlier in the program, partnered with marketing materials that succinctly details RDI program offerings, costs, and benefits, may have significantly changed the program's recorded achievements.

Program Measures: The evaluation team assessed that the program may not be maximizing its potential to distribute program measures at each visit. Further, a majority of the program measures are rarely distributed. There is opportunity for the program to increase energy savings per home energy survey visit. The program should ensure that all feasible measures are identified and installed. It could further consider assessing the introduction of LED lighting options to the program to help increase the potential savings acquired per participant.

Program Staffing: If the program seizes the opportunity to strengthen its marketing efforts and drive customer demand, program implementers should regularly reassess staffing levels to support the program in getting to its goals.

The evaluation team concludes that maximizing opportunities to install electric measures and boosting program marketing are key components linked to the RDI program's short-term outcomes and savings goals. As the program marketing increases, the program should also regularly re-evaluate staffing levels to assure there are enough home energy survey technicians available to meet customer demand.

The evaluation team additionally examined available customer information to better assess who is eligible for the program vs. who participates. The team observed during the course of the evaluation that participation by borough did not match the eligible Con Edison population. Table 7 compares the geographic distribution of RDI program participants to the eligible population of residential accounts provided to Honeywell. Program activity through July 2011 was concentrated in Westchester County, followed by Queens. However, the largest percent of eligible accounts are concentrated in Queens and Brooklyn.

Table 7: RDI Participation by Borough

Borough	Participants		Eligible Population	
	Count	Percent	Count	Percent
Bronx	197	12%	116,744	9%
Brooklyn	209	12%	402,729	31%
Manhattan	38	2%	22,551	2%
Queens	374	22%	411,420	32%
Staten Island	102	6%	144,340	11%
Westchester	754	45%	207,156	16%
Total	1,674	100%	1,304,940	100%

Sources: Con Edison residential 1- to 4-family customer records, May 2010 (population), Honeywell Backbone Client Server (BBCS) Database (participants).

Table 8 shows that the RDI program is engaging mostly single unit residential accounts. In contrast, the eligible population consists mostly of two to four unit residential accounts. Historically, targeting and enrolling multifamily dwellings has been recognized as difficult and

fraught with barriers such as misplaced incentives¹⁹ and perceived hassle/transaction costs. However, given the observed opportunity in Table 8, continuing efforts to engage this market is warranted.

Table 8: RDI Participation by Number of Units in Building

Number of Units	Participants		Population	
	Count	Percent	Count	Percent
One	1,256	75%	510,437	39%
Two to Four	418	25%	794,503	61%
Total	1,674	100%	1,304,940	100%

Sources: Con Edison residential 1- to 4-family customer records, May 2010 (population), Honeywell Backbone Client Server (BBCS) Database (participants).

The participation vs. eligible population counts in Table 7 and Table 8 suggest there are opportunities to boost program enrollment. One such opportunity is to increase awareness of and participation in the program through participation in the boroughs that are currently underrepresented. One of the strongest opportunities may be in Brooklyn, which holds 31% of the population yet represents only 12% of the participants. Examination of Participation vs. Number of Building Unit information suggests there may be an added opportunity to recruit more residents of multiple-unit buildings into the program.

We asked non-participants who rated themselves as unlikely to participate in the RDI program why they are unlikely to do so. Nearly two-thirds of non-participants who are unlikely to participate in the program indicate it is because they “*already know what to do to make their home more energy efficient.*” This was the strongest rated “major reason” regardless of borough, single or multi-family home status, rent vs. own, etc. Although not statistically significant, a majority of multi-unit dwellers indicated that renting their home was “not a reason” they were unlikely to participate.

In the remainder of this report, we examine current RDI program operations, and explore opportunities to boost RDI program activity through increased program participation and acquired savings per participant through program process changes. We first assess the infrastructure and tracking database, used as the foundation for managing program activity. To evaluate opportunities to increase participation, we examined the marketing and customer acquisition processes that bring eligible residential customers into the pipeline, as well as the program delivery processes that lead to free measures being installed. We assessed satisfaction with the program and opportunities to increase the amount of savings per project. Finally, we examined interactions with other programs, to identify their impact on RDI participation.

¹⁹ Characterized by relationships that fail to align the incentives of the purchaser with those of the person who would benefit from the purchase.

3.3 INFRASTRUCTURE DEVELOPMENT

In this section, we examine program management and reporting processes associated with the tracking system for the Con Edison RDI programs. The program tracking database stores and provides information necessary for the management of the program. Ideally, it allows implementation staff to identify leads and track participation and progress toward goals. The purpose of the database review is to summarize the functioning of the RDI program tracking database and to provide recommendations for improvement.

We based our database review on extracts from the Honeywell database, field observations of energy survey technicians, and the results of in-depth interviews, not solely on the database itself. The evaluation team also provides an assessment of the accuracy of the information housed in the tracking system.

Honeywell utilizes a proprietary software application called the Backbone Client Server (BBCS). KEMA received ten extract tables from the database that included detailed tracking information from completed surveys such as measures installed, recommended measures and household characteristics. The extracts also included customer contact information and dates associated with aspects of program participation.

From our experience with the extract tables, the basic structure of the underlying relational database appears sound. Most tables are linked to a particular survey by the “Workorder ID” and to customer information by the customer’s account number. The data collected to inform the recommendations appears detailed, complete, and well structured. For example, the database has separate tables for each type of energy using equipment, with appropriate fields specific to the tracked equipment. Electric energy program impacts are also stored in an easy to access manner, by one record per measure installed.

A primary function of the program tracking database is to provide a verifiable record of reported savings. The program's progress towards its savings goals is tracked in monthly scorecard reports, which did not consistently match the savings tracked in the database. The following is a list of the noted discrepancies:

- All of the records reported in the scorecard appeared in the database, but the July 2011 scorecard had 3,030 more kWh savings than the database (less than a 1 percent difference overall).
- Twenty-two work orders (out of more than 1,934) had savings in the scorecard and database that differed by more than 100 kWh.
 - Thirty-six work orders had no savings in the database, but had savings in the scorecard; conversely, five work orders had savings in the database, but not the scorecard.

- There were also 1,100 work orders where the savings difference between the database and scorecard was less than 100 kWh. Some of these differences appear to be systematic and could be attributed to rounding error; however, for the majority of records, we could not readily discern a pattern.

It is challenging to definitively conclude whether the sum of these database-to-scorecard discrepancies is resulting in consistent over- or under-reporting of program energy savings. However, it is clear that there are opportunities with the database infrastructure for Honeywell and Con Edison to improve the energy savings tracking and reporting accuracy for the program.

The database also tracks interactions with customers in the customer dates table. The table has seven fields, including the customer's first and last names, the account number, a UserID field, and an interaction date. The key fields for understanding the interaction are the interaction type field and the reason field. The interaction type field has limited categories which sacrifices detail for ease of entry, while the reason field is only complete for 25 percent of records.

We found the customer dates table difficult to work with outside of Honeywell's native database system, mainly because a single interaction can result in many records in the database, but there is no way to group them into a single interaction. A single record offers incomplete, and in some instances, misleading information. The status of the interaction is tracked in the interaction type field, so one line associated with an interaction reads as "complete," while additional lines for the interaction show other details. The "complete" record also often does not provide other information to indicate what was completed. The way the database stores interaction data prevents analyses of program timing, such as determining the average time from scheduling a survey to completing a survey.²⁰ Table 9 offers an example of what a single customer's program activity looks like within the customer dates table. The customer's actual name has been changed.

²⁰ Honeywell staff noted during their review of the final draft report that many of the database segments KEMA reviewed during its evaluation were custom data exports specific to the evaluation to accommodate the KEMA and/or Navigant data request. They further indicated that custom IT changes would be necessary to change or improve any of the noted data inconsistencies above.

Table 9: RDI Sample Participant Record

Account Number	First	Last	InteractionType	Reason	UserID	Interaction Date
00	Joe	Public	Incoming phone call	Schedule Appointment	UserID1	11/23/2010
00	Joe	Public	Ready to Schedule		UserID2	11/23/2010
00	Joe	Public	Scheduled		UserID2	11/23/2010
00	Joe	Public	Invoiced		UserID3	02/15/2011
00	Joe	Public	Complete		UserID2	11/26/2010
00	Joe	Public	Processed		UserID2	11/23/2010
00	Joe	Public	Data Entry		UserID4	11/23/2010
00	Joe	Public	Processed		UserID4	11/23/2010
00	Joe	Public	New		UserID2	11/23/2010

Source: Customer Dates Table

The customer installs table tracks the completed energy surveys, installed measures, and associated energy savings. Our primary concern with this table involves inconsistencies we found in per unit savings values for most program measures -- some of which were out of the expected range for the measure type. Other specific concerns are as follows:

- There is no measure-level ID field, which prevents one-to-one matching of measure-level records in the database and scorecard reports.
- Around 40 surveys appeared to have no installed measures and were not included in the scorecard.

Table 10 provides a more inclusive list of the irregularities we found in the data table.

Table 10: Customer Installs Table Observations

Key Field Name	Percent Complete	Observations
Measure or Record ID	0%	<ul style="list-style-type: none"> The dataset does not include a single field that is unique for each record
Workorder ID	100%	<ul style="list-style-type: none"> Consistent format
Fullname	100%	<ul style="list-style-type: none"> Consistent format One cell includes two names in some records
Description	100%	<ul style="list-style-type: none"> Consistent categories Appropriate level of specificity 11 percent of survey fees recorded do not match Con Edison's records re: number of residences In one case, a single work order had two survey fee records that contradicted each other re: number of residences
QTY	100%	<ul style="list-style-type: none"> All within reasonable range
KWhSavings ²¹	100%	<ul style="list-style-type: none"> In two cases, a survey fee record had kWh savings recorded CFL per unit savings range from six kWh per year to 354 kWh per year Smart strip per unit savings range from 44.3 kWh per year to 8,907 kWh per year Pipe wrap quantities range from one to 100 (per unit savings are consistent for all) Kitchen aerator measures (CAC and Room AC) do not have consistent per unit savings.
KWhLifeSavings	100%	<ul style="list-style-type: none"> All within reasonable range
Status Date	100%	<ul style="list-style-type: none"> All within reasonable range

The customer demographics table tracks the basic contact information for the work order. The program has complete contact information for all completed work orders in the database. The information tracked was consistent in format and appears to have a high level of data quality. Honeywell staff confirmed during in-depth interviews that the BBCS customer database contains geographic information down to the zip code level that would prove useful for specific

²¹ Honeywell corrected many of the errors KEMA identified in this table after KEMA released its final draft report.

targeted marketing campaigns. The phone number field included multiple phone numbers, making it hard to use. Tracking of multiple phone numbers in multiple fields would be more user-friendly. Based on responses to the CATI survey, 90 percent of the phone numbers in the database are accurate. Table 11 shows our high level observations of the customer demographics table.

Table 11: Customer Demographics Table Observations

Key Field Name	Percent Complete	Observations
Account Number	100%	<ul style="list-style-type: none"> Consistent number of digits
Workorder ID	100%	<ul style="list-style-type: none"> Consistent format
Address	100%	<ul style="list-style-type: none"> Consistent format Generally consistent use of abbreviations
City	100%	<ul style="list-style-type: none"> No spelling errors Only a few instances of inconsistent abbreviations (Mt. Vernon vs. Mount Vernon)
ZIP	100%	<ul style="list-style-type: none"> All five digit zip codes
First Name	100%	<ul style="list-style-type: none"> In a small percent of cases, the field has title (Dr, Mr etc) or first initial, rather than first name
Last Name	100%	<ul style="list-style-type: none"> In cases where title is tracked in first name field, last name often includes both first and last name
Phone Number	100%	<ul style="list-style-type: none"> Includes multiple phone numbers in a single cell, making it hard to use. We reached an eligible respondent at 90 percent of phone numbers we connected to during CATI survey fielding
Status Date	100%	<ul style="list-style-type: none"> Dates appear reasonable

The database stores recommended measures and their associated energy savings in the “customer recommendations” table. This table contained recommendations for 97 percent of work orders, with an average of 3.5 recommended measures per work order. KEMA calculated that if RDI participants followed up and installed additional, post-survey measures recommended through the program, it would result in an average estimated 456 kWh and 200 therms in energy savings for customers. This could represent an interesting opportunity for the program to increase energy savings if all or a portion of these recommended measures were installed and could be partially or fully attributed to RDI program goals. Recommended measures stored in this table fall into 20 well labeled categories.

The database stores other tips given to the customer, including rebates available through Con Edison and National Grid in the “customer tips and recommendations” table. There are 43 standard format tips tracked in the table, that provide behaviors or installations that could save energy and information about rebates and programs that the homeowner might be eligible for. We found that all work orders (with two exceptions) received between 21 and 33 of the tips, with an average of over 25 per work order.

3.4 MARKETING APPROACHES

In this section, we examine how Con Edison and Honeywell are marketing the RDI program to increase general awareness and promote participation. The review is based on in-depth interviews with program staff, implementation contractors, and phone surveys with non-participants and participants. The evaluation team also assessed the marketing materials developed by Con Edison and Honeywell. The marketing examples specifically reviewed within this section were provided by Con Edison, and may not necessarily be representative of all marketing efforts produced over the course of the program.

Both Con Edison and Honeywell representatives interviewed by the evaluation team acknowledged program marketing was slow to start. Con Edison staff listed traditional marketing methods were in use with the program, offering examples like bill inserts, phone calls, direct mail letters, and word-of-mouth. Door-to-door education was also mentioned in one interview. Honeywell representatives identified that a lack of program marketing was a challenge, noting that there are not enough customer leads or backlogs to maximize scheduling efficiency with the technicians. Representatives from both Con Edison and Honeywell interviewed in early 2011 acknowledged communication regarding marketing plans was ongoing, but there were no final marketing plans for the program in place at the time of the interview. They further expressed a need for clarity of roles between Con Edison and Honeywell about marketing responsibilities.

Con Edison Marketing Activities

The evaluation team reviewed the Marketing Plan²² that Con Edison provided for Residential Demand Side programs. A formal, final RDI program marketing plan was not formulated during the program year. The draft plan covers a wide range of topics about residential energy efficiency program marketing, including identifying attitudes and behaviors of likely residential energy efficiency program participants, and emphasizing the importance of the Con Edison name and brand recognition among its customers. It also postpones clear decisions on some program marketing tasks and responsibilities between Con Edison and the program implementers for its programs. The excerpt below provides an example:

²²Con Edison. Marketing Plan for Demand Side Management Programs Targeting Residential 1-4 Dwellers. Date uncertain.

Con Edison has worked closely with the Implementation contractor to implement a marketing strategy and this collaboration will continue, moving forward. In order to provide better efficiencies and coordination, the mass media effort that provides an overall reach should be centralized with Con Edison. The communications strategy should be worked out between the Implementation Contractor and Con Edison, but the media buy and creative production should be implemented by Con Edison's agency of record. This provides a better level of coordination and economies of scale. On the other hand, the targeted marketing should be implemented by the implementation contractor. The target markets, target list, communication, timing and measure of success should be decided on by both parties.

The plan indicated that Con Edison considers its residential 1-4 unit customers to belong in one of four segments²³: *Eco Influencers, Watt Saver Wannabes, Concerned Skeptics and Disinterested Non-Believers*. The marketing plan chose to “focus on the Eco Influencers and the Watt Saver Wannabes as these two attitudinal segments are already interested in energy efficiency and are most likely to act. Even though these segments combined represent the smallest group of the total target market, there are fewer barriers that need to be overcome such as skepticism about energy efficiency and limited disposable income.” In short, the plan directed Con Edison to define likely energy efficiency program participants as customers who were receptive to technology, younger, more affluent, and more likely to own their home²⁴. Con Edison planned to use a variety of targeted marketing techniques to deliver marketing messages to these customers, including, but not limited to, direct mail, mass media campaigns in key markets, social media, and more.

The Power of Green

In the latter part of 2010, roughly the same time the RDI program was undertaking its first Home Energy Surveys with Honeywell, Con Edison launched the “Power of Green” (Green Team) campaign. The campaign is an overall branding effort to educate Con Edison customers about its suite of residential energy efficiency program options. Campaign media plans for 2011 indicated Con Edison conducted a Green Team branding marketing effort that utilized print, radio, television, internet and online advertising. More specifically, the media plan details advertising purchases in prominent New York-area print publications such as the New York Post, the New York Times, and the Daily News, and also highlights a partnership with media outlets to have an online presence on their respective websites. The plan further includes outreach on eight radio stations reaching Metro New York and Westchester. The majority of the 2011 branding campaign effort was planned for May, June, and August.

Con Edison provided multiple examples of “Green Team marketing campaign materials. The Residential Green Team ad example (see Figure 3) mentions key program components of multiple residential energy efficiency programs. It avoids using specific program names, and

²³ The plan indicates these segments were defined in Con Ed's April 2010 customer research titled: “*Energy Efficiency Attitudinal Study Residential & Commercial Survey Results, April 29, 2010*”.

²⁴ Honeywell verified in its draft report review comments that the plan defined and included these customer segments, but in actual operation, these segments were unable to be accurately defined, and this targeted messaging was ultimately not delivered.

instead promotes measures and/or benefits the customer will receive through program participation. For example, the portion of the ad that refers to the RDI program mentions free program measure examples and a low cost energy survey. Customers may ultimately be confused about the mixture of no-cost and low-cost program messages within the same ad, leaving them unable to assess their actual RDI program costs vs. benefits.

Figure 3: Con Edison Residential Green Team Ad (2010)



HOME OWNER | VERSION 1A
SEPTEMBER 13, 2010 2

The Green Team campaign utilized many marketing vehicles to communicate Con Edison's suite of available energy efficiency programs and emphasize its "green" brand. Con Edison fashioned additional creative campaign elements that included radio spots, newspaper ads, and online banner ads. Some of these creative materials, such as the ad in Figure 3, promoted multiple programs with a focus on "being green" while also saving money and capturing energy efficiency. Other Green Team advertisements, such as fall 2010 radio spots, afforded Con Edison small capsules of program-specific advertising. The Green Team Con Edison RDI-

specific radio spot the evaluation team assessed emphasized 1) a home energy survey and 2) a free power strip and CFLs for the participant. Lowering energy bills was the key participant benefit mentioned in the ads. There was no mention of the survey fee.

The Program Website

The residential webpage linked from Green Team landing page lists multiple energy efficiency programs. A hyperlink inviting customers to “Start Saving Energy Now with a Home Energy Survey” connects customers in one step to the Residential Direct Install program page. Figure 4 displays a screenshot of the website, which highlights program benefits, lists examples of free program measures, notes program requirements, and gives a brief overview of how the program operates.

The content detail on the program website is adequate to introduce the program to a customer who is unfamiliar with RDI program offerings. The website may be improved by providing more straightforward program information in two instances. First, the web page details that the program offers free program measures, such as compact fluorescent light bulbs. However it did not provide a clear idea of how many bulbs, or the quantity of other measures they could receive, by participating in the program. They are also unable to get information about what the additional seven program measures are through this website. This information had been previously available; however, it has since been removed when it was noted that customers were disappointed when their needs did not result in the provision of all measures listed. Clear and direct communication about what the program offers through its website marketing messages could build further program interest. It could also result in higher customer satisfaction with the program through the provision of more specific expectations of what is offered.

The second way Con Edison may also improve its customer relations and their likelihood to use the website to interface with the program by providing a more clear call to action. The utilitarian website offers customers *four* ways to interface with the program or the Green Team. The first two options are under “How to Apply”, and customers can either apply online or call the 1-800 number. Contact options three and four on the RDI web page are within the Green Team call to action image on the right of the page. Customers can call the Green Team 1-877 number, or use the “Contact us” (for more information) hyperlink within the Green Team. Con Edison may be inviting a customer to interface with the company in a variety of ways to increase customer options. However, posting multiple phone number and online form options on the same page may result in customer confusion or frustration.

Figure 4: Con Edison RDI Program Website²⁵



Con Edison uses their Green Team branding campaign to capture customer attention, which includes print, radio, and website advertising. Con Edison cross-markets to past program participants through direct mail communication after they have completed their interaction with the Con Edison energy efficiency program. Figure 5 shows an example letter Con Edison mails to customers who have participated in the Room Air Conditioner program. The letter asks these participants to further consider the RDI and Appliance Bounty programs, respectively.

This letter represents one of the more informative marketing examples the evaluation team reviewed as far as communicating Con Edison RDI program specifics. It mentions the program participation cost (\$50 for the energy survey), and lists the program measures more comprehensively than other Green Team materials we regarded. The contact information provided is less customer-friendly. Letter recipients who use the phone number connect to the generic, automated Con Edison energy efficiency Green Team call center. Recipients who use the website address land on the heating and cooling program page, where an energy survey option is a small hyperlinked picture that is not a main focus.

²⁵ <http://www.coned.com/energyefficiency/residential.asp>

*Figure 5: Con Edison Green Team
Cross Program Marketing Letter Example*



Dear Alan Strauss:

The Con Edison Green Team thanks you for participating in the Room Air Conditioner Rebate program.

Did you know there are **even more** ways you can **save energy** in your home?

Request a home energy survey

Let the savings come to you when you request a Home Energy Survey! For just \$50, a Con Edison Green Team energy specialist will analyze your home and provide a customized report with tips for reducing your energy expenses further. While we're there, we'll also install free energy-saving products that add even more value:

- Compact fluorescent light bulbs
- Smart strip power strip*
- Weather stripping/sweeps for doors
- Hot water pipe insulation**
- Low flow faucet aerators**
- Low flow massaging showerhead**

Recycle your refrigerator

Have a second refrigerator that's old or taking up space? We'll haul it away at a convenient time for you and recycle it for free! Plus we will reward your smart decision to use less energy with a check for \$30.

At the time we pick-up your refrigerator, we will also collect and recycle any old, inefficient window or wall air conditioners. You'll get \$35 for window units and \$100 for wall air conditioners.

The **Con Edison Green Team** wants to help you save **energy, money, and the environment.**

For more information or to schedule your home energy survey or appliance pick-up, call the Green Team at **1-800-430-9505** or visit **conEd.com/HVACrebates**.

Refrigerators and air conditioners must be in working condition to qualify for recycling. Customers must provide clear and safe access to the appliance for pick-up. Air conditioners should be removed from windows or wall installation locations. Water hoses should be disconnected from refrigerators.

* A smart strip is a power strip with a control device outlet and switched outlets that automatically shut down when the control device is shut down. Con Edison will provide each customer one smart strip that can be used for equipment such as computers and entertainment systems.

** For customers with electric water heating equipment.



Con Edison Energy Efficiency Programs - c/o Honeywell - 145 Route 46 West - Wayne, NJ 07470

Con Edison provided the evaluation team with 2011 Green Team Awareness results in addition to the various Green Team marketing examples. The documented results indicated there was an

increase in call center volume and website traffic while the Green Team website was operational. However, the results also recorded the challenge of linking an overall awareness campaign specifically to increased calls, website traffic, and increased program inquiries & participation, especially in a cost-effective manner. Our team echoes the conclusion within the results document that the Green Team campaign and Con Edison marketing would benefit from increased marketing measurement and tracking efforts.

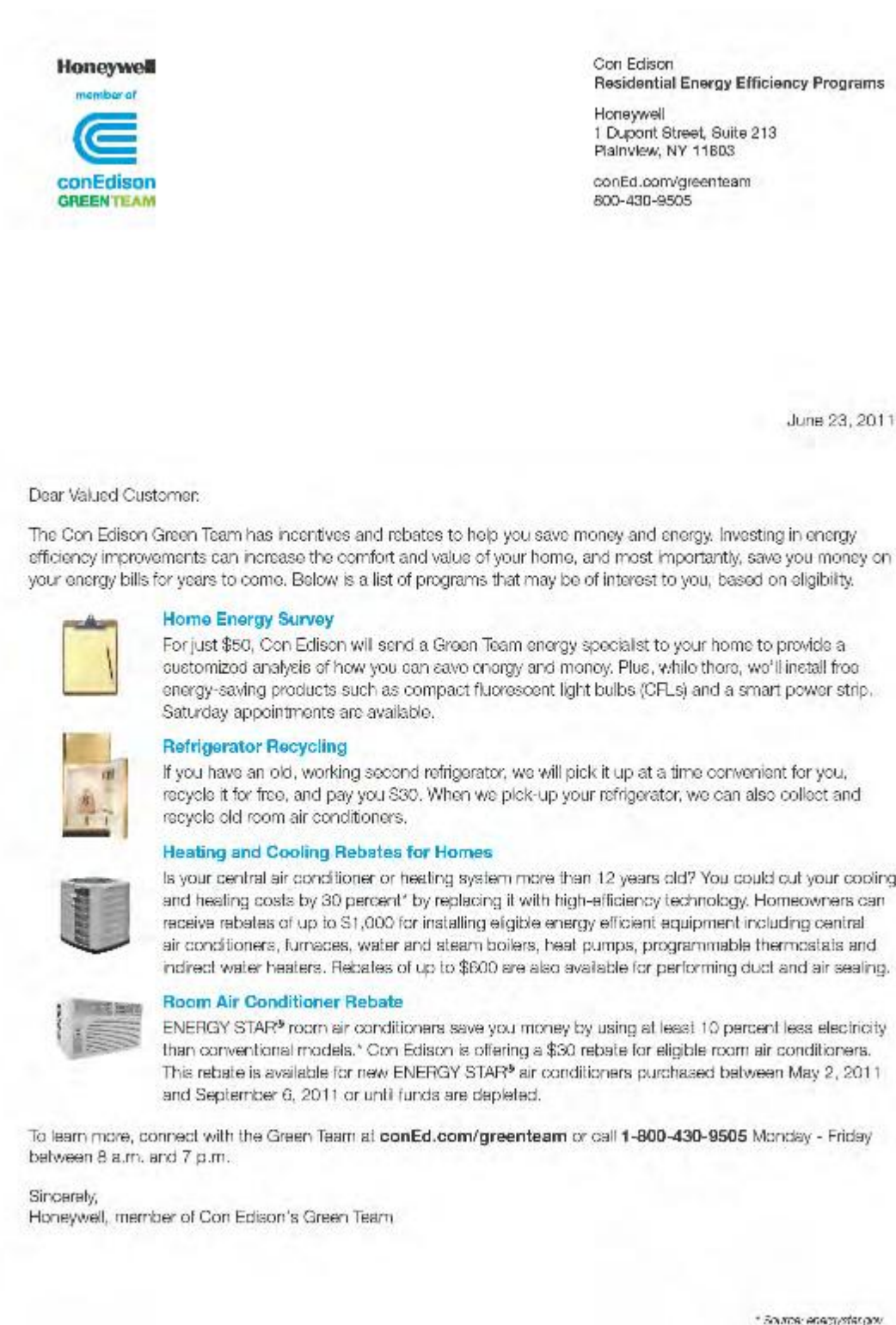
Program Specific Marketing Activities

Con Edison provided marketing materials to the evaluation team outside of Green Team materials. Two of the specific marketing efforts the evaluation team examined were co-branded with Honeywell. The first of two efforts involved a program-specific targeted marketing campaign first outlined in a February 2011 power point presentation²⁶. The presentation was finalized in September 2011. The presentations detailed targeted marketing activities which relied on various outreach methods, including (but not limited to) e-mail, direct mail, newspaper and online advertising, person-to-person outreach and more. This plan designated primary eligible customers for the Con Edison RDI program as those living in Queens and Brooklyn; Westchester and the Bronx were designated as secondary target markets. The main difference between the draft and final plan was there was a much higher planned quantity of direct mail for the program in September.

