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MidAmerican Energy Company

Residential Equipment Program Impact and Process Evaluation

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1.0 EXECUTIVE SUMMARY

MidAmerican Energy Company (MidAmerican) offers energy efficiency programs to their customers throughout their Iowa and Illinois service territories. These programs cover electric and natural gas energy efficiency measures and the Residential Equipment program provides incentives for equipment upgrades. This report details the activities, results, and recommendations from the evaluation of program years (PY) 2019 for Iowa and Illinois and the first quarter (Q1) of PY2020 for Iowa[1].

1.1 BACKGROUND

The Residential Equipment program encourages residential customers to purchase energy efficient equipment by providing rebates to offset the higher purchase cost of efficient equipment, as well as customer education of energy efficiency opportunities. The program is available to all residential customers and landlords for both new and existing homes and duplexes in MidAmerican's service territories in Iowa and Illinois[2].

1.2 EVALUATION METHODOLOGY

The evaluation included both impact and process components. To help guide both, the Tetra Tech team conducted interviews with MidAmerican program staff and implementation staff from Nexant. For the impact evaluation, the Tetra Tech team reviewed the applicable savings algorithm source, using MidAmerican's tracked "install date" as the key reference point to determine the prescribed energy savings and to confirm tracked savings were appropriately calculated (see Table 1). Additionally, the Tetra Tech team conducted both primary net-to-gross (NTG) research with Illinois program participants and a literature review to help inform NTG findings.

Table 1. Prescribed Savings Source

State	Install Date Range Evaluated	Technical Reference Manual Version
Iowa	4/1/2019 to 12/31/2019	Iowa, Version 3
Iowa	1/1/2020 to 4/1/2020	Iowa, Version 4
Illinois	1/1/2019 to 12/31/2019	MidAmerican's Appendix A

For the process evaluation, the Tetra Tech team reviewed program materials and conducted interviews with PY2019 and PY2020 Q1 participating trade allies and customers. The Tetra Tech team also included equipment-related questions in an omnibus telephone survey of MidAmerican residential customers who had not participated in an energy efficiency program in the previous two years based on the time they were surveyed. Results were analyzed to better understand the current state of the equipment market and consumers' understanding, use, and purchasing behaviors.

[1] Due to legislative changes in Iowa in 2019, MidAmerican refiled their 2019-2023 program plan resulting in a delayed launch of programs in Iowa. Therefore, for Iowa only, the Tetra Tech team assessed program activities from April 1, 2019 through December 31, 2019 of PY2019 and additionally assessed the first quarter activities of PY2020 (January 1, 2020 through March 31, 2020).

[2] Newly constructed multi-family homes with three or more units can obtain services and incentives through the Commercial New Construction program.

1.3 SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

Overall, it is the opinion of the Tetra Tech team that the MidAmerican Residential Equipment program team has worked diligently and effectively to keep the program running smoothly, particularly given the change in policy and implementer, as well as the recent transition to a new tracking database. Surveyed program participants and trade allies reported high levels of satisfaction with the program. They are happy with both their interaction with program staff and support provided through the program, finding it easy to reach someone when they need assistance.

A high proportion of customers become aware of the program and rebate opportunities through MidAmerican sources, and typically received the details for program eligibility, equipment recommendations, and rebate amounts from their interaction with trade allies. The trade allies noted that they receive the information they need to accurately inform customers of the program, and also provided a few suggestions for improvements. While processes such as alternate payee follow-up and who is contacted for missing application information created some misunderstandings, these procedures have been put in place for good reasons and are implemented systematically. Increased awareness and uptake by trade allies in the newly available online application will benefit some of the contractors we spoke with, improve the accuracy of the information collected, and largely improve the speed of incentive payments.

Both the trade allies and participants that were interviewed appreciate the incentives and support from MidAmerican to encourage energy efficiency. One area of concern raised by trade allies, that the program has less control of, is the effect of the decrease and elimination of incentives. While trade allies reported little change in the volume of their work, with the exception of insulation contractors, they have observed that some customers are reverting back to equipment that is less energy efficient and more budget-friendly.

The impact evaluation resulted in high realization rates overall. Realization rates for therms and peak therms were both 100 percent for Iowa and Illinois. Realization rates for energy (kWh) and demand (kW) varied slightly by state, between 95 percent and 100 percent. The variation in the kWh was largely a result of using default Technical Reference Manual (TRM) values for thermostats when actual information was available.

Table 2. Iowa and Illinois Savings Impacts*

Impact	Tracked Gross Savings**	Evaluated Gross Realization Rate***	Evaluated Gross Savings	NTG Ratio****	Evaluated Net Savings*****
Iowa					
kWh	2,520,934	98.0%	2,470,085	60%	1,482,051
Peak kW	1,528	97.3%	1,486	60%	892
Therms	832,637	100.0%	832,637	60%	499,582
Peak Therms	13,737	100.0%	13,737	60%	8,243

Impact	Tracked Gross Savings**	Evaluated Gross Realization Rate***	Evaluated Gross Savings	NTG Ratio****	Evaluated Net Savings*****
Illinois					
kWh	577,435	99.6%	575,058	60%	345,035
Peak kW	311	100.1%	311	60%	187
Therms	94,208	100.0%	94,208	60%	56,525
Peak Therms	1,225	100.0%	1,225	60%	735

* Numbers in the table are rounded—savings values are rounded to the nearest whole number and the realization rate is rounded to the nearest tenth of a percent. As a result, numbers may not calculate exactly in the table.

** Tracked savings shown are from the tracking data received from MidAmerican on July 20, 2020.

*** The evaluated gross realization rate calculation is the ratio of evaluated gross savings to tracked gross savings, and is described in more detail in Appendix B.

**** The NTG ratio is informed by primary data collection conducted with Illinois program participants. The NTG information in Iowa is for informational and program design purposes only.

***** Evaluated net savings are derived by multiplying the evaluated gross savings by the NTG ratio.

Through the process surveys, the Tetra Tech team learned that although trade allies reported some early hesitancy from customers to schedule projects as a result of COVID-19, both surveyed participants and trade allies are feeling more optimistic about the effects of COVID-19 as the year has progressed. During the surveys in September 2020, less than 10 percent of respondents reported that COVID-19 impacted actions they would take in their home. The trade allies we spoke with are finding enough project work, but the supply chain has been a problem, resulting in delays receiving equipment. Most trade allies were optimistic about their pipeline for the next six months but said it will ultimately depend on how COVID-19 numbers change and rebounds in manufacturing.

Next we present the key findings from the evaluation and associated recommendations.

Finding #1: Smart thermostats used the default cooling system capacity in savings calculations.

About half of the smart thermostat measures in Iowa were part of a project that included the cooling equipment (central air conditioners or heat pumps) replacement or installation. The cooling model numbers and Air Conditioning, Heating, and Refrigeration Institute (AHRI) sheet were included in the participant documentation but tracked in the central air conditioner or heat pump measure. This actual value was not applied to the associated thermostat measure; instead, the default Iowa TRM cooling capacity was used to calculate energy savings for the thermostat. The calculation is more accurate when actual capacity and efficiencies are used. The use of documented cooling system capacities was responsible for most of the savings adjustments in this evaluation.

> *Recommendation #1: For increased accuracy in savings estimates, use the actual installed equipment capacities for thermostat calculations when that information is part of the application submitted for associated equipment measures. When the information is not included with the application, use the Iowa TRM's default sizing values.*

Finding #2: The NTG research indicates moderate program influence on customer decision-making.

Overall, responses to the participant survey resulted in a calculated free-ridership rate of 55 percent and no spillover. Both the free-ridership value and the lack of spillover seem to be in line with what the Tetra Tech team heard from trade allies as well as customers. This is particularly true for spillover—that

is, the equipment currently incentivized through the program are large and relatively expensive, and thus, customers are not likely to install another similar central air conditioner or furnace on their own.

Although half of the surveyed Illinois participants said they followed the contractor recommendation on what to install, half also said they had already been planning to install the same high-efficient equipment before they learned about the rebate available through the Residential Equipment program. Responses from Illinois participants to the question of their likelihood of purchasing the exact same equipment without the rebate provided through the Residential Equipment program showed that 56 percent were highly likely (rating 9 or 10) to purchase the equipment on their own. Seven percent said they were unlikely to purchase it without the incentive (ratings 0 to 4). However, 48 percent of the Illinois respondents rated the influence of the rebate high (9 or 10). Another 40 percent rated the rebate influence between 5 and 8. Trade allies also reported some program influence, but as noted earlier, the lower incentive levels seem to be sending customers back to non-eligible program equipment.

Benchmarking of other programs in Illinois show NTG rates of 63 to 83 percent, though these included a large amount (8 to 12 percent) of nonparticipant spillover from trade ally studies. For MidAmerican, the addition of air source heat pumps and ductless min-splits in Iowa in July 2020 may stabilize NTG, as long as trade allies can generate projects that do not result in fuel switching.

It is important to note that the NTG estimates are subject to multiple sources of uncertainty, including sampling error and measurement error due to problems of respondent recall, the challenge of answering hypothetical questions about actions they might have taken in the absence of the program, and the assumption that a 0 to 10 influence score is linear and accurately reflects the impact of the program on the customer's decision. The Tetra Tech team has taken multiple steps to mitigate this uncertainty by adhering to best practices in the design of representative samples, the use of the self-report approach in estimating NTG, the use of effective strategies to minimize non-response, and the testing of NTG questions to ensure construct validity.

> *Recommendation #2: We recommend a NTG ratio of 60 percent for the Residential Equipment program in Illinois.*

Finding #3: Outreach to customers from both trade allies and utility sources is important.

At least two-thirds of the nonparticipants surveyed were aware that MidAmerican offers rebates and services to customers to help them save energy, and half had specifically heard of the equipment rebates. Nonparticipating survey respondents were more likely than surveyed participants to mention that they heard about the program from a MidAmerican bill insert (36 percent) or brochure (17 percent), which would explain why they are aware of the program, but maybe not the specific incentives or eligibility requirements. In addition, 20 percent of nonparticipating survey respondents heard about the program from a friend, family member, or co-worker, compared with about 13 percent of surveyed participants.

This corresponds with the trade allies reporting that residential customers tend to come to them aware that there is something available through MidAmerican, but they are unsure of the actual incentive levels or equipment eligibility. Trade allies said they provide this level of information and education, which is further exemplified by the high proportion of participating surveyed respondents (59 percent Iowa and 75 percent Illinois) that indicated a contractor or retailer was their primary source of information about the program.

There was a high proportion of older customers who completed the participant and nonparticipant surveys. This may be a reflection of the demographics across the MidAmerican territory, and/or that the measures currently eligible for rebates through the program are higher-cost measures typically installed

in single-family homes by higher-income earners who tend to be older. This also may indicate an opportunity to develop more targeted marketing to reach younger homeowners.

> *Recommendation #3: Consistent with previous findings, continue portfolio-level marketing efforts and engaging trades to help educate customers on program offerings. Further, investigate social media options for reaching younger homeowners.*

Finding #4: The application process is frequently completed by trade allies who have dedicated staff to work on applications.

All trade allies interviewed mentioned completing the application for their customers in some capacity, many completing all of it. About 20 percent of surveyed participants said they filled out the application themselves and 42 percent said they had help from their contractor. Both trade allies and surveyed participants reported the application was easy to understand, complete, and submit. MidAmerican has recently launched the online application option for trade allies; half of those we spoke with have signed up to use the online application, but half have not. Questions arose regarding contact procedures for alternate payees and issue resolutions, but these are quality control processes that are documented and instituted to prevent issues.

> *Recommendation #4: Continue to work with trade allies to facilitate the use of the electronic application process and provide timely responses to questions.*

Finding #5: Surveyed program participant and trade ally satisfaction remains high, but trade ally satisfaction could be improved.

Among surveyed participants, the overall program satisfaction rating was higher in Illinois, with 94 percent rating their satisfaction as very or extremely satisfied, compared with 78 percent in Iowa (previously 87 percent). The decrease in overall program satisfaction in Iowa is at least partially a result of the decrease in incentive amounts, as the proportion of very or extremely satisfied ratings for “the amount of the incentive received” was 63 percent in Iowa and 73 percent in Illinois (previously 76 percent and 91 percent, respectively). Ratings for other aspects of the program remain high and similar to the previous evaluation results. In addition, 60 percent of the surveyed participants said they were extremely likely to recommend the program to others.

Half of the trade allies interviewed said they were very satisfied with the program. They were also highly likely to recommend the program to a peer. However, some trade allies suggested increased communication about the program would be appreciated, noting they have not been able to attend annual vendor meetings and may not hear about program updates until they submit an application.

> *Recommendation #5: Include messaging about non-rebate benefits to help lessen potential disappointment with lower incentives. Continue to investigate additional methods for increasing proactive communication with trade allies, potentially supplementing in-person vendor annual meetings with webinars.*

2.0 INTRODUCTION

This report presents the detailed Residential Equipment program impact and process evaluation results for PY2019 in Iowa and Illinois and PY2020 Q1 for Iowa.

2.1 PROGRAM DESCRIPTION

The Residential Equipment program encourages MidAmerican's residential customers to purchase energy efficient equipment by providing rebates to offset the higher purchase cost of efficient equipment and educates customers on energy efficiency opportunities. The program is available to all residential customers and landlords for both new and existing homes and duplexes in MidAmerican's service territories in Iowa and Illinois[3]. For the 2019-2023 Energy Efficiency Plan, the number of measures eligible for incentives and the amount of available incentives were both reduced compared to the last five-year plan. The PY2019 and PY2020 Residential Equipment program in Iowa and Illinois includes rebates for the following measures:

- Natural gas furnaces
- Central air conditioners
- Air source heat pumps
- ENERGY STAR® listed-WiFi-enabled smart thermostats
- Ductless Minisplit Air Source Heat Pumps[4]

In addition to the measures listed above, the following equipment was offered in Illinois as part of the PY2019 program. Beginning with PY2020, this equipment is no longer offered in Illinois:

- Furnace fans
- Ground source heat pumps
- Window air conditioners
- Programmable thermostats
- Heat pump water heaters

MidAmerican staff provides overall strategic direction, research and development, customer outreach, trade ally support, and other administrative functions for the program. MidAmerican contracts with a third-party program implementation contractor (currently Nexant) that provides customer support services through its call center, manages application processing, tracks program data, and verifies equipment installations meet program guidelines. Nexant also continues to oversee all trade ally outreach for MidAmerican's programs, including providing Trade Ally Ambassadors as the main trade ally point of contact.

Trade allies play a key role in the delivery of the program. Trade allies are the primary customer outreach arms of the program, informing customers of the program and available rebates for qualifying energy efficient equipment. The program continues to have a robust network of trade allies, including

[3] Newly constructed multi-family homes with three or more units can obtain services and incentives through the Commercial New Construction program.
[4] Only offered in Illinois.

HVAC dealers and contractors, plumbing, and mechanical contractors. Trade allies commonly build program rebates into their project quotes to customers and help customers complete and submit rebate applications.

