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PROCESS EVALUATION FOR CON EDISON'S AND ORANGE AND ROCKLAND UTILITIES' RESIDENTIAL HVAC PROGRAMS - FINAL REPORT

Prepared for:
Con Edison and Orange and Rockland

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Executive Summary

Navigant Consulting, Inc. (Navigant) is leading a series of process evaluations for energy efficiency programs that Consolidated Edison (Con Edison) and Orange and Rockland (O&R) are delivering as part of their Energy Efficiency Portfolio Standard (EEPS) Utility Administered programs, as ordered by the New York Public Service Commission (NYPSC). Navigant and its team (KEMA, Inc., APPRISE Inc., and SERA) were selected to complete process evaluations for all of the Companies' EEPS programs through a competitive bid process. This report is a process evaluation for the gas and electric Residential Heating, Ventilation, and Air Conditioning (Res HVAC) Programs administered by Con Edison and O&R.

The Residential HVAC programs promote the replacement of old, inefficient HVAC equipment, with new, high-efficiency equipment by providing incentives to offset the higher cost of purchasing high-efficiency products. A number of heating and cooling efficiency retrofit measures are also included in the programs, with incentives offered to help defray the cost of these measures. The programs are open to customers in residential dwellings with one to four units who have either central air conditioning (electric program) or gas heating or hot water (gas programs). The programs provide cash rebates to customers for the installation of high efficiency gas and electric heating and cooling equipment. Per the NYPSC's direction, both utilities' programs had the same eligible equipment, efficiency requirements, and initial incentive levels. However, the O&R Res HVAC program addresses gas measures only, while Con Edison has programs for gas and electric measures.

The programs have the following objectives[1]:

- Increasing customer knowledge of the performance, reliability and energy savings associated with high-efficiency heating, cooling and water heating equipment and where to obtain energy efficient equipment;
- Increasing the market penetration of energy efficient heating, cooling and hot water equipment in customer homes;
- Helping customers to reduce energy costs and increase the comfort and value of their homes through the proper installation of high-efficiency heating, cooling and hot water equipment;
- Generating customer awareness of energy efficiency programs available through Con Edison, O&R, NYSERDA and other entities to support their energy efficiency goals;
- Maximizing available energy and cost savings for every participant by recommending efficiency opportunities supported by NYSERDA and other programs;
- Monitoring customer perception of the performance and reliability of high-efficiency HVAC equipment and the savings achieved;
- Training program allies such as plumbing and HVAC contractors on the benefits of high-efficiency equipment and on quality installation and service procedures;
- Effectively driving the adoption of quality installation methods among residential HVAC installation contractors;

[1] Program Plans filed with the NYPSC on August 21, 2008.

- Driving new participation in Con Edison's Direct Load Control Program by cross promoting the program through Con Edison's program service contractors.
- Building higher-level customer, trade ally and stakeholder relationships by providing value-added energy efficiency services, training, education, financial incentives, verification and customer support;
- Supporting the local economy by helping to reduce customer utility costs and promoting the adoption of high-quality equipment; and
- Reducing night-time peak demand in residential networks, reducing the need for transmission and distribution facilities and improving reliability in those networks, while also contributing to a reduction in coincident system peak demand.

Table ES1 and Table ES2 summarize the Res HVAC program savings goals and accomplishments for Con Edison and O&R, respectively.

Table ES1: Con Edison – Res HVAC Savings Goals

Program Type	Program Goal 2009-2011	Program Accomplishments through February 2011[2]	Percent of Goal
Electric (MWh)	7,086 MWh	823 MWh	12%
Gas (dekatherms)	116,918 Dth	23,814 Dth	20%

Table ES2: O&R – Res HVAC Participation and Savings Goals

Program Type	Program Goal 2009-2011	Program Accomplishments through February 2011[2]	Percent of Goal
Gas (dekatherms)	26,828 [3] Dth	21,573 Dth	80%

The overall objective of the Res HVAC process evaluation is to assess the effectiveness and efficiency of program design, delivery and implementation processes.

The process evaluation addresses the following six program processes:

- Program planning;
- Infrastructure development;
- Marketing and customer acquisition;
- Program delivery;

[2] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.
[3] O&R's goal reflects the increase found in the June 24, 2010 Order Approving Three New Energy Efficiency Portfolio Standard (EEPS) Programs and Enhancing Funding and Making Other Modifications for Other EEPS Programs.

- Satisfaction with the program; and
- Interactions with other programs.

Within each of these categories, research questions specific to the Res HVAC programs were identified. Appendix A presents the research area, specific research questions within each area, and the section of the report that addresses each question.

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

- Review of program and marketing materials;
- Review of program tracking system, data, and other documents;
- In-depth interviews with:
  - Con Edison and O&R staff
  - Honeywell staff delivering the Con Edison Res HVAC programs
  - Participating HVAC contractors
  - Non-Participating HVAC contractors
- Customer telephone surveys with:
  - Program participants
  - Program non-participants

Conclusions and Recommendations[4]

Program Planning and Design

While O&R is exceeding its original program goals and is at 80% of its extended goal, Con Edison participation is lower than expected. The following factors are likely to be contributing to this:

- PSC goals did not factor in the time necessary to bring a program implementer on board.
- Con Edison goals required a 40-62% participation rate of the eligible market of residential gas furnaces/boilers and central air conditioners, respectively, being turned over each year.
- Some program measures may not be applicable to the multi-family (2 to 4 unit buildings that qualify under the program) market predominant in the urban areas of Con Edison's territory.

Both Con Edison and O&R installed on average more than one measure per program participant (1.3 measures Con Edison gas and 1.5 measures Con Edison electric and 2.5 measures for O&R). Con Edison contractors were also found to be likely to submit multiple projects through the program.

[4] The conclusions and recommendations are presented in more detail in the Conclusions and Recommendations section of the report. They are summarized here.

Although most participants replace their HVAC systems due to old age or poor/no performance, a surprising number (approximately 20 percent for each of the three programs) report they are making upgrades to improve the efficiency of the system, even if the original unit was in working condition.

Incentives are an important factor for motivating customers to upgrade to high efficiency models.

Although many participants report that they would have installed the same equipment with a lower rebate, willingness to purchase high efficiency equipment declines as options move from rebate to no rebate and then to on-bill financing.

Both the utilities are experiencing difficulty with contractor acceptance of the air and duct sealing measures, due to the BPI certification requirement.

Recommendations for Program Planning and Design

Con Edison should revisit the assumptions around market size and housing stock that were used to develop the program goals. Participation goals are quite high relative to the size of the annual market.

Investigate adding commercial measures such as large boilers which are more appropriate for 2 to 4 unit multi-family buildings (which qualify under the program) and seeking approval from the NYPSC for the additional measures.

The programs should investigate the requirements for claiming additional energy savings for equipment that is replaced prior to burnout. The programs would need to seek approval from the NYPSC to claim savings for early replacement.

In anticipation of the expiration of the federal tax credit at the end of 2011, the utilities should investigate alternative financial support for customer installations.

Con Edison program marketing should encourage customers to consider lifecycle costs, rather than just first costs, when purchasing new heating and cooling equipment.

Consider removing BPI certification requirement for duct and air sealing, at least until the contractor community is more familiar with the overall rebate program. However, maintain a requirement for training and ensure that the inspection protocol for the program is robust.

Infrastructure Development

The information collected on the rebate applications and recorded in the program databases is generally adequate for program management, reporting, and evaluation.

O&R gathers much information on the program application that will be useful for a robust impact evaluation; however, this information does not make its way into the tracking spreadsheet.

On average, the time between application submission and rebate payment is eight weeks for Con Edison and four weeks for O&R.

Each program's quality control procedures with respect to customer eligibility, equipment eligibility, and installation verification are robust.

Con Edison's staffing levels for program oversight are low compared to other program administrators.

The Con Edison program rejects approximately 13 percent of the rebate applications submitted. The rejection rate is higher for gas measures (20 percent) than for electric measures (11 percent).

Recommendations for Infrastructure Development

The robustness of Con Edison's data can be improved for the purposes of impact evaluation by capturing the housing type, home square footage, and equipment vintage on the rebate application and tracking these data in the database.

Project cost (both labor and equipment) should be mined from the customer invoices for inclusion in the databases.

Con Edison should consider providing additional staffing capacity to oversee Res HVAC program implementation.

Marketing and Customer Acquisition

Participating contractors are an important driver of program participation to date. The vast majority of program participants heard about the program through their contractor.

There is an opportunity to expand participation by engaging non-participating contractors.

Contractors are leveraging the value proposition of the program to increase their sales of high efficiency equipment, by encouraging their customers to upgrade to high efficiency equipment. Participating customers find the utility rebate to be the most persuasive benefit.

HVAC contractor industry channels are as important as outreach by the utility in making contractors aware of the program.

O&R contractors highlight their participation in the program in their company marketing.

Marketing Recommendations

Enhance the program "pull" through program marketing directed at customers.

Capture the remaining non-participating contractors through outreach by circuit riders (for Con Edison) and the program manager (for O&R).

To increase the penetration of air and duct sealing measures, the programs should advertise the availability of these rebates to weatherization contractors who typically perform these services.

Program Delivery

Most participants report that their contractor, or the contractor they contacted, was already participating in the Con Edison program. The rate was slightly higher for electric participants (68 percent) than for gas participants (56 percent). This likely means that there is untapped program potential in terms of customers who replace equipment through non-participating contractors who do not inform them of the availability of rebates through the program.

Contractors in both programs indicate that the program paperwork requires a significant time commitment.

Recommendations for Program Delivery

The programs can increase the level of support provided to the customers and contractors. The program budgets seem to be sufficient to provide for one or more of the following:

- Con Edison could look up missing manufacturer certification sheets instead of sending them back to the customer or contractor;
- Provide a small incentive to contractors to compensate them for the administrative burdens associated with the application requirements. This could be done for both Con Edison and O&R, though O&R should only consider this for future program cycles or if program participation slows significantly; and/or
- Con Edison could add circuit riders to conduct more personal outreach to both participating and non-participating contractors and conduct field verifications with a shorter turn around, thereby reducing rebate payment times.

Satisfaction with the Program

Participants from both Con Edison and O&R indicated a high level of satisfaction with the measures they installed through the program.

Participants' satisfaction with the timing of receiving their rebate varied between Con Edison electric and gas customers. The average satisfaction score for Con Edison electric program participants was 8.16 and 6.58 for Con Edison gas program participants. Con Edison electric program participants were notably more satisfied with the timing of their rebate payments than their gas counterparts, with 73 percent giving a rating of eight or higher versus 47 percent for gas. O&R customers were very satisfied with the timing and received an average satisfaction rating of 9.02.

Participant satisfaction with the performance of their new equipment was very high.

More than half of the Con Edison Electric (CEE), and Con Edison Gas (CEG) participants indicated they have recommended the program to others (66 percent, and 55 percent respectively). All participants also indicated they would be very likely to recommend the program to others in the future (likelihoods of 9.28, and 8.81 for CEE, and CEG respectively).

A high percentage of O&R participants (ORG), 69 percent, indicated they have already recommended the program to others. ORG participants also indicated they would be very likely to recommend the program to others in the future (a likelihood of 9.52 on a 10 point scale).

O&R participants were very likely to call the utility (63 percent) and when they called they were likely to have their issues resolves the first time they called. This may be due in part to the fact that O&R customers could not download program applications on line, necessitating contact with the utility or possibly a contractor to participate in the program. Con Edison gas customers were significantly more likely to contact the call center (50 percent) than Con Edison electric customers (20 percent).

Contractors participating in the Con Edison and O&R programs indicated being satisfied with the programs due to the increased sales that occur through the program.

Recommendations for Satisfaction with the Program

To increase program satisfaction, Con Edison should work to reduce the average time between application submission and rebate payment and to ensure that all rebates are paid within eight weeks.

Con Ed should continue to provide on-going training to call center representatives so that they are able to respond to customer inquiries and resolve issues on the first call.

Interactions with Other Programs

There is overlap between the Res HVAC programs offered through Con Edison and O&R and the NYSERDA home appliance rebate program.

Each program overlaps with programs of another utility when the customer has different gas and electric providers.

Participant awareness of other programs which are offered to residential customers through Con Edison is very low[5].

Participants were more likely to have heard of other non-utility programs, including those offered by the federal government, State of New York, National Grid, NYSERDA, and manufacturer's rebate programs.

Participants are more likely to have participated in other non-utility programs than other utility programs including those offered by the federal government, State of New York, National Grid, NYSERDA, and manufacturer's rebate programs.

Recommendations for Interactions with Other Programs

[5] At the time of this study, O&R had no other residential programs of which customers could be aware.

To prevent double payment of rebates and double counting of measures, the programs should continue to coordinate with NYSERDA to cross check serial numbers of equipment submitted for rebates with those paid through the NYSERDA program.

Ensure that customer and equipment eligibility is aligned with the National Grid, Central Hudson, and New York State Electric and Gas Res HVAC program.

Introduction

Navigant Consulting, Inc. (Navigant) is leading a series of process evaluations for energy efficiency programs that Consolidated Edison (Con Edison) and Orange and Rockland (O&R) are delivering as part of their Energy Efficiency Portfolio Standard (EEPS) Utility Administered programs, as ordered by the New York Public Service Commission (NYPSC). Navigant and its team (KEMA, Inc., APPRISE Inc., and SERA) were selected to complete process evaluations for all of the Companies' EEPS programs through a competitive bid process.

Con Edison and O&R (the Companies) are committed to independent and transparent program evaluations. Con Edison's Section Manager for Measurement, Verification & Evaluation is administering the process evaluation for both companies. This Section Manager reports directly to the Director of Energy Efficiency Programs to maintain internal independence.

This report is a process evaluation for the gas and electric Residential Heating, Ventilation, and Air Conditioning (Res HVAC) Programs administered by Con Edison and O&R. All goals presented in this report were established by program design. All savings estimates are ex ante, and have not been confirmed by an independent impact evaluation.

1. Background

In May 2007, the New York Public Service Commission (PSC) 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 by 15 percent by 2015. 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, approving the EEPS programs, and requiring the utilities to file their program proposals within 90 days, but requiring that two program proposals, the Small Business Direct Installation (SBDI) and the Res HVAC programs, be expedited and submitted within 60 days.

Con Edison and O&R filed their respective implementation plans for gas and electric Res HVAC and SBDI programs with the NYPSC on August 21, 2008. The electric Res HVAC programs were approved by the NYPSC on January 16, 2009, and were required to launch on June 1, 2009. The gas Res HVAC programs were approved on April 9, 2009, and were required to launch on July 1, 2009.

Con Edison and O&R issued a joint request for proposals for a third-party implementation contractor but began implementing the Res HVAC programs internally with the intention of transitioning administration to the selected implementer. During the time it took to run the solicitation process, the NYPSC determined that the electric portion of the O&R Res HVAC program was not cost-effective and, therefore, did not approve the program beyond 2009. O&R decided to continue implementing the gas Res HVAC program internally, because the program was already running effectively, and the small program budget did not allow for a third-party contractor model.

Con Edison awarded its gas and electric Res HVAC implementation contract to Honeywell in September of 2009 and the purchase order authorizing Honeywell to begin work was signed on October 1, 2009.

2. Program Description

The Residential HVAC programs promote the replacement of old, inefficient HVAC equipment, with new, high-efficiency equipment by providing incentives to offset the higher cost of purchasing high-efficiency products. A number of heating and cooling efficiency retrofit measures are also included in the programs, with incentives offered to help defray the cost of these measures. The programs are open to customers in residential dwellings with one to four units who have either central air conditioning (electric program) or gas heating or hot water (gas programs). The programs provide cash rebates to customers for the installation of high efficiency gas and electric heating and cooling equipment. Per the NYPSC's direction, both utilities' programs have the same eligible equipment, efficiency requirements, and initial incentive levels. However, the O&R Res HVAC program addresses gas measures only, while Con Edison has programs for gas and electric measures.

Figure 1 summarizes the incentives for the gas and electric Res HVAC program energy efficiency measures.

Figure 1: Summary of Res HVAC Program Incentives[6]

Measure	Requirement	Rebate
Central Air Conditioning	SEER ≥ 15 EER ≥ 12.5	$400
	SEER ≥ 16 EER ≥ 13.0	$600
Central Air Source Heat Pump	SEER ≥ 15 EER ≥ 12.0 HSPF ≥ 8.5	$400
	SEER ≥ 16 EER ≥ 13.0 HSPF ≥ 9.0	$600
Duct Blaster Guided Duct Sealing & Blower Door Guided Air Sealing	Completed by a BPI-certified Building Analyst or Envelope Specialist	Up to $300 (Con Ed) Up to $600 (O&R)
ENERGY STAR Thermostat – Gas	Installed with eligible equipment	$25
ENERGY STAR Thermostat - Electric		$25
ECM Furnace Fan	n/a	$200
Electric Heat Pump Water Heater	Energy Factor >2.0	$400
Gas Furnace	AFUE ≥ 90	$200
	AFUE ≥ 92 w/ECM	$400
	AFUE ≥ 94 w/ECM	$600

[6] O&R rebate levels were reduced following the June 24,2010 Order Approving Three New Energy Efficiency Portfolio Standard (EEPS) Progams and Enhancing Funding and Making Other Modification for Other EEPS Programs.

Gas Water Boiler	AFUE ≥ 85	$500
	AFUE ≥ 90	$1000
Steam Boiler	AFUE ≥ 82	$500
Gas Boiler Reset Control	n/a	$100
Gas Indirect Water Heater	n/a	$300

Both utilities implement this program via a network of contractors / trade allies who advise their customers of the availability of rebates. When the programs were launched, Con Edison required that the customer's installation contractor be enrolled in the program in order to be eligible for any equipment rebates except for programmable thermostats. Con Edison's contractors were required to attend a free training course, submit proof of contractor's license and appropriate insurance, and complete a program application in order to be approved as a participating contractor. The contractor training course included training on the program requirements and on the Air Conditioning Contractors of America (ACCA) Manual J load calculation for residential loads. Participating Con Edison contractors who submitted a Manual J load calculation for central A/C and heat pumps received a $200 incentive. Con Edison dropped the requirement to attend the training course and submit the required documentation on October 1, 2010. However, the $200 contractor incentive for submitting a Manual J load calculation is still available to any contractor. The O&R Res HVAC program does not have a participating contractor requirement.

2.1 Program Goals and Objectives

The Res HVAC programs are designed to cost-effectively contribute to New York State's and New York City's energy efficiency goals.

The programs have the following objectives[7]:

- Increasing the market penetration of energy efficient heating, cooling and hot water equipment in customer homes;
- Helping customers to reduce energy costs and increase the comfort and value of their homes through the proper installation of high-efficiency heating, cooling and hot water equipment;
- Increasing customer knowledge of the performance, reliability and energy savings associated with high-efficiency heating, cooling and water heating equipment and where to obtain energy efficient equipment;
- Encouraging the stocking of efficient equipment by providing direct incentives to customers, thereby increasing customer demand for efficient equipment
- Generating customer awareness of energy efficiency programs available through Con Edison, O&R, NYSERDA and other entities to support their energy efficiency objectives;
- Maximizing available energy and cost savings for every participant by recommending efficiency opportunities supported by NYSERDA and other programs;
- Monitoring customer perception of the performance and reliability of high-efficiency HVAC equipment and the savings achieved;
- Training program allies such as plumbing and HVAC contractors on the benefits of high-efficiency equipment and on quality installation and service procedures;

[7] Program Plans filed with the NYPSC on August 21, 2008.

- Effectively driving the adoption of quality installation methods among residential HVAC installation contractors;
- Driving new participation in Con Edison's Direct Load Control Program by cross promoting the program through Con Edison's program service contractors.
- Building higher-level customer, trade ally and stakeholder relationships by providing value-added energy efficiency services, training, education, financial incentives, verification and customer support;
- Supporting the local economy by helping to reduce customer utility costs and promoting the adoption of high-quality equipment; and
- Reducing night-time peak demand in residential networks, reducing the need for transmission and distribution facilities and improving reliability in those networks, while also contributing to a reduction in coincident system peak demand.

Figure 2 and Figure 3 summarize the Res HVAC program savings goals and accomplishments for Con Edison and O&R, respectively. Due to delays in program start-up, the Program Implementation Plan goals for 2009 and 2010 were combined into a single goal to be achieved by December 31, 2010. The NYPSC later combined the 2009/2010 goal with the 2011 goal into a single, three-year target.

Figure 2. Con Edison – Res HVAC Savings Goals[8]

Program Type	Original Program Goal 2009-2011	Program Accomplishments through February 2011[9]	Percent of Goal
Electric (MWh)	4,436 MWh	823 MWh	19%
Gas (dekatherms)	98,881 Dth	23,814 Dth	24%

Figure 3. O&R – Res HVAC Participation and Savings Goals[10]

Program Type	Program Goal 2009-2011	Program Accomplishments through February 2011[11]	Percent of Goal
Gas (dekatherms)	26,828 Dth	21,573 Dth	80%

[8] Goals were subsequently lowered in August 22, 2011 Letter & PSC Order dated February 17, 2012 Approving Utility Target Adjustments.
[9] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.
[10] The Implementation Plan filed by Con Edison and O&R on May 15, 2009 included electric goals for O&R. However, the NYPSC did not approve the electric program beyond 2009; no electric goals have been included. O&R's gas goal has been increased based on the June 24, 2010, NYPSC order.
[11] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

3. Evaluation Objectives

The overall objective of the Res HVAC process evaluation is to assess the effectiveness and efficiency of program design, delivery and implementation processes.

The process evaluation addresses the following six program processes:

- Program planning;
- Infrastructure development;
- Marketing and customer acquisition;
- Program delivery;
- Satisfaction with the program; and
- Interactions with other programs.

Within each of these categories, research questions specific to the Res HVAC programs were identified. Appendix A presents the research area, specific research questions within each area, and the section of the report that addresses each question.

4. Overview of Evaluation Methodology

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

- Review of program and marketing materials;
- Review of program tracking system, data, and other documents;
- In-depth interviews with:
    - Con Edison and O&R staff
    - Honeywell staff delivering the Con Edison Res HVAC programs
    - Participating HVAC contractors
    - Non-Participating HVAC contractors
- Customer telephone surveys with:
    - Program participants
    - Program non-participants

A full description of the Evaluation Methodology is provided in Appendix B.

5. Organization of Report

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

» Key Findings discusses the key findings of the research conducted; and

» Conclusions and Recommendations provide the recommendations for modification to programs.

Key Findings

This section discusses the key findings from the research conducted.

6. Participation Summary

Program participation records were reviewed and summarized to provide an overview of the level of activity within each program, the types of measures installed, the distribution of installed measures across geographies and installation contractors, and the rate of program expenditure.

6.1 Con Edison Participation Summary

As of mid-December 2010, Con Edison had 1,876 total participants in its Res HVAC gas and electric programs: 778 gas participants, 1,168 electric participants, and 70 participants in both programs. The measures installed through each program are shown below in Figure 4. Electric heat pump water heaters have had no participation in Con Edison's program, and are not included in the table.

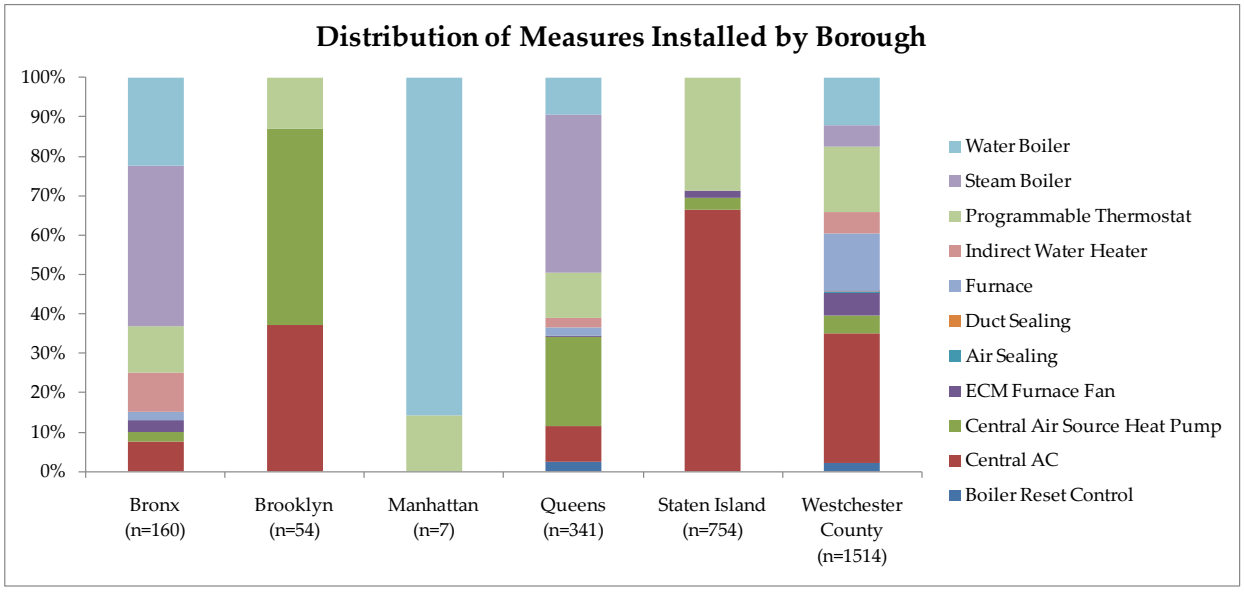
Figure 4. Con Edison Measures Installed

Measure	Number Installed	Percent of Installations
Gas		
Steam Boiler	282	26.6%
Furnace – AFUE 95 with ECM	163	15.4%
Water Boiler – AFUE 90	159	15.0%
Programmable Thermostat	138	13.0%
Indirect Water Heater	105	9.9%
Water Boiler – AFUE 85	100	9.4%
Furnace – AFUE 92	54	5.1%
Boiler Reset Control	42	4.0%
Furnace – AFUE 92 with ECM	9	0.8%
Furnace – AFUE 94 with ECM	6	0.6%
Furnace – AFUE 90	1	0.1%
Total Gas Measures	**1,059**	**100%**
Electric		
Central Air Conditioning, Tier 2	940	53.1%
Programmable Thermostat	397	22.4%
Central Air Source Heat Pump, Tier 1	134	7.6%
Central Air Conditioning, Tier 1	119	6.7%
ECM Furnace Fan	107	6.0%
Central Air Source Heat Pump, Tier 2	69	3.9%
Air Sealing	4	0.2%
Duct Sealing	1	0.1%
Total Electric Measures	**1,771**	**100%**
Total Measures	**2,830**	

The average number of measures installed per program participant is 1.3 for gas measures and 1.5 for electric measures.

Many installations of these measures were concentrated in specific boroughs of New York City. For example, primarily electric measures were installed in Brooklyn and Staten Island, with almost half (47 percent) of all central air conditioners rebated through the Res HVAC program installed on Staten Island. For gas measures, 48 percent of steam boilers rebated through the program were installed in Queens. Figure 5 shows the distribution of measures installed by borough.

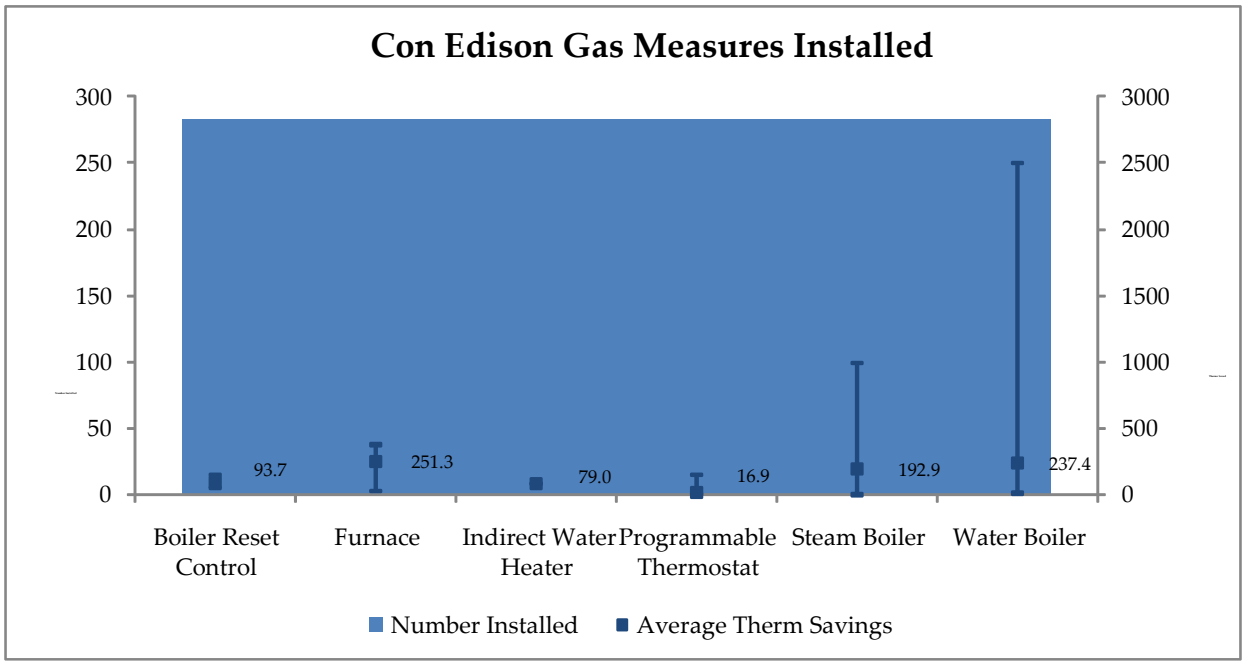
Figure 5. Measures Installed by Borough



Energy savings varies by measure, depending on several factors including the type and size of the unit. Figure 6 and Figure 7 show the average therm and kWh savings for each of the rebated measures in the gas and electric programs, respectively.[12]

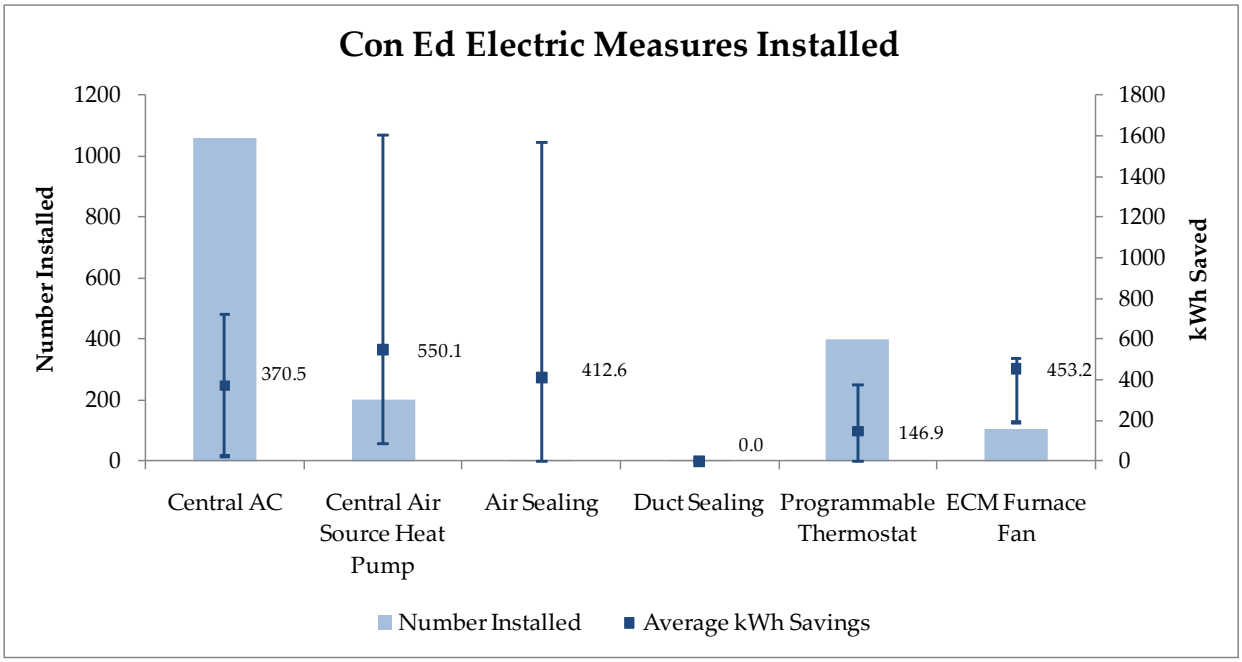
[12] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

Figure 6. Therm Savings of Installed Con Edison Gas Measures



Average therm savings range from 16 therms for programmable thermostats to 250 therms for furnaces. Water boiler therm savings vary significantly, based on the size and efficiency of the equipment.

Figure 7. kWh Savings of Installed Con Edison Electric Measures[13]



The variation in electricity savings for central air source heat pumps is because of the two efficiency tiers, while the variation for air sealing may be due to household characteristics, such as number of windows and doors, existing insulation, and other factors.

Con Edison has spent about 25 percent of its Res HVAC program budgets. The low program spending is due to low participation – most of the program budget is allocated to rebates, but target participation (and rebate) levels have not been met. Figure 8 shows Con Edison's electric program spending as of February 2011.

Figure 8. Con Edison Electric Program Spending through February 2011

Budget Category	Electric Program Budget	Electric Program Expenditures	Percent of Budget
Incentives	$6,916,789	$939,225	14%
Administration & Planning	965,297	206,130	21%
Implementation	853,731	647,083	76%
Marketing & Training	1,796,201	608,774	34%
Evaluation	596,304	147,417	25%
Total Program Budget	**$11,128,322**	**$2,548,629**	**23%**

Source: Con Edison EEPS Program Costs by Cost Component (Budget vs. Actual), through February 2011.

[13] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

Figure 9 shows Con Edison's gas program spending as of February 2011. Both the marketing and Implementation budgets have been exhausted for the gas program.

Figure 9. Con Edison Gas Program Spending through February 2011

Budget Category	Gas Program Budget	Gas Program Expenditures	Percent of Budget
Incentives	$5,464,692	$671,550	12%
Administration & Planning	607,423	235,398	39%
Implementation	178,650	591,752	331%
Marketing & Training	404,950	535,563	132%
Evaluation	350,300	113,136	32%
Total Program Budget	**$7,006,015**	**$2,147,399**	**31%**

Source: Con Edison EEPS Program Costs by Cost Component (Budget vs. Actual), through February 2011.

6.2 O&R Participation Summary

As of February 2011, O&R had 759 total participants in its Res HVAC gas program. The measures installed through this program are shown below in Figure 10. One measure, air sealing, has had no participation in O&R's program; this measure is not listed below.

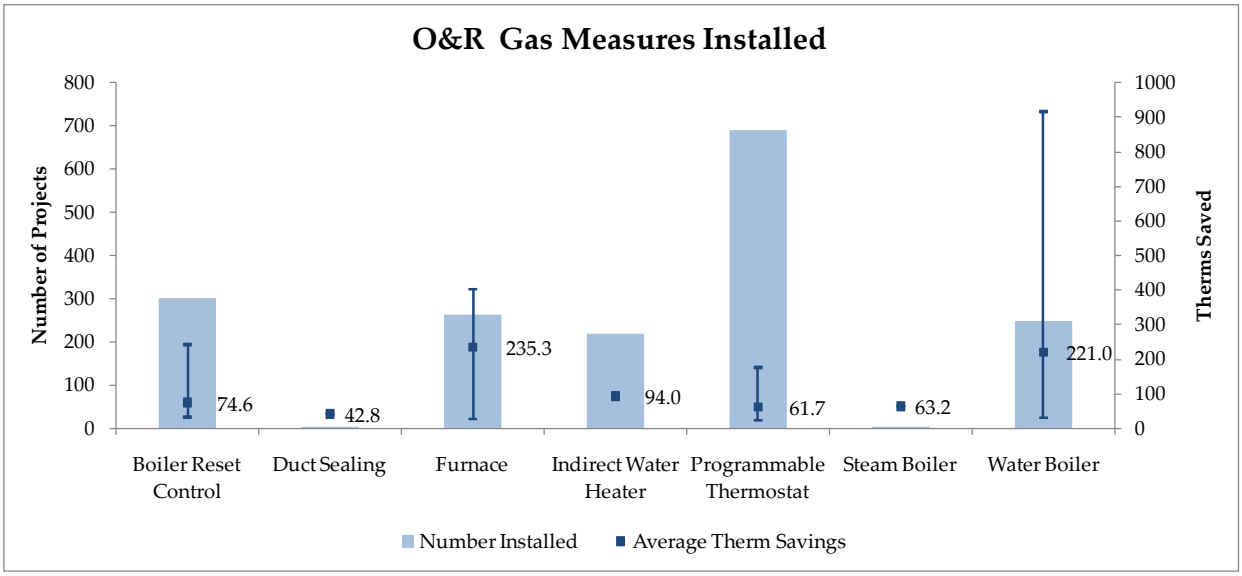
Figure 10. O&R Measures Installed through February 2011

Measure	Number Installed	Percent of Installations
Gas		
Programmable Thermostat	720	37.7%
Boiler Reset Control	310	16.2%
Water Boiler – AFUE 90	298	15.6%
Furnace – AFUE 94 with ECM	265	13.9%
Indirect Water Heater	223	11.7%
Water Boiler – AFUE 85	80	4.2%
Furnace – AFUE 92 with ECM	12	0.6%
Duct Sealing	1	0.1%
Steam Boiler	1	0.1%
Furnace – AFUE 90	0	0.0%
Total Gas Measures	**1,910**	

The average number of measures installed per program participant is 2.5 measures. The average therm savings for these installed projects are presented in Figure 11.[14]

[14] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

Figure 11. Therm Savings of Installed O&R Gas Measures through February 2011



Average therm savings range from 43 therms for duct sealing to 235 therms for furnaces. Similar to the savings shown in Figure 11, water boiler therm savings vary significantly, based on the size and efficiency of the equipment.[15]

O&R has spent over 50% of its Res HVAC gas program budget. Figure 12 shows O&R's Res HVAC program spending as reported in the February 2011 scorecard.

Figure 12. O&R Res HVAC Program Spending through February 2011

Budget Category	Gas Program Budget	Gas Program Expenditures	Percent of Budget
Incentives	$799,455	$535,811	67%
Administration & Planning	$46,676	$11,869	25%
Implementation	$84,717	$57,834	68%
Marketing & Training	$42,846	$14,607	34%
Evaluation	$51,247	$12,000	23%
Total Program Budget	**$1,024,941**	**$632,121**	**61.7%**

Source: O&R February 2011 Program Scorecard.

6.3 Contractor Participation Summary

Contractors played an integral role in the Res HVAC programs, though contractor participation varied by program. Approximately 56 percent of participating contractors in O&R territory installed only 1 project, where Con Edison had the same percentage (56-57 percent) of contractors with between 3 and 20 projects. Figure 13 shows the cumulative percent of contractors by the number of projects installed. This

[15] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

figure illustrates that O&R has a high concentration of contractors who installed only a few projects. In fact, 80 percent of O&R contractors installed fewer than 5 projects, while 80 percent of Con Edison gas contractors installed 10 projects or fewer, and 80 percent of Con Edison electric contractors installed 20 projects or fewer.

Figure 13. Percent of Contractors by Number of Projects through February 2011

Number of Projects	Con Ed Gas (n=136)	Con Ed Electric (n=102)	O&R Gas (n=184)
1	17.6%	14.7%	56.0%
2-5	48.5%	32.4%	29.3%
6-10	17.6%	20.6%	6.5%
11-20	8.1%	15.7%	4.3%
>21	8.1%	16.7%	3.8%

Source: ConEd data through Mid-December 2010 and O&R data through February 2011.

Con Edison had an average of six gas projects per contractor and 11 electric projects per contractor, while O&R averaged 4 gas projects per contractor.

6.4 Demographics of Surveyed Participants and Non-Participants

Samples of those who installed rebated items through the Res HVAC program (participants), and those who did not install rebated items (non-participants) were surveyed as part of this evaluation. Figure 14 provides a comparison of key demographics for the 602 surveyed participants and the 303 surveyed non-participants. The demographics appear to be similar for participants and non-participants in each utility group. The Con Edison gas non-participants had a higher proportion of females and a lower occurrence of university/college degrees than did Con Edison gas participants.

	Participants						Non-Participants					
	Con Edison Electric (n=200)		Con Edison Gas (n=201)		O&R (n=201)		Con Edison Electric (n=102)		Con Edison Gas (n=100)		O&R (n=101)	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Gender												
Male	112	56%	131	65%	117	52%	59	58%	48	48%	52	51%
Female	88	44%	70	35%	109	48%	43	42%	52	52%	49	49%
Household Income*												
Below $80,000	42	21%	37	18%	65	29%	24	24%	28	28%	31	31%
Above $80,000	88	44%	115	57%	98	43%	53	52%	40	40%	45	45%
Education												

University/College Degree	126	63%	163	81%	147	65%	70	69%	66	66%	57	57%

Figure 14. Surveyed Participant and Non-Participant Customer Demographics

*Does not sum to 100% due to the remaining sample giving a "prefer not to say" response.

Figure 15 provides a comparison of key household demographics for the surveyed participants and non-participants for both utilities. Although there was some disparity between Con Edison participants and O&R participants (most notably central AC, and hot water heater fuel), the data between participants and non-participants is comparable for almost all of the categories, implying that both consumer groups exhibit similar household system characteristics.

Figure 15. Surveyed Participant and Non-Participant Customers' Home Information

	Participants						Non-Participants					
	Con Edison Electric (n=200)		Con Edison Gas (n=201)		O&R (n=201)		Con Edison Electric (n=102)		Con Edison Gas (n=100)		O&R (n=101)	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Homeownership												
Own	198	99%	200	100%	201	100%	101	99%	98	98%	96	95%
Rent	2	1%	1	0%	0	0%	1	1%	2	2%	5	5%
Hot Water Heater												
Electric	14	7%	8	4%	6	3%	4	4%	4	4%	6	6%
Gas	163	82%	187	93%	186	93%	82	80%	92	92%	91	90%
Heat Source												
Natural gas	166	83%	198	99%	196	98%	82	80%	100	100%	101	100%
Electricity	8	4%	3	1%	1	1%	1	1%	0	0%	0	0%
Oil	21	11%	0	0%	0	0%	0	0%	0	0%	0	0%
Air Conditioning Type												
Central air conditioning	198	99%	95	47%	152	76%	91	89%	46	46%	58	57%
Room air conditioning	0	0%	91	45%	36	18%	0	0%	44	44%	31	31%
Both CAC & room AC	2	1%	7	3%	4	2%	11	11%	1	1%	4	4%
No air conditioning							0	0%			8	8%

7. Program Planning and Design

The Res HVAC program was designed to be uniform for each participating utility, but has produced varying results. Sections 7.1 and 7.2 will give an overview of the program planning, design and goals. Then, Section 7.3 will discuss potential barriers to meeting program goals, followed by Section 7.4, which will examine the measures offered through the Res HVAC programs and their applicability to the 1-4 family market. Section 7.5 will discuss barriers to participation, as found through surveys of program participants and non-participants. Finally, Section 7.6 will summarize the program incentives set by the NYPSC, and compare them to the incremental costs of the rebated equipment.

Key findings from Section 7 include the following:

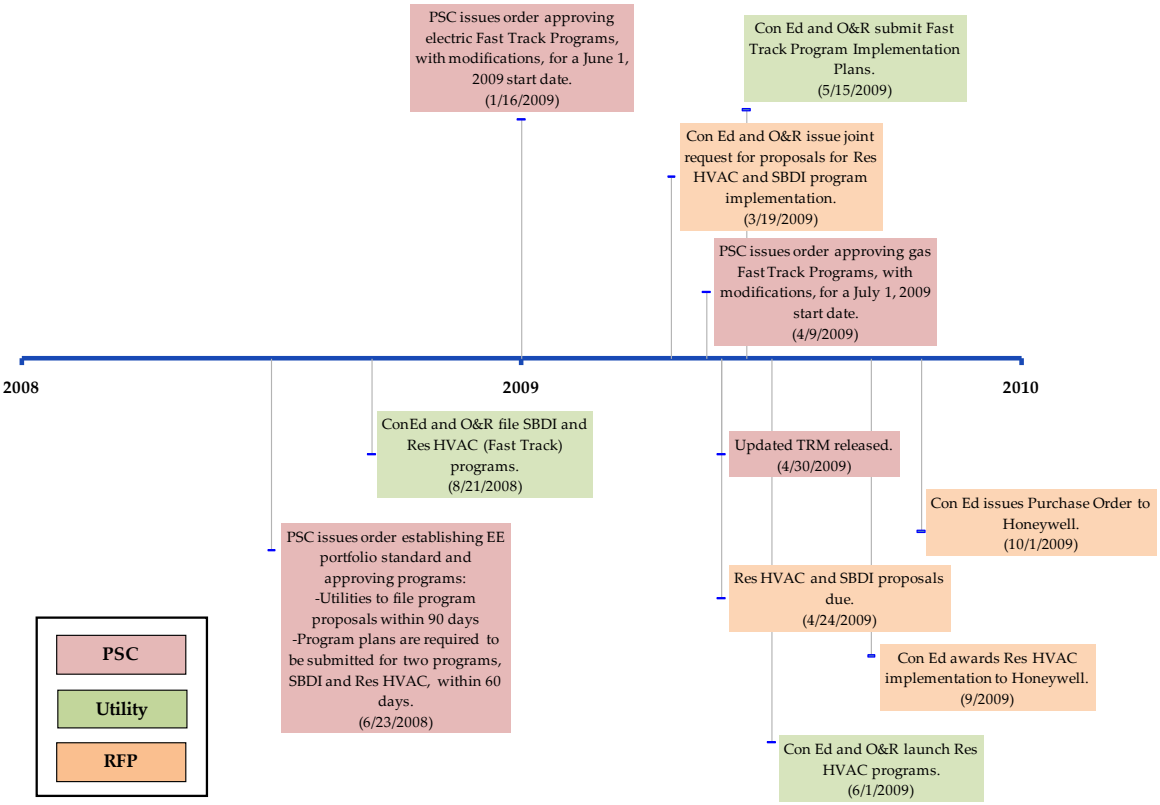
- While O&R is exceeding their program goals, Con Edison participation is lower than expected.
- Utilities operating in New York City are behind on meeting their gas goals, relative to the other utilities whose service territories are more suburban or rural.
- Contractors are most often promoting lower long-run operating costs as a key value proposition for upgrading to high efficiency models. However, participating customers find the utility rebate to be the most persuasive benefit.
- Both the utilities are experiencing difficulty with contractor acceptance of the air and duct sealing, and quality installation[16] measures, at least in part because of the BPI certification requirement.

7.1 Program Planning

The Con Edison and O&R Res HVAC programs were approved by the NYPSC in January 2009 and were required to launch in June and July of 2009. Figure 16 shows key moments along the program timeline, from the initial order to implement efficiency programs, to selecting Honeywell as Con Edison's implementation contractor.

[16] Only the Con Edison Res HVAC program includes a contractor incentive for quality installations.