Targeted marketing efforts detailed within the PowerPoint presentations emphasized using direct mail and targeted print campaigns as the major communication vehicles. Direct mail pieces were combined in a variety of ways, but a letter and a window envelope were constant features. Three of the five direct mail drop combinations added an insert in addition to a letter and window envelope; one included a brochure with the letter / envelope combination. Figure 6 shows a direct mail letter used by the program in June 2011. While the targeted marketing plans were program-specific, the letter content was not aimed at promoting a single Con Edison program.

²⁶ Con Ed and Honeywell. "Residential Energy Efficiency Programs 2011 Targeted Marketing". February 16, 2011.

**Figure 6: Con Edison RDI Program:
Direct Mail Letter, June 2011**



Budget projections were not available in the final marketing plan; however, the draft plan detailed that direct mail and print campaigns made up 95% of the projected targeted marketing campaign cost of \$184,738. A variety of smaller-scale, collateral program marketing efforts made up the remaining 5% of the planned spending. Examples of collateral marketing include public outreach events on January 20 in Westchester and June 16 in Queens. The cost of the final targeted marketing efforts is unclear in the provided PowerPoint presentation; however, the final PowerPoint did provide updates of what targeted marketing efforts happened. Those efforts are detailed in Table 12.

Table 12: Con Edison RDI 2011 Planned Targeted Marketing Activities

Targeted Marketing Activity	Target Neighborhoods	Number of Drops	Plan or Drop Date (if available)	Quantity
Direct Mail	Queens, Brooklyn	5*	April, May, June, July, September	~606,500
Valpak	Westchester	4	March / April / June / September	March – 200K April – 320K June – 200K September – 200K
Red Plum	Queens, Brooklyn	2	April, June	288,000
Newspaper	Queens, Brooklyn. Westchester (secondary)	2 papers, 2 inserts per month	March-May; September-November	

**Direct mail plans increased from the draft to final by 2 drops.*

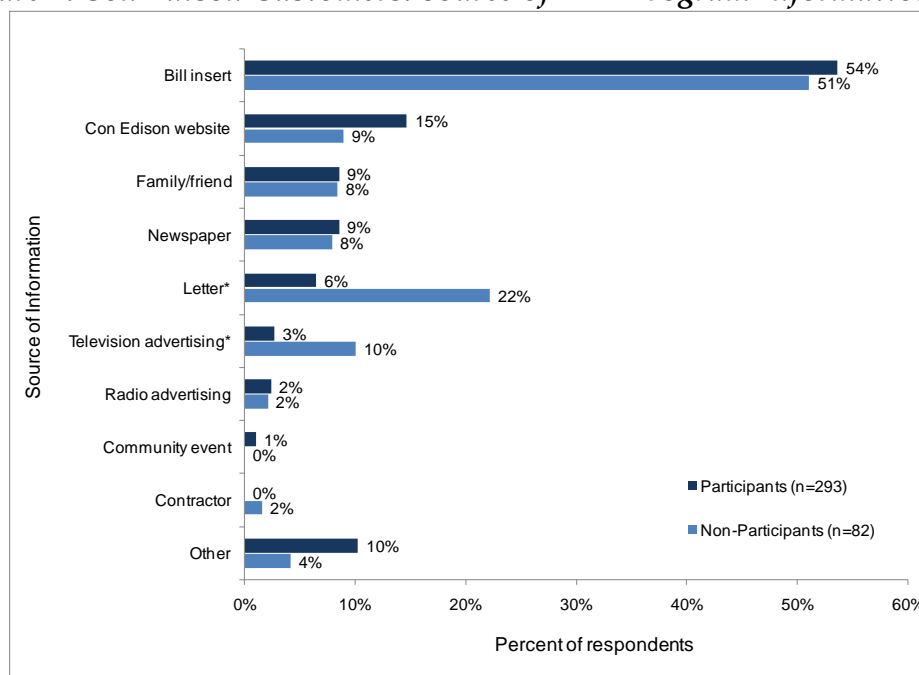
Honeywell executed Neighborhood Sweeps in October 2011, which appeared to be its second of two targeted marketing efforts. The program used Honeywell program staff and its energy survey technicians in a door-to-door effort to raise customer awareness about the program. Honeywell tested neighborhood sweeps in Staten Island and Queens over four days. Program representatives wore program-branded apparel and used a prepared script to educate customers about the RDI program terms and benefits. The evaluation team is unaware of the outcome of this campaign.

Customer Marketing Recall

Figure 7 illustrates what marketing materials Con Edison customers recalled seeing in connection with the Con Edison RDI program. All program participants were asked this question, and non-participants were asked this question if they indicated they had heard of or participated in the program to some extent.

Con Edison bill inserts were overwhelmingly the most recalled source of information among program participants and non-participants alike. The second most popular answer among participants is the Con Edison website; non-participants most frequently named a letter in the second position. Non-participants also named TV advertising as a source of Con Edison RDI program information (10%). Informal word of mouth marketing, such as hearing about the program from a friend or family member, was mentioned by fewer than 10% of both participants and non-participants. Surveyed Con Edison customers were equally as likely to report they saw information about the program in the newspaper.

Figure 7: Con Edison Customers: Source of RDI Program Information



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level
Note: Non-participant data in this figure is weighted to match the single vs. multi-family residence proportion in the participant data.

Sixty-nine participants indicated they heard about the RDI program through the website, used the program website for information in the past year, or both. On a scale of 1 to 10, where 1 is “extremely dissatisfied” and 10 is “extremely satisfied”, the mean website satisfaction rating is 7.6. Five participants give the website a rating less than 5.

Non-participants who learned about the RDI program from the Con Edison website or confirmed they had used the website in the past year to get information about the RDI program (n=31) rated their mean satisfaction at 8.62. All non-participants rated their website satisfaction higher than 5.

3.5 CUSTOMER ACQUISITION

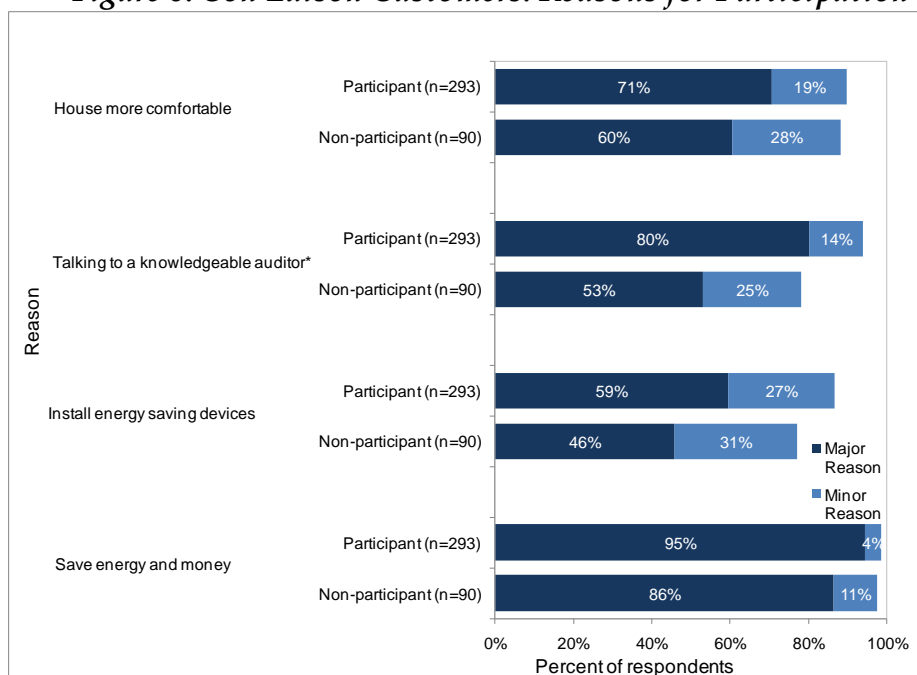
Customer acquisition refers to eligible customers contacting the program to have an energy survey completed at their home. A strong majority (87%) of surveyed participants indicated they initiated contact with the RDI program by phone. Seven percent of participants reported they did not know, and another four percent indicated they first contacted the program through the website. Roughly one-third of non-participants surveyed indicated they had heard of the program, but only five affirmed they had tried to contact Con Edison about it.

The evaluation team identified through interviews with Honeywell staff that many Con Edison customer calls are routed to a Honeywell phone center located in Georgia. RDI-eligible and/or interested customers are directly transferred to the Plainview, NY office for further information and survey scheduling. Participants and non-participants (if applicable) were both asked about their experience contacting the Home Energy Survey program. Sixty percent of participants ranked their satisfaction level an 8, 9, or 10 (10 equals “extremely satisfied”) on a 10-point scale. Non-participants who contacted the program rank their satisfaction similarly, with 55% reporting a similar satisfaction level. Both participants and non-participants who gave a rating less than 5 most frequently indicated that program representatives did not answer their questions or give them information they were seeking.

The evaluation team also worked to identify how customers were handled when they contacted the RDI program through the Con Edison website. The team learned that program leads acquired through the website are forwarded via email from an Information Technology staff member to the Senior Coordinator at Honeywell. The Honeywell Senior Coordinator manually forwards the email leads to the Program Coordinator for follow-up and survey scheduling. Honeywell staff indicated during in-depth interviews that web requests containing customer information are generally more accurate than customer information entered through the call center.

Surveyed Con Edison customers were also asked about why they were interested in participating in the program, regardless of whether or not they actually participated. Customers were given a list of reasons of why they were interested to participate in an energy efficiency program, and then were asked whether the reason was a major, minor or not a reason to participate in the Con Edison RDI program. RDI program participants and eligible non-participants most often indicated that saving energy and money was a major reason to participate in the RDI program. Participants and non-participants value talking to a knowledgeable energy survey technician differently. Eighty percent of participants indicate talking to a survey technician is a major reason for Con Edison RDI program participation, while non-participants are more likely to indicate it is a minor or a non-factor. Figure 8 highlights how customers ranked the reasons to participate in the RDI energy efficiency program.

Figure 8: Con Edison Customers: Reasons for Participation



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level.

Note: Non-participant data in this figure is weighted to match the single vs. multi-family residence proportion in the participant data.

The evaluator who accompanied energy survey technicians on field visits within Con Edison service territory noted that Con Edison, Honeywell, and the energy survey technicians are experimenting with less traditional customer acquisition strategies while conducting Home Energy Surveys. First, the technicians ask participants if they can install a yard sign (see Figure 9) in front of their home while the survey is underway. If the participant agrees, the technician places a Green Team yard sign in a highly visible place. The sign does not specifically name the Con Edison RDI program; rather, it is a Green Team branding tool. The sign includes both a link to the Con Edison Green Team website, and a QR code where interested people passing by could scan and link to the website directly. Technicians remove the sign once the survey is complete.

Figure 9: Con Edison Green Team Yard Sign



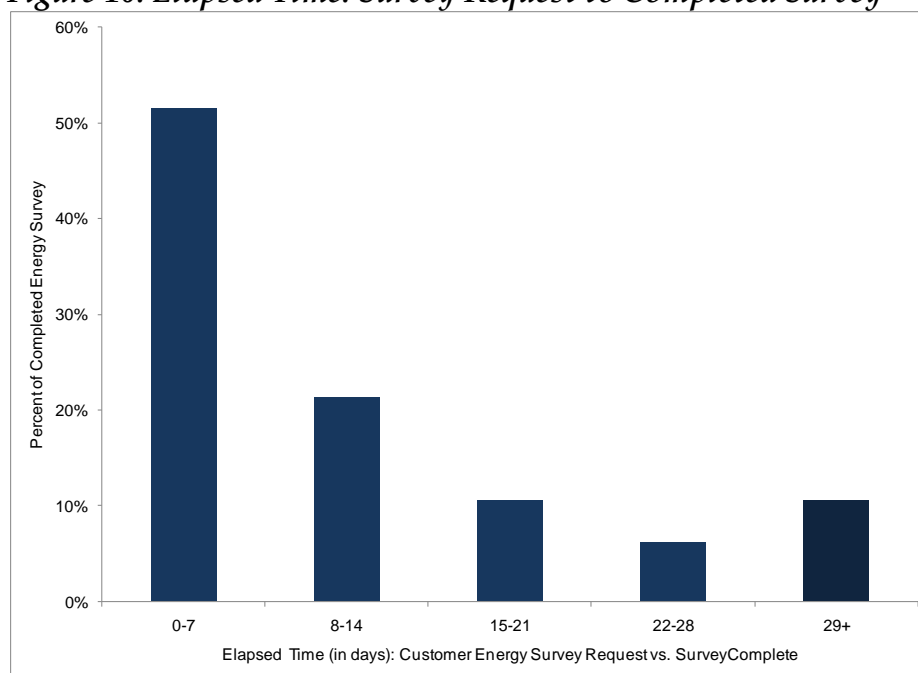
The evaluation team observed a second customer acquisition strategy while onsite in New York. Technicians asked participants to tell friends, family, or neighbors about the RDI program if they were satisfied with their experience at over half of the surveys the evaluator observed.

3.6 PROGRAM DELIVERY

This section examines the effectiveness of program delivery processes. We first explore participation flow and time lags between key program steps to increase participation. Then, we examine how the program is operating out of the Honeywell offices in Plainview, NY, and describe how the program is delivered by the energy survey technicians on site in participant homes. Some observations and recommendations come from in-depth interviewing, but field observations the evaluation team collected during an August, 2011 visit proved especially fruitful in understanding program delivery processes. Finally, we review how the program follows up with participants, and measure how successful the program has been at recommending additional energy efficiency improvements and/or programs to customers.

Honeywell has been successful at servicing Con Edison customers interested in a Home Energy Survey in a reasonable time frame. The July 2011 monthly scorecard report included the "enrollment date" and "acquire date" for each measure installed by the program through June 30, 2011. Figure 10 represents the time elapsed from when the participant enrolled in the program to when the savings for the measure were acquired by the program. The figure shows a majority of customers get a Home Energy Survey within one week of requesting it, and that more than seven in ten customers get it within two weeks.

Figure 10: Elapsed Time: Survey Request to Completed Survey



Source: Con Edison Scorecard Data, July 2011.

Honeywell employees indicated during in-depth interviews that they expect energy survey technicians to complete at least 4 home energy surveys a day; completing five surveys per day is considered ideal. Honeywell is reimbursed per home energy survey completed.

Achieving this rate of home visits per day is logistically challenging. Two days per week a technician is working, they are in the Plainview, NY office for 2-3 hours each day. For example, the Thursday schedule for our evaluation team member consisted of the Honeywell office visit from 8 a.m. until 10:00 a.m., followed by three energy surveys with a single energy survey technician. Four surveys were *scheduled* for the technician that day; however, one customer called the program to cancel during the course of the day. On day 2 of the evaluator's observations, customer cancellations caused scheduling challenges for more than one technician in the field.

Even if the current program technicians were consistently able to complete four surveys per day, five days per week, and 52 weeks of the year, their calculated effective capacity would only reach about half of the survey goal and achieve roughly one-third of the energy savings goal. Table 13 shows these calculated results next to the program goals.

Table 13: Con Edison–RDI Goals vs. Calculated Effective Survey Completions & Savings Capacity

	Program Goal 2010 – 2011	Possible Achievements
Number of Surveys	8,252	4,160
Savings (MWh) ²⁷	6,880	2,240

Source (goals): Con Edison Monthly Scorecards (July & December 2011)

Based on our interview findings, we believe that the manner in which Honeywell has structured the office time for technicians is appropriate. This office time is structured for management to interface with the technicians, communicate program updates or changes to them, QC program activity and collect program paperwork. This time also allows technicians access to program measure inventory and the opportunity to service their vehicles, among other things.

Program Staff Roles and Responsibilities

The evaluation team member’s visit to the Honeywell offices in Plainview, NY provided the opportunity to meet many of the team members who actively work to deliver the RDI program. During the two days of field observations, our evaluator attended the twice-weekly technician meeting, and was able to observe three of the four technicians who perform home energy surveys. The evaluator also met and talked with Honeywell’s senior supervisor, quality control coordinator, and program coordinator who work on the RDI program. The program employed four energy survey technicians through a subcontractor at the time of our field observations. The technician team includes a field supervisor, who both conducts energy surveys and “floats” to alleviate scheduling challenges or changes, and acts as a manager to the other technicians. Interviews revealed that the program originally had five total technicians.

The basic calculations highlighted in Table 13 illustrate that for much of 2011, the capacity of the program staff was not deep enough to complete neither the home energy surveys by volume nor achieve its MWh goals. It should be noted that in monthly program reports in the final quarter of 2011, Honeywell indicated that they hired two additional energy survey technicians (6 total). They further documented that they extended the hours of all technicians to boost energy survey numbers and subsequent MWh savings before the end of the program year.

Training

The evaluation team was provided multiple PowerPoint presentations (dated August 23-27, 2010) that were used to train incoming energy survey technicians hired to work on the program. The training covered the following topics:

- Customer Energy Education Principles

²⁷ Energy savings reported as achieved are ex ante and have not been confirmed by an independent impact evaluation

- Actual Surveyor Training: Building Science and Energy Overviews
- RDI Procedures Overview (customer introduction & closing, field and scheduling procedures, quality assurance, and materials).

The energy survey technicians interviewed for this evaluation indicated that they thought the Con Edison RDI program training was adequate. Multiple technicians emphasized that they especially appreciated the hands-on training (ride-alongs) in the field with supervisory staff in their first weeks as a program technician. Honeywell staff repeatedly indicated that the technicians had learned the information quickly and were dealing appropriately with customers and otherwise performing in a satisfactory manner. Staff noted the area where technicians needed the most improvement was the cross-marketing or “selling” of other energy efficiency programs. Educating the incoming technicians of additional Con Edison and other energy efficiency programs was a key portion of the technician training.

Honeywell / Energy Survey Technician Interaction (The “Office Meeting”)

As indicated previously, a member of our evaluation team spent two business days doing field observations with Honeywell staff and energy survey technicians from the program. The field observations had two distinct parts. The field visit began in the Honeywell offices in Plainview, NY, where the evaluation team member met the team and observed their office meeting. The second portion of field visits included observing actual Home Energy Surveys and the energy survey technicians while they were interacting with Con Edison customers. This section of the report will describe key observations of the office meeting between Honeywell staff and the technicians.

The time the energy survey technicians spent in the Honeywell office on Thursday morning, August 18, 2011 can best be grouped into three stages: 1) Ongoing maintenance and program measure inventory, 2) Processing program paperwork, and 3) General meeting and announcements. Our evaluation team member and the energy survey technicians arrived simultaneously on this morning, and we were unable to observe program measure inventory and vehicle maintenance process. We did observe program paperwork processing and data entry and general meeting announcements. Details regarding each of these meeting stages are described below.

Processing program paperwork

The energy survey technicians and the QC/QA Coordinator met as a group. The meeting was informal in structure. Every technician – and the QC/QA Coordinator -- had data collection forms from the past two days of home energy surveys. The technicians reviewed data collection forms, verified their notes, and adjusted their calculations as necessary. This review process went on for roughly 60 minutes, with some technicians completing this process before others. When each technician completed their individual review, the QC/QA Coordinator engages. The QC/QA Coordinator reviewed the technicians’ paperwork and inquired about anything that was unclear. Discussion is otherwise minimal at this portion of the meeting.

Honeywell office staff collected program paperwork from the technicians during the meeting. First, staff collected work authorization forms, which have each customer's credit card receipt for survey payment stapled to it. Staff members then filed work authorization forms and credit card receipts. Honeywell has opted to file this paperwork and receipts together to provide customers with documentation if they call to complain when they do not recognize the program's charge on their bill. In discussion with Honeywell, this event is characterized as infrequent, but does happen occasionally.

Later in the meeting, office staff collected data collection forms following QC/QA Coordinator review. Staff then began work on entering customer data into the HomeSTAR software. HomeSTAR is an energy analysis software tool created and updated by Honeywell. Interviews confirmed the system's use of updated pricing information²⁸ within the program, and the coordinating data collection form designed to reflect the revised format utilized for the Greater New York area market.

Each data component on each form is manually entered into HomeSTAR to create a customer's HomeSTAR survey report. We observed that the HomeSTAR program data entry fields appear in the same order as they appear on the data collection form. The multiple QCs and checks by various staff appeared robust during our evaluator's office observation.

Two percent of surveyed respondents (n=7) complained about not receiving a HomeSTAR survey report and program recommendations during the participant survey pre-notification phase. As a result of this feedback, the Honeywell staff reviewed their reporting procedures and discovered that some reports were delayed due to manual office procedures. The staff added additional layers of QC²⁹ to improve the report production process in fall 2011, including, but not limited to:

- Dedicating a specific printer to HomeSTAR report production
- Constructing an office log to record where each customer's form was in the office QC process
- Using the log to document when a customer's report was mailed
- Calling RDI program participants to confirm the customer received his or her written report. This initiative also provided another customer contact opportunity to recruit participants into additional energy efficiency programs.

²⁸ The evaluation team was unable to confirm whether the staff had also updated other HomeSTAR components (e.g. energy savings estimates) to reflect the Greater New York area/market.

²⁹ These QC process improvements were outlined in the document called: "Con Edison Home Energy Survey Process Improvement Plan", October 21, 2011.

This approach to resolving this customer service issue is straightforward and likely sustainable. Ongoing evaluation of this issue is recommended to assure that steps are taken to solve the issues and do not add unnecessary administrative burden to staff or delay a customer's report.

General meeting and announcements

The office time the technicians and the QC/QA Coordinator spend together eventually moves from program paperwork review and collection to a more interactive discussion. Con Edison marketing staff had alerted Honeywell that the incentive within the Refrigerator Replacement program changed from \$30 to \$50. This program change was not reflected in their current inventory of brochures they were taking into the field. The evaluation team member observed the technicians discussing whether using an inaccurate brochure in the field would create customer issues. After a period of discussion, they agreed as a group to continue using the brochure that incorrectly stated the incentive until they received new brochures from Con Edison, while acknowledging customers may be upset the brochure incorrectly lists program details.

Technicians received their schedules for the next few days while in the office. Technicians also received their schedules and/or updates via e-mail. The QC/QA Coordinator communicated a recent program safety policy change about confined spaces. Specifically, he directed the technicians to call the field supervisor before they entered a small space like an attic or crawl space, and then they are to "call out" of the space after they have finished their assessment of the confined space. He indicated this is for their safety, and the new 'call-in, call-out' policy will help office staff assess how much time has passed while a technician is in a confined space.

After measure inventory is replenished, program paperwork is completed, reviewed, and collected, and announcements are completed, the technicians were released to their appointments for the day.

The Home Energy Survey

Appointment Scheduling, Travel Time, and Program Representation in the Field

Energy survey technicians receive advance appointment schedules containing customer information during their twice-weekly office visits. For example, our evaluation team member received technician appointment schedules in hard copy for Thursday (8/18/11) and Friday (8/19/11) while in the office on 8/18. If applicable, a technician scheduled for Saturday hours will also receive a Saturday schedule during the Thursday Honeywell office time. The schedules include a customer name, address, one or more telephone numbers, and the program work order / number. The schedule also lists the appointment date, start time, and duration for each appointment. Program-provided customer information does not include whether a customer rents or owns their home.

Appointment windows range from 1.5 hours to 2 hours and include travel time. While office schedulers make an effort to build efficient schedules for the day, it is not always possible. Our evaluation team member shadowed a single energy survey technician on Thursday, 8/18/11, which provided insight on appointment scheduling and travel between appointments. The technician's schedule for the day contained four home energy survey appointments across three greater New York area boroughs – Westchester County, Brooklyn, and Queens. Figure 11 illustrates our evaluator's day one driving route. Point A in the figure marks the Honeywell office in Plainview, NY.

