



Central Hudson Gas & Electric Corporation Residential Natural Gas Program

2012-2013 Process Evaluation · February 2015



Prepared by:

Applied Energy Group, an Ameresco Company

1377 Motor Parkway, Suite 401 · Islandia, NY 11749

Tel (631) 434-1414 · Fax (631) 434-1212

www.appliedenergygroup.com

Table of Contents

Executive Summary.....	i
1. Introduction	1
2. Program Description	1
3. 2011 Process Evaluation Recommendations	2
4. Evaluation Methodology.....	3
5. Program Flow	5
5.1 Program Activities.....	7
5.2 Outcomes.....	8
5.3 External Factors	9
5.4 Market Barriers	9
6. Residential Appliance Saturation Survey	10
7. Process Evaluation Findings	12
7.1 Program Marketing.....	12
7.2 Program Performance.....	15
7.3 Trade Ally Participation.....	21
7.4 Tracking System	22
7.5 Quality Control/Quality Assurance	24
7.6 Program Satisfaction.....	25
8. Opportunities for Improvement	27
9. Conclusions and Recommendations	28
Appendix A. Implementation Contractor Interview Guide.....	31
Appendix B. Program Participant Survey Guide	32
Appendix C. Trade Ally Survey Guide.....	36
Appendix D. Trade Ally Focus Group Guide.....	38

List of Tables

Table 1 Program Rebates by Equipment Type.....	1
Table 2 Annual Program Goals.....	2
Table 3 Annual Program Budget	2
Table 4 Heating System Age	10
Table 5 Hot Water Heater Age.....	11
Table 6 Program Budget versus Expenditures	16
Table 7 Program Savings Target versus Savings Achieved.....	16
Table 8 Participation Goals versus Actual.....	16
Table 9 Equipment Replacement Type	19
Table 10 Total HVAC Measure Installation and Participation.....	21
Table 11 Residential Natural Gas HVAC Program HVAC Contractors and Measures	22
Table 12 Participant Satisfaction	26

List of Figures

Figure 1 Program Logic Model	6
Figure 2 Main Heating System	10
Figure 3 Type of Thermostat.....	11
Figure 4 Main Water Heating Fuel.....	11
Figure 5 Likelihood of Replacing Appliance in the Next Two Years	12
Figure 6 Trade Ally Ranking System.....	13
Figure 7 Residential Natural Gas HVAC Referral Type from Program Application	14
Figure 8 Participant Program Awareness.....	14
Figure 9 Participant Motivations.....	15
Figure 10 Total Natural Gas HVAC Measure Installations by Month.....	17
Figure 11 Residential Natural Gas HVAC Measures by Equipment Type.....	17
Figure 12 Furnaces Rebated by Efficiency	18
Figure 13 Boilers Rebated by Efficiency.....	18
Figure 14 Natural Gas HVAC Measure Installations by Year, Percentage of Total	19
Figure 15 Rebate Processing Time by Month	20
Figure 16 Participant Perception of Rebate Processing Duration	20
Figure 17 Additional Participant Energy Saving Actions	21
Figure 18 SavingsCentral Trade Allies by Rank	22
Figure 19 Participant Satisfaction, Program Overall.....	25
Figure 20 Participant Satisfaction with Trade Ally	26
Figure 21 Reasons Participant Would Recommend Program.....	26
Figure 22 Participant Suggested Improvements.....	27
Figure 23 Participant Suggested Additional Measures	27

Executive Summary

Applied Energy Group, Inc. ("AEG") was retained by Central Hudson Gas & Electric Corporation ("Central Hudson") to conduct a process evaluation of its Residential Natural Gas HVAC Program. The Residential Natural Gas HVAC Program targets residential customers that are interested in purchasing or replacing their space and water heating equipment with the energy efficient options offered by the program. Measures that are eligible for rebates include natural gas furnaces, steam and water boilers, and indirect water heating. In addition, incentives of up to \$420 are available to customers to install duct and air sealing from qualified contractors.

AEG designed the 2012-13 process evaluation to examine program processes and customer responses to the program. The evaluation identifies methods for gathering data and measuring program results, and makes recommendations for program improvements. To arrive at the final recommendations, AEG performed the following tasks:

- Reviewed program materials and data
- Reviewed program tracking methods
- Updated program logic model and assessed program flow
- Conducted interviews with Central Hudson staff and ICF
- Conducted focus groups/interviews with installation contractors
- Conducted surveys of participating customers

Summary of Key Findings

The Residential Natural Gas HVAC Program was modified following the transition to ICF on July 1, 2012. The program modifications include:

- **Revised Rebate Application.** ICF combined the rebate application for the Residential Electric and Natural Gas HVAC Programs.
- **Online Rebate Application.** Trade Allies have the option of completing the customer application into VisionDSM via an online platform rather than submitting a paper application.
- **Rebate Processing.** ICF issues incentives to customers upon Central Hudson approval of application batches and is reimbursed by Central Hudson within 30 days.

Central Hudson spent almost the entire 2012 budget and achieved approximately 75 percent of the Dtherm savings target and 55 percent of the participation goal. Between January 1st and June 30th, Central Hudson spent approximately 45 percent of the budget and achieved 52 percent of the Dtherm target while achieving 58 percent of the participation goal.

Between January 1, 2012 and June 30, 2013, 574 customers participated in the Residential Gas HVAC Program and 1,067 measures were rebated.

- 88 percent of boilers were water boilers AFUE \geq 90%. Steam boilers accounted for only 2 percent of rebated boilers.
- The majority of furnaces rebated had an AFUE \geq 92%.
- 49 percent of participants that installed a boiler or furnace also installed a programmable thermostat and 37 percent of participants that installed a boiler also installed a boiler reset control.

- More than 50 percent of installations were completed by Gold and Silver SavingsCentral Trade Allies. BPI certified SavingsCentral Trade Allies completed 35 percent of installations.

While the participants surveyed are satisfied with the program overall and most program components, the types of eligible equipment and the rebate processing time had the lowest satisfaction rates. However, ICF has decreased the rebate processing time since becoming the implementation contractor.

Recommendations

AEG has several recommendations on how to improve the program. These include:

Modify Trade Ally Participating Contractor Agreement

Approximately 46 percent of the SavingsCentral Trade Allies did not submit a rebate application between January 1, 2012 and June 30, 2013. The Trade Allies interviewed expressed concern regarding the list on the Central Hudson website, noting that the list is quite long and that there may be HVAC contractors that are not upselling energy efficient systems or performing quality work. Additionally, Central Hudson does not require proof that the HVAC contractors have insurance.

AEG recommends that Central Hudson and ICF consider modifying the Trade Ally Participating Contractor Agreement to (1) require proof of insurance and (2) require at least two customer references. ICF should require that all Trade Allies provide proof of insurance on an annual basis.

Continue Random Inspections of Trade Ally Projects

According to the participant survey, participants first became aware of the program via a SavingsCentral Trade Ally (44 percent) and word of mouth (23 percent). Bill savings is the strongest motivator for participants with nearly half of respondents wanting to save money by participating in the program. Forty-one (41) percent of respondents needed a new heating system.

AEG recommends that ICF continue to inspect the first four projects completed by a new Trade Ally and a random 10 percent of Trade Ally projects. The majority of program participants are made aware of the program via word of mouth or the Trade Ally. Therefore, it is crucial that customers are satisfied with the program and work completed by the Trade Ally.

Improve Application Processing QA/QC

The program requires that all work is completed by a SavingsCentral Trade Ally. Three (3) percent of measures rebated were installed by non-SavingsCentral Trade Allies. Programmable thermostat and boiler reset control incentives are offered to participants installing a qualified heating system. Of the programmable thermostats and boiler reset controls installed:

- Nine (9) percent of thermostats rebated through the Residential Electric HVAC and Residential Natural Gas HVAC Programs were not installed with a qualifying heating or cooling system.
- One (1) boiler reset control rebated through the Residential Natural Gas HVAC Program was not installed with a qualifying boiler.

AEG recommends that Central Hudson work with ICF to ensure the rebate processing system adheres to the requirement that systems are installed by a Trade Ally and programmable thermostats and boiler reset controls are installed with a qualifying heating system. The total quantity of programmable

thermostats or boiler reset controls incentivized should not exceed the total quantity of heating systems installed.

Consider Modifying Equipment Offerings and Incentives

In 2012, 47 percent of furnaces rebated had an AFUE $\geq 92\%$ and 43 percent had an AFUE $\geq 95\%$ with an ECM fan. As of June 30, 2013, 95 percent of furnaces rebated had an AFUE $\geq 92\%$. Eighty-eight (88) percent of boilers were water boilers AFUE $\geq 90\%$. Steam boilers accounted for only 2 percent of rebated boilers.

AEG recommends that Central Hudson work with ICF to determine if furnaces with an AFUE $\geq 90\%$ should be removed from the program and/or if equipment rebates should be modified to encourage the purchase and installation of high efficiency systems.

Remove the Central Hudson Logo from SavingsCentral Website

The Central Hudson logo is available for download on the SavingsCentral website. AEG recommends that Central Hudson remove the logo from the website to minimize access to the logo and unapproved use of the corporate logo. Participating SavingsCentral Trade Allies can request the Central Hudson logo from ICF as needed.

Consider Providing Incentives for ENERGY STAR® Appliances

Sixty-seven (67) percent of participants surveyed suggested providing incentives for ENERGY STAR® appliances. AEG recommends that Central Hudson work with ICF to determine if ENERGY STAR® appliances are cost-effective and a viable addition to Central Hudson portfolio.

Continue SavingsCentral Marketing Campaigns to Customers and Trade Allies

The majority of program participants learned about the program from a SavingsCentral Trade Ally or word of mouth. However, only 11 percent of survey respondents reported that they were aware of other programs offered by Central Hudson.

AEG recommends that ICF continue to provide clear, accessible information to participating SavingsCentral Trade Allies. Central Hudson and ICF should also continue to aggressively promote this program as part of the SavingsCentral brand and inform customers of other energy efficiency programs.

1. Introduction

Applied Energy Group, Inc. (“AEG”) was retained by Central Hudson Gas & Electric Corporation (“Central Hudson”) to conduct a process evaluation of its Residential Natural Gas HVAC Program. The program is part of Central Hudson’s effort to help the State of New York meet its goal of reducing statewide electricity usage by 15 percent by 2015.¹ Central Hudson is a regulated transmission and distribution utility serving approximately 300,000 electric customers and 75,000 natural gas customers in New York State’s Mid-Hudson River Valley, which extends from the suburbs of metropolitan New York City to the Capital District of Albany.

This report describes the key findings from the Residential Natural Gas HVAC Program process evaluation and provides recommendations for program improvement. Section 2 provides a program overview, Section 3 summarizes the 2011 process evaluation recommendations and Section 4 presents the evaluation approach. Section 5 presents the program flow and Section 6 provides key findings from the 2013 Residential Appliance Saturation Survey. Section 7 presents the key process evaluation findings, including program performance, Trade Ally participation and program tracking. Section 8 describes opportunities for program improvement and Section 9 provides recommendations.

2. Program Description

The Residential Natural Gas HVAC Program targets residential customers interested in purchasing or replacing their natural gas space and water heating equipment with the energy efficient options. Incentives are available for natural gas furnaces, steam and water boilers, indirect water heating, electronically commutated motor (“ECM”) fans, boiler reset controls, and programmable thermostats. Customers are also eligible for \$100 per hour of duct or air sealing, up to \$420, from a certified Building Performance Institute (“BPI”) Trade Ally, based upon the blower door and/or duct blaster test results.

The program is implemented by ICF International (“ICF”). The program requires that all work is completed by a SavingsCentral Trade Ally (“Trade Ally”), a qualified contractor certified by Central Hudson to participate in the program.

Table 1 Program Rebates by Equipment Type

Equipment Type	Minimum Performance	Rebate
Furnace	AFUE ≥ 90%	\$200
	AFUE ≥ 94%	\$400
Water Boiler	AFUE ≥ 85%	\$500
	AFUE ≥ 90%	\$1,000
Steam Boiler	AFUE ≥ 82%	\$500
ECM Fan	Installed on qualifying furnace	\$200
Boiler Reset Control	Installed on qualifying boiler	\$100
Indirect Water Heater	n/a	\$300
Programmable Thermostat	Installed with qualifying heating system	\$25

¹ The New York State Department of Public Service (“DPS”) established the energy efficiency portfolio standard on June 23, 2008. As part of this portfolio standard, the DPS mandated New York State gas and electric utilities and the New York State Energy Research and Development Authority (“NYSERDA”) to administer energy efficiency programs.

The New York Department of Public Service (“DPS”) approved a program budget of \$1,522,896 for 2012-2015, with a cumulative program energy savings goal of 60,388 dtherms.²

Table 2 Annual Program Goals

	2012	2013	2014	2015
Annual Energy Savings Goal (Dtherm)	15,097	15,097	15,097	15,097
Participants				
Furnace	450	450	450	450
Boiler	220	220	220	220
Boiler Reset Control	60	60	60	60
Programmable Thermostat	375	375	375	375
Indirect Water Heater	80	80	80	80
Duct/Air Sealing	30	30	30	30

Table 3 Annual Program Budget

	2012	2013	2014	2015
General Administration	\$14,576	\$14,576	\$14,576	\$14,576
Program Marketing	\$28,150	\$28,150	\$28,150	\$28,150
Trade Ally Training	\$8,089	\$8,089	\$8,089	\$8,089
Incentives & Services	\$283,950	\$283,950	\$283,950	\$283,950
Direct Program Implementation	\$26,923	\$26,923	\$26,923	\$26,923
Evaluation	\$19,036	\$19,036	\$19,036	\$19,036
Total Budget	\$409,144	\$409,144	\$409,144	\$409,144

Central Hudson is an active participant on the Energy Efficiency Program Administrator Collaborative with NYSERDA and the other New York State utilities. Central Hudson is an active participant on the Steering Committee and working groups discussing double dipping / counting, referrals, contractor qualifications, training, and collaborative outreach. Central Hudson has participated in numerous conference calls and meetings with the other utilities in New York State to discuss program operation and structure to minimize market confusion and promote best practices.

3. 2011 Process Evaluation Recommendations

AEG conducted a process evaluation of Central Hudson’s 2010-2011 Residential Natural Gas HVAC Program. Recommendations and Central Hudson’s actions, in response to the recommendations, are listed below.