Figure 16. Residential HVAC Program Timeline



The NYPSC order in January 2009 allowed less than six months to plan, build infrastructure, launch, and begin marketing the programs. This timeframe would have been aggressive for entities with sufficient program staffing and infrastructure in place, but was very difficult for Con Edison and O&R who were not able to hire staff until the programs were approved. In addition, running a sizable solicitation process, such as for an almost $20 million program implementation contract (as occurred with Con Edison), takes significant resources in terms of time and human capital. A typical request for proposals process takes five to seven months to complete and involves the following steps:

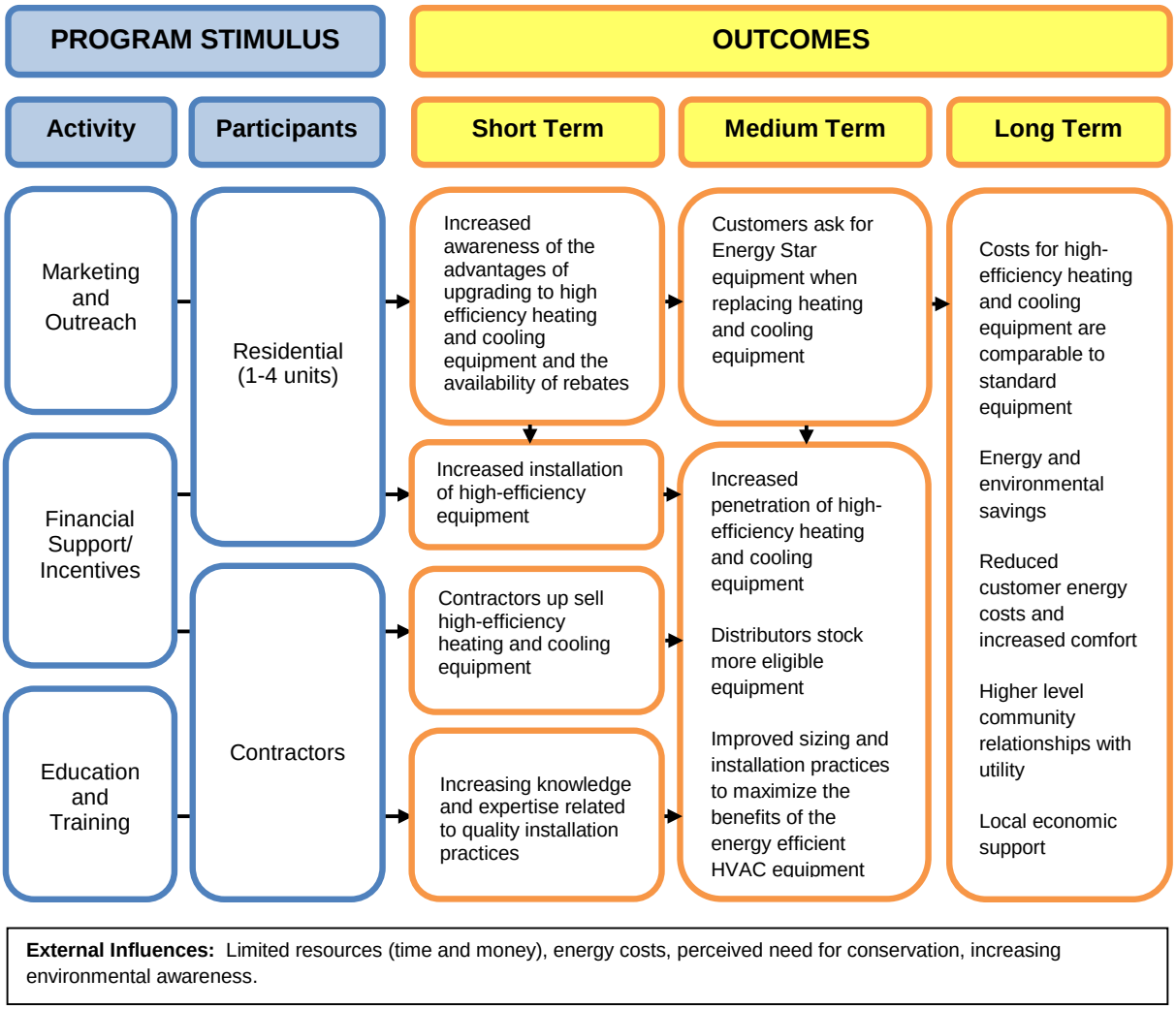
- Preparing and issuing the request for proposals document;
- Allowing time for potential bidders to review the document;
- Holding a pre-bid conference;
- Conducting written questions and answers;
- Allowing sufficient time for proposers to prepare their proposals;
- Reviewing and scoring the proposals once submitted;
- Holding in-person interviews with the top bidders;
- Notifying the winning proposer;
- Conducting contract negotiations; and
- Conducting a kick-off meeting.

Con Edison and O&R demonstrated timely progress in this process by issuing their joint request for proposals in March 2009, requiring proposals back in just over one month, and awarding the implementation to Honeywell in September 2009. In addition, contract negotiation took less than one month, showing considerable efficiency and cooperation by all parties.

7.2 Program Design and Goals

The Res HVAC program is designed to address several market barriers to energy efficiency in the residential (1- to 4-unit) market segment. The rebate program is designed to facilitate the purchase of higher efficiency equipment by providing financial incentives to offset the higher first costs, and depends on a robust pool of trade allies to facilitate the rebate application process and ensure the availability of eligible equipment. The Res HVAC program logic model is presented in Figure 17 below. 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 the effects.

Figure 17. Res HVAC Program Logic Model



One of the program goals defined in the program logic model is increased installation of high-efficiency equipment and the energy savings associated with it. The NYPSC approved energy savings goals for each year of the utilities' gas and electric programs. As the program progressed, NYPSC approved the combining of the individual yearly goals into a total 2009-2011 program goal. The three-year goals and program accomplishments for Con Edison and O&R are presented in Figure 18 below.

Figure 18. Program Savings Goals

Utility (Program)	3-Year Savings Goal	Savings Acquired to Date*	Percent of Goal Acquired
Con Edison (electric)	7,086 MWh	823 MWh	12%
Con Edison (gas)	116,918 Dth	23,814 Dth	20%
O&R (gas)	26,828 Dth	21,573 Dth	80%

*Through February 2011, as reported in the February 2011 scorecards submitted by each utility to the NYPSC. Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

Figure 18 shows that O&R has surpassed its original participation goal, and is at 80% of the modified goal from the June 2010 DPS order. Findings and recommendation throughout this report related to increasing program participation should be reviewed in this context. O&R anticipates meeting the participation goals and exhausting program funding prior to the end of the program cycle. Though participating contractors were not queried about this specifically, a program hiatus will likely cause confusion and frustration on the part of both contractors and customers. Accelerating the rate of participation will only exacerbate this issue.

7.3 Barriers to Achieving Program Goals

As shown in Figure 18, Con Edison has not yet reached its goal for either program. Customers eligible for the program are those who reside in single-family (1-4 units) households, pay the System Benefit Charge on their utility bill, and have gas heat or water heat, or central air conditioning, for the gas and electric programs, respectively. The total number of eligible households in Con Edison's service territory, along with the target program participation is listed below in Figure 19.

Figure 19. Number of Households Eligible for the Res HVAC Program

Utility (Program)	Number of Eligible Households[17]	Target Program Participation[18]	Percentage of Eligible Households	Number of Participants*	Percentage of Target
Con Edison (electric)	210,000	26,146	12.5%	1,168	5%
Con Edison (gas)	215,000	13,016	6.1%	778	6%

*As reported in the program database: Con Ed through mid-Dec 2010.

Figure 19 shows that Con Edison needs a high participation rate in terms of percentage of eligible customers in order to reach their program goals. This is a challenge, since only 41 percent of households

[17] These figures are presented in the Expedited Fast Track Electric and Gas Energy Efficiency Programs Implementation Plan, submitted by Con Ed and O&R on May 15, 2009. The Con Ed figures were estimates by the utility, but are confirmed by the 2010 Energy Efficiency Potential Study conducted by Global Energy Partners.
[18] Target program participation is presented in the program implementation plan, by direction from the NYPSC.

are single-family homes.[19] Con Edison's program participation has been the highest in Westchester County and Staten Island, with over 75 percent of participants residing in these areas.

Further, Figure 19 also can be used to obtain a rough approximation of the percentage of the available HVAC heating or cooling market expected to participate in the programs by dividing the number of eligible households by the typical life of the heating or cooling equipment included in each program. Assuming a 20-year life for the gas heating equipment and a 15-year life for central air conditioning equipment, the targeted 3-year participation on average suggests the annual penetrations for high efficiency equipment shown below in Figure 20.

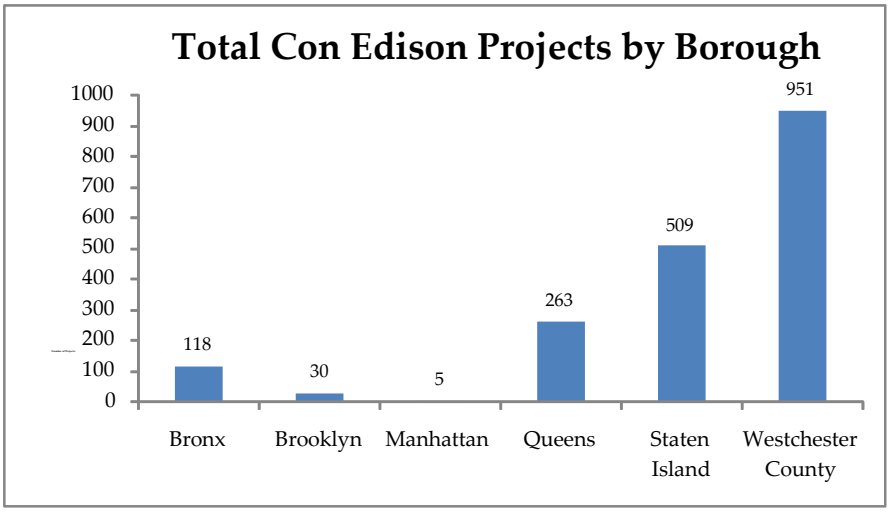
Figure 20. Annual Penetrations for High Efficiency Equipment

Utility (Program)	Annual Number of Units Turning Over	Annual Expected Participation in Program[20]	Expected Participation As Percent of Total Annual Turnover
Con Edison (electric, central AC)	14,000	8,715	62%
Con Edison (gas furnaces or boilers)	10,750	4,339	40%

Figure 21 shows Con Edison's actual program participation by borough.

[19] US Census. DP-4. Profile of Selected Housing Characteristics: 2000. Geographic Area: Manhattan borough, Westchester County, Bronx borough, Brooklyn borough, Queens borough, Staten Island borough.
[20] Annual participation is Target Participation in Figure 19, divided by 3, for the 3-year programs.

Figure 21. Con Edison's Program Participation by Borough, as of mid-December 2010[21]



As shown in Figure 21, Manhattan and Brooklyn have the fewest program participants, yet households in those boroughs make up nearly 50 percent of the total customers who reside in Con Edison's service territory.[22] The low participation in Manhattan can be attributed to the number of eligible customers in this borough. According to housing data from the US census, only 3.5 percent of households in Manhattan are in 1-4 unit buildings.[23] Multi-family buildings, including 2-4 unit buildings, are more common in the most populous areas of Con Edison territory (e.g., Manhattan, Brooklyn, Bronx, parts of Queens), but many of the rebated HVAC technologies are not typically used in older multi-family buildings in New York[24]. That is likely why market uptake is much higher in Staten Island and Westchester, where detached single family homes are common. Furthermore, in a multi-family condo or co-op building, improvements to a central system require approval of multiple owners, and getting consensus on a higher priced option can be difficult, especially if there is an absentee owner.

Another utility implementing the gas Res HVAC program in New York City is National Grid's Brooklyn Union Gas. As of February 2011, National Grid has only met 26 percent of its 3-year program goal, similar to Con Edison's 20 percent. A comparison of all utilities' gas Res HVAC programs is shown in Figure 22.

[21] Source: Con Ed's actual program database, mid-December 2010.

[22] US Census. DP-4. Profile of Selected Housing Characteristics: 2000.

[23] Ibid.

[24] Navigant Consulting professional experience. See further discussion in Section 7.4.

Figure 22. Gas Program Performance in Relation to Program Goals through February 2011

Utility	Savings Acquired (Dth)[25]	3-Year Savings Goal (Dth)	Percent of Goal Acquired
Rochester Gas and Electric	315,353	75,220	419%*
National Grid Niagara/Mohawk	237,332	75,963	312%*
Orange and Rockland Utilities	21,572.6	10,890	198%*
New York State Electric & Gas Corporation	130,321	75,220	173%*
Corning Natural Gas Corporation	11,631	9,223	126%*
Central Hudson Gas & Electric	7,331	6,182	119%*
National Grid Long Island	54,510	84,238	65%
St. Lawrence Gas Company	5,572	9,305	60%
National Grid New York	23,772	92,832	26%
Consolidated Edison Company	23,814	116,918	20%

*These programs received more funding because they reached their goal early and now have revised goals.

Utilities outside of New York City have tended to meet and exceed their program goals, while utilities serving the New York City area, such as Con Edison and National Grid of New York, are still far from their energy savings targets.

Only three electric utilities were approved by NYPSC to run electric Res HVAC programs: Con Edison, Central Hudson Gas & Electric, and National Grid Niagara/Mohawk. Of these three utilities, only Con Edison and Central Hudson were approved to run a three-year program.[26] Both Con Edison and Central Hudson need a significant participation increase to achieve their savings goals. Figure 23 shows their progress as of February 2011.

Figure 23. Electric Program Performance in Relation to Program Goals through February 2011

Utility	Savings Acquired (MWh)[27]	3-Year Savings Goal (MWh)	Percent of Goal Acquired
Con Edison	823	7,086	12%
Central Hudson Gas & Electric	644	2,011	32%

The low savings numbers for both Con Edison and Central Hudson suggest that there may be a problem with the program design. Electric measures offered through the program may not be appropriate for the 2-4 unit market in these territories, or the incentives are too low to motivate program participation. These factors will be further discussed in Section 7.4 and Section 7.5. Honeywell is the implementation contractor for both Con Edison and Central Hudson.

[25] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.
[26] The NYPSC only approved National Grid's 2009 electric Res HVAC program, and instructed them to submit a proposal for a 2010-2011 program to build on the 2009 program. That application was not approved by the NYPSC, so the program shut down in early 2010, after having met 713 percent of their 2009 goal.
[27] Reported energy savings acquired are ex ante and have not been confirmed by an independent impact evaluation.

7.4 Applicability of Program Measures

As mentioned in Section 7.3, the measures rebated through the Res HVAC program may not be appropriate for the 1-4 unit market in the urban areas of Con Edison's service territory. This section discusses specific rebated technologies, and their applicability in the 1-4 unit market.

- ***Central Air Conditioning, SEER ≥ 15, EER ≥ 12.5 or SEER ≥ 16, EER ≥ 13***
  - Two to four unit buildings are unlikely to have ducted central air conditioning, unless they are quite new or have been totally renovated. This type of system would not apply to most 2-4 unit buildings; those buildings would most likely use window or wall AC units.
  - For 3-4 unit buildings, a central cooling system to cool all the units would often need to have a higher capacity than 5.5 tons. In many cases, the building might use multiple residential sized units, and the SEER rating would apply. However, if a building uses a single unit, it would not meet the program eligibility requirements because the SEER rating only applies to units with capacities of 5.4 tons and below. Higher capacities are considered commercial units and are not rated by SEER but rather by EER only.
- ***Central Air Source Heat Pumps***
  - Heat pumps are not very common in Con Edison territory, as the cold climate and high electricity costs make them less attractive for heating than gas. According to a recent potential study conducted for Con Edison (2010 potential study), only 2 percent of all residences (not just 1-4 unit residences) in Con Edison's territory use heat pumps for space heating or cooling.[28]
  - Additionally, multi-family residences (2-4 units) are unlikely to have ducted forced air systems. They are most likely to have hydronic heating and room air conditioning, so central ducted heat pumps would not be applicable in this market. The 2010 potential study notes that 79 percent of all residences use room air conditioners.
- ***Duct Blaster Guided Duct Sealing***
  - As noted above, 2-4 unit households are unlikely to have central ducting unless they are very new or have been completely renovated.
- ***Electric Heat Pump Water Heater***
  - Few homes in Con Edison territory are likely to use electric water heating, since gas is widespread and heating oil is also an option in many cases. In fact, the 2010 potential study notes that only 4 percent of all residences have electric water heating, which is expected because electric water heating, particularly in the Con Edison territory, is very expensive compared to gas.
  - For some 2-4 unit residences, the available heat pump water heater products have insufficient capacity. For example, the General Electric and Rheem heat pump water heaters have a 50 gallon tank, which is sufficient for a single-family residence, but not for a multi-family residence with shared water heater. The AO Smith product is the only product on the market with a 60 or 80 gallon tank; the 80 gallon would be suitable for a 2-family residence but probably not for a 3-4 family residence. For the larger buildings, a commercial unit would be the best option.

[28] Global Energy Partners. Energy Efficiency Potential Study for Consolidated Edison Company of New York, Inc., Volume 2: Electric Potential Report, March 2010.

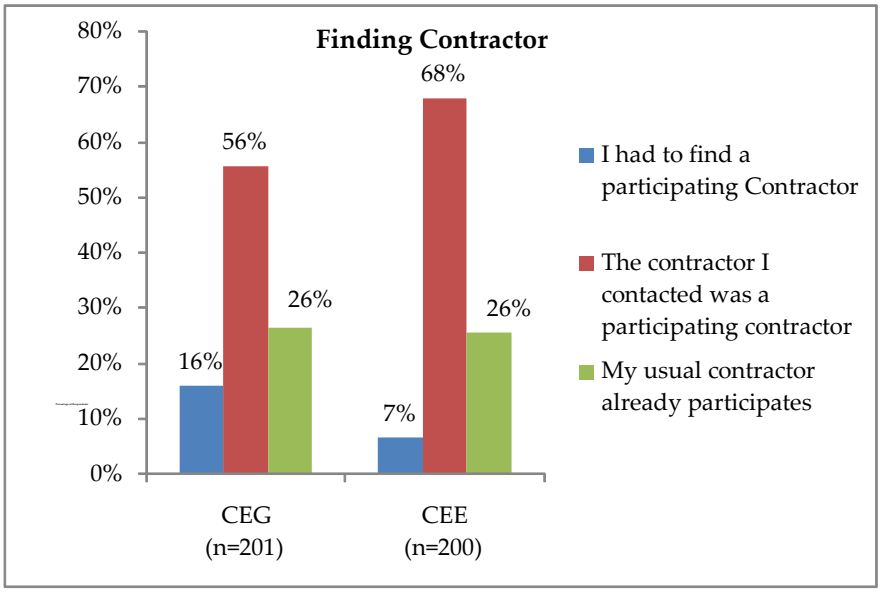
- *Gas Furnaces, various AFUE ratings*
  - The comments above regarding central ducted systems in 2-4 family residences apply to gas furnaces, as well. Heating in these residences is most likely to be a central boiler, not a furnace. The 2010 potential study lists the saturation of boilers in 1-4 unit households at 47 percent, compared to only 22 percent of 1-4 unit households with gas furnaces.[29]
  - AFUE is a rating used for residential furnace systems with capacities up to 225,000 Btu/hr. This would be applicable to most 2 unit multi-family buildings and many 3 unit buildings. But for larger 3 unit or 4 unit buildings a larger commercial unit would be a better option.

Due to these reasons, program success in the 2-4 unit residential market is somewhat limited. This impacts Con Edison's ability to meet its goal in dense urban areas with a high percentage of 2-4 unit households.

7.5 Barriers to Participation

Initially, one of Con Edison's program eligibility requirements was that customers must use a certified contractor. In order to increase participation, this requirement was dropped on October 1, 2010. Program participants were surveyed about whether they had to find a participating contractor. As Figure 24 demonstrates, 16 percent of gas program participants and 7 percent of electric program participants needed to find a participating contractor.

Figure 24: Participants Ability to Find Participating Contractor

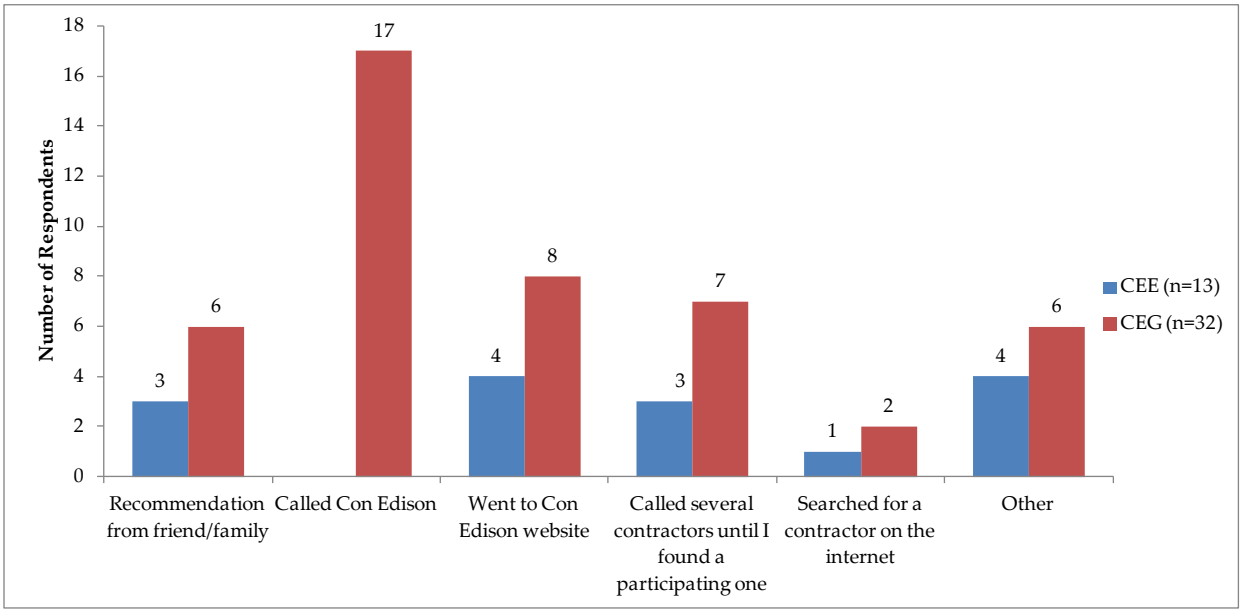


This suggests that the contractor training requirement was not a significant barrier, but removing the requirement may still increase participation. Of those who reported that they needed to find a

[29] Global Energy Partners. Energy Efficiency Potential Study for Consolidated Edison Company of New York, Inc., Volume 3: Gas Potential Report, March 2010.

participating contractor, Figure 25 shows that most called Con Edison or went to Con Edison's website for help identifying a participating contractor. Con Edison gas respondents most commonly reported finding a participating contractor by calling Con Edison. No Con Edison electric respondents reported calling Con Edison as a method of finding a contractor.

Figure 25: Method of Finding Participating Contractor – Con Edison



A participating contractor was not required for O&R program eligibility. When surveyed about how these participants chose their contractor, almost half (47 percent) reported choosing their usual contractor, and 24 percent chose based on a recommendation from a friend or family member. Only 2 percent of the 201 O&R participants surveyed reported calling O&R for assistance with selecting a contractor.

The BPI certification requirement is reported as a barrier to performing air and duct sealing, and quality installation measures through the Res HVAC program. Low participation rates for these three measures are likely due in part to this certification requirement. Contractor interviews revealed that obtaining BPI certification is not a priority. Almost all contractors interviewed reported that they were either unaware of this certification, or they have no plans to obtain it. Reasons cited for not pursuing BPI certification are the cost and length of time to obtain certification, as well as the certification's applicability to their business. One participating contractor mentioned that "they don't need BPI-certification to do the type of work they do." Another issue is that, according to BPI, the certification is for contractors engaged in home performance and weatherization retrofit work and therefore, is likely not applicable to the installation contractors participating in the Res HVAC programs. One BPI-certified contractor reported that their certification is advantageous when working in new residential construction because New York code requires duct blaster tests. However, the Res HVAC program targets equipment upgrades for *existing* 1-4 family homes, not new construction, making BPI-certification less important for contractors performing these upgrades.

BPI provided Navigant with a list of all certified contractors in New York State, by zip code. Approximately 20 percent of the 4,000 BPI-certified contractors are located within Con Edison's service territory, and only 3 percent are located within O&R's service territory. From Con Edison contractor participation data (as of June 9, 2010), only 12 percent of contractors who installed measures through the Res HVAC program are BPI-certified. This indicates that given the certification requirement, the opportunity to perform air and duct sealing, and quality installation measures is fairly low, compared to measures with no certification requirement.

Program participants reported a variety of reasons for installing their high efficiency equipment through the Res HVAC program. The top reasons that participants gave for installing their high efficiency equipment are presented in Figure 26 below. Both Con Edison and O&R participants most often cited that they installed the measure because their current equipment was no longer operating, but surprisingly, a large number also did so to improve the efficiency of the system (i.e., their purchase decision was in some respect discretionary).

Figure 26. Participants' Reasons for Installing Measures

Reason for purchasing high efficiency equipment	Con Ed Electric n=118	Con Ed Gas n=130	O&R n=114
The existing system was no longer operating	30.5%	37.0%	33.3%
Wanted to improve the *efficiency* of the system	21.2%	19.2%	20.1%
Wanted to improve system's performance system/System wasn't working well enough	17.8%	26.9%	18.4%
New system (not a replacement)	12.7%	2.3%	0.9%
System was old	2.5%	6.2%	12.3%
Wanted to improve the efficiency *and* performance of the system	1.7%	0.0%	8.8%
Oil to Gas conversion	0.0%	6.9%	0.0%
Other	12.7%	1.5%	6.1%

Additionally, some participants reported that their contractors influenced their decision to purchase high efficiency equipment. These participants reported the most persuasive reason the contractor gave for buying high efficiency equipment, as shown in Figure 27. The program rebate was a strong motivator, with over 50 percent of participants reporting the rebate as a persuasive reason to install the high efficiency equipment.

Figure 27. Most Persuasive Reason Contractors Gave to Encourage Participation

	Con Ed Electric	Con Ed Gas	O&R

Contractor's reason for purchasing high efficiency equipment	n=74	n=68	n=75
Rebate from utility	59.1%	66.1%	53.8%
Lower operating cost in the long run than standard efficiency	21.2%	16.1%	23.1%
Better performance than standard efficiency	9.1%	9.7%	6.2%
Federal Tax Credit	1.5%	3.2%	1.5%
Lower price than standard efficiency equipment	1.5%	0.0%	0.0%
Other	7.6%	4.8%	15.4%
Don't Know	10.8%	8.8%	13.3%

Conversely, non-participants who purchased high-efficiency equipment reported their reasons for not purchasing their equipment through the Res HVAC program. Of these few purchasers (five Con Edison electric customers and one Con Edison Gas customer), the Con Edison gas customer indicated their new equipment was purchased through warranty, two Con Edison electric customers said they did not have time or didn't want to deal with the rebate application, two said the equipment they purchased did not qualify and the remaining respondent thought they were participating. Some of these purchasers reported that they did not know about the Res HVAC program. Had they known about the rebate program, using a scale of "1" to "10" where "1" is not at all likely, and "10" is extremely likely, Con Edison electric non-participants reported a 9.1 average likelihood of participating in the program, Con Edison gas non-participants reported an 8.9 average likelihood of participating while O&R non-participants reported an 8.6 average likelihood of participating. This suggests that marketing efforts to increase awareness of the rebate program may yield significant benefits. Marketing efforts are detailed in Section 9.

When non-participants who had not purchased high efficient equipment were asked about their likelihood of participating in this program in the future when offered the rebates available through the program (and using the same "1" to "10" scale), Con Edison electric non-participants reported a 8.3 average likelihood of participating in the future, Con Edison gas non-participants reported a 7.6 average likelihood of participating in the future while O&R non-participants reported an average likelihood of 8.0. Some respondents reported that they were unlikely to participate (a rating less than 5). When probed for their reasons for not participating in the future, most Con Edison and O&R respondents reported that they needed more information about the program, had recently purchased new equipment or could not afford to participate.

Circumstances under which non-participants indicated they would buy high efficiency equipment are presented in Figure 28. Aside from purchasing high efficiency equipment when their current equipment breaks, cost is a driver of this decision with 15 to 40 percent of non-participants citing their desire for a higher rebate or lower equipment costs. Another important factor is the payback period for recovering the additional cost of equipment. Marketing materials should leverage this insight; program messaging can be designed to highlight the rapid payback of high efficiency equipment.

Figure 28. Non-Participant Reasons for Purchasing HE Equipment

Reasons for buying HE Equipment	Con Ed Electric n=35	Con Ed Gas n=47	O&R n=34
If my current equipment fails	52.9%	34.0%	17.6%
If payback in energy savings is reasonable/if the additional cost will be paid back in energy savings quickly	5.9%	17.0%	14.7%
Higher rebate	5.7%	14.9%	26.5%
If high efficiency equipment becomes less expensive	11.8%	10.6%	14.7%
Want more information about the program	2.9%	2.1%	5.9%
I rent my home and do not have the authority to upgrade my equipment	0.0%	4.3%	0.0%
Would never purchase the high efficiency model/version	0.0%	0.0%	0.0%
When I have extra money to purchase high efficiency equipment	0.0%	0.0%	8.8%
Other	0.0%	0.0%	0.0%
Don't know	8.8%	10.6%	11.8%

7.6 Program Incentives

Res HVAC program incentives were set by the NYPSC in their Order Approving "Fast Track" Utility-Administered Gas and Electric Programs. These incentives were designed to be uniform for all utilities administering this program in their service territories. When preparing their initial filing for the Res HVAC program, Con Edison retained the Cadmus Group to develop potential rebates for program equipment. The originally filed rebates, and the NYPSC mandated rebates are shown in Figure 29 below. Many of the NYPSC gas rebates are the same as those filed by Con Edison, but most of the electric rebates were lowered by the NYPSC. These lower rebates might contribute to the difficulty in meeting Con Edison's electric program goals.

Figure 29. Con Edison Rebate Comparison

Measure	Originally Filed Rebate	NYPSC Set Rebate	Difference
Gas			
Boiler Reset Control	--	$100	n/a
Furnace – AFUE 90	$100	$200	$100
Furnace – AFUE 92	$100	$200	$100
Furnace – AFUE 92 with ECM	$400	$400	$0
Furnace – AFUE 94 with ECM	--	$600	n/a
Furnace – AFUE 95 with ECM	--	$600	n/a
Indirect Water Heater	$300	$300	$0
Programmable Thermostat	$25	$25	$0
Steam Boiler	$200	$500	$300
Water Boiler – AFUE 85	$1,000	$1,000	$0
Water Boiler – AFUE 90	$1,000	$1,000	$0
Electric			
Air Sealing	--	$300	n/a
Central Air Conditioning, Tier 1	$500	$400	($100)
Central Air Conditioning, Tier 2	$950	$600	($350)
Central Air Source Heat Pump, Tier 1	$350	$400	($50)
Central Air Source Heat Pump, Tier 2	$650	$600	($50)
Duct Sealing	--	$300	n/a
ECM Furnace Fan	--	$200	n/a
Programmable Thermostat	$25	$25	$0

In order to motivate participation, the rebate offered through the Res HVAC program was designed to be high enough to cover a significant portion of the incremental cost of high efficiency equipment. As part of the evaluation effort, participating and non-participating contractors in both Con Edison and O&R's service territories were asked to estimate that incremental cost. Results of the contractor interviews, compared with the program rebates are in Figure 30.

Figure 30. Program Rebates as a Percent of Incremental Cost

Measure	Average Incremental Cost from Contractor Interviews	NYPSC Set Rebate	Rebate as a Percent of Incremental Cost
Gas			
Furnace – AFUE 90	$1,421	$200	14%
Furnace – AFUE 94 with ECM	$600*	$600	100%
Water Boiler – AFUE 85	$1,350	$1,000	74%
Water Boiler – AFUE 90	$1,800	$1,000	56%
Electric			
Central Air Conditioning, Tier 1	$1,286	$400	31%

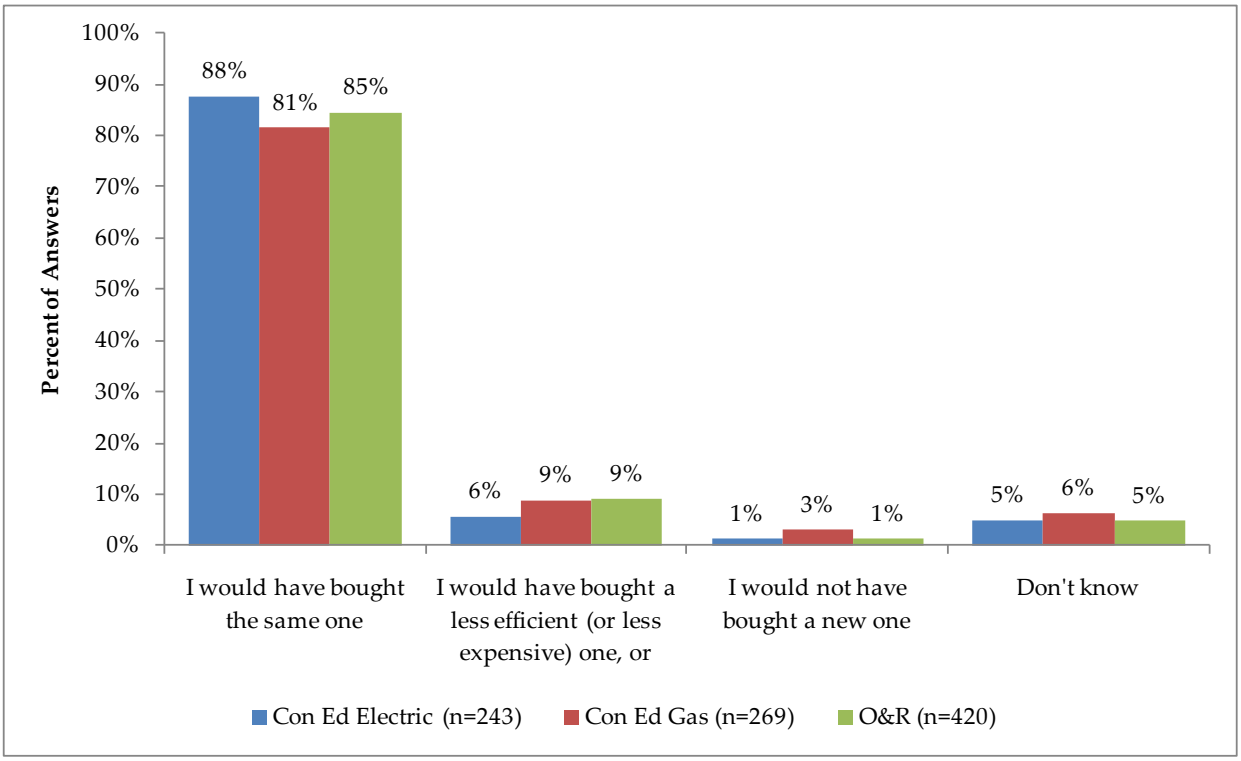
Measure	Average Incremental Cost from Contractor Interviews	NYPSC Set Rebate	Rebate as a Percent of Incremental Cost
Central Air Conditioning, Tier 2	$1,470	$600	41%
ECM Furnace Fan	$1,000	$200	20%

** Contractors were asked to estimate the incremental installation costs between a standard efficiency furnace and the high efficiency furnace rebated through the program for equipment they most frequently install. It's likely that an AFUE 90 furnace would have a higher incremental cost than an AFUE 94 with ECM. However, different groups of contractors provided estimates for the two efficiency levels.*

As shown in Figure 30, not all measures were discussed by the contractors who were interviewed. However, there are a few measures with low rebates as a percent of their incremental measure cost – Furnaces AFUE 90 and ECM Furnace Fans. In these interviews, contractors stressed the importance of rebates on their customers' decision to purchase high efficiency equipment. Most contractors reported that rebates, combined with tax credits, increases sales of high efficiency equipment in most cases.

Program participants were surveyed about their tolerance of a lower rebate amount. An overwhelming majority (88 percent Con Edison electric, 81 percent of Con Edison gas, and 85 percent O&R) of participants reported that even with a lower rebate through the Res HVAC program, they would have purchased the same equipment. These results, shown in Figure 31, seems to be contrary to the finding in Figure 56 that the majority of participants across all programs indicate that the utility rebate was the most persuasive reason their contractors gave for purchasing high-efficiency equipment. These conflicting results may be due to several factors. As Figure 67 shows, participants are very satisfied with the performance of their new equipment and, therefore, in hindsight, this may be leading them to say that they would have purchased the high-efficiency model even with a lower rebate. Another possibility is that the participants received other rebates or tax credits for the purchase of the high efficiency equipment and did not rely solely on the program rebates. Because these customers did receive the full rebate, the extent to which lower rebates actually would engender the same level of participation – without a tax credit or with a lower tax credit – is not clear.

Figure 31. Effect of Lower Rebate on Decision Making Process



Additionally, participants were asked what they would have done if no rebate were offered. Similar to the results of their action if the rebate was lower, the majority of respondents (64-67 percent) reported that they would have made the same purchase even if there was no rebate. Figure 32 shows these results.

Figure 32. Participant Actions if No Rebate

Customer action with no rebate	Con Ed Electric n=243	Con Ed Gas n=269	O&R n=420
I would have bought the same one	65%	64%	67%
I would have bought a less efficient (or less expensive) one, or	22%	20%	19%
I would not have bought a new one	7%	10%	7%
Don't know	6%	6%	7%

The survey also gauged participants' willingness to accept financing offered through the utility, rather than a rebate. The opinion of financing was somewhat favorable among surveyed participants, as shown in Figure 33. Many participants said they would still participate if the option was program financing, but the support was not overwhelming. Historically, financing has not been a preferred option for

residential customers; the 47 to 49 percent acceptance of financing found in this study is somewhat higher than is typical.

Figure 33. Participant Acceptance of Financing Instead of a Rebate

Customer action with financing options	Con Ed Electric n=194	Con Ed Gas n=232	O&R n=304
Yes	49%	47%	48%
No	38%	38%	31%
Maybe, it would depend on the financing terms	5%	7%	7%
Don't know	7%	8%	13%

To understand the perspective of customers who have not yet upgraded to high efficiency equipment, non-participants were surveyed about the importance of a rebate on their purchase decision. Almost all of the respondents were unaware that a rebate was available through their utility for their equipment upgrade. These results are shown in Figure 34.

Figure 34. Non-Participant Awareness of the Program Rebate

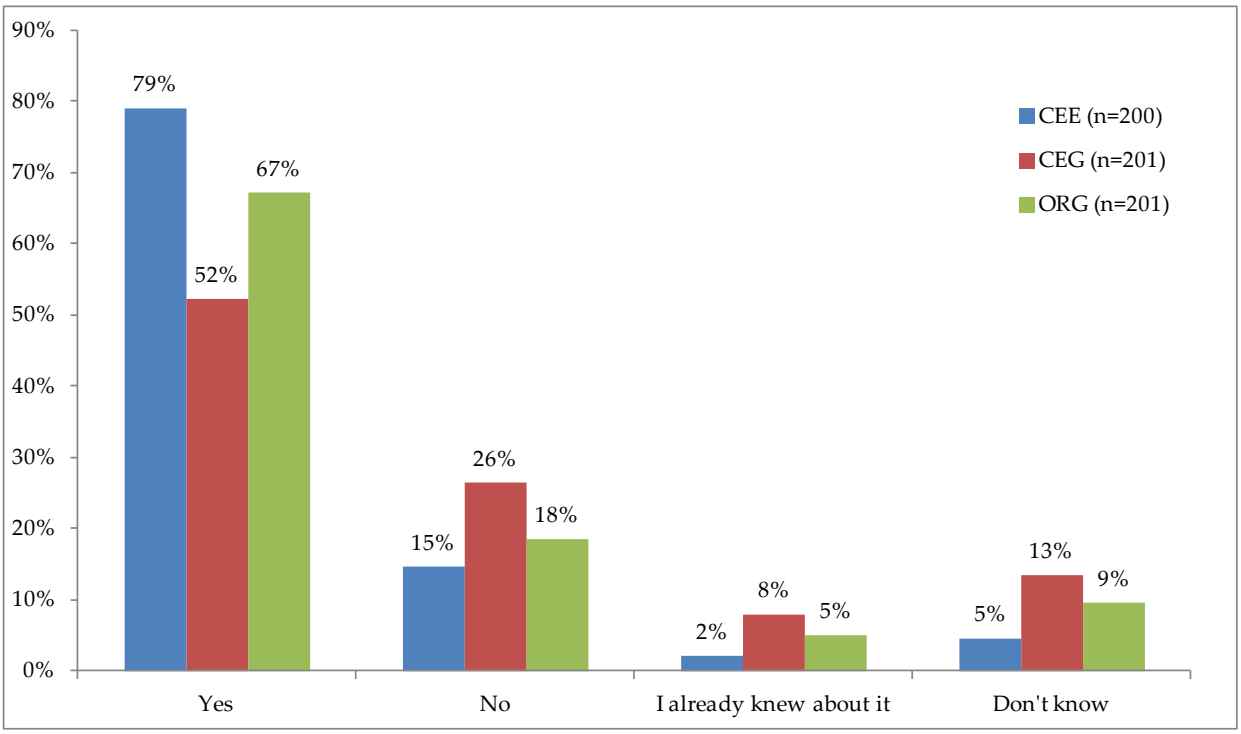
Awareness of Rebate Availability	Con Ed Electric n=38	Con Ed Gas n=40	O&R n=33
Yes	13.2%	2.5%	0.0%
No	84.2%	90.0%	97.0%
Don't Know	2.6%	7.5%	3.0%

Non-participants who have not upgraded to high efficiency equipment were asked how important it is that rebates are available when they purchase new high efficiency equipment. On a scale of "1" to "10", where "1" is not at all important and "10" is extremely important, Con Edison electric non-participants reported a 7.6 average level of importance; Con Edison gas non-participants reported a 7.5 average level of importance and O&R non-participants reported an average level of importance of 7.2. The non-participant results suggest that people who aren't necessarily in the market for high efficiency equipment at this time are encouraged by the availability of a rebate.

Participating contractors believe tax credits are an important component in closing a sale of a high energy efficient system. They report that the combination of the rebate offered by both programs and the tax credit make the difference between selling the high-efficiency equipment or not, and most contractors reported they are aware of existing tax credits and they inform their customers about it. Navigant asked program participants if contractors informed them about available State or Federal tax credits, Figure 35 shows that most customers learned about this option through contractors. A lower number of Con Edison gas respondents indicated hearing about the program from contractors than Con

Edison electric respondents. This may be a result of the fact that all electric measures qualify for federal tax credits while only 1 in 4 gas measures qualify for federal tax credits.

Figure 35. State or Federal Tax Credit Awareness as Informed by Contractor



The perceived value of the program rebate varies among these three groups: participants, non-participants and contractors. As previously discussed, participants consistently reported that even with a lower rebate, or no rebate, they would still have installed high efficiency equipment. Non-participants and contractors both reported that the rebate was an important factor motivating the decision to upgrade to high efficiency equipment. The conflicting perspectives of the participants (low importance of rebate) versus contractors and non-participants (high importance of rebate) may be explained by several reasons. First, participants have already purchased the high efficiency equipment. There is the potential for participants to say what they think the interviewer wants to hear – that the rebate didn't motivate them, but rather it was their own idea to install this equipment. Another potential reason for these conflicting perspectives is that participants, answering these questions in hindsight, have *already seen energy savings on their monthly bills*. Because they have evidence of the energy savings as a result of installing high efficiency equipment, the rebate may be less important to these respondents. Conversely, convincing potential participants to install high efficiency equipment before they witness those savings may pose greater challenges. The rebate is a motivator, corroborated by contractors and non-participants, because it is a guaranteed up-front cost savings, rather than a promise of future utility bill savings.

8. Infrastructure Development

This section reviews several aspects of the infrastructure developed by O&R and Con Edison/Honeywell to implement the programs. Section 8.1 assesses the data collection and tracking infrastructure by reviewing the program data from several angles. Section 8.2 looks at each program's quality control procedures relative to customer and equipment eligibility and equipment verification. Lastly, Section 8.3 reviews each program's staffing levels.

Key findings from Section 8 include the following:

- The information collected on the rebate applications and recorded in the program databases is generally adequate for program management, reporting, and evaluation.
- O&R gathers much information on the program application that will be useful for a robust impact evaluation; however, this information does not make its way into the tracking spreadsheet.
- On average, the time between application submission and rebate payment is eight weeks for Con Edison and four weeks for O&R.
- Each program's quality control procedures in respect to customer eligibility, equipment eligibility, and installation verification are robust.

8.1 Database Review

Navigant conducted a review of program data in the Con Edison and O&R tracking systems to assess their accuracy and effectiveness for use in recording, tracking, and reporting the process and impact of the programs. This review included an assessment of the key processing timeframes, review of the project data for outliers and missing information, and assessment of the data collected on the rebate applications and recorded in the tracking systems.

Processing Time Frames and Data Integrity

Con Edison Data

Honeywell extracted measure installation information from its Back Bone Client Server (BBCS) tracking database, in response to Navigant's data request. The records analyzed in this report were as of December 22, 2010. It is important to note that because the dataset reviewed by Navigant is an extract from a much larger relational database, it is possible that some data elements are recorded in the database but not included in the query that created the dataset that Navigant reviewed. This assessment and resulting recommendations should be taken in that light.

Honeywell also provided spreadsheets with information on gas and electric measures that were rejected and copies of a sample of project files. Files provided included the following:

- **HVAC scorecard.xls** This document contains 2,830 records. The file contains project level details including information on the customer, contractor, and measure, installation dates, and energy savings for each participating project. This file included both gas and electric measure installations. Only projects in status codes "ready for payment", "payment in progress" and

"complete" were provided[30]; this limits the applicability of this review to projects that are in process.

- **HVAC Electric Rejected.xlsx** This document provided information on the applications with electric measures that had been rejected by the program. The file contains 192 records.
- **HVAC Gas Rejected.xlsx** This document provided information on the applications with gas measures that had been rejected by the program. The file contains 211 records.
- **Project files** Ten project files for each fuel type, gas and electric, was selected to cover a range of measure types and other characteristics, such as applicants with multiple applications. The rebate application documents include the application sheet, invoices for equipment and installation, and measure product information. All of the reviewed project files were approved for payment by Honeywell.

The program dataset provided by Honeywell for the Con Edison programs was very complete. Of the 2,830 records provided, 2,345 were in the "complete" status, 465 were "payment in progress", and 20 were "ready for payment". All projects in the "complete" status had populated fields for commit date, install date, and application date. As would be expected, the projects in "payment in progress" and "ready for payment" did not have dates in the acquire and rebate payment fields.

However, the data did contain a few anomalies. In four records, the time frame between the date the application was received and the installation date was nearly 10 years, and for 50 observations the application date came before the installation date.

A very large proportion of projects included an inspection date. Forty percent of the "complete" projects and projects overall (958 of 2,345 and 1,144 of 2,830) had been inspected.

Analysis of Con Edison Processing Timeframes

Figure 36 below presents an analysis of the number of days between key dates listed in the Con Edison dataset. The rebate process begins with the installation of the eligible measure. A rebate application is submitted to the utility after the installation. For some applications, an inspection is conducted to ensure the measure meets the rebate requirements. If the measure meets the rebate requirement, a rebate payment is made. On average, it takes an average of 8 weeks to process a rebate payment from the time the application is received.

Figure 36. Con Edison Application Processing Timeframe Analysis

Time Period	Average Number of Weeks	Average Number of Days	Min Number of Days	Max Number of Days	Number of Projects
Con Edison					
Installation date to Application date	7	46	0	495	1,619

[30] Projects that are "ready for payment" have been completely processed and approved by Honeywell and are in the queue to be delivered to Con Edison in the weekly check request; "payment in progress" indicates that a project has been submitted to Con Edison in a check request, but Honeywell has not received confirmation of the rebate payment; and "completed" projects have been paid and Honeywell have received the rebate check number from Con Edison.

Application date to Inspection date	8	56	0	277	626
Inspection date to Rebate date	4	28	-4	213	626
Application date to Rebate date	8	58	2	292	1,619

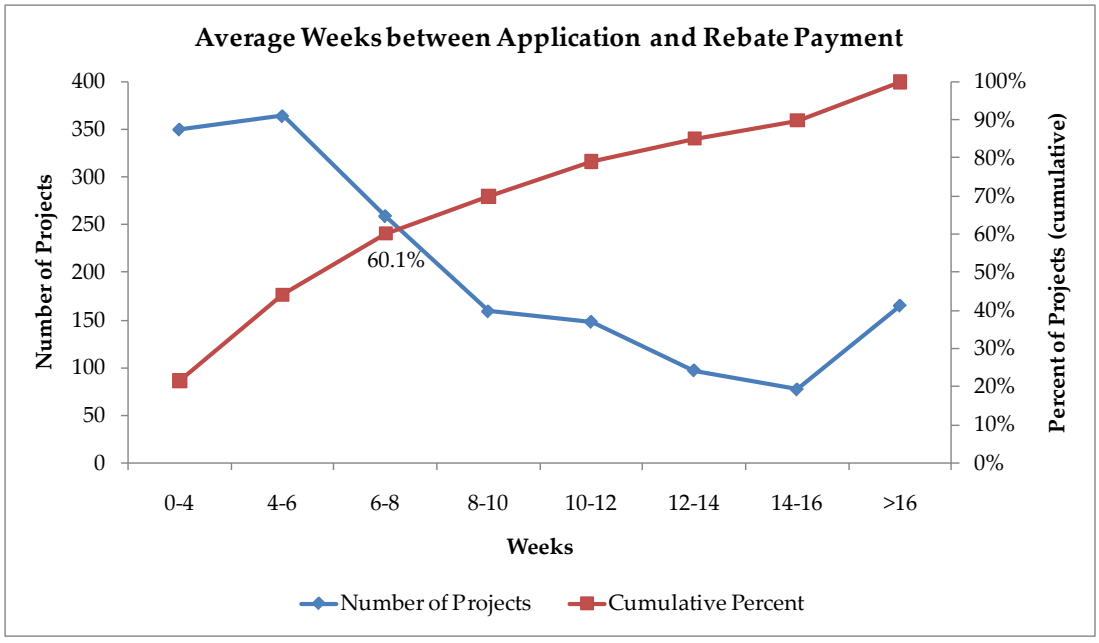
Source: HVAC scorecard.xls

Note: 25 projects (1 percent) had an application date prior to an installation date (submitted an application before installing). These were removed from the timeline analysis. Negative days mean that rebates were sent prior to inspection.