**Figure 11: Home Energy Survey Technician
Observed Appointment Route (Day 1)**



On paper, his schedule necessitated 86 driving miles and an estimated 2 hours, 20 minutes of drive time – including a projected 54 minute commute from his first energy survey in New Rochelle, NY (point B on the figure) to his second appointment in Brooklyn, NY³⁰ (point C on the figure). Further, the driving time and mileage estimates do not include the technician's commute from home to the Honeywell Plainview, NY office, or his commute from his last appointment to a final after-work destination, which are both unknown.

In reality, traffic congestion was a significant factor in the day's travel, and longer than projected drive times impacted timely arrival of technicians at their appointments. The evaluation staff member observed energy survey appointments often overlapped in practice, and she specifically noted that she was often at an appointment with a technician while the next scheduled appointment window was beginning. During the two days of field observations, customer-initiated appointment cancellations were crucial within each technician's daily schedule to get back on track with appointments.

³⁰ According to Mapquest.com. Image also created using Mapquest.com

Con Edison program identification and branding in the field is mixed. Con Edison RDI energy survey technicians dress similarly. Each technician wore a polo shirt embroidered with a Con Edison logo and navy pants or jeans. However, each technician also wore a yellow reflective safety vest that covered up the Con Edison logo while at customer homes. Our evaluation staff member noted one of three survey technicians wore a Con Edison ID around his neck with a lanyard, and he offered this identification to the customer upon arrival.

Each energy survey technician drove an identical Chevrolet crossover vehicle (HHR), wrapped with Honeywell colors and identification, as seen in Figure 12.

Figure 12: Home Energy Survey Technician Car



Pre-Home Energy Survey Activities

Our evaluation team member was unable to ride in the vehicle with Con Edison RDI energy survey technicians due to program policy³¹. This policy impeded our evaluator's ability to observe if or how technicians "call in" or "call out" of appointments with the Honeywell office. The evaluator did observe technicians using cellular phones while in the field to communicate with the field supervisor, quality control coordinator, or with the Honeywell office staff about scheduling updates or questions throughout the day. In short, our observations suggested that communication between the technician and the office was open and sufficient.

Equipment taken to the door for the initial customer greeting varied by technician. Two of the three observed technicians came to the door with a clipboard and HomeSTAR data collection forms, a credit card machine, and basic equipment that aids observation, such as a flashlight and a tape measure. Both of these technicians went back to their vehicles after the initial survey to retrieve necessary measures and additional necessary tools for installation, such as a drill and

³¹ Our evaluator was also accompanied to each home energy survey appointment by the program's quality control coordinator.

cutting tools (for cutting weather stripping or door sweeps as needed). The third technician brought more to the door initially, carrying a bag with CFLs and a smart strip in addition to items other technicians carried (clip board with HomeSTAR forms, credit card machine, flashlight, tape measure). He would return to the car only if additional measures and/or tools were needed.

Home Owner Interaction

The three technicians observed in the field handled customer introductions similarly upon arriving at appointments. Each technician indicated he was there from Con Edison to do a home energy survey, and mentioned free measures at the beginning of the appointment. Each technician also asked their customer to sign the work authorization form and collected the \$50 fee with the credit card reader before beginning the survey. A majority of observed customers wanted to pay with some method of payment other than a credit card (cash or check); the technicians' explanation of the program's "credit card only" policy generally satisfied customers. Our evaluator did not observe any customers upset or hesitant about paying the \$50 program fee³².

Program technician differed in their approach explaining the home energy survey to a customer, and each technician conducted their survey in a unique way. Customer engagement varied after they gained access to the home.

The Energy Survey

All observed technicians worked with the HomeSTAR data collection form while on site at the home. Data throughout each home energy survey was recorded by hand. As expected, many of the questions the technicians asked the customers largely echoed what appears on the HomeSTAR data collection form. Technicians consistently asked about home age and square footage at each survey appointment. Despite asking about the home's size, each technician measured the interior ground floor of the home to independently estimate the home size. It was apparent in our observations that the form uniformly guided much of the interaction with the customer.

The home survey included elements our evaluation auditor expected. The technicians thoroughly inspected the home's exterior and talked to the homeowner about potential energy efficiency opportunities by fixing visible air leaks, replacing aging windows, and identifying external damage to the house that could signal a larger problem (e.g., water stains, ice damming damage, etc). Inside the home, technicians examined interior energy using-equipment such as the HVAC system, lighting fixtures, and major appliances. Technicians regularly explained needed or recommended energy efficiency upgrades to customers in sufficient detail.

³² Several energy survey technicians and / or Honeywell staff indicated during in-depth interviews that the \$50 program fee is a barrier to participation. Some of these interviewees identified other energy efficiency programs (such as the NYSERDA Home Performance with ENERGY STAR® program) as a RDI program competitor.

The questions customers asked the technicians varied greatly by visit and by technician. Customer questions could be separated into three categories: 1) general questions about their home, 2) home energy-using equipment efficiency / replacement need / rebate options, and 3) overall program questions. Technicians generally answered questions directly and adequately, but often referred customer queries about energy-using equipment efficiency, replacement value, etc to the quality control coordinator who was present during field observations. It was unclear how technicians would resolve technical customer questions they were uncertain about without the observed supervisory support.

Table 14 provides examples of questions customers asked Con Edison RDI technicians during our field observations. Customers generally appeared satisfied with the responses.

Table 14: Sample RDI Program Participant Questions

Question Type	Verbatim Customer Questions
General home question examples	<ul style="list-style-type: none"> • Do you think I need to replace this / these windows? (if yes) Who do you recommend? What window company / brand do you recommend? Do you know any contractors you could recommend? • Can you help me with my thermostat / fire detector? It's not working. • Can you help me program my thermostat? • Can you help me reach the switch on my (ceiling) fan to make it go the other way?
Energy-using equipment efficiency / replacement / rebate questions	<ul style="list-style-type: none"> • How efficient is my furnace / central air / water heater? Is it the right size for my house? How old do you think it is? • How much would it cost to replace the furnace / central air / water heater with something more efficient? • Would you replace this furnace / central air unit / water heater if it were yours? Do you think it's worth it? • What can I do about the condensation raining down from my central air unit/pipes/etc? • Are there incentives available to replace furnace / central air / water heater / etc? • Are there any monthly payment plans to help me afford furnace / central air, etc. replacement?

Program questions	<ul style="list-style-type: none"> • What kind of notes should I take? What's in the report you'll send me? Will everything we're talking about today be in the report? • You're really from Con Ed, right? • What is Honeywell? Your car says Honeywell. I've never heard of that before.
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Program Measures

The technicians' method of how and when they would talk about program measures to customers varied. For example, one technician brought up the program measures to install early in the visit; another technician talked about program measures during the survey as educational opportunities presented themselves. Technicians were consistent about the overall order of events: they always followed up their energy survey observations and data collection efforts with installation of program measures.

Table 15 shows summary level information about how many measures were installed through RDI home visits as of July, 2011. RDI program energy survey technicians installed a) only a smart strip, b) only CFLs, or c) some combination of CFLs and a smart strip at over half of their home visits. Weather stripping was not frequently installed, and water measures were only installed at 3% of participant homes.

Table 15: Combinations of Installed Measures

Combination of Measures Installed	Homes (N)	Homes (%)	kWh Saved ³³	Percent kWh
CFLs and Smart Strips Only	798	43%	381,497	40%
CFLs, Smart Strips and weather stripping	663	36%	443,106	46%
CFLs Only	111	6%	40,284	4%
Smart Strip Only	83	4%	8,176	1%
CFLs and weather stripping	53	3%	30,829	3%
Smart Strip and weather stripping	53	3%	11,931	1%
Weather stripping only	10	1%	1,121	0%
Water Measures* (alone and with others)	47	3%	43,919	5%
No Installed Measures	37	2%	0	0%
Total	1,855	100%	960,862	100%

Source: Honeywell Backbone Client Server (BBCS) Database

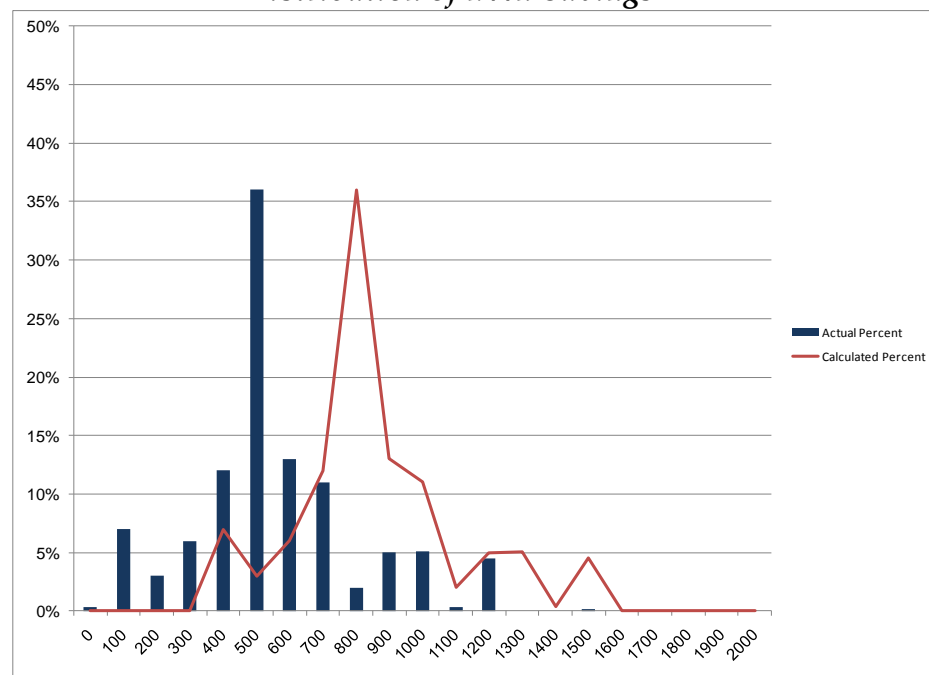
*Water measures include faucet aerators, low flow showerheads, pipe insulation and water heater set-back timers.

KEMA calculated additional summary level statistics about program delivery when examining the BBCS database as described below:

³³ Energy savings reported as achieved are ex ante and have not been confirmed by an independent impact evaluation

- Direct install measures credited to home energy surveys yields an average energy savings of 539 kWh per home. Figure 13 displays the actual, tracked kWh energy savings distribution of RDI program participants.
- The program needs to achieve an average savings of 834 kWh per home to make program goals based upon the planned number of surveys. Roughly 10% of program participants have achieved energy savings equal to or greater than 834 kWh. The red line in Figure 13 demonstrates one calculated example of how the distribution of achieved energy savings might look if program energy savings goals were achieved.
- The average number of measures types installed by the program is 2.27 per visit.
- The average number of CFLs per visit (among customers who receive CFLs) is 8.90.

**Figure 13: RDI Program Participants:
Distribution of kWh Savings**



Source: Honeywell Backbone Client Server (BBCS) Database

This examination of program delivery summary level statistics highlights RDI program's need to increase savings opportunities. The program implementers should continue to monitor energy savings achievement by home as the program changes or updates are implemented. Recently, a request was filed with the PSC³⁴ to increase program measure quantities (CFLs and smart strips, respectively) available to each participant. Monitoring energy savings by home after a change is implemented will allow rapid feedback about the success of the program

³⁴ Honeywell's August 2011 Monthly Report documented a request to the PSC to allow changes in RDI program measures. The request included increasing the number of CFLs from 10 to 17 and the number of smart strips from one to two. The report also indicated the program wished to test reduced cost or free home energy surveys and record customer response. The response to this request was not clear at the time this report was drafted.

update. The program implementers should continue to monitor energy savings to drive program decisions, such as if it needs to change program measure offerings, install more measures, or conduct more home energy surveys to meet its goals.

Program Referrals and Survey Wrap-Up

All observed technicians were thorough in addressing customer questions that came up during the survey; they also confirmed if they could answer additional questions before exiting a customer home. The three technicians observed in the field favored educating customers about energy efficiency opportunities during the survey. Each technician concluded a visit by indicating the participant would receive a report summarizing the program's recommendations in the mail.

The evaluator noted inconsistencies about program materials that were left behind with Con Edison RDI participants during the home visit. Customers most often received a brochure briefly describing other Con Edison program offerings. A few customers received a more robust folder of Con Edison program information, including fact sheets and/or rebate form examples for various programs. In other instances, very few or no program referrals or materials were offered to customers.

Technicians often concluded their home energy survey appointment and immediately departed to their next scheduled survey. The evaluator was unable to observe whether the technician had entirely filled out his HomeSTAR data collection form during the course of the home visit, or if the technician needed or had time between appointments to adequately capture survey results, installed measures, and/or program recommendations.

Participant Feedback on Measures

We measured RDI program short term outcomes by surveying participants about their experiences with program measures, the energy survey process, and whether they do plan to do anything further with the program recommendations or additional Con Edison programs. The three most frequently installed measures for the program are CFLs, smart strips, and door sweeps (or weather stripping). Given these three measures make up almost all of the equipment participants receive from the program, participants were only surveyed about these three measures.

Table 16 shows how often a participant confirmed a technician had installed a certain measure at their home and the satisfaction with the measure. Participants were first asked to confirm program records which indicated they had a particular program measure installed by a technician at their home. Nearly all participants who had a record indicator for a door sweep or weather stripping installation confirmed that a RDI technician had installed the measure at their home; this measure also had the highest percent of participants (80%) who ranked their satisfaction at 8 or more. Five percent of participants who received a door sweep or weather stripping rated their satisfaction at less than five on a 10-point scale. When asked why they

rated a door sweep or weather stripping less than 5, the most frequently mentioned answer was there was a problem with the installation or with the technician.

Participants were less likely to confirm that a technician installed CFLs or a smart strip. Participants who received a smart strip were specifically asked if the technician plugged equipment into the Smart Power Strip before he left the home. Twenty-nine (13%) participants indicated the technician did not plug equipment into the smart strip during the visit. Participants who received CFLs from the program were not asked about the CFL installation process specifically; however, 11 of 17 who reported a technician did not install CFLs volunteered that the technicians had left CFLs behind during the survey.

Participants rated the CFL with the lowest mean satisfaction measure rating (7) among the three measures surveyed.

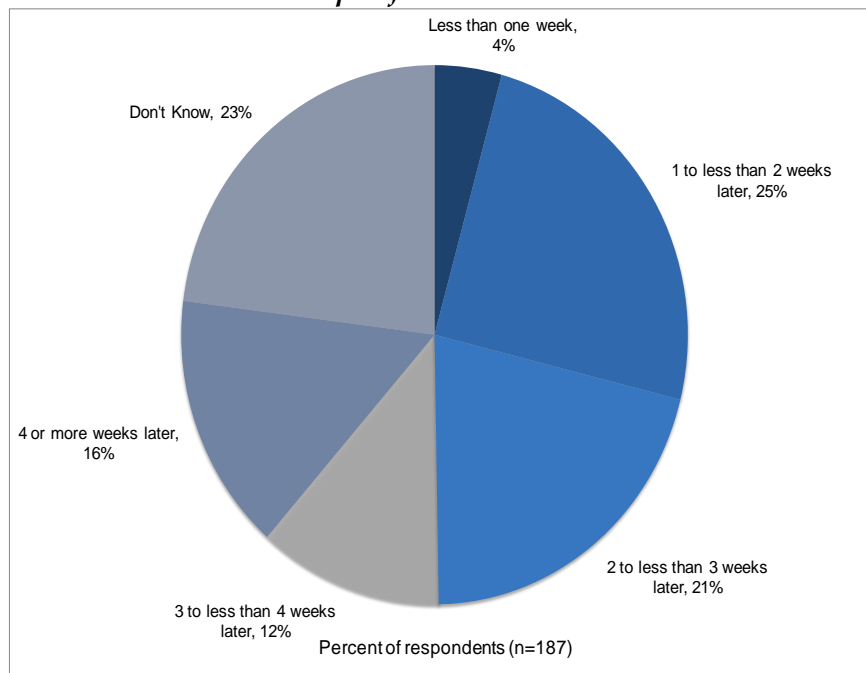
Table 16: Measure Installation Confirmation & Satisfaction

Program measure	Surveyed	Installation confirmed		Measure Satisfaction 8 or higher	Mean Satisfaction (out of 10)
	N	N	%		
CFL	104	84	81%	65%	7.00
Smart Strip	270	227	84%	72%	8.25
Door sweeps or weather stripping	128	123	96%	80%	8.59

Home Energy Survey Results

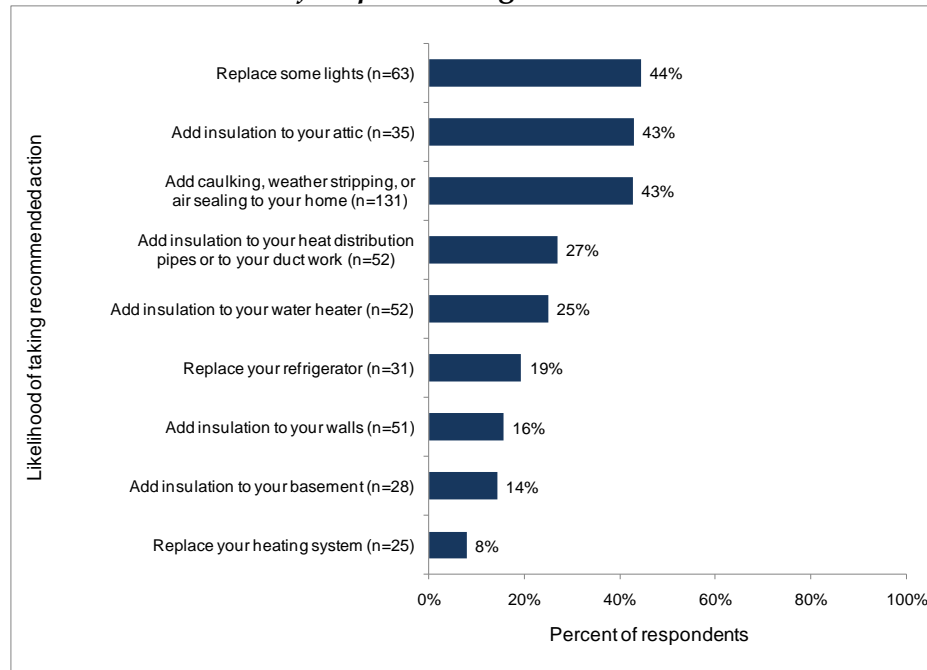
Program participants were also asked about their survey results, and how information about results was relayed. Nearly three-fourths of participants reported that the survey technician discussed the energy survey results with them. Less than two-thirds (64%, n=187) of participants indicated that they received written energy survey results. Participants who recalled receiving written results were asked how long it took to receive them. Figure 14 displays participant recall about how long it took to receive results.

Figure 14: Con Edison RDI Participants: Time Lapse between Survey and Receipt of Written Results



Program participants who recalled receiving written survey results and additional energy efficiency recommendations were asked about them in more detail. Sixty-nine percent confirmed the results were easy to understand. Only about half (54%) of participants receiving written survey results indicated they found them helpful. Participants were also asked how likely they were to implement specific energy efficiency recommendations they received in their written results (see Figure 15). Forty-four percent of participants who received a recommendation to replace additional lights reported they were likely to do so. Program participants also reported the measures such as adding attic insulation or doing additional caulking or weather sealing were the next most likely program recommendations to be installed.

**Figure 15: Con Edison RDI Participants:
Likelihood of Implementing Recommendation**



Program Quality Control and Assurance Procedures

Quality assurance and control procedures were the final program delivery element we examined during this evaluation. As noted earlier in this report, the program delegates a staff role to quality assurance and control. This staff member provided the following list of RDI program QC/QA procedures in an in-depth interview.

- QCs and/or personally shadows 10 percent of the home energy surveys
- Conducts post-visits with customers and acquires customer feedback
- Supports field technicians while in field by phone. Technicians are encouraged to call with questions
- Collects and reviews field paperwork, especially HomeSTAR data collection forms
- Adjusts HomeSTAR data calculations, clarifying or adding information as needed
- QCs HomeSTAR energy reports in advance of customer delivery
 - Reviews first draft report for data entry errors. Requests new report if needed.
 - Reviews final report vs. first draft report to verify errors have been corrected.

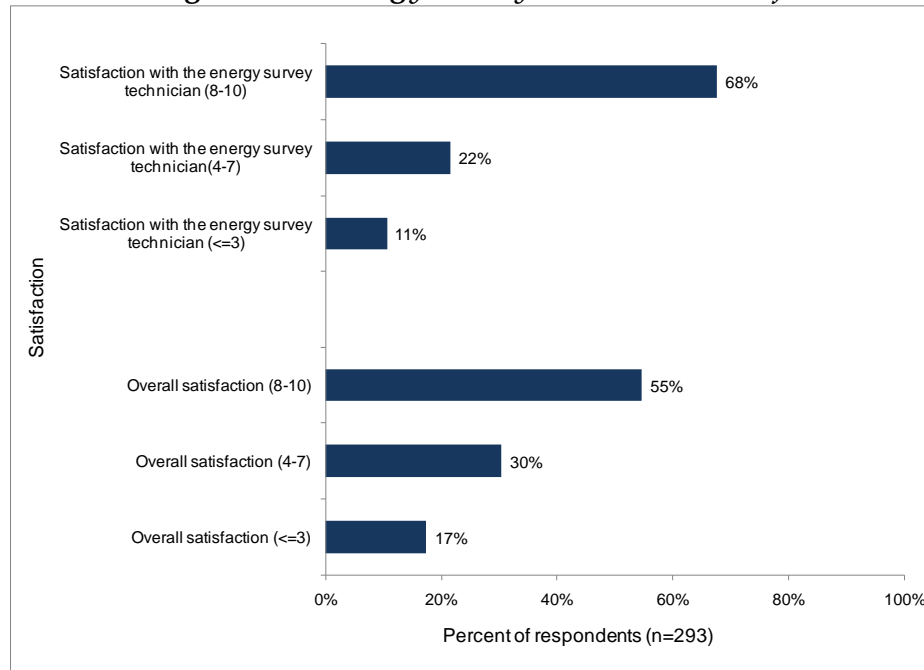
Our evaluation team member who traveled to New York observed these quality control procedures in action – especially efforts involving timely production and distribution of HomeSTAR energy reports to program participants. The evaluator also noted that the 1) overall manual creation process of HomeSTAR survey reports (including printing and distributing via U.S. mail) and 2) involvement of multiple staff members and review steps increased the likelihood for human error. The program put additional quality control measures in place during the course of this evaluation to assure participants did receive their reports, including report tracking and logging and a dedicated report printer in the Honeywell offices. The program should explore alternative reporting options, such as using tablets or laptops in the field for increased data collection efficiency and faster report production. Electronic collection of energy survey data could also lead to e-mailing program reports.

3.7 SATISFACTION WITH THE PROGRAM

In this section, we examine customer satisfaction with their interactions with the RDI program. Program participants were asked about their satisfaction with the program overall and with key program components through the phone survey.

As with other survey areas, we asked participants to rate their overall program satisfaction on a scale of 1 to 10, where 1 is “extremely dissatisfied” and 10 is “extremely satisfied”. To assess participant satisfaction, we asked survey respondents to gauge their satisfaction with the overall program using the scale. We also asked them to rate their satisfaction with program components, such as their Home energy survey technician, and program measures. Figure 16 indicates the percent of respondents who rated their overall satisfaction with the program with a value of 8, 9, or 10 – extremely satisfied as well as the frequency of responses in the mid range of satisfaction (4-7) and low satisfaction (less than or equal to 3). Figure 16 also reports who rated their energy survey technician with a similar satisfaction rating.

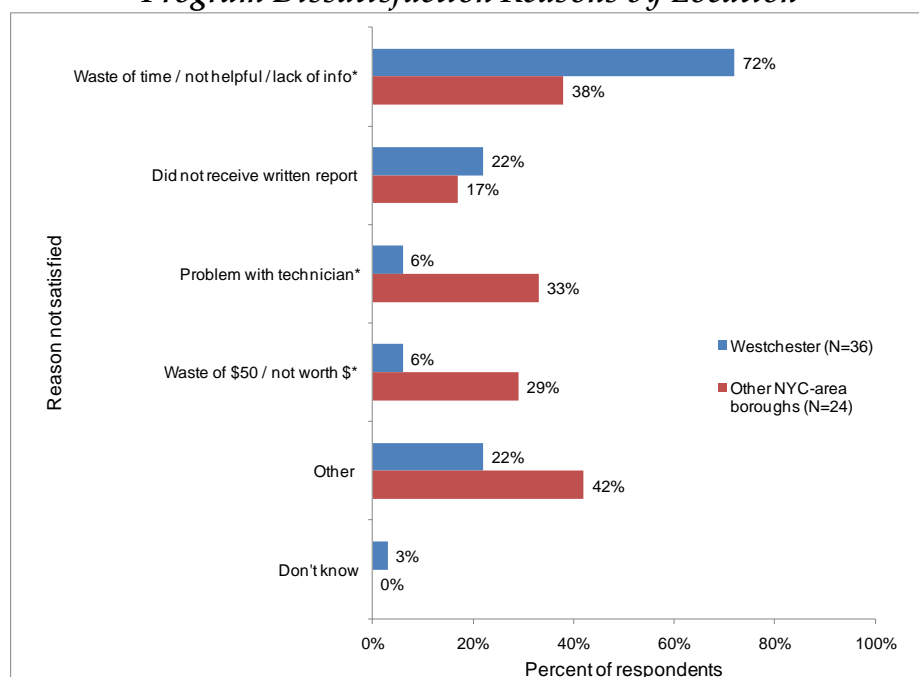
**Figure 16: Con Edison RDI Participants:
Overall Program and Energy Survey Technician Satisfaction**



The sixty (17%) program participants who ranked their overall RDI program experience at less than 5 were asked: “*What didn’t you like about the Home Energy Survey program?*”. Most of these respondents (58%) reported that the program was a waste of time, was not helpful or lacked information. Participants’ second most commonly stated reason for low program satisfaction was that they did not receive a written report from the program.