2.1.1 Summary of Researchable Questions and Evaluation Activities

This section describes the analytic methods and data collection activities implemented as part of the PY2019 and PY2020 Q1 impact and process evaluation of the MidAmerican Residential Equipment program. The Tetra Tech team designed a methodology to evaluate the program and address the researchable questions outlined in the program's Detailed Evaluation Plan[5] and addressed other issues that became relevant during the evaluation process.

2.1.1.1 Key Researchable Questions

Based on discussions with the MidAmerican product manager, energy efficiency director, and implementation contractor, key researchable questions were developed and prioritized for the evaluation of the Residential Equipment program, and then addressed within the customer and trade ally research as well as the impact evaluation activities. The table below outlines the researchable questions that this evaluation examined.

Table 3. Residential Equipment Program Researchable Questions

Researchable Questions	Activity to Support the Question
Program Design	
How have the recent changes in rebate levels affected customer participation in the program? How are they affecting trade allies?	• Program and implementation staff interviews • Trade ally interviews • Participant surveys
What are the primary barriers preventing customers from installing program-qualifying equipment? How effective has the program been at addressing these barriers?	• Participant surveys • General population survey • Trade ally ambassador interviews • Trade ally interviews
Customer Education, Outreach, and Marketing	
How effective is education of trade allies on program requirements? What additional support could be provided?	• Program and implementation staff interviews • Trade ally interviews • Trade ally ambassador interviews
Are program requirements clear to trade allies and customers?	• Participant surveys • Trade ally interviews
How effective are marketing efforts undertaken as part of the program? How does MidAmerican get the most out of marketing efforts?	• Participant customer survey • General population survey • Trade ally ambassador interviews • Trade ally interviews

[5] A select group of Iowa and Illinois stakeholders were provided an opportunity to review and comment on the draft Residential Equipment Detailed Evaluation Plan in June of 2020.

Researchable Questions	Activity to Support the Question
What is the level of customer awareness of the program? What more can/should MidAmerican do to increase program awareness among its customers?	• Trade ally interviews • General population survey
Program Administration, Processes, and Resources	
Do trade allies fully understand requirements for central air source heat pumps and ductless mini-splits? Is any additional support needed?	• Program and implementation staff interviews • Trade ally interviews • Trade ally ambassador interviews
Are program quality assurance and quality control processes adequate and effective?	• Program and implementation staff interviews • Trade ally interviews • Program information review
How do trade allies feel about the online application process? Are there any other program processes that could be more efficient and/or effective? If so, how can those processes be improved?	• Program and implementation staff interviews • Trade ally interviews • Program information review
Program Satisfaction	
What is the level of satisfaction with the program? How can satisfaction be improved, if at all?	• Participant survey • Trade ally interviews
How satisfied are customers with MidAmerican?	• Participant survey
How satisfied are customers with their contractor?	• Participant survey
Program Impacts	
What assumptions were used to develop savings estimates? Are there any updates that should be made?	• Program tracking data review • Review of the Iowa TRM
What are the program's verified gross savings for Iowa and Illinois for the evaluation period?	• Program database review • Project-level engineering desk reviews • Project verification
What is an appropriate NTG ratio for the program in Iowa and Illinois?	• Participant survey • Trade ally interviews • Literature review

2.1.2 Detailed Evaluation Activities

Table 4 documents the activities that were completed as part of this evaluation. The evaluation focused on verifying program impacts and providing key feedback on the functionality of program processes.

Table 4. Summary of Residential Equipment Program Evaluation Activities

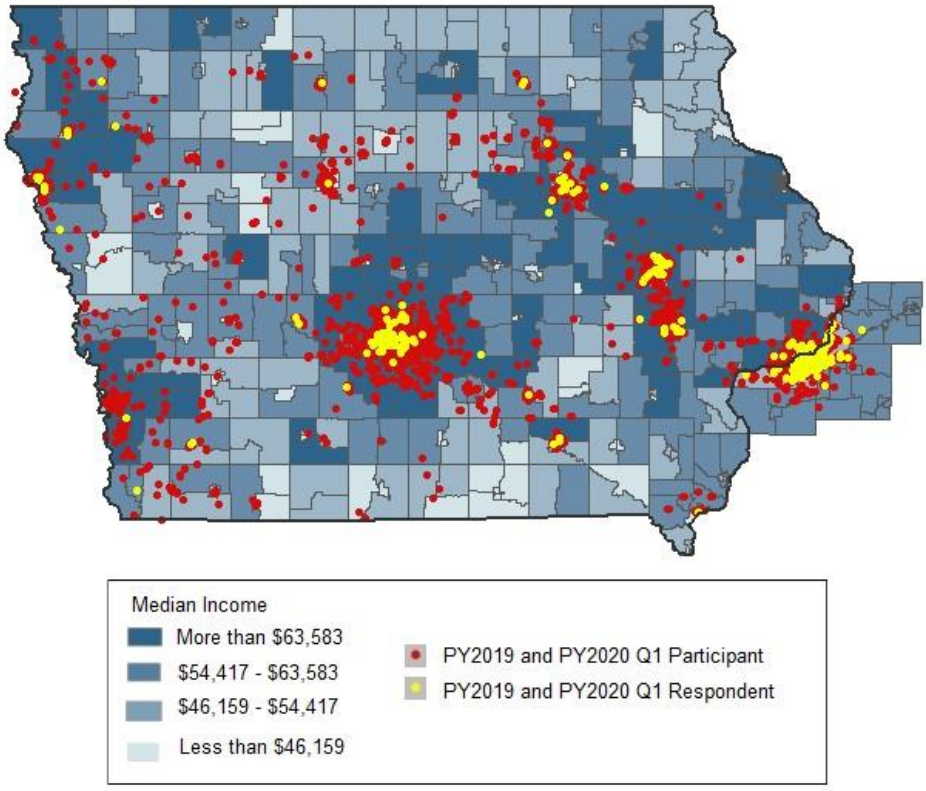
	Activities
Overarching Evaluation Activities	**Program staff interviews:** Conducted in-depth interviews with the product manager and energy efficiency director, the program implementation contractor, and trade ally ambassadors. **Tracking system review:** Analyzed the tracking database, savings tracked, and documentation for consistency. This included a full replication of savings for the Iowa projects. **Program documentation review:** Assessed completeness of program documentation. **Net-to-gross:** Estimated free-ridership and spillover effects from Illinois participant customer self-reports, triangulated with trade ally views (qualitative only), and a secondary review of NTG values in Illinois.
Impact Evaluation Activities	**Engineering desk reviews:** Conducted engineering desk reviews of 39 prescriptive PY2019 and 12 prescriptive PY2020 Q1 projects for 51 customers and a total of 101 installed measures. This included reviewing engineering inputs, assumptions, calculations, and documentation, comparing those to the Iowa TRM V3 and V4 and to MidAmerican's Appendix A, as appropriate. **Program participant survey:** As part of the program participant survey, respondents were asked to confirm equipment installations.
Process Evaluation Activities	**Program participant survey:** Completed 162 surveys with Iowa participants and 157 surveys with Illinois participants. The survey was conducted with a sample of the population of PY2019 and PY2020 Q1 program participants. **Nonparticipant customer survey:** Completed 198 customer surveys with a random sample of residential customers in MidAmerican's Iowa service territory who had not participated in a MidAmerican energy efficiency program in the past two years. **Trade ally interviews:** Conducted 13 semi-structured interviews with participating contractors in Iowa and Illinois.

The figure[6] below shows the location of MidAmerican's customers who participated in the Residential Equipment program in red and the participants who responded to the telephone surveys in yellow, against the median income by county to show where program opportunity exists and where program activity has been achieved[7]. The Tetra Tech team notes that the map reflects a dense are of yellow dots assembled in the far-right side of the map. These survey completes are in MidAmerican's Illinois service territory. Because Illinois requires a NTG ratio, the Tetra Tech team had to complete a statistically valid number of surveys across MidAmerican's small Illinois service territory, which created the concentration of survey completes in this geographic area.

[6] Iowa median income data was sourced from: https://www.iowadatacenter.org/data/acs/econ/poverty/ctecon
Illinois median income data was sourced from: http://proximityone.com/ustr0509_il.htm
and: https://www.census.gov/data/datasets/2018/demo/saipe/2018-state-and-county.html

[7] This information is also tracked in MidAmerican's database by zip code. Information can be provided at this level, if desired.

Figure 1. Residential Equipment Participants and Surveyed Respondents by County Median Income



Below is more detail related to the methodologies used for the different evaluation activities associated with MidAmerican's Residential Equipment program evaluation.

- **Program and implementation staff interviews.** Tetra Tech team members interviewed the MidAmerican product managers, representatives from the implementer, and trade ally ambassadors to understand the program design, delivery protocols, and customer and trade ally touchpoints.
- **Participant data tracking review.** The Tetra Tech team assessed MidAmerican's tracking database inputs for Residential Equipment prescriptive measures based on the Iowa TRM V3 and V4, and MidAmerican's Appendix A (for select Illinois projects). The Residential Equipment program tracking data provided information on participating customers, fuel type, incentives, and project level savings. The Tetra Tech team recalculated measure level energy savings for all Iowa projects. The recalculation was based on the appropriate Iowa TRM version and used the tracked data's attributes as needed. This task is implemented to help identify any potential systematic adjustments that may need to be made to the measure-level savings.
- **Participant customer survey.** The Residential Equipment program evaluation included a survey of 162 PY2019 and PY2020 Q1 program participants in Iowa and 157 PY2019 program participants in Illinois. The participant customer survey was used to inform both process and impact evaluation objectives. The survey investigated program delivery processes, interactions with the program staff, preferred communication channels, NTG effects (free-ridership and spillover for Illinois participants), satisfaction with different facets of the program, and demographic information. The past survey instrument was leveraged to identify questions that warranted tracking over time. The participant customer survey was administered through Tetra

Tech's in-house survey research center between July 30 and September 9, 2020. A copy of the participant survey can be found in Appendix C.

- **Nonparticipant survey.** The Tetra Tech team conducted a nonparticipant survey, completing interviews with 198 residential customers to support the evaluations of MidAmerican's residential programs in its Iowa service territory. Among other items, the questions assessed consumer awareness of different program offerings, interest in program participation and rebates, energy efficiency attitudes, and any recent energy efficiency activity. The nonparticipant surveys were administered through Tetra Tech's in-house Survey Research Center in September 2020. A copy of the nonparticipant survey can be found in Appendix D.
- **Trade ally interviews.** The Tetra Tech team conducted a total of 13 semi-structured interviews with participating trade allies in Iowa and Illinois. In July 2020, MidAmerican provided the Tetra Tech team with participating trade ally tracking data. Interviews with participating trade allies explored perceptions of the program's design, interactions with the program staff, program operations, customer experiences, and market trends. Trade ally interviews were conducted by Tetra Tech team senior staff in August and September 2020. A copy of the trade ally interview guide can be found in Appendix E.
- **NTG assessment.** Primary NTG information was collected from the Illinois program participant survey from which the Tetra Tech team estimated free-ridership and participant spillover effects. The trade ally interviews also investigated qualitative indicators of the program's influence on customer decision-making and trade ally practices. Additionally, the Tetra Tech team conducted a secondary review of NTG values used by similar utility programs in Illinois.
- **Engineering desk reviews.** The Tetra Tech team reviewed a random sample of 51 projects—41 prescriptive customer applications in Iowa and 10 prescriptive customer applications in Illinois, for a total of 101 measures reviewed. These reviews verified the documented installed equipment specifications to ensure the correct application of the savings algorithms and reviewed all available information regarding the efficiency of the existing equipment that was replaced. Project-specific results where adjustments were made can be found in Appendix A.

3.0 PROGRAM SAVINGS AND IMPACT EVALUATION FINDINGS

This section presents the results for the Residential Equipment program impacts for PY2019 in Iowa and Illinois and PY2020 Q1 for Iowa. We designed the impact evaluation around the key researchable questions identified in the methodology section 2.1.1. First, we present the program savings and then discuss the tracking, engineering, and data reviews.

3.1 PROGRAM SAVINGS

In this subsection, we present the electric and natural gas energy and demand savings results separately for Iowa and Illinois. For each service territory, the Tetra Tech team selected a sample of measures for review. In addition to the selected sample project measures, we included any other measure completed at the same customer premise to increase the number of measures reviewed.

3.1.1 Iowa

For Iowa in PY2019, the Residential Equipment program had 9,515 unique program participants that installed 14,042 measures, for an average of almost 1.5 individual measures per participant[8]. In PY2020 Q1, 2,276 unique program participants installed 3,418 measures, for a similar average of nearly 1.5 individual measures per participant. The Tetra Tech team reviewed this data file and recalculated savings based on the appropriate Iowa TRM version for thermostats, furnaces, furnace blowers, and central air conditioners.

Next, the Tetra Tech team selected a sample of projects for desk reviews. The individual measures tracked in MidAmerican's database were classified by fuel source and technology strata, as shown in the table below ("Measure Category"). The sample was allocated among these strata based on the individual stratum savings and the expected uncertainty for each technology listed. Within each of the strata, the Tetra Tech team randomly selected individual projects to assess. However, as mentioned earlier, any additional measures completed at the same premise were also reviewed to increase the total number of measures reviewed and increase overall confidence and precision levels.

The Tetra Tech team completed desk reviews of 41 individual customer projects totaling 77 measures. Based on the desk reviews, the Tetra Tech team made savings adjustments to 12 electric savings projects and zero natural gas savings measures. Appendix A of this report provides detailed results for those projects where adjustments to savings were made. Mostly, the adjustments were to the smart thermostats installed with new cooling equipment. This project included a new air conditioner or heat pump, with the smart thermostat calculation using the default cooling capacity to determine savings. The Tetra Tech team used the actual cooling capacity of the equipment installed as part of the project because using actual data results in more accurate savings estimates, and the Iowa TRM allows for this method to be used for this measure.

[8] For evaluation purposes, a unique participant is described as a unique premise ID. Therefore, customers who completed measures across multiple locations would be counted as multiple participants.

Table 5. Engineering Desk Reviews Sample by Measure Category* - Iowa

Measure Category	Number of Measures	Number of Unique Participants**	Tracked Gross Savings (kWh)	Number of Sampled Electric Measures	Tracked Gross Savings (Therms)	Number of Sampled Gas Measures
Air Source Heat Pump	20	20	30,774	1	N/A	N/A
Central Air Conditioner	6,088	6,005	2,014,755	27	N/A	N/A
Furnace	8,533	8,434	N/A	N/A	751,393	32
Furnace Blower Motor***	55	55	25,798	1	N/A	N/A
Smart Thermostat	2,685	2,578	449,608	13	79,576	13
Programmable Thermostat	79	79	1,923	0	1,668	1
Total	**17,460**	**11,791**	**2,522,857**	**42**	**832,637**	**46**

* Numbers reflected in this table are from tracking data received from MidAmerican on July 20, 2020.

** The total unique participant count does not match the sum of the participants for the individual measure categories due to some customers completing measures across multiple strata.

*** Furnace blowers are not rebated as part of MidAmerican's current Plan, but some projects did make it into the valid population based on Install Date.