Con Edison sets an expectation with their customers that rebate payments will be made within six to eight weeks of the inspection or receipt of complete documentation.

Figure 37 breaks down the time period between application submission and rebate payment further by showing the cumulative number of weeks between application and rebate payment over time. Though the average time from application submission to rebate payment is eight weeks (from Figure 36 above), 40 percent of rebates are paid within four weeks and 60 percent within eight weeks.

Figure 37. Cumulative Weeks Between Con Edison Application and Rebate Payment



Rebate Application Rejection Analysis

Con Edison provided datasets of gas and electric applications that were rejected by the program. The records indicate that 192 electric measures and 211 gas measure applications were rejected, while 2,830 measures were paid or were in progress. This indicates that the program rejects approximately 13 percent of the total measure applications applied for through the program. However, the rate is higher for gas measures (20 percent) than for electric measures (11 percent).

Figure 38 summarizes the reasons for measure installation rejection. The table lists 114 of the total 192 rejected electric records; 78 records did not have information entered in the "reason for rejecting the installation" field. There is no documentation explaining why this field was left blank in the 78 records.

Figure 38. Summary of Rejected Electric Measures

Reason for rejecting the installation	Frequency	Percent	Cumulative Frequency	Percent of total records
Geothermal unit	1	0.87	1	1%
Invalid Date of Purchase	1	0.87	2	1%
Low EER	23	20.00	25	12%
Low SEER	36	31.30	61	19%
Non-Participating Contractor*	37	32.17	98	19%
Unit not rated combination	16	13.91	114	8%

Figure 39 summarizes the reasons that gas measures were rejected. The table lists 76 of the total 211 gas rejected records; 133 records did not have information entered in the "reason for rejecting the installation" field. There is no documentation explaining why this field was left blank in the 133 records.

Figure 39. Summary of Rejected Gas Measures

Reason for rejecting the installation	Frequency	Percent	Cumulative Frequency	Percent of total records
Application Missing Information/Incomplete	1	1.28	1	0%
Commercial Account	2	2.56	3	1%
DHWH Don't Qualify	3	3.85	6	1%
Invalid Date of Purchase	1	1.28	7	0%
Low AFUE	30	38.46	37	14%
More than two Units Purchased	1	1.28	38	0%
Non-Participating Contractor*	37	47.44	75	18%
Not a Con Edison Gas Customer	1	1.28	76	0%

*Due to the October 2010 removal of the contractor participation requirement, this is no longer relevant.

While the measure applications indicated in Figure 38 and Figure 39 are only a portion of the rejected measures (47 percent), they provide important insights for the program. Had the applicants/contractors been more aware of the program requirements, many of these projects could have been converted to valid applications. For instance, had the applicant known the measure requirements for SEER, EER and AFUE, 89 additional projects may have qualified.

Project File Review
Con Edison provided 19 PDF files containing rebate applicant information for projects that had been approved by Honeywell. Each file referenced one applicant, some of the PDF files contained rebate applications for several different measures.

Information in the PDF files:

- Customer Information
  - Con Edison account number
  - Name
  - Address information
  - Phone numbers (home and work)
  - Email address
- Equipment Information (A certificate rating the equipment)
  - Measure Type
  - Manufacturer
  - Model number
  - Serial Number
  - Efficiency ratings (AFUE, EER, SEER, BTUS)
- Rebate amount requested
- Application Date
- Contractor Information
  - Contact Information
  - Installation costs
- A sheet that appeared to be a check list for the rebate application

All 19 applicants in the PDF files were located in the tracking system.

Each PDF file contained several documents. The first two pages in all the PDF files represented the rebate application form filled in, by hand, by the rebate applicant. There were several different formats of application forms from different years. The first page listed the customer information and the contractor name. The second page listed the measure equipment information. The measure equipment information that was entered by the applicant did not always match the tracking system information, especially model serial numbers. The problems with incorrect information written by the applicant were all minor issues of number discrepancies. A "Certificate of Rating" page later in the PDF file listed the equipment information that is found in the tracking system. The rebate amount requested in the application always matched the rebate amount in the tracking system.

All the PDF files had information about the equipment installed, provided by the contractor. The equipment information matched the tracking system information. The equipment information format varied from one PDF to the next.

Of the 19 rebate applicant files, 12 were delayed for some type of missing information. More than half of the customers had some missing information in their rebate application. All of the 12 applications reviewed that had missing information obtained the needed information and the applicant received a rebate. Nine of the 12 delayed files were due to missing invoices; 2 were delayed due to low EER, and in

one case the contractor was not part of the program. When the EER was too low, they did not receive a rebate for that measure. The applications with equipment that had low EER ratings had several measures in their application, some of which did receive a rebate. In the case where the contractor was not part of the program, Con Edison contacted the contractor and approved the contractor for this measure installation. All the applications reviewed eventually received a rebate payment.

The time from application submission to rebate payment for the delayed customers was within the normal range for the rest of the tracking system. Nine of the 12 delayed applications were within the 1- to 4-month range. One application was delayed for 8 months. This application was missing an invoice which was not received by Con Edison for seven months, according to the date on the customer's fax containing the invoice information.

The rebate application forms matched extremely well to the tracking system.

O&R Data

O&R provided its program database, which consists of a Microsoft Excel file. O&R initially expected that its implementation contractor would create a program database. When the electric portion of the program was dropped and O&R decided to continue implementing the gas program in house, it decided that the Excel spreadsheet was a reasonable tool for the task, especially considering that the utility was only expecting to receive about 1,000 applications. In addition, the administrative budget for the O&R program is limited and did not include sufficient funding for developing a dedicated database.

The O&R dataset consisted of 1,921 records through February 2011, all with a "paid" status. The dates tracked include installation date, application received, approved, and paid. The dataset does not track an inspection date; however, it is tracked on the master spreadsheet.

The O&R dataset was also very complete with only a few anomalies. Four paid records had application received and installation dates prior to July 1, 2009. Seven projects in the paid status did not have a paid date.

Analysis of O&R Processing Timeframes

Figure 40 below presents an analysis of the number of days between key dates listed in the O&R dataset. The measure installation process begins with the installation of the measure. A rebate application is submitted to the utility after the installation. On average, O&R rebates are paid within four weeks of receipt of the rebate application.

Figure 40. O&R Application Processing Timeframe Analysis

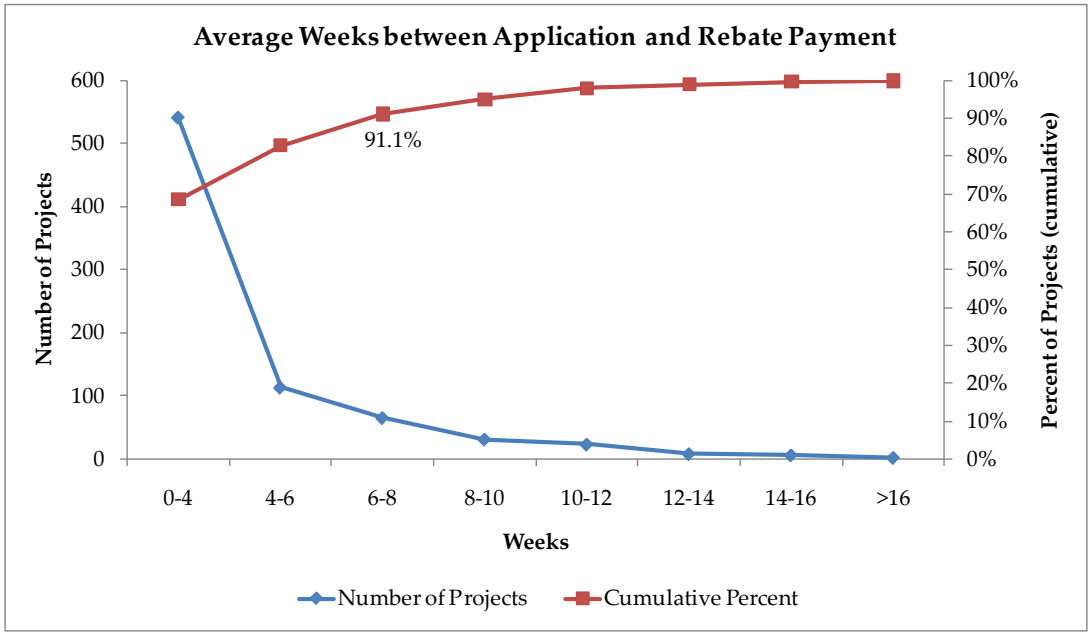
Time Period	Average Number of Weeks	Average Number of Days	Min Number of Days	Max Number of Days	Number of Projects
O&R					
Application date to Rebate date	4	26	1	172	788
Application date to Approved date	2	13	0	159	788
Approved date to Rebate date	2	13	0	72	788

Source: O&R Program Dataset through February 2011

Note: Twelve projects had no rebate date and five projects had approval dates prior to the application date. These were removed from the time frame analysis when calculating the averages.

Figure 41 breaks down this analysis further by determining the cumulative number of weeks between application submission and rebate payment. Ninety-one percent of O&R projects had rebate payment dates within 8 weeks of submitting their application.

Figure 41. Cumulative Count Weeks Between O&R Application and Rebate Payment



Review of Data Collected and Tracked

Navigant conducted a review of the program databases and applications to assess the adequacy of the data elements collected in the applications materials and tracked in the program database. Data collected and tracked is important for many program functions, including tracking the progress of active projects through the various stages of the rebate process, monitoring the program's progress toward goals, internal and regulatory reporting, and program evaluation.

Figure 42 summarizes the data collected on the program applications and supporting documents relative to the data captured in each program's tracking system. This list is not meant to capture every detail in the rebate applications or database. In some cases, information may be grouped into similar categories.

Figure 42. Summary of Data Collected and Tracked - Con Edison

Database Fields/ Characteristics	Con Edison		O&R	
	Rebate Application/ Invoice	Dataset	Rebate Application/ Invoice	Dataset

Database Fields/ Characteristics	Con Edison		O&R	
	Rebate Application/ Invoice	Dataset	Rebate Application/ Invoice	Dataset
Customer/Contractor Information				
Customer Name	√	√	√	√
Customer Address	√	√	√	√
Customer Phone Number	√	√	√	√
Customer Email	√	√	√	
Customer Acct Number	√	√	√	√
How did you hear about the program?	√			
Contractor Name	√	√	√	√
Contractor Address	√		√	
Contractor Phone Number	√		√	
Contractor Email	√		√	
Contractor License #	√		√	
BPI #, Type, Expiration	Air/Duct Only			
Application Signature Date	√		√	
Housing Characteristics				
House Type		√	√	√
Vintage Year (Year house was built or renovated)	√		√	
New System/Equipment Information				
Oil to Gas Conversion Y/N	Gas App Only		Implied	√
Installation Date	√	√	√	
Measure ID/ Name	√	√	√	√
Measure Quantity	√	√	√	√
Product Manufacturer	√	√	√	√
Product Model #	√	√	√	√
Certified Reference #	√		√	
Serial #	√	√	√	√
Equipment Size/Capacity (BTUs, Tons, Gallons)		√	√	√
Efficiency Rating (AFUE, SEER, EEER, Energy Factor)		√		√
Rebate Amount	√	√	√	√
Home Fuel Source	Air and Duct Only		NA	NA
Heating System Type	Air and Duct Only	√	NA	NA
Post Duct Blaster CFM Reading	Air and Duct Only			

Database Fields/ Characteristics	Con Edison		O&R	
	Rebate Application/ Invoice	Dataset	Rebate Application/ Invoice	Dataset
Post Blower Door Reading	Air and Duct Only			
Existing System/Equipment Information				
Disposition of Old Unit			√	
Old Unit Age			√	
Manufacturer			√	
Model			√	
Capacity			√	
Fuel Type			√	
Insulation	Air and Duct Only			
Pre Duct Blaster CFM Reading	Air and Duct Only			
Pre Blower Door Reading	Air and Duct Only			
Data from Invoice				
Total Cost	√		√	
Quantity	√		√	
Installed Cost	√		√	
Equipment Cost	√		√	
Description of Service	√		√	
Deemed Values				
kW Savings		√		N/A
kWh Savings		√		N/A
Therm Savings		√		√
Lifecycle Savings		√		√
Measure Life		√		√
Operating Hours		Not Populated		
Tracking and Miscellaneous				
Rebate Application Status		√		√
Project ID		√		
Meter Number				√
Customer Rate Code				√
Rebate Application Rec'd Date		√		√
Inspection Request Date		√		NA
Rebate Paid Date		√		√
Service Turn On Date		√		√

In general, the programs are gathering and tracking appropriate data for project and program tracking, and program management, reporting, and impact and process evaluation.

Most of the data collected on Con Edison's rebate application is input into the database, along with information from the equipment specification sheet, such as equipment capacity. The database also contains data fields for the deemed inputs to the savings algorithms, but the "operating hours" field is not populated. Con Edison does not capture information on the replaced equipment.

O&R gathers most of the same data on its rebate application as Con Edison. However, O&R collects information on the replaced unit as well. This information can prove valuable in an impact evaluation, should it become evident that the program caused units to be replaced prior to the end of their useful life. However, this information does not make its way into the tracking spreadsheet and would have to be manually extracted from the paper files, which would likely be a time consuming process. In addition, there may be limitations to the accuracy of the data; a second or third homeowner may not know the year the unit was put in service. Where old unit's manufacturer, model number, and serial number can be taken from the nameplate, sometime this information is unreadable and AFUE is not always indicated.

The robustness of Con Edison's data can be improved for the purposes of impact evaluation by capturing the housing type and vintage on the rebate application and tracking this data in the database. O&R's dataset could be improved by adding the information gathered on the housing vintage and replaced equipment. In addition, the dataset should include the date of the field verification so that it can be determined which projects were inspected. Both programs should capture the square footage of the home, or, more specifically, the square footage of the area affected by the new unit. Lastly, project cost (both labor and equipment) should be mined from the customer invoices for inclusion in the databases.

8.2 Quality Control

This section provides the results of a review of the quality control procedures for the Con Edison and O&R programs. The review is organized around three areas: customer eligibility, equipment eligibility, and installation verification. The purpose of these reviews is to determine whether the procedures are sufficient to ensure that the reported savings are real and verifiable.

As is common for most prescriptive rebate programs, participants in both utilities' programs submit their program applications and supporting documentation after the installation of the eligible equipment. Program applications are available in electronic form but these must be completed and submitted via US mail in hard copy. The information can be typed into the form and then printed, or a blank form can be printed and all information input by hand. However, the electronic application forms will not allow the user to save any information that is typed into the form.

Required documentation for both programs includes:

- A completed and signed program application; and
- An invoice for the equipment indicating:
    - The equipment type, model, price, date of purchase; and
    - That payment has been made in full.

In addition, Con Edison requires that the applicant submit a manufacturer's specification sheet for the equipment and that the invoice include the equipment serial number. O&R requires a serial number on the application, but performs its own lookup of the model to verify qualification.

O&R requires that, to be eligible, equipment must be purchased and installed between January 1, 2010 and December 31, 2011. Con Edison requires that equipment be purchased between June 1, 2009 and December 31, 2011 to be eligible. In addition, Con Edison participants must have used a participating contractor for equipment purchased and installed prior to October 1, 2010, which represents the date that the existing parameters for contractor participation for the program were changed.

O&R requires that applications be submitted within 90 days of installation and no later than March 15, 2012. Con Edison requires that applications be postmarked by January 15, 2012.

Honeywell, on behalf of Con Edison, conducts a pre-screen of each application within 48 hours of receiving the application. Each application is stamped with the date received. The prescreening processing includes verification of the following:

- The contractor is a participating contractor (required prior to October 1, 2010 when the program revised the parameters mentioned above);
- The customer is a Con Edison gas or electric customer and the name and address on the account match that on the application;
- All required documents are included and comply (with invoice dates, signatures present, etc.);
- The equipment qualifies for the program;
- The equipment indicated on the invoice matches what is listed on the application; and
- The rebate amount is correct.

Honeywell conducts a final review of each application before the rebate check is requested from Con Edison. In addition to the items verified in the pre-screen, the final review includes a review of the inspection performance and a check that all date fields are populated and in correct sequence. The individual responsible for the final review is always different than the individual(s) who conduct the prescreening and/or data entry.

The O&R process is similar to the Con Edison process where a support staff member conducts the pre-screen and data entry and the program administrator conducts the final review.

Customer Eligibility

When an application is received, both programs determine eligibility based on the applicant customer's rate tariff; eligible customers must be on a residential rate tariff. The programs locate the customer record in the utility customer information system (CIS) using the account number provided on the application, verify that the name and address matches that on the application, and that the customer is on a residential gas or electric rate tariff, for gas and electric measures respectively.

The O&R administrative support person verifies customer eligibility directly by looking up the customer in the O&R CIS. This process is slightly more complex for Con Edison applications, because Honeywell

does not have direct access to the Con Edison CIS. Honeywell receives a master file from the Con Edison CIS that is updated every month.

The programs reported that the only issues they have seen around customer eligibility are customers with the wrong fuel (for instance, an O&R electric customer with gas provide by Central Hudson) or customers on a commercial rate schedule. Interviews with participating contractors confirmed that they have seen these issues.

Assessment: Verifying customer eligibility through their gas and/or electric rate tariff is the most direct method for determining whether the customer is eligible to participate in the programs. Verifying that the name and address on the application match as well provides assurance that the account number was not falsified or mistyped, or that the program staff did not misread the information provided. If any of the name, address or account number are inaccurate, a red flag is raised.

Equipment Eligibility

The Con Edison programs require that the application package include the manufacturer's specification sheet for the rebated equipment. Product requirements, such as AFUE, SEER, EER, HSPF and Energy Factor, are included in the specification. Honeywell's BBCS database is programmed to automatically check that these ratings are valid for the unit model number[31]. If the applicant does not provide a manufacturer's specification sheet, Honeywell will send an e-mail and fax indicating that the rebate cannot be processed until the missing information is provided.

O&R does not require that the applicant include a manufacturer's specification sheet. Rather, the program manager searches the on-line Air-Conditioning, Heating and Refrigeration Institute (AHRI) database for the product specification. If equipment is not included in the AHRI database, the program manager searches for product information from the manufacturer's website.

To prevent double payment of rebates "double dipping" (payment by both the utility and NYSERDA), Honeywell's Back Bone Client Server (BBCS) automatically checks the serial numbers of new applications for duplicates within the Res HVAC dataset and with a database provided by NYSERDA. O&R also checks its program dataset and the NYSERDA program data for duplicate serial numbers.

Assessment: Verifying that the installed equipment meets the program requirements through manufacturer's specification sheets or an independent source, such as the AHRI database, is sound and will provide credible results over relying on the contractors to comply.

Both programs collect the serial number on the application, with Con Edison requiring that the serial number also be indicated on the paid-in-full invoice. Both utilities' programs check the serial numbers of new applications against the existing projects in the program database, and against the NYSERDA program, to ensure that duplicate serial numbers are not being submitted, which could indicate duplicate applications for the same equipment.

[31] The equipment tables within BBCS are regularly updated to include new unit listings and equipment combinations.

Equipment Verification

Both programs employ a similar strategy for verifying equipment installations. A sample of projects is selected to undergo an onsite inspection; the sampling unit is the installation contractor. The first four projects submitted by each contractor to the Con Edison programs receive an onsite inspection, as do the first three projects submitted by each contractor for O&R. After that point, for both utilities, a random sample of 10 percent of each contractor's projects is inspected. The processing staff at Honeywell and O&R use a spreadsheet to identify the first four projects for each contractor then flags them for inspection manually. Honeywell's BBCS data system is programmed to automatically select a sample of 10 percent of each contractor's projects for inspection.

The purpose of the onsite inspections is to verify that the system is installed and operational at the customer of record. The inspector confirms that the model number and serial number on the installed unit match the application documents. The Honeywell circuit riders conduct the onsite inspections for the Con Edison programs, and the O&R program manager conducts them for O&R.

The program managers for all programs indicate that the majority of projects inspected pass and that the most common discrepancies are serial numbers that do not match those provided on the application.

Assessment: Although using installation contractor as the sampling unit is sound, the program should run periodic reports to confirm that each measure has been inspected in roughly the same proportion to program participation.

Both programs reach out to contractors with failed inspections to be sure they understand the program requirements. O&R reports that they inspect all of a contractor's future projects until they are satisfied that the contractor is meeting the program standards. Con Edison does not have specific guidelines for increasing the rate of inspections. However, once a contractor's failure rate reaches a certain high threshold, the utility will remove the contractor from its program.

8.3 Program Staffing

Res HVAC program staffing levels vary between Con Edison and O&R. O&R maintains in-house implementation of its Res HVAC gas program. Implementation requires one full-time program manager, part-time support to assist with field verifications, and part-time administrative support to assist with application processing.

Con Edison contracts program implementation to Honeywell. Two program managers oversee Con Edison's gas and electric residential programs, two Honeywell project managers, three application processors, the support of an additional processor during high application volumes, three circuit riders (with plans to hire a fourth) and the support of Honeywell's marketing and IT departments.

Figure 43 summarizes Navigant's estimates of Con Edison and O&R program staffing in terms of full time equivalents (FTE/s).

Figure 43. Res HVAC Program Staffing

Job Function	# FTEs
O&R	
Program Manager	1
Inspection Support	0.25
Administrative Support	0.5
Total O&R FTEs	**1.75**
Con Edison/Honeywell	
Con Edison Program Manager[32]	1
Total Con Edison FTEs	**1+E.Q.=2**
Honeywell Senior Program Manager	0.25
Honeywell Program Manager	1
Application Processing	
Pre-Screen	1
Data Entry	1
Quality Control	1
Additional Data Entry	0.25
Circuit Riders	3
Marketing Department	0.25
IT Department	0.10
Total Honeywell FTEs	**7.85**

A "rule of thumb" for energy efficiency programs suggests 1 FTE of management oversight for every $1-3 million of outsourced program budgets. Program implementation staffing levels range from 1 FTE for every $350,000 to $2.2 million of program budget[33]. O&R's staffing levels for their self-implemented program falls into these ranges. However, Con Edison's staffing levels, for both management oversight and implementation fall outside of these ranges, though the degree is less so for Honeywell's implementation. Figure 44 shows Res HVAC staffing levels compared to its program funding.

Figure 44. Program Staffing Relative to Program Funding

Program	Program Funding	Standard Staffing Level (FTEs)	Actual Staffing Level (FTEs)
Con Edison Gas and Electric (Management Oversight)	$17,550,838*	1	1 / ~$18M
Con Edison Gas and Electric (Program Implementation)	$17,550,838*	7.85	1 / $2,310,106

[32] During 2011, Con Edison hired a Senior Specialist to assist and support the Residential Program Manager across all Residential Program activity.

[33] Summit Blue Consulting, "Energy Efficiency/Peak Demand Reduction Action Plan" for Midwest Energy Efficiency Alliance, November 5, 2009.

Program	Program Funding	Standard Staffing Level (FTEs)	Actual Staffing Level (FTEs)
O&R Gas (Program Implementation)	$1,024,944	1.5	1 / $683,296

* Funding level at 12/31/11 (Electric $10,544,823 Gas $7,006,015)

9. Marketing and Customer Acquisition

Con Edison and O&R designed their Res HVAC Programs for rapid deployment of energy efficiency measures to existing residential customers (1- to 4-unit market segment). As is typical with residential HVAC rebate programs, the program theory engages both "push" and "pull" elements. Both utilities' programs rely heavily on a network of contractors to push the programs to their customers looking to replace their HVAC equipment. The program also counts on the pull of residential homeowners seeking to reduce energy consumption and monthly bills.

This section will present an overview of current marketing efforts to promote both programs and will use the results of a survey conducted with program participants and non-participants, and in-depth interviews with participating and non-participating contractors to summarize program marketing effectiveness and customer and contractor awareness and motivation to participate in the programs. Section 9.1 discusses various aspects of the program marketing and its' effectiveness at building awareness among both customers and contractors. Section 9.2 discusses marketing activities conducted by contractors, and Section 9.3 is a review of the program websites. Lastly, Section 9.4 discusses customer awareness of the programs and their motivations to participate.

Key findings from Section 9 include the following:

- Participating contractors are an important driver of program participation to date, though after the program revision dropped this requirement, this will no longer apply.
- Industry channels are as important as outreach by Con Edison in making contractors aware of the program.
- O&R contractors are more likely to leverage their participation in the program in their company marketing.
- HVAC contractor awareness and promotion of the programs are critical to participant acquisition.
- Although website use by participating customers is modest (33 percent for Con Edison electric, 47 percent for Con Edison gas, and 38 percent for O&R) those who do visit the sites are very satisfied with the content.

9.1 Program Marketing

As of April 2011, much of Con Edison's marketing focus has been to recruit, educate and support the contractor community to promote the programs. As part of this effort, Con Edison has offered training sessions (both as part of the mandatory training requirement prior to October 1, 2010 and voluntary training focused on installation practices subsequent to October 1, 2010), and developed and distributed marketing material such as vehicle magnets, uniform badges and brochures for contractors to advertise

their participation in the program. Con Edison also offers the "Contractor of the Year Award," which aims to recognize top performing contractors in the company's energy efficiency program. On the customer side, Con Edison has done radio campaigns, printed advertisements in the form of direct mailing and ValPaks, on-bill messaging and newsletters, with the goal of raising program awareness[34]. During 2010, Honeywell began working on building relationships with manufacturers and distributors to recruit more contractors. Honeywell developed a micro website for the program, which is linked to Con Edison's main website. The program website contains information useful for both customers and contractors.

Honeywell is responsible for designing and developing all the marketing material for Con Edison's program. Honeywell's main marketing goals include:

- Recruit, train and develop a pool of qualified participating contractors;
- Build program awareness and educate residential customers on the benefits of high efficiency systems;
- Motivate residential customers to contact participating contractors; and
- Provide customer service and contractor support through the program's website and call centers.

Program marketing material featuring the "Green Team" concept must be consistent with Con Edison's corporate branding strategy – "The Power of Green." Con Edison provides brand guidelines and templates; Honeywell is required to secure approval from Con Edison before materials are used. Both Con Edison and Honeywell report that, when Honeywell and the other EEPS implementation contractors were brought on board, the Con Edison branding guidelines were not developed, and therefore the turnaround time for approval of customer and contractor marketing materials was slower than expected. More recently, Con Edison hired a new advertising agency to develop a new creative design plan centered around the "Green Team" concept.

The 2011 Con Edison Residential Marketing Plan calls for direct mail and advertising in local papers to begin in April for the electric portion of the program. In order to meet this deadline, Honeywell submitted the concepts for these pieces in February, but as of mid-March 2011, had not received approval, making it unlikely that they will be able to begin at the first of April. Honeywell has received approval on several pieces that were based on the 2010 creative direction, but because they did not conduct any direct mail in 2010, they had to create and submit new pieces for approval.

One would expect the Res HVAC program participation to be highly seasonal with electric portion of the program experiencing highest participation in the spring and summer as homeowners begin to operate their systems for the cooling season, and the gas portion showing high participation in the fall and winter as heating equipment becomes used. To leverage these opportunities, program marketing for the electric portion of the program should begin in early spring (with planning complete in the winter months) and marketing for the gas program to launch in early fall (with planning complete by summer's end).

[34] In 2012, Con Edison hired a Market Manager to manage all marketing efforts both in-house and with our implementation contractors, to ensure a consistent message across all efficiency programs.

Figure 45 and Figure 46 show Con Edison's program participation in 2010, for gas and electric measures, respectively, plotted against key marketing events. These tables demonstrate that participation follows a seasonal pattern, but the gas measures show a surprising summer peak. This is not completely surprising given that Honeywell was not engaged as the program implementer until October of 2009; it effectively missed the opportunity to promote the program for the 2009/2010 winter season. What is surprising is the uptick in the installation of gas measures during the summer season. Figure 45 and Figure 46 show there is no clear correlation between Con Edison's marketing efforts and the rate of equipment installations; Electric & Gas measures are usually addressed during their "off-season".

Figure 45. Marketing Efforts' Effect on Con Edison's Gas Measures Installation

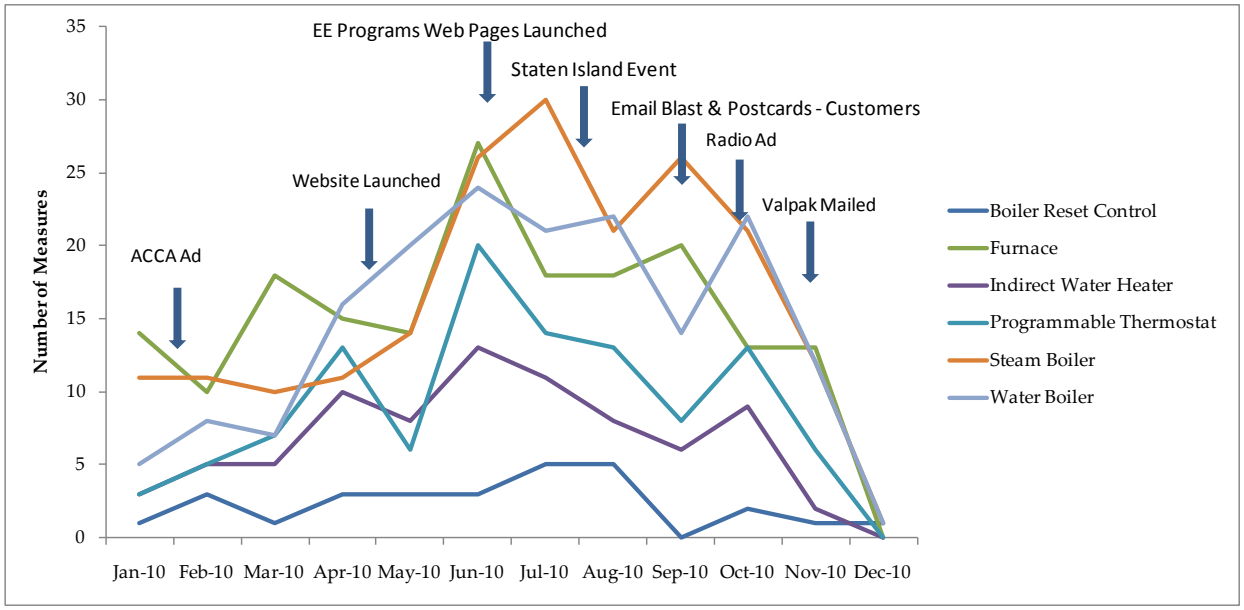
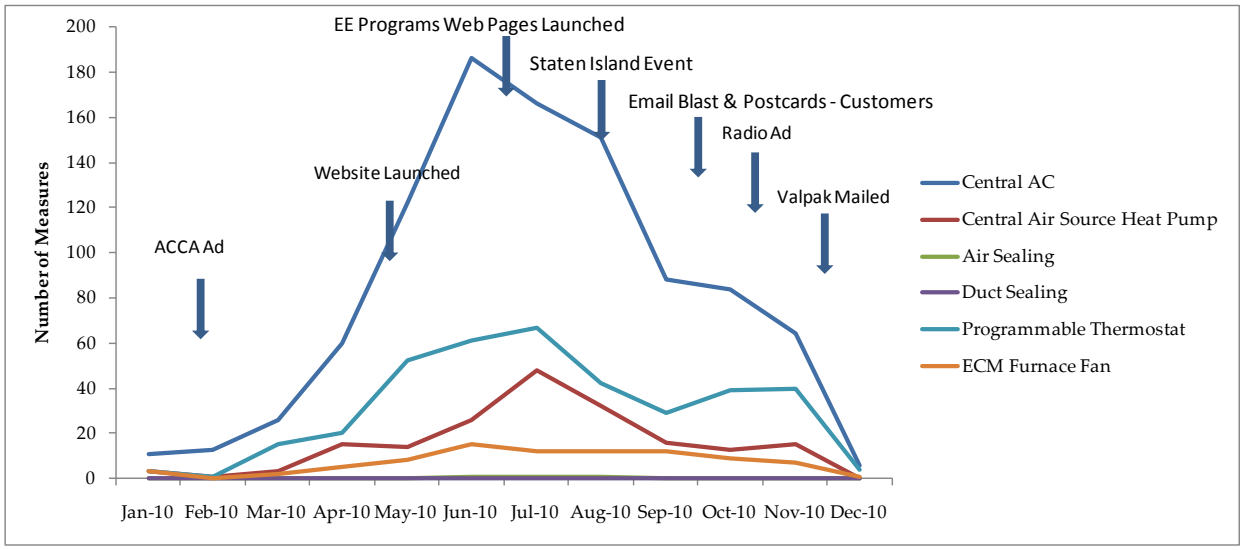
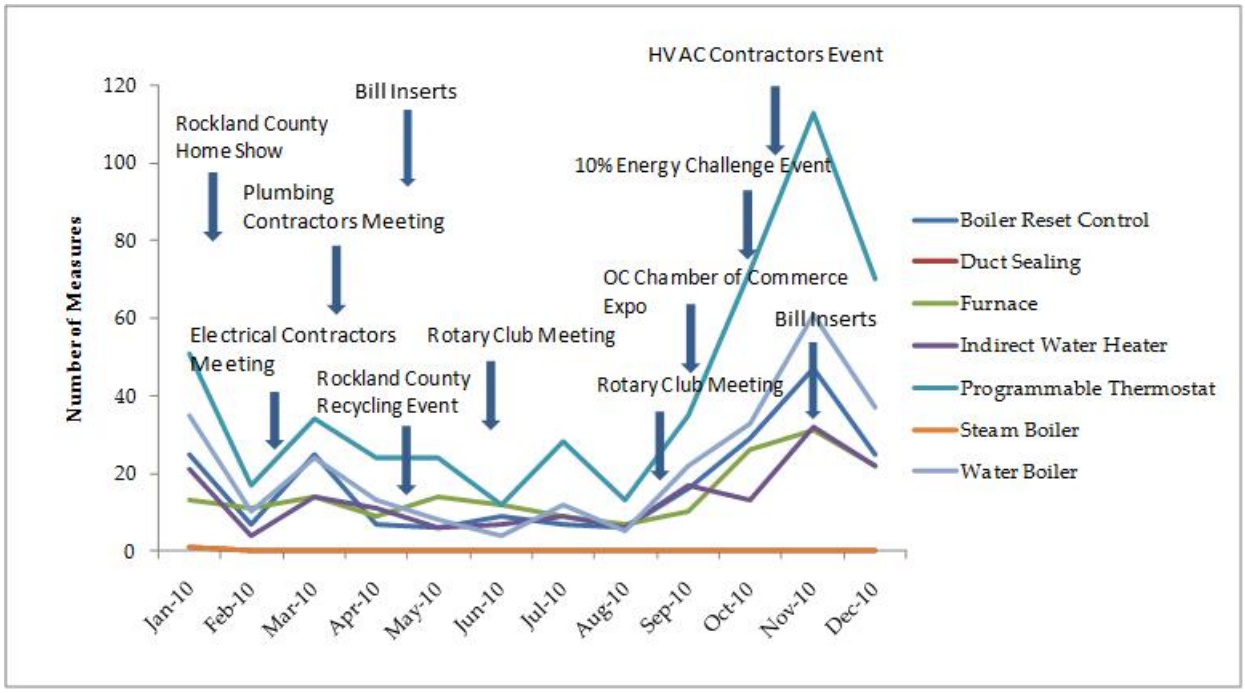


Figure 46. Marketing Efforts Effect on Con Edison's Electric Measures Installation



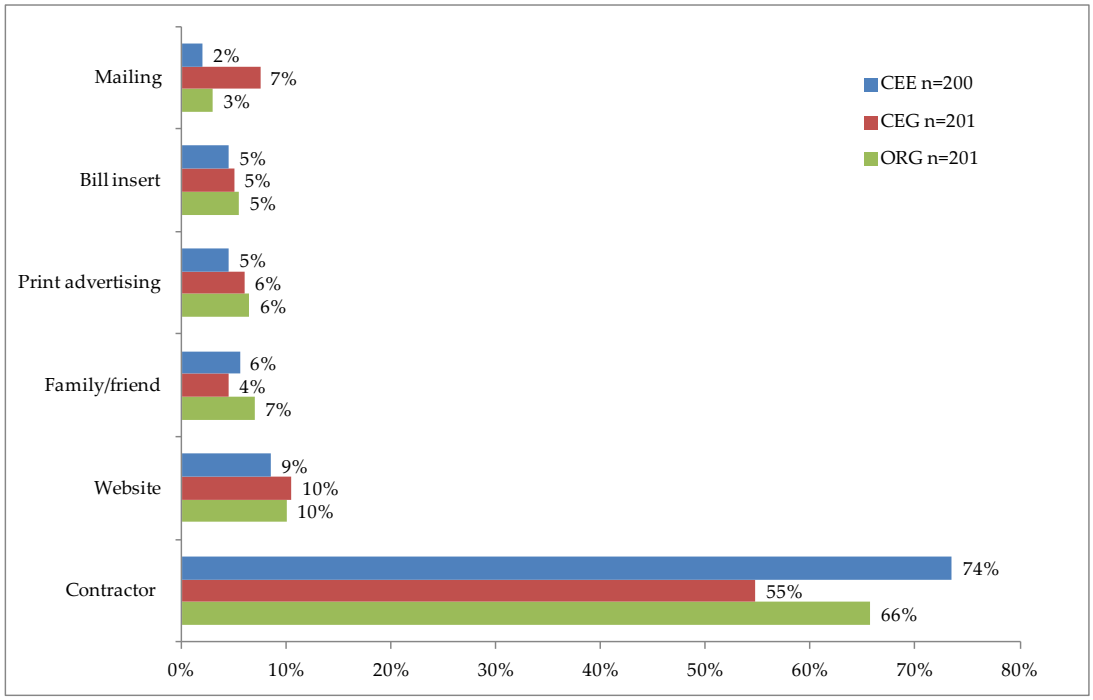
O&R's marketing has been a more grassroots effort focused on the contractor community. The primary strategy has been periodic phone calls and e-mails to provide program updates, and program presentations at contractor events (e.g., contractor training events for other programs). O&R is constantly updating its list of contractors as additional contractors submit applications through the program. O&R has conducted customer outreach, including local printed advertisement, bill inserts, newsletters, home shows and talks at events such as Rotary Club meetings, recycling events, and contractor's meetings. Figure 47 shows that participation in the O&R program follows a more normal seasonal pattern for gas heating equipment. O&R has conducted marketing to promote its portfolio of programs throughout the year, which seems to have served it well in terms of program participation.

Figure 47. Marketing Efforts Effect on O&R's Gas Measures Installation



When asked how they heard about the program, most survey participants indicated contractors as a source of program awareness, followed by the program's website and family and friends. In the case of Con Edison, 74 percent of Con Edison Electric and 55 percent of Con Edison Gas program participants learned about energy efficient options through contractors, while 66 percent of O&R's program participants learned of it from contractors. Figure 48 presents the top six sources of program awareness for both Con Edison and O&R.

Figure 48. Sources of Program Awareness



Navigant interviewed fifteen of Con Edison's participating contractors. Half of this group indicated they learned about the program through Con Edison; the other half either heard of the program through contacts in the industry (3 of 15), through customers (1 of 15) or did not recall (3 of 15). In the case of O&R, four out of seven participating contractors mentioned O&R's communications as their main source of program awareness; the remaining contractors heard about it through industry contacts (1 of 7) and customers (2 of 7).

Non-participating contractors for both Con Edison and O&R report lack of information about the program as the main reason why they are not participating. In the specific case of Con Edison, contractors also listed lack of direct contact from Con Edison as an important reason for non-participation. Overall, non-participating contractors show interest in both programs and would like to have more information about how it works, rebate structure, and eligible equipment.

9.2 Contractor Marketing

In general, Con Edison's participating contractors do not advertise their participation in the program. Only two contractors mentioned they advertise the program on their websites. Additionally, contractors report they do not use the marketing material provided when they sign up for the program; only two out of fifteen contractors reported they use the marketing material and find it useful.

In the case of O&R, six out of seven participating contractors that were interviewed reported they advertise their participation on their websites or through printed marketing material. Only one contractor does not advertise the program.

Participating contractors in both programs, Con Edison and O&R, believe there should be more program marketing directed at customers. A Marketing Manager has been added since the publication of this report.

9.3 Program Website

Con Edison and O&R both have program websites that provide customers with general information about the program. In the case of Con Edison, Honeywell created a micro site that is linked to Con Edison's main website. This website also offers customers information about the benefits of installing high efficiency systems and about available contractors in the area.

As a key program information sharing and enrollment tool, the websites are of great importance to the program's customer positioning, understanding, enrollment and satisfaction. Navigant conducted a review of the program's websites and assessed them from a number of perspectives including:

- Structure and Navigation – Is the website well laid out (i.e., is it intuitively structured, easy to navigate, etc.)?
- Functionality – Does the website load quickly and run smoothly?
- Visual Design – Does the website's visual design connect the target audience to the underlying message or information being presented?
- Consistency – Do the various pages or the website and any associated links match and conform to a common visual and informational theme?
- Content – Is the presented information relevant, easy to understand and consistent with that presented elsewhere?
- Interactivity – Does the website engage visitors and provide them with adequate tools to locate the information they are looking for or a means to request that information (e.g. searches, request forms, database queries, online chat).
- Customer Relations – Does the website provide the necessary contact information (i.e. address, customer help-line, email)
- Search – Is the website easy to find from various browsers (Google, Yahoo!, Bing, Ask AOL Search) using various key words?

Both Con Edison and O&R provide the information necessary to engage customers and make it easy for customers to participate in the HVAC rebate program. The websites are generally easy to navigate and are consistent in their look and feel. It would be helpful if O&R included the rebate form (preferably in "fillable" PDF format, for ease of completion and to ensure ease of processing) and full program Terms and Conditions online. In addition, both utilities might consider adding online rebate form submission functionality. Figure 49 and Figure 50 provide a summary of our findings.

Figure 49. Summary of Findings for Con Edison's HVAC Program-Related Websites

Assessment Category	Findings	Overall Assessment (Poor, Acceptable, Good, Excellent)

Assessment Category	Findings	Overall Assessment (Poor, Acceptable, Good, Excellent)
Overall Structure and Navigation	• Unintuitive navigation between Con Edison's http://www.coned.com/thepowerofgreen/residential.asp# page and the HVAC rebate page • Link to residential programs page from http://www.coned.com/energyefficiency/ not very prominent • Consider adding more prominent links to rebate information on the http://www.coned.com/energyefficiency/residential.asp page	Poor/Acceptable[35]
Structure and Navigation (HVAC rebate related pages)	• Good links between various pages and easy access to rebate forms and contractor information. • Text and graphics support intuitive navigation	Good
Functionality	• Various pages load quickly and cleanly.	Good
Visual Design	• Homepage uses graphics to assist user in locating relevant information, e.g., "Green Team" logo and moniker used to direct users to energy efficiency programs. • Good use of scrolling images and "Pay it Green" messaging • Good use of video ("Jesse")	Good
Consistency	• Consistent use of graphics, colors, language and navigation.	Good
Content	• Adequate information provided to determine eligibility and support participation • Eligibility requirements and other Terms and Conditions easy to locate and understand • Consider offering fillable forms (rebate applications) and/or online rebate submission	Good
Interactivity	• Con Edison's online audit tool is very interactive and easy to use. • Use of video is engaging • HVAC specific pages are not especially interactive, but they do not need to be.	Good

[35] A rebate information 'link' is provided on the page but appears within a sentence of text. Although this is an acceptable practice, the link could be make more prominent, thus ensuring that customers do not have to search for the information they are seeking.

Assessment Category	Findings	Overall Assessment (Poor, Acceptable, Good, Excellent)
Customer Relations	A number is provided for follow-up inquiries on all program related rebate documentation and is easy to locate on the associated web pages. An online query form is also available.	Excellent
Search	Program information was easy to locate via all web browsers.	Excellent
Web addresses reviewed: http://www.coned.com/Default.asp http://www.coned.com/thepowerofgreen/index.asp http://www.conedhvacrebates.com/default.aspx http://www.coned.com/energyefficiency/ http://www.coned.com/energyefficiency/residential.asp http://www.conedhvacrebates.com/find-a-contractor.aspx Date review conducted: March 16, 2011		

Figure 50. Summary of findings for O&R's HVAC program related websites

Assessment Category	Findings	Overall Assessment
Overall Structure and Navigation	• Navigation between ORU's homepage and the 'Incentives and Rebates' page not immediately apparent (the link is via drop down box). Could be enhanced through a graphic or text on the homepage. • The 'power of green' page does not prominently link to rebates page	Acceptable
Structure and Navigation (HVAC rebate related page)	• Single page devoted to providing all relevant program information • Links to other areas of O&R site prominent and easy to follow	Good
Functionality	• Various pages load quickly and cleanly.	Good
Visual Design	• Homepage uses graphics to assist user in locating relevant information, e.g. the 'It's good to be Cool' graphic links to the HVAC rebate page. However, a user would not know this unless they clicked it • Good use of dynamic images and energy efficiency messaging	Good
Consistency	• Consistent use of graphics, colors, language and navigation.	Good
Content	• Adequate information provided to determine eligibility and support participation • Eligibility requirements easy to locate and understand • Terms and Conditions not available online • Rebate applications not available online[36]	Acceptable
Interactivity	• O&R's online audit tool is very interactive and easy to use. • HVAC specific page is not interactive, but does not need to be.	Good
Customer Relations	A number is provided for follow-up enquiries on all program related rebate documentation and is easy to locate. An email address is also made available.	Excellent
Search	Program information was easy to locate via all web browsers.	Excellent

[36] O&R intentionally leaves its program application off of its web site so that customers and contractors must engage with the program. This is done to ensure that equipment and project requirements are not misinterpreted nor applications submitted that do not qualify.

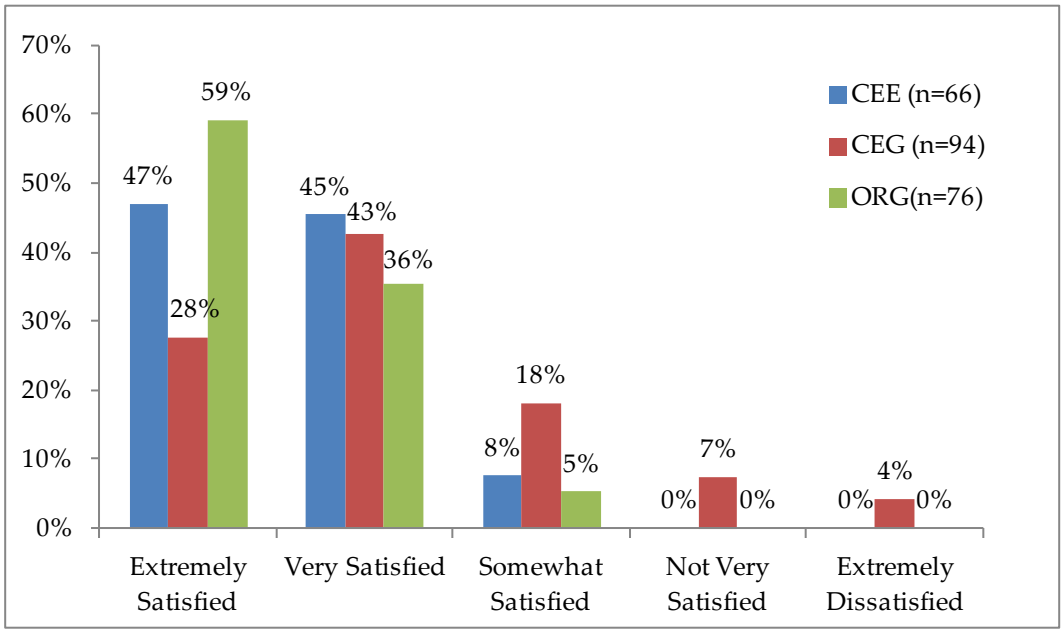
Assessment Category	Findings	Overall Assessment

Web addresses reviewed:
www.oru.com
http://www.oru.com/programsandservices/incentivesandrebates/
http://www.oru.com/programsandservices/incentivesandrebates/coolingandheatingequipment.html
http://www.oru.com/energyandsafety/thepowerofgreen/index.html
Date review conducted: March 16, 2011

Survey results indicate that 33 percent of Con Edison's electric and 47 percent of Con Edison's gas program participants visit the program website. Ninety-two percent of Con Edison electric participants and 70 percent of Con Edison gas participants who visit it show a high degree of satisfaction with its content; 7 percent (all Con Edison Gas participants) show dissatisfaction with the website. Only eleven survey respondents listed reasons for being dissatisfied with Con Edison's website. The main reasons for dissatisfaction are (1) the information available is too general, (2) couldn't find the information needed, and (3) program contact information is not available.

In the case of O&R program's website, 38 percent program participants indicate they visit the website and 95 percent of the visitors are satisfied with it. Figure 51 shows the reported levels of satisfaction among program participants.