There were some reported differences behind lack of program satisfaction when comparing the Westchester borough data against data from other Con Edison service territory boroughs. Figure 17 highlights these differences – many of which were statistically significant.

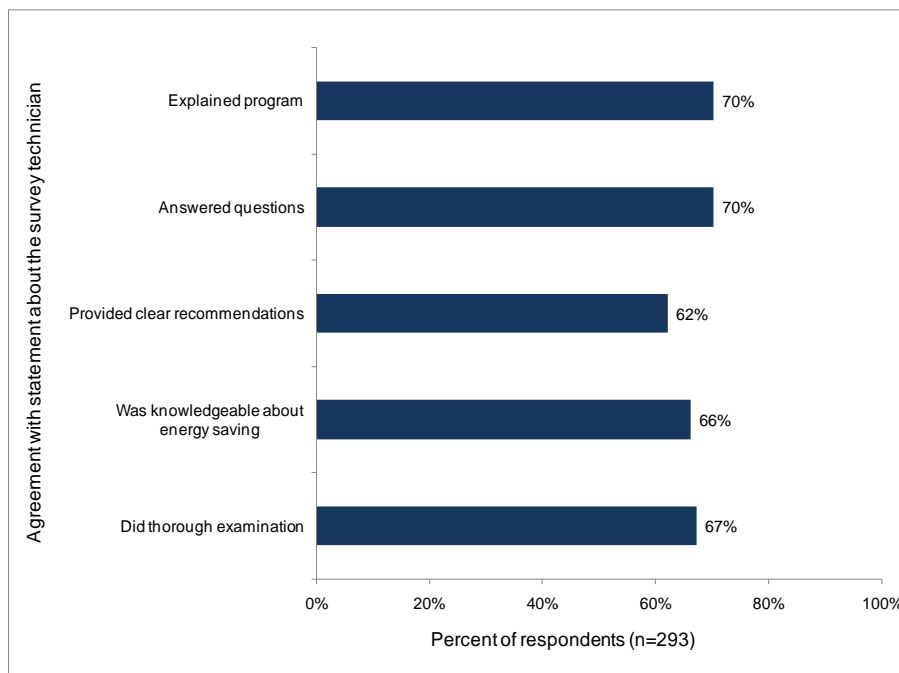
**Figure 17: Con Edison RDI Participants:
Program Dissatisfaction Reasons by Location**



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level

We asked all RDI program participants about their home energy survey technician experiences. Specifically, we asked participants to again use a 10-point scale to give feedback about the quality of their survey energy technician. Within the context of these questions, a 10 indicated strong statement agreement, and 1 indicated the respondent strongly disagreed with a statement. Figure 18 indicates the percent of respondents who rated the agreement with technician action statements with an '8' or higher. Seventy percent of respondents expressed high levels of agreement with statements reflecting that their energy survey technician explained the program or answered their questions. Respondents were less likely to agree that the technicians provided clear recommendations.

**Figure 18: Con Edison RDI Participants: The Survey Technician Experience
(Percent Agreement with Energy Survey Technician Statements)**



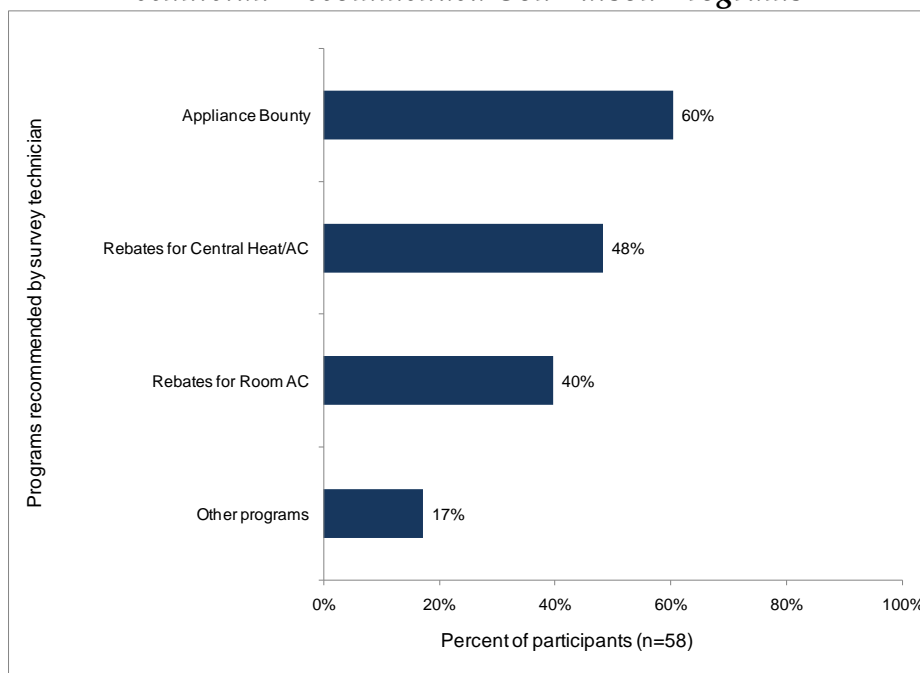
Finally, participants were asked if they would recommend the program to a friend or family member. Two-hundred fifteen respondents (73%) indicated they would recommend the program while nearly a quarter (n=68) indicated they would not. Program participants in Westchester were less likely (65%) to recommend the program compared to participants in the greater New York City area. Eighty percent of the participants in areas other than Westchester would recommend the RDI program to a family member or friend.

3.8 INTERACTIONS WITH OTHER PROGRAMS

A key objective of the Con Edison RDI program is to overcome market barriers such as lack of customer awareness of energy efficiency programs and options. The Con Edison RDI program is also specifically aiming to raise customer awareness of other Con Edison program offerings and additional energy efficiency programming in general. Participants were asked if their survey technician referred them to any other Con Edison energy efficiency programs. Fifty-eight participants (20%) recalled receiving a referral to at least one Con Edison program. Figure 19 displays how often participants received each program recommendation. The Appliance Bounty program was the most frequently recommended Con Edison program.

Sixty-five (n=191) percent of participants indicated their survey technician did *not* refer them to other Con Edison energy efficiency programs. Fifteen percent (n=44) did not know.

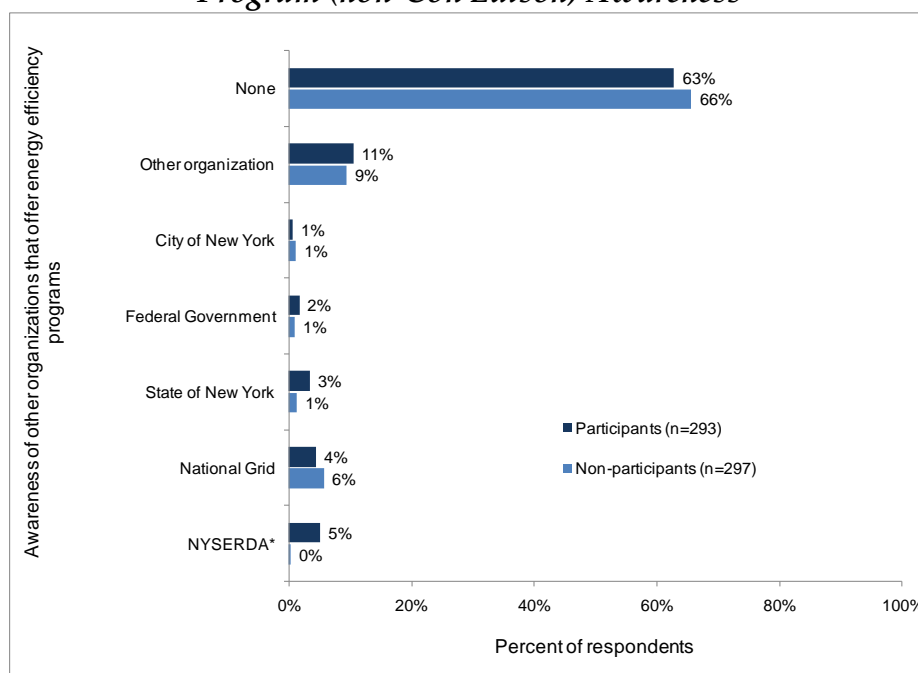
**Figure 19: Con Edison RDI Participants:
Technician-Recommended Con Edison Programs***



*Percents sum to greater than 100% because multiple responses were allowed.

Both RDI program participants and non-participants were also surveyed about program awareness of energy efficiency programming outside of Con Edison, such as programs offered through the City of New York, state or federal programming, or programs offered by other utilities or non-profits (e.g., National Grid or NYSERDA). Figure 20 displays the overall low energy efficiency program awareness outside of Con Edison programming. Roughly two-thirds of both RDI program participants and non-participants indicate no awareness of energy efficiency programs outside of Con Edison offerings. Among those who did indicate some energy efficiency program awareness, Con Edison RDI participants are statistically more likely to be aware of NYSERDA (5%) compared to non-participants (0%).

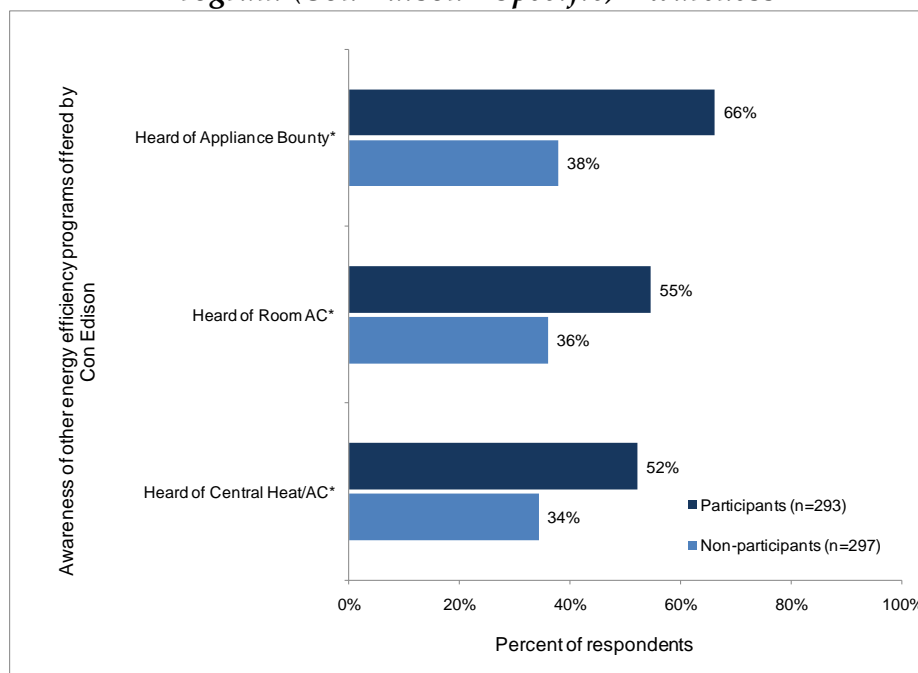
Figure 20: Con Edison Customers: Energy Efficiency Program (non-Con Edison) Awareness



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level.
 Note: Non-participant data in this figure is weighted to match the single vs. multi-family residence proportion in the participant data.

Awareness of energy efficiency programs is higher when survey respondents were specifically polled about Con Edison energy efficiency programs. Figure 21 compares Con Edison program awareness between RDI program participants and non-participants. Participants were statistically more likely to confirm awareness of a Con Edison program than non-participants; furthermore, the frequency distribution of program awareness closely mirrors how often participants report receiving a specific program recommendation in Figure 19. Con Edison RDI participants were most aware (66%) of the Appliance Bounty program; however, a majority of participants were also aware of the Room AC program (55%) and the Central Heat / AC program (52%). Non-participants awareness of these three programs varied slightly, but hovered around 35%.

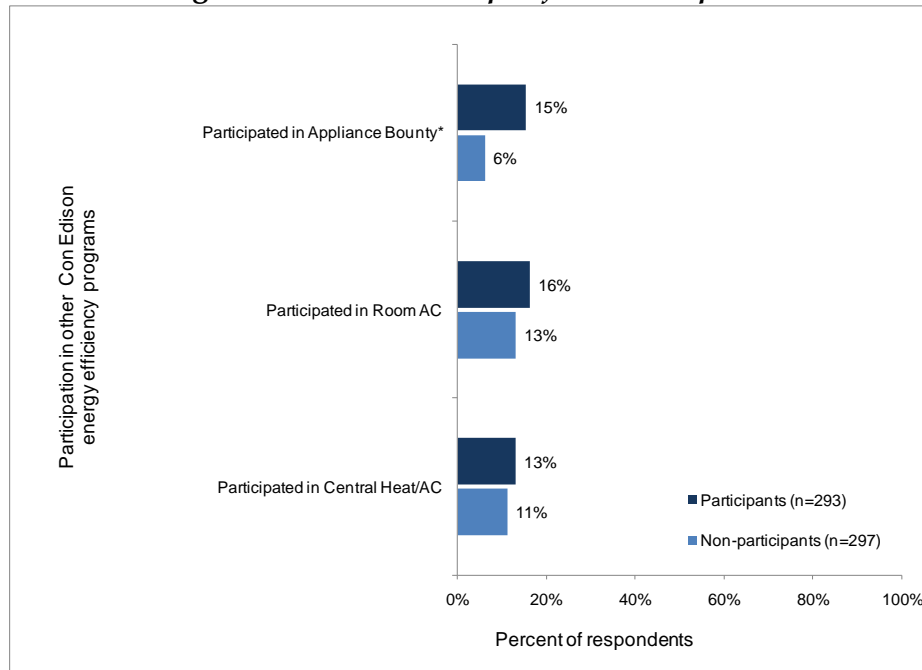
Figure 21: Con Edison Customers: Energy Efficiency Program (Con Edison - Specific) Awareness



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level.
 Note: Non-participant data in this figure is weighted to match the single vs. multi-family residence proportion in the participant data.

Figure 22 highlights Con Edison program participation other than the Con Edison RDI program. RDI program participants were more likely to participate in other Con Edison energy efficiency programs compared to non-participants. Fifteen percent of the Con Edison RDI program participants also report participating in the Appliance Bounty program, compared to only 6% of RDI non-participants. RDI non-participants reported participating in Appliance Bounty the least among the three programs of which we inquired. Program participation in the Room AC or the Central Heat / AC program was not significantly different than zero between the RDI participant and non-participant groups.

Figure 22: Con Edison Customers: Energy Efficiency Program (Con Edison- Specific) Participation



Asterisk (*) denotes a statistically significant difference at the 90 percent confidence level.
 Note: Non-participant data in this figure is weighted to match the single vs. multi-family residence proportion in the participant data.

4 CONCLUSIONS AND RECOMMENDATIONS

This section presents the key conclusions and recommendations from the findings and analyses presented throughout the report. These conclusions and recommendations are organized around the key areas of research. Recommendations flagged with a bold asterisk (*) indicate a recommendation that we believe would immediately increase program effectiveness or production if implemented. Additional recommendations within each section are those we believe would better align the program for success but can be characterized as being of secondary consideration and priority.

Some of these recommendations – crucial and otherwise -- require additional on-going program expenditures. Con Edison must identify which of these costs are possible while maintaining a cost effective program. Finally, this evaluation was undertaken during the course of program operations. One or more of the recommendations we provide below may have been previously implemented as part of the programs ongoing effort at improving its services.

4.1 PROGRAM PLANNING AND DESIGN

Summary: Program Planning and Design

- The RDI program is intended to serve as an entry point for residential customers wishing to identify opportunities for improved efficiency in their home.
- Con Edison contracts with Honeywell to deliver the RDI program on their behalf. Honeywell has a large majority of program delivery responsibility and subcontracts to hire energy survey technicians.
- The RDI program did not achieve its 2010-2011 goals. It achieved 20 percent of MWh and 9 percent of MW savings goals by the end of the year. Expenditures on incentives through July 2011 were ahead of progress in survey completions and savings.
- The Con Edison RDI program generated its highest totals of savings by month in its first few months of operation (October 2010 through December 2010). The program posted lower monthly savings in 2011.
- CFLs made up 67 percent of RDI program savings and were installed in 90 percent of surveyed homes as of July 31, 2011. Smart strips and door weatherization measures are the second and third most commonly installed measures, generating another 30% share of the program's savings. Program measures relating to water (e.g., faucet aerators, low-flow showerheads, etc) are rarely installed in participant homes.
- The RDI program will increase opportunities to meet its program goals and savings targets if it a) boosts the number of installed measures per home visit or changes the program measure assortment to create more savings opportunities; and b) enhances its marketing efforts to program-eligible customers. If the program increases its marketing efforts, KEMA further recommends the program monitor energy survey technician staffing levels to meet possible increased demand.

- Examining participation by borough and by home type compared to the eligible Con Edison customer population reveals there are opportunities to boost program awareness and participation within the boroughs with the largest customer population (e.g., Brooklyn) and among residents of multi-family (2-4) buildings.
- The program operations are generally succeeding at addressing energy efficiency barriers as outlined in the program's logic model. However, the program has opportunities to increase its participant referrals to additional Con Edison programs or other available energy efficiency program. Con Edison should also consider adding supplementary infrastructure to support participants who implement program recommendations and upgrade or install larger energy-using equipment.

Recommendations for Program Planning and Design

We introduce the following recommendations to improve the achievement of program goals within this section; each of these recommendations is re-emphasized and starred as a priority program change (*) in its appropriate section, below.

- **Aim to complete more home energy surveys.** The program needs more customer demand.
- **Focus on increasing the number of installed measures per visit.** Our evaluation revealed that despite the program having at least nine measure options available, most participants receive only a smart strip and/or CFLs. Average achieved savings per visit is considerably less than what was anticipated in planning. Installs per visit could potentially be boosted by considering the following changes:
 - **Alter the program measure assortment to make more of the program measures applicable to a wider variety of customers.** Currently, roughly half of the program measures are very rarely installed at customer homes. Explore offering additional and more applicable electric measures within the program.
 - **Install more successful program measures per home visit.** The program is already seeking approval to install more CFLs and increase the number of smart strips available through the program from one to two.
- **Market aggressively to program-eligible customer groups residing in boroughs that are currently underrepresented in program participation statistics (e.g., Queens and Brooklyn).** Eligible Con Edison customers in Queens and Brooklyn are roughly 2/3 of potential RDI market, yet only 1/3 of the program participants are from these areas. The program could increase marketing³⁵ to tap into the participation potential within the boroughs by building program awareness and strengthening the invitation for these customers to participate.

³⁵ As noted earlier in this report, Honeywell staff noted during its review of the draft final report that they are focusing 2012 program marketing efforts in Westchester, Queens, and Brooklyn.

- **Consider crafting a RDI program marketing campaign targeted specifically at Con Edison customers in multifamily homes that fit program requirements (four or fewer units).** Many of the current program marketing materials and messages are likely to appeal more strongly to homeowners. While KEMA acknowledges that targeting and enrolling multifamily dwellings can be challenging, continuing efforts to engage this market is warranted. The program could acquire a more robust share of renters by creating promotional materials that emphasize program opportunities and benefits for multifamily dwellings (2-4 units).

4.2 INFRASTRUCTURE DEVELOPMENT

Summary: Infrastructure Development

- The structure of the BBCS database is sound and nearly all fields are full populated; however, savings totals from the database do not match those in the scorecard reports.³⁶
- The BBCS database appears to sufficiently and comprehensively track complete information for each site, including measures installed during the survey, recommended measures, and tips for behavior changes to save energy.
- Contact information is remarkably complete and generally accurate.
- The program database is not consistent regarding measure savings. Examples are as follows:
 - Savings in the database do not match those in the scorecard reports for individual work orders
 - Savings in the database do not use the same per unit savings values for measures of the same type³⁷
 - Several records have greater than expected measures savings and/or quantities.

Recommendations for Infrastructure and Development

- **(*) Improve quality control processes regarding savings calculations and transfer of savings values from the database to the scorecard reports.** The program's progress towards its energy efficiency goals is based on savings reported in the scorecards. Ensuring their accuracy is a primary function of the BBCS.
- **Add a measure-level identification (ID) field to both the customer installs table in the database and the scorecard reports.** Including this ID to both locations will aid in quality control checks which could ensure program reporting accuracy.

³⁶ Honeywell noted during its review of the draft final report that BBCS reports gross savings, while Scorecards report net savings. This may account for some of the discrepancies noted within this evaluation.

³⁷ Honeywell noted that savings vary within measure, as some savings are based on algorithms that use varying values for multiple data points. Savings are not necessarily deemed values.

- **Track multiple phone numbers in *separate fields*, either by type of phone (home, work, mobile) or order of preference (phone number 1, phone number 2, etc).** KEMA noted that in some records, the phone number field included multiple phone numbers, making it hard to use. Tracking of multiple phone numbers in multiple fields would be more user-friendly, and it will increase clarity of the database records. It will also improve its usability for future data mining and/or evaluation efforts.
- **Include an interaction ID or some other way to group the records for a single interaction in the customer dates table.** This would add clarity to the tracking of interactions in the future, and it would allow clearer evaluation of the time elapsed between initial customer program contact and actual completion of a home energy survey.

Summary: Marketing Approaches

- The Green Team marketing campaign is an overall Con Edison branding campaign which highlights a range of energy efficiency program options with a limited amount of RDI program details. It included a broad high level campaign that used print, radio and on-line outlets to develop the “being green” brand, including messages of saving energy and lowering energy bills.
- The Green Team marketing examples reviewed in this evaluation do not offer Con Edison customers key RDI program details. The Green Team materials do not provide information that implementers believe are more appropriate for presentation in-person and on-site, such as program participation costs and information about direct install measures.
- The Green Team Con Edison branding campaign was launched at approximately the same time (fall 2010) the RDI program became operational; for this reason, more specific, program-related marketing efforts were delayed. Con Edison and Honeywell staff confirmed in 2011 Q1 interviews that marketing plans and responsibilities were still being discussed. RDI program marketing began in March, 2011.
- The content detail on the program website is *generally* adequate to introduce the program to a customer who is unfamiliar with RDI program offerings. The website lacks information to allow a customer to *specifically* assess what he/she will receive when participating in the program.
- Con Edison customers who seek information about the RDI program on the website are generally satisfied with their experience. However, only about 25% of RDI participants and 10% of non-participants report hearing about the program through the Con Edison website or using the website in the past year to obtain program information.
- The letter Con Edison provided as an example of its cross-marketing direct mail efforts to customers who have recently participated in a non-RDI program informs readers of

program specifics. It could be improved by including program-specific web landing pages to provide more program specifics quickly.

- Both RDI program participants and non-participants most frequently mention hearing about the RDI program through a Con Edison bill insert.
- Fewer than 10% of both participants and non-participants heard about the program through word-of-mouth.

Recommendations for Marketing Approaches

- **(*) Develop an agreement between Con Edison and Honeywell about the roles that each entity will be responsible for in marketing the RDI Program.** Coordinate marketing activities to leverage possible synergies, such as providing bill inserts and advertising concurrently in the same region. Consider making the marketing goals and targets specific and measurable to each organization to ensure accountability for any observed marketing shortcomings.
- **(*) Assess and use more targeted marketing to allow technicians to work more efficiently in a smaller geographic area.** While the evaluation team acknowledges targeted program marketing appeared underway in the 2011 materials, this year's targeted marketing efforts began too late in the program year to adequately assess their annual success or impact on the program.
- **Provide clear and direct communication about program offerings throughout the program's website and direct mail messaging to increase participation and to obtain higher customer satisfaction with the program.** Clarity about what the program offers and involved costs will set customer expectations in line with what the programs offers.
- **Streamline website customer call-to-action efforts to reduce customer confusion and increase the likelihood of contracting the program through the website.** Multiple phone numbers and additional contact information on one page can result in customer confusion and no action. The website should guide customers to make decisions about the program; not about how to make contact.
- **Assess marketing plans to ensure effectiveness of future program messages.** Bill inserts are likely to be seen by fewer customers over time as customers adopt electronic billing and automated utility bill payment processes. Although bill inserts provide a core targeted program marketing approach that should be continued, the program should also concurrently build up its promotion of the program electronically through

banner ads when customers are viewing their accounts online, or through increased email marketing from customers who permit it.³⁸

- **Ensure Con Edison has fully capitalized on the opportunity to market the RDI program at naturally occurring touch points.** We suggest protocols be developed for the customer call center and bill compliant lines to assure that every customer contact, regardless of the reason for their call, is followed up to the appropriate degree with energy efficiency information.
- **Create a baseline on number of page views, time on page, and click-through rates as a basis for regular review of web activity, before undertaking significant website revisions.** This would provide visibility into the effectiveness of changes made to the Green Team website portal as well as the impact of broader marketing campaigns in generating increased program website activity.