Conduct a Residential Appliance Saturation Survey and Market Potential Study

Recommendation: AEG recommends that Central Hudson conduct a RASS to identify the type, age and efficiency level of appliances and HVAC equipment currently being used by households within Central Hudson’s territory. The RASS will inform program design changes and measures to be considered for inclusion in Central Hudson’s programs.

Central Hudson Action: Central Hudson engaged AEG to conduct a RASS in 2013; the results are presented in Section 6 of this report.

² Central Hudson Gas & Electric Corp. Energy Efficiency Program Portfolio Implementation, Marketing, Outreach & Education Plan Authorized Programs for 2012 – 2015. Revision August 2013.

Continue Aggressive Marketing Campaign to Customers and Trade Allies

Recommendation: Central Hudson should continue to provide clear, accessible information to its residential customers on the benefits of installing energy efficient natural gas equipment and systems. Central Hudson should also continue to aggressively promote this program as part of the SavingsCentral brand and to inform customers of its other energy efficiency programs. Honeywell should continue to aggressively market the program to trade allies. In order to track changes in customer awareness moving forward, Central Hudson should include a question on the rebate application that asks customers to identify how they learned about the program.

Central Hudson Actions: Central Hudson continues to promote Energy Efficiency programs under the SavingsCentral branding. Customers are periodically sent information on program offerings. Central Hudson has set up a system for Trade Allies so that their continued effort to support and promote programs is highlighted on the SavingsCentral website. The new rebate application includes a question that asks customers to identify how they learned about the program.

Create a Flexible System for Completing and Submitting Rebate Applications

Recommendation: Honeywell should create a mechanism for contractors to complete applications online and give them the option of submitting the rebate application online or of filling out the application online and printing it through Adobe Acrobat. This would streamline the application process for many contractors and potentially end the problems associated with handwriting.

Central Hudson Action: Central Hudson changed implementation contractors in 2012 and implemented a new system to submit rebate applications online with instant feedback that it has been received.

4. Evaluation Methodology

AEG designed the process evaluation to examine program processes and customer responses to the program. The focus of the process evaluation activities was to gain a better understanding of program operations, assess the overall effectiveness of program operations, and identify areas for program improvement. The process evaluation was designed to comply with the *New York Evaluation Plan Guidance for EEPS Program Administrators* and the *New York State Process Evaluation Protocols*.

The evaluation was guided by the following key researchable issues:

- Are Central Hudson's requirements being effectively communicated to program implementers and are those requirements adhered to?
- Does the program implementer have sufficient resources to effectively implement the program?
- Is the tracking system effective for documenting and reporting program progress?
- Have customer/Trade Ally participation rates improved as the program has developed?
- Is the program achieving participation and energy savings goals?
- What marketing/promotional efforts resonate with customers? Trade Allies?
- Are Trade Allies sufficiently knowledgeable about the Central Hudson program?
- What types of training/education do Trade Allies receive?
- Is the rebate processing system effective in managing the application and rebate payment process?
- Are rebate applications processed, approved and paid on a timely basis?

- Are customers/Trade Allies satisfied with the program?
- What are the areas for improvement?
- What are the barriers to program participation? How can those barriers be overcome?
- Would customers recommend the program?
- Has program participation generated interest in other Central Hudson programs? In other energy efficiency actions?

The process evaluation included the period from January 1, 2012 through June 30, 2013. To arrive at the final recommendations in this report, AEG undertook the following activities:

Program Materials and Data

AEG reviewed current program documents and processes including, but not limited to, the customer application, marketing materials, the 2012-2015 implementation plan, the Residential Appliance Saturation Survey,³ and program performance data. The review served as the basis for understanding whether the program has been implemented as planned and is on track to meet its energy savings goals.

Program Flow

AEG updated the program logic model based on interviews with Central Hudson program staff and the third-party implementer. The model shows the linkages among the program's activities, outputs, key program stakeholders and outcomes, and highlights potential external influences.

Program Tracking System

AEG reviewed ICF's program tracking and reporting, including the monthly reports provided by the third-party implementer, summarizing rebate applications received, incentives paid, and applications denied. AEG also reviewed Central Hudson's tracking database and the reports submitted to the New York DPS.

Central Hudson Staff Interview

AEG conducted a comprehensive, group interview with Central Hudson program staff in August 2013 to get staff impressions of program implementation activities, program performance, marketing and customer awareness, and opportunities for program improvements. Individual interviews with program staff, as well as informal discussions, were conducted between August and October 2013. The individual interviews focused on program delivery issues, program performance, potential areas of improvements and overall program effectiveness.

Third Party Implementer Interview

As third-party implementation contractor, ICF International ("ICF") is responsible for program delivery, Trade Ally recruitment, rebate processing, program tracking, managing a customer call center, and assisting CHGE with marketing. AEG interviewed ICF in October 2013. The interview provided information on program implementation activities, Trade Ally participation, tracking methods, and barriers to increased participation. An interview guide can be found in Appendix A.

³ Central Hudson Gas & Electric Corporation. March 30, 2013. Energy Management Survey – 2013. Prepared by Opinion Research Specialists, LLC.

Participating Customer Surveys

AEG administered a 10 to 12 minute telephone survey to a sample of program participants to assess program experience and awareness, customer satisfaction, barriers to participation, free ridership and areas for potential program improvement. A survey guide can be found in Appendix B.

Between January 1, 2012 and June 30, 2013, Central Hudson rebated 1,067 measures to 574 participants for the Residential Natural Gas HVAC Program. Central Hudson provided data for all 1,067 measures rebated, including customer name, account number and telephone number. AEG scrubbed the participant data to remove duplicate natural gas Central Hudson account numbers from the participant list, thereby accounting for customers that received more than one rebate. The scrubbed participant data included 574 unique participants. AEG calculated the sample size at a 90 percent confidence interval with an error margin of +/-10 percent. The sample size was calculated at 61.

Participants were then randomly selected based on unique identifiers determined by Microsoft Excel's random number generator. Program participants were contacted based on the unique identifier, beginning with the smallest number. Sixty-one (61) surveys were completed.

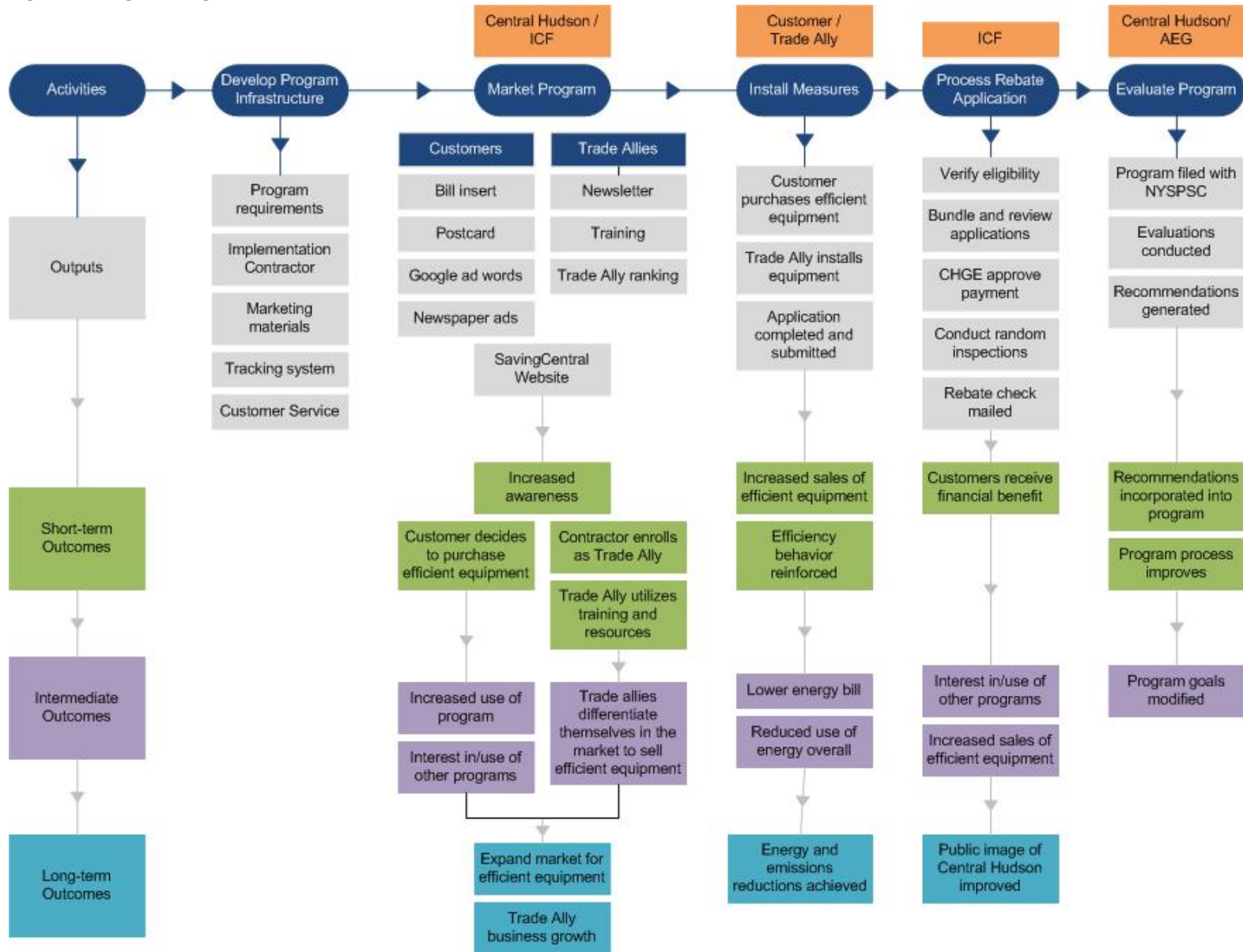
Trade Ally Focus Group

AEG held two focus groups with nine individuals representing seven Trade Allies and administered a five minute telephone survey to an additional 10 Trade Allies to assess their experience with the program, customer satisfaction and potential areas for program improvements. The focus group provided anecdotal information regarding the Central Hudson program. A survey guide can be found in Appendix C and the focus group guide in Appendix D.

5. Program Flow

The *New York State Process Evaluation Protocols* requires that a process evaluation assess program flow. Logic models are graphic representations of a program and its processes. Logic models make the program's assumptions explicit, showing the causal relationships or linkages among the problem or situation the program is designed to address, the intervention (inputs and outputs), and program impact (short, medium and long-term outcomes). Logic models also serve to identify handoffs of processes and relationships that are critical to the program's performance.

Figure 1 Program Logic Model



5.1 Program Activities

The program activities and their corresponding outputs help to establish linkages between the situation the program is designed to address and the program's intended outcomes. Program activities include:

Develop Program Infrastructure

Activities included gathering market knowledge, setting program goals, designing the program, developing marketing tactics, and establishing an operating structure. The Residential Natural Gas HVAC Program was launched on July 1, 2009. Central Hudson designed the program and established program goals. Central Hudson utilizes a third-party implementation contractor to deliver the program, recruit Trade Allies, process rebates, track program progress, assist with marketing and manage a customer call center. As of July 1, 2012, ICF has been the program implementation contractor. Prior to ICF, Honeywell was the implementation contractor.

A Customer Service line is operated Monday through Friday. The calls are received by a CHGE toll-free number and routed to an ICF Customer Service Representative ("CSR") through a phone tree.

Market Program

Central Hudson markets the program to residential customers, HVAC contractors and HVAC distributors as part of the SavingsCentral brand. ICF assisted CHGE in developing marketing tactics. Marketing activities to customers include, but are not limited to, bill inserts, postcards, and Google ad words.

ICF does not actively recruit HVAC contractors. However, contractors may submit the Trade Ally Participating Contractor Agreement to participate in the programs. ICF promotes the program to Trade Allies via monthly newsletters and training events. ICF provides education and training on:

- Central Hudson programs, including qualifying measures, verification of efficiency levels through the Air Conditioning, Heating and Refrigeration Institute ("AHRI") and application submittal.
- How to use energy efficiency as a sales tool.
- New and emerging technologies supported by the program.

Install Measures

The customer purchases qualifying energy efficient equipment and has it installed by a Trade Ally. The Trade Ally completes the rebate application and gathers the required supporting documentation, typically including a dated sales receipt, AHRI certificate and/or Manufacturer's specification sheet, and a work scope description (air/duct sealing only).

The completed application is submitted one of two ways:

- 1) The customer or Trade Ally mails a hard copy of the application and supporting documentation to ICF's rebate processing center in Virginia.
- 2) The Trade Ally enters the application data into VisionDSM via an online portal and uploads the supporting documentation and customer-signed Terms and Conditions.

According to ICF, approximately 40-50 percent of Trade Allies utilize the online portal to submit applications.

Process Rebate Application

A participant record is created in VisionDSM to verify customer eligibility and track participation. All documents, such as the supporting documentation, are converted to PDFs and uploaded to the participant record. ICF verifies participant eligibility, matching the participant address and account number against a database of eligible customers provided by Central Hudson. The Central Hudson database is uploaded to a secure FTP site and updated in VisionDSM every two weeks. If the account cannot be verified, ICF notifies Central Hudson. ICF verifies the participant VisionDSM record to ensure the equipment qualifies for a rebate.

Every two weeks, the applications are bundled into a batch and reviewed by ICF Customer Service and ICF's Management Team. The batch and an invoice are sent to Central Hudson for approval. Upon approval, ICF issues incentive checks to customers and is reimbursed by Central Hudson within 30 days. According to ICF,

On average, it takes 3 to 4 weeks to process an application.

ICF inspects the first four projects completed by a new Trade Ally and then a random 10 percent of Trade Ally projects thereafter. The ICF Inspector runs a monthly report in VisionDSM to determine the number of projects completed by Trade Ally. If a participant is selected for inspection, the participant's VisionDSM record is flagged and the rebate is not issued. ICF schedules an appointment with the participant. The ICF Inspector visually inspects the work completed, gathers information on customer satisfaction, and matches the equipment serial and model number to the application data. Inspection findings are uploaded into the participant VisionDSM record and the rebate issued.

Evaluate Program

Evaluation activities include process, market and impact studies. Once evaluations are conducted, recommendations for program improvements are generated for Central Hudson and fed back into program design. Central Hudson is responsible for program filings with the New York DPS.

5.2 Outcomes

Outcomes are the result of program partners and target audiences responding to the outputs of the program. There are short-term, intermediate, and long-term outcomes of the program.