Figure 51. Satisfaction with Program Website[37]



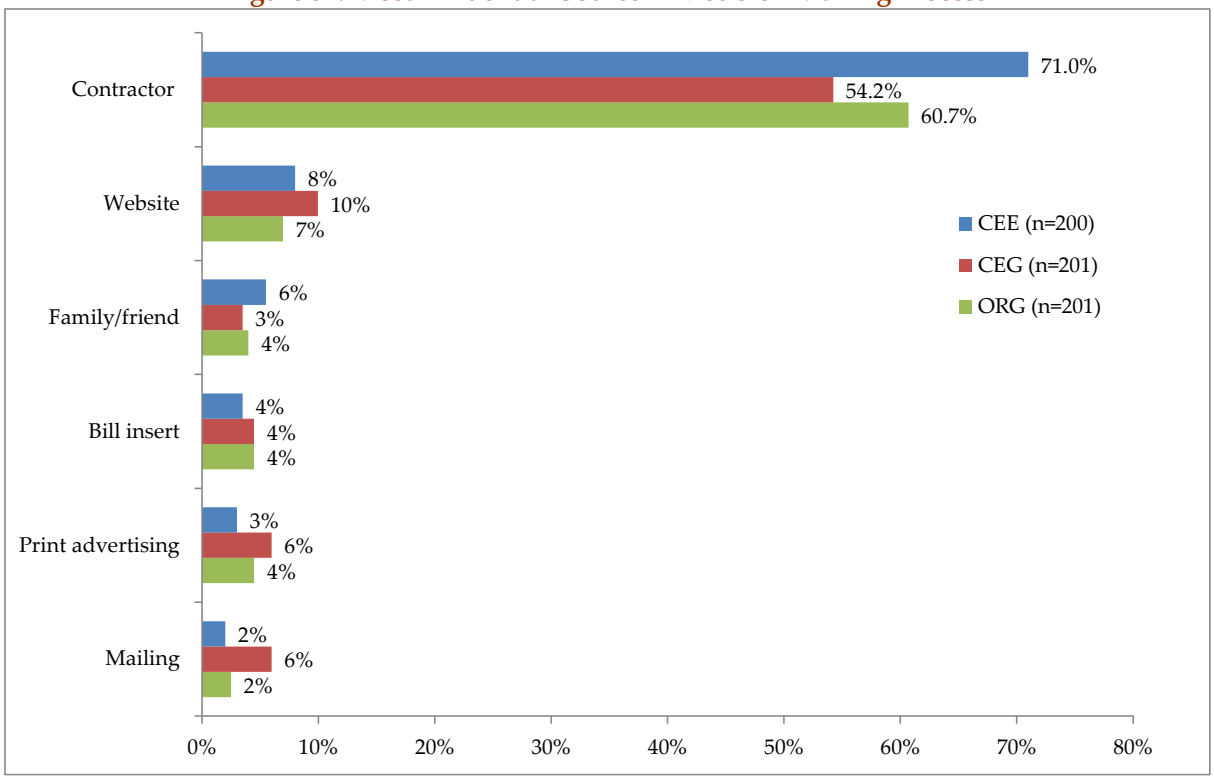
[37] CEE = Con Edison Electric HVAC program participant, CEG = Con Edison Gas HVAC program participant, and ORG = Orange and Rockland Utilities Gas HVAC program participant.

Contractors for both Con Edison and O&R did not report on their experience with the websites, but they did mention the development and implementation of an on-line application form as one way to increase their overall satisfaction with the programs.

9.4 Customer Awareness and Motivation

As previously discussed, most customers indicate contractors as a source of program awareness (Con Edison Electric 74 percent, Con Edison Gas 55 percent, and O&R 66 percent) followed by website, family and friends, print advertisement, and bill inserts (see Figure 48). When asked which of the sources of program awareness was the most influential in their decision to buy an energy efficient system, most respondents also indicated contractors as the most influential source in their decision making process followed by website, family and friends, bill inserts, and print advertising. Figure 52 shows the top six[38] most influential sources.

Figure 52. Most Influential Source in Decision Making Process



In cases where respondents listed a media channel such as mailing, newsletters, website, radio advertisement, television advertisement, print advertisement, and community event as the main source of program awareness, Navigant asked them if they knew which organization was the sponsor of the marketing material (see Figure 53). For Con Edison electric and Con Edison gas, 30 percent and 58

[38] For Con Edison, top five responses represent 86 percent of the total. In the case of O&R, top five responses represent 81 percent. Remaining responses include mailing, newsletter, television/radio advertising, community event/county/state fair, retail store/supply house, manufacturer/equipment supplier.

percent respectively of the respondents knew the marketing material was sponsored by the utility compared to 57 percent for Con Edison electric and 32 percent for Con Edison gas who said they did not know who the sponsor was. Other Con Edison's respondents listed contractors and National Grid. Figure 45 and Figure 46 show there is no clear correlation between Con Edison's marketing efforts and the rate of equipment installations.

Regarding respondents participating in O&R's program, 56 percent recognized the utility as the sponsor of the marketing material compared to 28 percent who did not know. Other sponsors mentioned include Contractors, NYSERDA, Honeywell, and Trade Association.

Figure 53. Awareness of Source of Program Marketing Materials

Program information awareness	Con Edison Electric (CEE) n=30	Con Edison Gas (CEG) n=48	Orange and Rockland (ORG) n=36
Con Edison	30%	58%	0%
Orange and Rockland	0%	0%	56%
Honeywell	0%	0%	3%
NYSERDA	0%	0%	6%
National grid	3%	0%	0%
Trade association	0%	0%	3%
Contractor (general)	7%	4%	11%
Other	3%	6%	0%
Don't know	57%	32%	28%

Participating customers were asked what prompted them to install the new equipment. Although it is not surprising that the most cited reason was to replace equipment that was no longer operating or not working well, it is surprising that nearly 20 percent made the change to improve the efficiency of the system. Figure 54 presents the customers' reasons by program type.

Figure 54. Reasons for Installing New Equipment

Reason for purchasing high efficiency equipment	Con Ed Electric n=118	Con Ed Gas n=130	O&R n=114
The existing system was no longer operating	30.5%	37.0%	33.3%
Wanted to improve the *efficiency* of the system	21.2%	19.2%	20.1%
Wanted to improve system's performance system/System wasn't working well	17.8%	26.9%	18.4%

enough			
New system (not a replacement)	12.7%	2.3%	0.9%
System was old	2.5%	6.2%	12.3%
Wanted to improve the efficiency *and* performance of the system	1.7%	0.0%	8.8%
Oil to Gas conversion	0.0%	6.9%	0.0%
Other	12.7%	1.5%	6.1%

It also appears that contractors are leveraging the value proposition of the program by encouraging their customers to upgrade to high efficiency equipment (58.8 percent Con Edison electric, 47.7 percent Con Edison gas, and 60.5 percent O&R). Figure 55 shows the value propositions for upgrading to high efficiency equipment given by the contractors.

Figure 55. Contractor-Stated Value Propositions for Purchasing High Efficiency

Contractor's reason for purchasing high efficiency equipment	Con Ed Electric n=74	Con Ed Gas n=68	O&R n=75
Lower operating cost in the long run than standard efficiency	50.0%	39.7%	45.3%
Better performance than standard efficiency	27.0%	32.4%	21.3%
Rebate from utility	25.7%	27.9%	29.3%
Lower price than standard efficiency equipment	9.5%	16.2%	5.3%
Federal Tax Credit	6.8%	5.9%	12.0%
Other	31.1%	23.5%	44%
Don't Know	9.5%	8.8%	5.3%

Although contractors most frequently tout lower long-run operating costs as an important benefit from upgrading to high efficiency systems, Figure 56 shows that this is not what motivates most customers to make the upgrade. By far, customers are motivated to choose high efficiency equipment over standard efficiency models by the availability of rebates. Lower long-run operating costs were a distant second. This demonstrates that customers are most sensitive to first costs, even in light of the potential for lower lifecycle costs.

Figure 56. Most Persuasive Value Propositions

Contractor's reason for purchasing high efficiency equipment	Con Ed Electric n=74	Con Ed Gas n=68	O&R n=75
Rebate from utility	59.1%	66.1%	53.8%
Lower operating cost in the long run than	21.2%	16.1%	23.1%

standard efficiency			
Better performance than standard efficiency	9.1%	9.7%	6.2%
Federal Tax Credit	1.5%	3.2%	1.5%
Lower price than standard efficiency equipment	1.5%	0.0%	0.0%
Other	7.6%	4.8%	15.4%
Don't Know	10.8%	8.8%	13.3%

Note: The "other" responses were primarily save money or save energy.

When asked about the first costs, many customers did indicate that the final cost of their high efficiency equipment, after the utility rebate and tax credits, was indeed higher than standard models, though as Figure 57 demonstrates, this sentiment was not overwhelming.

Figure 57. Customer Cost of High Efficiency Equipment

Was the final cost of the high efficiency equipment (after rebates & tax credits) more than the cost of a standard efficiency unit?	Con Ed Electric n=118	Con Ed Gas n=130	O&R n=114
Yes	31.4%	38.5%	34.2%
No	23.7%	23.1%	12.3%
Don't Know	33.1%	35.4%	27.2%

Note: Distributions do not sum to 100% because some respondents refused or said "Other."

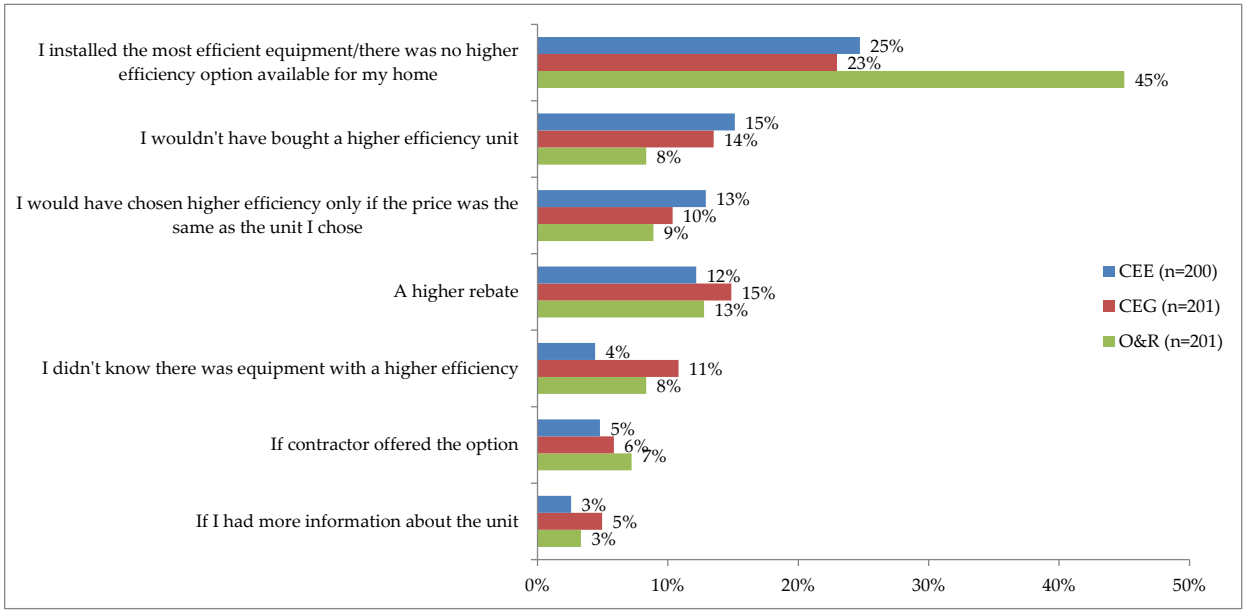
Navigant asked participating contractors in both programs (Con Edison and O&R) their opinion on the customer's decision to participation in the program. The majority of contractors from each utility's program indicated that the decision on whether to participate in the program comes down to the type of customer and what they are looking for. The consensus is that if the customer is the person responsible for paying the electricity bill, he or she is more likely to buy an efficient system as opposed to, say, a property owner replacing equipment for a property they are trying to sell. Another type of customer that contractors identified as likely to buy a more energy efficient equipment is the one who has a higher disposable income and is more educated about energy efficiency in general. Additionally, contractors agree that the general economic situation is negatively affecting the decision to purchase high energy efficient equipment, because customers cannot afford the upfront costs.

In terms of contractor's motivation to participate in the program and their satisfaction level, most participating contractors from both Con Edison and O&R indicated they are satisfied with the program, they believe the program increases awareness of available energy efficient options, and they can use it as a sales tool that helps them increase sales of this type of equipment. They believe participating in the program gives them a competitive advantage.

Navigant asked those program participants who installed central air conditioners, central heat pumps, gas furnaces, gas steam boilers or gas water boilers through the programs what would motivate them to purchase equipment with even higher levels of energy efficiency. Figure 58 presents the top five reasons

program participants' responses. For Con Edison Electric (CEE) and Con Edison Gas (CEG) respectively, 25 percent and 23 percent of participants indicated they installed the highest efficiency option available. In the case of O&R (ORG), 45 percent of participants said they bought the highest efficiency model available.

Figure 58. Reasons to Purchase Even Higher Energy Efficient Equipment[39]



10. Program Delivery

As discussed previously, the Con Edison program is delivered by Honeywell, and O&R implements its program in-house. Despite the different in delivery agents, from the customer perspective, the program processes are very similar. Customers typically hear about the program through one of two channels: program marketing efforts or through their installation contractor. As is typical in rebate programs, the equipment is purchased and installed prior to submitting the program application. If all of the customer and equipment eligibility requirements are met and the appropriate documentation provided, the project proceeds through the process. A sample of project applications is selected for onsite verification (See Section 8.2 above). If a discrepancy is found in the field verification inspection, the project is referred back to the contractor for minor issues and to the customer for more serious problems. The project proceeds to rebate payment when the discrepancies are resolved. Projects not selected for inspection, proceed directly to rebate payment after the customer and equipment eligibility are confirmed, and the project documentation is complete. The rebate is issued to the customer in the form of a paper check and delivered via U.S. mail.

[39] For Con Edison Electric, top seven responses represent 77 percent of the total while the top seven represent 83% of Con Edison Gas respondents. In the case of O&R, top seven responses represent 94 percent. Remaining responses include financing, reasonable payback and don't know.

Figure 59 and Figure 60 below illustrate these program processes for Con Edison and O&R, respectively. The O&R process appears more streamlined because Con Edison has additional processes for payment of contractor incentives for conducting Manual J load calculations (none had been received as of the report date) and for transferring inquiries from Con Edison to Honeywell.

Figure 59: Con Edison Res HVAC Program Process Flow

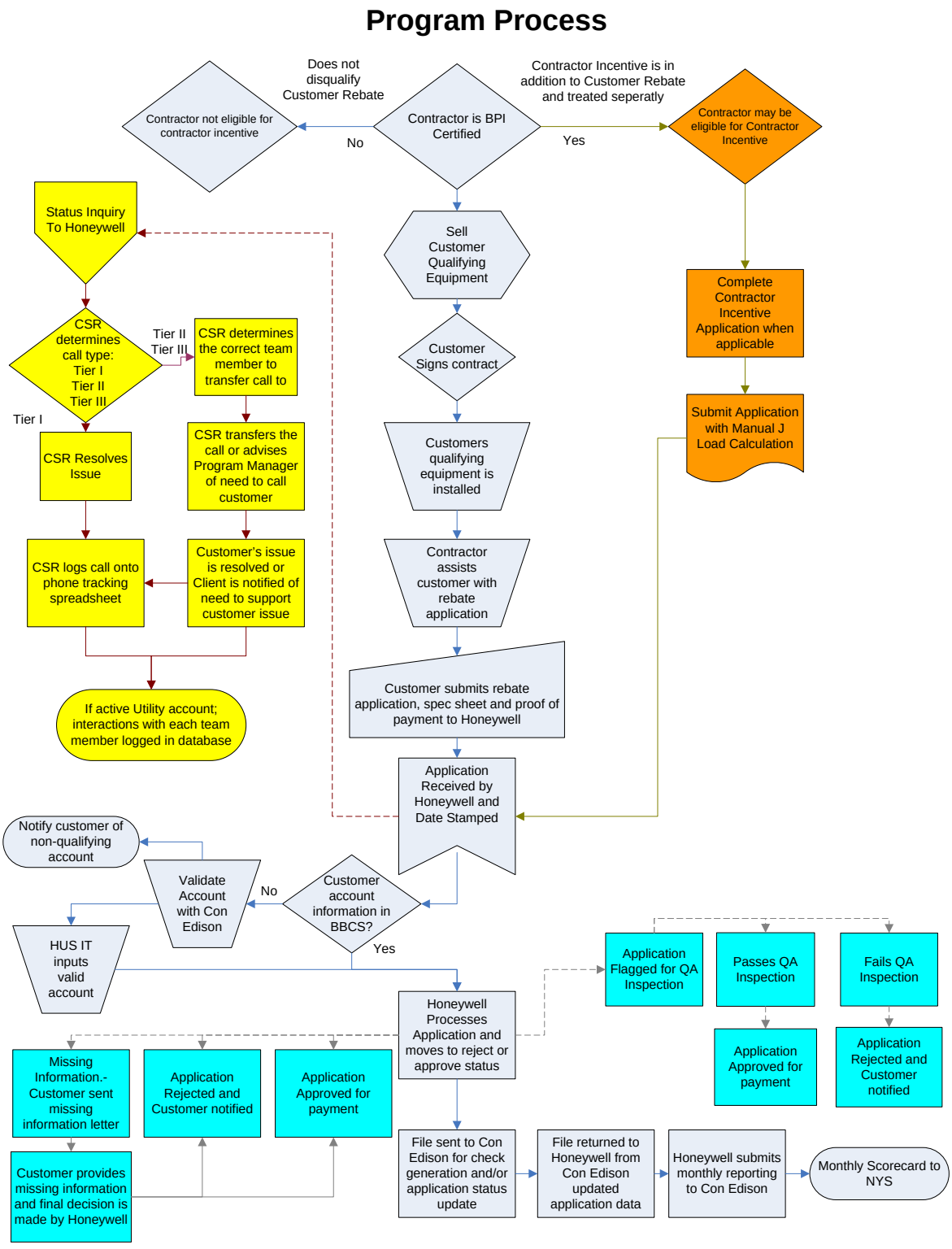
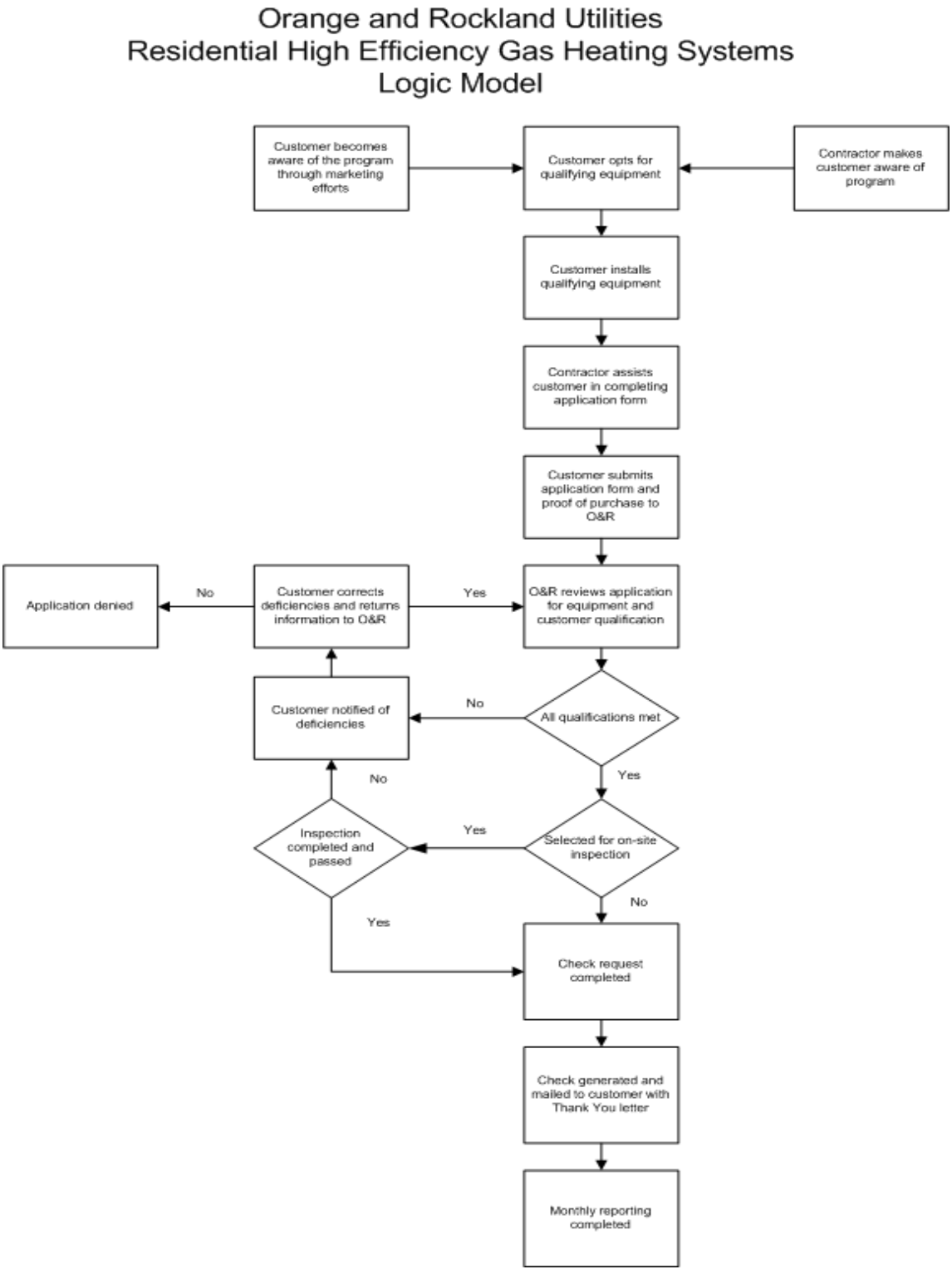


Figure 60: O&R Res HVAC Program Process Flow



The following sections provide perspectives on the Res HVAC programs delivery from the perspective of the program stakeholders, specifically participating and non-participating customers and contractors. Section 10.1 addresses the program processes such as difficulty of finding an eligible contractor, while Section 10.2 compares an in-house program delivery strategy to a third-party approach.

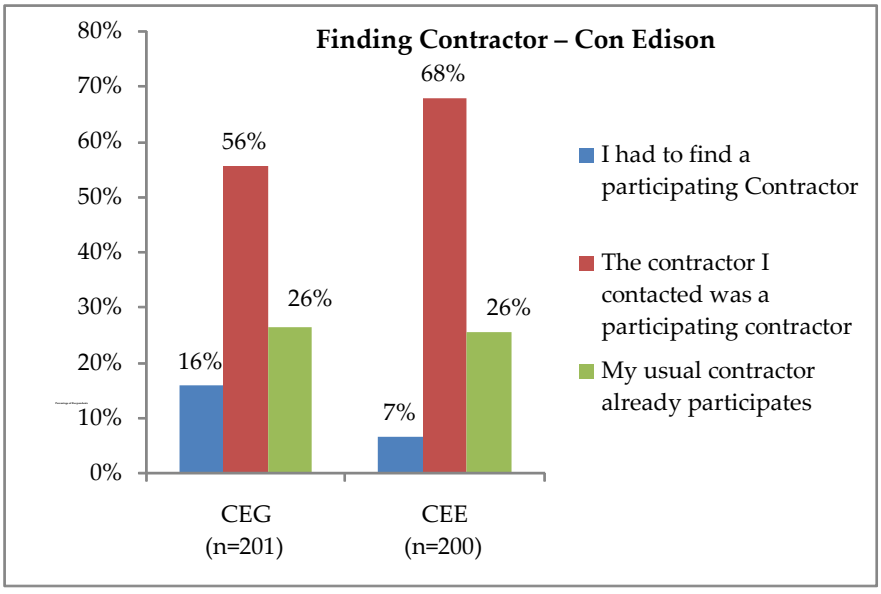
Key findings from Section 10 include the following:

- Most participants report that their contractor, or the contractor they contacted, was already participating in the Con Edison program. This likely means that there is untapped program potential in terms of customers who replace equipment through non-participating contractors (contractors who did not complete Con Edison training requirements and sign up for program) who do not inform them of the rebates available through the program.
- Contractors in both programs indicate that the program paperwork requires a significant time commitment.
- Most non-participants indicate that they would have participated in the program, had they known about it.

10.1 Program Process

When the program was first launched, Con Edison program participants were required to select a contractor who was participating in the Con Edison residential HVAC program. Figure 61 demonstrates that the majority of Con Edison participants surveyed (82 percent of Con Edison gas participants & 94 percent of Con Edison electric) indicated that their usual contractor or the contractor they contacted was already participating.

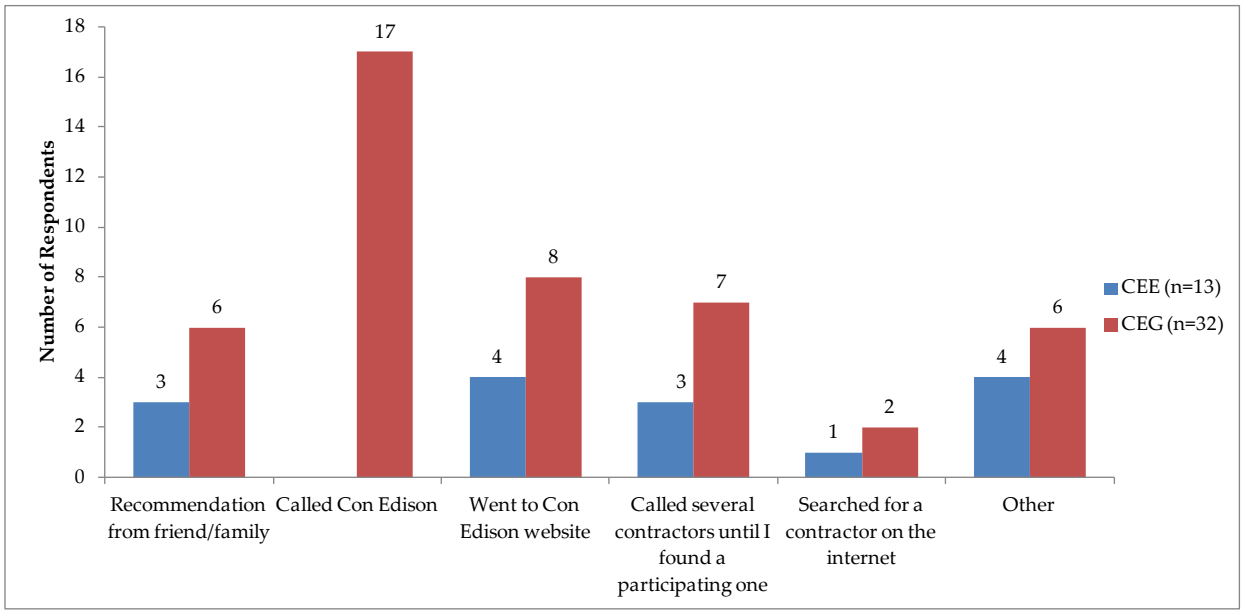
Figure 61: Participants Ability to Find Participating Contractor



Those participants whose existing contractor was not participating and those who did not contact a contractor who was already participating had to find a contractor on their own Figure 62 indicates that the many of the Con Edison gas individuals (53 percent) called Con Edison to find a contractor and

several individuals went to the Con Edison website (31 percent of Con Edison electric and 13 percent of Con Edison gas). The majority of Con Edison gas participants, 66 percent, went through Con Edison, either by phone or web, in order to find a participating contractor. Con Edison electric participants found contractors through a wider variety of methods, the most common being through the Con Edison website, by calling several contractors or through a recommendation from family/friends. Nineteen percent (6 of 32) of Con Edison gas individuals who had to find their own contractor indicated that this was a confusing process. None of the Con Edison electric program participants who had to find their own contractor (n=13) indicated it was a confusing process.

Figure 62: Method of Finding Participating Contractor – Con Edison



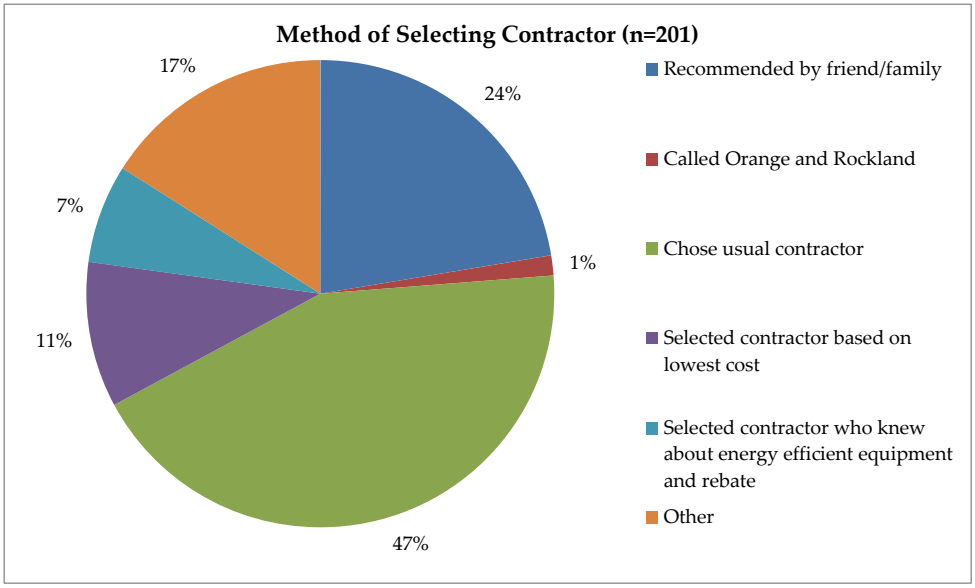
Based on Figure 61 and Figure 62 it would appear that the majority of participants are contacting contractors who are already participating in the program. Those who do not are turning to Con Edison to find a contractor; 19 percent of Con Edison gas respondents have indicated that this process is confusing[40].

Only two of fifteen Con Edison participating contractors interviewed indicated that the reason more contractors were not participating was a result of the training requirement. Although most contractors feel the training was not useful and did not change the way their companies operate, they think it was a mistake to eliminate it because it was a way to separate good contractors from mediocre ones. Most contractors think that in order to improve the training Con Edison should have focused more on program related details (e.g. operation details, type of equipment eligible, application process, and benefits of energy-efficient equipment) and stayed away from technical training.

[40] The Con Ed requirement that customers use a contractor enrolled in the program was removed as of October 1, 2010. Therefore, this should no longer be an issue.

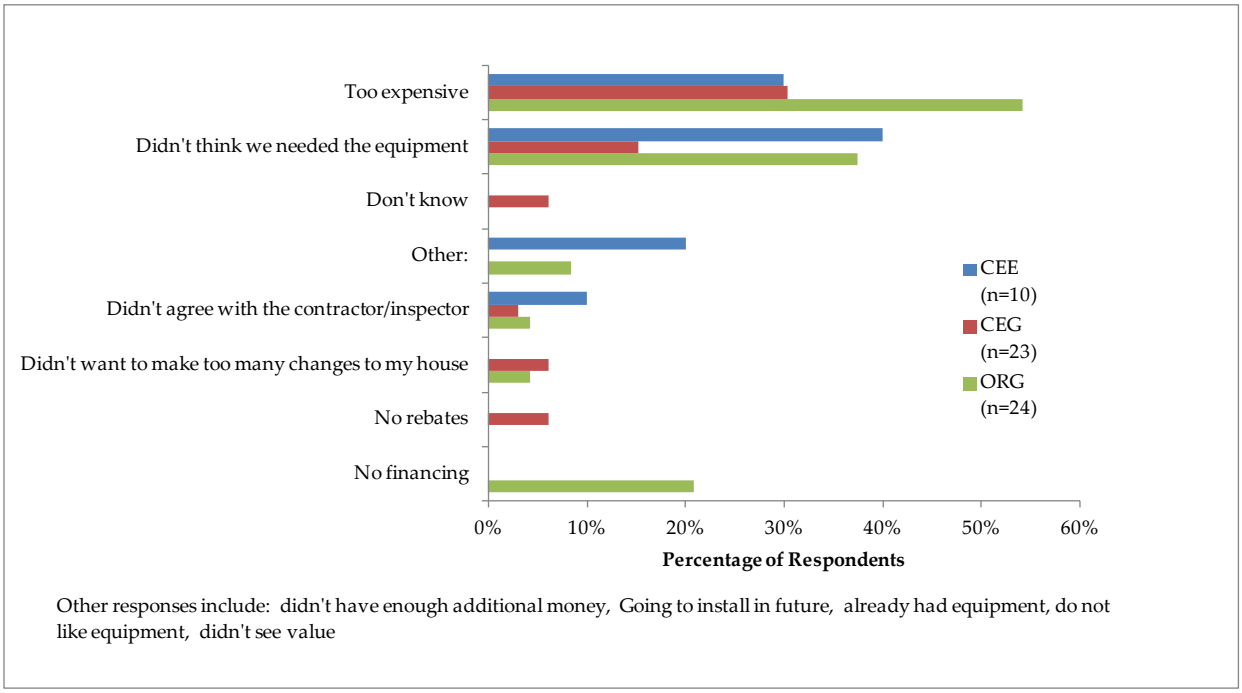
O&R did not have a requirement that contractors pre-qualify or apply in order to participate, and as a result participants were able to work with any contractors. O&R conducted several training events and invited Rockland County contractors to their Spring Valley facility in Rockland County, and Orange County contractors to their Blooming Grove facility in Orange County for convenience. Individual one-on-one training was also conducted by the Program Administrator as requested. As shown in Figure 63, participants most commonly selected their usual contractor (47 percent) followed by selecting a contractor who was recommended by friends of family (24 percent). Very few people called O&R (1 percent) and no respondents visited the O&R website. This suggests that O&R had to field fewer calls relating to the program than did Con Edison.

Figure 63: Method of Selecting Contractor – O&R



Participants were also asked to identify whether the contractor recommended any rebate-eligible equipment that was not installed. Only 12 percent of Con Edison gas participants, 7 percent of Con Edison electric, and 10 percent of O&R participants indicated that they had not installed some of the measures recommended by the contractor. Participants who did not install a measure recommended by the contractor indicated that they did not do so due to the high cost of the measure or because they believed that they did not need the measure (Figure 64).

Figure 64: Reasons for Not Installing Recommended Equipment



Other responses include: didn't have enough additional money, Going to install in future, already had equipment, do not like equipment, didn't see value

Contractors were interviewed in order to determine their perception of the benefits of participation in the program. All O&R contractors indicated that participation in the program is beneficial as it increases sales of energy efficient equipment and helps improve customer satisfaction. Benefits to participation given by Con Edison contractors were: increased customer awareness of available energy efficiency options, the ability to leverage the program as a sales tool to increase sales of energy efficient equipment, and the competitive edge that the program gives participating contractors.

10.2 Evaluation of Program Delivery Strategies

This section evaluates the delivery strategies of Con Edison and O&R. This involves evaluation of Con Edison's third-party delivery strategy and O&R's in-house delivery model. The differing delivery strategies relate to differences in utility territories. For instance, the small size of O&R's program has allowed it to handle outreach to contractors and resolution of application deficiencies in a very "high touch" manner, where the program manager is able to reach out directly via telephone. In contrast, the high volume of applications required to meet Con Edison's program goals necessitated development of a more mass market approach to marketing and outreach and formal application processing protocols. An evaluation of each delivery strategy was completed considering the needs of each utility territory customers.

The following section (Satisfaction with the Program) presents participant survey findings on several aspects of customer satisfaction. Figure 65 compares the survey results for three variables most likely to be influenced by the program delivery strategy.

Figure 65. Comparison of Key Satisfaction Variables

Satisfaction Variable	Con Ed Electric	Con Ed Gas	O&R
Satisfaction with timing of rebate payment (average on 1 to 10 scale)	8.16	6.58	9.02
Have recommended program to others	66%	55%	69%
Likelihood of recommending program to others in the future (average on 1 to 10 scale)	9.28	8.81	9.52

O&R participants tend to be more satisfied with the timeliness of their rebate payment which averages four weeks for O&R but eight weeks for Con Edison. O&R participants are also slightly more likely to have recommended the program to others and are slightly more likely to do so in the future. Con Edison gas participants indicated much lower satisfaction with the timing of the rebate than the Con Edison electric participants.

Participants who indicated that they would be extremely unlikely to recommend the program to others were asked to indicate why they would not do so. Only one O&R respondent fell into this category, indicating that they would recommend the program because the rebate was too small. Two Con Edison electric respondents fell into this category, one indicating that there is too much red tape and the second indicating they do not typically sign up for these type of programs. Con Edison gas participants complained of the lag in receiving their rebate (23 percent) and hassle and red tape (15 percent).

The delivery of the program can also be compared by examining enrollment rates and progress toward goals. Figure 66 indicates that, for the gas HVAC programs, O&R's market penetration was nearly twice as high as Con Edison's.

Figure 66: Program Enrollment Rates

	Con Ed Gas	Con Ed Electric	O&R Gas
Number of Customers	215,000	210,000	110,000
Number of Participants	778	1,168	759
% of Customer Participating	0.36%	0.56%	0.69%
Participation Goal	13,000	26,000	738

11. Satisfaction with the Program

In order to assess program satisfaction, participating and non-participating customers were asked several questions relating to their perceptions of the program. Contractors were also interviewed in order to obtain their program feedback. Section 11.1 provides and assessment of customer satisfaction with the program including the timing of rebate payments and the likelihood of recommending the program to others. Section 11.2 discusses contractor satisfaction with the program and Section 11.3 discusses customer satisfaction with the call centers.

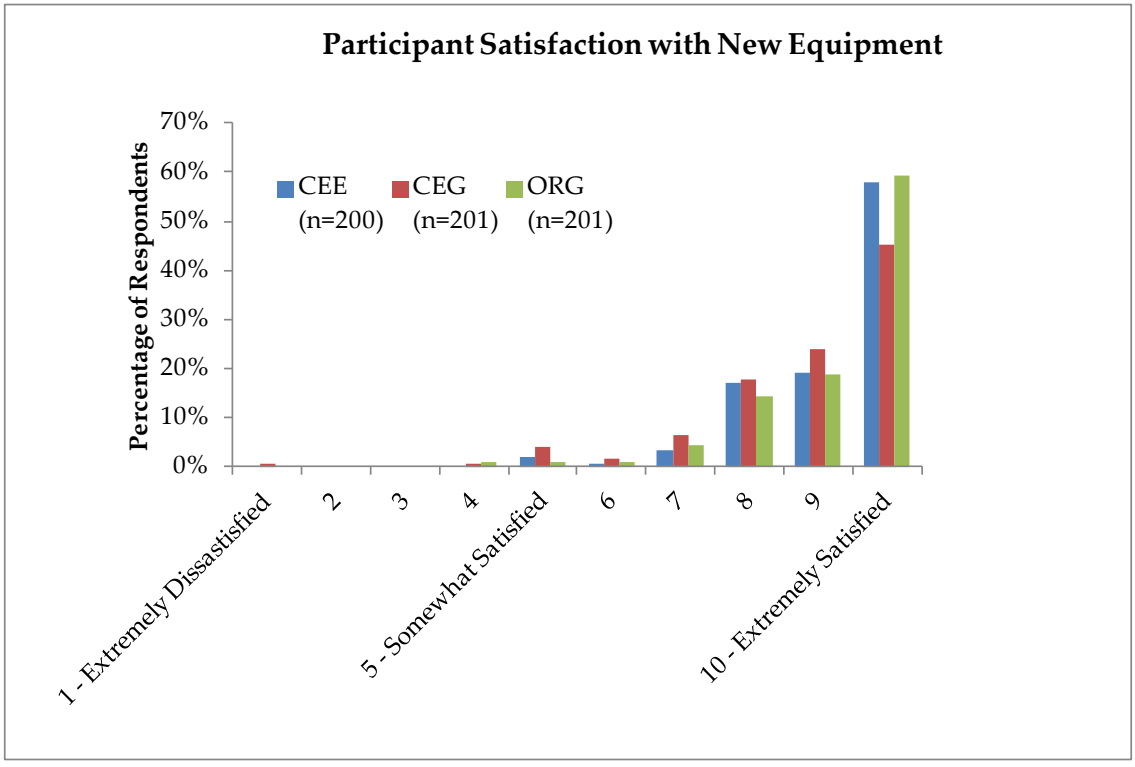
Key findings from Section 11 include the following:

- Participants from both Con Edison and O&R indicated a high level of satisfaction with the measures they installed through the program.
- Participants' satisfaction with the timing of receiving their rebate varied between Con Edison customers and O&R customers.
- O&R participants are slightly more likely to have recommended the program to others and are slightly more likely to do so in the future.
- O&R and Con Edison gas participants were more likely to call the utility than Con Edison electric participants (63 percent and 50 percent versus 20 percent), but O&R participants were more likely to have their issues resolved the first time.
- Contractors participating in both the Con Edison and O&R programs indicated being satisfied with the program due to the increased sales which occur through the program.

11.1 Customer Satisfaction

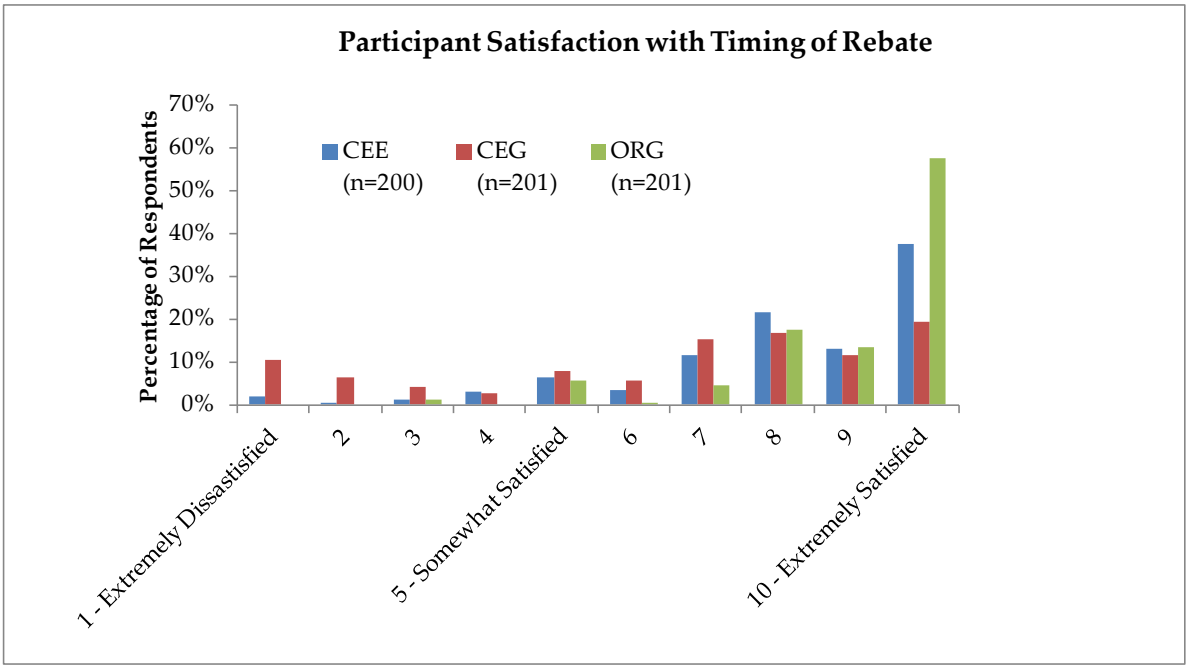
Participant's satisfaction with the performance of their new equipment was very high. Figure 67 illustrates that 91 percent of Con Edison customers (94 percent electric and 87 percent gas) and 93 percent of O&R customers have rated their satisfaction between 8 and 10 on a scale of 1 – 10 where 10 means 'extremely satisfied'. The average satisfaction with equipment performance for Con Edison electric customers was 9.24, for Con Edison gas customers it was 8.88 while that of O&R customers was 9.24.

Figure 67: Participant Satisfaction with New Equipment



Participants' satisfaction with the timing of receiving their rebate varied significantly between Con Edison gas and electric customers, especially with regard to those who gave the highest satisfaction ratings, as seen in Figure 68 which illustrates the percentage of participants who rated their satisfaction between 8 and 10 on a scale of 1 – 10 where 10 means 'extremely satisfied'. As discussed above, the average satisfaction for Con Edison gas customers was 6.58, the average of Con Edison electric customers was 8.16. O&R received an average satisfaction rating of 9.02. These survey results make sense in light of the application processing timeframe analysis in Section 8.1, which found the average time from application to rebate payment is four weeks for O&R, much shorter than the average of eight weeks for Con Edison. The high satisfaction by O&R customers is most likely due to quick turnaround time for rebate processing on the part of O&R.

Figure 68: Participant Satisfaction with Timing of Rebate

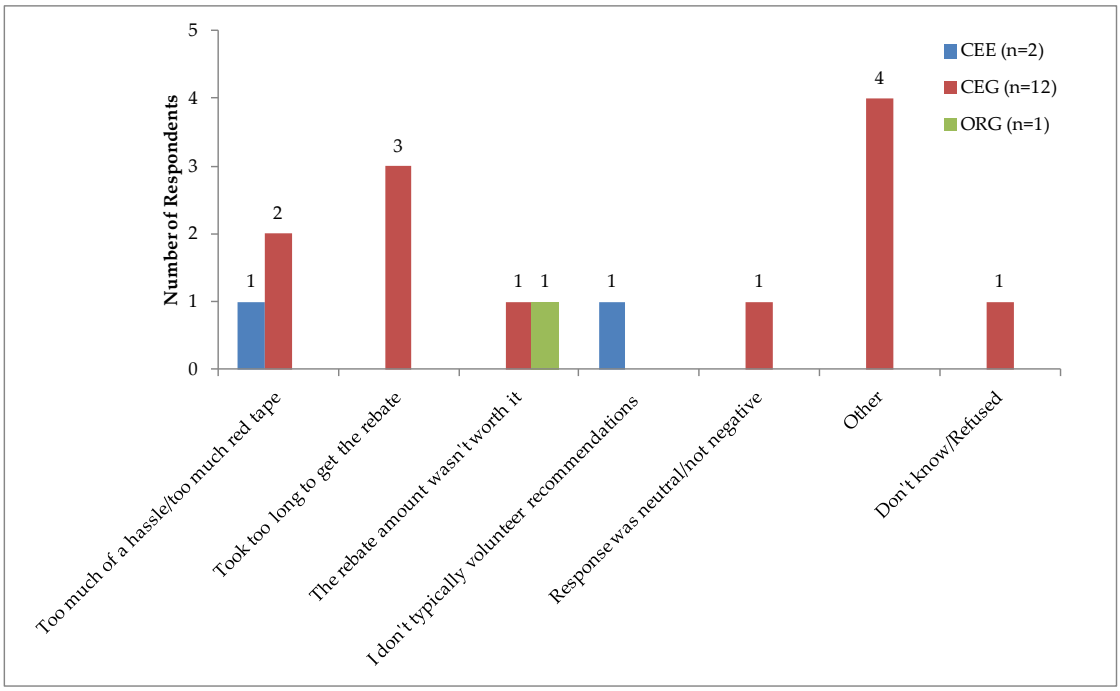


Another gauge of program performance is the frequency with which participants have recommended the program to others. O&R participants and Con Edison electric participants are slightly more likely to have recommended the program to others and are slightly more likely to do so in the future. Sixty six percent of Con Edison electric participants, 55 percent of Con Edison gas participants and 69 percent of O&R participants indicated that they have recommended the program to others. Con Edison electric, Con Edison gas and O&R participants rated their average likelihood of recommending the program to others in the future 9.28, 8.81 and 9.52 respectively on a scale of '1' to '10' where '1' is extremely unlikely and '10' is extremely likely; both scores are high.