4.3 CUSTOMER ACQUISITION

Summary: Customer Acquisition

- Eighty-seven percent of RDI program participants indicated they initiated program contact by phone. Only four percent indicated they contacted the program through its website.
- Participants and non-participants alike were generally – but not overwhelmingly -- satisfied with their program contact experience. Sixty percent of participants and 55% percent of non-participants report their satisfaction level at an 8 or higher (out of a possible 10).
 - Con Edison customers who contact the program by phone are subject to be transferred one or more times, and generally speak to out-of-state phone representatives.
 - Email or electronic forms Con Edison customers use through the program website are forwarded two or more times before they are used for customer contact by Honeywell.
- *Saving money and energy* was a major reason for RDI program participation for a strong majority of participants *and* non-participants. *Talking to a knowledgeable surveyor* was an additional major participation reason reported by 4 out of 5 participants. Non-participants were more likely to rank *making their house more comfortable* as a major program participation reason.

³⁸ Honeywell commented during the review period of the final draft report that 2012 program marketing plans do include email campaigns and a mobile website.

- The evaluator noted energy survey technicians in the field asking participants to talk to their family and/or friends about the program if they agreed it was a positive experience. Technicians and the program should continue to encourage customer word of mouth marketing while conducting the home energy surveys.

Recommendations for Customer Acquisition

- **(*) Increase awareness of Con Edison energy efficiency programs among Honeywell phone customer service representatives to be sure they can effectively address customer questions.** Customer service representatives create the first program impression, and answering customer questions effectively should be among the primary outcomes of the initial customer call.
- **Marketing messages crafted to recruit customers to the Con Edison RDI program should continue to emphasize saving energy and money.** General savings messages resonate strongly with all surveyed Con Edison customers. Marketing that outlines the benefits of talking to an energy survey technician and housing comfort will also resonate with a majority of Con Edison customers.
- **As program activity increases, consider automating customer information / survey requests between the Con Edison website and the Honeywell program schedulers.** At present levels of program activity, the implementation contractor manages this process through Senior staff and considers this to be an appropriate level of customer service. If program activity increases, an increased focus on automation will reduce the administrative load of forwarding appointment requests through one or more Honeywell staff members.
- **Energy survey technicians should consistently request participants tell friends/family members if they are satisfied with the program.** The program should consider crafting leave-behind cards or flyers to leave with participants along with a technician's business card to give to others. These materials could provide program details and the technician's name. The program should also consider incenting technicians for every completed survey that is tracked through these word-of-mouth suggestions.

4.4 PROGRAM DELIVERY

Summary: Program Delivery

- Four energy survey technicians³⁹ are currently averaging four completed energy surveys per day, which achieves only half of the yearly program survey goals and roughly 1/3 of its energy savings goals under the best of circumstances (assuming low or no customer cancellations).

³⁹ Honeywell indicated throughout this evaluation that they are capable of adding additional staff if program demand warrants it.

- Honeywell is generally servicing customers who request a Home Energy Survey promptly.
- The office meeting between Honeywell program staff and the energy survey technicians is a program asset. The meeting provides valuable time for paperwork adjustment and QC/QA, the opportunity to share program successes, challenges, or “best practices. It also provides effective communication and aids in enacting new policies.
- QC / QA procedures are rigorous and taken seriously by the program. The survey within this evaluation stirred customer feedback – most often about not receiving written program results. The program assessed breakdowns in the manual office QC / QA process in fall 2011 and, as a result, updated its report and post-survey customer communications.
- Program survey technicians consistently verbally attributed Con Edison as the program provider; however, technician attire and gear did not consistently identify Con Edison as affiliated with the work being done. This diminishes the opportunity for Con Edison to accrue the attendant benefits of being fully recognized as the program provider (loyalty, relationship building, etc.).
- Communication between the energy survey technicians, the office staff, and the supervisors was open and sufficient.
- All technicians handled customer introductions similarly upon arriving at appointments. Although the order in which the survey steps were performed was not always the same, we did observe the same standard energy survey elements consistently covered by all technicians; including measurements, exterior and interior examination of home shell and equipment and present opportunities.
- Observed technicians were consistent in asking customers to sign a work authorization form and in collecting the \$50 program fee before work began.
- Customer questions to the technicians could be categorized into three categories: 1) general questions about their home, 2) residential energy equipment efficiency / replacement need / rebate options, and 3) overall program questions.
- Technicians generally answered the customer questions directly and adequately, but they often referred customer queries about energy equipment efficiency, replacement value, etc to the quality control coordinator who was present during field observations.

Program Measures

- RDI program energy survey technicians installed a) only a smart strip, b) only CFLs, or c) some combination of CFLs and a smart strip at over half of their home visits.

- KEMA calculated summary level statistics using the BBCS database about the installed measures at RDI participant homes. The statistics highlight an opportunity to garner more energy savings per visit through increasing the number of measures installed per visit.
 - Direct install measures credited to home energy surveys yielded an average energy savings of 539 kWh per home. The program needs to achieve an average savings of 834 kWh per home to make program goals based upon the planned number of surveys.
 - Roughly 10% of program participants have achieved energy savings equal to or greater than 834 kWh.
 - The average number of measures types installed by the program is 2.27 per visit.
 - The average number of CFLs per visit (among customers who receive CFLs) is 8.90.

Program Referrals and Survey Wrap-Up

- All technicians observed in the field appeared to enjoy educating customers about energy efficiency opportunities during the survey.
- The evaluator noted inconsistencies about the type of program materials that were left behind with Con Edison RDI participants in the field.

Participant Feedback about Program Measures

- Nearly all surveyed participants who had a record indicator for a door sweep or weather stripping installation confirmed a RDI technician installed the measure at their home. These measures also had the highest percent of participants (80%) who ranked their satisfaction with the measure at 8 or more (out of a possible 10).
- Energy survey technicians are not consistently installing program measures. For example, twenty-nine (13%) participants who received a smart strip with the program indicated the technician did not plug equipment into the smart strip during the survey.
- Participants were surveyed about the three most frequently installed program measures: CFLs, smart strips, and weather stripping and/or door sweeps. Participants rated the CFL with the lowest mean satisfaction measure rating (7 out of 10) among the three measures surveyed.

Home Energy Survey Results

- Nearly three-fourths of participants recalled the energy survey technician discussing the energy survey results with them after completing the survey. Almost two-thirds (64%) remember receiving written results in the mail after the survey.

- A majority of participants indicated they received a written report of their results in three weeks or less. Most (69%) participants reported the results were easy to understand; fewer (54%) reported that the recommendations were helpful.
- Nearly two-thirds of participants were able to recall receiving any RDI program recommendations. Participants who did recall receiving one or more recommendations indicated they are most likely to implement the following recommendations: 1) replace lights, 2) add insulation to their attic, or 3) add caulking, weather stripping or air sealing measures to their homes.

Recommendations for Program Delivery

- **(*) Con Edison and Honeywell should review the newly implemented HomeSTAR survey report tracking log and customer service courtesy call procedures going forward to assure that it is functioning properly.**
- **(*) Employ more energy survey technicians (based on customer demand).** The program boosted the number of energy survey technicians from four to six near the end of 2011 in an effort to achieve more program savings and completed surveys. According to our estimates, the program would have needed eight technicians completing an average of four home energy surveys per day for the entire year to reach the completed survey goal. We recommend that Con Edison and Honeywell regularly review program staffing levels to meet program goals and consider hiring additional staff as appropriate.
- **(*) Increase the number of installed measures per visit, whenever possible.** While the program could achieve its completed survey goal by doubling its survey technician staff from four to eight, the program will not achieve its savings goal unless it also increases the savings per home energy survey visit. This can be achieved through installing more existing measures per visit or changing the program measure assortment to include higher energy-savings options.
- **(*) Make appointment groupings more efficient to reduce drive time.** The evaluator acknowledges Honeywell office staff makes an effort to maximize the efficiency of a technician's daily schedule. However, a technician's daily schedule may include travel to and stops across multiple NYC-area boroughs within each work day if the requested survey queue is low and spread out across various boroughs. More scheduling efficiency could be realized by using targeted marketing campaigns in specific neighborhoods, and by delaying a customer appointment by a day or two to group appointments by geography more effectively. This may also increase technician job satisfaction and allow the program to retain technicians they have trained and invested in for longer periods of time.
- **(*) Con Edison and Honeywell should closely monitor whether the requested program change to install more smart strips or CFLS translates into additional program savings.** The program should further consider requesting program measure additions that are more relevant to a majority of program participants. For example, the

program may consider assessing the cost effectiveness of introducing one or more residential LED lighting options into the program.

- **Monitor monthly energy savings achievement during and after program changes or updates.** Examining these data monthly will provide rapid feedback on the effectiveness of program revisions. This can be a rudimentary exercise, that might include a simple calculation of monthly savings (see figure 1 near the beginning of this report) or the calculation of the distribution of average savings to be sure savings increases as expected.
- **Continue to emphasize to energy survey technicians that program measures must be installed at participant homes.** Ongoing reminders in the field and during office meetings are recommended. If the program adds a post-survey satisfaction survey component to program delivery, a follow-up question about measure installation should be included.
- **Implement program changes and marketing material updates simultaneously.** Customers receiving program literature and marketing materials that do not reflect current program parameters can hurt program and technician credibility and increase customer confusion.
- **Consider emailing Home Energy Survey participants their results.** Emailing results could reduce administrative burden and reduce the reported lag for the customer. Emailed reports also have the added benefit of time/date stamp record, which could be helpful in addressing customers' claims that they did not receive a report if, in fact, they did.
- **Handle important safety announcements and other program changes more formally.** The office (technician) meeting setting is an appropriate place to introduce and discuss program terms and policy changes, and our evaluation team member observed verbal program updates at the meeting. However, more formal presentation of new or updated program information through memos or email would further support the provision of that information among the technicians, and ultimately, to Con Edison customers.
- **Build drive time into the schedules.** It was unclear at the time of this field visit what customers are told about their appointment time. While an appointment time window (in lieu of a specific arrival time promise) may compensate for long appointments or traffic jams, additional time should be built into the schedule. This will increase the likelihood of a technician arriving on-time for each appointment.
- **Strengthen Con Edison branding in the field.** The evaluator documented customer confusion or concern about a technician not being affiliated with Con Edison. This was linked to a lack of clear Con Edison program identification in the field. The technicians should refrain from wearing safety vests when approaching the customer (if there is no safety concern), allowing Con Edison shirt embroidery to be visible. Additionally, having the Con Edison IDs on hand or readily visible is a good policy that all technicians should employ.

- **Offer customers more program payment options than in-person credit card collections.** Not only could additional payment options, such as payment through PayPal or Square, streamline processes for program implementers and reduce burden on the technicians, pre-payment could result in fewer customer cancellations. Con Edison and/or Honeywell staff could pilot new payment options with a small subset of customers to test the impact on cancellations or program participation.

4.5 SATISFACTION WITH THE PROGRAM

Summary for Satisfaction with the Program

- Fifty-five percent of RDI program participants ranked their satisfaction at 8 or higher on a 10-point satisfaction scale. Twenty percent of participants rated their program satisfaction lower than 5.
- The twenty percent of surveyed participants who ranked their satisfaction lower than 5 most commonly indicated the program was a waste of time, was not helpful to them, or lacked information. Westchester area program participants were statistically more likely to provide this reason compared to other area program participants; participants who lived in other Con Edison service territory boroughs were equally as likely to indicate that the program was not worth the money, they had a technician problem, or some other reason.
- Participants' second most commonly stated reason for low program satisfaction was that they did not recall having received written report from the program.
- Participants generally rated their satisfaction with their energy survey technician higher than their overall satisfaction with the program. Sixty-eight percent of participants reported they were extremely or very satisfied with their energy survey technician.
- Participants most strongly agreed that energy survey technicians explained the program and answered their questions. Fewer participants agreed that the program provided clear recommendations.
- Nearly three out of four (73%) participants would recommend the program to a friend or family member.

Recommendations for Satisfaction with the Program

Many of the recommendations discussed above will lead to increase participant satisfaction. These include:

- **Consistently monitor energy survey technician staffing adequacy to assure quick delivery of a home energy survey, and increase as needed.**
- **Continue to train and educate energy survey technicians about additional Con Edison and outside energy efficiency opportunities and encourage them to communicate these options to customers.**

- **Monitor measure installation opportunities to assure the right mix and number of measure installations.**
- **Prioritize training and staffing at customer call centers to be sure customer questions are addressed and inconveniences are kept to a minimum.**
- **Continue to monitor and improve the delivery process for participant reports and program recommendations in a timely manner.**

In addition to implementing previous recommendations to increase customer satisfaction, we also suggest the following options:

- **We recommend that Con Edison verify customer receipt of the HomeSTAR report as part of the ongoing Honeywell online survey effort among participants.** We also suggest that Con Edison ensure that they are in receipt of the online survey results to track program, technician, and measure satisfaction. As part of this effort, Con Edison might consider follow up with respondents who rate their satisfaction at average or low to record and address their source of dissatisfaction.
- **As suggested earlier, we recommend that Con Edison consider emailing reports to customers to ensure they receive them.** Email communications can be readily tracked to ensure that all customers receive their survey report. Emails should include a request for a delivery receipt when it is opened by the customer. It further provides customers with an electronic record of their program participation and recommendations.

4.6 INTERACTIONS WITH OTHER PROGRAMS

Program awareness of Con Edison energy efficiency program offerings was low among RDI program participants and non-participants alike. Awareness of non-Con Edison energy efficiency programs among those surveyed was very low. Here are some of the specific summary findings related to interactions with other programs.

Summary: Interactions with Other Programs

- One RDI program objective is to familiarize customers with Con Edison's other program offerings in the residential sector. The RDI program also works to build customer awareness of energy efficiency programs outside of those offered by Con Edison.
- Roughly one out of every five program participants recalled receiving Con Edison program recommendations from their energy survey technician. Nearly two-thirds of program participants who confirmed receipt of program recommendations reported a referral to the Appliance Bounty program.
- RDI participants were more likely to participate in other Con Edison energy efficiency programs (Appliance Bounty, Res HVAC, and/or Room AC) compared to non-participants.
 - RDI participants (15%) most frequently reported participating in the Appliance Bounty program, compared to only 6% of RDI non-participants.

- RDI non-participants were more likely to have participated in a Con Edison heating/cooling program. Non-participants reported participating in Appliance Bounty *the least* among the three programs of which we inquired.
- Overall energy efficiency program awareness outside of Con Edison program options is low among all surveyed Con Edison customers. Roughly two-thirds of both RDI program participants and non-participants indicated no awareness of other energy efficiency programs outside of Con Edison offerings.

Recommendations: Interactions with Other Programs

- **Con Edison should ensure that all opportunities to broker other programs as an integral part of the home energy survey are fully leveraged.** Sixty-five percent of participants indicated their survey technician did not refer them to other Con Edison energy efficiency programs. Energy survey technicians should be promoting additional Con Edison energy efficiency programs during *every* Home Energy Survey.
- **Both Con Edison and Honeywell should communicate with customers more directly about RDI program specifics.** Directly outlining what the RDI program provides will allow customers to select the program that is appropriate for them, and increase satisfaction with Con Edison and its programs. This may also increase the likelihood the participant recognizes RDI program participation is the first in multiple participation opportunities within a suite of Con Edison energy efficiency programs.
- **Promote examples of RDI program excellence for participants that inspires them to recommend the program.** This includes quality surveying and technician support, participant satisfaction with program measures, and rapid delivery of program report (with useful information and recommendations) to the participant.

Appendix A. RESEARCH AREAS

Six broad categories of research were established for the evaluation of the EEPS programs. Within each of these categories, research questions specific to the RDI program were identified. Figure A1 presents the research area, specific research questions within each area, and the section of the report that addresses each question.

Figure A1. RDI Evaluation Objectives

Research Area	Specific Research Issues	Section in the Report
1. Program Planning and Design	1.1. Identify possible improvements for cost-effectiveness, energy savings, and increased participation.	3.1
	1.2. Identify program process and design limitations that impede the program's ability to meet goals.	3.2
	1.3. Assess whether changes to the measure list may improve cost-effectiveness and increase participation.	3.2
2. Infrastructure Development	2.1. Determine whether the program is gathering all info needed for program management and reporting.	3.3
	2.2. Determine whether the tracking systems contain appropriate data fields for effective program management, reporting and evaluation.	3.3
	2.3. Determine whether the tracking systems contain accurate data.	3.3
	2.4. Completeness of data (i.e. all fields are populated)	3.3
	2.5. Review program's quality control procedures to determine whether they are sufficient to ensure that reported savings are real and verifiable.	3.3

3. Marketing & Customer Acquisition	3.1. Assess whether marketing approaches are appropriate and effective.	3.4
	3.2. Examine customer acquisition approaches for potential free-rider issues.	3.5
	3.3. Assess effectiveness of and satisfaction with customer service call center.	3.5
	3.4. Assess effectiveness of and satisfaction with website.	3.4
	3.5. Identify customer participation drivers and barriers, including customer differentiation of the Con Edison RDI program from others in the market.	3.4, 3.5
4. Program Delivery	4.1. Identify possible bottlenecks in the customer participation process, and opportunities for streamlining program delivery program.	3.6
	4.2. Assess training and communication with energy survey technicians.	3.6
5. Satisfaction with Program	5.1. Assess participant satisfaction with program delivery, and identify possible improvements.	3.7
	5.2. Assess participant satisfaction with information provided by the program, and identify possible improvements.	3.7
	5.3. Assess participant satisfaction with program measures, and identify possible improvements.	3.6
6. Interactions with Other Programs	6.1. Identify potential overlap with other programs.	3.8
	6.2. Assess awareness of other Con Edison and external energy efficiency programs.	3.8
	6.3. Assess level of customer confusion about the program due to similar programs in the residential market.	3.8
	6.4. Assess participant intent to participate in other energy efficiency programs.	3.8

Appendix B. EVALUATION METHODOLOGY

This appendix describes the evaluation methodologies used to gather information for this report. The evaluation approach included both primary and secondary data collection.

REVIEW OF PROGRAM AND MARKETING MATERIALS

KEMA conducted the following background review activities before interviewing program implementation staff:

- Utility filings and NYPSC Orders
- Program website, implementation plans, training materials
- Energy survey forms and example report

Based on the background review, the team refined the specific evaluation instruments planned to capture research issues unique to the Con Edison RDI program.

During and following the interviews, the process team received additional materials from the program managers. The following materials and resources were reviewed for this report:

- Program implementation request for proposals
- Program implementer contracts
- Program database extracts
- Contractor Procedures Manual
- Contractor Training PowerPoint
- Program process diagrams and logic models
- Energy survey tool (i.e., RDI Savings Tool)
- Quality Assurance/Quality Control (QA/QC) Procedures
- QA/QC reported results
- Marketing materials
- Example weekly reports
- Utility scorecards

UTILITY AND IMPLEMENTATION CONTRACTOR STAFF INTERVIEWS

The evaluation team conducted interviews with individuals responsible for RDI program design, management, and implementation. Table B1 summarizes the number of interviews the team conducted with representatives from each of the utilities and implementation contractor staff.

Table B1. In-depth Interviews with Utility and Implementation Staff Sample Sizes

Target	Total
Utility program staff	2
Implementation contractor staff	6

Energy survey technicians	4
Program participants	5
Total	17

PARTICIPANT SURVEY

APPRISE Inc. conducted telephone surveys with RDI program participants. The sample frame was developed using the entire participant population through the July 2011 Monthly Scorecard. Phone surveys were conducted in September 2011 through the last full week of October 2011. APPRISE attempted to reach each participating customer through at least eight call attempts scheduled at different times of day and days of the week. Interviewers left a scripted message when they encountered voice mail, including a toll-free number. Interviewers leave a toll-free number in the event customers want to call back to complete an interview at their convenience. Messages are left initially and every three days thereafter. These steps were taken to minimize non-response bias potential due to the timing of the attempted completions with surveyed customers.

We limited the sample population for the participant surveys to customers who had an energy survey completed and received a written report. Therefore, we conducted a census of these program participants. The sample population is based on information from the Honeywell BBCS database and the Con Edison Direct Install July 2011 Monthly Scorecard, which captured participation through end of July 2011. Table B2 summarizes the number of CATI survey respondents per participant account type.

Table B2. Con Edison - Participant Sample Frame and Surveys Completed

Account Type	Sample Population	Surveys Completed
RDI Program Participants	1,799	293

The sample was designed to exceed an absolute precision level of +/- 10 percent at the 90 percent confidence level.

The survey instrument for the participant survey is provided in Appendix C.

A key objective of the RDI participant survey was to verify installation of program measures and assess participant satisfaction with the installed measures. Due to an error in the original, fall 2011 participant survey, only 21 Con Edison RDI participants documented in the database as receiving CFLs through the program were asked to verify installation and assess satisfaction of the measure during our initial contact. KEMA staff conducted a second phone survey effort in early January 2012 to re-contact a subset of the 293 originally surveyed program participants who received CFLs through the RDI program, and collect necessary verification and satisfaction data about the measure if it was previously missed. KEMA successfully reached 83 participants

during the second survey effort. The final result was 104 participants listed in the Con Edison database as having received CFLs from the RDI program were asked to verify their installation and to rate their satisfaction with the measure.

NON-PARTICIPANT SURVEY

APPRISE Inc. conducted telephone surveys with Con Edison program non-participants. Surveys were conducted in November 2011 through the week of December 12th, 2011. APPRISE attempted to reach each non-participant through at least eight call attempts scheduled at different times of day and days of the week. Interviewers left a scripted message when they encountered an answer machine, including a toll-free number. Interviewers leave a toll-free number in the event customers want to call back to complete an interview at their convenience. Messages were left initially and every three days thereafter. These steps were taken to minimize non-response bias potential due to the timing of the attempted completions with surveyed customers.

In order to study an eligible population that more closely resembles the participant population characteristics, KEMA stratified the eligible population to disproportionately represent single unit accounts, as follows:

- 150 non-participants (single unit)
- 150 non-participants (2-4 unit)

The actual completed CATI surveys neared these strata targets. Table B4 summarizes the number of CATI survey respondents per non-participant account type.

Table B4. Con Edison – Non-Participant Sample Frame and Surveys Completed

Account Type	CATI Sample Population		CATI Surveys Completed	
	Count	%	Count	%
Non-Participants				
Single unit	15,520	92%	154	52%
Two to four unit	1,350	8%	138	46%
Non-Participants who did not know or refused	NA	NA	5	2%
Total Non-Participants	16,870	100%	297	100%

Post-survey, we weighted the non-participant sample so that it would match the makeup of the participant population: this meant that the sum of the single family weights would be ~75% of the total sum of non-participant weights. Holding the multi-family weight constant at 1, and assigning the single family non-participants a weight of 3.073 accomplished this goal. We used weighted non-participant data when comparing directly to participant data.

The sample was designed to exceed an absolute precision level of +/- 10 percent at the 90 percent confidence level.

The survey instrument for the non-participant survey is provided in Appendix C.

SURVEY PRETESTS

The participant and non-participant surveys were pretested prior to the main data collection effort. The phone surveyors were briefed on the program nomenclature and survey goals prior to making any calls. After approximately five surveys, each instrument was reviewed by APPRISE Inc. and KEMA to identify issues and implement improvements. A memorandum was prepared outlining the results of the pretests and the recommended survey instrument changes. The participant and non-participant survey pretest memorandums are presented in Appendix C.

RIDE-ALONGS FOR FIELD OBSERVATIONS

KEMA completed two days of field observations to study implementation contractor staff approach to program delivery and customer response to field activities. The field observations included one morning in the Honeywell office to observe quality control and data entry procedures. The evaluator spend the remainder of the field observation time observing energy survey technicians completing home energy surveys and interacting with Con Edison program participants.

Appendix C. INTERVIEW GUIDES AND SURVEY INSTRUMENTS

This Appendix contains the following in-depth interview guides and survey instruments:

- C1. Energy survey technician interview guide
- C2. Participant phone survey
- C3. Non-participant phone survey
- C4. Pretest memorandum

C1. Energy Survey Technician Interview Guide

Con Edison Residential Direct Install (RDI) Program

Energy Survey Technician In-depth Interview Guide

Interview Research Objectives:

1. Program Planning and Design
 - a. Assess appropriateness of measures, opportunities for additional low or no cost measures and/or increased participation
2. Infrastructure Development
 - a. Determine the process for uploading energy survey information. Assess if the program is gathering all info needed for program management and reporting.
 - b. Review program's quality control procedures for sufficiency to ensure reported savings are real and verifiable.
3. Marketing and Customer Acquisition
 - a. Examine customer acquisition approaches for potential free rider issues
 - b. Identify customer drivers and barriers to participation, including customer differentiation of the Con Edison RDI program from others in the market
4. Program Delivery
 - a. Identify possible bottlenecks in the customer participation process, and opportunities for streamlining program delivery
 - b. Assess efficiency of site assignments to energy survey technicians, and opportunities for improvement
 - c. Assess effectiveness of field processes, including information, equipment and process for completing energy surveys.
 - d. Assess training and communication with energy survey technicians
5. Program Satisfaction
 - a. Assess energy survey technician satisfaction with RDI program delivery, processes, and identify possible improvements
 - b. Assess energy survey technician satisfaction with information provided by the program, and identify possible improvements
 - c. Assess energy survey technician satisfaction with program measures, and identify possible improvements.
 - d. Energy survey technician feedback on customer satisfaction and recommendations for program improvements
6. Interactions with Other Programs
 - a. Assess level of customer confusion about the program due to similar programs in the residential market

4.6.1.1.1 [INSTRUCTIONS FOR INTERVIEWER]

The numbered questions are the main topics for inquiry. The lettered bullets are intended as sub-topics to follow up, if respondent hasn't covered them. Periodically remind respondent of confidentiality, if needed.