The Tetra Tech team's impact evaluation of Iowa projects resulted in an overall gross realization rate for electric measures of 98.0 percent with 2.6 percent relative precision at the 90 percent confidence interval for kWh and 97.3 percent with 2.2 percent relative precision for kW. The slight reduction from 100 percent was due to the smart thermostat equation using the default air conditioning capacity as opposed to the customer reported. The overall gross realization rate for therms and peak therm savings was 100.0 percent for each, with a relative precision of 0 percent, which is expected when the realization rate is 100 percent.

Table 6. PY2019 and PY2020 Q1 Tracked and Evaluated Impacts* - Iowa

Measure Category	Tracked kWh**	Evaluated kWh	kWh Realization Rate***
Air Source Heat Pump	30,774	30,774	100.0%
Central Air Conditioner	2,014,755	2,014,755	100.0%
Furnace Blower Motor	25,798	25,798	100.0%
Smart Thermostat	449,608	398,759	88.7%
All Projects	**2,520,934**	**2,470,085**	**98.0%**
Measure Category	**Tracked Peak kW****	**Evaluated Peak kW**	**Peak kW Realization Rate*****
Air Source Heat Pump	1	1	100.0%
Central Air Conditioner	1,330	1,330	100.0%
Furnace Blower Motor	0	0	100.0%
Smart Thermostat	196	155	78.9%
All Projects	**1,528**	**1,486**	**97.3%**

Measure Category	Tracked Therms**	Evaluated Therms	Therms Realization Rate***
Furnace	751,393	751,393	100.0%
Smart Thermostat	79,576	79,576	100.0%
Programmable Thermostat	1,668	1,668	100.0%
All Projects	**832,637**	**832,637**	**100.0%**
Measure Category	**Tracked Peak Therms****	**Evaluated Peak Therms**	**Peak Therms Realization Rate*****
Furnace	12,401	12,401	100.0%
Smart Thermostat	1,315	1,315	100.0%
Programmable Thermostat	22	22	100.0%
All Projects	**13,737**	**13,737**	**100.0%**

* Numbers in the table are rounded—savings values are rounded to the nearest whole number and the realization rate is rounded to the nearest tenth of a percent. As a result, numbers may not calculate exactly in the table

** Tracked savings shown are from the tracking data received from MidAmerican on June 20, 2020.

*** The evaluated gross realization rate calculation is the ratio of evaluated gross savings to tracked gross savings, and is described in more detail in Appendix B.

3.1.1 Illinois

For Illinois in PY2019, the Residential Equipment program had 822 unique program participants that installed 2,022 measures, for an average of almost 2.5 individual measures per participant. The Tetra Tech team assessed the PY2019 data tracking file but did not recalculate savings, like was done for Iowa. This is because the savings for most of the 2019 Illinois projects were calculated using MidAmerican's Appendix A. In 2020, MidAmerican updated the savings calculations for Illinois projects to reflect the Iowa TRM savings. Because of this, the Tetra Tech team did not believe it was necessary to recalculate savings for the PY2019 tracking system.

From the 2019 population of participants, the Tetra Tech team selected a sample for desk reviews. The completed measures were classified by fuel source and technology strata, as shown in the table below ("Measure Category"). The sample was allocated among these strata based on the individual stratum savings and the expected uncertainty for each technology listed. Within each of the strata, the Tetra Tech team randomly selected measures. However, as mentioned earlier, any additional measures completed at the same premise were also reviewed to increase the total number of measures reviewed and increase overall confidence and precision levels.

The Tetra Tech team reviewed 10 projects for a total of 24 measures. The tracked savings were consistently lower for these measures than the evaluated savings by 0.5 percent for electric and 2.5 percent for gas. The Tetra Tech team discussed the inconsistency with MidAmerican and confirmed that the Illinois measures should claim these reductions. Once these factors were applied, savings adjustments were made to two electric savings and zero natural gas savings measures. Appendix A of this report provides details for those projects where adjustments to savings were made. The adjustments made were minor. One project included "quality install" savings in the project, but the "quality install" was not documented. The other was a minor data entry error that transposed two decimal values in the peak kW savings.

Table 7. Engineering Desk Reviews Sample by Measure Category* - Illinois

Measure Category	Number of Measures	Number of Unique Participants**	Tracked Gross Savings (kWh)	Number of Sampled Electric Measures	Tracked Gross Savings (Therms)	Number of Sampled Gas Measures
Air Source Heat Pump (Ductless Mini-Split)	38	36	59,811	2	N/A	N/A
Ground Source Heat Pump	7	7	77,105	0	N/A	N/A
Central Air Conditioner	407	397	171,775	5	N/A	N/A
Furnace	658	640	N/A	N/A	85,661	6
Furnace Blower Motor	483	471	226,551	6	N/A	N/A
Heat Pump Water Heater	1	1	4,130	1	N/A	N/A
Programmable Thermostat	422	408	37,935	4	8,547	4
Room Air Conditioner	6	6	127	0	N/A	N/A
Total	**2,022**	**822**	**577,435**	**18**	**94,208**	**10**

* Numbers reflected in this table are from the tracking data received from MidAmerican on July 20, 2020.
** The total unique participant count does not match the sum of the participants for the individual measure categories due to some customers completing measures across multiple strata.

The Tetra Tech team's impact evaluation of PY2019 Illinois projects resulted in an overall gross realization rate for electric measures of 99.6 percent with 1.3 percent relative precision at the 90 percent confidence interval for kWh and 100.0 percent with 0.2 percent relative precision for kW. The decrease in savings is due to the "quality install" supplemental savings for one install where the evaluation did not find supporting documentation for the quality install. The overall gross realization rate for therms and peak therm savings was 100.0 percent for both, with a relative precision of 0 percent, which is expected when there is a 100 percent realization rate.

Table 8. PY2019 Tracked and Evaluated Impacts* - Illinois

Measure Category	Tracked kWh**	Evaluated kWh	kWh Realization Rate***
Air Source Heat Pump (Ductless Mini-Split)	59,811	57,251	95.7%
Ground Source Heat Pump	77,105	77,105	100.0%
Central Air Conditioner	171,775	171,912	100.1%
Furnace Blower Motor	226,551	226,551	100.0%
Heat Pump Water Heater	4,130	4,130	100.0%
Programmable Thermostat	37,935	37,981	100.1%
Room Air Conditioner	127	127	100.0%
All Projects	**577,435**	**575,058**	**99.6%**

Measure Category	Tracked Peak kW**	Evaluated Peak kW	Peak kW Realization Rate***
Air Source Heat Pump (Ductless Mini-Split)	23	23	100.5%
Ground Source Heat Pump	14	14	100.0%
Central Air Conditioner	228	228	100.1%
Furnace Blower Motor	0	0	100.0%
Heat Pump Water Heater	0	0	100.0%
Programmable Thermostat	44	44	100.1%
Room Air Conditioner	0	0	100.0%
All Projects	**311**	**311**	**100.1%**
Measure Category	**Tracked Therms****	**Evaluated Therms**	**Therms Realization Rate*****
Furnace	85,661	85,661	100.0%
Programmable Thermostat	8,547	8,547	100.0%
All Projects	**94,208**	**94,208**	**100.0%**
Measure Category	**Tracked Peak Therms****	**Evaluated Peak Therms**	**Peak Therms Realization Rate*****
Furnace	1,114	1,114	100.0%
Programmable Thermostat	111	111	100.0%
All Projects	**1,225**	**1,225**	**100.0%**

* Numbers in the table are rounded—savings values are rounded to the nearest whole number and the realization rate is rounded to the nearest tenth of a percent. As a result, numbers may not calculate exactly in the table

** Tracked savings shown are from the tracking data received from MidAmerican on June 20, 2020.

*** The evaluated gross realization rate calculation is the ratio of evaluated gross savings to tracked gross savings, and is described in more detail in Appendix B.

3.2 PROJECT LEVEL TRACKING DATA AND DOCUMENTATION

As noted earlier, for both Iowa and Illinois, the impact analysis included a tracking system review of the Residential Equipment program population data queried from MidAmerican's EEMIS and VisionDSM database as appropriate by state. The Residential Equipment program tracking data was provided at the measure level. The type of data that was captured and reviewed by the Tetra Tech team included:

- Customer information (e.g., address, site contact information)
- Project level energy savings by fuel type
- Project number
- Equipment manufacturer and model number
- Equipment size and efficiency information
- Dates (e.g., install date, paid date, other date).

For sampled Iowa projects, the Tetra Tech team also reviewed project documentation to confirm equipment specifications, quantities, and prescriptive measure savings recorded. This information was aligned with Iowa TRM V3 and V4 savings algorithms, as appropriate. The Tetra Tech team reviewed all information and crosschecked data sources for consistency. The Tetra Tech team reviewed the individual project files to assess the appropriateness of the information collected to support program quality assurance and quality control (QA/QC), as part of the impact evaluation activities. Key project documentation captured and reviewed for each sampled project included (to the extent available):

- Customer assessment reports
- Contractor invoices
- Equipment specifications
- Project calculations
- Site energy use records

Customer information, equipment model numbers, capacities, and efficiencies recorded on the application forms were compared to the supporting equipment specifications provided, as well as with the information entered in the database. The documentation provided confirmed the data entry in the tracking system and identified specific calculation assumptions in line with the relevant Iowa TRM.

As noted earlier, the project level reviews identified that for smart thermostats, MidAmerican used Iowa TRM default values, when more specific information may be available through the application process. Specifically, through the tracking data review and desk reviews, the Tetra Tech team identified the following items where the Iowa TRM default value was selected:

- For WiFi-enabled smart thermostats, MidAmerican consistently used a default value of 36Mbtus for the connected equipment's cooling capacity.
- For WiFi-enabled smart thermostats, the percent of the equipment controlled was assumed to be 93 percent.
- MidAmerican used the remaining measure life/time of sale calculations for all projects. The remaining measure life was assumed to be six years.

These assumptions are acceptable for use in the program calculation, although they could be replaced with the information collected on the project applications, which would bolster the accuracy of the savings estimates.

3.3 ENGINEERING DESK REVIEWS

In addition to the documentation review, the Tetra Tech team completed an engineering review for each of the sampled measures. This review involved a recalculation of each measure's savings in the sample based on the information in the documentation.

For prescriptive measures, the Tetra Tech team’s analysis included recalculating the savings using the Iowa TRM V3 and V4, or MidAmerican’s Appendix A, as appropriate. The engineering reviews resulted in few adjustments to energy savings. The types of adjustments made are described below, and project-specific adjustments can be found in Appendix A of this document.

- **WiFi-enabled ENERGY STAR certified smart thermostats.** Iowa projects used an assumed value for cooling capacity instead of the actual cooling system capacity. The Iowa TRM default value is acceptable for prescriptive residential projects which replace only the thermostat and do not provide information about the existing cooling systems. However, most of the thermostat

projects in the sample included the replacement of HVAC equipment, which documented the controlled equipment's cooling capacity. The Tetra Tech team used the documented HVAC equipment capacities, when available, to calculate energy savings. Eleven of the 15 thermostats sampled had a documented capacity below the default size, two were larger, and two did not have documented capacities. This resulted in evaluated savings 11 percent lower than tracked savings for the thermostat measure category. The Tetra Tech team also notes that the sampled projects' average cooling system capacity was about 15 percent lower than the Iowa TRM default value of 36,0000 Btuh. Further study would be necessary to determine if this number should be updated in the Iowa TRM. Still, the Tetra Tech team determined that 36,000 Btuh is reasonable for savings calculations when cooling system capacity is unknown.

- **HVAC equipment (air source heat pumps and furnaces).** Illinois projects used the “quality install” energy savings addition without tracking whether the project met the requirements of a “quality install.” Unless documentation was included, the Tetra Tech team did not include “quality install” energy savings in the measure. This resulted in a four percent reduction in evaluated savings for the air source heat pump measure category. The “quality install” component is no longer implemented, and as a result, there is no associated recommendation.

4.0 NET IMPACT EVALUATION

In addition to estimating evaluated gross savings, the Illinois Commerce Commission (ICC) requires that MidAmerican provide evaluated savings estimates with NTG adjustments and the Iowa Utility Board (IUB) has encouraged using NTG estimates for informational and program design purposes. To meet these requirements, the Tetra Tech team conducted primary and secondary research to recommend NTG ratios that would be appropriate to apply to MidAmerican's Residential Equipment program evaluated program savings.

4.1 ESTIMATION PROCESS

The Tetra Tech team recommends an overall prospective NTG value of 60 percent for the Residential Equipment program in Illinois based on results from primary data collection with program participant, trade ally interviews, and a peer program review.

From an impact perspective, NTG represents a measurement of savings attributable to program interventions. It first accounts for free-ridership, which measures the savings claimed by participants who would have installed the same high-efficiency measure type on their own at that same time if the program had not been offered. The Tetra Tech team also accounted for participant spillover, which measures untracked and non-rebated savings resulting from program information and intervention. When free-ridership and spillover are captured, the NTG ratio is calculated. From a process perspective, NTG is one indicator related to what is driving the adoption of rebated equipment.

Because NTG is required in Illinois, the Tetra Tech team conducted primary NTG research with participating Illinois customers, as well as a secondary review of NTG values used by similar utility programs in Illinois. Because MidAmerican's Residential Equipment program operates similarly in both Iowa and Illinois, NTG results from Illinois were applied to Iowa. The participant survey estimated free-ridership and participant spillover effects from customer self-reports following the same protocol as in the last evaluation cycle—those from the Illinois TRM protocol (Version 6.0)[9]. The trade ally interviews also investigated qualitative indicators of the program's influence on customer decision-making and trade ally practices.

The customer self-reports resulted in a calculated NTG ratio of 45 percent. The surveys estimated a free-ridership rate of 55 percent free-ridership using the primary scoring methodology outlined in the Illinois TRM. The surveys also resulted in an overall spillover rate of zero percent. The participant survey assessed only "like" spillover—or attributable savings resulting from additional installations of the same type of energy-efficient equipment customers installed through the program. In addition, and similar to the last evaluation cycle, surveys were conducted with recent program participants to minimize recall issues, restricting the amount of time customers had to make additional energy efficiency improvements after their participation in the program.

The customer self-report results are on the lower end of NTG ratios found for similar programs in nearby territories, which ranged from 63 percent to 83 percent. Several of the other NTG results included nonparticipant spillover estimates based on trade ally interviews, which are not included in the MidAmerican results.

[9] Illinois Statewide Technical Reference Manual for Energy Efficiency. Version 6.0. Volume 4: Cross-Cutting Measures and Attachments. FINAL. February 8, 2017.

Feedback from participating trade allies suggests that the program influences trade ally sales processes and customer decision-making. Trade allies are a primary source of program awareness, and participants commonly mentioned the influence of contractor recommendations on their decision to install their rebated equipment. Participating trade allies we spoke with consistently reported informing customers about available rebates and using the rebates as part of their sales process. Trade allies also indicated that their sales of energy-efficient equipment would decline, or have already declined, in the absence of MidAmerican's rebates, particularly for insulation.