Participants who indicated that they would be extremely unlikely to recommend the program to others were asked to indicate why they would not do so. Only 2 Con Edison electric participants, 12 Con Edison gas and one O&R participants were asked this question. Figure 69 indicates the reasons given for not recommending the program to others. Due to the small sample size it is difficult to draw any

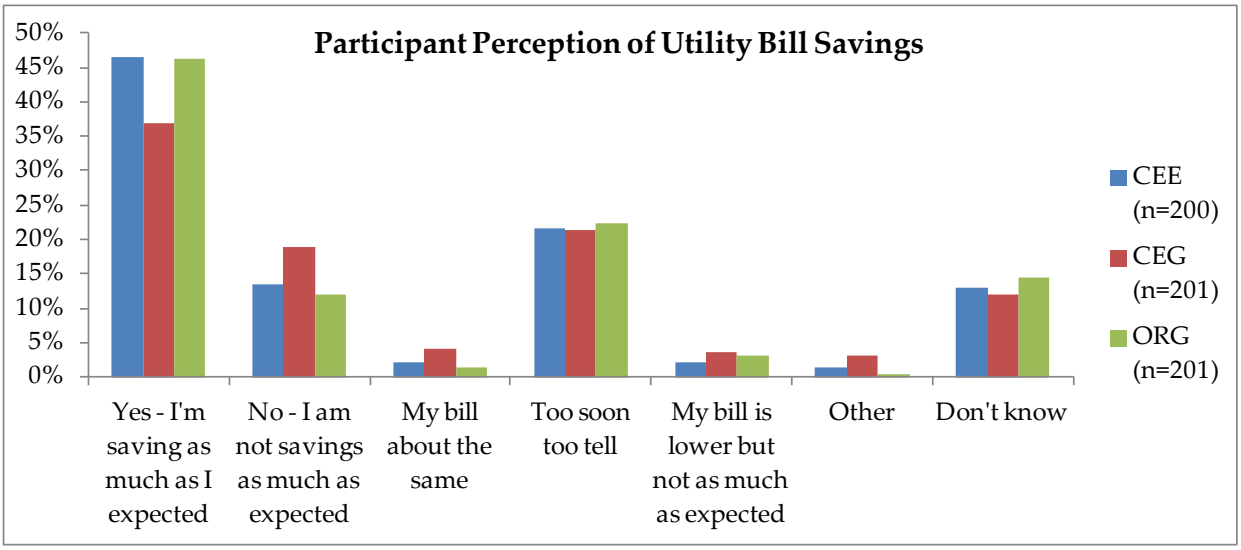
conclusions for these responses. The single O&R respondent indicated that they would not participate because the rebate was too small. Figure 69 shows that responses vary by participant group with multiple respondents indicating that the program was too much of a hassle and multiple Con Edison gas respondents indicating that it took too long to get the rebate.

Figure 69: Reasons Participants Did Not Recommend Program to Others



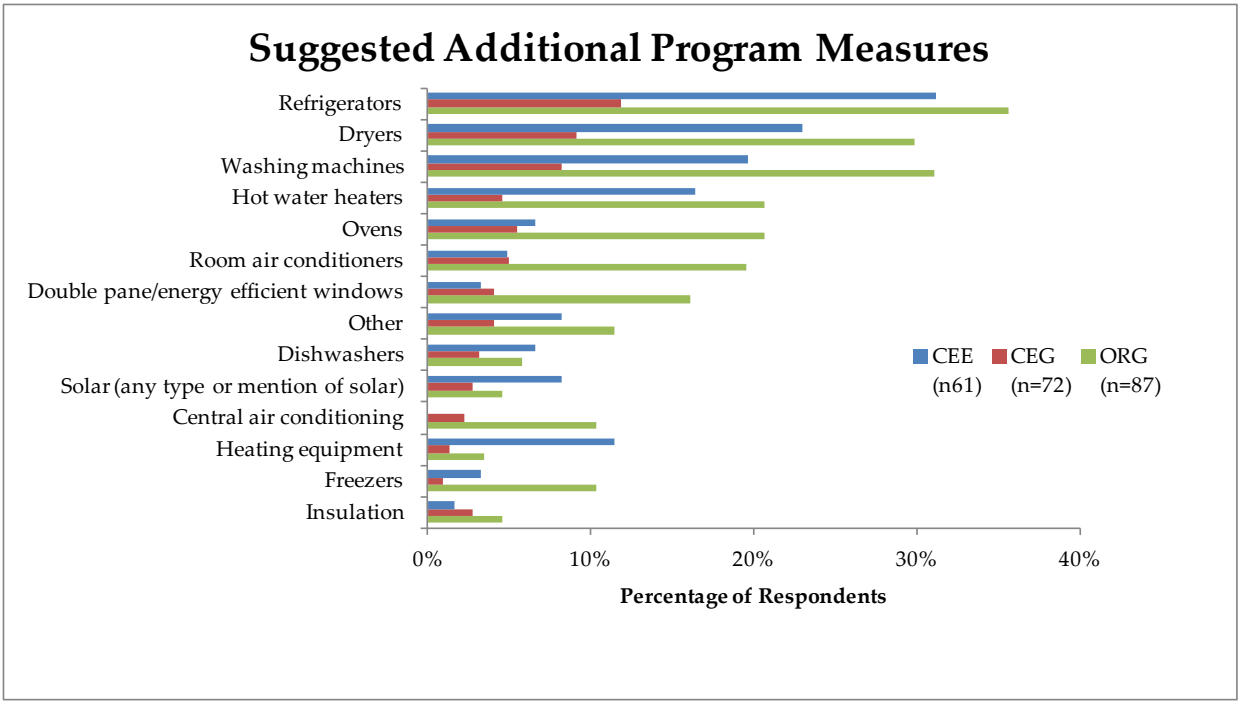
One expectation of participation in the program is savings on utility bills. In order to gauge customer's satisfaction with program savings survey respondents were asked if they had achieved the savings they expected through installation of the rebated equipment. Figure 70 illustrates that 47 percent of Con Edison electric participants, 37 percent of Con Edison gas participants and 46 percent of O&R participants indicated that they had achieved expected savings while 3 percent indicated that their bills were lower but savings were not as high as expected.

Figure 70. Participant Perception of Utility Bill Savings



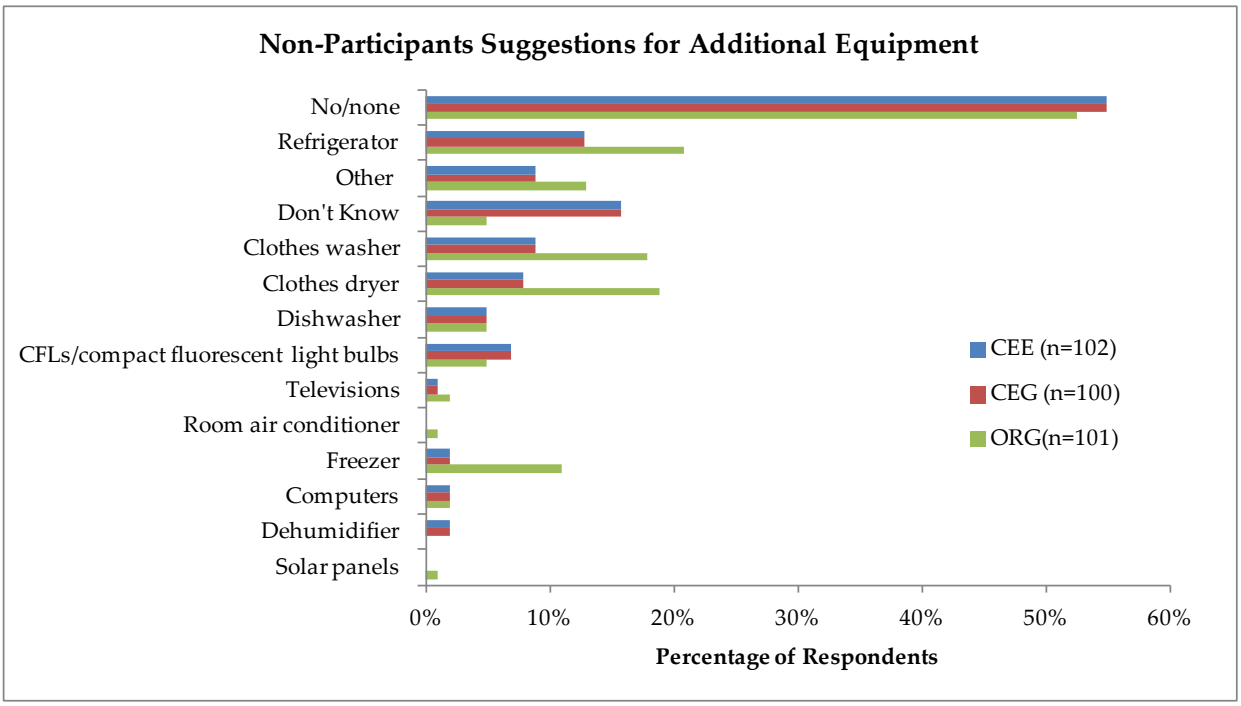
The type of equipment which is rebated through the program will affect participation. Thirty-one percent of Con Edison electric participants, 33 percent of Con Edison gas participants and 43 percent of O&R Participants have suggested that additional equipment be rebated through the program. Figure 71 illustrates that the most commonly recommended additional measures were refrigerators, dryers and washing machines.

Figure 71: Additional Measures Suggested by Participating Respondents



Individuals who did not participate in the program were also asked to indicate if they had any suggestions for additional equipment. Over half of non-participating respondents from both utilities indicated that they had no suggestions for additional equipment. Figure 72 illustrates that among those who did make suggestions, refrigerators, clothes washers and clothes dryer were most commonly suggested.

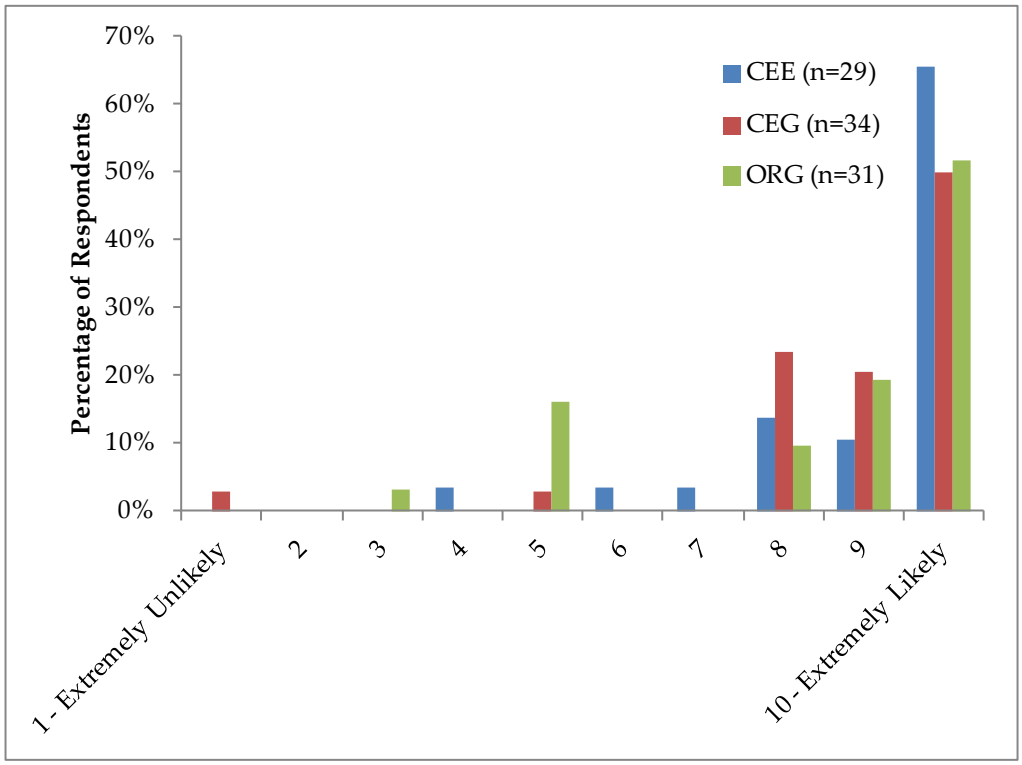
Figure 72: Additional Measures Suggested by Non-Participating Respondents



Eight individuals indicated that they purchased eligible equipment but did not participate in the program. The main reason these individuals listed for not participating was not enough time/did not want to process the rebate (38 percent).

Non-participants who purchased high efficiency equipment indicated that that they would be likely to participate in the program if they were aware of the availability of rebates, with a reported average likelihood of 9.2, 8.9 and 8.6 on a scale of 1 to 10 where '1' indicates not at all likely and '10' indicates extremely likely for Con Edison electric, Con Edison gas and O&R non-participants respectively. Figure 73 illustrates these results graphically. The fact that most non-participants would have participated if they had known about the program indicates that the program should work to increase awareness in order to improve program participation. Non-participants who indicate they would have been unlikely to participate even if they had known about the rebate were asked why. Only 10 respondents were asked this question and 50 percent of these individuals indicated that they may participate in the future or that they would require more information to participate. The remaining individuals did not indicate why they would not participate in the future.

Figure 73: Likelihood of Participating in Program if Non-Participants had Known about Rebate



The circumstances under which non-participants may consider participating was also explored among respondents who knew about the rebate and respondents who indicated they would have been unlikely to use the rebate if they had known about it. Only 18 respondents fell into this group and 7 of these individuals indicated that they would not participate under any circumstances, 2 indicated they would participate if the rebate was higher, and the remaining individuals declined to answer.

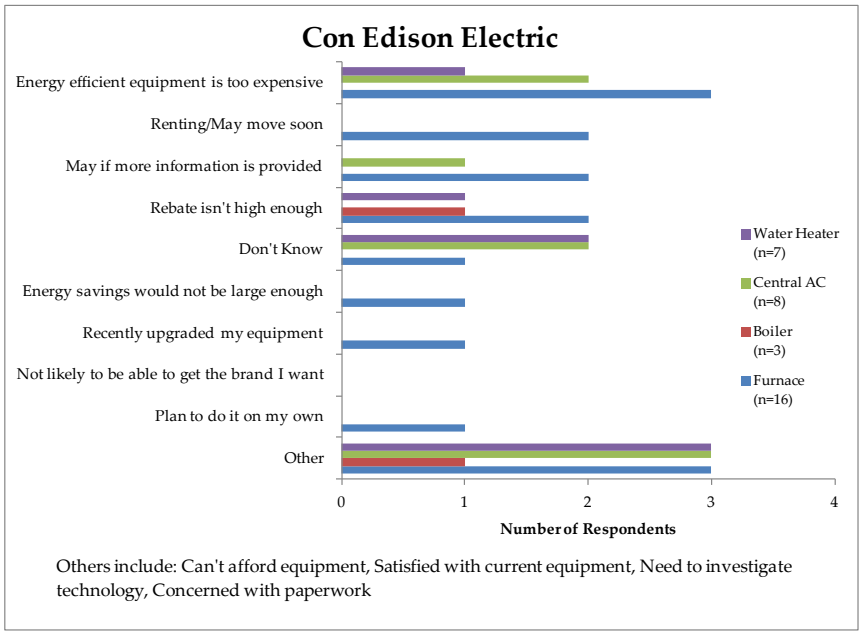
When asked to indicate how likely they would be to spend additional money to purchase energy efficient equipment when it comes time to replace their current equipment if a rebate were offered, non-participants indicated that they would be more likely to purchase an efficient water heater than an efficient furnace, boiler or central air conditioning. Non-participants were asked (using a 10-point scale) specifically if they would spend an additional $1,000 for an efficient a furnace/boiler/central AC or $300 for an efficient water heater, if a rebate of $200, $500, $400 and $300 was offered for the efficient furnace, boiler, central AC and water heater, respectively. Figure 74 indicates that non-participants would be somewhat or very likely to purchase energy efficient equipment if a rebate is provided.

Figure 74: Likelihood of Non-Participants to Spending Additional Money on Energy Efficient Equipment in the Future

Mean Likelihood	Furnace	Boiler	Central AC	Water Heater
Con Edison Electric	6.63	8.70	8.45	8.93
Con Edison Gas	6.36	7.37	7.17	8.82
O&R	7.00	8.13	N/A	8.70

The reasons individuals would not take advantage of the rebate are given below in Figure 75, Figure 76 and Figure 77. A significant percentage of respondents indicated that they would not participate due to the high cost of energy efficient equipment or that they may participate if more information is provided. This suggests that in order to improve participation Con Edison and O&R could provide higher rebates and could provide more information about the program or make this information more accessible, though the rebates are mandated by the NYPSC, which is a barrier.

Figure 75: Reasons for Not Participating in the Future – Con Edison Electric



Others include: Can't afford equipment, Satisfied with current equipment, Need to investigate technology, Concerned with paperwork

Figure 76: Reasons for Not Participating in the Future – Con Edison Gas

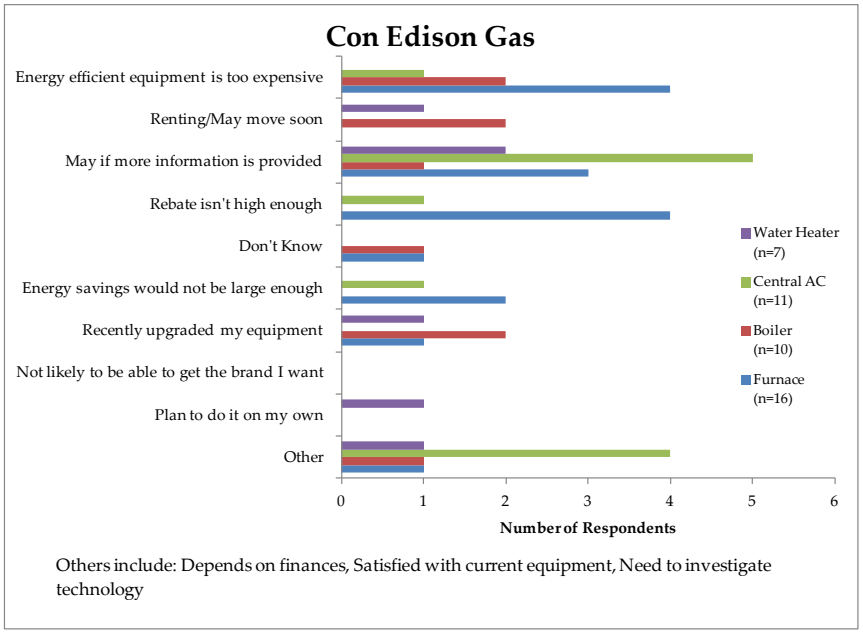
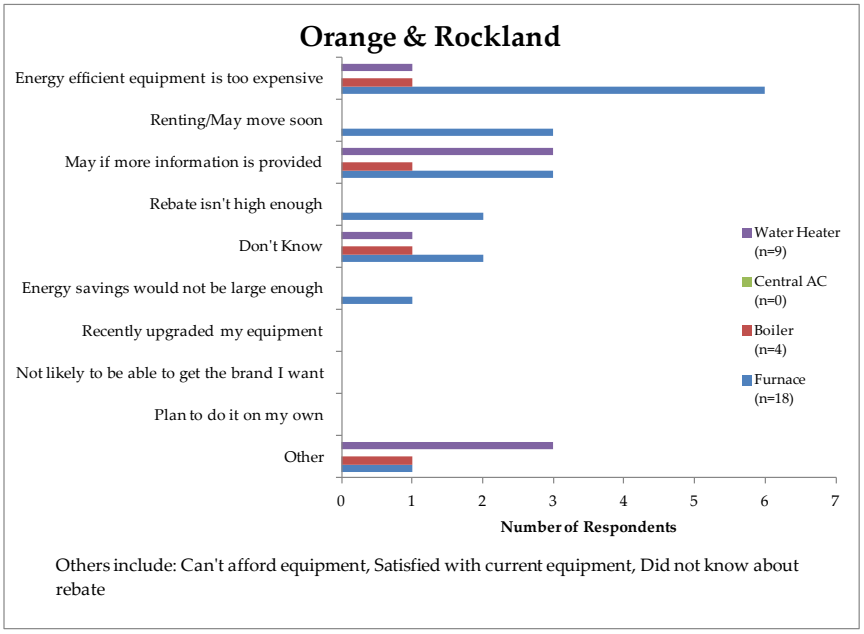


Figure 77: Reasons for Not Participating in the Future – Orange & Rockland



Non-participants were also asked to identify circumstances under which they would participate in the program in the future. As seen in Figure 78, Figure 79 and Figure 80, many non-participants said they will participate in the future when their equipment fails.

Figure 78: Circumstances Under Which Non-Participants Would Participate in the Future – Con Edison Electric

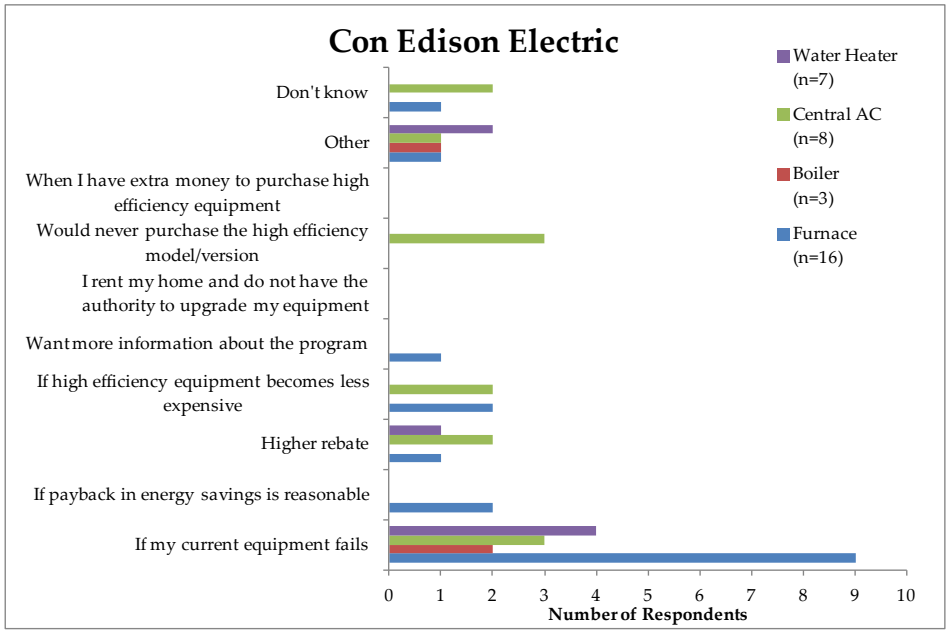


Figure 79: Circumstances Under Which Non-Participants Would Participate in the Future – Con Edison Gas

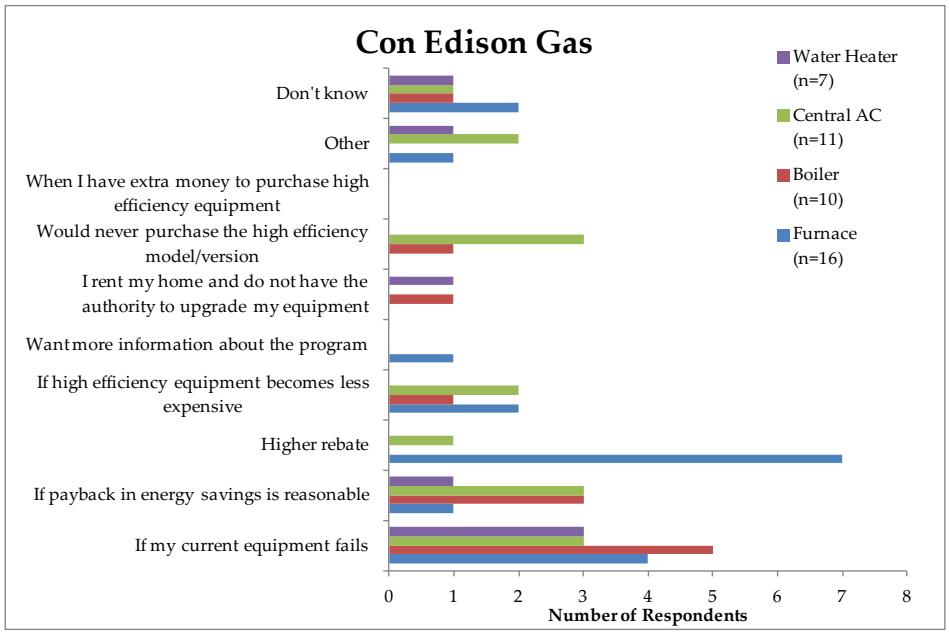
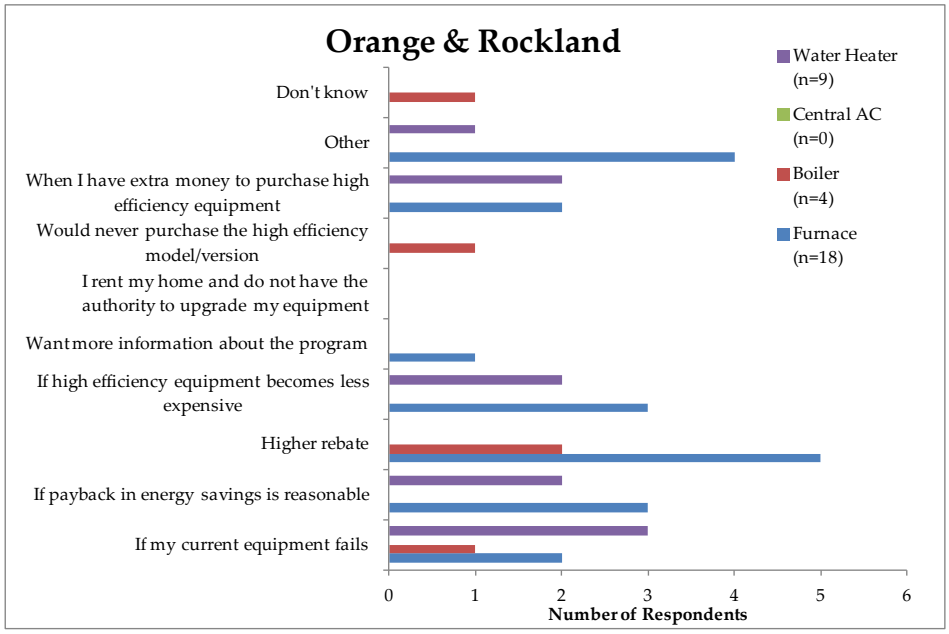


Figure 80: Circumstances Under Which Non-Participants Would Participate in the Future – Orange & Rockland



11.2 Contractor Satisfaction

Contractors involved in both the Con Edison and O&R programs were interviewed to determine their perspective on the programs. Contractors participating in both the Con Edison and O&R programs indicated being satisfied with the program due to the increased sales which occur through the program. Con Edison contractors indicated that the program acts as a sales tool and gives them a competitive edge over other contractors. O&R contractors indicated that the program also leads to customer satisfaction which acts as an advantage to the contractors. Non-participating contractors in the O&R territory showed interest in participating but most have not heard of the programs. Con Edison non-participating contractors have heard of the program, but most are not participating since they did not receive information about the program directly from Con Edison. For both O&R and Con Edison it would be beneficial to work harder to make contractors aware of the program and send program information to them, in order to improve participation.

When asked how they heard about the program many O&R (4 of 7) contractors claimed they heard about it through O&R, a few (2 of 7) contractors found out through customers, and 1 through industry contacts. The majority of participating O&R contractors inform customers of the program, and a few (3 of 7) advertise their participation in the program through websites or printed materials.

Approximately half of the participating Con Edison contractors (7 of 15) indicated hearing about the program through Con Edison, a few (3 of 15) heard about the program through industry contacts, one heard about the program from a customer and the other did not know or did not comment on how they heard about the program.

When asked about satisfaction with the program, all O&R contractors indicated being satisfied with the program as it increases sales and none reported any drawbacks to participation. Sixty percent (9 of 15) Con Edison contractors indicated that they felt the program was beneficial and helped increase sales. Two Con Edison contractors indicated that they did not feel the program was beneficial and one contractor said the program is only beneficial with the training in place. The remaining three contractors did not comment on program satisfaction. Several Con Edison contractors suggested that the training was not useful and did not change the way their companies operated. However, as noted earlier, they believe it was helpful in separating the mediocre contractors from the good ones.

The O&R program did not require that contractors participate in program workshops or be certified prior to submitting an application for the program. All O&R contractors indicated that the program was beneficial and helped increase their sales of energy efficient equipment. Removing the requirement that contractors complete training to participate in the Con Edison program likely increased competition for the trained contractors which led to some dissatisfaction by contractors who had already gone through the qualification process.

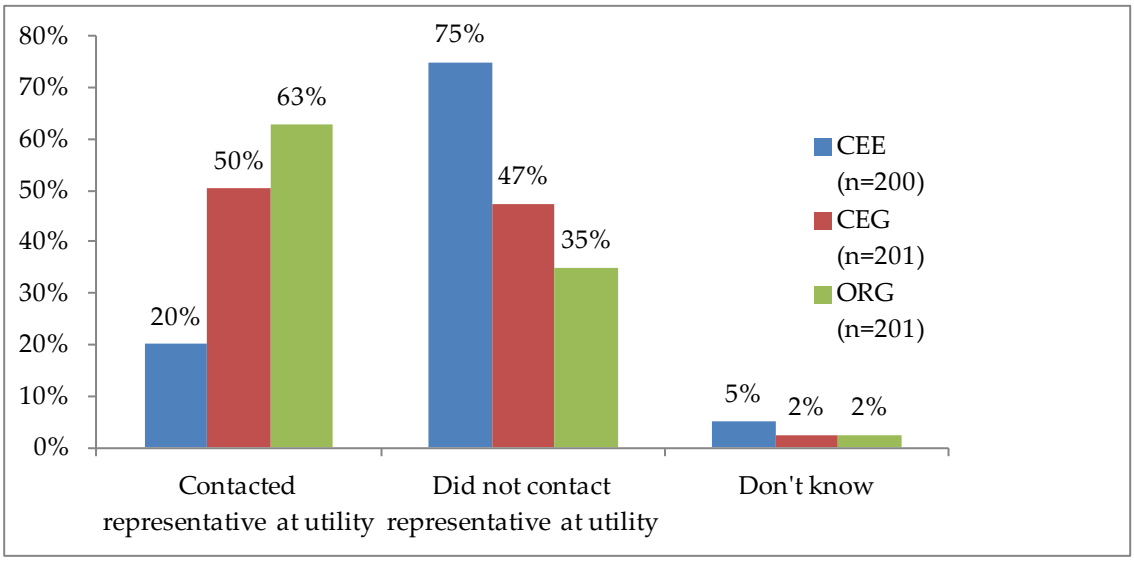
11.3 Satisfaction with Call Centers

Customers are able to contact the programs by telephone for information or to resolve issues. Although each utility runs a call center for general utility customer service, each also has a toll free number for rebate program-specific questions. Survey respondents were not able to distinguish between the general utility and rebate program call centers in their responses, so this must be taken into account when reviewing these findings.

Figure 81 indicates that, on average, a higher percentage of O&R participants contacted the call center than did Con Edison participants; though Con Edison gas participants were more likely to contact the call center (50 percent) than electric participants (20 percent). This result is to be expected; O&R does not provide a copy of the program application on its web site so customers and contractors must engage with the program in order to participate. This is done to prevent customers from misinterpreting the eligibility requirements and submitting applications for equipment or projects that do not qualify.

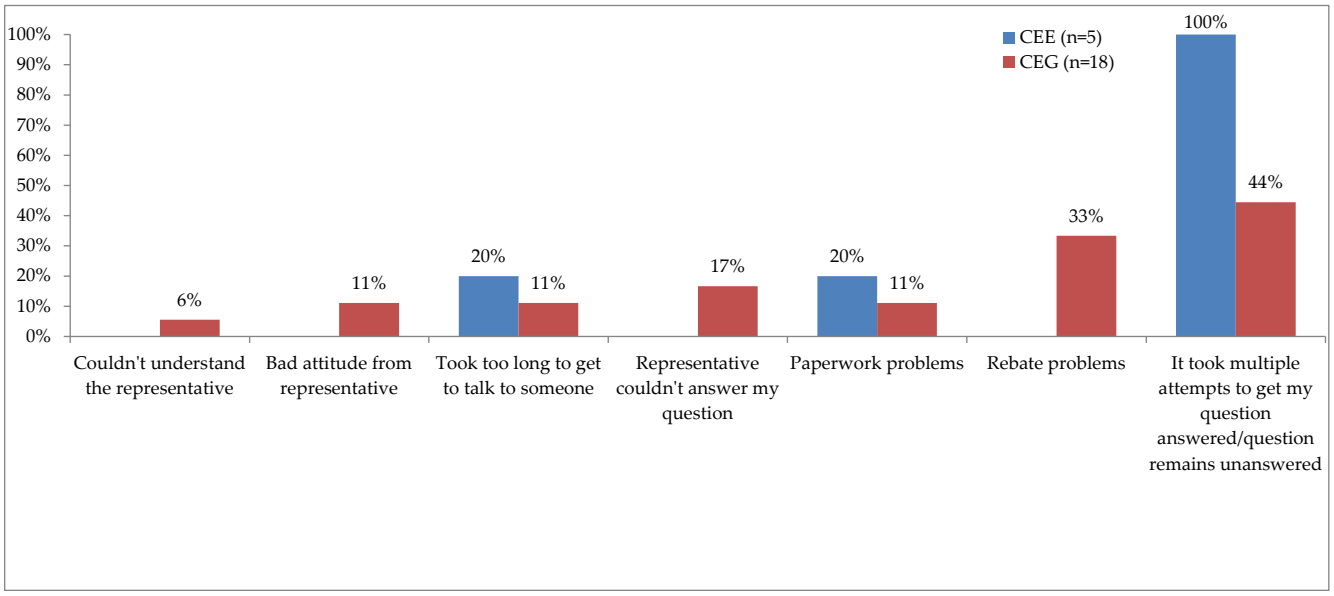
Individuals who placed calls were asked the number of calls they made to the utility. On average Con Edison electric participants indicated making 2.08 calls; Con Edison gas participants indicated making 3.80 calls while O&R participants indicated making 2.07 calls. The average satisfaction with contacting the utility was reported to be 8.10, 6.97 and 9.48 by Con Edison electric, Con Edison gas and O&R participants, respectively (on a 10-point scale). Having to make multiple call attempts to get through was the biggest source of dissatisfaction with the call centers. O&R's high satisfaction rating is likely due to having a dedicated phone line that goes directly to each program administrator so customers can get assistance quickly.

Figure 81: Frequency of Call Center Calls



Participants who indicated that they were not satisfied with their experience contacting the utility were asked what caused their dissatisfaction. The average satisfaction ratings, on a scale of 1 to 10, given by individuals who contacted the utility were 8.10, 6.97 and 9.5 for Con Edison electric, Con Edison gas and O&R respectively – all relatively high. Five Con Edison electric participants and 18 Con Edison gas participants (less than 13 percent and 18 percent respectively of these surveyed) indicated dissatisfaction (satisfaction rating lower than 5). None of the O&R participants indicated a satisfaction of less than 5. Figure 82 illustrates that the majority of individuals who were not satisfied had to contact the utility multiple times and may still not have had their issue addressed. A large portion of these respondents also indicated that the representative was not able to answer their questions. Both of these responses indicate that Con Edison should invest more into training their call center employees and ensuring that they are knowledgeable with regards to program details. This would decrease the number of calls participants are required to make in order to have their issues addressed and would improve customer satisfaction.

Figure 82: Reasons for Dissatisfaction with Experience Contacting Utility



12. Interactions with Other Programs

Several programs are available to customers in the same region and customer class as the Con Edison and O&R Res HVAC programs. Participating and non-participating customers were asked if they knew about these other programs and if they have participated in them. In some cases these programs are complimentary to the Con Edison and O&R programs, but some programs are focused on the same measures which causes overlap with the Res HVAC programs. Sections 12.1 and 12.2 discuss participant and non-participant awareness of other efficiency programs, respectively.

Key findings from Section 12 include the following:

- There is overlap between the Res HVAC programs offered through Con Edison and O&R and the NYSERDA home appliance rebate program.
- Each program overlaps with another utility when the customer has different gas and electric providers.
- Con Edison participant awareness of other residential programs which are offered through the utility is very low.[41]
- Participants were more likely to have heard of other non-utility programs, including those offered by the federal government, State of New York, NYSERDA, and manufacturer's rebate programs.
- Participants are more likely to have participated in other non-utility programs than utility programs.

[41] O&R offered only one residential program during this time, and thus had no other efficiency programs for residential customers to be aware of.

12.1 Participant Program Awareness – Other Programs

The awareness of other programs which are offered through Con Edison and O&R is very low. Figure 83 indicates that awareness is lower among O&R customers. This result is not surprising for O&R; this is the only program available to residential customers. Both Con Edison and O&R should be cross promoting their programs to customers as this would be a great way to improve participation in all programs. A significant force in this cross-promotion could be the contractors, but some way must be found to make it in their interest to do so. At the very least, they could be informed about the other programs.

Figure 83: Percentage of Participants Who are Aware of Other Programs Offered by Con Edison or O&R

Response	CEE n=200	CEG n=201	ORG n=201
Yes	11%	16%	7%
No	88%	81%	92%
Don't know	2%	3%	0%

Those who were aware of other programs offered by their utility were asked to identify which programs they had heard of. As Figure 84 and Figure 85 indicate, very few participants can identify any of the specific programs which they have heard of.

Figure 84: Other Utility Programs Con Edison Participants Have Heard Of

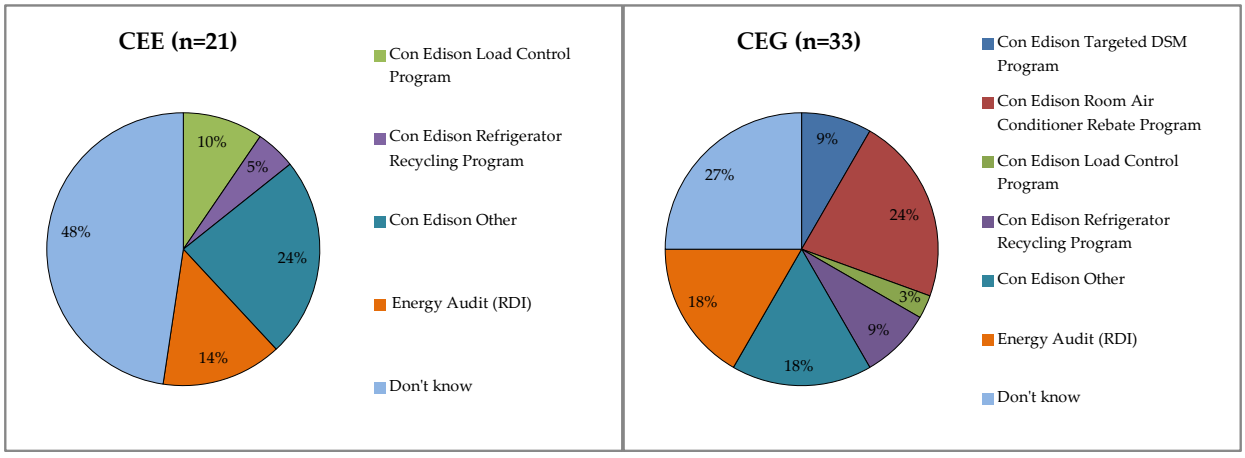
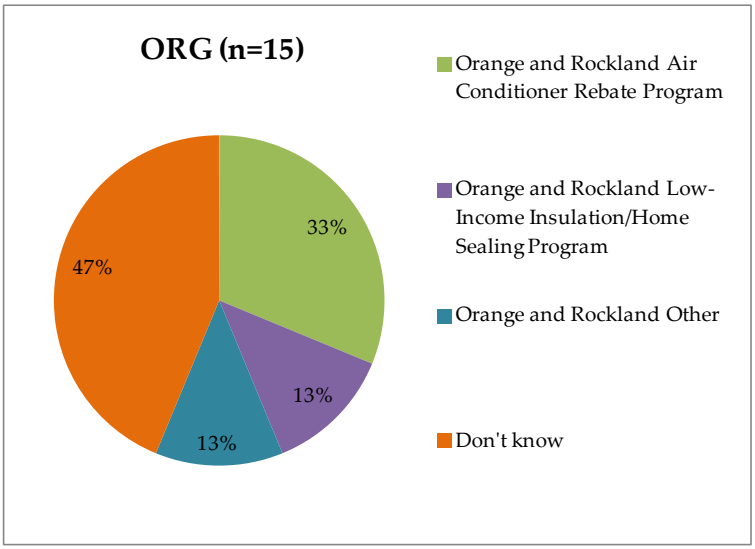


Figure 85: Other Utility Programs O&R Participants Have Heard Of



Of those participants who have heard of other utility energy efficiency programs, only 20 percent reported participating in one. Only one of these participants was able to identify the program they had participated in.

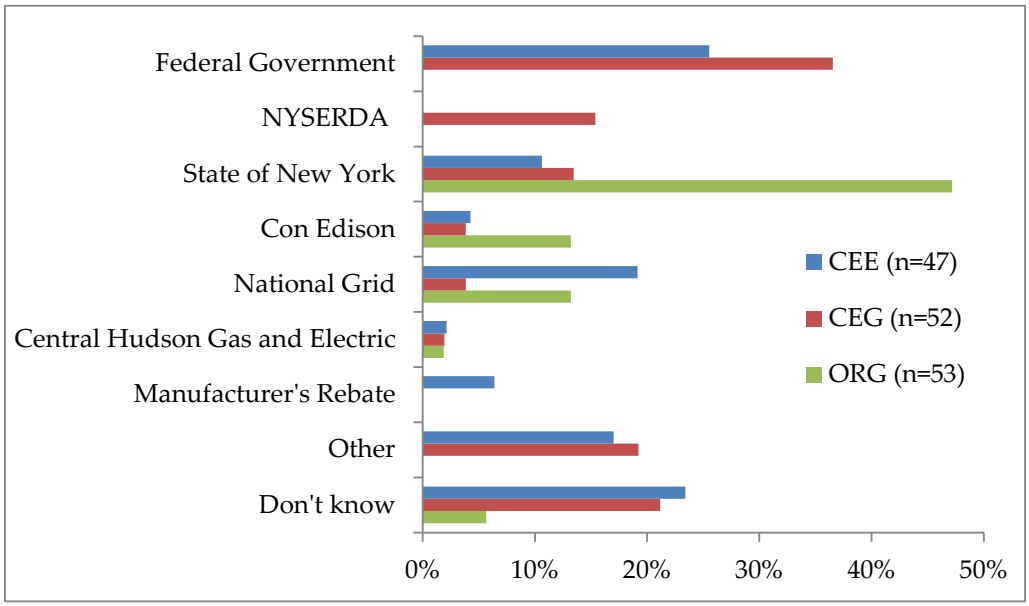
Participants were also asked if they were aware of energy efficiency programs other than those offered by Con Edison or O&R. Figure 86 indicates that while awareness of other energy efficiency programs offered by someone other than the utility is not very high it is still higher than awareness of other programs offered by the utility (Figure 83).

Figure 86: Percentage of Participants who are Aware of Other Energy Efficiency Programs

Response	CEE n=200	CEG n=201	ORG n=201
Yes	24%	26%	26%
No	75%	72%	73%
Don't know	2%	2%	1%

Figure 87 shows that the most common programs which participants have heard of are programs offered by the federal government or by the state of New York.

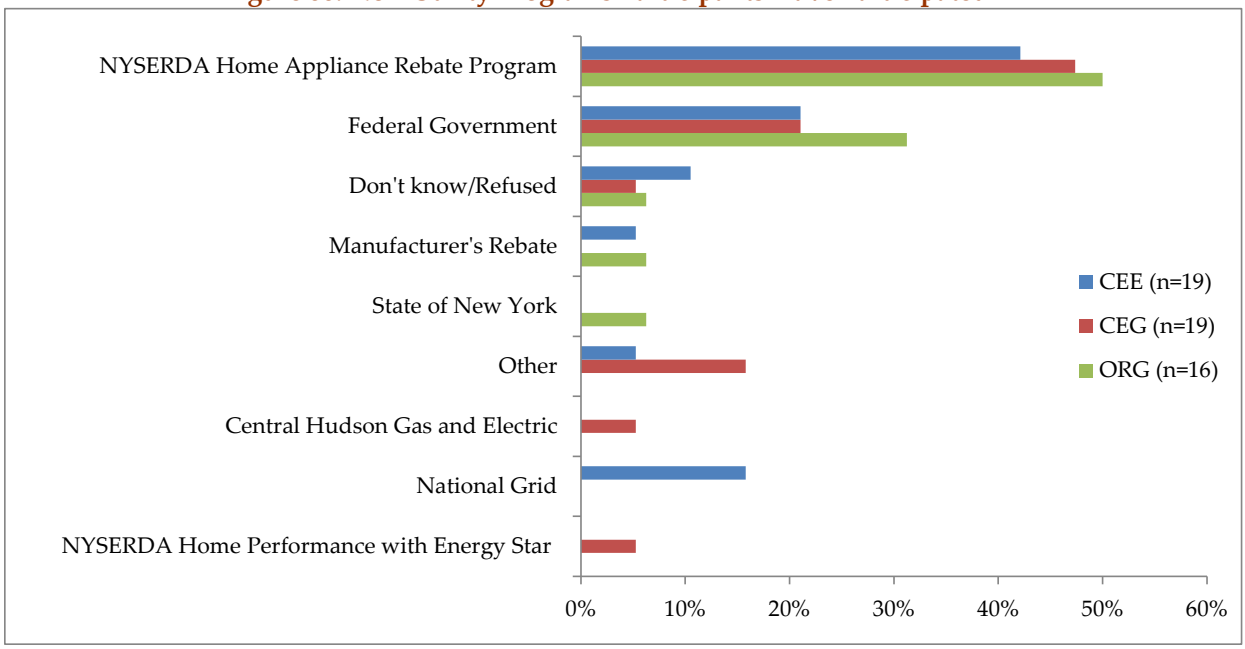
Figure 87: Non-Utility Programs Participants Have Heard Of



There is a significant amount of overlap between the Res HVAC programs offered through Con Edison and O&R and the NYSERDA home appliance rebate program. As a result, individuals who indicated that they had heard of at least one other non-utility program were asked if they had heard specifically of the NYSERDA home appliance rebate program. Twenty-five percent of Con Edison electric respondents, 20 percent of Con Edison gas respondents and 21 percent of O&R respondents indicated that they had heard of the NYSERDA program.

Twenty-three percent of Con Edison electric and gas participants and 19 percent of O&R gas participants who had heard of other energy efficiency programs offered through someone other than the utility indicated having participating in one of the programs. Figure 88 indicates that the most common program which participants took part in was the NYSERDA home appliance rebate program.

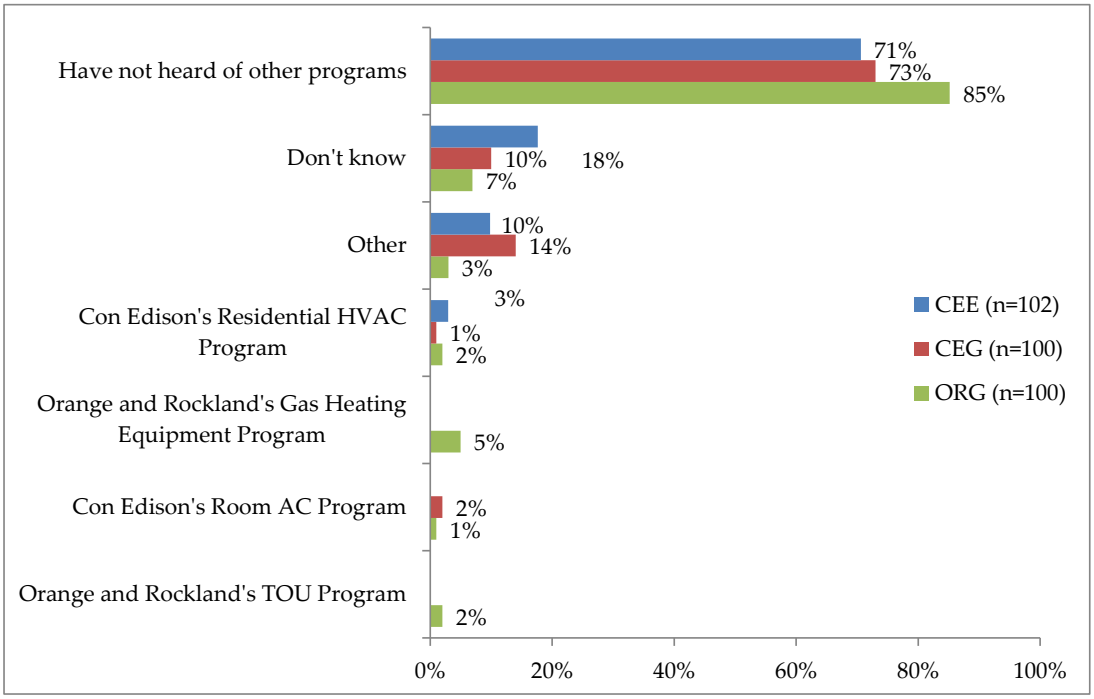
Figure 88: Non-Utility Programs Participants Have Participated In



12.2 Non-Participant Program Awareness

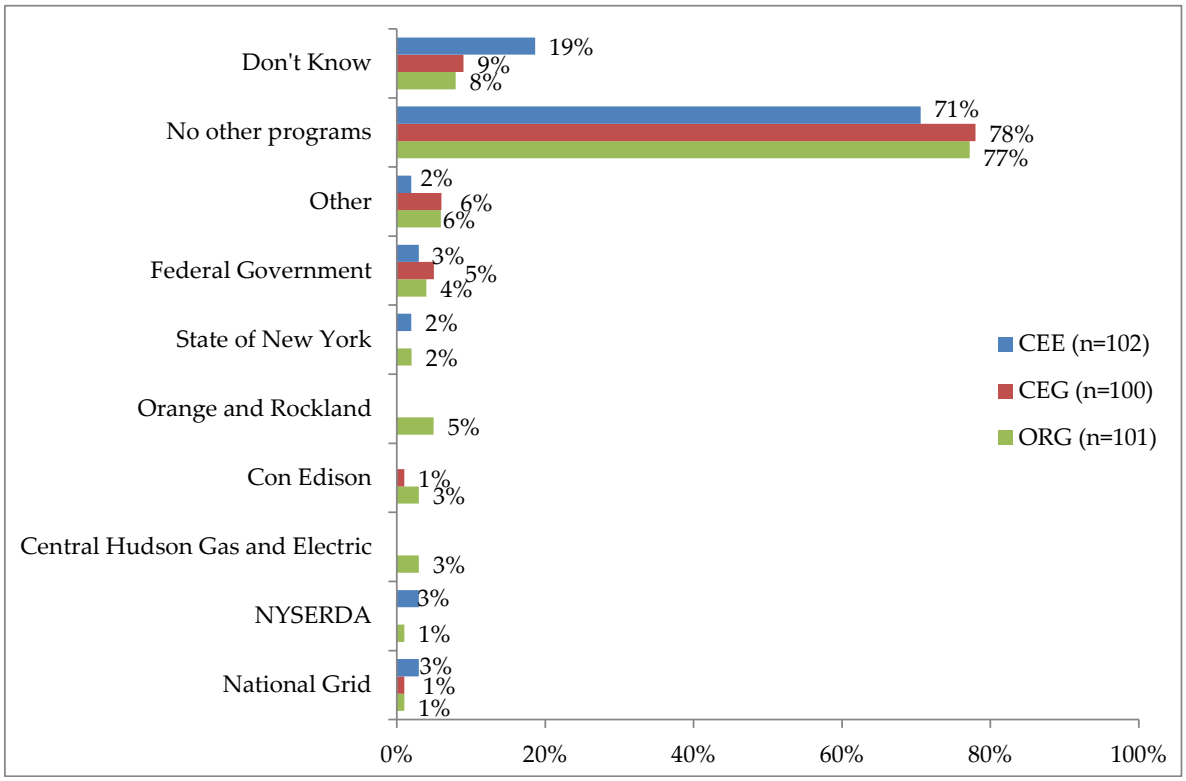
Non-Participants were also asked if they had heard of other Con Edison or O&R programs. Figure 89 demonstrates that the large majority of non-participants (88 percent of Con Edison electric, 83 percent of Con Edison gas and 92 percent of O&R respondents) indicated that they had not heard of any other programs or do not know if they have heard of any other programs. This indicates that non-participants are very unaware of programs the utilities are offering. Of the non-participants who have heard of other programs, 64 percent of Con Edison electric, 35 percent of Con Edison gas and 40 percent of O&R respondents reported participating in the program they had heard of. This indicates that 8 percent of all CEE surveyed non-participants, 6 percent of CEG surveyed non-participants and 3 percent of ORG surveyed non-participants reported participating in a Con Edison or O&R program.