Short-term Outcomes

When the program is marketed and promoted, customers, contractors and HVAC distributors may become aware of and interested in the Residential Natural Gas HVAC Program. Customers and contractors may become knowledgeable about the benefits of installing high efficiency natural gas systems. If contractors have the tools and resources needed to effectively market and promote the program, customers may choose to install efficient equipment.

Intermediate Outcomes

Intermediate outcomes may include increased use of the program by customers and contractors, interest in and use of other Central Hudson efficiency programs, increase in the number of contractors marketing high efficiency equipment to customers, and reduced household energy consumption.

Long-term Outcomes

The long-term outcomes may include energy savings for Central Hudson, reduced utility emissions, market expansion for contractors that sell energy efficient equipment, and improved public image of Central Hudson as a utility that responds to customer needs and is considerate of environmental issues.

5.3 External Factors

There are a variety of factors outside the control of Central Hudson and ICF that may influence the program. Documenting these factors help improve program planning by identifying important program partners, the part(s) of the issue the program can realistically influence, which evaluation measures will accurately reflect project outcomes, and other needs that must be met to address this issue.

- Changes in political priorities (e.g. codes and standards, state and local regulations, federal policies, perceptions of energy and climate change)
- Weather and associated impacts on customer actions and energy bills
- Economy and associated impacts on customer actions
- Energy prices and regulation
- Changes in utility rate structures
- Perceptions in the value of energy efficiency
- Competing interests among demand side customers
- Competition among contractors and HVAC distributors
- Cost, performance and availability of efficient technologies

5.4 Market Barriers

HVAC contractors play an important role in this program by encouraging customers to make energy efficient upgrades. Contractors are often the primary source of information and the first point of contact for customers in need of HVAC equipment. Therefore, it is critical that contractors have accurate and up-to-date information about the benefits of installing energy efficient equipment and are able to effectively communicate these benefits to customers.

Key barriers to achieving greater market penetration and quality installations include:

- Lowest bid quotes typically drive the HVAC equipment sales industry. Customers are often price-sensitive, especially during a weak economy. Contractors often lack the resources and tools to effectively educate the customers on the benefits of high efficiency equipment.
- Lack of consumer awareness. The majority of equipment sales take place in the replacement market where consumers need to make quick decisions.

Central Hudson's program tries to address these barriers through a combination of education, training, and financial incentives to customers and Trade Allies. This approach helps build customer support for high efficiency equipment while educating and providing tools to the contractors to market and install high efficiency systems.

6. Residential Appliance Saturation Survey

Central Hudson engaged AEG to conduct a Residential Appliance Saturation Survey (“RASS”). The RASS, completed in March 2013, identified the type, age and efficiency level of appliances and HVAC equipment currently being used by households within Central Hudson’s territory. Opinion Research Specialists, LLC of Springfield, Missouri conducted the data collection and analysis. A total of 1,129 mail questionnaires were completed, for a response rate of 33% and a margin of error of +/- 3% at the 95% confidence interval.

The majority of Central Hudson residential customers utilize forced air furnace as their main heating system (43 percent), followed by baseboard (21 percent) and boiler (14 percent). The majority of forced air furnaces are more than 15 years old (31 percent), followed by 6 to 10 years old (25 percent).

Figure 2 Main Heating System

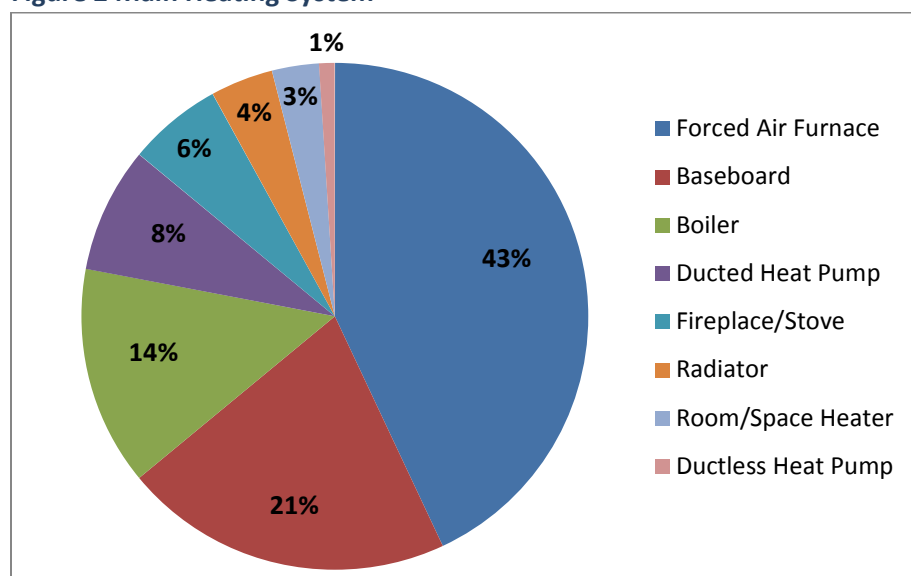
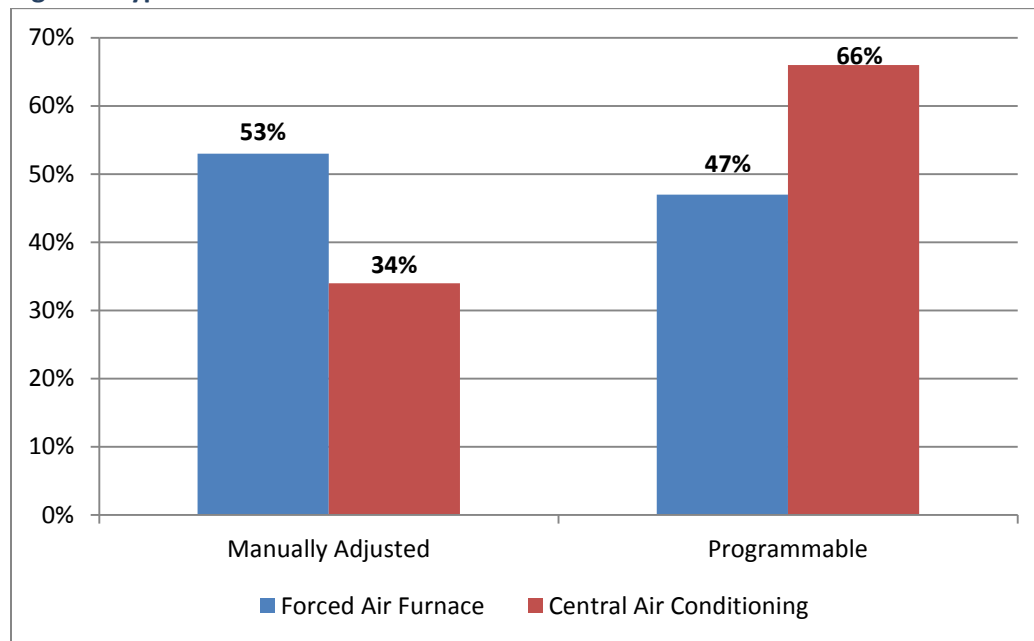


Table 4 Heating System Age

System Type	< 3 Years	3-5 Years	6-10 Years	11-15 Years	> 15 Years
Total Heating System	9%	15%	23%	18%	35%
Forced Air Furnace	11%	14%	25%	19%	31%
Baseboard	7%	16%	19%	19%	39%
Boiler	6%	14%	30%	15%	35%
Ducted Heat Pump (n=85)	6%	18%	24%	22%	33%
Fireplace/Stove (n=63)	14%	18%	28%	12%	28%
Radiator (n=41)	5%	14%	6%	22%	53%
Room/Space Heater (n=36)	14%	7%	7%	4%	68%
Ductless Heat Pump (n=16)	25%	25%	8%	25%	17%

Forty-seven (47) percent of homeowners with forced air furnace heating have a programmable thermostat. The remaining 53 percent use a manually adjusted thermostat.

Figure 3 Type of Thermostat



The majority of residential customers use fuel oil to heat their water (39 percent), followed by electricity (28 percent) and natural gas (22 percent). Natural gas hot water heaters are typically less than 10 years old. However, approximately 25 percent of natural gas hot water heaters are greater than 10 years old.

Figure 4 Main Water Heating Fuel

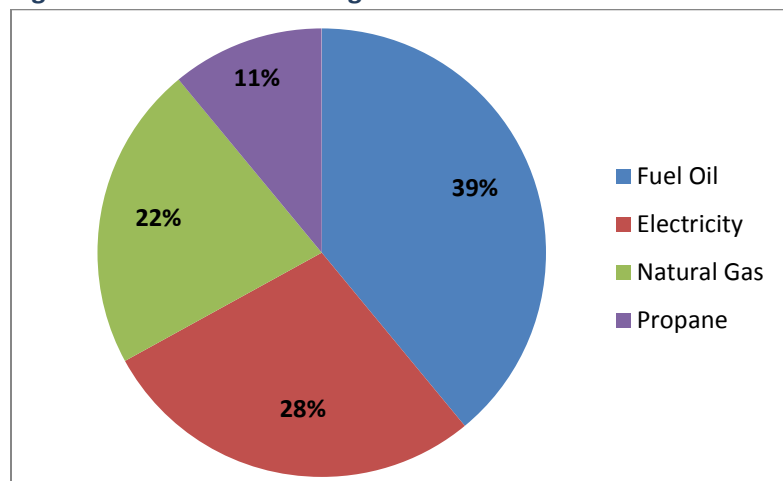
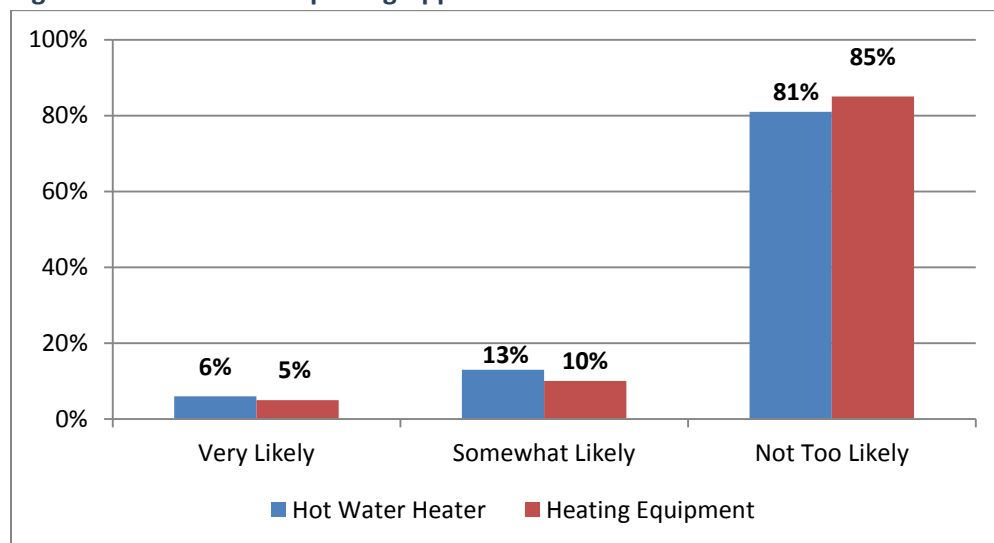


Table 5 Hot Water Heater Age

System Type	< 3 Years	3-5 Years	6-10 Years	11-15 Years	> 15 Years
All	15%	22%	30%	16%	17%
Electricity	22%	23%	29%	14%	12%
Natural Gas	13%	29%	33%	14%	11%
Propane	15%	23%	32%	14%	16%
Other (Fuel Oil)	9%	18%	28%	21%	24%

Residential customers noted that they are not likely to replace their hot water heater or heating system within the next two years.

Figure 5 Likelihood of Replacing Appliance in the Next Two Years



7. Process Evaluation Findings

This section provides key process evaluation findings, including marketing, program performance, Trade Ally participation and program tracking.

7.1 Program Marketing

The Residential Natural Gas HVAC Program is marketed to residential customers through direct mail, web advertising and the SavingsCentral Trade Allies. Central Hudson determines the marketing tactics and ICF assists with the design and development. In 2012 and 2013, Central Hudson marketed the program through the following:

- **SavingsCentral Website.** Central Hudson’s SavingsCentral website contains detailed information on customer rebates, the Trade Ally participation agreement and Trade Ally resources.
- **Bill Inserts.** Six energy efficiency bill inserts were included in customer bills throughout the year.
- **Postcards.** Postcards were sent to residential customer promoting the Residential Electric HVAC and Residential Natural Gas Programs as well as the Silver and Gold Trade Allies.
- **Google Ad Words.** Central Hudson paid to have SavingsCentral appear first when a customer near Central Hudson’s service territory searched for specific key words, such as ‘efficient HVAC.’ The advertisements were paid on a ‘per click’ basis.

There are more than 300 SavingsCentral Trade Allies participating in the Residential Electric HVAC Program, Residential Natural Gas HVAC Program and Commercial Natural Gas Program. SavingsCentral Trade Allies are listed on Central Hudson’s webpage and can be sorted by Company Name, City, County, Rank and BPI Certification.⁴ In early 2012, Central Hudson and Honeywell developed a ranking system to promote active SavingsCentral Trade Allies. Central Hudson distinguishes Trade Allies who

⁴ See <http://www.savingscentral.com/tradeallies/index.htm>

demonstrate a serious commitment to the program based on the number of projects completed, the number of training events attended, BPI Accreditation or Chamber of Commerce membership, and customer satisfaction. The ranking system and list of participating Trade Allies is updated on the SavingsCentral website every month. ICF provides a list of updates to Central Hudson's corporate office to implement.

Figure 6 Trade Ally Ranking System



Silver and Gold Trade Allies received the following rewards:

- **Postcard.** In 2012 and 2013, Central Hudson issued a postcard to 40,000+ residential customers promoting the Residential Electric HVAC and Residential Natural Gas HVAC Programs. The back of the postcard listed the Silver and Gold Trade Allies and their contact information.
- **Newspaper Advertisement.** Gold Trade Allies received \$500 towards the cost of a one-time co-branded newspaper advertisement in a local, daily newspaper. The ad had to mention at least one SavingsCentral rebate and be approved by Central Hudson staff.

ICF issued a monthly newsletter, *Trade Ally News*, to participating SavingsCentral Trade Allies. The newsletter, submitted via e-blast and mail, provided information on program changes, safety notices, upcoming events and trainings, and co-hosting trainings in addition to other topics.