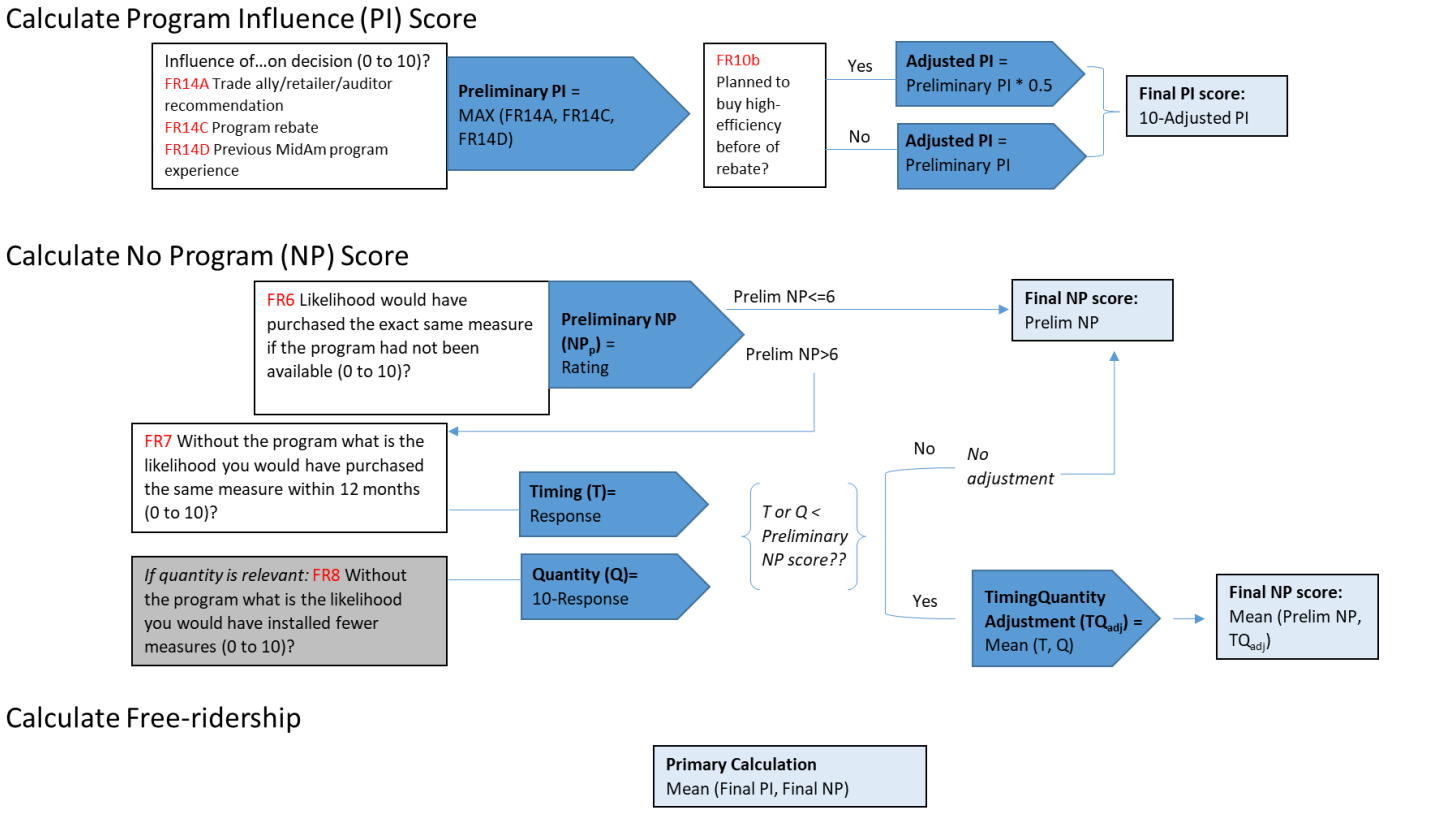
4.2 CUSTOMER SELF-REPORTS

The participant survey asked customers a series of highly structured questions to estimate free-ridership and spillover effects based on the Illinois TRM self-report protocol.

4.2.1 Free-Ridership

To assess free-ridership, the participant survey asked decision-makers a series of questions about the influence of the program on their decision to purchase qualifying equipment and actions that would have been taken in the absence of the program. A preliminary free-ridership rate was calculated for each participant, following the primary free-ridership scoring methodology detailed in the Illinois TRM, shown below.

Figure 2. Illinois TRM Primary Residential Free-Ridership Scoring Methodology



Source: Illinois TRM (Version 6.0)

Based on the program's design and implementation, the Tetra Tech team defined the following as potential program-related factors: the availability of the program incentive, a recommendation from an equipment vendor or contractor,[10] previous experience with a MidAmerican program, and recommendations from MidAmerican staff. Non-program related factors included the age or condition of the old equipment.

Calculated free-ridership scores were then reviewed for consistency with an additional question included in the participant survey asking respondents to state in their own words what influence the program had on their decision to implement the project[11]. Final individual free-ridership rates were then weighted to adjust for proportional sampling differences, non-response, and reported energy savings to calculate measure-category-level and program-level free-ridership rates.

The table below presents detailed free-ridership results from the participant survey by measure. Following the Illinois TRM protocol, the participant customer self-reports resulted in an overall free-ridership rate of 55 percent. Free-ridership rates for furnaces, which represented almost 85 percent of the combined reported electric and gas savings in the survey population, averaged 56 percent. Measure-specific results should be viewed with caution due to small sample sizes for a few measure categories.

Table 9. Illinois Self-Report Free-Ridership Results

Measure	Number Surveyed	Population Reported Savings (MMbtu)	Free-ridership Estimate	90% CI (+/-)	Previous Free-ridership Estimate
Central air conditioner	25	804	55%	0.160	51%
Furnace	103	14,554	56%	0.077	47%
Heat pump	7	327	39%	0.284	64%
Thermostat	20	1,493	58%	0.178	74%
Overall	**155**	**17,178**	**55%**	**0.064**	**51%**

Although half of the surveyed Illinois participants said they followed the contractor recommendation on what to install, 49 percent of all Illinois respondents said they had already been planning to install the same high-efficient equipment before they learned about the rebate available through the Residential Equipment program.

When asked to rate the influence of each of the availability of the program rebate using a scale of 0 to 10, where 0 was "not at all influential" and 10 was "very influential," 48 percent of the Illinois respondents rated the influence a 9 or 10 and 40 percent rated the rebate influence between 5 and 8.

Responses from Illinois participants to the question of their likelihood of purchasing the exact same equipment without the rebate provided through the Residential Equipment program showed that 56 percent said they were completely likely (rating 9 or 10) to purchase the equipment on their own. Seven percent said they were unlikely to purchase it without the incentive (ratings 0 to 4).

[10] MidAmerican actively maintains a robust trade ally network and trade allies play an integral role in customer communications and implementation for the program. Considering this, the Tetra Tech team believes it is most appropriate to treat contractor or vendor recommendations as a program influence.

[11] Forty individual free-ridership scores were adjusted based on the consistency check review.

4.2.2 Participant Spillover

In addition to free-ridership, the participant survey included a series of questions designed to measure participant spillover. Spillover refers to purchases of energy-efficient equipment since participation that were made without any financial assistance from MidAmerican as a result of the customer's participation in the program. A participant spillover estimate is computed based on energy savings from energy-efficient equipment the customer installed on their own since participating because of their experience with the program.

One of the issues with attempting to quantify spillover savings is how to value the savings of measures installed outside the program since we are relying on customer self-reports of the quantity and efficiency of any measures installed. The Tetra Tech team used a conservative approach and assessed only "like" spillover, or measures installed outside the program that were of the exact same type as the ones installed through the program. This, in turn, made it possible to use the estimated program savings for that measure (multiplied by the ratio of the quantity of equipment installed on their own versus through the program) to calculate the customer's like-spillover savings.

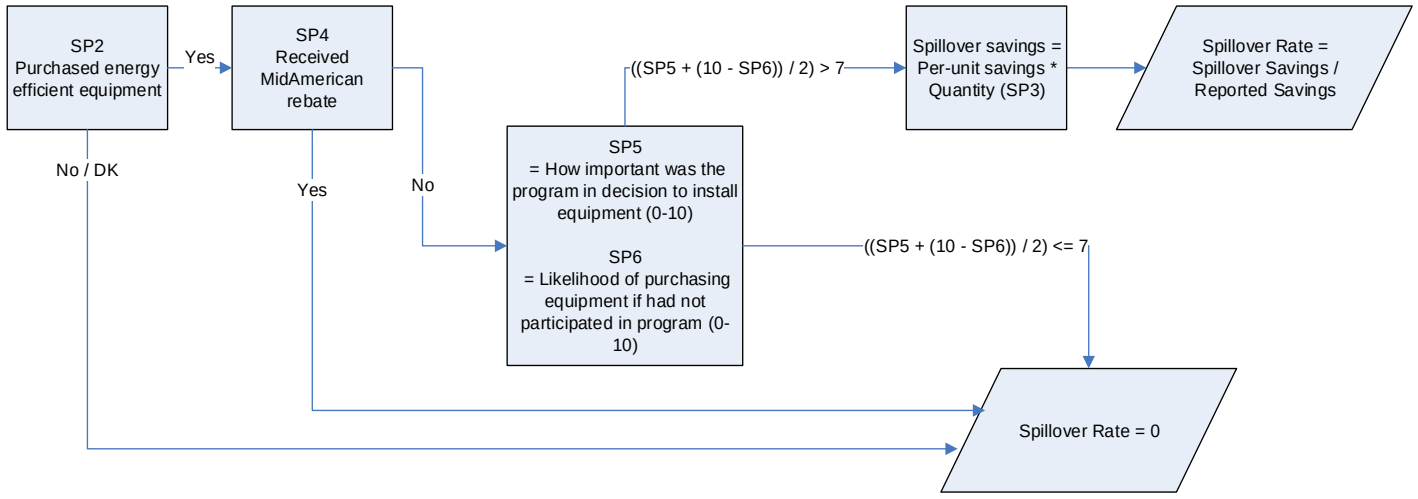
The Tetra Tech team determined the percentage of reported spillover savings that is attributable to the program using the following two survey questions, following the Illinois TRM Residential Core Participant Spillover Protocol:

1) SP5: On a scale of 0 to 10 where 0 is "not at all important" and 10 is "extremely important," how important was your participation in the program on your decision to purchase the equipment on your own?

2) SP6*:* If you had not participated in the program, how likely is it that you would still have purchased this equipment, using a 0 to 10, scale where 0 means you definitely WOULD NOT have purchased this equipment and 10 means you definitely WOULD have purchased this equipment?

A participant spillover rate was calculated for each participant surveyed at the measure-category level following the algorithm shown in the flowchart below (Figure 5). Individual spillover rates were then weighted based on the gross claimed energy savings for each participant and the distribution of program population savings by measure-category.

Figure 3. Participant Spillover Methodology



The following table presents self-report participant spillover results from the participant surveys by measure. The participant survey resulted in an overall spillover rate of zero percent. Based on the type and size of measures currently rebated through the program, it is not a surprise that none of the survey respondents reported installing "like" spillover measures on their own within MidAmerican's service territory without receiving financial assistance from MidAmerican.

Table 10. Illinois Self-Report Participant Spillover Results

Measure	Number Surveyed	Population Reported Savings (MMbtu)	Like Spillover Estimate	90% CI (+/-)
Central Air Conditioner	25	804	0%	N/A
Furnace	103	14,554	0%	N/A
Heat Pump	7	327	0%	N/A
Thermostat	20	1,493	0%	N/A
Overall	**155**	**17,178**	**0%**	N/A

4.3 TRADE ALLY VIEWS

One potential issue with assessing free-ridership through customer self-reports for trade ally-influenced equipment is that programmatic influences on trade ally sales practices and recommendations are likely not fully captured in customer self-reports. The program relies heavily on trade allies for customer outreach and marketing. Recognizing this, interviews with participating trade allies investigated the program's influence on sales practices, recommendations, and market trends to support the NTG assessment.

The trade allies interviewed had anywhere from two to more than 15 years of experience with rebate programs. Exposure to rebate programs has created an environment where many of the trade allies routinely include a recommendation for energy efficient equipment as an option for customers.

Historically, their experience has been that few customers purchase the more expensive, higher efficiency equipment without the incentives.

Surveyed trade allies selling HVAC equipment have plenty of work in their pipeline. The HVAC contractors reported changes in the efficiency level selected by customers now that incentives amounts have decreased.

> *I have found in the last 2-3 years that the number of people going with less efficient equipment is greater than it used to be because of the lack of the dollar amount of the rebates. I think they're rationalizing spending less money because the rebate isn't as great so in their mind, they're thinking that the higher amount they'd spend for the more efficient equipment doesn't translate into payback. You'd see a reduction in the efficiency of the equipment if they went away. I think we've already seen that. If they completely went away, I think you'd see a greater number, but we've witnessed that with just the reduction in the rebate amount.*
>
> *We still do the same stuff. It's just that now for homeowners, instead of costing them a couple hundred bucks out of pocket, it's going to come out as $1,200 or so and they can't afford it.*
>
> *I don't know. I think the customer would buy differently. It's definitely a factor in their purchasing.*
>
> *This allows me to upsell efficiency to people that would not buy it if the rebates didn't exist, absolutely.*
>
> *We give a range of options for efficiencies usually. If they see they can get a couple hundred bucks back to go with a 16 SEER air conditioner, they are more willing to spend a little bit more to get that.*

To further illustrate the effect of the decreased incentives, a few of the HVAC contractors also felt that the temporary 50 percent increase in rebates as a result of COVID-19 offered by MidAmerican during the second half of 2020 have generated more interest in energy efficiency projects.

Iowa and Illinois rebates 50% higher for select upgrades

Now is the perfect time to upgrade your air conditioner and thermostat! From now until the end of 2020, you can get a 50% higher rebate when you purchase qualifying energy-efficient air conditioners, air source heat pumps, and smart thermostats. This means you can get up to a $750 rebate from us for upgrading your air conditioner, up from our normal rebate maximum of $500. Take advantage of these Iowa energy efficiency rebates now and save even more money and energy.

With the elimination of the insulation rebates, two of the contractors indicated they had to find other workstreams to replace all the business they lost when the insulation incentives ended. For them, the majority of that work did not continue without the incentives.

> *We always go by ENERGY STAR standard and national building code. But the bulk of those people are not going to do it because they don't get a rebate. They'll elect not to do it because they don't have that extra $600, $700 rebate. They just don't have it in their budget to do that. They do have $300 to do it and have MidAmerican pay for the rest of it. It was a good program for everyone to make everyone more efficient and bring them up to standards. I wish they'd bring it back.*
>
> *Less people are looking to do installation without rebates. Now the cost is going higher because no assistance where before if they had a little assistance, it would get them to stretch their pocketbooks to take advantage of the savings. Now they're 100% on their own so they may*

decide to wait and it turns into them not doing anything. I offer a little bit less quality stuff to help them out but I also have them sign a paper that explains the difference between less quality and more quality. It seems like then they'll pick the lesser quality where lesser quality correlates to lower price.

Three contractors did not feel that the incentives made a difference, but responses indicated effects from replace on failure and potential misunderstanding of program incentives.