Figure 89: Utility Programs Non-Participants Have Heard Of



Awareness of the programs offered outside of the utility companies was also very low. Figure 90 illustrates that 89 percent of Con Edison electric, 87 percent of Con Edison gas and 85 percent of O&R non-participants have not heard of other programs or do not know if they have. Fifty-five percent of the Con Edison electric non-participants, 54 percent of the Con Edison gas non-participants and 47 percent of O&R non-participants who are aware of other energy efficiency programs have also indicated that they have participated in one.

Figure 90: Non-Utility Programs Non-Participants Have Heard Of



Both participating and non-participating contractors were also asked if they had heard of other energy efficiency programs. The majority of participating contractors from both O&R and Con Edison indicated that they were aware of the federal tax credit options and notify their customers about them;

- Only 29 percent (2 of 7) of O&R contractors are aware of the NYSERDA program and only one participates. The contractor who is aware but is not participating in the NYSERDA programs has indicated that this is because of the BPI certification requirement.
- Similarly, 27 percent (4 of 15) of participating Con Edison contractors are aware and participate in the NYSERDA program. These contractors have indicated that the NYSERDA program is more burdensome but offers higher rebates.

Two of seven O&R contractors also indicated that they participate in the Central Hudson and New York State Gas and Electric programs. Con Edison contractors (participating and non-participating) did not mention these programs.

Non-participating contractors from both O&R and Con Edison territories indicated that they have heard of the federal tax credit options and notify their customers about them. Very few non-participating contractors (1 Con Edison and 2 O&R) indicated having heard of the NYSERDA program and only one of the O&R contractors has participated.

The fact that these non-participating contractors have also not heard of other programs and do not participate may be an indication that there is an opportunity for education about the availability of these types of programs.

Conclusions and Recommendations

This section presents the key conclusions and recommendations from the findings and analysis presented throughout the report. We limit this section to substantive issues that are most likely to produce increased levels of program participation or customer and contractor satisfaction. These conclusions and recommendations are organized around the six key area of research.

13. Program Planning and Design

While O&R is exceeding its program goals, Con Edison participation is lower than expected. The following factors are likely to be contributing to this:

- ***PSC goals did not factor in the time necessary to bring a program implementer on board.*** The utilities were required to launch their programs with less than five months' notice. This is a very aggressive time frame for planning and conducting a multi-million dollar solicitation and establishing program infrastructure.

- ***Con Edison needs very high participation in terms of percentage of eligible customers in order to reach its program goals.*** Con Edison goals required a 6 to 12 percent participation rate of the eligible market which is challenging given that only 5 percent of furnaces and boilers and 7 percent of central air conditioners will be replaced in any given year.

- ***Some program measures may not be applicable to the multi-family market predominant in the urban areas of Con Edison's territory.*** Low program participation rates in Manhattan, Brooklyn, and the Bronx support this theory:
    - Multifamily units are unlikely to have ducted central air or gas furnace systems, reducing the demand for central air conditioning and gas furnaces;
    - Central cooling systems for three- and four-unit buildings would likely require a cooling capacity higher than 5.4 tons which is the highest SEER-rated capacity available.
    - Electric heat pump central air conditioners and water heaters are not attractive options because of the higher electric costs relative to natural gas. For three- and four-unit buildings, the available heat pump water heater products do not have sufficient capacity.

U***tilities operating in New York City are behind on meeting their gas goals, relative to the other utilities whose service territories are more suburban or rural.*** Con Edison and National Grid are at 20 percent and 26 percent of their gas goal, respectively (goals were revised downward).

Although most participants replace their HVAC systems due to old age or poor/no performance, a surprising number report they are making upgrades to improve the efficiency of the system. Twenty-one percent of Con Edison electric, 19 percent of Con Edison gas, and 20 percent of O&R participants indicate that they installed their equipment for this reason. This suggests early replacement of these units and potentially greater savings for the program if equipment baseline information can be

documented. However, claiming savings for early replacement would need to be approved by the NYPSC and may require significant work to document.

Incentives are an important factor for motivating customers to upgrade to high efficiency models:

- Participating customers report that the most persuasive value proposition offered by contractors for the purchase of high efficiency models was the utility rebates;
- Contractors reported that rebates combined with tax credits increase the sale of high efficiency equipment;

A significant percentage of non-participants indicate that they would not participate when purchasing new, eligible equipment due to the high cost of energy efficient options. This suggests an opportunity to educate customers on the benefits energy savings and lower utility costs.

Although many participants report that they would have installed the same equipment with a lower rebate, willingness to purchase high efficiency equipment declines as options move from rebate to no rebate and then to on-bill financing. While this is an indication of possible free ridership, a more rigorous approach to free ridership estimation is needed to draw any reliable conclusions.

- Over 80 percent of Con Edison electric and gas and 85 percent of O&R participating customers indicate they would have purchased the same equipment had the rebate been lower;
- Sixty-four to 65 percent of Con Edison electric and gas participants and 67 percent of O&R participants said they would have purchased the same equipment with no rebate; and
- Forty-seven to 49 percent of both Con Edison electric and gas and O&R participants said they would have participated if financing was offered instead of a rebate.

Both the utilities are experiencing difficulty with contractor acceptance of the air and duct sealing measures. Reasons include the high cost and low perceived benefit of obtaining the required BPI certification.

Recommendations for Program Planning and Design

***Con Edison should revisit the assumptions around market size and housing stock that were used to develop the program goals*:**

- Revised targets should consider the characteristics of the housing stock in the urban areas of the service territory, such as the presence of ducted HVAC systems; and
- There is uncertainty that the market size used in developing program goals is realistic.

Investigate adding commercial measures more appropriate for 2-4 unit multi-family buildings and seek approval from the NYPSC for the additional measures:

- Air conditioning equipment greater than 5.5 tons with an appropriate EER; and
- Furnaces and boilers using appropriate thermal efficiency rating rather than AFUE.

The programs should investigate the requirements for claiming additional energy savings for equipment that is replaced prior to burnout.[42] Con Edison would need to revise their program applications to include fields to collect information on the equipment being replaced and the reason for purchasing the new equipment. O&R already gathers this information. However, the administrative process for

[42] The DPS has since issued detailed protocols for how to claim such savings.

estimating the energy savings may be burdensome and should be weighed against the potential benefits. Lastly, the programs would need to seek approval from the NYPSC to claim savings for early replacement.

In anticipation of the expiration of the federal tax credit at the end of 2011, the utilities should find alternative financial support for customer installations. This might be done, perhaps, by leveraging existing partnerships with manufacturers to coordinate rebates or through the introduction and promotion of program financing options.

Con Edison program marketing should encourage customers to consider lifecycle costs, rather than just first costs, when purchasing new heating and cooling equipment. In addition, the program web sites are an excellent venue for information and resources to customers for calculating the potential energy savings and lifecycle cost analysis.

Consider removing BPI certification requirement for duct and air sealing, but maintain a requirement for training and ensure that the inspection protocol for the program is robust.

- HVAC contractors indicate that the BPI certification is expensive and requires a significant time commitment. While weatherization contractors were not interviewed as part of the process evaluation (because the primary focus of the evaluation was on HVAC equipment measures), such contractors may have similar concerns regarding air sealing. In any case participation in the duct sealing and air sealing program components at the time of the evaluation was minimal for both utilities, suggesting that a different approach may be required.
- For new programs such as Con Edison's/O&R's, a phase-in of the BPI certification is likely to be more effective. As a condition for air/duct sealing rebates, the utilities could require proof that the contractor has undergone air/duct sealing training from a recognized organization – to establish a firm knowledge base and build an infrastructure of knowledgeable contractors – without requiring the BPI certification, while encouraging such certification and indicating that it will become a program requirement at some point in the future. This training should be both less time-consuming and less expensive than BPI certification. This would allow contractors to establish a foothold in this business area, gain valuable experience and understand its benefits as a revenue source.
- Air and duct sealing rebates should also require a contractor checklist indicating the work that has been done to seal the home or ducts, so that inspectors can verify that such work has indeed been done (and an inspection protocol should confirm that these activities were undertaken). Pre- and post-sealing duct blaster and/or blower door readings alone may not provide sufficient information to prevent fraudulent reporting.

14. Infrastructure Development

The information collected on the rebate applications and recorded in the program databases is generally adequate for program management, reporting, and evaluation.

O&R gathers much information on the program application that will be useful for a robust impact evaluation; however, this information does not make its way into the tracking spreadsheet. This

information will have to be manually extracted from the paper files for impact evaluation which will be a time consuming process.

On average, the time between application submission and rebate payment is eight weeks for Con Edison and four weeks for O&R. Only 60 percent of Con Edison rebates are paid within eight weeks while O&R pays 91 percent within eight weeks.

Each program's quality control procedures in respect to customer eligibility, equipment eligibility, and installation verification are robust. Differences in program implementation strategy between the utilities are appropriate given their program size and budget.

Con Edison's staffing levels for program oversight are low compared to other program administrators. Con Edison has about one FTE providing oversight for a program with a budget over $18 million. The rule of thumb for management oversight of programs is 1 FTE for every $1 to $3 million.

The Con Edison program rejects approximately 13 percent of the rebate applications submitted. The rate of rejection is higher for gas measures (20 percent) than for electric measures (11 percent). Though the majority of these applications don't include a reason for the rejection, those that do suggest that there is a lack of understanding of the program requirements in the market place.

Recommendations for Infrastructure Development

The robustness of Con Edison's data can be improved for the purposes of impact evaluation by capturing the housing type, home square footage, and equipment vintage on the rebate application and tracking these data in the database. Both programs should capture the square footage of the home, or, more specifically, the square footage of the area affected by the new unit.

Project cost (both labor and equipment) should be mined from the customer invoices for inclusion in the databases.

Con Edison should consider providing additional staffing capacity to oversee Res HVAC program implementation.

15. Marketing and Customer Acquisition

Participating contractors are an important driver of program participation to date. The vast majority of program participants heard about the program through their contractor (74 percent Con Edison electric, 55 percent Con Edison gas and 66 percent O&R).

- In a balanced "push/pull" marketing strategy, more participants would have heard about the program through customer marketing efforts.
- Participating contractors in both programs believe there should be more program marketing directed to customers. Con Edison notes that this has improved since this review was conducted.
- Participants indicate that their contractors were influential in their decision to participate in the program (71.0 percent Con Edison electric, 54.2 percent Con Edison gas and 60.7 percent O&R).

There's an opportunity to expand participation by engaging non-participating contractors.

- Non-participating contractors for both Con Edison and O&R report lack of information about the program as the main reason why they are not participating, indicating that they would have participated had they known about the program;
- In the specific case of Con Edison, contractors also listed lack of direct contact from Con Edison as an important reason for non-participation;
- Overall, non-participating contractors show interest and would like more information.

Contractors are leveraging the value proposition of the program to increase their sales of high efficiency equipment, by encouraging their customers to upgrade to high efficiency equipment:

- Over 58 percent of Con Edison electric participants, 47 percent of Con Edison gas, and 60 percent O&R participants indicate that their contractors specifically encouraged them to purchase high efficiency models;
- Contractors are most often promoting lower long-run operating costs as a key value proposition for upgrading to high efficiency models;
- However, participating customers find the utility rebate to be the most persuasive benefit.

HVAC contractor industry channels are as important as outreach by the utility in making contractors aware of the program. Half of Con Edison participating contractors learned about the program through Con Edison, the other half either heard of the program through contacts in the industry or through customers. Four out of seven participating O&R contractors mentioned O&R's communications as their main source of program awareness, the remaining contractors heard about it through industry contacts and customers.

O&R contractors are more likely than are Con Edison contractors to highlight their participation in the program in their company marketing. Only two Con Edison participating contractors mentioned they advertise the program in their websites. Six out of seven participating O&R contractors reported they advertise their participation in their websites or through printed marketing material.

Although website use by participating customers is modest (33 percent for Con Edison electric, 47 percent for Con Edison gas and 38 percent for O&R) those who do visit the sites are very satisfied (92 percent for Con Edison electric, 70 percent for Con Edison gas and 95 percent for O&R) with the content.

Marketing Recommendations

Enhance the program "pull" through program marketing directed at customers. This will increase the number of customers who hear about the program through channels other than their contractors and request high efficiency equipment.

Capture the remaining non-participating contractors through outreach by circuit riders (for Con Edison) and the program manager (for O&R).

- Promote the program's value proposition that customers are motivated to upgrade to high efficiency equipment by program rebates and long-term cost reductions.

To increase the penetration of air and duct sealing measures, the programs should advertise the availability of these rebates to weatherization contractors who typically perform these services.

The programs can improve their program websites as follows:

Update the entry points from the Con Edison website to the Honeywell Res HVAC sub site to leverage all Res HVAC content; and

- ***O&R can include more program terms and conditions, along with the program rebate application on its site.***

16. Program Delivery

Most participants report that their contractor, or the contractor they contacted, was already participating in the Con Edison program. The rate was slightly higher for electric participants (68 percent) than for gas participants (56 percent). This likely means that there is untapped program potential in terms of customers who replace equipment through non-participating contractors who do not inform them of the availability of rebates through the program. Only 15 percent of gas program participants and 6.5 percent of electric participants reported that they needed to find a participating contractor; the remaining participants indicated that their usual contractor or the contractor they contacted was already participating.

Contractors in both programs indicate that the program paperwork requires a significant time commitment. A review of Con Edison files indicates that many are returned for missing manufacturer's specification sheets, whereas the O&R program looks this information up in the AHRI database. Alternately, a small incentive provided to the contractors could compensate them for the administrative burden and might increase the likelihood that they promote the program to all of their customers.

Recommendations for Program Delivery

The programs can increase the level of support provided to the customers and contractors. The program budgets seem to be sufficient to provide for the one of following:

- Con Edison could look up missing manufacturer certification sheets instead of sending them back to the customer or contractor;
- Provide a small incentive to contractors to compensate them for the administrative burdens associated with the application requirements. This could be done for both Con Edison and O&R, though O&R should only consider this for future program cycles or if program participation slows significantly; and/or
- Con Edison could add circuit riders to conduct more personal outreach to both participating and non-participating contractors and conduct field verifications with a shorter turn around, thereby reducing rebate payment times.

17. Satisfaction with the Program

Participants from both Con Edison and O&R indicated a high level of satisfaction with the measures they installed through the program. The average satisfaction with equipment performance for Con Edison electric customers was determined to be 9.24, for Con Edison gas customers it was 8.88 while that of O&R customers was found to be 9.24. Con Edison electric customers tended to be slightly more satisfied than gas customers, with 94 percent rating their satisfaction as eight or higher (versus 87 percent for gas).

Participants' satisfaction with the timing of receiving their rebate varied between Con Edison customers and O&R customers. The average satisfaction for Con Edison gas customers was 6.58; the average of Con Edison electric customers was 8.16, while O&R received an average satisfaction rating of 9.02. The program data indicates that, on average, Con Edison customers wait eight weeks between the submission of their applications and the payment of rebates, while O&R customers wait an average of four weeks. Con Edison electric customers were notably more satisfied with the timing of their rebate payments than their gas counterparts, with 73 percent giving a mark of eight or higher (versus 47 percent for gas).

Participant's satisfaction with the performance of their new equipment was very high. Ninety-four percent of Con Edison electric customers, 87 percent of Con Edison gas and 93 percent of O&R customers have rated their satisfaction between 8 and 10 on a scale of 1 – 10. The average satisfaction with equipment performance for Con Edison electric customers was determined to be 9.24, for Con Edison gas customers it was determined to be 8.88 while that of O&R customers was found to be 9.24. Only one Con Edison participant reported that their steam boiler had been removed after they received the program rebate.

O&R and Con Edison electric participants are slightly more likely to have recommended the program to others and are slightly more likely to do so in the future. Sixty-nine percent of O&R participants, 66 percent of Con Edison electric participants and 55 percent of Con Edison gas participants and indicated that they have recommended the program to others. O&R, Con Edison electric and Con Edison gas participants rated their average likelihood of recommending the program to others in the future 9.52, 9.28 and 8.80 respectively.

Con Edison gas participants were more likely to call the utility than Con Edison electric participants (50 percent versus 20 percent). On average, Con Edison gas participants indicated making 3.80 calls and Con Edison electric indicated making 2.08 calls. The average satisfaction with contacting the utility was reported to be 7.16 and 8.10 (on a 10 point scale) by Con Edison gas and Con Edison electric participants, respectively. Multiple call attempts were the biggest source of dissatisfaction with the call centers.

O&R participants were very likely to call the utility[43] (63 percent), and were likely to have their issues resolved the first time. On average, O&R participants indicated making 2.07 calls with the average satisfaction with contacting the utility was reported to be 9.48 (on a 10 point scale). O&R customers' high satisfaction is likely a result of having a dedicated phone line to reach Program Administrators to address questions about program eligibility requirements.

Contractors participating in the Con Edison and O&R programs indicated being satisfied with the programs due to the increased sales that occur through the program. Con Edison contractors indicated that the program acts as a sales tool and gives them a competitive edge over other contractors. O&R contractors indicated that the program also leads to customer satisfaction which acts as an advantage to the contractors.

[43] O&R did not make its application available on the web. This was intended to decrease rejections and streamline rebate processing and most likely led to a greater number of calls than if the application was available on the web.

Recommendations for Satisfaction with the Program

To increase program satisfaction, ***Con Edison should work to reduce the average time between application submission and rebate payment*** and to ensure that all rebates are paid within eight weeks. Despite the disclaimers about the timing of rebate payments in the program materials, customers are still frustrated; and

Provide training to call center representatives so that they are able to respond to customer inquiries and resolve issues on the first call.

18. Interactions with Other Programs

There is overlap between the Res HVAC programs offered through Con Edison and O&R and the NYSERDA home appliance rebate program.

- Con Edison contractors indicate that they participate in the NYSERDA program despite the more burdensome requirements because the rebate is higher. Only one O&R contractor interviewed participates but another O&R contractor reports not participating because of the BPI requirement.
- Both utility programs check the equipment serial numbers for new applications against a database provided by NYSERDA to ensure that the same equipment does not receive rebates through each program.

Each program overlaps with another utility when the customer has different gas and electric providers. Con Edison electric customers are National Grid gas customers in Staten Island and some O&R electric customers are Central Hudson or NYSEG gas customers. Both programs report that they have received gas program applications for customers that belong to another utility and that they refer these customers to the proper utility.

Participant awareness of other programs which are offered through Con Edison very low.

- Eleven percent of Con Edison electric participants and 16% of Con Edison gas participants have heard of one of the following: targeted DSM program, load control program, refrigerator recycling, air conditioner rebate, energy audit, or other programs that they could not name.
-

Participants were more likely to have heard of other non-utility programs, including those offered by the federal government, State of New York, National Grid, NYSERDA, and manufacturer's rebate programs.

Con Edison participants are more likely to have participated in other non-utility programs than other utility programs.[44] Of those participants who have heard of other utility energy efficiency programs, only 20 percent reported participating and only one of these participants was able to identify the program they had participated in. Twenty-three percent of participants who had heard of other energy

[44] O&R offered only one residential program (the HVAC program) and therefore no other O&R programs were available to residential customers.

efficiency programs offered through an entity other than the utility indicated having participating in one of the programs the most common being the NYSERDA home appliance rebate program.

Recommendations for Interactions with Other Programs

To prevent double payment of rebates and double counting of measures, ***the programs should continue to coordinate with NYSERDA to cross check serial numbers of equipment submitted for rebates with those paid through the NYSERDA program***; and

Ensure that customer and equipment eligibility is aligned with the National Grid and Central Hudson Res HVAC programs. When customers served by both utilities inadvertently submit their rebate application to the wrong utility, the projects can be referred to the correct utility without the risk of being ineligible.

Appendix A: Research Questions

Research Area	Specific Research Questions	Section in the Report
Program Planning and Design	Identify possible improvements for cost-effectiveness, energy savings, and increased contractor and customer participation.	Section 7.3
	Identify program process and design limitations that impede the program's ability to meet goals.	Section 7.3
	Identify beneficial measure additions or necessary changes to existing measures.	Section 7.4
	Determine whether incentive levels are appropriate relative to the customer's incremental cost.	Section 7.6
	Gauge customer acceptance of loan and on-bill payment options.	Section 7.5
	Assess customer and contractor perceptions regarding the program's value proposition.	Section 7.5
	Assess the effectiveness and value of (Con Edison) contractor training, and the extent to which certification control is maintained over time.	Section 10.1
	Assess the relative effectiveness of Con Edison's 3rd-party implementation approach vs. the in-house approach used by O&R.	Section 10.2
Infrastructure Development	Determine whether program staffing levels and capabilities are appropriate.	Section 8.3
	Determine whether the program is gathering all info needed for program management and reporting.	Section 8.1
	Determine whether the tracking systems contain appropriate data fields for effective program management, reporting and evaluation.	Section 8.1
	Assess each tracking system's ability to access necessary data and prepare reports.	Section 8.1
	Determine whether the tracking systems contain accurate data.	Section 8.2
	Evaluate each tracking system's interface with other tools.	Not Applicable
	Assess the quality control procedures of the data entered into each tracking system.	Section 8.2
	Review each program's quality control procedures to determine whether they are sufficient to ensure that reported savings are real and verifiable.	Section 8.2

Marketing & Customer Acquisition	Determine customer awareness of the program and understanding of program requirements.	Section 9.1
	Assess whether marketing partners and channels are appropriate and effective.	Section 9.2
	Determine whether marketing approaches are appropriate and effective, and whether marketing materials are being leveraged by contractors.	Section 9.2
	Assess effectiveness of and customer satisfaction with the customer service call center.	Section 11.3
	Evaluate the effectiveness of each program's website to both customers and contractors.	Section 9.3
	Identify customer and contractor participation drivers and barriers, including customer response to program value proposition.	Section 9.4
	Identify the factors that motivate customers to upgrade to high efficiency equipment.	Section 9.4
Program Delivery	Determine whether the programs are successful at presenting the programs' value proposition to effectively recruit the participation of contractors.	Section 10.1
	Identify contractor perceptions of the benefits of program participation.	Section 10.1
	Identify possible bottlenecks in the customer participation process.	Section 10.1
	Identify opportunities for streamlining the program delivery processes.	Section 10.1
	Compare Con Edison's third-party and O&R's in-house implementation approaches in terms of customer and contractor satisfaction and enrollment rates.	Section 10.2
Satisfaction with Program	Assess participating customer's satisfaction with programs and identify possible improvements.	Section 11.1
	Determine whether customers are satisfied with the timing of rebate payments.	Section 11.1

	Determine whether participating customers recommend the program to other customers.	Section 11.1
	Assess contractor satisfaction with the programs.	Section 11.2
	Assess participant willingness to implement further energy efficiency.	Section 7.5
Interactions with Other Programs	Identify areas of potential program overlap with other programs.	Section 12
	Determine whether there are any areas of contractor or customer confusion about the program due to having multiple programs in market.	Section 12
	Identify double-counting of program savings or synergistic effects, if applicable.	Section 12
	Determine whether customers and contractors are aware of other EE programs.	Section 12
	Determine whether the programs encourage participation in other EE programs.	Section 12

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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

The Navigant team conducted the following background review activities before interviewing program implementation staff:

- Utility filings and NYPSC Orders
- Program Websites
- Program Applications

Based on the background review, the team refined the specific evaluation instruments planned to capture research issues unique to the Res HVAC 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
- Program Operations Manuals
- Marketing Plans
- Program process diagrams and logic models
- Marketing materials
- Utility Scorecards

Program Administrator and Implementation Staff Interviews

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

Figure B1. Interviews of Utility and Implementation Staff for the Residential HVAC Program

Utility Program	Utility Staff	Implementer Staff	TOTAL	Date of Interviews
Con Edison	5	8	13	May-June 2010 March 2011
O&R	2	N/A*	2	May-June 2010 March 2011
Total	**7**	**8**	**15**	

*O&R implements its program and therefore does not use an implementation contractor.

Participant Survey

APPRISE, Inc. conducted telephone surveys with Con Edison and O&R program participants. The sample frame was developed using the entire participant population through September of 2010. Surveys were conducted in December of 2010 and January of 2011. APPRISE attempted to reach each participating customer through at least 8 call attempts scheduled at different times of day and days of the week. Interviewers left a scripted message when they encountered an answering machine, including a toll-free number. 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.

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

Figure B2. Participant Sample Frame and Survey Targets

	Number of Participants	Targeted Sample Size and Approach	Maximum Sample Size
Con Edison Electric	473	Census up to 200	200
Con Edison Gas	418		200
O&R Gas	421		200

**Through September 2010. Forty-two Con Edison participants installed both gas and electric measures.*

The sample was designed to exceed an absolute precision level of +/- 10 percent at the 90 percent confidence level (as binary options) given a participant population for each segment of less than 600. Figure B3 shows that this level of precision was achieved with at least 200 completed surveys in each quota group.

Figure B3. Summary of Completed Participant Surveys

Strata	Target Completes	Total Completes	Percent Complete	Confidence Interval/ Precision
Con Edison - Electric	200	200	100.0%	90% +/-4.4%
Con Edison – Gas*	200	201	100.5%	90% +/-4.2%
O&R - Gas	200	201	100.5%	90% +/-4.2%
Total	**600**	**602**	**100.3%**	

**Note that 18 of these completed surveys were with Con Edison customers who installed both gas and measures; these were counted towards the gas quota group.*

Survey Disposition

Figure B4 shows the final disposition of the participant surveys for both Con Edison and O&R.

Figure B4. Participant Survey Disposition

19. Disposition	20. Con Ed	21. O&R	22. Total
Completed Interview	401	201	**602**
Break-Off	22	15	37
Disconnected Number	30	7	37
Fax Number	4	1	5
Wrong Number	11	3	14
Ineligible (Business) Number	9	5	14
No Answer	26	21	47
Busy	4	14	18
Refused	90	8	98
Language Barrier	8	0	8
Answering Machine	195	118	313
Callback	45	25	70
Terminated - Ineligible	4	3	7
TOTAL	**849**	**421**	**1270**

Note: Break-Off indicates a call that was terminated by the participant after the screening process but prior to the completion of the interview; these surveys are not included in the survey results.

Non-Participant Survey

APPRISE, Inc. conducted telephone surveys with Con Edison and O&R customers who were eligible for their single-family HVAC programs but who had not yet participated. The non-participant sample was designed to support both the Res HVAC and the Room AC evaluations. The total non-participant sample size was 450 with 100 allocated to each of the three HVAC programs. Quotas for each market segment are summarized in Table 5. These quotas were established to provide at least +/- 10 percent absolute precision at the 90 percent confidence interval for binary questions.

Figure B5. Non-Participant Sample Quotas

Program Segment	Minimum Sample Size
Con Edison Central AC	100
Con Edison Gas Heating	100
O&R Gas Heating	100
Room AC – Single (1-4) Family	75
Room AC – Multi (>4) family	75

Non-Participant Sample Frame

Con Edison analyzed billing data to identify customers who were likely to have only gas heat, gas heat and central AC, and central AC only. The algorithm used to identify customers with central AC (average electricity consumption in July and August was at least 1.7 times the average consumption of the October and April consumption) may have understated the number of households with central AC, for a variety of reasons, the most important of which being that the total penetration estimate is only approximately 108,000 customers rather than the approximately 220,000 customers thought by the company to have central AC, based on other studies. However, those who use enough central AC to be found by employing the algorithm were considered plentiful and representative of the best targets for the program. The distribution of customers with gas heat, central AC (based on the algorithm), or both is summarized in Table 6. Since the population of customers with both central AC and gas heat is small and is an artifact of the central AC predictor algorithm, there may be central AC customers among those listed as having gas heat only.

Figure B6. Estimated Distribution of AC and Gas Heat Residential (1 to 4 Family) Customers for Con Edison

Dwelling/Fuel Type	Manhattan	Bronx	Brooklyn	Queens	Staten Island	West Chester	Totals
One- to Four-family – electric	22,551	116,753	402,747	411,420	144,369	207,173	1,305,013
One- to Four-family – gas	15,061	104,715	-	118,507	-	156,892	395,175
One- to Four-family – central AC	1,220	4,142	18,800	-	37,054	26,588	87,804
One- to Four-family – gas heat	6,704	48,952	-	70,829	-	106,837	233,322
One- to Four-family – central AC & gas heat	574	2,767	-	-	-	17,542	20,883
One- to Four-family – electric	2%	9%	31%	32%	11%	16%	100%
One- to Four-family – gas	4%	26%	0%	30%	0%	40%	100%
One- to Four-family – central AC	1%	5%	21%	0%	42%	30%	100%
One- to Four-family – gas heat	3%	21%	0%	30%	0%	46%	100%
One- to Four-family – central AC & gas heat	3%	13%	0%	0%	0%	84%	100%

Con Edison provided a listing of these customers as follows:

- 4,000 with central AC in 1-4 unit buildings
- 4,000 with gas heat in 1-4 unit buildings
- 3,250 with room AC in 1-4 unit buildings
- 3,000 with room AC in 5+ unit buildings

O&R identifies customers with gas heating in their customer information database. O&R provided a list of 4,000 of these customers.

Each list was cross checked with the respective program participants to ensure that none had participated in the Res HVAC program. A sample of customers 2,495 Con Edison non-participants and 500 O&R non-participants were selected randomly from the sample frame of all Con Edison non-participating customers.

Completed Non-Participant Surveys

The non-participant surveys were conducted during January and February of 2011. APPRISE attempted to reach each non-participant through at least 8 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. 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.

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

Figure B7. Summary of Completed Non-Participant Surveys

Strata	Target Completes	Total Completes	Percent Complete	Confidence Interval/ Precision

Con Edison - Central AC	100	102	102.0%	90% +/-8.2
Con Edison – Gas	100	100	100.0%	90% +/-8.2
Con Edison - Room AC – Multi	75	77	102.7%	90% +/-9.4
Con Edison - Room AC - Single Family	75	76	101.3%	90% +/-9.4
O&R – Gas	100	101	101.0%	90% +/-8.2
Total	450	456	101.3%	

Survey Disposition

Table 8 shows the final disposition for the non-participant surveys for both Con Edison and O&R.

Figure B8. Final Non-Participant Survey Disposition

Disposition	Con Ed	O&R	Total
Completed Interview	355	101	**456**
Break-Off	40	3	43
Disconnected Number	288	45	333
Fax Number	25	1	26
Ineligible (Business) Number	78	19	97
No Answer	328	70	398
Busy	93	12	105
Refused	415	62	477
Language Barrier	124	8	132
Answering Machine	524	114	638
Callback	141	23	164
Terminated - Ineligible	65	42	107
Quota Met	19	0	19
TOTAL	**2495**	**500**	**2995**

Survey Pretests

The participant and non-participant surveys were pretested prior to the main data collection effort. The 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 Navigant to identify issues and implement improvements. A memorandum was prepared outlining the results of the pretests and the recommended survey instrument changes. The memorandums were submitted to Con Edison

for their review and approval. The participant and non-participant survey pretest memorandums are presented in Appendix D.

Contractor Interviews

The sample frame of participating contractors was developed from each utilities program records. Contractors who were listed as the installation contractor on at least one Res HVAC application were included.

The sample frames of non-participating contractors for Con Edison and O&R were developed as follows.

The Con Edison nonparticipant frame combined data from three sources:

1. A purchased list from Dunn & Bradstreet. SIC code 171104 – Heating and Cooling contractors for Bronx, Kings, New York, Queens, Richmond, and Westchester NY counties;
2. Con Edison provided a list of contractors who had completed Con Edison's required training but who had (as indicated by the program database) not submitted any rebate applications; and
3. A target marketing list of 62 contractors developed by Honeywell through conversations with Trane, Lennox and Mitsubishi and represents their highest producers within the service territory.

The O&R sample frame of non-participating contractors came from two sources:

1. A purchased list from Dunn & Bradstreet SIC code 171104 – Heating and Cooling contractors for Orange and Rockland counties;
2. A target marketing list of 49 contractors O&R had contacted regarding participation in the program.

All of these sources of non-participating contractors were cross checked with each program's participation records to remove any participating contractors.

Table 9 presents the final results of the contractor interviews for both Con Edison and O&R. For Con Edison, we completed three interviews with listed non-participants who had participated in the program by the time of their interview. These were contractors who had participated in the training, but not completed any jobs that were on record, as of the date of the database snapshot used for determining participation status. Similarly, for O&R, we completed one interview with one listed non-participant that actually was a participant. In all of these cases, the completed interviews were counted toward the "participant" quota group.

Figure B9. Summary of Completed Contractor Interviews

Group	Complete	Quota	Percent Complete
Con Edison Participant	12	12	100%
Con Edison Non-participant	12	12	100%

O&R Participant	6	6	100%
O&R Non-participant	6	6	100%
Total	36	36	100%

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Appendix C: Interview Guides and Survey Instruments

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

- Participant Customer Survey Instrument
- Callback Guide for Participant Customer
- Non-Participant Customer Survey Instrument
- Participant Contractor Interview Guide
- Non-Participant Contractor Interview Guide

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Quota Group	Target N
Con Ed Electric	200
Con Ed Gas	200
O&R Gas	200

Residential HVAC Participant Survey

FOR THE PURPOSES OF THE SURVEY, [UTILITY] IS CON EDISON OR ORANGE & ROCKLAND. [PROGRAM NAME] FOR CON EDISON IS: RESIDENTIAL HEATING, VENTILATION AND AIR CONDITIONING REBATE AND FOR ORANGE & ROCKLAND: GAS HEATING EQUIPMENT REBATE]

Hello may I please speak to [NAME LISTED IN SAMPLE]?
Hi, my name is _____, and I'm calling from Braun Research on behalf of [UTILITY]. We understand that you recently participated in the [PROGRAM NAME] program and received a rebate for installing energy efficient heating and/or cooling equipment in your home. We'd like to ask you a few questions about this program.

INTRO 1. First, were you involved in the decision to participate in this program?

1 YES, GO TO SCREENER 1A
2 NO, DON'T KNOW, REFUSED, ASK:

INTRO 1a: Might someone else in your household have made the decision to participate? Our records indicate you purchased and received a rebate for [MEASURE]?

1 YES – ASK TO SPEAK TO THAT PERSON, OR SCHEDULE A CALLBACK, IF NEEDED
2 NO –THANK AND TERMINATE
96 REFUSED – THANK AND TERMINATE
97 DON'T KNOW – THANK AND TERMINATE

[REPEAT INTRO IF NEW PERSON COMES TO PHONE, THEN CONTINUE]

SCREENER

S1a. According to [UTILITY]'s records, [IF MEASURE = 1 INSERT 'a' (EXCEPT IF MEASURE IS AIR/DUCT SEALING OR GAS BOILER RESET CONTROLS); = 2+INSERT QUANTITY][MEASURE(S)] was/were installed/*conducted* [FOR AIR/DUCT SEALING] in your home. Do you recall *purchasing and receiving a rebate* for this? ASK FOR EACH MEASURE FROM LIST INDIVIDUALLY]?

1 YES – SKIP TO S1d AFTER Q.S1a HAS BEEN ASKED FOR ALL MEASURES
2 NO – ASK S1b
96 REFUSED – ASK S1b
97 DON'T KNOW – ASK S1b

[IF RESPONDENT PROVIDES CORRECTED NUMBER OF THE MEASURE INSTALLED, SKIP S1b AND ENTER CORRECT NUMBER OF MEASURES IN S1c.]

S1b. Is the quantity or equipment type incorrect?

1 QUANTITY – ASK S1c
2 EQUIPMENT – GO TO NEXT MEASURE, OR S1d IF ALL MEASURES ARE

VERIFIED
96 REFUSED – GO TO NEXT MEASURE, OR S1d IF ALL MEASURES ARE VERIFIED
97 DON'T KNOW – GO TO NEXT MEASURE, OR S1d IF ALL MEASURES ARE VERIFIED

S1c. How many [MEASURES] were installed? _____ RECORD #

AFTER ASKING S1a/S1b/S1c FOR EACH MEASURE ASK S1d:

S1d. [DO NOT READ]]INTERVIEWER: USE THIS SPACE TO RECORD ANY ADDITIONAL EQUIPMENT INSTALLED THAT THAT THE RESPONDENT VOLUNTEERS. IF NOTHING IS VOLUNTEERED MOVE ON TO THE NEXT QUESTION

99 – NOTHING VOLUNTEERED

PROGRAM AWARENESS

IF RESPONDENT HAD ONE OR MORE MEASURE INSTALLED, ASK THE FOLLOWING Q1-4 FOR EACH MEASURE. REPEAT ALL QUESTIONS (1-4) FOR A SINGLE MEASURE BEFORE MOVING ON TO THE NEXT. DO NOT ASK THESE QUESTIONS FOR ANY MEASURE WHERE S1B=2 OR WHERE S1B=1 AND S1C=0. IF MULTIPLE MEASURES ARE INSTALLED (I.E. 2 THERMOSTATS) ADJUST QUESTION WORDING ACCORDINGLY

1. Is/Are the [MEASURE(S)] still installed?

   1 YES (GO TO Q2)
   2 NO (GO TO Q4)
   96 REFUSED (GO TO Q5)
   97 DON'T KNOW (GO TO Q5)

2. Is/Are the [MEASURE(S)] working properly?

   1 YES (GO TO Q5)
   2 NO (GO TO Q3)
   96 REFUSED (GO TO Q5)
   97 DON'T KNOW (GO TO Q5)

3. Have you contacted anyone about the [MEASURE(S)] not working properly?

   1 YES (GO TO Q5)
   2 NO (GO TO Q5)
   96 REFUSED (GO TO Q5)
   97 DON'T KNOW (GO TO Q5)

4. Why was/were the [MEASURE(S)] removed or uninstalled? [DO NOT READ LIST]

   1 WAS NOT WORKING PROPERLY/BROKEN
   2 DID NOT LIKE HOW IT PERFORMED
   3 AESTHETICS/DID NOT LIKE THE WAY IT LOOKED
   4 COULDN'T OPERATE IT
   95 OTHER, SPECIFY:

96 REFUSED
97 DON'T KNOW

5. How did you find out about the *[PROGRAM NAME]* program? [DO NOT READ LIST] [RECORD ALL RESPONSES]

1 MAILING
2 NEWSLETTER
3 BILL INSERT
4 WEBSITE
5 FAMILY/FRIEND
6 CONTRACTOR
7 TELEVISION ADVERTISING
8 RADIO ADVERTISING
9 PRINT ADVERTISING
10 COMMUNITY EVENT/COUNTY/STATE FAIR
11 RETAIL STORE/SUPPLY HOUSE
12 UTILITY COMPANY (GENERAL)
13 RESPONDENT WORKS IN THE INDUSTRY
14 MANUFACTURER/EQUIPMENT SUPPLIER
95 OTHER , SPECIFY
96 REFUSED
97 DON'T KNOW

6. [IF MORE THAN ONE RESPONSE IN Q5] Which of these sources of information was most influential in your decision to participate in the program?
[READ ANSWERS GIVEN IN Q5]
[IF Q5 IS ONLY ONE RESPONSE, AUTOFILL]

7. [IF Q5 = 1, 2, 4, 7, 8, 9 or 10 (Mailing, Newsletter, Website, ANY Advertising or Community Event) ASK IF ONE OF THESE RESPONSES SELECTED IN Q6] Do you know who sponsored the [RESPONSE TO Q6]? [DO NOT READ] [RECORD ALL RESPONSES] [PROMPT IF NECESSARY: Was it the utility or another organization?]

1 CON EDISON
2 ORANGE & ROCKLAND
3 HONEYWELL
4 NYSERDA
5 NATIONAL GRID
6 INDUSTRY ASSOCIATION
7 TRADE ASSOCIATION
8 CONTRACTOR (GENERAL)
95 OTHER, SPECIFY
96 REFUSED
97 DON'T KNOW

7a. [IF Q7 = DK/REF] Was it [UTILITY] or another organization? [DO NOT READ]

1 CON EDISON
2 ORANGE & ROCKLAND
3 MANUFACTURER (GENERAL)
95 ANOTHER ORGANIZATION (SPECIFY:)
96 REFUSED

97 DON'T KNOW

CONTRACTOR INTERACTIONS

8. [ASK CON EDISON CUSTOMER ONLY] This program has a requirement that the equipment must be installed by contractors participating in the Con Edison Residential Heating Ventilation and Air Conditioning Program. Did you have to find such a contractor, or was the contractor that you happened to choose already participating? [DO NOT READ]

1	I HAD TO FIND A PARTICIPATING CONTRACTOR
2	THE CONTRACTOR I CONTACTED WAS A PARTICIPATING CONTRACTOR
3	MY USUAL CONTRACTOR ALREADY PARTICIPATES (RECORD ONLY IF VOLUNTEERED)
95	OTHER
96	REFUSED
97	DON'T KNOW

9. [If Q8 = 1] How did you find a participating contractor? [DO NOT READ LIST] [RECORD ALL RESPONSES]

1	RECOMMENDATION FROM FRIEND/FAMILY
2	CALLED CON EDISON
3	WENT TO CON EDISON WEBSITE
4	CALLED SEVERAL CONTRACTORS UNTIL I FOUND ONE THAT WAS A PARTICIPATING CONTRACTOR
5	SEARCHED FOR A CONTRACTOR ON THE INTERNET (NOT CON EDISON'S WEBSITE)
95	OTHER
96	REFUSED
97	DON'T KNOW

10. [If Q8 = 1]Was it confusing to find an eligible contractor?

1	Yes
2	No
96	Refused
97	Don't Know

11. [ASK O&R CUSTOMERS ONLY] How did you decide which contractor to use to install your new equipment? [DO NOT READ LIST] [RECORD ALL RESPONSES]

1	RECOMMENDED BY FRIEND/FAMILY
2	CALLED ORANGE & ROCKLAND
3	WENT TO THE ORANGE & ROCKLAND WEBSITE
4	CHOSE USUAL CONTRACTOR
5	SELECTED CONTRACTOR BASED ON LOWEST COST
6	SELECTED CONTRACTOR WHO KNEW ABOUT ENERGY EFFICIENT EQUIPMENT AND REBATE
95	OTHER
96	REFUSED
97	DON'T KNOW

12. Did the contractor recommend any other [UTILITY] rebate-eligible equipment that you did not install?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

12a. [IF Q12 = YES] What did they recommend? [DO NOT READ] [RECORD ALL RESPONSES]

1	HIGH EFFICIENCY CENTRAL AIR CONDITIONING
2	HIGH EFFICIENCY CENTRAL AIR SOURCE HEAT PUMP
3	ENERGY STAR PROGRAMMABLE THERMOSTAT
4	ELECTRONICALLY CONTROLLED MOTOR FOR FURNACE FAN
5	ELECTRIC HEAT PUMP WATER HEATER
6	HIGH EFFICIENCY GAS FURNACE
7	HIGH EFFICIENCY GAS WATER BOILER
8	HIGH EFFICIENCY STEAM BOILER
9	GAS BOILER RESET CONTROL
10	GAS INDIRECT WATER HEATER
11	HEATING SYSTEM (NON-SPECIFIC)
12	WATER HEATER (NON-SPECIFIC)
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

13. [IF Q12 = YES] Why didn't you install the [INSERT MEASURE(S) FROM LIST ABOVE]? [DO NOT READ LIST] [RECORD ALL RESPONSES] [REPEAT FOR EACH RESPONSE TO 12A]

1	TOO EXPENSIVE
2	NO FINANCING
3	NO REBATES
4	DIDN'T WANT TO MAKE TOO MANY CHANGES TO MY HOUSE
5	DIDN'T AGREE WITH THE CONTRACTOR/INSPECTOR
6	DIDN'T THINK WE NEEDED THE EQUIPMENT
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

14. Did the contractor mention that state and federal tax credits might also be available for some types of equipment? [DO NOT READ]

1	YES
2	NO
3	HE DIDN'T HAVE TO, I ALREADY KNEW ABOUT THEM
96	REFUSED
97	DON'T KNOW

15. [IF Q14 = YES] For what types of equipment? [DO NOT READ]

1	HIGH EFFICIENCY CENTRAL AIR CONDITIONERS
2	HIGH EFFICIENCY CENTRAL AIR SOURCE HEAT PUMPS
3	ENERGY STAR PROGRAMMABLE THERMOSTATS
4	ELECTRONICALLY CONTROLLED MOTOR FOR FURNACE FANS
5	HIGH EFFICIENCY ELECTRIC HEAT PUMP WATER HEATERS
6	HIGH EFFICIENCY GAS FURNACES
7	HIGH EFFICIENCY GAS WATER BOILERS
8	HIGH EFFICIENCY STEAM BOILERS
9	GAS BOILER RESET CONTROLS
10	GAS INDIRECT WATER HEATERS
11	HEATING SYSTEM (NON-SPECIFIC)
12	WATER HEATER (NON-SPECIFIC)
13	WINDOWS/WEATHERIZATION EQUIPMENT
14	SOLAR (GENRAL)
15	WASHERS/DRYERS
95	OTHER (SPECIFY)
96	REFUSED
97	DON'T KNOW

16. What was the most persuasive reason provided by the contractor for buying [MEASURE REPEAT FOR EACH MEASURE INSTALLED]? [DO NOT READ LIST. ACCEPT MULTIPLE RESPONSES]

1	REBATE
2	ENERGY SAVINGS/EFFICIENCY
3	MONEY/ UTILITY BILL SAVINGS
4	HOME COMFORT
5	ENVIRONMENTAL BENEFITS
6	CONTRACTOR-PROVIDED FINANCING
7	EXTENDED WARRANTIES/GUARANTEES
8	BEST SIZE/FIT FOR MY HOME
9	NO PERSUASION NECESSARY/IT MADE SENSE/IT'S WHAT I NEEDED
10	ELIMINATED THE NEED FOR A BIG TANK (FOR INDIRECT WATER HEATERS)
11	CONTRACTOR RECOMMENDATION (GENERAL)
12	SAFE/RELIABLE./EASY TO USE FEATURES
13	CHANGING HEATING FUEL/CONVERTING FROM OIL TO GAS
14	REPUTATION OF COMPANY/PRODUCT
15	PACKAGES/DEALS THAT CAME WITH PRODUCT
16	TAX CREDIT
17	PRICE
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

17. Did your contractor explain any additional energy efficiency programs available to you?

1	YES – ASK Q18
2	NO – SKIP TO Q20
96	REFUSED – SKIP TO Q20
97	DON'T KNOW – SKIP TO Q19a

18. What other energy efficiency programs were mentioned by your contractor? [DO NOT READ LIST] [RECORD ALL THAT APPLY]

1	NYSERDA – Residential Energy Efficient Appliance Rebate Program
2	NYSERDA – Home Performance with Energy Star Homeowner Financing Incentive
3	National Grid heating equipment program
4	Contractor did not mention any other programs
5	FEDERAL TAX CREDITS
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

19a. [IF NYSERDA NOT MENTIONED IN Q18]: Did your contractor mention any efficiency programs sponsored by NYSERDA – the New York State Energy Research and Development Authority?