SavingsCentral Trade Allies received education and training throughout the year:

- **HVAC Distributors.** ICF cultivated relationships with 9 to 10 HVAC Distributors throughout Central Hudson's service territory. ICF co-hosted events on new equipment offerings and eligible equipment supported by the program. Events were typically held during the off-season.
- **SUNY Ulster.** ICF partnered with SUNY Ulster in early 2013 to provide small business training one to two times per month.⁵ ICF promoted the programs to participating Trade Allies via a monthly newsletter. The events provided technical and non-technical training on items such as emerging technologies, building performance and development coordination.
- **ICF Training.** ICF and Central Hudson provided training on the Central Hudson program, including qualifying measures, the online application tool and program changes. Trade Allies recommended training topics.

Trade Allies also have access to resources on the SavingsCentral website, including:

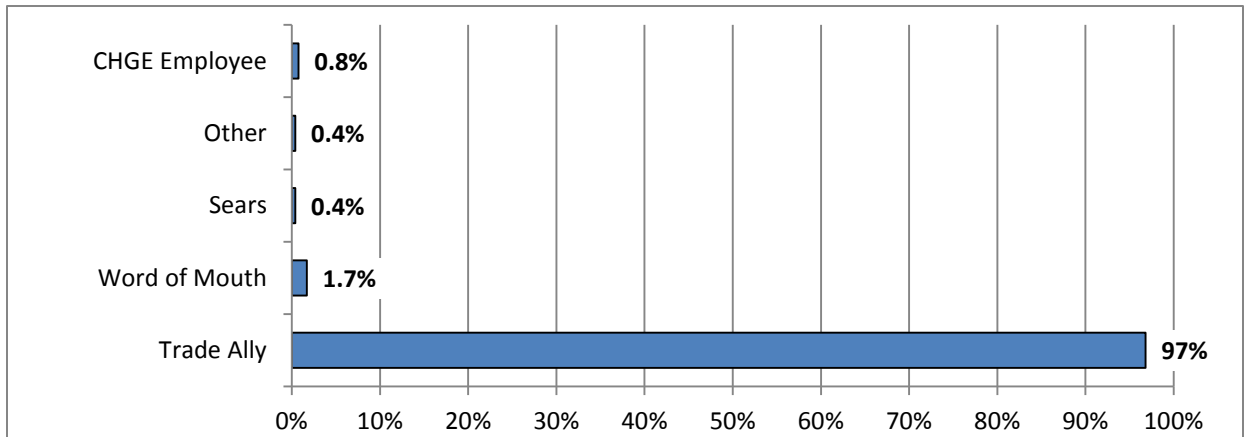
- Trade Ally Participating Contractor Agreement
- Past issues of the Trade Ally *Trade Ally News* newsletter
- Link to AHRI for appliance efficiency ratings
- SavingsCentral logo and SavingsCentral Trade Ally logo for Trade Ally websites and printed materials (mailers, flyers or newspaper advertisements)

⁵ Target Trade Allies with less than seven employees.

- List of Participating Trade Allies
- Rebate Forms
- Building Performance Institute (“BPI”) training

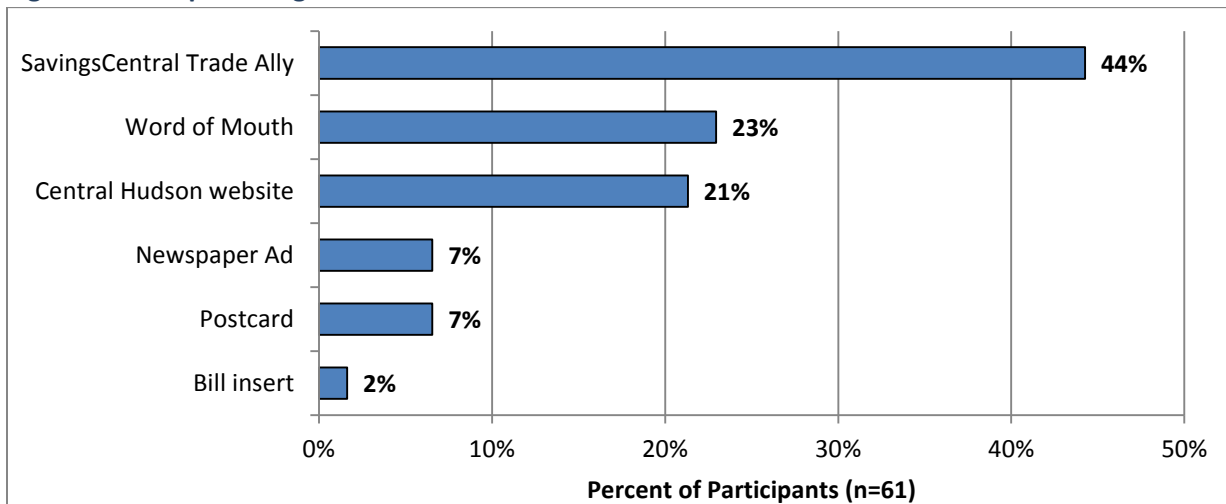
According to data collected from the participant application, the majority of participants learned about the program from a SavingsCentral Trade Ally.

Figure 7 Residential Natural Gas HVAC Referral Type from Program Application



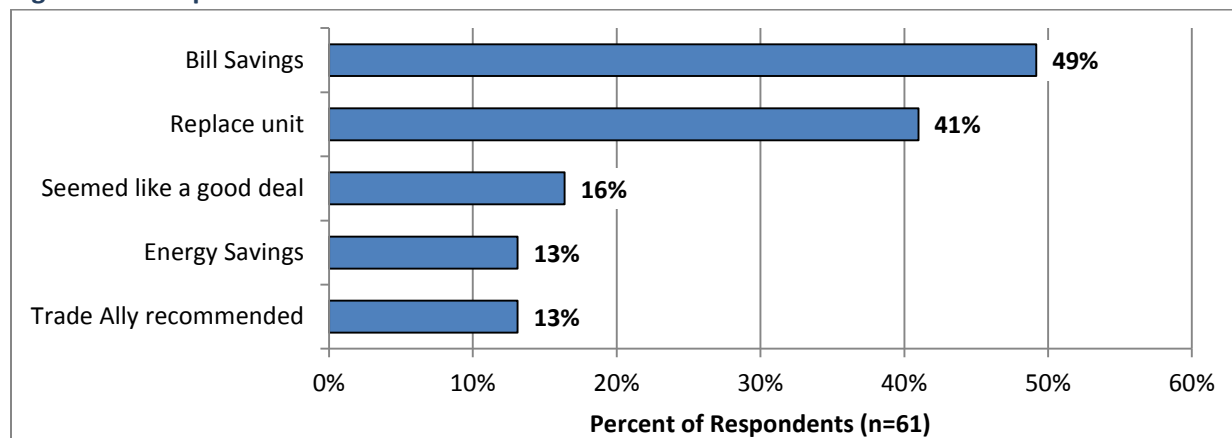
According to the participant survey, participants first became aware of the program via a SavingsCentral Trade Ally (44 percent) and word of mouth (23 percent). Other respondents reported hearing about the program through the Central Hudson website, newspaper ads, postcards and bill inserts.

Figure 8 Participant Program Awareness



Bill savings is the strongest motivator for participants with nearly half of respondents wanting to save money by participating in the program. Forty-one (41) percent of respondents needed a new heating system. Energy savings and the Trade Ally recommendation were less popular reasons for participating.

Figure 9 Participant Motivations



Only 11 percent of survey respondents reported that they were aware of other programs offered by Central Hudson. Participants were aware of the Residential Appliance Recycling, the Residential Electric HVAC, and the Home Energy Comparison Report programs.

7.2 Program Performance

The Residential Natural Gas HVAC Program was launched on July 1, 2009 and implemented by Honeywell until ICF took over on July 1, 2012. Central Hudson and ICF staff held weekly conference calls. Since the transition, the following changes have been made to the program:

- **Revised Rebate Application.** In Spring 2013, ICF combined the rebate application for the Residential Electric HVAC and Residential Natural Gas HVAC Programs. The combined application is simpler for Trade Allies to complete and ICF to track.
- **Online Rebate Application.** As of 2012, Trade Allies have the option of entering the application information directly into VisionDSM via an online platform. The online tool allows Trade Allies to receive instant feedback if there are any errors or missing data and reduces ICF’s level of effort to transcribe data from hard-copy applications. The Trade Allies can access submitted applications and view the status of the application processing.
- **Rebate Processing.** Upon Central Hudson approval of application batches, ICF issues incentives to customers. ICF is reimbursed by Central Hudson within 30 days.

Central Hudson spent almost the entire 2012 budget and achieved approximately 75 percent of the Dtherm savings target and 55 percent of the participation goal. Between January 1, 2013 and June 30, 2013, Central Hudson spent approximately 45 percent of the budget and achieved 52 percent of the Dtherm target and 58 percent of the participation goal.

Table 6 Program Budget versus Expenditures

	2012			2013		
	Budget	Expenditures	% Spent	Budget	Expenditures (Jan - June)	% Spent
Administration	\$9,576	\$6,964	73%	\$17,188	\$5,278	31%
Marketing	\$28,150	\$21,498	76%	\$34,802	\$12,741	37%
Trade Ally Training	\$13,089	\$14,160	108%	\$7,018	\$4,288	61%
Incentives	\$283,950	\$229,660	81%	\$338,240	\$122,667	36%
Implementation	\$26,923	\$86,589	322%	(\$32,743)	\$30,801	-94%
Evaluation	\$19,036	\$12,947	68%	\$25,125	\$0	0%
Total Budget	\$380,724	\$371,818	98%	\$389,630	\$175,775	45%

Table 7 Program Savings Target versus Savings Achieved

	2012	2013 (Jan - June)
Dtherm Savings Target	15,097	7,549
Dtherm Savings Achieved	11,018	3,898
% Achieved	73%	52%

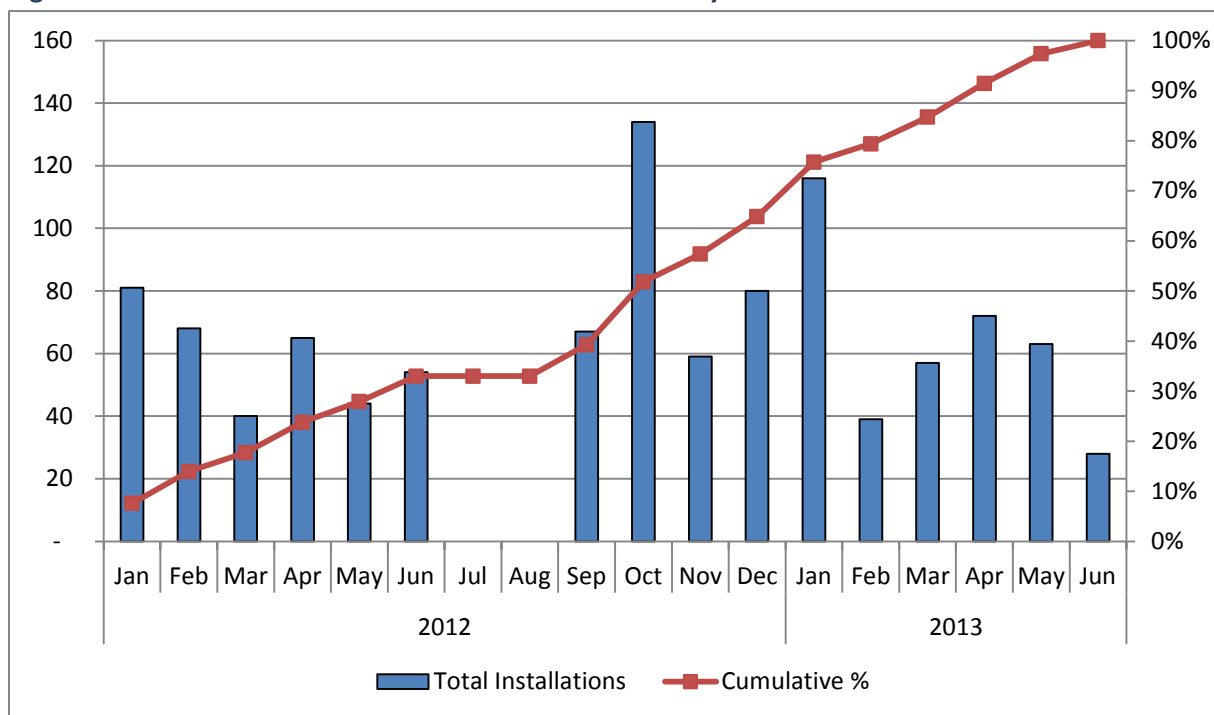
Table 8 Participation Goals versus Actual

	2012			2013		
	Goal	Actual	% Achieved	Goal	Actual (Jan - June)	% Achieved
Furnace	450	129	29%	450	85	19%
Boiler	220	198	90%	220	107	49%
Boiler Reset Control	60	72	120%	60	40	67%
Programmable Thermostat	375	172	46%	375	27	7%
Indirect Water Heater	80	93	116%	80	81	101%
Duct/Air Sealing	30	28	93%	30	35	117%
Total Participation	1,215	692	57%	1,215	375	31%

Between January 1, 2012 and June 30, 2013, 574 customers participated in the Residential Gas HVAC Program and 1,067 measures were rebated. Twenty-one (21) percent of customers who participated in the Natural Gas HVAC Program also participated in the Electric HVAC Program. The program experienced higher levels of activity during the fall and winter,⁶ suggesting a consistent seasonal trend in program activity.

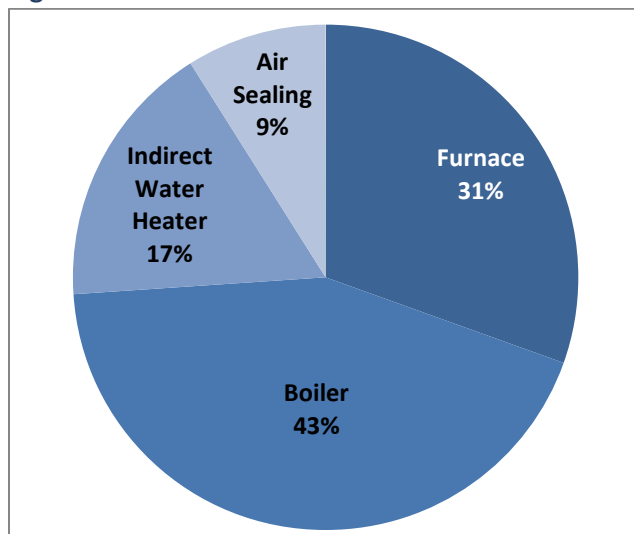
⁶ There was a time lag in July and August 2012 during the Implementation Contractor transition.