1. Introduction

1.1) Hello, may I please speak with _____?

Hello, my name is _____ and I am calling from KEMA consulting. We've been hired by Con Edison to research their Residential Direct Install program and to better understand how energy technicians work with and perceive the program.

I'd like to reassure you before we begin that your responses are confidential, and we won't attribute anything you say to you personally.

2. Energy Technician Background

I'd like to start by getting information about you and your background.

2.1) Can you please tell me your job title with Honeywell?

a. Are you technically an employee of Honeywell, or ACCENT?

2.2) What are your overall job responsibilities?

2.3) How long have you been doing that job for the Residential Direct Install program?

2.4) Please describe your work and education background prior to working for <Honeywell / ACCENT>.

a. How long did you do that job?

3. Training and Communication

3.1) Next, I'd like to understand what type of training, if any, you got for being an energy technician through <Honeywell / ACCENT>.. Did you get training for this job?

Probes:

a. What training did you get?

- b. How long was it?
- c. Who provided the training?
- d. What did the training cover?
- e. Where was the training?
- f. As part of the training, did anyone go along with you in the field and provide feedback?

3.2) What was your overall assessment of the training you received?

Probes:

- a. What was the most valuable part of your training?
- b. What are some areas you wished you had received more training on?
- c. What specific suggestions do you have for improving the training?

3.3) What are some changes to the DI program processes that have occurred since you began working as a survey technician?

- a. How were those changes communicated to you?
- b. Was this an effective approach? Why do you say that?

4. Program Delivery: Conducting the Energy Survey

Now I'd like to talk about what it's like to do your job every day.

4.1) What does a typical day consist of for you?

Probes:

- a. Office visit (Do you stop in an office each morning?)
- b. Site visits
- c. Reporting / administrative work

4.2) How are survey sites assigned to you?

Probes:

- a. Is the site assignment process efficient?
- b. Are the blocks of time (time slots) for appointments adequate?
- c. How long does it take for you get from site to site?
- d. How could the site assignment process be improved?

4.3)What information do you have about the home before you arrive for the survey appointment?

Probes:

- a. How do you get the information? (Probe: Do they have to download the info from BBCS tracking database? Or, is it handed or emailed to them?)
- b. Is there anything else that would be helpful to have?
- c. Do you know if they are rent or own the property you've been assigned ahead of time? [If no], do you capture this information?

4.4)What equipment do you typically carry with you to conduct the surveys?

- a. What additional information or equipment would be useful to have? Why do you say that?

4.5)When you arrive at the home, what happens next?

Probes:

- a. How do you introduce yourself? The program?
- b. How do you address the Work Authorization form with a customer?
- c. Is the Work Authorization form useful? How do you use it?
- d. What do customers say about the form?
 - Do homeowners seem surprised at all about what is on the form?
 - What do customers like about the form? Dislike about the form?

4.6)Please describe a typical energy survey walk-through.

Probes:

- a. What do you do first?
- b. Do you do it the same way every time?
- c. Do you engage the homeowner? How?
- d. How engaged are homeowners in a typical survey walk through?
- e. What do customers seem most interested in getting out of the program?

4.7)How do you collect data about a home?

Probes:

- a. Do you use the Home Energy Survey Form?
- b. Do you find the form useful?

- c. What do you like about the form? Dislike about the form?

4.8) Are you satisfied with Home Energy Survey process? Why do you say that? [probe: If not satisfied] What can be improved?

5. Program Measures and Customer Participation

5.1) After you complete the energy survey walk-through, what happens next?

5.2) How do you determine what measures to install?

5.3) What do you think about the measures provided by the program?

Probes:

- a. Do you think the program should add any measures? If yes, which ones?
- b. Have you encountered any problems in the field with the existing program measures? If yes, what were they? How could that be improved?

5.4) Do customers seem knowledgeable about program measures?

Probes:

- a. Do customers understand measures are free? [If no] are they suspicious of the program offerings?
- b. Do customers have concerns about the measures that they communicate with you? What are they?
- c. What do customers seem most interested in getting out of their home energy survey?

5.5) Please describe how you close out a home visit.

Probes:

- a. Do you refer customers to other programs? (Additional probe: Which programs do you refer them to, typically?)
- b. If yes, how do you communicate this? (Additional probe: Do you carry any marketing materials with you? Which ones?)
- c. Do you encourage customers to install additional measures on their own?

- d. Do customers talk to you about participating in other energy efficiency programs? [if yes] What programs do they name?

5.6) After a successful home visit, what happens next? (Probe: Do you follow up with customers in any way?)

5.7) What do you think drives customers to participate in the Residential Direct Install program?

6. Program Tracking Database

6.1) After you visit a home and install measures, what happens to any information you've collected during each home visit?

- a. How often do you return forms to Honeywell (probe: daily, weekly, something else)?
- b. How do you return the forms? (probe: in person, mail, e-mail, some other way)
- c. After you submit the forms and the data to Honeywell office staff. . .
 - Where does the data go?
 - What type of feedback, if any, do you typically get from the QA/QC process?
 - Do you ever get follow up questions about the data you've entered on the form? When/from who?

6.2) How satisfied are you with the program forms and reports? Why do you say that? (Possible probes: What works well? What could be improved?)

7. Program Satisfaction and Recommendations

7.1) What are the overall strengths for the Con Edison RDI program? Any others?

7.2) What are the overall weaknesses or barriers for the Con Edison RDI program? Any others?

7.3) Do you have suggestions for ways to improve the RDI program? Any others?

7.4) Do you have any additional comments or suggestions for improvement before we conclude today that we haven't already covered within this interview?

That's all the questions I have for you today. Thank you very much!

C2. Participant CATI Survey

Residential Direct Install CATI Participant Survey

[INSTRUCTIONS: Do not read anything in square brackets.]

May I please speak with _____?

Hello, my name is _____ and I'm calling from IC International, on behalf of Con Edison to learn about your experiences with the Home Energy Survey Program. This is the program where you received an energy survey for \$50. The energy technician also may have installed some energy saving devices at the time of the survey.

INT1. Do you recall receiving an energy survey for your home in <MONTH/YEAR>?

1. YES
2. NO – [SAY:] Is there someone else at your home who may recall participating in this program? **[IF YES, ASK TO SPEAK TO APPROPRIATE PERSON OR SCHEDULE CALLBACK, AS NEEDED. IF NEW PERSON COMES TO PHONE, REPEAT INTRO AND INT1, AND THEN CONTINUE SURVEY. IF ANSWER IS A DEFINITIVE “NO, THEY DID NOT GET AN ENERGY SURVEY,” NOTE THIS, THANK RESPONDENT AND TERMINATE CALL.]**
96. REFUSED [THANK AND TERMINATE]
97. DON'T KNOW – [SAY:] Is there someone else at your home who may recall participating in this program? **[IF YES, ASK TO SPEAK TO APPROPRIATE PERSON OR SCHEDULE CALLBACK, AS NEEDED. IF NEW PERSON COMES TO PHONE, REPEAT INTRO AND INT1, AND THEN CONTINUE SURVEY. IF ANSWER IS A DEFINITIVE “NO, THEY DID NOT GET AN ENERGY SURVEY,” NOTE THIS, THANK RESPONDENT AND TERMINATE CALL.]**

[IF YES] That's great. Your feedback will help us to improve our services and help **you** save energy and money.

[IF RESPONDENT SAYS NOW IS NOT A GOOD TIME FOR THIS CALL SAY:] When would be a more convenient time for me to call you back? **[RECORD APPT DATE/TIME BELOW:]**

NAME: _____ DATE: _____

TIME: _____

INT2. OK. Just to confirm, the energy survey was completed at <ADDRESS> in <CITY>, correct?

[RECORD ONE RESPONSE]

1. YES
2. NO **[RECORD CORRECT ADDRESS]**
96. REFUSED
97. DON'T KNOW

[If needed] Who is doing this study?

APPRISE is managing this survey for Consolidated Edison Company of New York – known as Con Edison or just Con Ed. Con Ed and Honeywell manage and deliver the Home Energy Survey Program. You may contact Steve Mysholowsky at Con Edison if you wish to verify this. His phone number is 212-460-2120.

1. Marketing and customer acquisition

- 1.1 How did you hear about the Home Energy Survey Program? **[IF NECESSARY:]** Anywhere else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**
1. BILL INSERT, INFORMATION INCLUDED IN UTILITY BILL
 2. NEWSPAPER
 3. CON EDISON WEBSITE
 4. TELEVISION ADVERTISING
 5. FAMILY/FRIEND (WORD OF MOUTH)
 6. CONTRACTOR
 7. RADIO ADVERTISING
 8. COMMUNITY EVENT
 95. OTHER **[SPECIFY]**
 96. REFUSED
 97. DON'T KNOW

[ASK 1.2 IF 1.1 ≠ 3]

- 1.2 In the past year, have you seen information about the Home Energy Survey Program on the Con Edison website? **[RECORD ONE RESPONSE]**
1. YES
 2. NO
 96. REFUSED
 97. DON'T KNOW

[ASK 1.3 IF 1.1 = 3 OR 1.2 = 1; OTHERWISE, SKIP TO 1.4]

- 1.3 On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your satisfaction with the program information on the website. **[RECORD ONE RESPONSE]**
- | | | | | | | | | | |
|------------|---|---|---|-------------------|---|---|---------------------|---|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Not at all | | | | Neither Satisfied | | | Extremely Satisfied | | |
| Satisfied | | | | Nor Dissatisfied | | | | | |
96. REFUSED
 97. DON'T KNOW

[ASK 1.3a IF 1.3 < 5; OTHERWISE, SKIP TO 1.4]

- 1.3a Why do you say that? **[IF NEEDED SAY:]** Why are you less than satisfied with the program information on the website? Anything else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**
1. COULDN'T FIND INFORMATION
 2. INFORMATION IS TOO GENERAL
 3. NO CONTACT INFORMATION
 4. NOT DISSATISFIED/NEUTRAL
 95. OTHER **[SPECIFY]**
 96. REFUSED
 97. DON'T KNOW

- 1.4 Please tell me whether each of the following reasons is a major, minor or not a reason you were interested in participating in the program. First is ... **[INSERT ITEMS a-d]. [READ IF**

NECESSARY:] Is this a major, minor or not a reason you were interested in participating? Next is...

- a. Learning how to save energy and money in my home.
- b. Having someone install energy saving devices in my home.
- c. Talking to a knowledgeable auditor about my house.
- d. Making my house more comfortable.
- 1. MAJOR REASON
- 2. MINOR REASON
- 3. NOT A REASON
- 96. REFUSED
- 97. DON'T KNOW

1.6 How did you first contact the Home Energy Survey Program? Was it...**[READ LIST] [RECORD ONE RESPONSE]**

- 1. By telephone,
- 2. Through the website, or
- 3. In person?
- 95. OTHER **[SPECIFY]**
- 96. REFUSED
- 97. DON'T KNOW

1.9 On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your overall satisfaction with your experience contacting the Home Energy Survey Program. **[RECORD ONE RESPONSE]**

- | | | | | | | | | | |
|------------|---|---|---|---|-------------------|---|---|---|---------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Not at all | | | | | Neither Satisfied | | | | Extremely Satisfied |
| Satisfied | | | | | Nor Dissatisfied | | | | |
- 96. REFUSED
 - 97. DON'T KNOW

[ASK 1.9a IF 1.9 < 5; OTHERWISE, SKIP TO NEXT SECTION]

1.9a Why do you say that? **[IF NEEDED SAY:]** Why are you less than satisfied with your experience contacting the Home Energy Survey Program? Anything else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

- 1. MULTIPLE ATTEMPTS TO GET MY QUESTION ANSWERED
- 2. TOOK TOO LONG
- 3. BAD ATTITUDE
- 4. COULDN'T UNDERSTAND
- 5. RUSHED
- 6. COULDN'T ANSWER MY QUESTION
- 7. I WASN'T DISSATISFIED/RESPONSE WAS NEUTRAL
- 95. OTHER **[SPECIFY]**
- 96. REFUSED
- 97. DON'T KNOW

2. Program Delivery

Now I have some questions about the energy survey that was conducted at your home.

2.1 On a scale of 1 to 10, with 1 meaning “strongly disagree” and 10 meaning “strongly agree,” please rate each of the following statements. First is ... **[INSERT ITEMS a-e]. [READ IF NECESSARY:]** How much do you agree with this statement? Next is...

- a. The survey technician clearly explained the program before beginning the energy survey.
- b. The survey technician was thorough in his examination of my home.
- c. The survey technician was knowledgeable about energy saving opportunities in my home.
- d. The survey technician provided clear recommendations on how to save energy in my home.
- e. The survey technician answered any questions I had.

1	2	3	4	5	6	7	8	9	10
Strongly Disagree				Neither Agree				Strongly Agree	
					Nor Disagree				

96. REFUSED

97. DON'T KNOW

2.2 Did the survey technician refer you to any other Con Edison energy efficiency programs?

1. YES

2. NO

96. REFUSED

97. DON'T KNOW

[ASK 2.3 IF 2.2 = 1; OTHERWISE, SKIP TO 2.4]

2.3 Which programs did the survey technician refer you to? Did he refer you to **[READ LIST]** **[RECORD ALL THAT APPLY]**?

1. Rebates for high efficiency room air conditioners,
2. Rebates for high efficiency central heating and central air conditioners,
3. Incentive money for Con Ed to pick up and recycle refrigerators, freezers and room air conditioners **[APPLIANCE BOUNTY PROGRAM]**, or

95. Any other programs? **[SPECIFY]**

96. REFUSED

97. DON'T KNOW

2.4 I'd like you to rate your overall satisfaction with the energy survey technician. On a scale of 1 to 10, with 1 meaning “not at all satisfied” and 10 meaning “extremely satisfied,” please rate your satisfaction with the energy survey technician. **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10
Not at all				Neither Satisfied				Extremely Satisfied	
Satisfied				Nor Dissatisfied					

- 96. REFUSED
- 97. DON'T KNOW

3. Measure Verification

[SKIP TO SECTION 4 IF instmeas = 0]

Now I'd like to ask some questions about the equipment that was installed during the energy survey. When I use the term "install," I mean that the survey technician placed the equipment in the correct location and did not leave it behind for you to put in use.

[REPEAT MV1 – MV6A FOR EACH MEASURE. MEASURES ARE DEFINED IN THE DATASET IN THE "INST_MEAS1" AND "INST_MEAS2" FIELDS, RESPECTIVELY.]

MV1. According to program records, the technician installed [IF inst_meas# = Smart Power Strip, ADD: "a"] <inst_meas#> at your home. Is this correct? [RECORD ONE RESPONSE]

- 1. YES
- 2. NO **[REPEAT QUESTION FOR SECOND MEASURE, IF APPLICABLE; OTHERWISE, GO TO NEXT SECTION]**
- 96. REFUSED **[REPEAT QUESTION FOR SECOND MEASURE, IF APPLICABLE; OTHERWISE, GO TO NEXT SECTION]**
- 97. DON'T KNOW **[REPEAT QUESTION FOR SECOND MEASURE, IF APPLICABLE; OTHERWISE, GO TO NEXT SECTION]**

[ASK MV2 IF <inst_meas#> = "Smart Power Strip" AND MV1 = 1; OTHERWISE, SKIP TO MV4]

MV2. Did the technician plug equipment into the Smart Power Strip before he left?

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

MV4. Now, I'd like you to rate your overall satisfaction with the <inst_meas#>. On a scale of 1 to 10, with 1 meaning "not at all satisfied" and 10 meaning "extremely satisfied," please rate how satisfied you are with the <inst_meas#>. [RECORD ONE RESPONSE]

1	2	3	4	5	6	7	8	9	10
Not at all				Neither Satisfied				Extremely Satisfied	
Satisfied				Nor Dissatisfied					

- 93. POWER STRIP NEVER PLUGGED IN [SKIP TO NEXT MEASURE AND START AT MV1, IF APPLICABLE; OTHERWISE, GO TO NEXT SECTION]**
- 96. REFUSED
- 97. DON'T KNOW

[ASK MV5 IF MV4 < 5, OTHERWISE, SKIP TO MV6]

MV5. Why do you say that? [IF NEEDED SAY:] In what ways aren't you satisfied with the <inst_meas#>? [DO NOT READ LIST] [RECORD ALL THAT APPLY]

[USE PRE-CODES FOR BELOW MEASURES IN TABLE]

Measure	Precodes
CFLs	1. BROKE DOWN OR MALFUNCTIONED 2. DID NOT SAVE ENERGY 3. DID NOT LIKE HOW IT LOOKED 4. NOT BRIGHT ENOUGH 5. DID NOT LIKE THE QUALITY OF LIGHT/LIGHT COLOR 95. OTHER [SPECIFY] 96. REFUSED 97. DON'T KNOW
All other measures	1. BROKE DOWN OR MALFUNCTIONED 2. DID NOT SAVE ENERGY 3. DID NOT LIKE HOW IT LOOKED 95. OTHER [SPECIFY] 96. REFUSED 97. DON'T KNOW

MV6. Have you removed the <instmeas#>? [RECORD ONE RESPONSE]

1. YES
2. NO [PROCEED TO NEXT MEASURE, OR NEXT SECTION IF ALL MEASURES HAVE BEEN ASKED ABOUT]
96. REFUSED [PROCEED TO NEXT MEASURE, OR NEXT SECTION IF ALL MEASURES HAVE BEEN ASKED ABOUT]
97. DON'T KNOW [PROCEED TO NEXT MEASURE, OR NEXT SECTION IF ALL MEASURES HAVE BEEN ASKED ABOUT]

MV6a. What were the reasons for removing the <Measure>(s)? [IF NEEDED SAY:] Anything else? [DO NOT READ LIST] [RECORD ALL THAT APPLY]

[USE PRE-CODES FOR MEASURES IN TABLE BELOW]

Measure	Precodes
CFLs	1. BROKE DOWN OR MALFUNCTIONED 2. DID NOT SAVE ENERGY 3. DID NOT LIKE HOW IT LOOKED 4. NOT BRIGHT ENOUGH 5. DID NOT LIKE THE QUALITY OF LIGHT/LIGHT COLOR 95. OTHER [SPECIFY] 96. REFUSED 97. DON'T KNOW
All other measures	1. BROKE DOWN OR MALFUNCTIONED 2. DID NOT SAVE ENERGY 3. DID NOT LIKE HOW IT LOOKED 95. OTHER [SPECIFY]

	96. REFUSED 97. DON'T KNOW
--	-------------------------------

[PROGRAMMER: LOOP THROUGH MV1-MV6 FOR SECOND MEASURE, IF APPLICABLE. ANSWERS TO QUESTIONS IN THIS SECTION MUST BE LINKED TO SPECIFIC MEASURES.]

4. Energy Survey Results

4.1 After the survey technician completed the energy survey, did he discuss the results with you while he was at your home? **[RECORD ONE RESPONSE]**

1. YES

2. NO

96. REFUSED

97. DON'T KNOW

4.2 Did you receive written results? **[RECORD ONE RESPONSE]**

1. YES

2. NO **[GO TO INSTRUCTIONS BEFORE 4.9]**

96. REFUSED **[GO TO INSTRUCTIONS BEFORE 4.9]**

97. DON'T KNOW **[GO TO INSTRUCTIONS BEFORE 4.9]**

4.4 About how long after the survey was completed did it take to receive the written results? Did it take... **[READ LIST] [RECORD ONE RESPONSE]**

1. Less than one week,

2. 1 to less than 2 weeks later,

3. 2 to less than 3 weeks later,

4. 3 to less than 4 weeks later, or

5. 4 or more weeks later?

96. REFUSED

97. DON'T KNOW

4.5 I'd like you to rate how easy or difficult it was to understand the recommendations in the energy survey results. On a 10 point scale, with 1 meaning "very difficult" and 10 meaning "very easy," please rate how easy or difficult it was to understand the recommendations. **[RECORD ONE RESPONSE]**

1 2 3 4 5 6 7 8 9 10

Very

Neither Easy

Very

Difficult

Nor Difficult

Easy

96. REFUSED

97. DON'T KNOW

[RECOMMENDATIONS THAT APPLY TO QUESTIONS 4.9 AND 4.9A ARE DEFINED IN THE DATASET AS "rec_meas1" AND "rec_meas2," RESPECTIVELY. FOR EACH RESPONDENT, ASK QUESTIONS 4.9 AND 4.9A FOR THE FIRST RECOMMENDATION THAT APPEARS IN "rec_meas1." IF THERE IS A SECOND RECOMMENDATION IN "rec_meas2," THEN REPEAT QUESTIONS 4.9 AND 4.9A WITH "rec_meas2."]

- 4.9 The energy survey technician recommended that you <rec_meas#>. On a scale of 1 to 10, where 1 is “not at all likely” and 10 is “very likely,” please rate how likely you are to take this action within the next year. **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10
Not at all					Neither Likely			Extremely	
Likely					Nor Unlikely			Likely	

93. ALREADY COMPLETED

96. REFUSED

97. DON'T KNOW

[ASK 4.9a IF 4.9 < 5; OTHERWISE, SKIP TO NEXT RECOMMENDATION]

- 4.9a Why do you say that? **[IF NEEDED SAY:]** Why are you less than likely to take this action?

1. **[RECORD VERBATIM]**

96. REFUSED

97. DON'T KNOW

[AFTER LOOPING THROUGH ALL RECOMMENDATIONS, PROCEED TO QUESTION 4.10]

- 4.10 On a scale of 1 to 10, where 1 is “not at all helpful” and 10 is “extremely helpful,” please rate how helpful the recommendations were to you.

1	2	3	4	5	6	7	8	9	10
Not at all					Extremely				
Helpful					Helpful				

96. REFUSED

97. DON'T KNOW

- 4.11 Are there any items that you expected the energy survey to address but did not? **[RECORD ONE RESPONSE]**

1. YES

2. NO **[GO TO 4.14]**

96. REFUSED **[GO TO 4.14]**

97. DON'T KNOW **[GO TO 4.14]**

- 4.11a What else did you expect it to cover?

1. **[RECORD VERBATIM]**

96. REFUSED

97. DON'T KNOW

- 4.14 Overall, how satisfied are you with the overall Home Energy Survey Program on a scale of 1 to 10, where 1 is “not at all satisfied” and 10 is “extremely satisfied”? **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10
Not at all					Neither Satisfied			Extremely Satisfied	
Satisfied					Nor Dissatisfied				

- 96. REFUSED
- 97. DON'T KNOW

[ASK 4.14a IF 4.14 < 5; OTHERWISE, SKIP TO 4.16]

4.14a Why do you say that? **[IF NEEDED SAY:]** What didn't you like about the Home Energy Survey Program?

1. **[RECORD VERBATIM]**

- 96. REFUSED
- 97. DON'T KNOW

4.16 Would you recommend this program to a friend or family member? **[RECORD ONE RESPONSE]**

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

CP. Interactions with other Con Edison programs

CP29. What, if any, other energy efficiency programs offered by Con Edison have you heard of? Have you heard of **[READ LIST AND OMIT ANY RECOMMENDED IN 2.3]**? **[RECORD ALL THAT APPLY]** **[AUTOFILL AS YES IF RECOMMENDED IN 2.3]**

- a. Rebates for high efficiency room air conditioners
- b. Rebates for high efficiency central heating and central air conditioners
- c. Incentive money for pick-up and recycling of refrigerators, freezers and room air conditioners **[APPLIANCE BOUNTY PROGRAM]**

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

[IF ALL CP29a-c = 2, 96 OR 97, SKIP TO NEXT SECTION]

CP30. Within the past two years, have you participated in Con Edison's **[program description here]**? **[READ ONLY THOSE MENTIONED IN CP29]** **[RECORD ALL THAT APPLY]**

- a. program offering REBATES for high efficiency Room Air Conditioners?
 - b. program offering REBATES for high efficiency central heating or central air conditioners?
 - c. program offering money for letting Con Edison PICK-UP and recycle a refrigerator, freezer or room air conditioner?
- 1. YES
 - 2. NO

- 96. REFUSED
- 97. DON'T KNOW

AB. Appliance Bounty Screener

AB1. How many working refrigerators do you currently have in your home? **[IF NECESSARY, INDICATE THAT "WORKING" MEANS THAT THE REFRIGERATOR WORKS]**

- 1. 1 **[GO TO AB4]**
- 2. 2
- 3. 3 **[GO TO INSTRUCTION BEFORE AB3]**
- 4. MORE THAN 3 **[GO TO INSTRUCTION BEFORE AB3]**
- 94. NONE **[GO TO AB4]**
- 96. REFUSED **[GO TO AB4]**
- 97. DON'T KNOW **[GO TO AB4]**

AB2. Which of the following best describes how you currently use your second refrigerator? Is it . . .
[READ LIST] [RECORD ONE RESPONSE]

- 1. on all of the time, **[GO TO AB4]**
- 2. on only in the summer, **[GO TO AB4]**
- 3. on only occasionally, or **[GO TO AB4]**
- 95. Do you use it some other way? **[GO TO AB4]**
- 96. REFUSED **[GO TO AB4]**
- 97. DON'T KNOW **[GO TO AB4]**

[ASK AB3 IF AB1 = 3 OR 4]

AB3. Which of the following best describes how you currently use your additional refrigerators? Are they...**[READ LIST] [RECORD ONE RESPONSE]**

- 1. on all of the time,
- 2. on only in the summer,
- 3. on only occasionally, or
- 95. Do you use them some other way?
- 96. REFUSED
- 97. DON'T KNOW

AB4. How many working, stand-alone freezers do you currently have in your home? **[IF NECESSARY, INDICATE THAT "WORKING" MEANS THAT THE FREEZER KEEPS THINGS FROZEN]**

- 1. 1
- 2. 2
- 3. 3
- 4. MORE THAN 3
- 94. NONE
- 96. REFUSED
- 97. DON'T KNOW

[ASK AB5 IF AB4 = 1]

- AB5. Which of the following best describes how you currently use your stand-alone freezer? Is it . .
.[READ LIST] [RECORD ONE RESPONSE]
1. on all of the time,
 2. on only in the summer,
 3. on only occasionally, or
 95. Do you use it some other way?
 96. REFUSED
 97. DON'T KNOW

[ASK AB6 IF AB4 = 2, 3 OR 4]

- AB6. Which of the following best describes how you currently use your additional freezers? Are they .
..[READ LIST] [RECORD ONE RESPONSE]
1. on all of the time,
 2. on only in the summer,
 3. on only occasionally, or
 95. Do you use them some other way?
 96. REFUSED
 97. DON'T KNOW

AB. Appliance Bounty

[ASK THIS BATTERY OF REMAINING APPLIANCE BOUNTY QUESTIONS IF RESPONDENT HAS MORE THAN 1 REFRIGERATOR (AB1 = 2 through 4), OR AT LEAST ONE STAND-ALONE FREEZER (AB4 = 1, 2, 3, OR 4)]

[ASK AB7 IF CP29c = 1]

- AB7. You mentioned that you recall hearing about the Residential Appliance Bounty Program, where Con Edison provides a service to remove and recycle old and inefficient refrigerators and freezers. How did you find out about this program? [DO NOT READ] [RECORD ALL THAT APPLY]
1. CON EDISON MAILING
 2. NEWSLETTER
 3. CON EDISON BILL INSERT
 4. CON EDISON WEBSITE
 5. FAMILY MEMBER IN HOUSE
 6. FAMILY/FRIEND NOT IN HOUSE
 7. SALESPERSON IN STORE SELLING REFRIGERATORS AND/OR ROOM/WALL ACS
 8. FROM THE PERSON WHO CONDUCTED MY HOME ENRGY SURVEY
 95. OTHER [SPECIFY]
 96. REFUSED
 97. DON'T KNOW

[ASK AB8 IF CP29c = 1 AND AB7 ≠ 4]

- AB8. Since you learned about the Appliance Bounty program, have you gone to the Con Edison website to find out more about this program?
1. YES

- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

[ASK AB9 IF AB7 = 4 OR AB8 = 1]

AB9. On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your satisfaction with the program website.