It's the way our company lets them know about the equipment, focused primarily on the comfort.

If people need equipment, it's a necessity. They don't buy it for the $175 rebate or anything. The rebates aren't big enough to persuade one way or another.

Because when I do sell the equipment, they give rebates for up to 16 SEER, but a lot of the jobs I sell are higher efficiency than that and they don't get anything for it. So why have it?

5.0 PROCESS EVALUATION FINDINGS

This section presents the findings from the process evaluation activities and is detailed separately for Iowa and Illinois. The process evaluation was designed around the key researchable questions identified in the methodology section 2.1.1. Process evaluation activities involved interviews with program and implementation staff, participating customers, participating trade allies, and nonparticipating customers. The key process-related findings are detailed in the subsections below.

The participating customer survey was used to understand the perspectives of program participants; questions explored consumers' awareness, reasons for participation, program experiences, and satisfaction with the Residential Equipment program. The participating trade ally interviews investigated trade ally awareness, experiences, and satisfaction with the program. In addition, training, education, and outreach[12] were further explored with trade allies, as well as the program's impact on increasing the interest and demand for energy-efficient equipment. Illinois program participants surveyed were asked NTG questions, as were all trade allies surveyed.

5.1 INTERVIEWED PARTICIPANT AND TRADE ALLY CHARACTERISTICS

The Tetra Tech team interviewed a total of 162 participating customers in Iowa and 157 participating customers in Illinois, as well as 13 participating trade allies to support the process evaluation. In addition, the Tetra Tech team conducted a nonparticipant survey with 198 residential customers to support all Iowa residential program evaluations.

5.1.1 Participant Characteristics

The table below summarizes the number of PY2019 and PY2020 Residential Equipment program participants surveyed and the number of participants in the survey population by rebated measure category by state. For evaluation purposes, the participant survey population included PY2019 and PY2020 program participants who installed rebated equipment between January 1 and March 31, 2020.

Table 11. Summary of PY2019 and PY2020 Participants Surveyed

Measure Category	Iowa			Illinois		
	Number of Surveyed Participants	Number of Measures	Number of Unique Participants**	Number of Surveyed Participants	Number of Measures	Number of Unique Participants**
Air Source Heat Pump	0	20	20	7	38	36
Ground Source Heat Pump		0	0		7	7
Central Air Conditioner	46	6,088	6,005	26	407	397
Furnace	64	8,533	8,434	104	658	640
Furnace Blower Motor*	0	55	55	0	483	471

[12] Training, education, and outreach findings will be summarized as part of the Education program report.

Measure Category	Iowa			Illinois		
	Number of Surveyed Participants	Number of Measures	Number of Unique Participants**	Number of Surveyed Participants	Number of Measures	Number of Unique Participants**
Smart Thermostat	52	2,685	2,578	0	0	0
Programmable Thermostat		79	79	20	422	408
Heat Pump Water Heater	0	0	0	0	1	1
Room Air Conditioner	0	0	0	0	6	6
Total	**162**	**17,460**	**11,791**	**157**	**2,022**	**822**

* Furnace blower motors were not sampled as MidAmerican is no longer incentivizing that measure.

** The total unique participant count does not match the sum of the participants for the individual measure categories due to some customers completing measures across multiple strata.

As shown in the table[13] below, it is most common for participants to be owners of single-family homes, which corresponds with the types of measures rebated by the program. At least half of the Illinois respondents reported homes built between 1950 and 1980.

Table 12. Home Characteristics

House Characteristic	Iowa Participants	Illinois Participants	Nonparticipants
Own or rent home			
Own/ buying	98.0%	97.3%	91.8%
Rent	2.0%	2.7%	8.2%
Respondents (n)	**149**	**147**	**195**
Type of home			
Single-family detached house	90.0%	93.9%	85.5%
Single-family attached house (townhouse, row house, or duplex)	8.7%	5.4%	7.5%
Apartment building with 2-4 units	0.0%	0.7%	0.5%
Apartment building with 5+ units	0.7%	0.0%	4.3%
Mobile home or house trailer			2.2%
Other	0.7%	0.0%	0.0%
Respondents (n)	**150**	**147**	**186**

[13] Note that these results are reported in aggregate across all customers interviewed, are unweighted, and are representative of the survey sample only.

House Characteristic	Iowa Participants	Illinois Participants	Nonparticipants
Year Home Built			
1930s or earlier	17.8%	11.7%	17.7%
1940s	2.1%	8.3%	7.7%
1950s	15.1%	12.4%	8.3%
1960s	11.6%	20.0%	14.9%
1970s	12.3%	22.1%	9.4%
1980s	11.0%	6.2%	5.5%
1990s	11.0%	5.5%	13.3%
2000s	15.8%	8.3%	14.9%
2010s	3.4%	5.5%	8.3%
Respondents (n)	**146**	**145**	**181**
Years Lived in Home			
Average number of years	16.9	19.2	17.2
Respondents (n)	**149**	**147**	**184**
Square Footage			
Less than 1,000 square feet	9.0%	10.9%	13.1%
1,000 to 1,500 square feet	29.2%	29.0%	32.7%
1,501 to 2,000 square feet	27.1%	29.7%	26.8%
2,001 to 3,000 square feet	24.3%	23.2%	18.5%
More than 3,000 square feet	10.4%	7.2%	8.9%
Respondents (n)	**144**	**138**	**168**

Source: Questions DEM2, DEM1, DEM3, DEM3a, DEM8, DEM9
Don't know and refused responses are excluded

Almost all of the surveyed participants indicated they have central air conditioning in their homes. Around 90 percent have natural gas space heating and about 85 percent have gas water heating equipment.

Table 13. Energy Use Characteristics

Energy Use Characteristics	Iowa Participants	Illinois Participants	Nonparticipants
Home has central air conditioning			
Yes	99.3%	96.7%	86.9%
No	0.7%	3.3%	13.1%
Respondents (n)	**152**	**150**	**198**

Energy Use Characteristics	Iowa Participants	Illinois Participants	Nonparticipants
Main fuel used for space heating			
Natural gas	87.8%	91.1%	74.0%
Electricity	9.5%	6.8%	16.1%
Bottled gas propane	1.4%	1.4%	7.8%
Other	0.7%	0.7%	1.6%
Wood	0.7%	0.0%	0.5%
Respondents (n)	**147**	**146**	**192**
Main fuel used for water heating			
Natural gas	82.2%	86.9%	N/A
Electricity	16.4%	10.3%	N/A
Bottled gas propane	0.7%	2.1%	N/A
Other	0.7%	0.7%	N/A
Respondents (n)	**146**	**145**	N/A

Source: Question DEM6, DEM4, DEM5, (Participant Survey), CW6, CW3 (Nonparticipant Survey)
Water heating fuel type was not asked of nonparticipants
Don't know and refused responses are excluded

As part of the nonparticipant survey, respondents were asked if they already have a smart thermostat, one that is wi-fi enabled, and learns and adjusts to their household patterns. Seventy-nine percent of the respondents said they do not have a smart thermostat. Of the 17 percent who said they do have a smart thermostat (n=34), 59 percent of them said it was an ENERGY STAR thermostat and another 35 percent were unsure.

As shown in the table below, there is a higher proportion of surveyed participant households in the $100,000 or greater income category than reported by the nonparticipant respondents. In addition, almost half of the surveyed participants from Illinois were 65 or older. While the proportion of 65 or older surveyed participants was 33 percent in Iowa, the proportion of surveyed participants between the ages of 25 and 44 (almost 39 percent) was higher than in Illinois (19 percent) or from the nonparticipant survey (24 percent).

Table 14. Demographics

Demographic Characteristics	Iowa Participants	Illinois Participants	Nonparticipants
Average number of people in household			
Average number of people in home	2.4	2.4	2.6
Respondents (n)	**149**	**147**	**184**

Demographic Characteristics	Iowa Participants	Illinois Participants	Nonparticipants
Age on last birthday			
18 to 24	0.0%	0.7%	1.1%
25 to 34	16.3%	4.8%	8.9%
35 to 44	22.4%	14.5%	15.1%
45 to 54	10.9%	12.4%	16.2%
55 to 64	17.0%	18.6%	21.2%
65 or older	33.3%	49.0%	37.4%
Respondents (n)	**147**	**145**	**179**
Household income			
Less than $24,000	4.2%	4.6%	12.3%
$24,000 to less than $50,000	15.8%	19.3%	19.2%
$50,000 to less than $75,000	18.3%	20.2%	19.9%
$75,000 to less than $100,000	18.3%	22.0%	22.6%
$100,000 or greater	43.3%	33.9%	26.0%
Respondents (n)	**120**	**109**	**146**
Gender			
Male	55.7%	60.5%	57.1%
Female	44.3%	39.5%	42.9%
Respondents (n)	**149**	**147**	**184**

Source: Question DEM10, DEM13, DEM14, DEM15 (Participant and Nonparticipant Survey)
Don't know and refused responses are excluded

5.1.2 Trade Ally Characteristics

The Tetra Tech team interviewed 13 participating trade allies across MidAmerican's Iowa and Illinois territories. The trade allies varied from small, family-owned businesses to a few large companies with multiple locations and more than 30 employees. Three of the trade allies focus on insulation, air sealing, and other envelope services such as windows and siding. The remainder all install HVAC equipment, with a few also offering plumbing, geothermal, and various air purifying systems.

Surveyed trade allies have from three to 15 years of experience with MidAmerican's energy efficiency programs and report from five to 99 percent of their 2019 business received incentives through the program. Four of the trade allies thought the incentivized projects made up more than 70 percent of their business, while another five thought it was less than 40 percent.

5.2 PROGRAM PROCESSES

5.2.1 Program Design

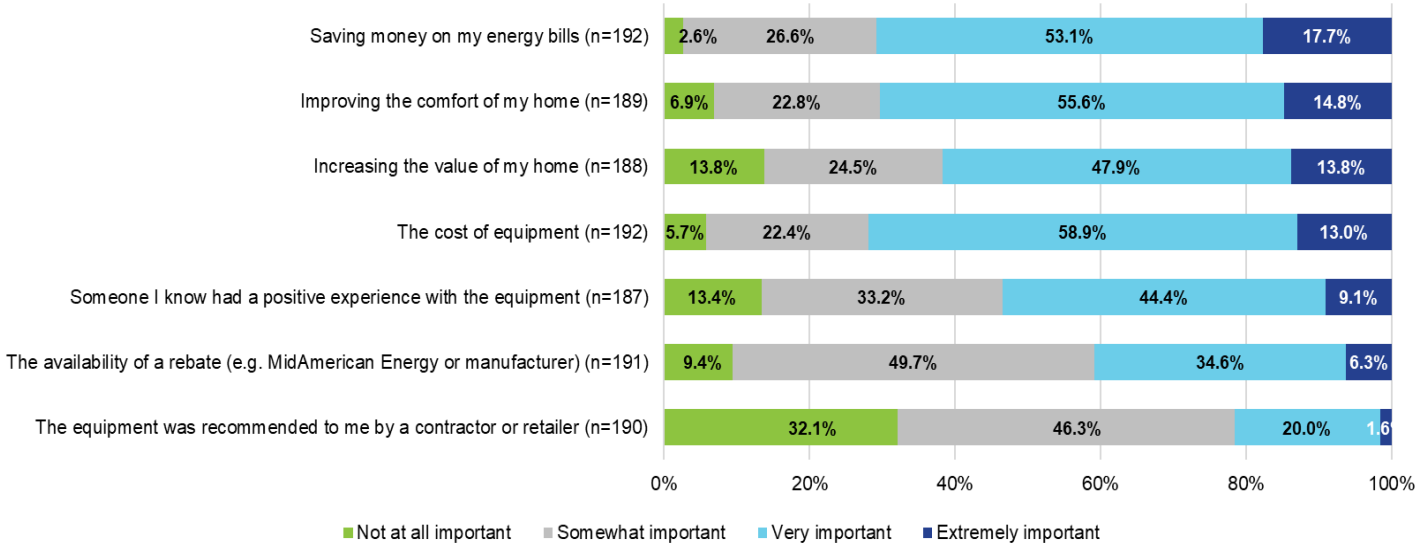
The Residential Equipment program encourages MidAmerican's residential customers to purchase energy efficient equipment by providing rebates to offset the higher purchase cost of efficient equipment, as well as educates customers on energy efficiency opportunities through utility outreach and trade allies.

5.2.1.1 Motivations for Participation

In order to put the motivation for program participation into perspective, we asked nonparticipants to tell us how important various considerations were to them as they thought about purchasing new appliances or equipment for their home. Survey respondents rated the importance from not at all important to extremely important. In particular:

- Almost 18 percent of nonparticipant respondents said that saving money on their energy bills was extremely important when considering new appliances or equipment.
- 72 percent rated the cost of the equipment as a very or extremely important consideration.
- 70 percent felt saving money on their energy bills and improving the comfort of their homes was very or extremely important.
- 32 percent thought that an equipment recommendation by a contractor or retailer was not at all important to them when they considered new equipment.

Figure 4. Importance of Purchasing Considerations for Nonparticipant



Source: Question C6 (Nonparticipant Survey)
Don't know and refused responses are excluded

As part of the participants survey, respondents were asked to provide the reasons they decided to participate in the Residential Equipment program. Consistent with the 40 percent of nonparticipants who said the availability of a rebate was very or extremely important to them, 41 percent of Iowa participants and 44 percent of Illinois participants said the financial incentive was the primary reason they participated. Twenty-five percent of participating respondents said they participated to save money on their energy bills. Similar to responses from the nonparticipant survey, about 16 percent of the participants were motivated to participate in the program due to a recommendation from a contractor.

Table 15. Reason for Participating in the Residential Equipment Program

	Iowa Participants	Illinois Participants
The financial incentive (rebate, payment for participating)	41.4%	43.9%
Saving money on my energy bills	25.0%	23.0%
The program was recommended to me by a contractor	15.8%	16.9%
Because it was available	9.2%	13.5%
I needed new equipment	7.9%	11.5%
The program was a way for me to do something good for the environment	7.9%	10.1%
I got a better or energy efficient product	9.9%	5.4%
The program was recommended to me by MidAmerican	1.3%	4.1%
To improve the comfort of my home	1.3%	3.4%
It was part of the equipment package	3.3%	0.7%
To increase the value of my home	0.7%	2.0%
I liked the smart thermostat	1.3%	0.7%
Someone I know had a positive experience with the program	0.7%	0.0%
Other reasons	10.5%	8.1%
Respondents (n)	**152**	**148**

Source: Question PP1 (Participant Survey)
Don't know and refused responses are excluded
Multiple responses were allowed

5.2.1.1 Program-Specific Marketing

At least two-thirds (68 percent) of the nonparticipants surveyed were aware that MidAmerican offers rebates and services to customers to help them save energy and 49 percent of the nonparticipants surveyed had specifically heard of the equipment rebates. This corresponds with the trade allies reporting that residential customers tend to come to them aware that there is something available through MidAmerican, but they are unsure of the actual incentive levels or equipment eligibility, which the trade allies said they explain fully. This is further exemplified by the high proportion of participating respondents (59 percent Iowa and 75 percent Illinois) indicating that a contractor or retailer was their primary source of information about the program.