Figure 10 Total Natural Gas HVAC Measure Installations by Month



Boilers and furnaces were the most popular measures, accounting for 43 and 31 percent of the total measures purchased and installed, respectively.

Figure 11 Residential Natural Gas HVAC Measures by Equipment Type



The program offers several types of furnaces and boilers based on nameplate efficiency.

- In 2012, 47 percent of furnaces rebated had an AFUE $\geq 92\%$ and 43 percent had an AFUE $\geq 95\%$ with an ECM fan. As of June 30, 2013, 95 percent of furnaces rebated had an AFUE $\geq 92\%$.
- Eighty-eight (88) percent of boilers were water boilers AFUE $\geq 90\%$. Steam boilers accounted for only 2 percent of rebated boilers.

Figure 12 Furnaces Rebated by Efficiency

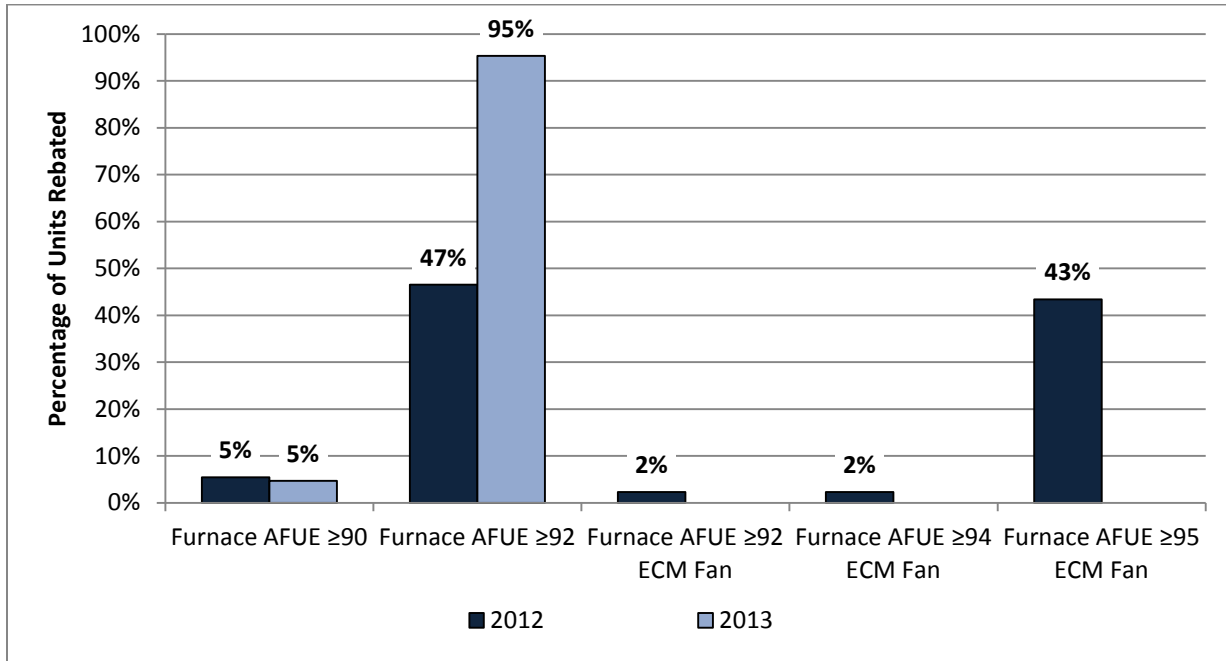
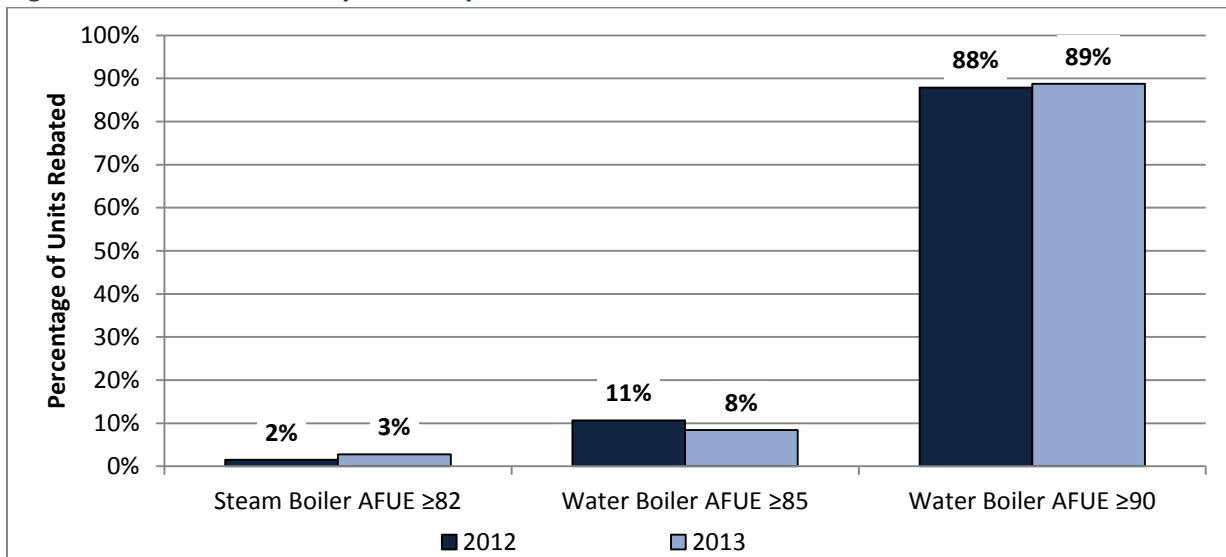


Figure 13 Boilers Rebated by Efficiency



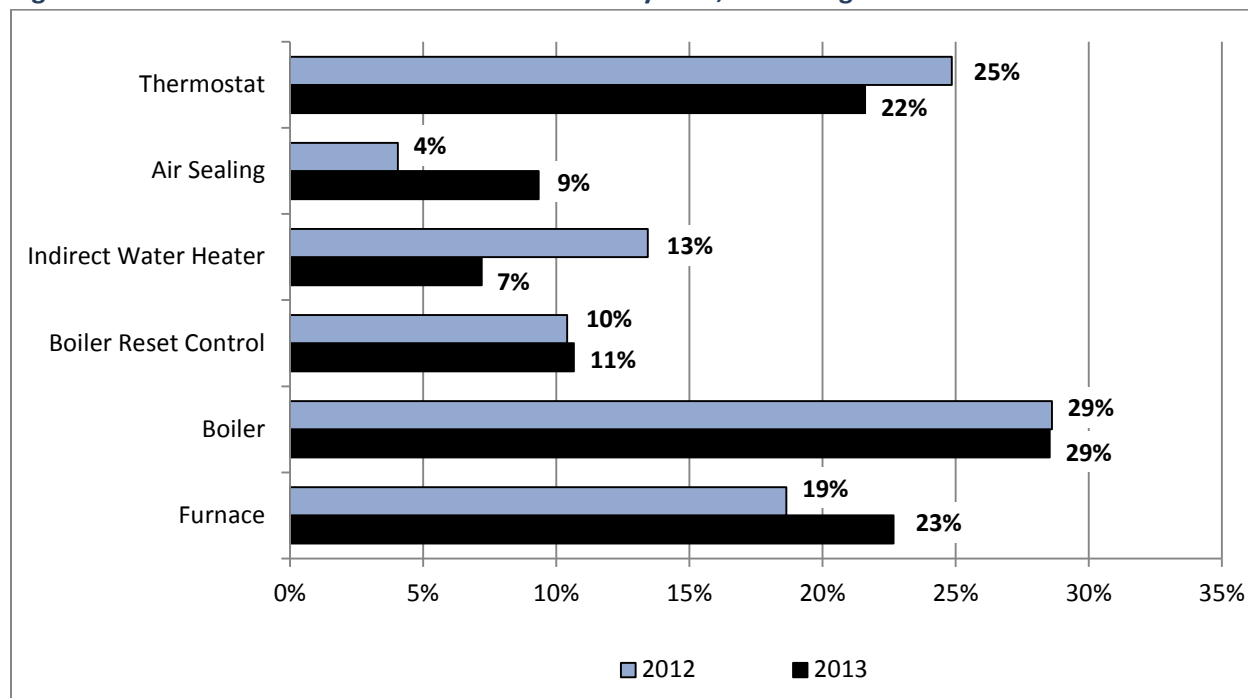
Programmable thermostats and boiler reset controls were offered to participants installing a qualified heating system. Forty-nine (49) percent of participants that installed a boiler or furnace also installed a programmable thermostat. Thirty-seven (37) percent of participants that installed a boiler also installed

a boiler reset control. Of the programmable thermostats and boiler reset controls installed, there were a few that were not installed with qualifying heating systems, per the program requirements.

- Nine (9) percent of thermostats rebated through the Residential Electric HVAC and Residential Natural Gas HVAC Programs were not installed with a qualifying heating or cooling system.
- One (1) boiler reset control rebated through the Residential Natural Gas HVAC Program was not installed with a qualifying boiler.

As of June 30, 2013, Central Hudson saw an increase in the number of air sealing projects and furnaces installed, but a decrease in the number of indirect water heaters installed.

Figure 14 Natural Gas HVAC Measure Installations by Year, Percentage of Total



The majority of participants surveyed (76 percent) reported that the natural gas HVAC equipment rebated through the program replaced operating equipment. Twenty (20) percent of respondents reported the replacement of failed equipment and 4 percent reported adding new equipment to the residence.

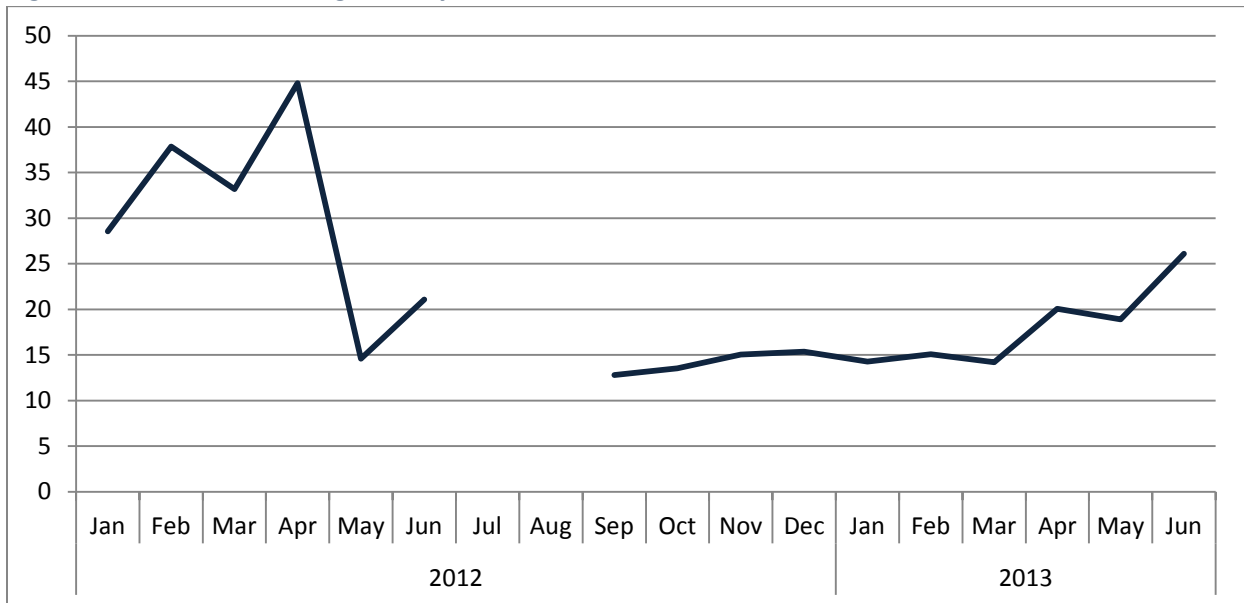
Table 9 Equipment Replacement Type

Measure	Add	Replace Operating	Replace Failed
Natural Gas Furnace	3%	31%	6%
Natural Gas Boiler	1%	32%	11%
Indirect Water Heater	-	11%	3%
Boiler Reset Control	-	1%	-
Total	4%	76%	20%

As a result of the transition from Honeywell to ICF, customer applications were not processed in July and August 2012. There was an overall downward trend in the average rebate processing time for Honeywell, particularly in the months before ICF took over. Although there is an overall upward trend in the average rebate processing time for ICF, the rebate processing times are consistently lower than

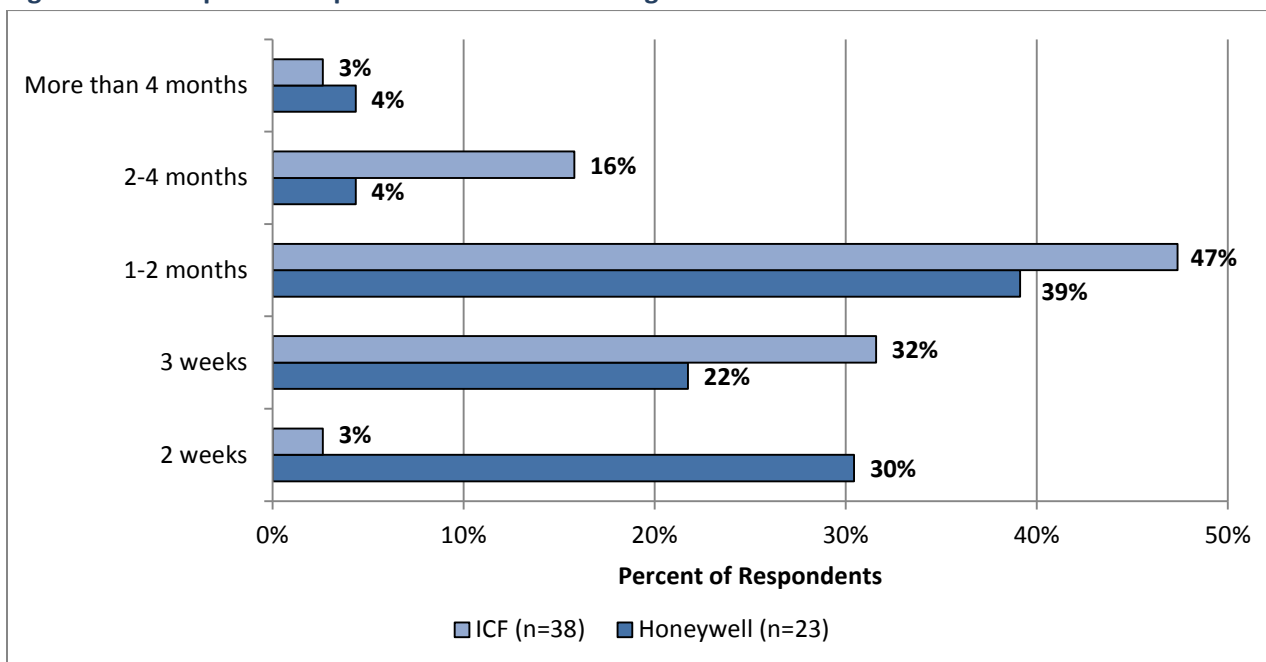
those for Honeywell. The figure below presents the number of days between the date on the participant application and the date the rebate check was issued.