- | | | | | | | | | | | | |
|------------|---|---|---|---|---|---|---|-----------|----|-----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 96 | 97 |
| Not at all | | | | | | | | Extremely | | REF | DK |
| Satisfied | | | | | | | | Satisfied | | | |

[ASK AB10 IF AB9 < 5]

AB10. What did you dislike about the website? **[DO NOT READ] [RECORD ALL THAT APPLY]**

- 1. COULDN'T FIND THE INFORMATION I WANTED
- 2. IT WAS TOO SLOW
- 3. THE INFORMATION WAS TOO GENERAL
- 4. COULDN'T FIND ANY CONTACT INFORMATION
- 5. NOTHING/NOTHING IN PARTICULAR/WEBSITE WAS O.K.
- 95. OTHER **[SPECIFY]**
- 96. REFUSED
- 97. DON'T KNOW

[ASK AB11 IF CP29c = 1]

AB11. Did you contact a representative of Con Edison about the program?

- 1. YES
- 2. NO **[GO TO INSTRUCTIONS BEFORE AB14]**
- 96. REFUSED **[GO TO INSTRUCTIONS BEFORE AB14]**
- 97. DON'T KNOW **[GO TO INSTRUCTIONS BEFORE AB14]**

AB12. On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your overall satisfaction with your experience contacting Con Edison regarding the program.

- | | | | | | | | | | | | |
|------------|---|---|---|---|---|---|---|-----------|----|-----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 96 | 97 |
| Not at all | | | | | | | | Extremely | | REF | DK |
| Satisfied | | | | | | | | Satisfied | | | |

[ASK AB13 IF AB12 < 5]

AB13. Why weren't you satisfied with your experience contacting the Con Edison representative about the program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

- 1. TOOK TOO LONG TO GET TO TALK TO SOMEONE
- 2. BAD ATTITUDE FROM THE REPRESENTATIVE
- 3. COULDN'T UNDERSTAND THE REPRESENTATIVE
- 4. FELT LIKE THE REPRESENTATIVE WAS RUSHING ME OFF THE PHONE
- 5. REPRESENTATIVE COULDN'T ANSWER MY QUESTION(S)
- 6. IT TOOK MULTIPLE ATTEMPTS TO GET MY QUESTION(S) ANSWERED
- 7. I WASN'T DISSATISFIED FOR ANY PARTICULAR REASON
- 95. OTHER **[SPECIFY]**

- 96. REFUSED
- 97. DON'T KNOW

[ASK AB14 IF CP29c = 1]

- AB14. Before this phone call, were you aware that the Appliance Bounty program pays to recycle customers' second refrigerators and also pays to recycle customers' stand-alone freezers?
- 1. YES
 - 2. NO
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK AB15 IF CP29c = 1]

- AB15. Before this phone call, were you aware that, through this program, Con Edison would pay you \$50 to remove a stand-alone freezer or secondary refrigerator?
- 1. YES
 - 2. NO
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK AB16 IF CP29c = 1]

- AB16. Are you aware that if you are recycling a refrigerator or freezer, Con Edison will also offer you \$20 to remove working room or wall air conditioners?
- 1. YES
 - 2. NO
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK AB17a IF CP29c = 1]

- AB17a. Did you have a freezer or second refrigerator removed and recycled through Con Edison's Appliance Bounty program in the past two years?
- 1. YES [GO TO NEXT SECTION]
 - 2. NO
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK AB17b IF CP29c = 1 OR AB17a = 2, 96, OR 97]

- AB17b. Why haven't you decided to have:
- [CHOOSE NEXT PHRASE BY CHECKING EACH CONDITION SEQUENTIALLY (I.E., STARTING WITH THE FIRST STATEMENT, THEN THE SECOND STATEMENT, ETC.)]**
- [IF AB1 = 2 AND AB4 > 4, SAY: "your [IF AB17a = 1, ADD: "current"] second refrigerator"]
- [IF AB1 = 3 or 4 AND AB4 > 4, SAY: "one of your [IF AB17a = 1, ADD: "current"] refrigerators"]
- [IF AB1 = 2 AND AB4 = 1, 2, 3 or 4, SAY: "your [IF AB17a = 1, ADD: "current"] second refrigerator or"]
- [IF AB1 = 3 or 4 AND AB4 = 1, 2, 3 or 4, SAY: "one of your [IF AB17a = 1, ADD: "current"] refrigerators" or]
- [IF AB4 = 1, SAY: "[IF AB17a = 1, ADD: "your current"; IF AB17a = 2, ADD: "a"] freezer"]

[IF AB4 = 2, 3 or 4, SAY: "one of your [IF AB17a = 1, ADD: "current"] freezers"]
 removed and recycled through the Con Edison program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. I USE IT/THEM
2. I DON'T WANT PEOPLE IN MY HOME
3. I PLAN TO GIVE IT/THEM AWAY
4. APPLIANCE(S) DOESN'T/DON'T QUALIFY: DOESN'T/DON'T WORK
OR IS/ARE LESS THAN 10 CUBIC FEET
5. DIDN'T KNOW CON ED WOULD PAY \$50 FOR IT
6. DIDN'T KNOW THEY WOULD ALSO TAKE ROOM/WALL AIR
CONDITIONERS
7. I WASN'T CLEAR ABOUT WHAT QUALIFIED/HOW THE PROGRAM
WORKED
8. I WASN'T READY TO BUY ANOTHER ONE TO REPLACE IT
9. I DIDN'T KNOW FREEZERS WERE INCLUDED
95. OTHER [SPECIFY]
96. REFUSED
97. DON'T KNOW

[ASK AB18 IF CP29c = 1, AND AB17b ≠ 4]

AB18. Based on what you now know about the program, how likely are you to have a freezer or second refrigerator removed and recycled through the Con Edison program in the next 12 months? Please use a scale of 1 to 10 where 1 means "not at all likely" and 10 means "extremely likely."

1	2	3	4	5	6	7	8	9	10	96	97
Not At All								Extremely		REF	DK
Likely								Likely			

[ASK AB19 IF CP29c ≠ 1]

AB19. **[READ QUESTION SLOWLY, TO MAKE SURE RESPONDENT UNDERSTANDS IT]** Con Edison has a program that will pay you \$50 for each working freezer or secondary refrigerator you'd like them to remove and recycle. And, when they pick up your appliance, Con Edison will also offer you \$20 to remove any working room or wall air conditioners you'd like them to take. Using a scale of 1-10 where 1 means "not at all likely" and 10 means "extremely likely," how likely are you to contact Con Edison about having a freezer or secondary refrigerator removed and recycled? **[IF RESPONDENT ASKS, "WORKING" MEANS THAT THE UNIT CAN RUN, NOT NECESSARILY THAT IT IS CURRENTLY BEING USED]**

1	2	3	4	5	6	7	8	9	10	96	97
Not At All								Extremely		REF	DK
Likely								Likely			

[ASK AB20 IF AB19 < 5]

AB20. Why wouldn't you have:

[CHOOSE NEXT PHRASE BY CHECKING EACH CONDITION SEQUENTIALLY (I.E., STARTING WITH THE FIRST STATEMENT, THEN THE SECOND STATEMENT, ETC.)

[IF AB1 = 2, 3 or 4, AND AB4 > 4, SAY: "a secondary refrigerator"]

[IF AB1 = 2, 3 or 4, AND AB4 = 1, 2, 3 or 4, SAY: "a freezer or a secondary refrigerator"]

[IF AB1 < 2 or > 4, AND AB4 = 1, 2, 3 or 4, SAY: "a freezer"]

removed and recycled through this program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. I NEED/WANT TO USE IT/THEM
2. I DON'T WANT PEOPLE IN MY HOME
3. I PLAN TO GIVE IT/THEM AWAY
4. APPLIANCE(S) DOESN'T/DON'T QUALIFY: DOESN'T/DON'T WORK OR IS/ARE LESS THAN 10 CUBIC FEET
5. I'M CONCERNED I COULDN'T BE HERE WHEN THEY WOULD NEED TO COME TO GET IT
6. I'M NOT CLEAR ABOUT HOW THE PROGRAM WORKS
7. I'M NOT READY TO REPLACE IT
8. NOT A HIGH ENOUGH INCENTIVE
9. I WOULD/MIGHT HAVE IT/THEM REMOVED AND RECYCLED THROUGH THE PROGRAM
95. OTHER **[SPECIFY]**
96. REFUSED
97. DON'T KNOW

P. Interactions with other Available Programs

P32. Other than Con Edison, what other organizations are you aware of that offer energy efficiency programs that you could participate in? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. NYSERDA
2. NATIONAL GRID
3. STATE OF NEW YORK
4. FEDERAL GOVERNMENT
5. CITY OF NEW YORK
94. NONE **[GO TO NEXT SECTION]**
95. OTHER **[SPECIFY]**
96. REFUSED **[GO TO NEXT SECTION]**
97. DON'T KNOW **[GO TO NEXT SECTION]**

P33. Have you participated in any of these energy efficiency programs in the past two years? **[RECORD ONE RESPONSE]**

1. YES
2. NO **[GO TO NEXT SECTION]**
96. REFUSED **[GO TO NEXT SECTION]**
97. DON'T KNOW **[GO TO NEXT SECTION]**

[ASK P33a IF P33 = 1 AND IF P32 HAS MORE THAN ONE PROGRAM]

- P33a. Which organizations' program or programs have you participated in during the past two years? **[DO NOT READ LIST] [RECORD ALL THAT APPLY] [ONLY DISPLAY THE CHOICES MARKED IN P32, INCLUDING THE OTHER SPECIFY IF APPLICABLE]**
1. NYSERDA
 2. NATIONAL GRID
 3. STATE OF NEW YORK
 4. FEDERAL GOVERNMENT
 5. CITY OF NEW YORK
 95. OTHER [SPECIFY]
 96. REFUSED [GO TO NEXT SECTION]
 97. DON'T KNOW [GO TO NEXT SECTION]
- P33b. What was the name of [INSERT ORGANIZATION]'s program? **[REPEAT IF MORE THAN ONE RESPONSE GIVEN TO P33a] [ASK NAME OF PROGRAM FOR EACH ORGANIZATION MENTIONED IN P33a] [IF P33a NOT ASKED AND P33 = 1, ASK NAME OF PROGRAM FOR THE ORGANIZATION MENTIONED IN P32]**
- a. **[INSERT "NYSERDA" if P33a = 1]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
 - b. **[INSERT "NATIONAL GRID" if P33a = 2]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
 - c. **[INSERT "STATE OF NEW YORK" if P33a = 3]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
 - d. **[INSERT "FEDERAL GOVERNMENT" if P33a = 4]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
 - e. **[INSERT "CITY OF NEW YORK" if P33a = 5]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. Don't Know
 - f. **[INSERT the other verbatim answer given in P33a if P33a = 95]**
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW

D. Demographics

Finally, I have just a few categorization questions to ask.

- D1. How long have you lived in your current residence?

1. **[RECORD RESPONSE:]** # _____ YEARS
 96. REFUSED
 97. DON'T KNOW
- D2. What type of home do you live in? Please allow me to read three categories before you answer. Is it... **[READ LIST] [RECORD ONE RESPONSE]**
1. A stand alone single family home,
 2. A multi-family home with 2 to 4 units, including townhomes or rowhouses, or
 3. A multi-family home with 5 or more units, including condos or an apartment?
96. REFUSED
 97. DON'T KNOW
- D3. Do you own or rent your home? **[RECORD ONE RESPONSE]**
1. OWN
 2. RENT
96. REFUSED
 97. DON'T KNOW
- D7. What is the highest level of education you have completed? Was it . . . **[READ LIST] [RECORD ONE RESPONSE]**
1. Some high school **[NO DIPLOMA]**
 2. High school graduate
 3. Trade or Technical School
 4. Some College **[NO DEGREE OR 2 YR ASSOCIATES DEGREE]**
 5. College graduate **[4 YR DEGREE]**
 6. Some graduate school
 7. Graduate or Professional Degree, or
95. Something else? **[SPECIFY]**
 96. REFUSED
 97. DON'T KNOW
- D8. And finally, for statistical purposes only, please tell me which of the following categories contains your total household income, before taxes, for the year 2010. Please stop me when I get to the appropriate category. Was it . . . **[READ LIST] [RECORD ONE RESPONSE]**
1. Under \$20,000
 2. \$20,000 to just under \$40,000
 3. \$40,000 to just under \$60,000
 4. \$60,000 to just under \$80,000
 5. \$80,000 to just under \$100,000
 6. \$100,000 to just under \$150,000, or
 7. \$150,000 or more?

96. REFUSED

97. DON'T KNOW

Thank you for taking the time to complete this important survey. We really appreciate your input. Have a good day/evening!

C3. Non-Participant CATI Survey

Appliance Bounty & Residential Direct Install Non-Participant Survey

Quota Group	Target N
Appliance Bounty	~40
RDI	300
1 unit residential	150
2-4 unit residential	150

[INSTRUCTIONS: Do not read anything in square brackets.]

Hi, my name is _____ from IC International and I'm calling on behalf of Con Edison. We're evaluating one of Con Edison's energy efficiency programs. May I speak with **[CONTACT]**, or any person in your household who is knowledgeable about your household's energy use?

[READ IF NECESSARY:] This survey will take approximately 10 - 15 minutes depending on your answers and all of your answers will be kept strictly confidential.

[IF NOW IS NOT A CONVENIENT TIME, SCHEDULE CALL-BACK, OR IF REFUSAL, THANK AND TERMINATE CALL. RECORD REASONS FOR REFUSAL IN CALL NOTES.]

INT3. OK. Just to confirm, you are listed as the contact on the Con Ed account at <ADDRESS>.

Is that correct? **[RECORD ONE RESPONSE]**

1. YES **[GO TO INT3b]**
2. NO
96. REFUSED **[THANK AND TERMINATE]**
97. DON'T KNOW **[THANK AND TERMINATE]**

INT3a. What is your address?

1. **[RECORD CORRECT ADDRESS]**
96. REFUSED **[THANK AND TERMINATE]**
97. DON'T KNOW **[THANK AND TERMINATE]**

INT3b. Which of the following best describes your relationship to the home at <ADDRESS [IF INT3 = 2, INSERT CORRECTED ADDRESS FROM INT3a]>? **[READ LIST] [RECORD ONE RESPONSE]**

1. You own it and live in it,
2. You rent it and live in it,
3. You own it but do not live in it, or
95. Some other situation? **[SPECIFY]**
96. REFUSED
97. DON'T KNOW

[ASK INT4 IF INT3 = 2; OTHERWISE, SKIP TO INSTRUCTIONS BEFORE CP29]

INT4. Are you a Con Ed residential customer? **[RECORD ONE RESPONSE]**

1. YES
2. NO **[THANK AND TERMINATE]**
96. REFUSED **[THANK AND TERMINATE]**
97. DON'T KNOW **[THANK AND TERMINATE]**

TERMINATION TEXT: Thank you but our quota for respondents like you has been filled.
Have a nice day.

INTERACTION WITH OTHER CON EDISON PROGRAMS

[IF RESPONDENT IS CORRECT PERSON SAY:] First, I'd like to discuss energy efficiency programs.

CP29. What, if any, energy efficiency programs offered by Con Edison have you heard of?
Have you heard of **[READ LIST]** **[RECORD ALL THAT APPLY]**

- a. Rebates for high efficiency room air conditioners?
 - b. Rebates for high efficiency central heating and central air conditioners?
 - c. Incentive money for pick-up and recycling of refrigerators, freezers and/or room air conditioners? **[APPLIANCE BOUNTY PROGRAM]**
 - d. Home energy audits for \$50? **[HOME ENERGY SURVEY PROGRAM]**
1. YES
 2. NO
 96. REFUSED
 97. DON'T KNOW

[ASK FOR EACH PROGRAM MENTIONED IN CP29]

CP30. Within the past two years, have you participated in Con Edison's [PROGRAM DESCRIPTION HERE]? [READ ONLY THOSE MENTIONED IN CP29] [RECORD ALL THAT APPLY]

- a. program offering rebates for high efficiency **room** air conditioners?
 - b. program offering rebates for high efficiency **central** heating or **central** air conditioners?
 - c. program offering you money for letting Con Edison pick up and recycle a refrigerator, freezer or room air conditioner?
 - d. program offering a \$50 energy audit for your home?
-
- 1. YES
 - 2. NO
 - 96. REFUSED
 - 97. DON'T KNOW

RESIDENTIAL DIRECT INSTALL QUESTION SET

[ASK 1.1 IF CP29d = 1 OR CP30d = 1; OTHERWISE, SKIP TO INSTRUCTIONS BEFORE NP2]

- 1.1 How did you hear about the Home Energy Survey Program? **[IF NEEDED:]** This is the Con Edison program offering a \$50 energy audit for your home. **[IF NEEDED:]** Anywhere else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**
- 9. BILL INSERT, INFORMATION INCLUDED IN UTILITY BILL
 - 10. NEWSPAPER
 - 11. CON EDISON WEBSITE
 - 12. TELEVISION ADVERTISING
 - 13. FAMILY/FRIEND (WORD OF MOUTH)
 - 14. CONTRACTOR
 - 15. RADIO ADVERTISING
 - 16. COMMUNITY EVENT
 - 17. MAILING OR LETTER
 - 95. OTHER **[SPECIFY]**
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK 1.2 IF (CP29d = 1 OR CP30d = 1) AND 1.1 ≠ 3]

- 1.2 Within the past year, have you seen information about the Home Energy Survey Program on the Con Edison website? **[RECORD ONE RESPONSE]**
- 3. YES
 - 4. NO
 - 96. REFUSED
 - 97. DON'T KNOW

[ASK 1.3 IF 1.1 = 3 OR 1.2 = 1; OTHERWISE, SKIP TO NP1]

- 1.3 On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your satisfaction with the program information on the website. **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10
NOT AT ALL					NEITHER SATISFIED			EXTREMELY	
SATISFIED					NOR DISSATISFIED			SATISFIED	
96. REFUSED									
97. DON'T KNOW									

[ASK 1.3a IF 1.3 < 5; OTHERWISE, SKIP TO NP1]

- 1.3a Why do you say that? **[IF NEEDED SAY:]** Why are you less than satisfied with the program information on the website? **[IF NEEDED SAY:]** Anything else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**
- 5. COULDN'T FIND INFORMATION
 - 6. INFORMATION IS TOO GENERAL
 - 7. NO CONTACT INFORMATION
 - 8. NOT DISSATISFIED/NEUTRAL
 - 95. OTHER **[SPECIFY]**
 - 96. REFUSED
 - 97. DON'T KNOW

- NP1. Did you try to contact a representative of Con Edison about the program? **[RECORD ONE RESPONSE]**

1.	YES
2.	NO
96.	REFUSED
97.	DON'T KNOW

[ASK 1.9 IF NP1 = 1; OTHERWISE, SKIP TO INSTRUCTIONS BEFORE NP2]

- 1.9 On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your overall satisfaction with your experience contacting the Home Energy Survey Program. **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10
NOT AT ALL					NEITHER SATISFIED			EXTREMELY SATISFIED	
SATISFIED					NOR DISSATISFIED				
96. REFUSED									
97. DON'T KNOW									

[ASK 1.9a IF 1.9 < 5; OTHERWISE, SKIP TO INSTRUCTIONS BEFORE NP2]

1.9a Why do you say that? **[IF NEEDED SAY:]** Why are you less than satisfied with your experience contacting the Home Energy Survey Program? Anything else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. IT TOOK MULTIPLE ATTEMPTS TO GET MY QUESTION ANSWERED/QUESTION REMAINS UNANSWERED
2. TOOK TOO LONG TO GET TO TALK TO SOMEONE
3. BAD ATTITUDE FROM REPRESENTATIVE
4. COULDN'T UNDERSTAND THE REPRESENTATIVE
5. FELT LIKE THE REPRESENTATIVE WAS RUSHING ME OFF THE PHONE
6. REPRESENTATIVE COULDN'T ANSWER MY QUESTION
7. I WASN'T DISSATISFIED/RESPONSE WAS NEUTRAL
8. NO FOLLOW UP/WRITTEN REPORT
9. DIDN'T DO ANYTHING/NOT ENOUGH/NOT HELPFUL
10. TECHNICIAN INEFFICIENT/NOT KNOWLEDGEABLE
11. DID NOT ARRIVE AT SCHEDULED APPOINTMENT TIME
95. OTHER **[SPECIFY]**
96. REFUSED
97. DON'T KNOW

[READ IF CP29d ≠ 1]

For a cost of \$50, Con Edison's energy professionals will identify cost-effective improvements for your home. As part of this offer, the Home Energy Survey program will also install up to 10 free energy efficient light bulbs, one smart power strip, and other energy-saving devices at no additional cost. Now that you know about this program...

[ASK NP2 IF CP30d ≠ 1; OTHERWISE, SKIP TO NP4]

NP2. On a scale of 1 to 10, with 1 being "not at all likely" and 10 being "extremely likely," please rate how likely you are to participate in the Home Energy Survey Program in the next year. **[RECORD ONE RESPONSE]**

1	2	3	4	5	6	7	8	9	10	
NOT AT ALL					NEITHER LIKELY			EXTREMELY		
LIKELY					NOR UNLIKELY			LIKELY		

- 96. REFUSED
- 97. DON'T KNOW

[ASK NP3a IF NP2 = 6-10]

NP3a. Please tell me whether each of the following reasons is a major, minor or not a reason you are interested in participating in the program. First is ... **[INSERT ITEMS a-d]. [READ IF NECESSARY:]** Is this a major, minor or not a reason you would be interested in participating? Next is...

- a. Learning how to save energy and money in your home.
- b. Having someone install energy saving devices in your home.
- c. Talking to a knowledgeable auditor about your house.
- d. Making your house more comfortable.
 - 4. MAJOR REASON
 - 5. MINOR REASON
 - 6. NOT A REASON
 - 98. REFUSED
 - 99. DON'T KNOW

[ASK NP3b IF NP2 < 6]

NP3b. Please tell me whether each of the following reasons is a major, minor or not a reason you are unlikely to participate in the program. First is ... **[INSERT ITEMS a-d]. [READ IF NECESSARY:]** Is this a major, minor or not a reason you are NOT likely to participate? Next is...