Nonparticipating respondents were more likely to mention that they heard about the program from a MidAmerican bill insert (36 percent) or brochure (17 percent), which would explain why they were aware of the program, but maybe not the specific incentives or eligibility requirements. In addition, 20

percent of nonparticipating respondents heard about the program from a friend, family member, or co-worker, compared with about 13 percent of participating respondents. In discussing with MidAmerican, staff indicated that they have been using more electronic and paper newsletters with residential customers and have used little social media to educate customers about the Residential Equipment program.

Table 16. Source of Program Awareness

Source	Iowa Participants	Illinois Participants	Nonparticipants
Contractor	43.2%	66.9%	13.6%
Friend/family member/coworker	13.6%	12.1%	19.7%
Retail store	15.4%	7.6%	8.3%
MidAmerican website	13.0%	7.0%	3.8%
MidAmerican utility bill insert	6.8%	12.1%	35.6%
Previous experience with a program	7.4%	10.8%	0.0%
MidAmerican brochure	6.2%	4.5%	17.4%
Television	2.5%	3.2%	8.3%
Researched online	2.5%	1.9%	0.0%
Newspaper	0.6%	2.5%	3.0%
MidAmerican call center representative	1.2%	1.3%	0.8%
Email from MidAmerican	1.9%	0.6%	1.5%
Home show/conference/trade show	0.0%	0.6%	0.0%
Radio	0.0%	0.6%	3.0%
Signage at local events (school/sporting events)	0.0%	0.0%	0.8%
Billboard	0.0%	0.0%	0.8%
Don’t know	11.1%	5.7%	4.5%
Other	1.9%	2.5%	10.6%
Respondents (n)	**162**	**157**	**132**

Source: Question C1 (Participant Survey and Nonparticipant Survey)
Don't know and refused responses are excluded
Multiple responses were allowed

The MidAmerican website was the source of program information for 13 percent of Iowa participating respondents and seven percent in Illinois. Although 34 percent of the nonparticipating respondents reported visiting the MidAmerican website, most of them were looking for either billing information (66 percent) or outage information (24 percent). The rest were looking for general energy efficiency information or ways that MidAmerican could help them saving energy or money.

Nonparticipating respondents who visited the MidAmerican website were happy with their experience. Eighty-eight percent thought it was very or extremely easy to find what they were looking for there and 73 percent found the information very or extremely helpful.

Of the 49 percent of nonparticipating respondents who have heard of the Residential Equipment program rebates, about half of them (39 of 85) said they have received a rebate at some point for

equipment such as heating and cooling equipment, and thermostats. Most of them received that rebate two or more years ago. The majority (69 percent) received a rebate for high-efficiency heating equipment. Forty-four percent received rebates for central air conditioners and another 10 percent for heat pumps.

Table 17. Type of Incentive Received for Nonparticipants

Incentive Type	Percent
High efficiency heating equipment (furnace/boiler/furnace fan)	69.2%
Central air conditioner	43.6%
Heat pump (geothermal, air-source, etc.)	10.3%
Insulation	5.1%
Windows	5.1%
Water heater	5.1%
Refrigerator	5.1%
Clothes washer / dryer	5.1%
Room air conditioner	2.6%
Dishwasher	2.6%
Don't know	2.6%
Respondents (n)	**39**

Source: Question REA3 (Nonparticipant Survey)
Refused responses are excluded
Multiple responses allowed

5.2.1.2 Trade Ally Outreach and Support

MidAmerican has a robust process in place for trade ally outreach, including providing multiple support avenues for trade allies such as annual trade ally meetings, communication emails, trade ally ambassadors , a dedicated phone number they can call with questions, and periodic trainings. Many of the trade allies we spoke with (8 of 13) feel adequately informed of program changes and appreciate the annual vendor meetings. Three would like more frequent proactive communication about program changes, suggesting more emails and possible webinars, but they have been able to get the information they needed by calling the rebate assistance line. These three contractors also indicated they have not worked with a trade ally ambassador.

Half of the trade allies reported some contact with someone they considered a trade ally ambassador. They all found the interaction helpful. The rest of the trade allies were not aware of the role or have not needed additional assistance.

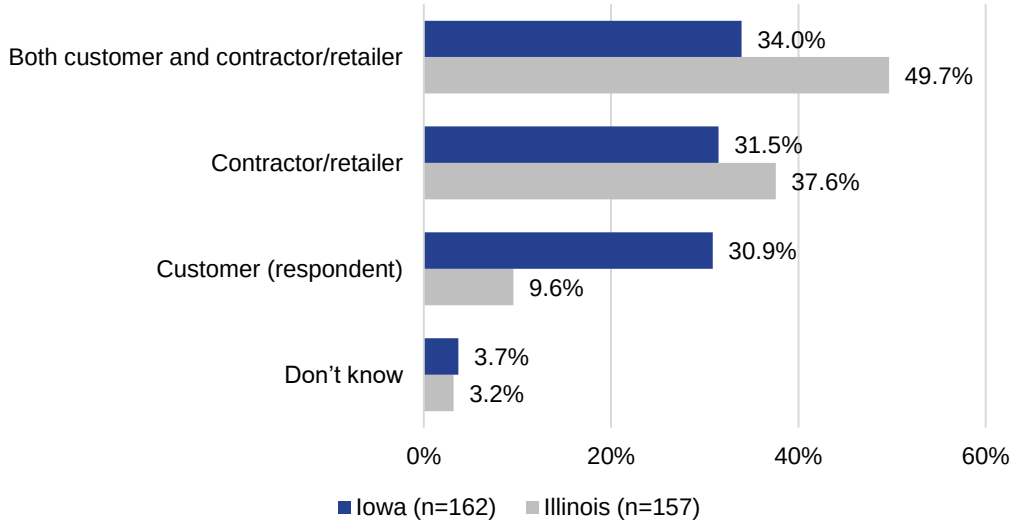
Almost all (11) the responding trade allies have contacted the Energy Efficiency call center for assistance at some point. Seven of them were very or extremely satisfied with their experience and found the staff to be helpful. Three were somewhat satisfied and one was not at all satisfied but did not provide a suggestion for improvement.

5.2.2 Program Administration, Processes, and Resources

5.2.2.1 Program Administrative Requirements

Applications for the Residential Equipment program are available on MidAmerican's website. About 31 percent of Iowa and 10 percent of Illinois participating respondents reported completing the application on their own for the rebated equipment. All the trade allies we spoke with said they provide some level of assistance with the application and have a staff person dedicated to application completion or assistance.

Figure 5. Participant Feedback on who Completed Application



Source: RE6 (Participant Survey)
Don't know and refused responses are excluded

Almost all surveyed participants who completed at least part of the application found it easy to complete (95 percent in Iowa and 97 percent in Illinois). The few who had problems mentioned needing to find detailed equipment information that was hard to locate. About 13 percent of the surveyed participants who worked on their own application contacted MidAmerican program staff for assistance. All but three of them found the staff helpful.

Trade allies interviewed had few suggestions for improving the application forms. After a few years of filling them out, they understand why each piece of information is needed. A couple of the trade allies suggested the AHRI information was the most difficult to get. Three others, who were not aware that MidAmerican has launched an online application option, mentioned that it would be easier if the application could be completed online.

When asked if they have signed up to use the online application process that is now available from MidAmerican, five said they were signed up to use it, with another seven reporting they are not. At least three of the seven said they are interested in signing up for online applications. Those trade allies who have used the online application process reported no issues with it. A couple of the trade allies who have not used it raised concerns about how they would share a copy with the customer through the online portal. Five of the trade allies have noticed a reduction in the processing time for paper applications. Two of the trade allies using the online application process feel that is more

efficient than the paper option. In discussing with MidAmerican, staff confirmed that they have key performance indicators in place for both paper and electronic application processing times.

Most of the trade allies (10) reported no issues collecting information required on the application. Two said that the AHRI details needed were initially difficult to find, but they have since worked through that barrier or it is a matter of the AHRI website not working. One trade ally mentioned difficulty splitting out material and labor costs, since that is not the way they price out their projects.

One concern from trade allies was the frequency of declined applications. Seven of the responding trade allies reported experiences with declined applications, four of them saying it happens at least monthly or a couple times a month. In a few instances, trade allies mentioned that even if they are the ones completing the application, the customer is contacted about the issue. MidAmerican follows this process to ensure transparency for the customer, so they understand the status of their application, even if the issues requires resolution by the trade ally.

Another process MidAmerican follows, that a few trade allies mentioned as causing some confusion, is the alternate payee process. MidAmerican allows customers to sign their incentive over to the trade ally so the trade ally can apply the incentive to the invoice. If the customer decides to do that, they sign off on the application. Then the program implementer is required to call those customers to confirm they intend to transfer the incentive payment to the trade ally. This is a quality control step that MidAmerican instituted to reduce potential misuse of the option.

Half of the trade allies we interviewed are aware of the alternate payee process and have had customers use it. Four of those six trade allies said the process has impacted them. For one trade ally it is common in rental situations. In a couple other cases, trade allies feel it confuses the customers who have already signed off on the transfer of the incentive. Trade allies told us that customers do not often read the fine print that indicates they will receive a phone call. Two trade allies hold the opinion that the incentive should always go to the customer, so they understand the benefit of the program.

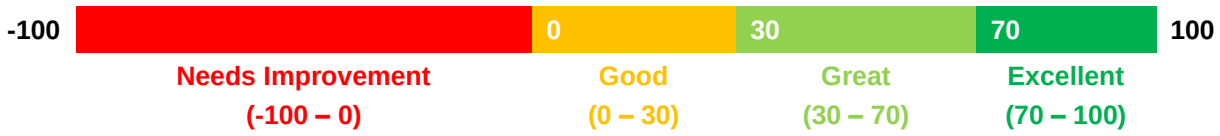
5.2.3 Program Satisfaction

5.2.3.1 Net Promoter Score

A new metric being presented for MidAmerican programs in this evaluation cycle is the Net Promoter or Net Promoter Score (NPS) [14]. The NPS is calculated based on responses to a single question: How likely is it that you would recommend our company/product/service to a friend or colleague? The NPS is then the percentage of customers rating their likelihood to recommend a company, a product, or a service to a friend or colleague as 9 or 10 ("promoters") minus the percentage rating this at 6 or below ("detractors") on a scale from 0 to 10. Respondents who provide a score of 7 or 8 are referred to as "passives." The result of the calculation is expressed without the percentage sign. Promoters are considered likely to exhibit value-creating behaviors, such as buying more, remaining customers for longer, and making more positive referrals to other potential customers. Detractors are believed to be less likely to exhibit the value-creating behaviors.

[14] NPS is a management tool used as a measure of customer satisfaction and has been shown to correlate with revenue growth relative to competitors. NPS has been widely adopted by Fortune 500 companies and other organizations. Scores vary substantially among industries, so a good score is simply one whose trend is better than that of competitors in the same industry, as measured by double-blind benchmark research. The metric was developed by (and is a registered trademark of) Fred Reichheld, Bain & Company and Satmetrix. It was introduced by Reichheld in his 2003 Harvard Business Review article, "The One Number You Need to Grow". Its popularity and broad use have been attributed to its simplicity and its openly available methodology.

Figure 6. Net Promoter Score Scale



Based on telephone survey respondent answers, the Residential Equipment program in Iowa has an NPS of 55 (70 percent – 15 percent = 55) and an NPS of 76 in Illinois (79 percent – 3 percent = 76).

Table 18. Iowa and Illinois NPS

NPS Score and Category	Iowa Participants	Illinois Participants
NPS Score	**55**	**76**
Promoters (rating 9 or 10)	70%	79%
Passives (rating 7 or 8)	15%	18%
Detractors (rating 0 – 6)	15%	3%
Respondents	**157**	**154**

Source: SAT4 (Participant Survey)
Don't know and refused responses are excluded
Rated on a scale of 0 to 10, where 0 was "extremely unlikely" and 10 was "extremely likely"

Trade allies were also asked how likely they are to recommend the program to a peer using the same scale. Seven trade allies rated their likelihood a 9 or 10, three rated their likelihood a 7 or 8, and one trade ally rated their likelihood a 0.

5.2.3.2 Customer Satisfaction

Overall, satisfaction with MidAmerican services is high among both surveyed participants and nonparticipants, with more than 90 percent of each reporting they are either very or extremely satisfied. In comparison, 43 percent of surveyed participants are extremely satisfied, while 32 percent of responding nonparticipants are extremely satisfied. However, none of the surveyed participants indicated they were not at all satisfied with MidAmerican services.

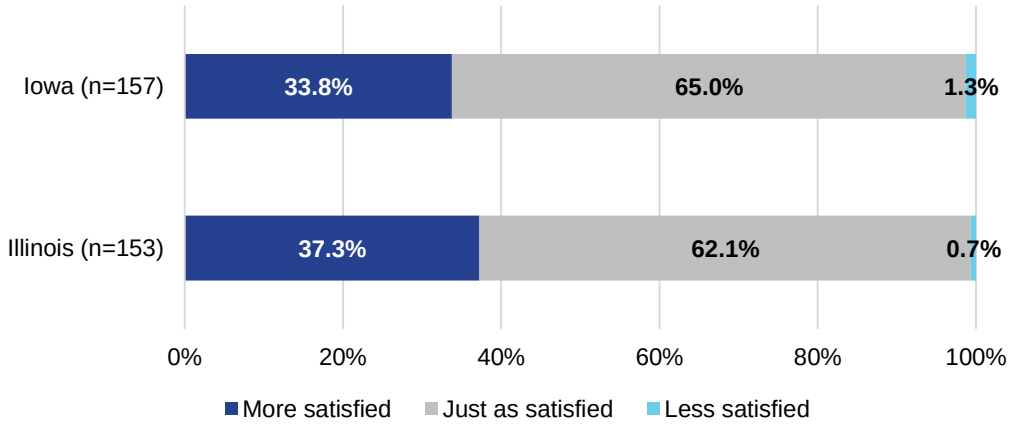
Table 19. Satisfaction with Service Provided by MidAmerican

Satisfaction Level	Iowa Participants	Illinois Participants	Nonparticipants
Extremely satisfied	46.2%	40.3%	32.1%
Very satisfied	44.9%	49.4%	59.8%
Somewhat satisfied	8.9%	10.4%	7.6%
Not at all satisfied	0.0%	0.0%	0.5%
Respondents (n)	**158**	**154**	**184**

Source: Question SAT5 (Participant and Nonparticipant Survey)
Don't know and refused responses are excluded

Additionally, 34 percent of Iowa and 37 percent of Illinois surveyed participants indicated they were more satisfied with MidAmerican since their participation in the Residential Equipment program.

Figure 7. Change in Satisfaction with Service Provided by MidAmerican since Participation



Source: Question SAT8 (Participant Survey)
Don't know and refused responses are excluded

To provide further detail, participants were asked to rate the program and specific aspects of the program on a scale of not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied. The overall program rating was higher in Illinois, with 94 percent rating it as very or extremely satisfied, compared with 78 percent in Iowa (previously 87 percent). This decline in Iowa is at least partially a result of the decrease in incentive amounts, as the proportion of very or extremely satisfied ratings for "the amount of the incentive received" was 63 percent in Iowa and 73 percent in Illinois (previously 76 percent and 91 percent respectively). Ratings for other aspects of the program remain high and similar to the previous evaluation results.