Figure 15 Rebate Processing Time by Month



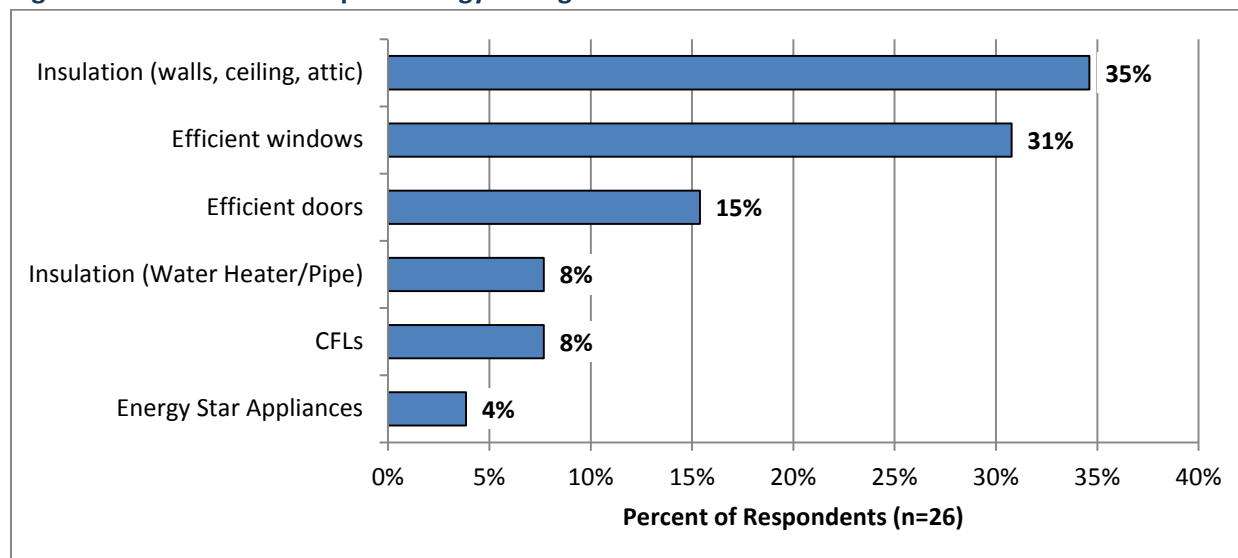
A number of Trade Allies noted that rebate processing times improved with ICF as the implementation contractor. The majority of participants surveyed reported that it took 1-2 months to receive the rebate after the equipment was installed. The majority of Honeywell participants surveyed reported that it took less than 2 months to receive the rebate while the majority of ICF participants reported that it took 1 to 4 months to receive the rebate.

Figure 16 Participant Perception of Rebate Processing Duration



Approximately 18 percent of customers surveyed reported that they were planning to install an efficient furnace or boiler within three months of participating in the program. Forty-six (46) percent of customers surveyed reported that participating in the Residential Natural Gas HVAC Program motivated them to take additional steps to reduce their household energy usage. Participants engaged in a variety of energy saving actions, but most commonly installed insulation (35 percent) and upgraded to efficient windows (31 percent).

Figure 17 Additional Participant Energy Saving Actions



7.3 Trade Ally Participation

Currently, there are 354 Trade Allies listed on SavingsCentral as eligible to install equipment through Central Hudson’s Residential Electric HVAC, Residential Natural Gas HVAC and Commercial Natural Gas Programs. Fifty-four (54) percent of the Trade Allies participated in at least one of the programs in 2012 and 2013. Six (6) percent of SavingsCentral Trade Allies participated in each the Residential Electric HVAC, Residential Natural Gas HVAC and Commercial Natural Gas Programs.

A total of 3,446 measures were installed through Central Hudson’s Residential Electric HVAC, Residential Natural Gas HVAC and Commercial Natural Gas Programs. Ninety-one (91) percent of the measures were installed by a SavingsCentral Trade Ally, 3 percent were installed by non-participating HVAC Contractors⁷ and 5 percent were self-installed heat pump water heaters.⁸

Table 10 Total HVAC Measure Installation and Participation

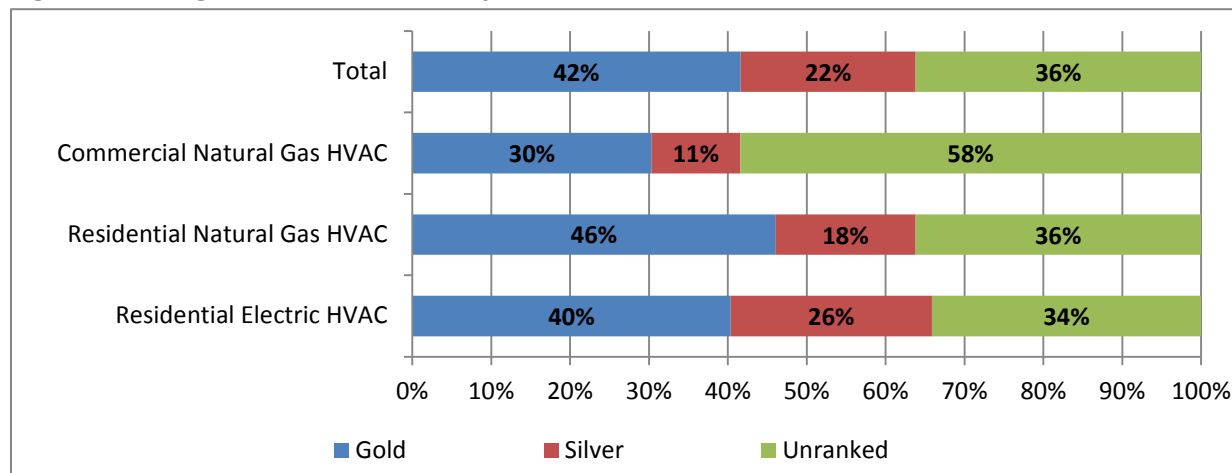
	HVAC Contractors	Total Measures Installed
SavingsCentral Trade Ally	192	3,123
Non-Participating Trade Ally	26	95
Self-Installed Heat Pump Water Heater	1	174
Unknown	1	54
Total	220	3,446

⁷ Non-participating HVAC Contractors are not listed on SavingsCentral as eligible to participate in the programs.

⁸ Two percent of measures were installed by unknown persons, due to a lack of information.

Gold SavingsCentral Trade Allies completed 42 percent of all installations and Silver completed 22 percent of all installations. More than 50 percent of Residential Electric HVAC and Residential Natural Gas HVAC Program installations were completed by Silver and Gold ranked SavingsCentral Trade Allies.

Figure 18 SavingsCentral Trade Allies by Rank



Of the 1,067 measures installed in through the Residential Natural Gas HVAC Program, 94 percent were installed by SavingsCentral Trade Allies and 3 percent by non-participating HVAC Contractors. More than 50 percent of installations were completed by Gold and Silver SavingsCentral Trade Allies. Additionally, BPI certified SavingsCentral Trade Allies completed 35 percent of installations.

Table 11 Residential Natural Gas HVAC Program HVAC Contractors and Measures

	HVAC Contractors	Total Measures Installed
SavingsCentral Trade Ally	111	1,005
Non-Participating Trade Ally	15	29
Unknown	1	33
Total	127	1,067

7.4 Tracking System

Central Hudson and ICF hold weekly conference calls to discuss the status of the Commercial Natural Gas Process Program. Central Hudson submits a monthly, quarterly and annual scorecard report to the New York DPS with each program’s progress to-date, including participation, energy savings and budget.

VisionDSM™ is a proprietary DSM/DR tracking system created and managed by AEG. VisionDSM enables utilities to rapidly deploy energy efficiency and demand reduction programs while securely managing efficient workflow, data, and access. The platform provides management functions around all program and portfolio components, including application intake, utility integration, analytics and reporting, customer service support (including online customer portal for self-service), and EM&V.

ICF utilizes VisionDSM for all DSM/DR clients. Central Hudson has read-only capabilities and receives the following on a weekly basis:

- Residential Gas Fuel Switch Report
- Residential Gas Measures Summary Production Charts Report
- Residential Gas Measures Summary Production Data Report
- Hear About Program Report

- Heat Pump Water Heater Report
- Residential Invoice Report

VisionDSM provides an audit trail of each person that updates a project entry. The system captures supporting documentation, such as the Manufacturer's specification sheet, and validates the measures against external lists (i.e. AHRI).

ICF collects a copy of the customer's dated sales receipt and the AHRI Certification or Manufacturer's specification sheet as well as the following information from the Residential Natural Gas HVAC customer application:

- Customer Information
 - Customer name, address, email, phone number and Central Hudson account number
 - Trade Ally and phone number
 - Date of installation
 - What type of residence do you live in? (multiple choice)
 - Existing heating system type? (multiple choice)
 - Existing heating fuel? (multiple choice)
 - Does your home have central air conditioning (Y/N)?
 - How did you hear about this program?
- Natural Gas HVAC System (for each unit rebated)
 - Rebate amount
 - AFUE
 - Heating Capacity (kBtu/hr)
 - Manufacturer
 - Model and Serial Number
 - AHRI Reference number
- Other measures. For each unit rebated, the customer must provide manufacturer, model number and serial number.
 - Programmable thermostat quantity and rebate amount
- Total Rebate Amount

For the air/duct sealing rebate, ICF collects a copy of the customer's dated sales receipt and the work scope description in addition to collecting the following information on the customer application:

- Customer Information
 - Customer name, address, email, phone number and Central Hudson account number
 - Trade Ally and phone number
 - Date of installation
 - How did you hear about this program?
 - What type of residence do you live in? (multiple choice)
- Air/Duct Sealing
 - Test-In and Test-Out Data
 - Hours
 - Total Incentive Amount

- Heat Type (Furnace/Boiler)
- Does the home have central air conditioning (Y/N)?
- Square footage of home

In addition to the data collected on the rebate applications, VisionDSM also tracks the following:

- Energy Savings, estimated utilizing the New York State Technical Manual
- Installation Date
- Rebate Application Date
- Application Approval Date
- Application Status
- Reason for Application Denial
- Payment Status

7.5 Quality Control/Quality Assurance

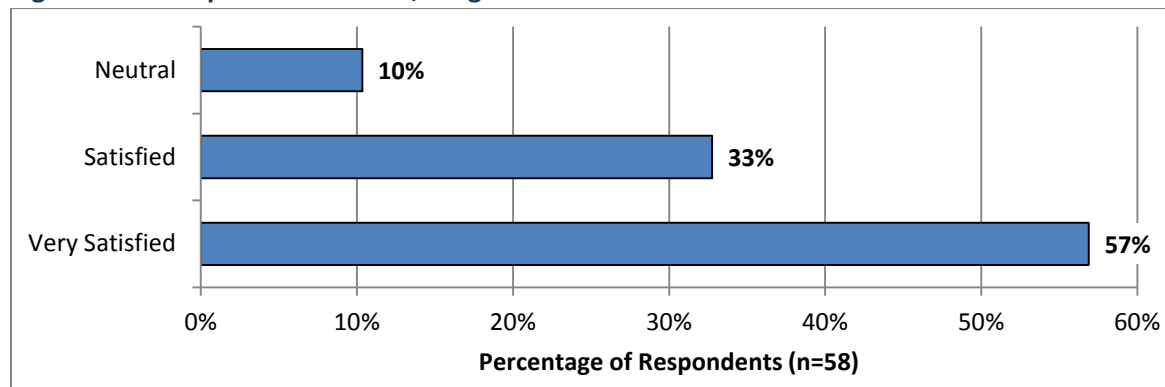
The VisionDSM customer record includes participant information, application data, notes and inspection status. All modifications to the customer record are time-stamped with the user ID. Each customer record is reviewed for customer eligibility and to ensure the equipment specifications meet the program requirements.

The purpose of the inspection process is to assure that the equipment specified on the application is installed and operational as required. ICF inspects the first four projects completed by a new Trade Ally and then a random 10 percent of Trade Ally projects thereafter. The ICF Inspector runs a monthly report in VisionDSM to determine the number of projects by Trade Ally. The customer VisionDSM records of the participants being inspected are flagged for inspection and rebates are not issued. ICF schedules an appointment with the customer. The ICF inspector visually inspects the work completed, gathers information on customer satisfaction, and matches the serial and model number of the HVAC equipment with the application data. The inspection findings are uploaded into the customer VisionDSM record and the customer rebate issued.

7.6 Program Satisfaction

AEG assessed program satisfaction through a participant survey, interviews with implementation staff and Central Hudson staff, as well as Trade Ally focus groups and surveys. Overall, all parties are very satisfied with the program. Ninety (90) percent of participants surveyed noted that they were satisfied with the Residential Natural Gas HVAC Program.

Figure 19 Participant Satisfaction, Program Overall



Central Hudson and the Trade Allies are very satisfied with ICF’s performance. Central Hudson noted that the transition to ICF was fairly smooth. Central Hudson and the Trade Allies reported that ICF is easy to work with, knowledgeable, and very responsive. The two parties are particularly satisfied with the Trade Ally outreach noting that the ICF staff is very helpful and responsive to requests for information and/or training.