1	Yes
2	No
96	REFUSED
97	DON'T KNOW

19b. [IF Q18 ≠ 4, ASK] Did you find it confusing that the contractor mentioned multiple programs in which you could participate?

1	Yes
2	No
96	REFUSED
97	Don't Know

20. On a scale of 1 to 10, where 1 is Extremely Dissatisfied, and 10 is Extremely Satisfied, please rate your overall satisfaction with the contractor who installed the equipment that qualified for the [UTILITY] rebate.

1	2	3	4	5	6	7	8	9	10
Extremely Dissatisfied				Somewhat Satisfied				Extremely Satisfied	

20a. [IF Q20 RESPONSE IS LESS THAN 5] Why are you dissatisfied with your experience with your contractor? [DO NOT READ] [RECORD ALL RESPONSES]

1	SLOPPY WORK/LEFT A MESS
2	TOO EXPENSIVE
3	BAD ATTITUDE
4	DIDN'T TRUST THEM
5	NOT MY REGULAR CONTRACTOR
6	NOT DISSATISFIED/RESPONSE WAS NEUTRAL
7	DELAY IN REBATES/PAPERWORK
	There IS NO CODE 8
9	WORK TOOK TOO LONG

10	BAD REBATE INFORMATION
11	INCORRECTLY INSTALLED
12	UNTRUTHFUL
95	OTHER
96	REFUSED
97	DON'T KNOW

INTERACTION WITH UTILITY

21. At any point during your participation in the *[PROGRAM NAME]* program, did you contact a representative at [UTILITY]?

1	YES – ASK Q21a
2	NO – SKIP TO Q23
96	REFUSED – SKIP TO Q23
97	DON'T KNOW – SKIP TO Q23

21a. How many times did you contact [UTILITY]?

_____ RECORD #

96	REFUSED
97	DON'T KNOW

22. [IF Q21 = YES] On a scale of 1 to 10, where 1 is Extremely Dissatisfied, and 10 is Extremely Satisfied, please rate your overall satisfaction with your experience contacting [UTILITY] regarding the [PROGRAM NAME].

1	2	3	4	5	6	7	8	9	10
Extremely Dissatisfied								Extremely Satisfied	

Q22a. [IF Q22 < 5] Why are you dissatisfied with your experience contacting [UTILITY] regarding the [PROGRAM NAME]? [DO NOT READ] [RECORD ALL RESPONSES]

1	TOOK TOO LONG TO GET TO TALK TO SOMEONE
2	BAD ATTITUDE FROM 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
6	IT TOOK MULTIPLE ATTEMPTS TO GET MY QUESTION ANSWERED/QUESTION REMAINS UNANSWERED
7	I WASN'T DISSATISFIED/RESPONSE WAS NEUTRAL
8	REBATE PROBLEMS
9	PAPERWORK PROBLEMS
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

23. Did you visit the [UTILITY] *[PROGRAM NAME]* program website?

1	YES

2	NO
96	REFUSED
97	DON'T KNOW

24. [IF Q23= Yes] On a scale of 1 to 10, where 1 is Extremely Dissatisfied, and 10 is Extremely Satisfied, please rate your satisfaction with the program website.

1	2	3	4	5	6	7	8	9	10
Extremely Dissatisfied								Extremely Satisfied	

Q24a. [IF Q24 < 5] Why are you dissatisfied with the website? [DO NOT READ] [RECORD ALL RESPONSES]

1	COULDN'T FIND THE INFORMATION THAT I WANTED
2	TOO SLOW
3	THE INFORMATION IS TOO GENERAL
4	COULDN'T FIND ANY CONTACT INFORMATION
5	I'M NOT DISSATISFIED/RESPONSE WAS NEUTRAL
95	OTHER
96	REFUSED
97	DON'T KNOW

INSPECTION

25. Did your Contractor conduct a house inspection using a special door with a fan in it to measure your home's performance and efficiency? [READ IF NECESSARY: "Do you remember the contractor attaching a large tarp with a big fan in it to your front door? This is called a blower-door test."]

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

26. [IF MEASURE = CENTRAL AC] Did your contractor talk to you about making sure your central air conditioner was the right size?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

MEASURE SPECIFIC

Read for ALL: For the next set of questions, I'll be asking you about the item(s) that you installed through the [UTILITY] [PROGRAM NAME].

[ASK THE FOLLOWING BATTERY (Q27-Q38a) FOR EACH MEASURE THAT THE RESPONDENT INSTALLED THROUGH THE PROGRAM, IF THEY INSTALLED ANY OF THE FOLLOWING MEASURES:

- GAS MEASURES:
  - STEAM BOILER
  - WATER BOILER
  - FURNACE
  - INDIRECT WATER HEATER
- ELECTRIC MEASURES:
  - CENTRAL AIR CONDITIONING
  - CENTRAL AIR SOURCE HEAT PUMP.
  - Energy Star Programmable Thermostat
  - Electronically Controlled Motor for the Furnace Fan, or ECM
  - Gas Boiler Reset Control
  - Heat Pump Water Heater
- ASK ALL QUESTIONS FOR A SINGLE MEASURE BEFORE MOVING ON TO THE NEXT MEASURE

27. Why did you decide to install the [MEASURE FROM LIST]? [DO NOT READ] [SELECT ALL RESPONSES]

1 TO SAVE ENERGY
2 TO SAVE MONEY/REDUCE ENERGY BILLS
3 AVAILABILITY OF REBATE(S)
4 TAKE ADVANTAGE OF A GOOD DEAL/WHY WOULDN'T I?
5 HAD BEEN MEANING TO MAKE UPGRADES
6 TO HELP THE ENVIRONMENT/REDUCE GREENHOUSE GAS/CARBON FOOTPRINT
7 OBTAIN QUICK PAYBACK
8 TO IMPROVE SAFETY/HEALTH/COMFORT OF HOME
9 BECAUSE OF THE ADDITIONAL TAX CREDITS
10 CONTRACTOR RECOMMENDATION
11 NO CHOICE/SYSTEM BROKEN/HAD TO REPLACE IT/NEEDED NEW ONE
12 WANTED ENERGY EFFICIENT HEAT/AC/HOT WATER HEATING SYSTEM
13 PACKAGES/DEALS THAT CAME WITH PRODUCT
14 SAFE/RELIABLE/EASY TO USE FEATURES
15 CHANGING HEATING FUEL/CONVERTING FROM OIL TO GAS
16 COMPATIBILE WITH UNIT
95 OTHER (SPECIFY):
96 REFUSED
97 DON'T KNOW

28. You received a [REBATE AMOUNT] rebate for your [MEASURE]. Which of the following three statements best describes the action you would have taken had the rebate been $[LOWER REBATE]? [USE FOLLOWING TABLE FOR REBATE AMOUNTS]

Measure	Rebate Amount	Lower Rebate
Central Air Conditioning, SEER ≥ 15, EER ≥ 12.5	$400	340
Central Air Conditioning SEER ≥ 16, EER ≥ 13	$600	510
Central Air Source Heat Pump SEER ≥15, EER ≥ 12	$400	340
Central Air Source Heat Pump SEER ≥ 16, EER ≥ 13	$600	510
Energy Star Programmable Thermostat	$25	21

Electronically Controlled Motor (ECM) for Furnace Fan	$200	170
Electric Heat Pump Water Heater	$400	340
Gas Furnace AFUE ≥ 90	$200	170
Gas Furnace AFUE ≥ 92 with ECM	$400	340
Gas Furnace AFUE ≥ 94 with ECM	$600	510
Gas Water Boiler AFUE ≥ 85	$500	425
Gas Water Boiler AFUE ≥ 90	$1,000	850
Steam Boiler	$500	425
Gas Boiler Reset Control	$100	85
Gas Indirect Water Heater	$300	255

READ LIST:

1	I would not have bought a new one
2	I would have bought a less efficient (or less expensive) one, or
3	I would have bought the same one
96	REFUSED
97	DON'T KNOW

29. Which of the following statements best describes the action you would have take if there had been **no** rebate available for your [MEASURE]?

READ LIST:

1	I would not have bought a new one
2	I would have bought a less efficient (or less expensive) one, or
3	I would have bought the same one
96	REFUSED
97	DON'T KNOW

ASK FOR ALL MEASURES INSTALLED EXCEPT THERMOSTAT:

30. Would you have installed the same [MEASURE] if financing had been available through the program, instead of a program rebate?

1 YES
2 NO
3 MAYBE, IT WOULD DEPEND ON THE FINANCING TERMS
96 REFUSED
97 DON'T KNOW

31. [IF MEASURE = CENTRAL AC, CENTRAL HEAT PUMP, GAS FURNACE, GAS STEAM BOILER, or GAS WATER BOILER] Under what circumstances would you have installed an even higher efficiency [MEASURE]? [DO NOT READ]

1 A HIGHER REBATE
2 IF I HAD MORE INFORMATION ABOUT THE UNIT
3 IF CONTRACTOR OFFERED THE OPTION
4 I DIDN'T KNOW THERE WAS EQUIPMENT WITH A HIGHER EFFICIENCY
5 I INSTALLED THE MOST EFFICIENT EQUIPMENT/THERE WAS NO HIGHER EFFICIENCY OPTION AVAILABLE FOR MY HOME
6 I WOULDN'T HAVE BOUGHT A HIGHER EFFICIENCY UNIT

7	I WOULD HAVE CHOSEN HIGHER EFFICIENCY ONLY IF THE PRICE WAS THE SAME AS THE UNIT I CHOSE
8	FINANCING
9	REASONABLE PAYBACK PERIOD
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

32. [IF MEASURE = BOILER, BUT NOT= BOILER RESET CONTROLS] Did the contractor recommend boiler reset controls?

1	YES
2	NO [SKIP TO Q34]
96	REFUSED [SKIP TO Q34]
97	DON'T KNOW [SKIP TO Q34]

33. [IF Q32= Yes] Why didn't you have the boiler reset controls installed? [DO NOT READ]

1	DIDN'T HAVE ENOUGH INFORMATION ABOUT THEM
2	DIDN'T WANT TO SPEND MORE MONEY
3	NOT A HIGH ENOUGH REBATE
4	WOULD HAVE TAKEN TOO LONG TO PAY FOR ITSELF IN SAVINGS
95	OTHER
96	REFUSED
97	DON'T KNOW

34. [IF MEASURE = CENTRAL AC OR BOILER OR FURNACE, BUT NOT = PROGRAMMABLE THERMOSTAT] Did the contractor recommend a programmable thermostat?

1	YES
2	NO [SKIP TO Q38]
96	REFUSED [SKIP TO Q38]
97	DON'T KNOW [SKIP TO Q38]

35. [IF Q34= Yes] Why didn't you have the programmable thermostat installed? [DO NOT READ]

1	DIDN'T HAVE ENOUGH INFORMATION ABOUT IT
2	DIDN'T WANT TO SPEND MORE MONEY
3	NOT A HIGH ENOUGH REBATE
4	WOULD HAVE TAKEN TOO LONG TO PAY FOR ITSELF IN SAVINGS
5	I DID HAVE ONE INSTALLED
95	OTHER
96	REFUSED
97	DON'T KNOW

NOTE: THERE IS NO Q36 OR Q37

38. [IF MEASURE= CENTRAL AC, and if UTILITY = Con Edison] Did the contractor recommend Con Edison's program where you can control your new central air conditioner through your

thermostat and Con Edison can control it when electrical demand gets too high? [READ IF NECESSARY: This is typically referred to as a Demand Response Program]

1	YES – ASK Q38a
2	NO – SKIP TO Q39
96	REFUSED – SKIP TO Q39
97	DON'T KNOW – SKIP TO Q39

38a. Do you participate in this program?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

SATISFACTION

Next we'd like to get a sense of your satisfaction with the [PROGRAM NAME] program. For the next few questions, please use a 1 to 10 scale, where 1 means EXTREMELY DISSATISFIED and 10 means EXTREMELY SATISFIED.

39. How satisfied are you with the performance of your new equipment [IF Q1=2 (MEASURE REMOVED), ADD:] aside from the [MEASURE THAT WAS REMOVED] you had removed?

1	2	3	4	5	6	7	8	9	10
Extremely Dissatisfied								Extremely Satisfied	

40. [IF Q39 < 5] Why are you dissatisfied with the performance of your new equipment? [DO NOT READ. RECORD ALL RESPONSES] VERBATIMS WILL BE SUPPLIED FOR THIS Q., NO CODES

41. How satisfied are you with the amount of time between submitting your rebate application and receiving your rebate check?

1	2	3	4	5	6	7	8	9	10
Extremely Dissatisfied								Extremely Satisfied	

42. Are you saving as much on your monthly utility bill as you expected?

1	YES
2	NO
3	ITS ABOUT THE SAME
4	TOO SOON TO TELL
5	LOWER BUT NOT AS MUCH AS EXPECTED
95	OTHER
96	REFUSED
97	DON'T KNOW

43a. Do you have any suggestions for additional equipment or appliances to include in a rebate program?

1	YES

2	NO – SKIP TO Q44
96	REFUSED – SKIP TO Q44
97	DON'T KNOW – SKIP TO Q44

43. b What other high-efficiency appliances or equipment would you like to see rebated by [UTILITY]?

1	CFLs
2	REFRIGERATORS
3	LED LIGHTS
4	WASHING MACHINES
5	DRYERS
6	OVENS
7	ROOM AIR CONDITIONERS
8	LOW FLOW TOILETS
9	DOUBLE PANE/ENERGY EFFICIENT WINDOWS
10	FREEZERS
11	APPLIANCE TIMERS
12	SPACE/ROOM HEATERS
13	HOT WATER HEATERS
14	SOLAR (ANY TYPE OR MENTION OF SOLAR)
15	CENTRAL AIR CONDITIONING
16	INSULATION
17	DISHWASHERS
18	HUMIDIFIER/DEHUMIDIFIER
19	MICROWAVE
20	HEATING EQUIPTMENT
21	TELEVISION
22	ENERGY AUDIT
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

44. Have you recommended the *[PROGRAM NAME]* program to friends, neighbors or colleagues?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

45. On a scale of 1 to 10, where 1 is Not at All Likely, and 10 is Extremely Likely, how likely are you to recommend the program to others in the future if the subject were to comes up?

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

46. [IF Q45 < 5] Why are you not likely to recommend the program to others? [DO NOT READ]

1	ENERGY SAVINGS WEREN'T HIGH ENOUGH
2	ENERGY BILL SAVINGS WEREN'T HIGH ENOUGH
3	TOO MUCH OF A HASSLE/TOO MUCH RED TAPE
4	TOOK TOO LONG TO GET THE REBATE

5	THE REBATE AMOUNT WASN'T WORTH IT/WAS TOO LOW
6	I DON'T TYPICALLY VOLUNTEER RECOMMENDATIONS FOR THINGS LIKE THIS
7	RESPONSE WAS NEUTRAL / NOT NEGATIVE
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

OTHER PROGRAMS

47. Have you heard of any other energy efficiency programs offered by [UTILITY]?

1 YES [GO TO Q49]
2 NO
96 REFUSED
97 DON'T KNOW

Q47a. [IF Q47 = Yes] What other [UTILITY] programs have you heard of? PROGRAMMER: SUPPRESS CON EDISON RESPONSE OPTIONS IF UTILITY=O&R AND SUPPRESS O&R RESPONSE OPTIONS IF UTILITY = CON EDISON

1	CON EDISON TARGETED DSM PROGRAM (FREE CFLS/EFFICIENT LIGHT BULBS)
2	CON EDISON LOAD CONTROL PROGRAM (CONTROL AIR CONDITIONER THROUGH THERMOSTAT)
3	CON EDISON ROOM AIR CONDITIONER REBATE PROGRAM
4	CON EDISON REFRIGERATOR RECYCLING PROGRAM
5	CON EDISION SMALL BUSINESS DIRECT INSTALL PROGRAM
6	CON EDISON OTHER (SPECIFY): _____
7	ORANGE & ROCKLAND AIR CONDITIONER REBATE PROGRAM
8	ORANGE & ROCKLAND LOW-INCOME INSULATION/HOME SEALING PROGRAM
9	ORANGE & ROCKLAND SMALL BUSINESS ENERGY EFFICIENCY/ DIRECT INSTALL PROGRAM
10	ORANGE AND ROCKLAND OTHER (SPECIFY): _____
11	ENERGY AUDIT
96	REFUSED
97	DON'T KNOW

48. [IF Q47 = Yes] Have you participated in [this/any of these] other energy efficiency program(s)?

1 YES [ASK Q48a]
2 NO [SKIP TO Q49]
96 REFUSED
97 DON'T KNOW [SKIP TO Q49]

Q48a. [IF Q47a IS MORE THAN ONE PROGRAM, ASK]: Which other [UTILITY] program have you participated in?

1	CON EDISON TARGETED DSM PROGRAM (FREE CFLS/EFFICIENT LIGHT BULBS)
2	CON EDISON LOAD CONTROL PROGRAM (CONTROL AIR CONDITIONER THROUGH THERMOSTAT)
3	CON EDISON ROOM AIR CONDITIONER REBATE PROGRAM
4	CON EDISON REFRIGERATOR RECYCLING PROGRAM
5	CON EDISION SMALL BUSINESS DIRECT INSTALL PROGRAM
6	CON EDISON OTHER (SPECIFY): _____
7	ORANGE & ROCKLAND AIR CONDITIONER REBATE PROGRAM
8	ORANGE & ROCKLAND LOW-INCOME INSULATION/HOME SEALING PROGRAM
9	ORANGE & ROCKLAND SMALL BUSINESS ENERGY EFFICIENCY/ DIRECT INSTALL PROGRAM
10	ORANGE AND ROCKLAND OTHER (SPECIFY): _____
96	REFUSED
97	DON'T KNOW

49. Have you heard of any other residential energy efficiency programs apart from those offered by [UTILITY]?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

Q49a. [If Q49 = Yes] Whose programs have you heard of? [DO NOT READ]

1	NYSERDA (HOME APPLIANCE REBATE PROGRAM OR HOME PERFORMANCE WITH ENERGY STAR PROGRAM)
2	NATIONAL GRID
3	CENTRAL HUDSON GAS AND ELECTRIC
4	CON EDISON
5	ORANGE AND ROCKLAND
6	STATE OF NEW YORK
7	FEDERAL GOVERNMENT
8	OTHER
9	MANUFACTURER REBATES
96	REFUSED
97	DON'T KNOW

50. [IF 49a >1] Have you heard of the NYSERDA HOME APPLIANCE REBATE PROGRAM?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

51. [IF Q49= Yes or Q50 = YES] Have you participated in any of these other energy efficiency program(s)?

1 YES
2 NO
96 REFUSED
97 DON'T KNOW

Q51a. [IF Q51 = Yes] Which program or programs have you participated in? [DO NOT READ] [SELECT ALL RESPONSES]

1 NYSERDA HOME PERFORMANCE WITH ENERGY STAR PROGRAM
2 NYSERDA HOME APPLIANCE REBATE PROGRAM
3 NATIONAL GRID
4 CENTRAL HUDSON GAS AND ELECTRIC
5 CON EDISON
6 ORANGE AND ROCKLAND
7 STATE OF NEW YORK
8 FEDERAL GOVERNMENT
9 MANUFACTURER REBATES
95 OTHER
96 REFUSED
97 DON'T KNOW

52. [IF Q47 = Yes or Q50 = YES OR Q49 = YES] Do you find the availability of multiple energy efficiency programs confusing?

1 YES
2 NO
96 REFUSED
97 DON'T KNOW

DEMOGRAPHICS

Now I have just a few categorization questions to ask and we'll be finished.

53. What type of home do you live in? Is it a. . .[READ LIST AS THREE CLEARLY SEPARATE CHOICES]

1 Stand-alone single family home,
2 A multi-family home with 4 separate units or less, including townhomes or rowhouses, or a
3 Multi-family home with 5 or more units, including a Condo or an Apartment
4 OTHER: SPECIFY
96 REFUSED
97 DON'T KNOW

54. [IF MEASURE = GAS BOILER RESET CONTROL, GAS FURNACE, GAS WATER BOILER OR STEAM BOILER, PREFACE THIS QUESTION WITH: "Just to verify,"]What fuel do you mainly use to heat your home? [READ LIST]

1 Natural Gas
2 Electricity
3 Propane

4	Wood
5	Oil, or
95	Something else? Specify:_____
99	NONE
96	REFUSED
97	DON'T KNOW

55.

a. IF MEASURE (IS NOT EQUAL TO) CENTRAL AIR CONDITIONING OR CENTRAL AIR SOURCE HEAT PUMP, ASK:

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

1	Room air conditioners
2	Central air conditioning
3	Both central air conditioning and room air conditioning, or
4	No air conditioning?
96	REFUSED
97	DON'T KNOW

b. IF MEASURE = CENTRAL AIR CONDITIONING OR CENTRAL AIR SOURCE HEAT PUMP, ASK:

Do you have any Room Air Conditioners in your home?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

56. [IF 55a = 1 or 3, OR 55b = 1, ASK] How many room air conditioners do you have and use in your home?

1	One
2	Two
3	Three
4	Four
5	Five
8	More than five

57. What type of fuel does your hot water heater use? [READ LIST]

1	Electricity
2	Natural Gas
3	Propane, or
4	Some other fuel?
5	NONE/DON'T HAVE WATER HEATING
96	REFUSED
97	DON'T KNOW

58. Do you own or rent your home?

1	OWN
2	RENT
97	DON'T KNOW

59. How many years have you lived in your current residence?

    _____YEARS

    96 – REFUSED/97 – DON'T KNOW

60. What is the highest level of education you have completed? [READ LIST]

1	Some High School
2	High School
3	Trade or Technical School
4	Some college
5	College graduate
6	Some graduate school
7	Graduate degree, or
8	Something else?
96	DON'T KNOW
97	REFUSED

61. 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 2009? **(Read list and select one)**

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	DON'T KNOW
97	REFUSED

62. DO NOT READ: INTERVIEWER RECORD ANY INFORMATION RESPONDENT VOLUNTEERS ABOUT THE PROGRAM THAT WAS NOT CAPTURED DURING THE INTERVIEW HERE

01	NEVER RECEIVED REBATE
02	DIDN'T RECEIVE THE FULL REBATE AMOUNT

Thank you for taking the time to complete this important survey. Have a good day/evening!

Callbacks to Residential HVAC Program Participants

Callback Script:

Hello may I please speak to [SAMP_NAME]? Hi, my name is _____, and I'm calling on behalf of [UTILITY]. You recently completed a survey about your participation in [UTILITY]'s [PROGRAM NAME] program. We have a few follow up questions about your decision to install your [EQUIPMENT TYPE (s)] for which you received a rebate /received rebates. This should only take about 3 minutes.

[PROGRAMMER NOTE: IF RESPONDENT HAS MORE THAN 1 OF THE SAME EQUIPMENT TYPE, USE PLURAL LANGUAGE FOR [EQUIPMENT TYPE]. IF RESPONDENT HAS MULTIPLE EQUIPMENT TYPES, insert "[EQUIPMENT TYPE1] and [EQUIPMENT TYPE2]", IN OPENING SCRIPT ABOVE]

[IF RESPONDENT HAS MEASURES OF DIFFERENT TYPES] First I'd like to ask you about your [EQUIPMENT TYPE 1].

Q1. Why did you decide to purchase the [EQUIPMENT TYPE] when you did? [READ LIST, ALLOW ONLY 1 RESPONSE]

1 The existing system was broken,

2 You wanted to improve the performance of your system/Your system wasn't working well enough,

3 You wanted to improve the *efficiency* of the system, or

95 Something else? (Specify)

4 NEW SYSTEM – NOT A REPLACEMENT [DO NOT READ]

5 REFUSED

6 DON'T KNOW

NOTE NEW QUESTION ORDER

Q2. Did the contractor who installed the [EQUIPMENT TYPE] for which you received a rebate specifically encourage you to buy a *high efficiency* [EQUIPMENT TYPE] rather than one of a standard efficiency? OLD Q5

1 YES
2 NO
95 OTHER (Specify)
96 REFUSED
97 DON'T KNOW /DON'T REMEMBER

[INTERVIEWER NOTE: CODE THIS QUESTION AND THEN RECORD VERBATIM ADDITIONAL DETAIL FROM RESPONDENT, REGARDLESS OF RESPONSE CODED IN Q2]

NOTE NEW QUESTION ORDER

Q3. [If Q2 DOES NOT =2] What were some reasons provided by that contractor for buying the high efficiency model of the [EQUIPMENT TYPE]] rather than one of the standard efficiency? Anything else? [DO NOT READ LIST, MARK ALL THAT APPLY] OLD Q6

1 REBATE FROM UTILITY

2 FEDERAL TAX CREDIT
3 LOWER PRICE THAN STANDARD EFFICIENCY EQUIPMENT
4 LOWER OPERATING COST OVER THE LONG RUN THAN STANDARD EFFICIENCY
5 BETTER PERFORMANCE THAN STANDARD EFFICIENCY
95 OTHER (Specify)
96 REFUSED
97 DON'T KNOW /DON'T REMEMBER

NOTE NEW QUESTION ORDER
Q3a. [IF MORE THAN ONE REASON PROVIDED IN Q3, INCLUDING MULTIPLE REASONS WITHIN "OTHER" RESPONSE OPTION (INTERVIEWER JUDGEMENT): "What was the most persuasive reason the contractor gave for buying the high efficiency [EQUIPMENT TYPE]?" [ONLY SHOW RESPONSES TO Q3 AS OPTIONS FOR Q3a] OLD Q6a
NOTE NEW QUESTION ORDER
OLD Q4 -- DELETED
Q4. Was the final cost of the[EQUIPMENT TYPE] you purchased (after any rebates or tax credits) more expensive than a standard efficiency unit? OLD Q3

1 YES
2 NO
95 OTHER (Specify)
96 REFUSED
97 DON'T KNOW

NOTE NEW QUESTION ORDER
Q5. In the end, why did you decide to buy this [EQUIPMENT TYPE] rather than one of standard efficiency? [OPEN ENDED QUESTION. RECORD FIRST RESPONSE SEPARATELY FROM ADDITIONAL RESPONSES] OLD Q2

96 REFUSED
97 DON'T KNOW

Q5a. Are there any other reasons? [OPEN ENDED QUESTION] [READ IF NECESSARY: Are there any other reasons why you decided to purchase the [EQUIPMENT TYPE] rather than one of standard efficiency?] OLD Q2A

1 YES (Record response)
2 NO
96 REFUSED
97 DON'T KNOW

[IF RESPONDENT HAS MEASURES OF DIFFERENT TYPES] Great, thank you. Now I'd like to ask you about your [EQUIPMENT TYPE 2] that you received a rebate for. REPEAT QUESTIONS FOR SECOND EQUIPMENT TYPE, IF APPLICABLE

I'd like to thank you again for your time. Your responses to our survey are greatly appreciated. Have a nice evening.

NAVIGANT

Residential HVAC & Room AC Non-Participant Survey

Quota Group	Target N
Con Ed CAC	100
Con Ed Gas	100
O&R Gas	100
Room AC Single	75
Room AC Multi	75

PROGRAMMER: FOR THE PURPOSES OF THE SURVEY, [UTILITY] IS Con Edison OR Orange & Rockland. [PROGRAM NAME] FOR CON EDISON IS: Residential Heating, Ventilation and Air Conditioning Rebate AND FOR ORANGE & ROCKLAND: Gas Heating Equipment Rebate.

Hi, my name is _____, from Braun Research and I'm calling on behalf of [UTILITY]. We're evaluating one of [UTILITY]'s energy efficiency programs. May I speak with [CONTACT], or the person in your household that is most knowledgeable about your household's energy bill?
READ IF NECESSARY: This survey will take approximately 15 minutes and all of your answers will be kept strictly confidential. Let's begin. [IF NOW IS NOT A CONVENIENT TIME, SCHEDULE CALL-BACK, OR IF REFUSAL, THANK AND TERMINATE CALL. RECORD REASONS FOR REFUSAL IN CALL NOTES.]

NON PARTICIPANT CATEGORIZATION

19. First, we need a little bit of information about your home and the energy equipment in it. What type of home do you live in? Is it a. . .[READ LIST AS THREE CLEARLY SEPARATE CHOICES]

1	Stand alone single family home,
2	A multi-family home with 4 separate units or less, including townhomes or row houses, or a
3	Multi-family home with 5 or more units, including condos or apartments?
96	REFUSED
97	DON'T KNOW

20. Do you own or rent your home?

1	OWN
2	RENT
96	REFUSED
97	DON'T KNOW

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

1	Natural Gas,
2	Electricity,
3	Propane,
4	Wood,

5	Oil, or
95	Something else? SPECIFY
99	NOTHING/NO HEAT IN HOME
96	REFUSED
97	DON'T KNOW

22. [IF Q3 = Natural Gas ASK Q4; OTHERWISE, SKIP TO Q5] What type of equipment do you use to heat your home? Is it a . . . [READ LIST]
[READ IF NECESSARY: Furnaces use heated air that blows out of air vents to heat your home, and boilers use heated water that runs in radiators or in pipes in baseboard heaters to heat your home. Which of these types of systems do you have?]

1	Furnace,
2	Water boiler, or
3	Steam boiler?
96	REFUSED
97	DON'T KNOW

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

1	Central air conditioning,
2	Room air conditioners,
3	Both central air conditioning and room air conditioners, or
4	No air conditioning at all?
96	REFUSED
97	DON'T KNOW

24. What type of fuel does your hot water heater use? Does it use . . . [READ LIST, CHOOSE ONE RESPONSE.]

1	Electricity,
2	Natural Gas,
3	Propane, or
95	Some other fuel?
99	NONE/DON'T HAVE WATER HEATER
96	REFUSED
97	DON'T KNOW

25. [IF Q2 = 2] Are you permitted to replace the heating and/or air conditioning equipment in your residence? [CHOOSE ONE RESPONSE] [DO NOT READ CHOICES]

1	YES
2	NO [TERMINATE FOR ALL BUT CON ED ROOM AC]
3	ALLOWED TO REPLACE AC, BUT NOT HEAT
4	ALLOWED TO REPLACE HEAT, BUT NOT AC
96	REFUSED
97	DON'T KNOW

CATEGORIZATION FOR QUOTAS:

Categorization	Requirements	Categorization	Requirements

Con Ed CAC	[UTILITY] = Con Ed	O&R Gas	[UTILITY] = O&R
	Q1 = 1 or 2		Q1 = 1 or 2
	Q2 = 1 or (Q2 = 2 AND Q7 = 1 OR 3)		Q2 = 1 or (Q2 = 2 AND Q7 = 1 OR 4)
	Q5 = 1 or 3		Q3 = 1
Con Ed Gas	[UTILITY] = Con Ed	Room AC Single	[UTILITY] = Con Ed
	Q1 = 1 or 2		Q1 = 1 or 2
	Q2 = 1 or (Q2 = 2 AND Q7 = 1 OR 4)		Q5 = 2 or 3
	Q3 = 1	Room AC Multi	[UTILITY] = Con Ed, Q1=3, Q5=2 or 3

IF RESPONDENT DOES NOT FALL INTO ANY CATEGORY, THANK AND TERMINATE FROM SURVEY BY SAYING: I'm sorry, but our quota is already filled for people who live in homes like yours. Thank you for your time, and have a nice day/evening.

PROGRAM AWARENESS – HVAC

ASK Q8-Q12 IF CATEGORY = Con Ed CAC, Con Ed Gas, or O&R Gas, ELSE SKIP TO INSTRUCTIONS BEFORE Q27.

26. Are you familiar with [UTILITY]'s *[PROGRAM NAME]* program that provides rebates for high efficiency [CON ED ONLY: central air conditioners,] gas heating and water heating equipment, and programmable thermostats?

1	YES – AM FAMILIAR, BUT NOT PARTICIPATING
3	YES – AM FAMILIAR, **BUT CURRENTLY ARE PARTICIPATING IN PROGRAM -- TERMINATE**
2	NO [SKIP TO Q11]
96	REFUSED [SKIP TO Q11]
97	DON'T KNOW [SKIP TO Q11]

27. [IF Q8 = Yes] How did you hear about the program? [DO NOT READ] [RECORD ALL RESPONSES]

1	MAILING
2	NEWSLETTER
3	BILL INSERT/AS A CUSTOMER
4	WEBSITE
5	FAMILY/FRIEND
6	CONTRACTOR
7	TELEVISION ADVERTISING
8	RADIO ADVERTISING
9	PRINT ADVERTISING
10	COMMUNITY EVENT/STATE/COUNTY FAIR
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

28. [IF Q9 = MAILING, NEWSLETTER, WEBSITE, ANY ADVERTISING OR COMMUNITY EVENT] Do you know who provided the information about the program? [DO NOT READ] [RECORD ALL RESPONSES]

1	CON EDISON
2	ORANGE & ROCKLAND
3	HONEYWELL
4	NYSERDA
5	NATIONAL GRID
6	INDUSTRY ASSOCIATION SPECIFY:
7	TRADE ASSOCIATION
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

10a. [IF 10 = 97] Was it [UTILITY] or another organization?

1	CON EDISON [ONLY ASK IF UTILITY = CONED]
2	ORANGE & ROCKLAND [ONLY ASK IF UTILITY = O&R]
95	ANOTHER ORGANIZATION, SPECIFY:
96	REFUSED
97	DON'T KNOW

29. Where do you typically get information about energy efficient products? [DO NOT READ] [CHECK ALL THAT APPLY]

1	FAMILY/FRIENDS
2	WORK ASSOCIATES/COLLEAGUES
3	WEBSITES
4	UTILITY BILL INSERTS
5	TELEVISION
6	BILLBOARDS
7	MAILINGS
8	CONTRACTORS (PLUMBERS, ELECTRICIANS. . .)
9	APPLIANCE TAGS/ENERGY STAR INFO PRINTED ON APPLIANCES
10	RETAILERS (HARDWARE STORES, HOME DEPOT/LOWES)
11	DO NOT GET INFORMATION ABOUT ENERGY EFFICIENT PRODUCTS
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

11a. [IF Q11 = 3] Who sponsors the websites you visit to get information about energy efficient products? [CHECK ALL THAT APPLY]

1	UTILITY WEBSITES
2	ENERGY STAR WEBSITE
3	CONSUMER REPORTS
95	ANOTHER WEBSITE, SPECIFY:
96	REFUSED
97	DON'T KNOW

[DO NOT ASK IF Q7 = 02, NO; SKIP TO Q27]

30. Please indicate if you have purchased any of the following products for your home since June 2009. Have you purchased a(n) . . .: [READ LIST. CHOOSE ALL THAT APPLY.]

	Yes	No	RF	DK	
a.	1	2	96	97	Central air conditioner?
b.	1	2	96	97	Gas Furnace?
c.	1	2	96	97	Gas Water Boiler?
d.	1	2	96	97	Gas Steam Boiler?
e.	1	2	96	97	Gas Water Heater?
f.	1	2	96	97	Boiler reset control? READ IF NECESSARY: Most boilers are set to a constant temperature. The boiler reset control allows the boiler temperature to change (or reset) based on the outdoor temperature.
g.	1	2	96	97	Electronically commuted motor, or ECM, for your air conditioning? READ IF NECESSARY: An ECM fan is sometimes called a variable speed fan. For systems with an ECM, the air handler will turn on and ramp up to 100% speed slowly. When the thermostat satisfies, the motor will slowly ramp down and then stop after so many minutes. This is often referred to as soft start and soft stop and uses less energy that a fan set to a constant speed.
h.	1	2	96	97	Electronically commuted motor, or ECM, for your furnace? READ IF NECESSARY: An ECM fan is sometimes called a variable speed fan. For systems with an ECM, the air handler will turn on and ramp up to 100% speed slowly. When the thermostat satisfies, the motor will slowly ramp down and then stop after so many minutes. This is often referred to as soft start and soft stop and uses less energy that a fan set to a constant speed.

Equipment Purchasers

ASK Qs 13-17 ONLY IF AT LEAST ONE OF Q12a – Q12h = 1. OTHERWISE, SKIP TO INSTRUCTIONS BEFORE Q18. REPEAT Qs13-17 FOR EACH ITEM PURCHASED IN Q12. ASK ALL QUESTIONS FOR EACH ITEM BEFORE MOVING ON THE NEXT.

Now I'd like to ask to ask you some questions about the [ANSWER FROM Q12] that you purchased.

FOR Q13, USE THE FOLLOWING VALUES FOR [REBATE AMOUNT] AND [INCREMENTAL COST], BASED ON ANSWER(S) TO Q12:

	Equipment Type	Rebate Amount	Incremental Cost
a	Central air conditioner	$400	$1,000
b	Gas Furnace	$200	$1,000
c	Gas Water Boiler	$500	$1,000
d	Gas Steam Boiler	$500	$1,000

	Equipment Type	Rebate Amount	Incremental Cost
e	Gas Water Heater	$300	$300
f	Boiler reset controls	$100	$500
g	Electronically commuted motor, or ECM for central air	$200	$455
h	Electronically commuted motor, or ECM for furnace	$200	$455

31. A typical ***additional*** cost for purchasing [IF Q12a-d = 1, ADD: "a high efficiency"; IF Q12e = 1, ADD: "an indirect"; IF Q12f =1, DON'T ADD ANYTHING; IF 12g or h=1, ADD: "an"] [ANSWER FROM Q12] [IF Q12a-e=1, ADD: "rather than a standard efficiency model"] is about [INCREMENTAL COST]. Were you aware of the [REBATE AMOUNT] rebate that you could receive from [UTILITY] for purchasing [IF Q12a-d = 1, ADD: "the high efficiency"; IF Q12e = 1, ADD: "the indirect"; IF Q12f =1, DON'T ADD ANYTHING; IF 12g or h=1, ADD: "the"] [ANSWER FROM Q12]? [REPEAT FOR EACH Q12 ITEM INSTALLED]?

1	YES [CONTINUE]
2	NO [SKIP TO Q15]
96	REFUSED [SKIP TO Q15]
97	DON'T KNOW [SKIP TO Q15]

32. Why didn't you purchase your [ITEM FROM Q12] through the [UTILITY] [PROGRAM NAME] program? [DO NOT READ]? [CHECK ALL THAT APPLY]

1	DID NOT WANT ANYONE COMING INTO MY HOME TO INSPECT
2	QUALIFYING EQUIPMENT WAS TOO EXPENSIVE
3	ENERGY SAVINGS NOT ENOUGH TO JUSTIFY ADD'L EXPENSE
4	DID NOT HAVE TIME/DIDN'T WANT TO DEAL WITH REBATE APPLICATION
5	PLANNED TO DO IT ON MY OWN
6	REBATE WASN'T HIGH ENOUGH
7	I DIDN'T KNOW HOW LONG THE PROGRAM WAS RUNNING
8	DIDN'T KNOW ABOUT PROGRAM/DIDN'T KNOW PROGRAM EXISTED
95	OTHER (SPECIFY):
96	REFUSED
97	DON'T KNOW

SKIP TO Q17

33. [IF q13=2,96,97] If you had known about this rebate when you made your purchase, on a scale of 1 to 10, where 1 is not at all likely and 10 is extremely likely, how likely would you have been to purchase your [ITEM FROM Q12] through the [PROGRAM NAME] program? [REPEAT FOR EACH Q12 ITEM INSTALLED] [READ IF NECESSARY: "You would need to pay [READ ONLY FOR ITEMS A-E an additional] [INCREMENTAL COST] to receive a [REBATE AMOUNT] rebate."

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

34. [IF Q15 RESPONSE < 7, ASK]: Why wouldn't you have been likely to purchase your [ITEM FROM Q12] through the program? [DO NOT READ] [CHECK ALL THAT APPLY]

1	ENERGY EFFICIENT EQUIPMENT IS TOO EXPENSIVE
2	ENERGY SAVINGS NOT ENOUGH TO JUSTIFY ADD'L EXPENSE
3	DO NOT HAVE TIME TO DEAL WITH REBATE APPLICATION
4	PLAN TO DO IT ON MY OWN
5	REBATE ISN'T HIGH ENOUGH
6	RECENTLY UPGRADED MY EQUIPMENT
7	NOT CONCERNED WITH ENERGY EFFICIENCY
8	NOT LIKELY TO BE ABLE TO GET THE BRAND I WANT
9	I MIGHT/I NEED MORE INFORMATION/MY RESPONSE IS NEUTRAL
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

[ASK IF Q13 = 01 OR Q15 < 7]

35. Under what circumstances would you have participated in the [UTILITY] rebate program to buy your [ITEM FROM Q12]? [DO NOT READ] [CHECK ALL THAT APPLY]

1	HIGHER REBATE
2	BETTER ADVERTISEMENT
3	MORE EQUIPMENT REBATED
4	LONGER PROGRAM PERIOD
5	NONE/NO CIRCUMSTANCE UNDER WHICH I WOULD'VE PARTICIPATED
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

Non-Purchasers

ASK ONLY IF ANY Q12a-h NOT = 1; OTHERWISE, SKIP TO INSTRUCTIONS ABOVE Q23
FOR THE FOLLOWING QUESTIONS (Q18-Q22), ASK FOR EACH EQUIPMENT TYPE (FURNACE, BOILER, WATER HEATER, CENTRAL AIR CONDITIONER) IF THE RESPONDENT IS IN THE FOLLOWING CATEGORY:

- FURNACE IF {CON EDISON GAS, Q4 = FURNACE, AND Q12b ≠ 1} OR {ORANGE & ROCKLAND GAS, Q4 = FURNACE, AND Q12b ≠ 1}
- BOILER IF {CON EDISON GAS, Q4 = WATER OR STEAM BOILER, AND Q12c/d ≠ 1} OR {ORANGE & ROCKLAND GAS, Q4 = WATER OR STEAM BOILER, AND Q12c/d ≠ 1}
- INDIRECT WATER HEATER IF {Q6 =2, and Q12e ≠ 1]
- CENTRAL AIR CONDITIONER IF {Q5 = 1 OR 3, CON EDISON CUSTOMER, and Q12a ≠ 1}
  NOTE: NO ONE CAN ANSWER QUESTIONS FOR BOTH FURNACE **AND** BOILER. ASK ALL QUESTIONS FOR EACH EQUIPMENT TYPE BEFORE MOVING ON TO NEXT EQUIPMENT TYPE.

Question Key	Incremental Cost	Equipment Type	Rebate Amount
Q4 = 1 (Furnace)	$1,000	Furnace	$200
Q4 = 2 (Water Boiler) or 3 (Steam Boiler)	$1,000	Boiler	$500
Q5 = 1 or 3	$1,000	Central Air Conditioner	$400
Q6 =2 (Gas)	$300	Indirect Water Heater	$300

[FOR Q18, USE TABLE ABOVE FOR INCREMENTAL COSTS, EQUIPMENT TYPES AND REBATE AMOUNT INSERTION TEXT.]

36. When it comes time to replace your current [EQUIPMENT TYPE; IF EQUIPMENT TYPE = INDIRECT WATER HEATER, INSERT 'WATER HEATER'], on a scale of 1 to 10, where 1 means "not at all likely" and 10 means "extremely likely," how likely would you be to spend an additional [IF FURNACE/BOILER/CENTRAL AC – "$1000"; IF WATER HEATER –"$300"] to purchase a ***high efficiency*** [FURNACE/BOILER/"INDIRECT" WATER HEATER/CENTRAL AIR CONDITIONER] if you were given a rebate of [IF FURNACE – "$200"; IF BOILER – "$500; IF WATER HEATER – "$300"; IF CENTRAL AIR CONDITIONER -- $400]? [DO NOT READ] INTERVIEWER: IF RESPONDENT SAYS SOMETHING LIKE, WHEN IT'S TIME TO BUY A NEW UNIT I'LL BE HAPPY TO PAY EXTRA FOR ENERGY EFFICIENCY EVEN WITHOUT THE REBATE' CODE RESPONSE AS A '10'

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

37. [IF Q18 < 7] Why wouldn't you be likely to take advantage of the rebate and purchase a high efficiency [FURNACE/BOILER/INDIRECT WATER HEATER/CENTRAL AIR CONDITIONER]? [DO NOT READ] [CHECK ALL THAT APPLY]

1	ENERGY EFFICIENT EQUIPMENT IS TOO EXPENSIVE
2	ENERGY SAVINGS WOULD NOT BE LARGE ENOUGH
3	DO NOT HAVE TIME TO DEAL WITH REBATE APPLICATION
4	PLAN TO DO IT ON MY OWN
5	REBATE ISN'T HIGH ENOUGH
6	RECENTLY UPGRADED MY EQUIPMENT

7	NOT CONCERNED WITH ENERGY EFFICIENCY
8	NOT LIKELY TO BE ABLE TO GET THE BRAND I WANT
9	I MIGHT/I NEED MORE INFORMATION/MY RESPONSE IS NEUTRAL
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

38. [IF Q18 < 7] Under what circumstances ***would*** you purchase a high efficiency [FURNACE/BOILER/INDIRECT WATER HEATER/CENTRAL AIR CONDITIONER]? [DO NOT READ] [CHECK ALL THAT APPLY]

1	HIGHER REBATE
2	BETTER ADVERTISEMENT
3	MORE EQUIPMENT REBATED
4	LONGER PROGRAM PERIOD
5	IF HIGH EFFICIENCY EQUIPMENT BECOMES LESS EXPENSIVE
6	WOULD NEVER PURCHASE THE HIGH EFFICIENCY MODEL/VERSION
7	IF MY CURRENT EQUIPMENT BREAKS
8	IF PAYBACK IN ENERGY SAVINGS IS REASONABLE/IF THE ADDITIONAL COST WILL BE PAID BACK IN ENERGY SAVINGS QUICKLY
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

39. Assuming you decided to install a high efficiency [FURNACE/BOILER/INDIRECT WATER HEATER/CENTRAL AIR CONDITIONER], what is the longest you would be willing to wait until the energy savings covered the additional cost of the new [FURNACE/ BOILER/ INDIRECT WATER HEATER/CENTRAL AIR CONDITIONER]? [RECORD RESPONSE IN YEARS – DO NOT ACCEPT A RANGE]

READ IF NECESSARY: This is called 'payback' or the time it takes for the extra cost of high efficiency heating or air conditioning equipment to be paid for by the money you save on lower utility bills.

_____ YEARS

96	DON'T KNOW
97	REFUSED

40. Now please assume you need to replace your [FURNACE/BOILER/WATER HEATER/CENTRAL AIR CONDITIONER]. Using a scale from 1 to 10, where 1 is "not at all important" and 10 is "extremely important," how important is the availability of rebates in deciding whether to purchase a high efficiency [FURNACE/BOILER/WATER HEATER/CENTRAL AIR CONDITIONER] rather than one of standard efficiency? [DO NOT READ]

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

FOR THE FOLLOWING QUESTIONS (Q23-Q26), ASK FOR EACH PRODUCT (BOILER RESET CONTROLS OR PROGRAMMABLE THERMOSTAT) IF THE RESPONDENT MEETS THE FOLLOWING QUALIFICATIONS:

- **PROGRAMMABLE THERMOSTAT IF {CON EDISON GAS NON-PARTICIPANT AND Q4 = FURNACE OR BOILER} OR {ORANGE & ROCKLAND GAS NON-PARTICIPANT AND Q4 = FURNACE OR BOILER} OR {CON EDISON CAC NON-PARTICIPANTAND Q5 = CENTRAL AIR CONDITIONING OR BOTH CENTRAL AIR CONDITIONING AND ROOM AIR CONDITIONERS}**
- **ASK ALL QUESTIONS FOR ONE TYPE OF EQUIPMENT BEFORE MOVING ON TO THE NEXT**
- **BOILER RESET CONTROLS IF {CON EDISON GAS NON-PARTICIPANT, Q4 = BOILER, Q12f ≠ YES " }**

41. Are you aware that the [UTILITY] [PROGRAM NAME] program also offers rebates on [BOILER RESET CONTROLS/PROGRAMMABLE THERMOSTATS] that [IF BOILER RESET CONTROLS – "control the temperature of your boiler"; IF PROGRAMMABLE THERMOSTAT – "let you automatically change the temperature setting of your thermostat at different times of the day"]?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

PROGRAMMER AUTOFILL Q23a=YES IF Q12f=YES

[ASK IF Q4 = BOILER AND Q12f ≠ 1]

23a.Does your boiler have a reset control? READ IF NECESSARY: A boiler reset control allows the boiler temperature to vary (or reset) based on the outdoor temperature.