Table 20. Participant Satisfaction

Program Aspect	Iowa		Illinois	
	Respondents (n)	Percent Rating 3 or 4	Respondents (n)	Percent Rating 3 or 4
The program overall	162	77.8%	157	94.3%
The type of equipment eligible for the program	155	80.6%	146	91.1%
The rebate application process	147	82.3%	152	92.8%
The amount of the incentive received	157	63.1%	154	73.4%
The timeliness of payment of the incentive	146	81.5%	153	88.9%
The contractor who installed the equipment	96	91.7%	128	94.5%

More than 60 percent of the surveyed participants are extremely likely to recommend the Residential Equipment program to others (62 percent in Iowa and 72 percent in Illinois).

5.2.3.3 Trade Ally Satisfaction

Similar to program participants, the trade allies interviewed are highly likely to recommend the program to a peer. On a scale of 0 to 10, where 0 was extremely unlikely and 10 was extremely likely, 10 of the trade allies the Tetra Tech team spoke with rated their likelihood of recommending the program to their peers as an eight, nine, or 10.

Responding trade allies were asked to rate their satisfaction on a four-point scale from not at all satisfied to extremely satisfied. Ten of the 13 interviewed trade allies reported some level of satisfaction—five were somewhat satisfied, and five were very or extremely satisfied. Two insulation contractors were very satisfied with the program while the insulation rebates were available. Two more trade allies, who were somewhat satisfied, would be more satisfied if there were incentives available for geothermal systems, although they feel that everything is currently working well.

Interviewed trade allies offered the following when asked for program improvement suggestions:

- Three trade allies would like more communication from MidAmerican regarding program changes and requirements. They suggested emails were the best way to provide additional program information. An easier application process was mentioned by three trade allies as something that would increase their satisfaction from somewhat satisfied. None of the three have signed up for the online application. One would like an online option, which MidAmerican has recently launched. Another is struggling with the need to split out individual package projects into individual measure invoices. Recommended changes from trade allies varied. As noted earlier, three insulation contractors would like to see the insulation incentives return to the program.

  > *Start it up again for insulation. I can give thousands of examples of how it has made homes more efficient. It has put less stress on the power grid. It was very beneficial to a lot of people especially the elderly and the low income.*

- Two trade allies would like to see the incentive amounts increased closer to previous levels. One satisfied trade ally feels for customers who are not getting the rebate value that past customers have gotten but understands why. It is not creating any issues for their business but senses customer disappointment in the amount of the rebate. Two others commented on application improvements—one suggesting an extension to the timeline and the other suggesting a downloadable form that can be filled in.

5.2.4 Future Plans and COVID-19 Affect

With all the restrictions put in place in response to COVID-19, participating and nonparticipating survey respondents were asked to indicate how likely they are to take various actions over the next six months. As we highlight in Table 21, a high proportion of both participating and nonparticipating customers are not at all likely to take some of the proposed actions in the next six months, such as building a new house, starting a major home remodel, or purchasing new energy efficient equipment. However, when it comes to looking for additional ways to save energy in their homes, and allowing a contractor into their homes, customers were more likely to say it was a possibility.

Table 21. Household Actions Likely in the Next 6 Months

Action		Iowa Participants	Illinois Participants	Nonparticipants
Purchase new energy efficient equipment or appliances for your home	Extremely likely	8.6%	11.0%	2.2%
	Very likely	20.5%	19.2%	10.9%
	Somewhat likely	27.8%	25.3%	27.2%
	Not at all likely	43.0%	44.5%	60.0%
	Respondents (n)	**151**	**146**	**184**
Allow a contractor into your home to service existing equipment or appliances	Extremely likely	24.7%	25.5%	7.6%
	Very likely	32.7%	36.9%	30.4%
	Somewhat likely	22.7%	27.5%	28.3%
	Not at all likely	20.0%	10.1%	33.7%
	Respondents (n)	**150**	**149**	**184**
Look for additional ways to save energy in your home that are low cost or no cost	Extremely likely	14.7%	19.7%	6.5%
	Very likely	24.7%	27.9%	24.5%
	Somewhat likely	39.3%	32.0%	44.6%
	Not at all likely	21.3%	20.4%	24.5%
	Respondents (n)	**150**	**147**	**184**
Start a major home renovation or remodeling project	Extremely likely	6.0%	6.1%	5.9%
	Very likely	6.7%	6.8%	9.0%
	Somewhat likely	17.3%	19.6%	13.3%
	Not at all likely	70.0%	67.6%	71.8%
	Respondents (n)	**150**	**148**	**188**
Build a new home	Extremely likely	0.0%	2.0%	0.5%
	Very likely	0.0%	0.7%	1.6%
	Somewhat likely	4.0%	3.4%	0.5%
	Not at all likely	96.0%	93.9%	97.3%
	Respondents (n)	**151**	**148**	**187**

Source: Question C10A-C10E (Participant and Nonparticipant Survey)
Don't know and refused responses are excluded

Participants and nonparticipants were then asked to think about whether or not their responses to the actions presented in Table 21 were influenced by the COVID-19 pandemic. More than 90 percent of surveyed participants and 83 percent of nonparticipants said that their answers were not influenced by the pandemic. Those who were influenced mostly mentioned the reduction or lack of income affecting their plans, with a few others still not comfortable with letting people into their homes.

Table 22. Influence of COVID-19 on Household Actions

Were Actions Influenced	Iowa Participants	Illinois Participants	Nonparticipants
No	90.0%	92.5%	83.4%
Yes	10.0%	7.5%	16.6%
Respondents (n)	**150**	**147**	**187**

Source: Question C11 (Participant and Nonparticipant Survey)
Don't know and refused responses are excluded

5.2.4.1 Trade Ally COVID Responses

Eight of the trade allies suggested there was early impact on their businesses from COVID-19, with five indicating their work has picked up over the summer as they figured out all the social distancing, safety, and personal protective equipment. A consistent issue mentioned by 10 of the trade allies is the difficulty getting equipment in a timely manner. Supply chains have been disrupted and manufacturers seem to have challenges keeping up with demand.

> *We had a good season. For whatever reason, people were buying equipment. Some delays in getting equipment and we lost projects. Some projects are delayed until the equipment is available, which could be weeks. It affected our ability to provide quick and timely installations.*
>
> *I don't think it has affected business. Maybe delays with some of the equipment.*
>
> *It's caused a problem with being able to get in people's home. Everyone was pretty skeptical about letting someone in, but it's starting to turn back around. It didn't cause project/equipment delays.*
>
> *Just having to wear a face mask when we're in certain places. It hasn't slowed us down a bit. We had some trouble getting water heaters and a few different air conditioners, but it seems to be getting back to more normal. As far as slowing down or not getting jobs to do, it didn't affect that any.*
>
> *It was hard at first. We had a little bit of a slow-down but since then, we're having a great year. Some equipment delays.*
>
> *We wear a lot more masks than we were used to in places where we never had to. We try to follow every possible rule we can follow and we're an exemplary company when it comes to protection of COVID. I don't think there's anything else we can do except for follow the guidelines as we're told.*
>
> *People still need heat and cooling. We'll make PPE arrangements when we need to, but if somebody wants work done, we do it. Getting equipment is becoming an issue.*
>
> *It killed it for the first part of the year. Do you want someone to come into your house and work on your system? Manufacturers can't keep up right now.*
>
> *It set me down for first part of summer 100%. Majority of projects are still delayed from spring. We don't know if we'll ever get those back. I made a large order of materials around the storm since I recognized there might be a shortage. For me, no delays in materials because always buy in bulk. I have heard of people having to wait for product for 3-4 days. For us, it's not the case because we ordered in bulk early.*

Issues with supply chain, bought up surplus equipment to avoid supply issues later in the year

In terms of the effect COVID-19 will have on trade allies over the next six months, two contractors think there will be minimal impact, but seven mentioned that it would be dependent on the reliability of the supply chain for required equipment, new COVID-19 cases, and homeowner preferences. For one trade ally, employee wellness was their primary concern.

Trying to get inventory is terrible right now so in six months, I might not be able to put a furnace in because we might not have one.

I think equipment should be easier to get. I hope it's business as usual.

It's going to make a difference depending on what the news cycle is like with the numbers and people's comfortability.

I think some people are putting some things off like home remodel jobs like upgrading the furnace or AC. Some are more afraid of being in contact with people, so I don't know if we'll see a big push to upgrade after this is all over or what to expect.

Our business is up and going strong again and we're not being affected. We do a lot over the phone. We try to be respectful of social distancing things. I don't think it'll affect the business but our procedures are changing a little.

Two of the responding trade allies shifted their purchasing of materials in an attempt to minimize delays to the customer, otherwise they risk losing the projects.

APPENDIX A: PROJECT REVIEW RESULTS

As noted earlier, the PY2019 and PY2020 Q1 Residential Equipment program impact evaluation efforts included an engineering analysis for a sample of measures completed for 41 customer sites and for a total of 101 measures reviewed at these sites. Based on findings in the documentation, adjustments were made on electric projects and gas projects had no adjustments. There were minimal adjustments to projects, for Iowa electric projects, the most common adjustment was to cooling capacity values for Thermostats. Illinois electric projects included a small amount of savings associated with the “quality install,” although there was no supporting documentation. There were no natural gas project adjustments.

Table A-1. Project Level Tracked and Evaluated Gross Energy Savings - Iowa

Project ID	Electric Savings (kWh)		Demand Savings (kW)		Gas Savings (Therms)		Gas Savings (Peak Therms)		Realization Rate			
	Tracked	Evaluated	Tracked	Evaluated	Tracked	Evaluated	Tracked	Evaluated	kWh	kW	Therms	Peak Therms
1013	552.2193	544.3385	0.3430	0.3383	151.1608	151.1608	2.4980	2.4979	99%	99%	100%	100%
1018	497.9176	471.1232	0.3064	0.2906	103.2151	103.2151	1.7057	1.7056	95%	95%	100%	100%
1020	1133.0745	932.0004	0.2210	0.1791	0.0000	0.0000	0.0000	0.0000	82%	81%		
1024	710.4563	755.7702	0.4459	0.4727	157.1537	157.1537	2.5970	2.5970	106%	106%	100%	100%
1032	812.7501	805.0858	0.0799	0.0657	0.0000	0.0000	0.0000	0.0000	99%	82%		
1037	479.5871	382.6548	0.2901	0.2329	103.2151	103.2151	1.7057	1.7056	80%	80%	100%	100%
1039	617.6038	568.7436	0.3831	0.3543	103.2151	103.2151	1.7057	1.7056	92%	92%	100%	100%
1043	650.4111	612.9779	0.4052	0.3831	138.3309	138.3309	2.2860	2.2859	94%	95%	100%	100%
1048	300.8492	282.5021	0.2988	0.2806	50.3177	50.3176	0.8315	0.8315	94%	94%	100%	100%
1054	269.7844	241.2086	0.2637	0.2348	27.9670	27.9670	0.4622	0.4622	89%	89%	100%	100%
1055	231.9665	189.6272	0.2210	0.1791	70.7151	70.7151	1.1686	1.1686	82%	81%	100%	100%

Electric Project Adjustments

- Project ID 1013: These projects included a smart advanced thermostat measure. The tracked measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The Tetra Tech team used the cooling system size of 34.0 Mbtu versus 36 Mbtu. This resulted in a realization rate of 99 percent for both kWh and Peak kW.
- Project ID 1018: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 29.2 Mbtu versus 36 Mbtu. This resulted in a realization rate of 95 percent for both kWh and Peak kW.
- Project ID 1020: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 18.0 Mbtu versus 36 Mbtu. This resulted in a realization rate of 82 percent for kWh and 81 percent for Peak kW.
- Project ID 1024: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 47.5 Mbtu versus 36 Mbtu. This resulted in a realization rate of 106 percent for both kWh and Peak kW.
- Project ID 1032: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 29.6 Mbtu versus 36 Mbtu. This resulted in a realization rate of 99 percent for kWh and 82 percent for Peak kW.
- Project ID 1037: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 23.4 Mbtu versus 36 Mbtu. This resulted in a realization rate of 80 percent for both kWh and Peak kW.
- Project ID 1039: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 35.6 Mbtu versus 36 Mbtu. This resulted in a realization rate of 92 percent for both kWh and Peak kW.
- Project ID 1043: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 38.5 Mbtu versus 36 Mbtu. This resulted in a realization rate of 94 percent for kWh and 95 percent for Peak kW.
- Project ID 1048: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 28.2 Mbtu versus 36 Mbtu. This resulted in a realization rate of 94 percent for both kWh and Peak kW.

- Project ID 1054: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 23.6 Mbtu versus 36 Mbtu. This resulted in a realization rate of 89 percent for both kWh and Peak kW.
- Project ID 1055: These projects included a smart advanced thermostat measure. The claimed measure used the default cooling system size, although the project included the actual cooling system size that was identified by the AHRI certification sheet provided for the cooling system equipment incentive. The evaluation used the cooling system size of 18.0 Mbtu versus 36 Mbtu. This resulted in a realization rate of 82 percent for kWh and 81 percent for Peak kW.

Natural Gas Project Adjustments

- No adjustments

Table A-2. Project Level Tracked and Evaluated Gross Energy Savings - Illinois

Project ID	Electric Savings (kWh)		Demand Savings (kW)		Gas Savings (Therms)		Gas Savings (Peak Therms)		Realization Rate			
	Tracked	Evaluated	Tracked	Evaluated	Tracked	Evaluated	Tracked	Evaluated	kWh	kW	Therms	Peak Therms
1007	1481.8181	1401.9941	0.4886	0.4910	0.0000	0.0000	0.0000	0.0000	95%	100%		
1031	382.1502	382.2008	0.1756	0.1765	0.0000	0.0000	0.0000	0.0000	100%	101%		

Electric Project Adjustments

- Project ID 1007: This project included an air source heat pump (ductless mini-split) measure. It appears that the “quality install” adder was included in the project, although not documented or tracked. The evaluation removed approximately 80 kWh associated with the adder. The subtraction resulted in 94.6 percent realization rate for kWh. Peak kW matched claimed with 100 percent realization rate.
- Project ID 1031: This project included an air source heat pump (ductless mini-split) measure. It appears that a data entry or rounding error caused a slight difference in both Peak kW and kWh. The difference resulted in a 100 percent realization rate for kWh and 100.5 percent realization rate for Peak kW.

Natural Gas Project Adjustments

- No adjustments

APPENDIX B: GROSS REALIZATION RATE CALCULATIONS

Per the Strategic Evaluation Plan[15] (SEP), the sampling design for each of MidAmerican's program-level impact evaluations will attempt to report verified program savings at a minimum 90% confidence (+/- 10% error). This confidence and precision level is an industry standard. However, error bands will vary somewhat by program due to sampling, program needs, and budgets. Additionally, the SEP noted that verified ex-post (evaluated) results will be presented numerically and by major measure category. The sampling process for the Residential Equipment program desk reviews was designed to achieve this level of precision for evaluated savings estimates for the programs.