As previously noted, the following changes were made to the program following the transition to ICF:

- **Revised Rebate Application.** In Spring 2013, ICF combined the rebate application for the Residential Electric HVAC and Residential Natural Gas HVAC Programs. The combined application is simpler for Trade Allies to complete and ICF to track.
- **Online Rebate Application.** As of 2012, Trade Allies have the option of entering the application information directly into VisionDSM via an online platform. The online tool allows Trade Allies to receive instant feedback if there are any errors or missing data and reduces ICF’s the level of effort to transcribe data from hard-copy applications.
- **Rebate Processing.** Upon Central Hudson approval of application batches, ICF issues incentives to customers. ICF is reimbursed by Central Hudson within 30 days.

The Trade Allies interviewed reported that these changes have improved the Residential Natural Gas HVAC Program. The online platform allows Trade Allies to access submitted applications, allowing them to view the status of a customer application. One Trade Ally requested that the Home Sealing rebate application be reviewed to determine if it can be streamlined. Currently, the application requires that the Trade Ally submit the application online and fax duplicate documents to ICF.

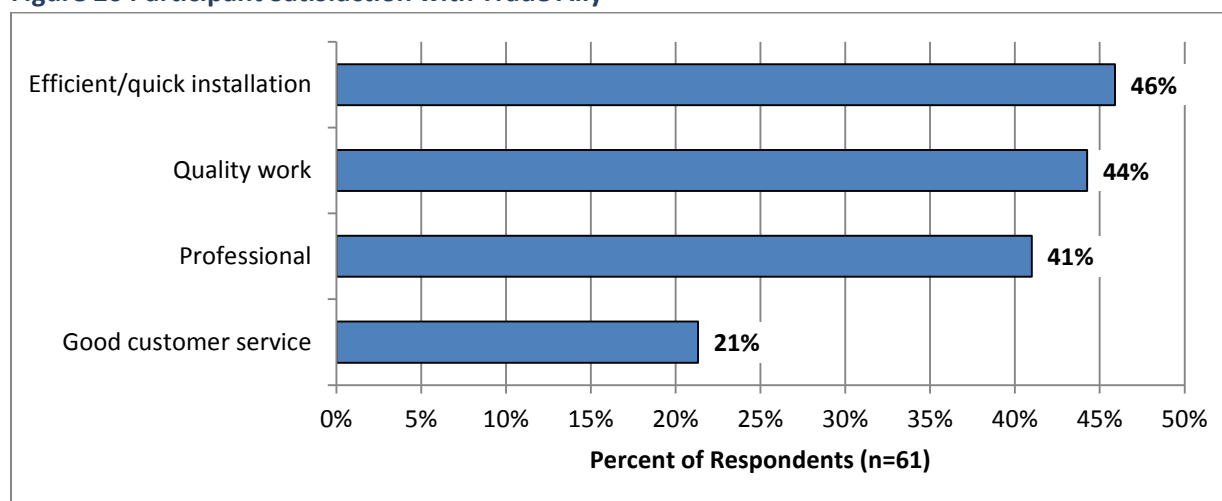
While the participants surveyed are satisfied with the program overall and most program components, the types of eligible equipment and the rebate processing time had the lowest satisfaction rates. ICF has decreased the rebate processing time since becoming the implementation contractor (see Figure 15).

Table 12 Participant Satisfaction

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Rebate application	62%	28%	9%	-	2%
Rebate processing time	55%	22%	17%	2%	3%
Types of equipment eligible	26%	34%	38%	2%	-
Performance of equipment installed	76%	19%	5%	-	-

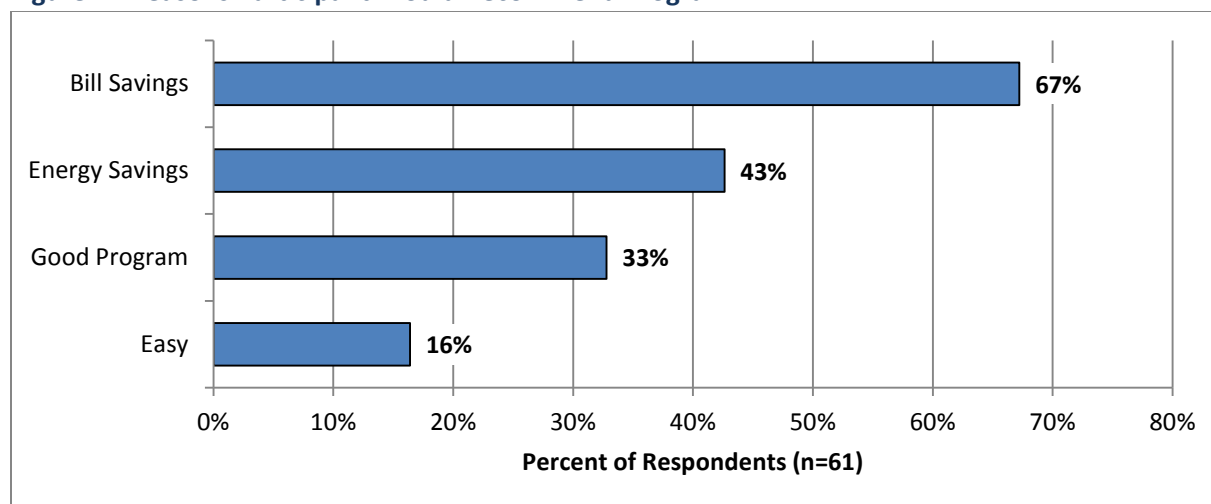
Nearly all participants surveyed (95 percent) reported that they would recommend the Trade Ally who performed the installation. Respondents were pleased with the quality of work, customer service, and professionalism displayed by the Trade Ally. The three respondents that would not recommend the Trade Ally were dissatisfied with the level of customer service, the Trade Ally’s unprofessionalism and that the Trade Ally did not finish on time.

Figure 20 Participant Satisfaction with Trade Ally



Ninety-seven (97) percent of participants surveyed reported that they would recommend the program to other customers, primarily for the bill savings (67 percent) and energy savings (43 percent). One participant found it difficult to participate in the program. The figure below shows the key reasons participants would recommend the program.

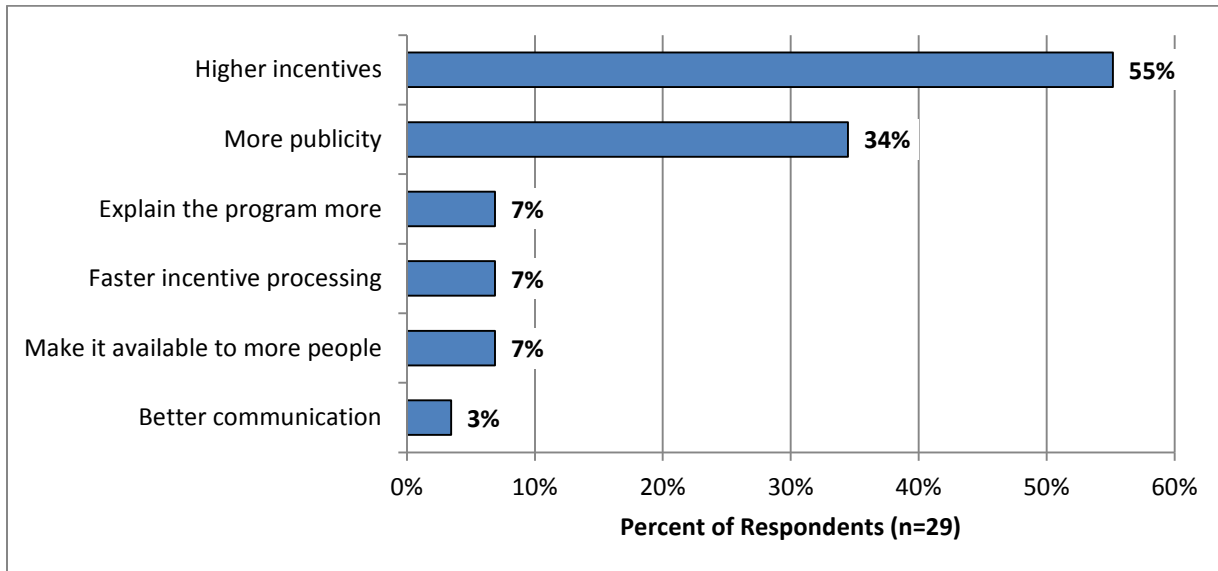
Figure 21 Reasons Participant Would Recommend Program



8. Opportunities for Improvement

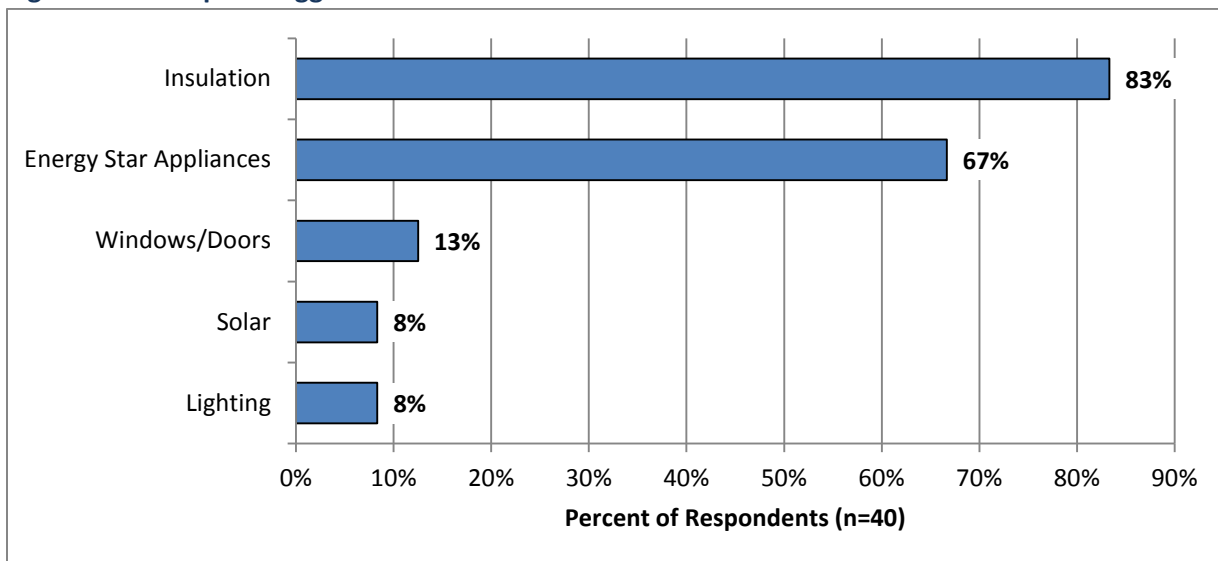
Participants surveyed were asked if they had suggestions for program improvements. The primary suggestions included higher incentives, more publicity and increased customer outreach.

Figure 22 Participant Suggested Improvements



Additionally, 65 percent of participants surveyed suggested that additional measures be included in the Central Hudson program. The most frequently recommended measure was insulation (83 percent) followed by Energy Star appliances (67 percent).

Figure 23 Participant Suggested Additional Measures



The larger Trade Allies interviewed, those with a number of employees, reported that they are often able to upsell energy efficient HVAC systems to customers. The smaller Trade Allies interviewed find it more difficult to upsell energy efficient HVAC systems, particularly if the customers are unaware of the

program or cannot afford the more expensive system. Additionally, it was easier for the Trade Allies to upsell customers when the rebates were higher.

According to the Trade Allies interviewed,

Customers really don't know about Central Hudson's HVAC programs, it is up to the contractor to offer a high efficiency option.

Some of the Trade Allies interviewed expressed concern regarding the list of SavingsCentral Trade Allies on the Central Hudson website. The Trade Allies noted that the list is quite long and that there may be HVAC contractors that are not upselling customers to energy efficient systems and that may not perform quality work. Additionally, Central Hudson does not require proof that the HVAC contractors have insurance or to provide references with the Participating Contractor Agreement. Trade Allies are typically not removed from the SavingsCentral website. However, the Trade Allies were asked to resubmit the Participating Contractor Agreement in January 2012 to remove any non-interested parties from the SavingsCentral website. ICF works with the Trade Allies to encourage participation, contacting Trade Allies a few times a year.

The Trade Allies interviewed reported that it is difficult to upsell a customer from HVAC to whole house air/duct sealing. Trade Allies with a focus on HVAC noted that home sealing is time consuming and reduces the number of overall jobs because staff is not available for other work. NYSERDA has a Home Performance with Energy Star® Program that provides customers incentives and financing for upgrading an existing residence's heating or cooling system, building shell, water heater, appliances and/or lighting. The Trade Allies noted that NYSERDA provides better incentives than Central Hudson but requires more paperwork. Based upon the interactions between the Trade Allies at the focus group, the Trade Allies appear to work together to provide the best service to the customers. For example, Trade Allies will recommend another company to perform work that is beyond their capability, such as air sealing.

9. Conclusions and Recommendations

The Residential Natural Gas HVAC Program was modified following the transition to ICF on July 1, 2012. The program modifications include:

- **Revised Rebate Application.** ICF combined the rebate application for the Residential Electric and Natural Gas HVAC Programs.
- **Online Rebate Application.** Trade Allies have the option of completing the customer application into VisionDSM via an online platform rather than submitting a paper application.
- **Rebate Processing.** ICF issues incentives to customers upon Central Hudson approval of application batches and is reimbursed by Central Hudson within 30 days.

Central Hudson spent almost the entire 2012 budget and achieved approximately 75 percent of the Dtherm savings target and 55 percent of the participation goal. Between January 1st and June 30th, Central Hudson spent approximately 45 percent of the budget and achieved 52 percent of the Dtherm target while achieving 58 percent of the participation goal.

Between January 1, 2012 and June 30, 2013, 574 customers participated in the Residential Gas HVAC Program and 1,067 measures were rebated.

- 88 percent of boilers were water boilers AFUE \geq 90%. Steam boilers accounted for only 2 percent of rebated boilers.
- The majority of furnaces rebated had an AFUE \geq 92%.
- 49 percent of participants that installed a boiler or furnace also installed a programmable thermostat and 37 percent of participants that installed a boiler also installed a boiler reset control.
- More than 50 percent of installations were completed by Gold and Silver SavingsCentral Trade Allies. BPI certified SavingsCentral Trade Allies completed 35 percent of installations.