1	YES – CHECK TO SEE IF RESPONDENT QUALIFIES FOR PROGRAMMABLE THERMOSTAT QUESTIONS. IF NOT, GO TO INSTRUCTIONS BEFORE Q27
2	NO – GO TO Q24
96	REFUSED – CHECK TO SEE IF RESPONDENT QUALIFIES FOR PROGRAMMABLE THERMOSTAT QUESTIONS. IF NOT,GO TO INSTRUCTIONS BEFORE Q27
97	DON'T KNOW – CHECK TO SEE IF RESPONDENT QUALIFIES FOR PROGRAMMABLE THERMOSTAT QUESTIONS. IF NOT,GO TO INSTRUCTIONS BEFORE Q27

[ASK IF Q4 = FURNACE/BOILER OR Q5 = CENTRAL AIR CONDITIONER/BOTH CENTRAL A/C AND ROOM AC]

23b. Does your home have a programmable thermostat?

1	YES – GO TO INSTRUCTIONS BEFORE Q27
2	NO – GO TO Q24
96	REFUSED – GO TO GO TO INSTRUCTIONS BEFORE Q27
97	DON'T KNOW – GO GO TO INSTRUCTIONS BEFORE Q27

42. [IF Q23a/b = NO] Why don't you have a [BOILER RESET CONTROL/ PROGRAMMABLE THERMOSTAT]? [DO NOT READ] [CHECK ALL THAT APPLY]

1	DON'T KNOW WHAT IT IS
2	DON'T HAVE A NEED FOR IT/ALREADY HAVE ONE
3	TOO EXPENSIVE
4	REBATE NOT HIGH ENOUGH
5	I RENT MY HOUSE

6	WORRIED ABOUT HOME COMFORT
7	DON'T THINK THEY REALLY WORK/SAVE MUCH ENERGY
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

43. On a scale of 1 to 10, where 1 is not at all likely and 10 is extremely likely, knowing that you can receive a [IF BOILER RESET CONTROLS – "$100"; IF PROGRAMMABLE THERMOSTAT – "$25"] rebate for installing [IF BOILER RESET CONTROLS: "boiler reset controls on your current boiler"; IF PROGRAMMABLE THERMOSTAT – "a programmable thermostat"], how likely are you to participate in the [PROGRAM NAME] program in the next 12 months? [DO NOT READ] [READ IF NECESSARY: IF BOILER RESET CONTROLS: "Boiler reset controls typically cost about $500" IF PROGRAMMABLE THERMOSTAT: "A programmable thermostat typically costs $50."

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

44. [IF Q25 < 7] Why wouldn't you be likely to purchase a [BOILER RESET CONTROL/ PROGRAMMABLE THERMOSTAT] through the [PROGRAM NAME] Program? [DO NOT READ] [CHECK ALL THAT APPLY]

1	DON'T KNOW WHAT THEY ARE
2	DON'T HAVE A NEED FOR IT/ALREADY HAVE ONE
3	TOO EXPENSIVE
4	REBATE NOT HIGH ENOUGH
5	I RENT MY HOUSE
6	WORRIED ABOUT HOME COMFORT
7	DON'T THINK THEY REALLY WORK/SAVE MUCH ENERGY
8	I MIGHT/I NEED MORE INFORMATION/MY RESPONSE IS NEUTRAL
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

PROGRAM AWARENESS – ROOM AC

[ASK THE QUESTIONS IN THIS SECTION (Q27-Q40) ONLY IF CATEGORIZATION = CON EDISON ROOM AC SINGLE OR CON EDISON ROOM AC MULTI

45. Are you familiar with Con Edison's *Room AC* program, which provided rebates for purchasing Energy Star room air conditioners?

1	YES
2	NO [SKIP TO Q30]
96	REFUSED [SKIP TO Q30]
97	DON'T KNOW [SKIP TO Q30]

46. [IF Q27= YES] How did you hear about the program? [DO NOT READ]

1	MAILING

2	NEWSLETTER
3	BILL INSERT/AS A CUSTOMER
4	WEBSITE
5	FAMILY/FRIEND
6	CONTRACTOR
7	TELEVISION ADVERTISING
8	RADIO ADVERTISING
9	PRINT ADVERTISING
10	COMMUNITY EVENT/STATE/COUNTY FAIR
95	OTHER, SPECIFY
96	REFUSED
97	DON'T KNOW

47. [IF Q28 = MAILING, NEWSLETTER, WEBSITE, ANY ADVERTISING OR COMMUNITY EVENT] Do you know who provided the information about the program? [DO NOT READ] [MARK ALL RESPONSES] [PROMPT IF NECESSARY: Was it the utility or another organization?]

1	CON EDISON
2	ORANGE & ROCKLAND
3	HONEYWELL
4	NYSERDA
5	NATIONAL GRID
6	INDUSTRY ASSOCIATION
7	TRADE ASSOCIATION
95	OTHER
96	REFUSED
97	DON'T KNOW

48. Did you purchase any new room air conditioners for your home between May 14TH and July 14TH of 2010? [DO NOT READ]

1	YES [GO TO Q31]
2	NO [GO TO Q37]
3	MAYBE/CAN'T RECALL EXACT DATE [GO TO Q31]
96	REFUSED [GO TO Q37]
97	DON'T KNOW [GO TO Q37]

Room AC Purchasers [IF Q30=1 or 3]

49. [IF Q30=1 OR 3] When you bought your air conditioner, were you aware of the $30 rebate that you could receive from Con Edison for purchasing a new Energy Star, high-efficiency room air conditioner?

1	YES
2	NO
96	REFUSED
97	DON'T KNOW

31a.When you bought your air conditioner, did it have an Energy Star label on it?

1	YES

2	NO [SKIP TO Q33]
96	REFUSED [SKIP TO Q33]
97	DON'T KNOW [SKIP TO Q33]

50. [IF Q31a=1] Why didn't you purchase an Energy Star room air conditioner through the program? [DO NOT READ] [CHECK ALL THAT APPLY]

1	DID NOT HAVE FUNDS TO BUY AN ENERGY STAR ROOM AC
2	ENERGY SAVINGS WOULD NOT BE LARGE ENOUGH TO JUSTIFY ADD'L COST OF ENERGY STAR
3	REBATE TOO COMPLICATED
4	REBATE WASN'T HIGH ENOUGH
5	I DIDN'T KNOW HOW LONG THE PROGRAM WAS RUNNING
6	I DIDN'T KNOW HOW MUCH THE REBATE WAS
7	I DIDN'T KNOW HOW TO GET THE REBATE
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

51. [IF Q31a=2 OR 96 or 97] If you had known about this rebate when you bought your air conditioner, on a scale of 1 to 10, where 1 is "not at all likely" and 10 is "extremely likely," how likely would you have been to purchase an Energy Star room air conditioner? [DO NOT READ] [READ IF NECESSARY: "The typical cost difference between a regular efficiency room air conditioner and an Energy Star room air conditioner is between $30 and $50."]

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

52. [IF Q33<7] Why wouldn't you have been likely to buy your air conditioner through the program? [DO NOT READ] [CHECK ALL THAT APPLY]

1	ENERGY EFFICIENT EQUIPMENT IS TOO EXPENSIVE
2	ENERGY SAVINGS WOULD NOT BE LARGE ENOUGH
3	DO NOT HAVE TIME TO DEAL WITH REBATE APPLICATION
4	PLAN TO DO IT ON MY OWN
5	REBATE ISN'T HIGH ENOUGH
6	RECENTLY UPGRADED MY EQUIPMENT
7	NOT CONCERNED WITH ENERGY EFFICIENCY
8	NOT LIKELY TO BE ABLE TO GET THE BRAND I WANT
9	I MIGHT/I NEED MORE INFORMATION/MY RESPONSE IS NEUTRAL
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

53. Using the same scale of 1 to 10, where 1 is "not at all likely" and 10 is "extremely likely," how likely are you to buy an Energy Star air conditioner through the program the next time you need to buy one? [DO NOT READ] [READ IF NECESSARY: "The typical cost difference between a regular efficiency room air conditioner and an Energy Star room air conditioner is between $30 and $50."]

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

Likely Likely

54. [IF Q35<8] Under what circumstances would you be very likely to buy your next room air conditioner through this program? [DO NOT READ] [CHECK ALL THAT APPLY]

1	HIGHER REBATE
2	BETTER ADVERTISEMENT
3	IF I SEE SOMETHING ABOUT IT/IF RETAILERS TELLS ME ABOUT IT AT THE STORE
4	LONGER PROGRAM PERIOD
5	NONE/DON'T KNOW OF ANY CIRCUMSTANCE UNDER WHICH I WOULD'VE PARTICIPATED
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

Room AC Non-Purchasers (ENTER THIS SECTION IF Q30=2, 96 or 97, ELSE SKIP TO Q41)

55. [IF Q30 = 2, 96 OR 97 (NO, RF, DK)] When it is time to buy a new room air conditioner, using a scale from 1 to 10, where 1 means "not at all likely" and 10 means "extremely likely," how likely would you be to purchase an Energy Star high efficiency room air conditioner, if you were offered a $30 rebate? [DO NOT READ]
[READ IF NECESSARY: "The typical cost difference between a regular efficiency room air conditioner and an Energy Star room air conditioner is between $30 and $50."]

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

56. [IF Q37 < 7] Why wouldn't you be likely to take advantage of the rebate and purchase an Energy Star room air conditioner? [DO NOT READ] [SELECT ALL RESPONSES]

1	ENERGY STAR ROOM AIR CONDITIONERS ARE TOO EXPENSIVE
2	ENERGY SAVINGS WOULD NOT BE LARGE ENOUGH
3	DO NOT HAVE TIME TO DEAL WITH REBATE APPLICATION
4	PLAN TO DO IT ON MY OWN
5	REBATE ISN'T HIGH ENOUGH
6	RECENTLY UPGRADED MY EQUIPMENT
7	I MIGHT/I NEED MORE INFORMATION/MY RESPONSE IS NEUTRAL
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

57. [IF Q37<8] Under what circumstances **would** you be very likely to buy an Energy Star room air conditioner? [DO NOT READ] [CHECK ALL THAT APPLY]

1	HIGHER REBATE
2	BETTER ADVERTISEMENT

3	LONGER PROGRAM PERIOD
4	I WOULDN'T BUY ONE UNDER ANY CIRCUMSTANCES
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

58. Using a scale from 1 to 10, where 1 is not at all important and 10 is extremely important, how important is the availability of rebates in deciding whether to purchase a new Energy Star room air conditioner? [DO NOT READ]

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

ENERGY EFFICENCY ATTITUDES - ASK ALL

59. Are there any other energy-using products for which you would like [UTILITY] to offer rebates? [DO NOT READ] [CHECK ALL THAT APPLY]

1	CFLS/COMPACT FLUORESCENT LIGHT BULBS
2	CLOTHES WASHER
3	CLOTHES DRYER
4	COMPUTERS
5	DISHWASHER
6	DEHUMIDIFIER
7	EVAPORATIVE COOLER
8	REFRIGERATOR
9	FREEZER
10	POOL PUMP
11	LOW-FLOW SHOWERHEAD
12	OCCUPANCY SENSOR
13	ROOM AIR CONDITIONER
14	TELEVISIONS
15	VIDEO GAMING SYSTEMS
16	NO/NONE
17	SOLAR PANELS
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

60. Do you normally purchase energy efficient products?

1	YES (GO TO Q44)
2	SOMETIMES (GO TO Q43)
3	NO (GO TO Q43)
96	REFUSED (GO TO Q45)
97	DON'T KNOW (GO TO Q45)

61. [IF Q42 = NO OR SOMETIMES] What are some reasons you might not purchase energy efficient products? [DO NOT READ] [CHECK ALL THAT APPLY]

1	THEY ARE NOT WORTH THE ADDED COST
2	I AM NOT CONCERNED ABOUT ENERGY EFFICIENCY
3	THE PRODUCTS SEEM EXPERIMENTAL
4	THE APPEARANCE OF THE PRODUCTS IS UNDESIRABLE
5	THE PERFORMANCE OF THE PRODUCT IS QUESTIONABLE
6	NOT ENOUGH INFORMATION ON THE BENEFITS THEY WILL PROVIDE ME
7	I DO NOT HAVE THE DISPOSABLE INCOME TO BUY ANYTHING EXTRA RIGHT NOW/UPFRONT COSTS HURT
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

62. [IF Q42 = YES] What is the main reason you buy energy efficient products? [DO NOT READ. TAKE ONE RESPONSE.]

1	THEY SAVE MONEY/COST ME LESS IN THE LONG RUN
2	THEY SAVE ENERGY
3	IT'S GOOD FOR THE ENVIRONMENT/REDUCES POLLUTION
4	THEY TEND TO BE HIGHER QUALITY PRODUCTS
5	IF I HAVE TO BUY A NEW [PRODUCT] ANYWAY/MY CURRENT ONE IS BROKEN, HAS TO BE REPLACED
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

OTHER PROGRAMS – ASK TO ALL

63. What other energy efficiency programs offered by [UTILITY] have you heard of, if any? [DO NOT READ] [CHECK ALL THAT APPLY]

1	CON EDISON'S TARGETED DSM PROGRAM (AKA DEMAND SIDE MANAGEMENT)
2	CON EDISON'S DIRECT LOAD CONTROL PROGRAM
3	CON EDISON'S RESIDENTIAL HEATING, VENTILATION AND AIR CONDITIONING PROGRAM
4	CON EDISON'S ROOM AC PROGRAM
5	ORANGE AND ROCKLAND'S GAS HEATING EQUIPMENT PROGRAM
6	ORANGE AND ROCKLAND'S TIME OF USE PROGRAM
7	HAVE NOT HEARD OF OTHER PROGRAMS (GO TO Q48)
95	OTHER, SPECIFY INDIVIDUAL PROGRAMS SEPARATELY (OTHER #1, OTHER #2, ETC)
96	REFUSED (GO TO Q48)
97	DON'T KNOW (GO TO Q48)

[IF ONLY ONE RESPONSE RECORDED IN Q45, GO TO Q46. IF MORE THAN ONE RESPONSE, GO TO Q47]

64. [IF Q45 = **ONE** OF 1-6 OR 95] Have you participated in that program?

1	YES

2	NO
96	REFUSED
97	DON'T KNOW

65. [IF Q45 = MORE THAN ONE OF 1-6, 95] Which of these other programs, if any, have you participated in? [DO NOT READ. ACCEPT MULTIPLE RESPONSES]

1	CON EDISON'S TARGETED DSM PROGRAM
2	CON EDISON'S DIRECT LOAD CONTROL PROGRAM
3	CON EDISON'S RESIDENTIAL HEATING, VENTILATION AND AIR CONDITIONING PROGRAM
4	CON EDISON'S ROOM AC PROGRAM
5	ORANGE AND ROCKLAND'S GAS HEATING EQUIPMENT PROGRAM
6	ORANGE AND ROCKLAND'S TIME OF USE PROGRAM
94	NONE/NO OTHER
95	LIST OTHER(S) FROM Q45
96	REFUSED
97	DON'T KNOW

66. Apart from the programs offered by [UTILITY], which other residential energy efficiency programs are you familiar with, if any? [DO NOT READ] [CHECK ALL THAT APPLY]

1	NYSERDA
2	NATIONAL GRID
3	CENTRAL HUDSON GAS AND ELECTRIC
4	CON EDISON
5	ORANGE AND ROCKLAND
6	STATE OF NEW YORK
7	FEDERAL GOVERNMENT
8	NO OTHER PROGRAMS
95	OTHER, SPECIFY:
96	REFUSED
97	DON'T KNOW

67. [IF Q48 = 1-7 OR 95] Have you participated in [this/any of these] energy efficiency program(s)?

1	YES
2	NO (GO TO Q50)
96	REFUSED (GO TO Q50)
97	DON'T KNOW (GO TO Q50)

49a. [IF Q49 = YES AND IF Q48 HAS MORE THAN ONE PROGRAM] Which program or programs have you participated in? [DO NOT READ, GET ORGANIZATION AND NAME OF PROGRAM IN Q49a AND Q49b, RESPECTIVELY]

1	NYSERDA
2	NATIONAL GRID
3	CENTRAL HUDSON GAS AND ELECTRIC
4	CON EDISON

5	ORANGE AND ROCKLAND
6	STATE OF NEW YORK
7	FEDERAL GOVERNMENT
95	OTHER
96	REFUSED
97	DON'T KNOW

ASK NAME OF PROGRAM FOR EACH ORGANIZATION MENTIONED Q49A

49b. [IF Q49 = YES AND IF Q48 LISTS MORE THAN ONE PROGRAM, PROVIDE NAME OF PROGRAM.] [CHECK ALL THAT APPLY]

1	NYSERDA:
2	NATIONAL GRID:
3	CENTRAL HUDSON GAS AND ELECTRIC:
4	CON EDISON:
5	ORANGE AND ROCKLAND:
6	STATE OF NEW YORK:
7	FEDERAL GOVERNMENT:
95	OTHER:
97	REFUSED
98	DON'T KNOW

DEMOGRAPHICS

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

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

    _____YEARS

    96 – REFUSED

    97 – DON'T KNOW

69. What is the highest level of education you have completed? Was it . . .[READ LIST]

1	Some High School,
2	High School,
3	Trade or Technical School,
4	Some college,
5	College graduate,
6	Some graduate school,
7	Graduate degree, or
95	Something else?
96	REFUSED
97	DON'T KNOW

70. 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? Was it . . . **(READ LIST AND SELECT ONE)**

1	Under $20,000,
2	$20,000 to under $40,000,
3	$40,000 to under $60,000,
4	$60,000 to under $80,000,
5	$80,000 to under $100,000,
6	$100,000 to under $150,000, or
7	$150,000 or more?
97	PREFER NOT TO SAY/REFUSED
98	DON'T KNOW

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

NAVIGANT

Con Edison EEPS Evaluation
Residential Electric and/or Gas HVAC PARTICIPATING Contractor Interview Guide

November 2010

INTRODUCTION

Hello, my name is _____, and I'm calling from APPRISE on behalf of [Consolidated Edison/Orange & Rockland]. Our firm is contacting HVAC Contractors who participate in [Con Ed's/O&R's] Residential HVAC Rebate program, to obtain feedback on the program. We need input from your company, to make the program as simple to use and as valuable to contractors as possible. May I please speak to [INSERT LISTED CONTACT NAME/IF NO NAME SAY: Whoever has been most involved with participating in the Con Edison Residential HVAC Rebate Program/O&R Gas Heating Equipment Rebate Program?]

I have you listed as the primary contact for <COMPANY NAME> with respect to this program. Are you the appropriate person in your business to discuss your company's experiences with it?

YES Continue
NO Who at your company can best speak to this topic?

Record the new contact's name and telephone number in B. below.

This discussion will not take much of your time. Is it possible for you to speak with me right now or would you prefer to schedule a more convenient date and time?

YES (now <u>is</u> a good time) SKIP to "REMINDERS," below.
NO (<u>not</u> a good time) Schedule a date and time to call back and record it below.

A. **Appointment Date and Time**: _____

B. **New Contact Name and Phone Number**:

Name: _____

Phone: (____) _____ – _____, **Ext:** _____

IF NEW CONTACT NOT AVAILABLE, SCHEDULE FOLLOW UP CALL.

<u>REMINDERS</u>

Before I begin, I have a few important points.

- We'd like this to be an informal discussion about a number of key topics mostly related to your participation in the program.
- As an independent research firm, APPRISE will not report your specific responses in any way that would reveal your identity or that of your organization to [Con Edison/Orange & Rockland].
- If it's ok with you I'd like to record our conversation so that I can make sure my notes are complete. It's difficult to take notes and talk on the phone at the same time. [SAY ONLY IF NECESSARY: If you'd prefer that I not record our conversation, that's fine.]

COMPANY BACKGROUND

1. First, I'd like to talk about your business. Roughly, what percentage of your installations is residential and what percentage is commercial or industrial?

    a. Residential _____%

    b. Commercial/industrial/institutional _____% (NOTE: TERMINATE INTERVIEW IF BUSINESS INSTALLS MORE THAN 50% COMMERCIAL/INDUSTRIAL/INSTITUTIONAL)

    c. What would you say your **primary residential market** is (i.e., what type of customer, single family, multi-family, # units)?

2. What geographic area does your company service?

3. How many full-time employees, including you, work at this location? _____# **full-time employees.**

    a. Is this the company's only location? **[If NO, ask b. and c.]**

    b. How many locations are there?

    c. Approximately how many total employees are at the company?

4. How would you describe your position? **[PROBE FOR: OWNER, MANAGER, SALES PERSON, TECHNICIAN]**

HEATING AND COOLING EQUIPMENT (ASK ALL)

5. In a typical year, roughly how many of each of the following types of equipment does your company install in RESIDENCES? A range is fine.

    Central forced air gas furnaces _____#

Gas water boilers _____#

Steam boilers _____#

Central air conditioners _____# **[Ask for Con Edison only]**

Air-source heat pumps _____# **[Ask for Con Edison only]**

Electric water heaters _____ # **[Ask for Con Edison only]**

[IF >0] How many, if any, of these are heat pump water heaters? _____

Gas water heaters _____# **[IF >0]**

[IF >0] How many of these, if any, are gas indirect water heaters? _____

6. As of June 27th, our records show that your company submitted_____ rebate applications for **[TYPE OF EQUIPMENT]**. Do these installations represent all, most, some or very few of your total installations of this type of equipment since you began participating in this program?

[REPEAT FOR EACH TYPE OF EQUIPMENT REBATES THAT HAVE BEEN APPLIED FOR . . .]

Central forced air furnace (gas furnace) _____# REBATES/_____ (ALL/MOST/SOME/VERY FEW)

Gas water boiler _____# REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

Steam boiler _____# REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

Central air conditioners _____# REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

Air-source heat pumps _____# REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

Electric water heaters _____ # REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

Gas water heaters _____# REBATES/ _____ (ALL/MOST/SOME/VERY FEW)

[FOR THE FOLLOWING, REPEAT FOR EACH TYPE OF EQUIPMENT DISCUSSED ABOVE . . .]

Do you think the percentage of your rebate-qualified **[INSERT EQUIPMENT]** installs will increase, decrease or stay about the same in the next year or so?

Central forced air furnace (gas furnace) _____# REBATES/_____
(INCREASE/DECREASE/SAME)

Gas water boiler _____# REBATES/ _____
(INCREASE/DECREASE/SAME)

Steam boiler _____# REBATES/ _____
(INCREASE/DECREASE/SAME)

Central air conditioners _____# REBATES/ _____
(INCREASE/DECREASE/SAME)

Air-source heat pumps _____# REBATES/ _____
(INCREASE/DECREASE/SAME)

Electric water heaters _____ # REBATES/ _____
(INCREASE/DECREASE/SAME)

Gas water heaters _____# REBATES/ _____
(INCREASE/DECREASE/SAME)

7. Have you completed any installations that qualify for [Con Edison/O&R] rebates but for which a rebate application was not submitted to [Con Edison/O&R]? **[IF YES, ASK Why?]**

8. Do you typically submit the rebate application, or do your customers? **IF CUSTOMERS SUBMIT, ASK:** What factors drive the decision for your customers to submit the application?

9. We're trying to understand the circumstances under which contractors do and do not install qualifying equipment. For which types of situations do you typically install high-efficiency equipment that would qualify for a [Con Edison/O&R] rebate? (**PROBE IF NECESSARY:** Is it for certain types of customers only? For certain types of equipment only?) Why?

10. Similarly, under what circumstances do you install high-efficiency equipment that DOES NOT qualify for a [Con Edison/O&R] rebate? **[PROBE ACROSS EQUIPMENT TYPES INSTALLED]**

11. **[ASK IF RESPONDENT HAS INDICATED THAT NOT ALL OF HIS/HER INSTALLATIONS QUALIFY FOR THE PROGRAM]** What could [Con Edison/O&R] do, or how could the program be changed, so that a much greater percentage of your installations would receive rebates? **[IF THE RESPONSE IS "OFFER HIGHER REBATES" SAY]** I realize that offering higher rebates would help, but what else could be done? If the rebates go up, that might put pressure on rates to go up, too. **[PROBE ACROSS EQUIPMENT TYPES INSTALLED]**

12. What do you see as the benefits of participating in the program for contractors like you? And what are the drawbacks, if any?

13. Not all contractors are currently participating in the [Con Edison/O&R] program. Why do you think these contractors aren't participating? **[LISTEN FOR TRAINING REQUIRES TOO MUCH TIME/EFFORT; DON'T NEED THIS PROGRAM, WE'RE BUSY ENOUGH ALREADY; TOO MUCH HASSLE; PROBABLY BECAUSE THEY HAVEN'T HEARD ABOUT IT, CERTIFICATION REQUIREMENT, ETC.]**

    a. What could the utility do to better promote participation?

b. From your perspective, what do these non-participating contractors have in common? What types of contractors are participating? What types aren't? **[PROMPT IF NECESSARY:** Are they contractors of a certain size? Do they serve a certain market? Are there certain business characteristics that encourage or discourage contractor participation?]

14. In your opinion, does this program have any effect on the heating and cooling systems people install? For example, are customers who would normally buy high efficiency buying even higher efficiency? Is the program moving people from non-qualifying units to qualifying ones? Or are people just installing what they would normally install anyway? Are contractors just installing the products they have in inventory? **[PROBE FOR EXTENT TO WHICH EACH OF THESE IS HAPPENING FOR EACH TYPE OF EQUIPMENT THE COMPANY INSTALLS. TRY TO GET AN ESTIMATED PERCENTAGE.]**

15. Do you have suggestions for additional eligible equipment for the program? **[IF NECESSARY, LIST ELIGIBLE EQUIPMENT FOR RESPONDENT]** Any ideas for different eligibility requirements? Explain.

16. We need to understand how much extra the higher efficiency equipment costs than the standard efficiency equipment.

ASK ONLY IF RESPONDENT INSTALLS CENTRAL ACs [CON EDISON CONTRACTORS ONLY]:

For your most frequently installed unit **[IN TERMS OF TYPICAL TONNAGE OR BTUS]**, what would be a typical cost for a SEER 13 unit including installation? $_____**[NOTE TONNAGE/BTUS FOR INSTALL DISCUSSED]**

- And what would be a typical cost for that same installation if it were SEER 15? $_____

17. [REPEAT FOR MAIN TYPE OF HEATING EQUIPMENT, IF ANY, THE RESPONDENT INSTALLS COMPARING THE MINIMUM (STANDARD) EFFICIENCY TO THE MINIMUM QUALIFYING EFFICIENCY. NOT LIMITED TO CON EDISON CONTRACTORS.]

For a typical **[INSERT CONTRACTOR'S MOST TYPICAL TYPE OF INSTALL IN TERMS OF EQUIPMENT TYPE AND SIZE]**, what would be the incremental cost between an [efficiency/AFUE]of XX and an [efficiency/AFUE] of XX? **[NOTE: Costs should include installation]**? _____
NOTE: MIN.EFFICIENCY FOR GAS FURNACE IS AFUE 78%/REBATE REQUIRES 90%/REBATE=$200
MIN.EFFICIENCY FOR GAS WATER BOILER IS AFUE 80%/REBATE REQUIRES 85%/REBATE=$500
MINIMUM EFFICIENCY FOR STEAM BOILER IS 75%/REBATE REQUIRES 82%/REBATE=$500

18. **[IF RESPONDENT INSTALLS BOILERS]** This program offers a rebate for installing gas boiler reset controls. Prior to your participation in this program, did your company install this type of efficiency product?

    a. Has this number changed because of the Rebate Program? How could the program be changed to encourage more installations of boiler reset controls?

19. This program offers rebates for performing duct blaster guided duct sealing if the contractor has Building Performance Institute (or BPI) certification. Prior to your participation in this program, did you offer this service?

    a. **[IF YES]:** How many duct blaster guided duct sealing installs did your company complete last year?

    b. Did this number change because of your participation in the rebate program? How?

    c. Do you think the program's incentives for this service are sufficient? **[INCENTIVE=$300]** Why or why not?

20. This program also offers rebates for performing blower door guided air sealing if the contractor has BPI-certification. Prior to your participation in this program, did you ever offer this service?

    a. **[IF YES]:** How many blower door guided air sealing installs did your company complete last year?

    b. Did this number change because of your participation in the rebate program? How?

    c. Do you think the program's incentives for this service are sufficient? ? **[INCENTIVE=$300]** Why or why not?

21. **[IF RESPONDENT INSTALLS FURNACES]** Another rebate offered by this program is for Electronically Controlled Motor (or ECM) furnace fans. Prior to your participation in this program did your company install ECM furnace fans?

    a. **[IF YES]:** How many did you install last year?

    b. Did this number change because of your participation in the rebate program? How?

    c. Do you think the program incentives for this install are sufficient? **[INCENTIVE=$200]** Why or why not?

REBATE PROGRAM/TRAINING

22. How did you hear about the Residential HVAC Rebate Program?

23. **[ASK Q22-Q27 FOR CON EDISON ONLY]** Overall, how do you feel about the training requirement for this program? **[ONEROUS? OK? USEFUL?]**

[LOW PRIORITY] Did you, yourself, attend the training? If yes, how was it? Please describe your overall training experience.

24. **[LOW PRIORITY]** How many of your employees attended the Residential HVAC Rebate Program training?

    a. Did any of your office/admin staff attend?

25. **[LOW PRIORITY]** To what extent did you share the training that you received with others in your firm; those who did not attend?

26. **[LOW PRIORITY]** Are there any specific things that your company now does differently because of the training? If yes, what do you do differently? If yes, is this applied to all installations or just those for which rebates are being submitted?

27. The training requirement has been eliminated. Do you think your company will install fewer, more or about the same number of qualifying units? Do you think more contractors will install qualifying equipment now that there is no training requirement? Do you think eliminating the training requirement is a good idea?

28. Do you think the program application form makes sense and is clear enough? Do you have any recommendations for changes?

29. **[FOR CON EDISON ONLY]** Our records indicate that you are/are not BPI certified. Is that correct?

    a. **[ASK ONLY IF LISTED AS BPI-CERTIFIED OR IF YES ABOVE]** Have you applied for or received the contractor incentive for BPI-certified contractors for any of your installs? **[IF NOT]** Why not?

[IF NOT BPI-CERTIFIED, SAY]:

30. Your company may be eligible for an incentive of $200 per installation if you are BPI-certified as a central air conditioner or heat pump specialist and provide documentation that a Manual J calculation was completed to determine the proper size of installed equipment.

31. Do you plan to become BPI-certified so you'll be eligible for the $200 Quality Installation Incentive?

    a. YES When?

    b. NO Why not?

COMPANY PRACTICES (ASK ALL)

32. Before participating in this Rebate Program, did your company recommend high-efficiency products and services to your customers?

33. [IF YES, CONTINUE WITH A, B AND C]

    a. In your opinion, does marketing high-efficient products and services to potential customers provide your company with a competitive advantage?

    b. Why? **OR** Why not?

34. [IF NO, ASK]: Why not?

35. Thinking of the entire Rebate Program, how has it affected the way your company does business, if at all?

    a. Do you recommend this program to your customers? Why/Why not?

    b. Do only certain employees at the company promote participation in the [Con Edison/O&R] program or does everyone at the company promote it? Explain.

PROGRAM SUPPORT (ASK ALL)

36. Have you had any problems getting the equipment that you need to qualify for the Rebate Program?

37. **[FOR CON EDISON CONTRACTORS ONLY]:** Have you had any interactions with the program's Circuit Rider **[IF NECESSARY, EXPLAIN THAT THIS IS THE PROGRAM CONTACT WHO CALLS OR VISITS PARTICIPATING CONTRACTORS TO PROVIDE WHATEVER SUPPORT THEY NEED FROM THE PROGRAM – FORMS, TRAINING, OR HELP IN HOW TO SELL HIGH-EFFICIENCY, ETC.]? [IF YES] How many contacts have you had?**

    a. **[IF YES] Has the Circuit Rider** bee**n a useful** resource? Why/Why not?

MARKETING

38. Is your company's participation in this Rebate Program something that you explicitly advertise? If so, how do you sell it?

39. What are the strongest selling points for persuading your customers to participate in the program?

40. **[FOR CON ED ONLY]**: Have you used any of the following collateral materials provided by Con Edison?

a. Uniform patches?

b. Vehicle Magnets?

c. Direct Mail or Advertising templates?

d. Web-based tools? **[IF YES]:** Which ones?

e. Anything else?

f. What has been most useful? What has been least useful? Any suggestions for additional materials?

41. **[FOR CON ED ONLY]**: There is a "contractor of the year award" under this program which is promoted in trade press. The winning contractor may also publicize their award in their own marketing efforts. Do you think this is valuable to the program? Why/Why not?

42. Have you had any difficulty gaining access to any of the programs materials (such as the rebate forms)? **[IF YES, PROBE]**: Do you have access to the internet?

43. Have any of your customers *approached your company* regarding the Residential HVAC Rebate Program?

44. **[FOR CON ED ONLY]**: Do you think there is *confusion among your cu*stomers about which contractors they can use to be eligible for the Con Edison rebates? **[IF YES, PROBE REASONS]**

45. What types of customers are most likely to participate? Does participation make sense for everyone? Are there some customers whom you do NOT suggest this program to?

46. Do you typically help your customers figure out how to take advantage of current tax credits for installation of energy efficient products, or do you not get into that? Why/Why not?

47. Are you aware of or do you participate in any other rebate programs? **[NOTE WHICH PROGRAMS AND FROM WHAT ENTITIES.]**

[ASK FOR EACH PROGRAM MENTIONED]: Is this program easier or more difficult to participate in than the Con Edison/O&R Residential HVAC Rebate Program? **[PROBE FOR SPECIFIC AREAS OF DIFFICULTY OR DIFFERENCE.]**

48. In your opinion, do you think this Residential HVAC Rebate Program overlaps with programs being offered to the same customers by other agencies or organizations?

49. [IF YES]: Which programs/organizations? Is there any customer confusion because of this overlap?

50. [IF NYSERDA IS NOT MENTIONED PROBE]: How about NYSERDA, have you heard of similar programs offered by an organization called NYSERDA, or the New York Energy

Research and Development Authority? Is there any conflict or confusion from your perspective? How about among your customers?

51. Before we wrap this discussion up, do you have any other thoughts or insights you would like to share regarding the Residential HVAC Rebate Program, or how it might be improved?

Those are all of the questions I have. Thank you very much for your time and input. Have a good day.

NAVIGANT

CON EDISON EEPS EVALUATION
Residential Electric and/or Gas HVAC NON-PARTICIPATING Contractor Interview Guide

November 2010

INTRODUCTION

Hello, my name is _____, and I'm calling from APPRISE on behalf of [Consolidated Edison/Orange & Rockland]. We're contacting HVAC Contractors in the New York area to discuss the types of HVAC products and services that they offer to residential customers. We'd also like to discuss some current Residential HVAC rebate programs sponsored by local utility companies, and how they might affect your business. We need input from your company to make the program as attractive and as useful to contractors as possible. May I please speak to someone at your company who would know the most about the types of HVAC equipment your company installs and why?

Are you the appropriate person in your business to discuss your company's experiences with the heating and cooling products and services that you offer?

YES Continue
NO Who at your company can best speak to this topic?

Record the new contact's name and telephone number in B. below.

This discussion will not take much of your time. Is it possible for you to speak with me right now or would you prefer to schedule a more convenient date and time? We're offering $25 in appreciation of the time that you'll spend on this discussion.

YES (now <u>is</u> a good time) SKIP to "REMINDERS," below.
NO (<u>not</u> a good time) Schedule a date and time to call back and record it below.

If they indicate that they are willing to participate but cannot accept the honorarium, indicate that we could also provide a donation of $25 to the charity of their choice. (If they don't want or can't handle the honorarium, don't push it. Just continue.)
Charity Name:

C. **Appointment Date and Time**: _____

D. **New Contact Name and Phone Number**:

Name: _____

Phone: (____) _____ – _____, **Ext:** _____

IF NEW CONTACT NOT AVAILABLE, SCHEDULE FOLLOW UP CALL.

REMINDERS

Before we begin, I have a few important points.

- We'd like this to be an informal discussion about a number of key topics mostly related to the types of HVAC products and services you offer.
- As an independent research firm, APPRISE will not report your specific responses in any way that would reveal your identity or that of your organization to [Con Edison/Orange and Rockland].
- If it's ok with you I'd like to record our conversation so that I can make sure my notes are complete. It's difficult to take notes and talk on the phone at the same time. [SAY ONLY IF NECESSARY: If you'd prefer that I not record our conversation, that's fine.]

COMPANY BACKGROUND

1. First, I'd like to talk about your business. Roughly what percentage of your installations is residential versus commercial or industrial?

    a. Residential _____%

    b. Commercial/industrial/institutional _____% **[NOTE: TERMINATE INTERVIEW IF MORE THAN 50% OF THEIR INSTALLS ARE COMMERCIAL/INDUSTRIAL/INSTITUTIONAL]**

    c. What would you say your **primary residential market** is (i.e., what type of customer, single family, multi-family, # units)?

2. What geographic area does your business service?

3. How many full-time employees, including you, work at this location? _____# **full-time employees.**

    a. Is this the company's only location? [If NO, ask b. and c.]

    b. How many locations are there?

    c. Approximately how many total employees are at the company?

4. How would you describe your position? **[PROBE FOR: OWNER, MANAGER, SALES PERSON, TECHNICIAN.]**

5. What kind of certification(s) does your company have? **[PROBE FOR BPI (Building Performance Institute)-CERTIFICATION. IF NO BPI CERTIFICATION, ASK]** Have you heard of this certification? **[IF YES, ASK]:** Why do you/don't you have BPI-certification? **[IF HAS BPI CERTIFICATION, ASK]:** What value do you think this certification has provided to your company?

6. In a typical year, roughly how many of each of the following types of equipment does your company install in residences? A range is fine.

   Central forced air gas furnaces _____#

   Gas water boilers _____#

   Steam boilers _____#

   Central air conditioners _____#

   Air-source heat pumps _____#

   Electric water heaters _____ #

   {IF >0] How many, if any, of these are heat pump water heaters?_____#

   Gas water heaters _____# [IF >0]

   [IF >0] How many of these, if any, are gas indirect water heaters?_____#

REBATE PROGRAM AWARENESS

[ESTABLISH LEVEL OF RESPONDENT AWARENESS OF THE HEATING AND COOLING REBATES FOR HOMES PROGRAM (NONE, VERY LITTLE, SOME, VERY KNOWLEDGEABLE)]

[IF AT ALL AWARE OF THE PROGRAM ASK 7-9]:

7. How did you hear about the [Con Edison Residential HVAC Rebate Program/Orange & Rockland Gas Heating Equipment Rebate Program]?

8. Can you tell me what you know about the program? Note extent of knowledge about:

   - Equipment types included:
   - Rebates and rebate levels:
   - Qualifying criteria for equipment and for contractors (if any):
   - Need for training/certification **[FOR CON ED ONLY]**:

9. Plan to participate? Likely to participate? **[IF YES]** In what way/for what types of equipment at what efficiency levels?

10. **[ASK ALL]**: Our records show that you do not currently participate in the Con Ed/O&R residential HVAC rebate program. We're very interested in understanding why some contractors participate and others do not, and in how to get more contractors to participate in the program and get more high-efficiency HVAC installations in the area. Why don't you participate**? [LISTEN FOR: TRAINING REQUIRES TOO MUCH TIME/EFFORT; DON'T NEED THIS PROGRAM, WE'RE BUSY ENOUGH ALREADY; BECAUSE THEY HAVEN'T HEARD ABOUT IT, ETC.]** What could the utility do to better promote participation by contractors like you?

[ONLY ASK CON EDISON CONTRACTORS Qs 11-13]

11. **[IF TRAINING NOT ALREADY MENTIONED AS A BARRIER, ASK FOR CON ED ONLY:]** Until very recently, one of the requirements of participation in this program was attending a contractor training program. Did you consider this a barrier to your participation? **[IF YES]** Why? **[ASK ALL]:** Are you more likely to participate in the program now that you know you don't have to attend any training?

12. **[ONLY ASK CON EDISON COOLING CONTRACTORS]** In order to be eligible for the additional contractor incentives under this program, your company must be BPI-certified by the Building Performance Institute (BPI) as a central air conditioner or heat pump specialist. ASK IF NOT ALREADY ASCERTAINED FROM Q5: Have you heard of BPI certification? Were you aware that this additional rebate was available to BPI-certified contractors?

    a. The incentive is $200 and is available to certified contractors who show documentation that a Manual J calculation was completed. Does this incentive change your opinion regarding participation in this program? How? ASCERTAIN INTEREST AND REASONS

13. Have any of your customers approached you about applying for rebates under this program? What was the result?

HEATING AND COOLING EQUIPMENT

14. **[FOR EACH MEASURE CONTRACTOR INSTALLS SAY]:** "You said that your company installs **[FIRST TYPE OF EQUIPMENT INSTALLED, FROM Q6 ABOVE]**. What percentage of these are typically" **[DEFINE REBATE THRESHOLD FOR THIS TYPE OF EQUIPMENT]** " or higher?" **[IF RESPONDENT HAS TROUBLE WITH PERCENTAGE ESTIMATES ASK: ALL, MOST, SOME, A FEW OR NONE? DO NOT ASK O&R CONTRACTORS ABOUT COOLING MEASURES.]**

MEASURE CONTRCTOR INSTALLS	REBATE THRESHOLD	RESPONSE (%)

Central forced air furnace (gas furnace)	AFUE>=90	
Gas water boiler	AFUE >=85	
Steam boiler	AFUE >=82	
Central air conditioners	SEER>=15 OR EER>=12.5	
Air-source heat pumps	SEER>=15 OR EER>=12 OR HSPF >=8.5	
Electric water heaters	ENERGY FACTOR >2	

15. We're trying to understand the circumstances under which contractors do and do not install energy efficient equipment. For which types of situations do you install high-efficiency equipment **[IMPORTANT: REFERENCE APPROPRIATE UTILITY'S REBATE REQUIREMENTS FOR CLARIFICATION OF "HIGH EFFICIENCY" IF NECESSARY. WE DON'T WANT THE RESPONDENT THINKING OF A STANDARD EFFICIENCY LEVEL BUT RATHER OF THE PROGRAM-QUALIFYING EFFICIENCY LEVELS,]**? **[PROBE IF NECESSARY]:** Is it for certain types of customers only? For certain types of equipment only? Why?

16. Similarly, under what circumstances do you install standard efficiency equipment? **[PROBE ACROSS EQUIPMENT TYPES INSTALLED]**

17. **[ASK IF RESPONDENT HAS INDICATED THAT NOT ALL OF HIS/HER INSTALLATIONS WOULD QUALIFY FOR THE PROGRAM]** What could [Con Edison/Orange & Rockland] do to increase the percentage of your energy efficient installations**? [IF THE RESPONSE IS "OFFER REBATES" SAY]** I realize that offering rebates would help, but what are some other options, in your opinion? **[PROBE ACROSS EQUIPMENT TYPES INSTALLED**]

18. **[ASK ONLY IF RESPONDENT INSTALLS CENTRAL AC (CON EDISON CONTRACTORS ONLY)]**: Can you help me understand how much extra higher efficiency a/c equipment costs than the standard efficiency equipment? For example, for your most frequently installed unit **[IN TERMS OF TYPICAL TONNAGE OR BTUS]**, what would be an approximate typical cost for a SEER 13 unit including installation? $_____ **[NOTE TONNAGE/BTUS FOR INSTALL DISCUSSED]**

    - And what would be a typical cost for that same installation if it were SEER 15? $_____
    - And how effective do you think a $400 rebate would be in getting people to select the higher efficiency?

- Do you think high efficiency central air conditioners are typically a good deal for the customer? Why/Why not?

19. **[REPEAT FOR MAIN TYPE OF HEATING EQUIPMENT, IF ANY, THE RESPONDENT INSTALLS COMPARING THE MINIMUM (STANDARD) EFFICIENCY TO THE MINIMUM QUALIFYING EFFICIENCY].**

For a typical **[INSERT CONTRACTOR'S MOST TYPICAL TYPE AND SIZE OF INSTALL]**, what would be the approximate incremental cost between an [efficiency/AFUE] of XX and an [efficiency/AFUE] of XX? **[NOTE: Costs should include installation]**? _____
NOTE: MIN.EFFICIENCY FOR GAS FURNACE IS AFUE 78%/REBATE REQUIRES 90%/REBATE=$200
MIN.EFFICIENCY FOR GAS WATER BOILER IS AFUE 80%/REBATE REQUIRES 85%/REBATE=$500
MINIMUM EFFICIENCY FOR STEAM BOILER IS 75%/REBATE REQUIRES 82%/REBATE=$500

- And how effective do you think a rebate is in getting people to select the higher efficiency?

- Do you think qualifying heating systems are typically a good deal for the customer? Why/Why not?

20. **[IF RESPONDENT INSTALLS BOILERS]** Does your company install gas boiler reset controls?

a. **[IF NOT]** What prevents you from installing [more] gas boiler reset controls?

b. Do you think a $100 rebate is sufficient to encourage more installations of boiler reset controls?

21. Are you familiar with duct sealing using a device called a duct-blaster? **[IF NO, SKIP TO NEXT QUESTION. IF YES, ASK]**: Does your company conduct duct blaster guided duct sealing?

a. **[IF YES]**: How many did your company complete last year?

b. Is this number changing? How? Why?

c. What prevents you from doing [more] duct blaster guided duct sealing?

d. Do you think a $300 incentive for this service is adequate? Why or why not?

e. Do you think this type of service is a good value for the customer, even without a rebate? Explain.

22. Are you familiar with blower door-guided air sealing for homes? **[IF NO, SKIP TO NEXT QUESTION. IF YES, ASK]**: Does your company conduct blower door guided air sealing?

a. **[IF YES]:** How many did your company complete last year?

b. Is this number changing? How? Why?

c. What prevents you from doing [more] blower door guided duct sealing?

d. Do you think a $300 incentive for this service is sufficient? Why or why not?

e. Do you think this type of service is a good value for the customer, even without the rebate? Explain.

23. **[IF RESPONDENT INSTALLS FURNACES]** Another rebate offered by this program is for Electronically Controlled Motor (or ECM) furnace fans. Does your company install ECM furnace fans?

a. **[IF YES]:** How many did you install last year?

b. Is this number changing? How? Why?

c. What prevents you from installing [more] ECM furnace fans?

d. Do you think a $200 incentive for this install is sufficient? Why or why not?

e. Do you think this type of product is a good value for the customer, even without a rebate? Explain.

COMPANY PRACTICES (ASK ALL)

24. Does your company's marketing strategy or sales practices emphasize high-efficiency products and services? **[IF YES, ASK]:** How is this done? What messages are given to the customer?

25. [IF YES (EE is part of marketing strategy:, continue with a., b. and c.]

a. What high-efficiency products and services are promoted?

b. In your opinion, does marketing high-efficiency products and services to potential customers provide your company with a competitive advantage?

c. Why? **OR** Why not?

26. [IF NO EE in marketing strategy, ASK]: Why not?

27. Do you think participation in the Rebate program I've been talking about would impact your business? Positive/Negative? Why?

a. What type of customer do you think would respond to this program?

b. Would you recommend this program to your customers? Why/Why not? Under what circumstances?

28. Do you think the economy has had an impact on customer desire for high-efficiency products and services? How?

29. Do you have suggestions for additional equipment that [Con Edison/O&R] should include in this program? **[IF NECESSARY, LIST ELIGIBLE EQUIPMENT FOR RESPONDENT]**

30. Do you typically help your customers figure out how take advantage of current tax credits for installation of energy efficient products? Why/Why not?

31. Are you aware of or do you participate in any other rebate programs? **[NOTE WHICH PROGRAMS AND FROM WHAT ENTITIES.]**

    [FOR EACH PROGRAM MENTIONED, ASK]: Why do you participate in this program but not [Con Edison's/O&R's] program?

32. In your opinion, do you think this Residential HVAC Rebate Program overlaps with programs being offered to the same customers by other agencies or organizations?

33. [IF YES]: Which programs/organizations? Is there any customer confusion because of this overlap?

[IF NYSERDA IS NOT MENTIONED PROBE]: How about NYSERDA, have you heard of similar programs offered by an organization called NYSERDA, or the New York Energy Research and Development Authority? Is there any conflict or confusion from your perspective? How about among your customers?

34. Before we wrap this discussion up, do you have any other thoughts or insights you would like to share regarding the Residential HVAC Rebate Program, or how it might be improved either to encourage contractors like you to participate or to encourage customers to participate?

Those are all of the questions I have. Thank you very much for your time and input. Have a good day.