- a. Your home is already energy efficient.
- b. You already know what needs to be done to make your home efficient.
- c. Fifty dollars is too much for an energy audit, or not worth it.
- d. You rent your home.
- e. You don't want people in your home.
- f. You're too busy.
 - 1. MAJOR REASON
 - 2. MINOR REASON
 - 3. NOT A REASON
 - 96. REFUSED
 - 97. DON'T KNOW

NP4. How would you suggest Con Edison reach out to customers like you to get them to participate in this program? Anything else? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. BILL INSERTS
2. PRINT AD/NEWSPAPER
3. FLYERS/MAILINGS
4. TELEVISION ADS
5. EMAIL
6. PHONE CALL
7. DOOR-TO-DOOR REPRESENTATIVES
8. REDUCE ENERGY SURVEY COST
9. COMMUNITY EVENTS
94. NOTHING/NO SUGGESTIONS
95. OTHER [SPECIFY]
96. REFUSED
97. DON'T KNOW

APPLIANCE BOUNTY SCREENER

AB1. How many working refrigerators do you currently have in your home? [IF NECESSARY, INDICATE THAT "WORKING" MEANS THAT THE REFRIGERATOR WORKS]

1. 1 [GO TO AB4]
2. 2
3. 3 [GO TO INSTRUCTIONS BEFORE AB3]
4. MORE THAN 3 [GO TO INSTRUCTIONS BEFORE AB3]
94. NONE [GO TO AB4]
96. REFUSED [GO TO AB4]
97. DON'T KNOW [GO TO AB4]

AB2. Which of the following best describes how you currently use your second refrigerator?
Is it . . . [READ LIST] [RECORD ONE RESPONSE]

1. on all of the time, [GO TO AB4]
2. on only in the summer, [GO TO AB4]
3. on only occasionally, or [GO TO AB4]
95. Do you use it some other way? [GO TO AB4]
96. REFUSED [GO TO AB4]
97. DON'T KNOW [GO TO AB4]

[ASK AB3 IF AB1 = 3 OR 4]

AB3. Which of the following best describes how you currently use your additional refrigerator? Is it . . . [READ LIST] [RECORD ONE RESPONSE]

- 1. on all of the time,
- 2. on only in the summer,
- 3. on only occasionally, or
- 95. Do you use it some other way?
- 96. REFUSED
- 97. DON'T KNOW

AB4. How many working, stand-alone freezers do you currently have in your home? **[IF NECESSARY, INDICATE THAT "WORKING" MEANS THAT THE FREEZER KEEPS THINGS FROZEN]**

- 1. 1
- 2. 2 **[GO TO INSTRUCTIONS BEFORE AB6]**
- 3. 3 **[GO TO INSTRUCTIONS BEFORE AB6]**
- 4. MORE THAN 3 **[GO TO INSTRUCTIONS BEFORE AB6]**
- 94. NONE **[GO TO NEXT SECTION]**
- 96. REFUSED **[GO TO NEXT SECTION]**
- 97. DON'T KNOW **[GO TO NEXT SECTION]**

[ASK AB5 IF AB4 = 1]

AB5. Which of the following best describes how you currently use your stand-alone freezer?
Is it . . . **[READ LIST] [RECORD ONE RESPONSE]**

- 1. on all of the time,
- 2. on only in the summer,
- 3. on only occasionally, or
- 95. Do you use it some other way?
- 96. REFUSED
- 97. DON'T KNOW

[ASK AB6 IF AB4=2, 3 OR 4]

AB6. Which of the following best describes how you currently use your additional freezers?
Are they . . . **[READ LIST] [RECORD ONE RESPONSE]**

- 1. on all of the time,
- 2. on only in the summer,
- 3. on only occasionally, or
- 95. Do you use it some other way?
- 96. REFUSED
- 97. DON'T KNOW

4.7 APPLIANCE BOUNTY

[ASK THIS BATTERY OF REMAINING APPLIANCE BOUNTY QUESTIONS IF RESPONDENT HAS MORE THAN 1 REFRIGERATOR (AB1 = 2 through 4), OR AT LEAST ONE STAND-ALONE FREEZER (AB4 = 1, 2, 3, OR 4)]

[ASK AB7 IF CP29c = 1; OTHERWISE, SKIP TO INSTRUCTIONS BEFORE AB19]

AB7. You mentioned that you recall hearing about the Residential Appliance Bounty Program, where Con Edison provides a service to remove and recycle old and inefficient refrigerators and freezers. How did you find out about this program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. CON EDISON MAILING
2. NEWSLETTER
3. CON EDISON BILL INSERT
4. CON EDISON WEBSITE
5. FAMILY MEMBER IN HOUSE
6. FAMILY/FRIEND NOT IN HOUSE
7. SALESPERSON IN STORE SELLING REFRIGERATORS AND/OR ROOM/WALL ACS
95. OTHER **[SPECIFY]**
96. REFUSED
97. DON'T KNOW

[ASK AB8 IF AB7 ≠ 4]

AB8. Since you learned about the Appliance Bounty program, have you gone to the Con Edison website to find out more about this program?

1. YES
2. NO
96. REFUSED
97. DON'T KNOW

[ASK AB9 IF AB7 = 4 OR AB8 = 1]

AB9. On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your satisfaction with the program website.

- | | | | | | | | | | | | |
|------------|---|---|---|---|---|-----------|---|---|---------------|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 96 | 97 |
| NOT AT ALL | | | | | | | | | EXTREMELY REF | | |
| DK | | | | | | | | | | | |
| SATISFIED | | | | | | SATISFIED | | | | | |

[ASK AB10 IF AB9 < 5]

AB10. What did you dislike about the website? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. COULDN'T FIND THE INFORMATION I WANTED
2. IT WAS TOO SLOW
3. THE INFORMATION WAS TOO GENERAL
4. COULDN'T FIND ANY CONTACT INFORMATION
5. NOTHING/NOTHING IN PARTICULAR/WEBSITE WAS O.K.
95. OTHER **[SPECIFY]**
96. REFUSED

97. DON'T KNOW

AB11. Did you contact a representative of Con Edison about the program?

- 1. YES
- 2. NO [GO TO AB14]
- 96. REFUSED [GO TO AB14]
- 97. DON'T KNOW [GO TO AB14]

AB12. On a scale of 1 to 10, where 1 is "not at all satisfied" and 10 is "extremely satisfied," please rate your overall satisfaction with your experience contacting a Con Edison representative regarding the program.

1	2	3	4	5	6	7	8	9	10	96	97	
NOT AT ALL									EXTREMELY REF			DK
SATISFIED									SATISFIED			

[ASK AB13 IF AB12 < 5]

AB13. Why weren't you satisfied with your experience contacting the Con Edison representative about the program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

- 1. TOOK TOO LONG TO GET TO TALK TO SOMEONE
- 2. BAD ATTITUDE FROM THE REPRESENTATIVE
- 3. COULDN'T UNDERSTAND THE REPRESENTATIVE
- 4. FELT LIKE THE REPRESENTATIVE WAS RUSHING ME OFF THE PHONE
- 5. REPRESENTATIVE COULDN'T ANSWER MY QUESTION(S)
- 6. IT TOOK MULTIPLE ATTEMPTS TO GET MY QUESTION(S) ANSWERED
- 7. I WASN'T DISSATISFIED FOR ANY PARTICULAR REASON
- 95. OTHER [SPECIFY]
- 96. REFUSED
- 97. DON'T KNOW

AB14. Before this phone call, were you aware that the Appliance Bounty program included both refrigerators and freezers?

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

AB15. Before this phone call, were you aware that, through this program, Con Edison would pay you \$50 to remove a stand-alone freezer or secondary refrigerator?

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

AB16. Are you aware that if you are recycling a refrigerator or freezer, Con Edison will also offer you \$20 to remove working room or wall air conditioners?

- 1. YES
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

AB17a. Did you have a freezer or second refrigerator removed and recycled through Con Edison's

Appliance Bounty program in the past two years?

- 1. YES [GO TO NEXT SECTION]
- 2. NO
- 96. REFUSED
- 97. DON'T KNOW

AB17b. Why haven't you decided to have:

[CHOOSE NEXT PHRASE BY CHECKING EACH CONDITION SEQUENTIALLY (I.E., STARTING WITH THE FIRST STATEMENT, THEN THE SECOND STATEMENT, ETC.)]

[IF AB1 = 2 AND AB4 > 4, SAY: "your second refrigerator"]

[IF AB1 = 3 or 4 AND AB4 > 4, SAY: "one of your refrigerators"]

[IF AB1 = 2 AND AB4 = 1, 2, 3 or 4, SAY: "your second refrigerator or a freezer"]

[IF AB1 = 3 or 4 AND AB4 = 1, 2, 3 or 4, SAY: "one of your refrigerators or a freezer"]

[IF AB1 ≠ 2, 3, or 4 AND AB4 = 1, 2, 3, or 4, SAY: "a freezer"]

removed and recycled through the Con Edison program? **[DO NOT READ LIST]**

[RECORD ALL THAT APPLY]

- 1. I USE IT/THEM
- 2. I DON'T WANT PEOPLE IN MY HOME
- 3. I PLAN TO GIVE IT/THEM AWAY
- 4. APPLIANCE(S) DOESN'T/DON'T QUALIFY: DOESN'T/DON'T WORK OR IS/ARE LESS THAN 10 CUBIC FEET
- 5. DIDN'T KNOW CONED WOULD PAY \$50 FOR IT
- 6. DIDN'T KNOW THEY WOULD ALSO TAKE ROOM/WALL AIR CONDITIONERS

7. I WASN'T CLEAR ABOUT WHAT QUALIFIED/HOW THE PROGRAM WORKED
8. I WASN'T READY [NOT ENOUGH MONEY] TO BUY ANOTHER ONE TO REPLACE IT
9. I DIDN'T KNOW FREEZERS WERE INCLUDED
10. APPLIANCE(S) IS/ARE NEW/STILL WORKING
95. OTHER [SPECIFY]
96. REFUSED
97. DON'T KNOW

[ASK AB18 IF AB17b ≠ 4]

AB18. Based on what you now know about the program, how likely are you to have a freezer or second refrigerator removed and recycled through the Con Edison program in the next 12 months? Please use a scale of 1-10 where 1 means "not at all likely" and 10 means "extremely likely."

1	2	3	4	5	6	7	8	9	10	96	97
NOT AT ALL									EXTREMELY	REF	DK
LIKELY									LIKELY		

[ASK AB19 IF CP29c ≠ 1]

AB19. [READ QUESTION SLOWLY, TO MAKE SURE RESPONDENT UNDERSTANDS IT]

Con Edison has a program that will pay you \$50 for each working freezer or secondary refrigerator you'd like them to remove and recycle. And, when they pick up your appliance, Con Edison will also offer you \$20 to remove any working room or wall air conditioners you'd like them to take. Using a scale of 1-10 where 1 means "not at all likely" and 10 means "extremely likely," how likely are you to contact Con Edison about having a freezer or secondary refrigerator removed and recycled? [IF RESPONDENT ASKS, "WORKING" MEANS THAT THE UNIT CAN RUN, NOT NECESSARILY THAT IT IS CURRENTLY BEING USED]

1	2	3	4	5	6	7	8	9	10	96	97
NOT AT ALL									EXTREMELY	REF	DK
LIKELY									LIKELY		

[ASK AB20 IF AB19 < 5]

AB20. Why wouldn't you have:

[CHOOSE NEXT PHRASE BY CHECKING EACH CONDITION SEQUENTIALLY (I.E., STARTING WITH THE FIRST STATEMENT, THEN THE SECOND STATEMENT, ETC.)]

[IF AB1 = 2, 3 or 4, AND AB4 > 4, SAY: "a secondary refrigerator"]

[IF AB1 = 2, 3 or 4, AND AB4 = 1, 2, 3 or 4, SAY: "a freezer or a secondary refrigerator"]

[IF AB1 < 2 or > 4, AND AB4 = 1, 2, 3 or 4, SAY: "a freezer"]

removed and recycled through this program? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. I NEED/WANT TO USE IT/THEM
2. I DON'T WANT PEOPLE IN MY HOME
3. I PLAN TO GIVE IT/THEM AWAY
4. APPLIANCE(S) DOESN'T/DON'T QUALIFY: DOESN'T/DON'T WORK OR IS/ARE LESS THAN 10 CUBIC FEET
5. I'M CONCERNED I COULDN'T BE HERE WHEN THEY WOULD NEED TO COME TO GET IT
6. I'M NOT CLEAR ABOUT HOW THE PROGRAM WORKS
7. I'M NOT READY TO REPLACE IT
8. NOT A HIGH ENOUGH INCENTIVE
9. I WOULD/MIGHT HAVE IT/THEM REMOVED AND RECYCLED THROUGH THE PROGRAM
10. APPLIANCE(S) IS/ARE NEW/STILL WORKING
95. OTHER **[SPECIFY]**
96. REFUSED
97. DON'T KNOW

INTERACTIONS WITH OTHER AVAILABLE PROGRAMS

P32. Other than Con Edison, what organizations are you aware of that offer energy efficiency programs you could participate in? **[DO NOT READ LIST] [RECORD ALL THAT APPLY]**

1. NYSERDA
2. NATIONAL GRID
3. STATE OF NEW YORK
4. FEDERAL GOVERNMENT
5. CITY OF NEW YORK
94. NONE **[GO TO NEXT SECTION]**
95. OTHER **[SPECIFY]**
96. REFUSED **[GO TO NEXT SECTION]**
97. DON'T KNOW **[GO TO NEXT SECTION]**

P33. Have you participated in any of these energy efficiency program(s) in the past two years? **[RECORD ONE RESPONSE]**

1. YES
2. NO [GO TO NEXT SECTION]
96. REFUSED [GO TO NEXT SECTION]
97. DON'T KNOW [GO TO NEXT SECTION]

[ASK P33a IF P33 = 1 AND IF P32 HAS MORE THAN ONE PROGRAM]

P33a. Which organizations' program or programs have you participated in during the past two years? [DO NOT READ LIST] [RECORD ALL THAT APPLY] [ONLY DISPLAY THE CHOICES MARKED IN P32, INCLUDING THE OTHER SPECIFY IF APPLICABLE]

1. NYSERDA
2. NATIONAL GRID
3. STATE OF NEW YORK
4. FEDERAL GOVERNMENT
5. CITY OF NEW YORK
95. OTHER [SHOW THE ANSWER MENTIONED IN P32]
96. REFUSED [GO TO NEXT SECTION]
97. DON'T KNOW [GO TO NEXT SECTION]

P33b. What was the name of [INSERT ORGANIZATION'S] program? [REPEAT IF MORE THAN ONE RESPONSE GIVEN TO P33a] [ASK NAME OF PROGRAM FOR EACH ORGANIZATION MENTIONED P33a] [IF P33a NOT ASKED AND P33 = 1, ASK NAME OF PROGRAM FOR THE ORGANIZATION MENTIONED IN P32]

- a. [INSERT "NYSERDA" IF P33a = 1 or (P32 = 1 & P33 = 1)]
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
- b. [INSERT "NATIONAL GRID" IF P33a = 2 or (P32 = 2 & P33 = 1)]
 1. NAME GIVEN:[SPECIFY]
 96. REFUSED
 97. DON'T KNOW
- c. [INSERT "STATE OF NEW YORK" IF P33a = 4 or (P32 = 4 & P33 = 1)]
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW
- d. [INSERT "FEDERAL GOVERNMENT" IF P33a = 5 or (P32 = 5 & P33 = 1)]
 1. NAME GIVEN: [SPECIFY]
 96. REFUSED
 97. DON'T KNOW

- e. **[INSERT "CITY OF NEW YORK" IF P33a = 6 or (P32 = 6 & P33 = 1)]**
 - 1. NAME GIVEN: **[SPECIFY]**
 - 96. REFUSED
 - 97. DON'T KNOW
- f. **[INSERT OTHER VERBATIM ANSWER GIVEN IN P33a OR P32 IF P33a = 95 or (P32 = 95 & P33 = 1)]**
 - 1. NAME GIVEN: **[SPECIFY]**
 - 96. REFUSED
 - 97. DON'T KNOW

DEMOGRAPHICS

Finally, I have just a few categorization questions to ask.

D1. How long have you lived in your current residence?

- 1. **[RECORD RESPONSE:]** # _____ YEARS
- 96. REFUSED
- 97. DON'T KNOW

D2. What type of home do you live in? Please allow me to read three categories before you answer. Is it. . . **[READ LIST] [RECORD ONE RESPONSE]**

- 1. A standalone single family home,
- 2. A multi-family home with 2 to 4 units, including townhouses or rowhouses, or
- 3. A multi-family home with 5 or more units, including condos or an apartment?
- 96. REFUSED
- 97. DON'T KNOW

D4. What fuel do you mainly use to heat your home? **[READ LIST]**

- 1. Natural Gas
- 2. Electric
- 3. Propane

- 4. Wood
- 5. Oil, or
- 95. Something else? **[SPECIFY]**
- 94. NONE
- 96. REFUSED
- 97. DON'T KNOW

D5. What type of air conditioning, if any, do you have in your home? Do you have . . .
[READ LIST]

- 1. Central air conditioning,
- 2. Room air conditioners,
- 3. Both central air conditioning and room air conditioners, or
- 94. No air conditioning?
- 95. OTHER **[SPECIFY]**
- 96. REFUSED
- 97. DON'T KNOW

D6. What type of fuel does your water heater use? Is it . . . **[READ LIST]**

- 1. Electricity,
- 2. Natural Gas,
- 3. Propane, or
- 95. Something else? **[SPECIFY]**
- 94. NONE
- 96. REFUSED
- 97. DON'T KNOW

D7. What is the highest level of education you have completed? Was it . . . **[READ LIST]**
[RECORD ONE RESPONSE]

- 1. Some High School **[NO DIPLOMA]**
- 2. High School graduate
- 3. Trade or Technical School
- 4. Some college **[NO DEGREE OR 2 YR ASSOCIATES DEGREE]**

- 5. College graduate **[4 YR DEGREE]**
- 6. Some graduate school
- 7. Graduate or Professional degree, or
- 95. Something else? **[SPECIFY]**
- 96. REFUSED
- 97. DON'T KNOW

D8. And finally, for statistical purposes only, please tell me which of the following categories applies to your total household income, before taxes, for the year 2010. Please stop me when I get to the appropriate category. Was it . . . **[READ LIST] [RECORD ONE RESPONSE]**

- 1. Under \$20,000
- 2. \$20,000 to just under \$40,000
- 3. \$40,000 to just under \$60,000
- 4. \$60,000 to just under \$80,000
- 5. \$80,000 to just under \$100,000
- 6. \$100,000 to just under \$150,000, or
- 7. \$150,000 or more?
- 96. REFUSED
- 97. DON'T KNOW

Thank you for taking the time to complete this important survey. We really appreciate your input. Have a good day/evening!

C4. Pretest memorandum

DATE: September 2, 2011

TO: Betty Seto (cc: Bobby Tannenbaum, Lisa Stefanik, Ben Jones)

FROM: Jeffrey Ho (cc: Kathi Barringer)

SUBJECT: RDI Participants CATI Survey Pretest Results

Pretest 1:

- Completed on 8/31/11,
 - Respondent has 1 refrigerator,
 - Length, 23 minutes, 2 seconds.
- Length by Section:
- ✓ Marketing and Customer Acquisition 3:20,
 - ✓ Program Delivery 2:40,
 - ✓ Measure Verification 4:39,
 - ✓ Appliance Bounty Screener 0:11,
 - ✓ Energy Survey Results 7:37,
 - ✓ Interactions with Other Con Edison Programs 4:32,
 - ✓ Appliance Bounty N/A,
 - ✓ Interactions with Other Available Programs 0:47,
 - ✓ Demographics 1:16

Pretest 2:

- Completed on 8/31/11,
 - Respondent has more than 3 refrigerators,
 - Length, 25 minutes.
- Length by Section:
- ✓ Marketing and Customer Acquisition 2:54,
 - ✓ Program Delivery 1:25,
 - ✓ Measure Verification 4:10,
 - ✓ Appliance Bounty Screener 1:55,
 - ✓ Energy Survey Results 1:55,
 - ✓ Interactions with Other Con Edison Programs 5:31,
 - ✓ Appliance Bounty 5:18,
 - ✓ Interactions with Other Available Programs 0:37,
 - ✓ Demographics 1:15

Pretest 3:

- Completed on 8/31/11,
- Respondent has 2 refrigerators,
- Length, 23 minutes, 44 seconds.

Length by Section:

- ✓ Marketing and Customer Acquisition 4:40,
- ✓ Program Delivery 2:39,
- ✓ Measure Verification 3:21,
- ✓ Appliance Bounty Screener 1:12,
- ✓ Energy Survey Results 6:00,
- ✓ Interactions with Other Con Edison Programs 0:58,
- ✓ Appliance Bounty 2:02,
- ✓ Interactions with Other Available Programs 1:31,
- ✓ Demographics 1:21

Pretest 4:

- Completed on 9/1/11,
- Respondent has 1 refrigerator,
- Length, 15 minutes.

Length by Section:

- ✓ Marketing and Customer Acquisition 3:17,
- ✓ Program Delivery 1:30,
- ✓ Measure Verification 1:53,
- ✓ Appliance Bounty Screener 0:05,
- ✓ Energy Survey Results 4:28,
- ✓ Interactions with Other Con Edison Programs 1:59,
- ✓ Appliance Bounty N/A,
- ✓ Interactions with Other Available Programs 0:36,
- ✓ Demographics 1:12

Averages:

Complete Interview: 21:42

Marketing and Customer Acquisition: 3:33

Program Delivery: 2:04

Measure Verification: 3:31

Appliance Bounty Screener: 0:51

Energy Survey Results: 4:58

Interactions with Other Con Edison Programs: 3:15

Appliance Bounty: 3:40

Interactions with Other Available Programs: 0:53

Demographics: 1:16

Findings

Overarching: There were no questions that respondents had difficulty understanding or interpreting. There are a few skip patterns that are unclear and questions that are not designated as single-punch or multi-punch. These are noted on the attached questionnaire in track changes.

Length: The first three respondents had lengthy responses, while the fourth respondent often gave one-word answers. Eligibility for the Appliance Bounty section is a large determinant of length. Awareness and/or participation in other programs offered by Con Edison and other organizations also play a major role in determining length. The survey, as pretested, exceeds our budgeted length by almost seven minutes. Please consider which questions can be deleted when reviewing these results. We have provided recordings of the pretests for your clarification.

For pretest #2, the Energy Survey Results section was considerably shorter than the rest of the pretests because the sample file did not list the respondent as having received any recommendations. Thus, the respondent was not asked any of the questions in the section from 4.9 and on. Pretests #1 and #3 had long Energy Survey Results sections because they had a lot to say for each question where they rated something on a scale of 1 to 10. Respondents of these two pretests would elaborate on why they gave a specific number as a rating, whether it was a low or a high one.

For pretest #4, the length of the Measure Verification section was considerably shorter than the rest of the pretests because the respondent did not elaborate on her responses like respondents in the other pretests. She was very informed about what had been installed and thus answered these questions quickly.

Question-specific issues: Please see the attached questionnaire [with question-specific edits shown in track changes].

DATE: October 24, 2011
TO: Lisa Stefanik (cc: Steve Hastie, Timothy Douek, Erin Palermo, Bobbi Tannenbaum)
FROM: Jeffrey Ho (cc: Kathi Barringer)
SUBJECT: RDI-AB Non Participant Survey Pretest Results

Pretest 1:

- Completed on 10/20/11,
- Strata: 2
- Length, 9 minutes, 50 seconds.
Length by Section:
 - ✓ Interaction with Other Con Edison Programs 1:42,
 - ✓ Residential Direct Install Question Set 4:00,
 - ✓ Appliance Bounty Question Set Screener 0:45,
 - ✓ Appliance Bounty Section 0:45,
 - ✓ Other Energy Efficiency Programs 0:38,
 - ✓ Demographics 2:00

Pretest 2:

- Completed on 10/20/11,
- Strata: 1
- Length, 5 minutes, 23 seconds.
Length by Section:
 - ✓ Interaction with Other Con Edison Programs 0:39,
 - ✓ Residential Direct Install Question Set 1:46,
 - ✓ Appliance Bounty Question Set Screener 0:40,
 - ✓ Appliance Bounty Section N/A,
 - ✓ Other Energy Efficiency Programs 0:20,
 - ✓ Demographics 1:58

Pretest 3:

- Completed on 10/20/11,
- Strata: 2
- Length, 6 minutes, 38 seconds.
Length by Section:
 - ✓ Interaction with Other Con Edison Programs 1:10,
 - ✓ Residential Direct Install Question Set 2:40,
 - ✓ Appliance Bounty Question Set Screener 0:47,
 - ✓ Appliance Bounty Section N/A,
 - ✓ Other Energy Efficiency Programs 0:13,
 - ✓ Demographics 1:48

Averages:
Complete Interview: 7:17
Interaction with Other Con Edison Programs: 1:10
Residential Direct Install Question Set: 2:49
Appliance Bounty Question Set Screener: 0:44
Appliance Bounty Section: 0:45
Other Energy Efficiency Programs: 0:24
Demographics: 1:55

Findings

Overarching: There were no questions that respondents had difficulty understanding or interpreting. Any question-specific issues regarding skip patterns or response options are noted in the attached questionnaire. The questionnaire has been formatted to be consistent with APPRISE protocol. Sections that have been taken from the RDI Participant Survey have been worded and revised to make these sections consistent, if not identical with each other. A few other minor wording changes were made based on our experiences fielding the Participant survey. Please note that there are a few differences between the two surveys. The section headings on this survey are not consistent with the Participant survey. The Demographics section contains more questions in this survey than it does in the Participant survey. These differences are shown on the marked up survey instrument which accompanies this memo.

Length: The average length is less than 10 minutes. Note, however, that none of the respondents went through the entire RDI and AB sections. None of the respondents had heard of the Home Energy Survey program, which skipped them out of the first part of the RDI section. The first respondent skipped out of the AB section (he had not heard of AB before); the second and third respondents skipped out of a portion of the RDI section and the entire AB section (they did not have second refrigerator or a stand-alone freezer). As is reiterated in the questionnaire comments, if a respondent does not skip out of any section, the length will be closer to fifteen minutes.

Question-specific issues: Please see the attached questionnaire [with question-specific edits noted in comments].