While the participants surveyed are satisfied with the program overall and most program components, the types of eligible equipment and the rebate processing time had the lowest satisfaction rates. However, ICF has decreased the rebate processing time since becoming the implementation contractor.

AEG has several recommendations on how to improve the program. These include:

Modify Trade Ally Participating Contractor Agreement

Approximately 46 percent of the SavingsCentral Trade Allies did not submit a rebate application between January 1, 2012 and June 30, 2014. The Trade Allies interviewed expressed concern regarding the list on the Central Hudson website, noting that the list is quite long and that there may be HVAC contractors that are not upselling energy efficient systems or performing quality work. Additionally, Central Hudson does not require proof that the HVAC contractors have insurance.

AEG recommends that Central Hudson and ICF consider modifying the Trade Ally Participating Contractor Agreement to (1) require proof of insurance and (2) require at least two customer references. ICF should require that all Trade Allies provide proof of insurance on an annual basis.

Continue Random Inspections of Trade Ally Projects

According to the participant survey, participants first became aware of the program via a SavingsCentral Trade Ally (44 percent) and word of mouth (23 percent). Bill savings is the strongest motivator for participants with nearly half of respondents wanting to save money by participating in the program. Forty-one (41) percent of respondents needed a new heating system.

AEG recommends that ICF continue to inspect the first four projects completed by a new Trade Ally and a random 10 percent of Trade Ally projects. The majority of program participants are made aware of the program via word of mouth or the Trade Ally. Therefore, it is crucial that customers are satisfied with the program and work completed by the Trade Ally.

Improve Application Processing QA/QC

The program requires that all work is completed by a SavingsCentral Trade Ally. Three (3) percent of measures rebated were installed by non-SavingsCentral Trade Allies. Programmable thermostat and boiler reset control incentives are offered to participants installing a qualified heating system. Of the programmable thermostats and boiler reset controls installed:

- Nine (9) percent of thermostats rebated through the Residential Electric HVAC and Residential Natural Gas HVAC Programs were not installed with a qualifying heating or cooling system.

- One (1) boiler reset control rebated through the Residential Natural Gas HVAC Program was not installed with a qualifying boiler.

AEG recommends that Central Hudson work with ICF to ensure the rebate processing system adheres to the requirement that systems are installed by a Trade Ally and programmable thermostats and boiler reset controls are installed with a qualifying heating system. The total quantity of programmable thermostats or boiler reset controls incentivized should not exceed the total quantity of heating systems installed.

Consider Modifying Equipment Offerings and Incentives

In 2012, 47 percent of furnaces rebated had an AFUE $\geq 92\%$ and 43 percent had an AFUE $\geq 95\%$ with an ECM fan. As of June 30, 2013, 95 percent of furnaces rebated had an AFUE $\geq 92\%$. Eighty-eight (88) percent of boilers were water boilers AFUE $\geq 90\%$. Steam boilers accounted for only 2 percent of rebated boilers.

AEG recommends that Central Hudson work with ICF to determine if furnaces with an AFUE $\geq 90\%$ should be removed from the program and/or if equipment rebates should be modified to encourage the purchase and installation of high efficiency systems.

Remove the Central Hudson Logo from SavingsCentral Website

The Central Hudson logo is available for download on the SavingsCentral website. AEG recommends that Central Hudson remove the logo from the website to minimize access to the logo and unapproved use of the corporate logo. Participating SavingsCentral Trade Allies can request the Central Hudson logo from ICF as needed.

Consider Providing Incentives for ENERGY STAR® Appliances

Sixty-seven (67) percent of participants surveyed suggested providing incentives for ENERGY STAR® appliances. AEG recommends that Central Hudson work with ICF to determine if ENERGY STAR® appliances are cost-effective and a viable addition to Central Hudson portfolio.

Continue SavingsCentral Marketing Campaigns to Customers and Trade Allies

The majority of program participants learned about the program from a SavingsCentral Trade Ally or word of mouth. However, only 11 percent of survey respondents reported that they were aware of other programs offered by Central Hudson.

AEG recommends that ICF continue to provide clear, accessible information to participating SavingsCentral Trade Allies. Central Hudson and ICF should also continue to aggressively promote this program as part of the SavingsCentral brand and inform customers of other energy efficiency programs.

Appendix A. Implementation Contractor Interview Guide

Program Operations

1. Describe ICF's roles/responsibilities.
2. How frequently do you interact with Central Hudson staff?
3. What changes have been made to the program since 2011?
4. Who operates the customer service line?
5. What are the hours of operation/staffing for the customer service line?
6. Are any data tracked from the customer service line?

Customer Marketing

7. How is the program marketed to customers?
8. How are marketing and outreach activities tracked?
9. What marketing and outreach methods are most effective in reaching customers?

Trade Allies

10. Describe Trade Ally recruitment.
11. Do Trade Allies receive any education/training? Describe.
12. How often do you reach out to Trade Allies once they are enrolled?
13. Do Trade Allies market the program to customers? What resources are provided?

Participation Process

14. How do customers enroll?
15. How is eligibility verified? Are all HVAC systems required to receive a quality installation?
16. Who submits the rebate application?
17. Describe rebate processing.
18. What reports does CHGE have access to?
19. Describe the QA/QC policies.

Program Satisfaction/Barriers

20. Have you received any customer feedback regarding the program, satisfaction and opportunities for improvement?
21. Do you have an indication of the level of customer satisfaction with the service and quality of work provided by the Trade Allies?
22. What do you see as the biggest barriers to program participation? How could the program be improved?
23. Have you considered expanding the program to include additional measures?

Comments

Appendix B. Program Participant Survey Guide

Hello, my name is _____ and I’m calling on behalf of Central Hudson Gas & Electric. According to our records, your household participated in Central Hudson’s Residential Natural Gas HVAC Program.

Do you recall participating in the program?

- Yes
- No (“The program provides rebates to customers that purchase and install energy efficient heating equipment for their homes.” If they still do not remember **Terminate Interview.**)

May I ask you a few questions about your participation?

- Yes
- No (See if they agree to another date/time: If “No,” thank them for their time, and exit.)

Program Participation

1. How did you first become aware of the program?

- SavingsCentral Trade Ally
- Central Hudson website
- Bill insert
- Postcard
- Twitter
- Facebook
- Store Ad
- Newspaper Ad
- Word of Mouth

2. Why did you decide to participate?

- Trade Ally recommended
- Needed a new heating system
- Wanted to save money
- Seemed like a good deal/offer from the utility
- Wanted to save energy

3. Did you add this equipment to your residence, replace operating existing equipment, or replace failed equipment?

	Add	Replace Operating	Replace Failed
Natural Gas Furnace			
Natural Gas Boiler			
Indirect Water Heater			
Boiler Reset Control			

4. About how long did it take to receive the rebate from the time the equipment was installed?

- 1 week
- 2 weeks
- 3 weeks
- 1-2 months
- 2-4 months
- More than 4 months

5. Rate your satisfaction with the following program components on a five-point scale, where “5” means “Very Satisfied” and “1” means “Very Dissatisfied.” How satisfied are you with the:

	Satisfaction
Rebate application	
Rebate processing time	
Types of equipment eligible for the program	
Performance of the new equipment installed as compared to the equipment replaced	
Program as a whole	

6. Would you recommend the Trade Ally to someone else?

- Yes
- No

7. Why do you say that?

- Quality work
- Professional
- Efficient/quick installation
- Good customer service
- Did not finish on time
- Unprofessional
- Poor customer service

Free Ridership

8. Had you been planning to purchase a new *{measure}* with the EXACT SAME efficiency, within three months of participating in the program?

Measure Group	Furnace	Water Boiler	Steam Boiler	Indirect Hot Water Heater	Air Sealing
Yes					
No (skip to Q10)					

9. What factors kept you from purchasing and installing a new *{measure}*?

	Furnace	Water Boiler	Steam Boiler	Indirect Hot Water Heater	Air Sealing
I did not have the money					
I wasn’t sure how long I would remain in my home					
I wasn’t sure what type of system/brand to install					
I was not convinced I would save more					
I did not have a contractor I felt I could trust					

10. If Central Hudson had NOT offered the rebate, how likely is it that you would have purchased and installed *{ }* with the EXACT SAME efficiency within 3 months of participating in the program?

	Furnace	Water Boiler	Steam Boiler	Indirect Hot Water Heater	Air Sealing
Very likely					
Somewhat likely					
Neutral					
Somewhat unlikely					
Very unlikely					

Spillover

11. As a result of your participation in the program, have you taken any other steps to reduce your energy use?

- Yes
- No (skip to Q13)

12. Have you taken the following actions?

If YES, “How much influence did the program have in this decision?”

Action	No	Yes	Program Influence (1-4)
Upgrade to Energy Star Appliances			
Replace incandescent light bulbs with CFL			
Replace incandescent light bulbs with LEDs			
Install new efficient doors			
Install new efficient windows			
Install / upgrade insulation (walls, ceiling, attic)			
Insulate water heater/installed pipe insulation			

Are there any other energy savings actions you have taken?

Barriers to Participation

13. Would you recommend this program to others?

- Yes
- No

14. Why do you say that?

- It saves natural gas/we need to conserve it
- It saves money
- It’s easy to do
- It’s a good program
- It’s time consuming
- Difficult to participate in the program

15. How could the program be improved?

- Make it available to more people
- Higher incentives
- More publicity
- Faster incentive processing
- Explain the program more
- Better communication
- No suggestions

16. What other energy efficiency products would you like Central Hudson to provide incentives for?

- CFLs
- LEDs
- Insulation
- Energy Star Refrigerator
- Energy Star Dishwasher
- Energy Star Clothes Washer

17. Are you aware of other energy efficiency programs offered by Central Hudson?

- Yes
- No (skip to Q19)

18. Which programs?

- Residential Appliance Recycling
- Residential Electric HVAC
- Home Energy Comparison Reports

Customer Demographics

19. Which of the following best describes your residence?

- Single family house
- Multi-family house
- Apartment
- Townhouse

Thank you for taking the time to answer my questions!

Appendix C. Trade Ally Survey Guide

Hello. My name is _____ and I’m calling on behalf of Central Hudson Gas & Electric. We are currently conducting an evaluation of Central Hudson’s Commercial and Residential HVAC energy efficiency programs and would like to ask you a few questions about your participation as a Trade Ally.

Program Awareness

1. How did you first hear about Central Hudson’s HVAC Programs?
 - a. Central Hudson
 - b. Advertisement
 - c. Internet
 - d. SavingsCentral Website
 - e. Customer
2. How long have you been a Trade Ally?
3. How often do you interact with Central Hudson/ICF personnel?
 - a. Daily
 - b. Weekly
 - c. Monthly
 - d. Never

4. How satisfied are you with:

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Central Hudson staff					
ICF staff					

5. What is the best way to for Central Hudson/ICF to communicate program information?
 - a. In-person meetings
 - b. Email
 - c. Telephone

Customer Participation/Satisfaction

6. How are customers typically made aware of the HVAC programs?
 - a. Trade Ally
 - b. SavingsCentral website
 - c. Central Hudson
 - d. Advertisement
7. In your opinion, how satisfied are Central Hudson customers with the HVAC programs?
 - a. Very Satisfied
 - b. Satisfied
 - c. Neutral
 - d. Dissatisfied
 - e. Very dissatisfied
8. What is the most common feedback that customers have about the program? Please describe.
9. What barriers exist that may prevent a customer from participating in the program? Please describe.

Application/Program Tracking

10. Do you feel rebate applications are processed in a timely manner? Please describe.
11. Is there any information missing that you feel would be valuable to track? Please describe.

12. How satisfied are you with the:

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Eligible measures					
Incentives					
Program Overall					

13. What aspects of the program could be improved? How?

14. Do you have any additional comments about the program?

Appendix D. Trade Ally Focus Group Guide

Good morning and welcome. My name is _____ and I am the moderator for this morning's discussion. I am here on behalf of Central Hudson Gas & Electric to conduct a focus group to obtain feedback on the Residential & Commercial HVAC Programs.

Program Awareness and Participation

1. How did you first hear about Central Hudson's *Residential and/or Commercial HVAC Program(s)*? What made you decide to participate as a Trade Ally?
2. Do you feel you were properly informed about the *Residential and/or Commercial HVAC Program(s)* when becoming a Trade Ally?
 - a. How are you kept abreast of current program information?
 - b. Would you like to see any changes regarding how program information is communicated to you? Please describe.
3. What do you believe are the most effective aspects of the *Residential and/or Commercial HVAC Program(s)*?
4. Do you feel any changes could be made to the program to make it more attractive to customers? Please describe.
5. Describe any barriers that you've seen which cause customers not to participate in the program. How could these barriers be removed?
6. How would you describe your interaction with Central Hudson or ICF in regards to the *Residential and/or Commercial HVAC Program(s)*? What would you consider some of ICF's strongest features?

Customer Interaction

7. Describe the feedback heard from Central Hudson customers in regards to the *Residential and/or Commercial HVAC Program(s)*.
8. Describe the feedback heard from Central Hudson customers in regards to interaction with ICF.
9. Describe the type of energy efficiency measures that you installed as a result of this program?
 - a. Have you seen a noticeable increase of installation for a specific type of measure?
 - b. Have you seen a noticeable decrease of a requested measure?
10. What customer issues occur on a regular basis in regards to the program and/or installation process?
 - a. How are such issues resolved?
 - b. What would you like to see happen when the issues arise?
11. Can you describe a positive and/or negative encounter with a Central Hudson customer?

Application Processing/Program Tracking

12. Is the application easy to complete? What information is missing from the application that you would like to see included?
13. Do you feel applications are processed in a timely manner? Is payment received in a timely manner?
14. Describe any problems that arose when processing a customer application.
 - a. What were the issues?
 - b. How were the issues resolved?

15. What has customer feedback been in regards to the application process?
16. How would the application process be improved?
17. How do you monitor program participation at your company?
18. Do you ever request information from ICF or Central Hudson?
 - a. If so, what is the process for requesting information?
 - b. What type of information do you request?
 - c. How long does it take to receive this information?
 - d. Describe how the process can be improved in any way.

Closure of Discussion

19. Do you have any messages for Central Hudson or ICF?
20. How can Central Hudson, ICF, or a Trade Ally improve their image in the community?