The program tracking data provides detailed measure descriptions of equipment installed through the Residential Equipment program. Per the SEP guidance, the Tetra Tech team collapsed the measures of the relevant activity codes into major end uses. Both the participating customer telephone surveys and the engineering desk reviews were sampled across these measure end use categories. The table below documents the measures defined within the program tracking system and their assignment into measure end use categories[16].

[15] MidAmerican Energy Company 2019-2023 Energy Efficiency Monitoring and Evaluation Strategic Evaluation Plan, dated May 1, 2020.

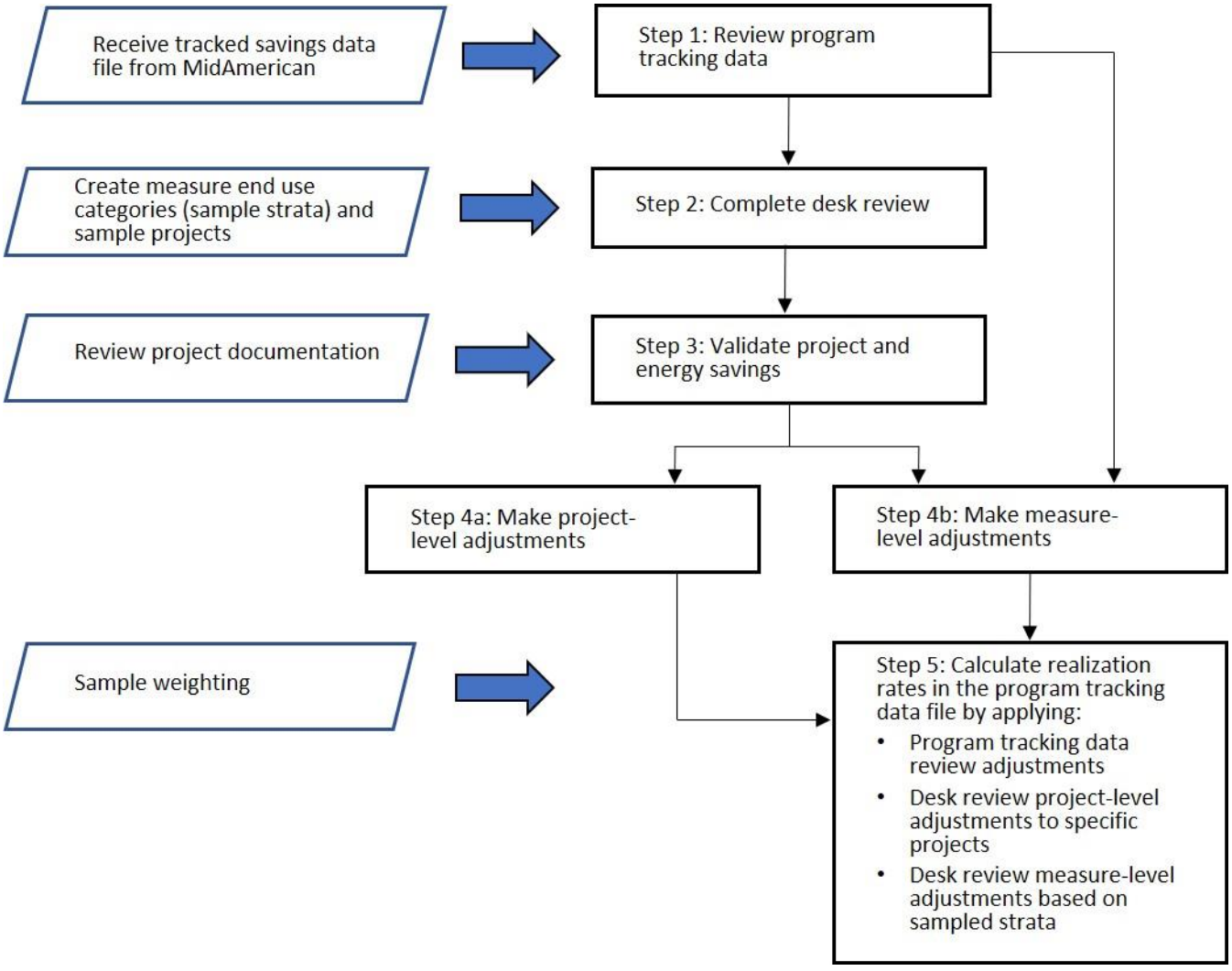
[16] This process was documented in the Sampling Memo provided to MidAmerican and finalized on July 10, 2020.

Table B-1: Equipment Measure End Use Categories

Measure Catalog Name	Measure End Use
IA/IL/SD - Furnace Blower Motor_A	Furnace Fan
IA/IL/SD - Ground Source Heat Pump_A	GSHP
IA - Air Source Heat Pump_TRM	HVAC
IA - Central Air Conditioner_TRM	HVAC
IA - Furnace_TRM	HVAC
IA/IL - Air Source Heat Pump (Ductless Mini-Split)_A	HVAC
IA/IL/SD - Air Source Heat Pump_A	HVAC
IA/IL/SD - Central Air Conditioner_A	HVAC
IA/IL/SD - Furnace_A	HVAC
IL - Air Source Heat Pump_TRM	HVAC
IL - Central Air Conditioner_TRM	HVAC
IL - Furnace_TRM	HVAC
Res - Central Air Conditioner	HVAC
Res - Natural Gas Furnace	HVAC
IA/IL/SD - Room Air Conditioner_A	Room Air Conditioner
IA/IL/SD - Attic Insulation (Parent)_A	Shell
IA/IL/SD - Attic Insulation-1.5 Story_A	Shell
IA/IL/SD - Attic Insulation-Low Pitch r-13_A	Shell
IA/IL/SD - Attic Insulation-Low Pitch_A	Shell
IA/IL/SD - Attic Insulation-Normal Attic_A	Shell
IA/IL/SD - Foundation Insulation (Parent)_A	Shell
IA/IL/SD - Foundation Insulation_A	Shell
IA/IL/SD - Rim Joist Insulation_A	Shell
IA/IL/SD - Wall Insulation (Parent)_A	Shell
IA/IL/SD - Wall Insulation_A	Shell
IA - Smart Advanced Thermostat_TRM	Thermostat
IA/IL/SD - Programmable Thermostat_A	Thermostat
IL - Smart Advanced Thermostat_TRM	Thermostat
Res - Smart Thermostat	Thermostat
IA/IL - Heat Pump Water Heater_A	Water Heater

The evaluated savings results are based on both the program tracking data review and the sampled project-level adjustments. The Tetra Tech team calculated a realization rate based on the difference between the tracked savings and evaluated savings. The program tracking data and sampled project-level realization rates were weighted to represent program level realization rates. Program tracking data and project-level adjustments incorporated any changes related to items such as adjustments based on the application of deemed savings values from the Iowa TRM or MidAmerican's Appendix A and/or any project documentation inconsistencies. Each measure category's realization rate calculation varies somewhat due to the projects that were sampled and what was found across the database tracking system review and desk reviews. The flow chart below outlines how the realization rate calculations were completed for sampled projects with desk reviews.

Figure A-1: Realization Rate Calculation—Projects with Desk Reviews



APPENDIX C: PARTICIPANT SURVEY

MidAmerican Energy Residential Equipment Program
Process, Verification, and Net-to-Gross Participant Survey

(NOTE: Each respondent will only be asked the Verification and Free-Ridership for ONE sampled measure)

- Sample Variables
- Introduction
- Phone Screening
- Awareness and Attitudes
- Process Questions
- Verification
  - Central Air Conditioner
  - Heat Pump
  - Furnace
  - Furnace Fan
  - Thermostat
- Free-ridership
- Spillover
- Satisfaction
- Final Process Questions
- Demographics
- Conclusion

SAMPLE VARIABLES

CASEID Unique case identifier

DATE Date of participation

REBAMT Rebate dollar amount per measure

QTY Quantity of sampled measure installed

MEASTYPE Generic product description and Sample Flag
1 central air conditioner
2 furnace
3 furnace fan
4 heat pump
5 thermostat

EEMEAS Specific high efficiency equipment implemented or service performed. These will be generated in the sample file and updated prior to fielding the survey.

1 energy efficient central air conditioner
2 energy efficient furnace
3 energy efficient furnace fan
4 energy efficient heat pump
5 smart thermostat

ADDRESS Address where measure implemented

CITY

STATE

ZIP

CONTACT_NAME Contact listed in participant files

PHONE_NUM

EXTPROJECTID Project identification number

ACCOUNT_NUM

QUOTA

1 Iowa = 140
2 Illinois = 140

kW

kWh

Therms

FuelType

Incent_E

Incent_G

INTRODUCTION

INTRO [INTERVIEWER INSTRUCTION: Please dial the phone number <PHONE_NUM> and enter the call result.]

01	Connected	[PROCEED]
02	Did not connect	[DISPO CASE OUT]

INT01 Hello, my name is _____ calling from Tetra Tech on behalf of MidAmerican Energy. We are conducting a study about MidAmerican's Residential Equipment program. This is not a sales call, and responses will be used to inform MidAmerican about your experience with the program.

Our records show that your household received a rebate for purchasing a <EEMEAS> through MidAmerican's Residential Equipment program. May I speak to the person in your household that is most familiar with your participation in the Residential Equipment program?
[IF CONTACT_NAME IS NOT BLANK SHOW "The name we have on record is <CONTACT_NAME>."]

01	Yes	
02	No, R not knowledgeable	[SKIP TO OTHER_R]
03	No, R is not currently available	[SCHEDULE CALLBACK]
04	Did not connect	[DISPO CASE OUT]

PREAMBLE

I'm with Tetra Tech, an independent research firm. I am calling to learn about your experiences with MidAmerican's Residential Equipment program.

I'm not selling anything; I'd just like to ask your opinion about this program. Let me assure you that your responses will be kept confidential and your individual responses will not be revealed to anyone unless you grant permission.

Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored.

01	Continue	[SKIP TO I3]

FAQ [THE FOLLOWING IS AVAILABLE ONLY IF NEEDED:

Who is doing this study: MidAmerican Energy has hired our firm to evaluate this program. As part of the evaluation, we're talking with customers that participated in the program to understand their experiences with the program.

Why are you conducting this study: Studies like this help MidAmerican Energy better understand customers' need for energy efficiency programs and services.

Timing: This survey should only take about 20 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALLBACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.

Sales concern: I am not selling anything; we would simply like to learn about your experience with the program. Your responses will be kept confidential and not revealed to anyone unless you grant permission. If you would like to talk with someone from MidAmerican Energy about this study, feel free to call MidAmerican Energy's call center at (888) 427-5632.

OTHER_R Is there someone else in your household that is knowledgeable about your household's participation in the Residential Equipment program?

01	Yes, there's somebody else	
02	No	[THANK & TERMINATE 81]
88	Don't know	[THANK & TERMINATE 81]
99	Refused / Prefer not to answer	[THANK & TERMINATE 91]

AVAILABLE_R May I please speak with that person?

01	Yes	[RETURN TO INT01]
02	Yes, but R is not currently available	[SCHEDULE CALLBACK]
03	No	[THANK AND TERMINATE 91]
99	Refused	[THANK AND TERMINATE 91]

PHONE SCREENING QUESTIONS

I3 Are you, or is anyone in your household, a current or former employee of MidAmerican? [CHECK ONE]

01	Yes	[THANK & TERMINATE 83]
02	No	
88	Don't know	[THANK & TERMINATE 83]
99	Refused	[THANK & TERMINATE 91]

AWARENESS

[ASK OF ALL]

Now I would like to ask you about your experience with the Residential Equipment program.

C1 How did you learn about the Residential Equipment program? *[DO NOT READ; SELECT ALL THAT APPLY]*

For C1C01 through C1C99:
0 Not mentioned
1 Mentioned

C1C01 MidAmerican utility bill insert
C1C02 MidAmerican website
C1C03 MidAmerican brochure
C1C04 MidAmerican call center representative
C1C05 Retail store
C1C06 Contractor
C1C07 Home show/conference/trade show
C1C08 Newspaper
C1C09 Radio
C1C10 Television
C1C11 Billboard
C1C12 Friend / Family member / Coworker
C1C13 Email from MidAmerican
C1C15 Signage at local event such as school or sporting event
C1C16 Other (SPECIFY)
C1C88 Don't know
C1C99 Refused

GENERAL BEHAVIORS AND ATTITUDES

C2 *[SKIP IF C1C01 =1]* In the past year, have you visited the MidAmerican website?

01	Yes	
02	No	[SKIP TO C6]
88	Don't know	[SKIP TO C6]
99	Refused	[SKIP TO C6]

C3 Why did you visit the MidAmerican website? *[DO NOT READ; SELECT ALL THAT APPLY]*

For C3C01 through C3C88:
0 Not mentioned
1 Mentioned

C3C01 Look for information on the program
C3C02 Look for additional ways/opportunities that MidAmerican offers to help me save energy/money at home
C3C03 Information on energy efficient appliances
C3C04 Information on energy efficiency in general
C3C05 Information on COVID-19
C3C06 Other (specify)
C3C88 Don't know

C3C01O [ASK IF C3C01=1] Which programs?
C3C05O [ASK IF C3C05=1] What specific information were you looking for?

C4 How easy was it to find the information you were looking for? Was it not at all easy, somewhat easy, very easy, or extremely easy? [*SELECT ONE]*

01 Not at all easy
02 Somewhat easy
03 Very easy
04 Extremely easy
88 Don't know

C5 How helpful was the information you found on the website? Was it not at all helpful, somewhat helpful, very helpful, or extremely helpful? *[SELECT ONE]*

01 Not at all helpful
02 Somewhat helpful
03 Very helpful
04 Extremely helpful
88 Don't know

PROGRAM PARTICIPATION

C6 Please tell me, when considering an appliance or equipment purchase for your home, how important are each of the following factors in your decision? Please respond with not at all important, somewhat important, very important, or extremely important to you. How important is…*[PROGRAMMER NOTE: ROTATE A – G]*

For C6A through C6G:
01 Not at all important
02 Somewhat important
03 Very important
04 Extremely important
77 Not applicable
88 Don't know
99 Refused

C6A saving money on your energy bills?
C6B the cost of equipment?
C6C the availability of a rebate, such as those offered by MidAmerican Energy or the manufacturer?
C6D it that someone you know had a positive experience with the equipment?
C6E improving the comfort of your home?
C6F increasing the value of your home?
C6G it that the equipment was recommended to you by a contractor or retailer?

PROCESS QUESTIONS

[ASK OF ALL]

RE2 For the purchase and installation of the equipment through the program, did you work directly with a contractor, a retailer, or do it all on your own? *[DO NOT READ; SELECT ALL THAT APPLY]*

For RE2C01 through RE2C04:
0 Not mentioned
1 Mentioned

RE2C01 Contractor
RE2C02 Retailer
RE2C03 Do it all on your own / Did it myself [EXCLUSIVE]
RE2C04 Other (SPECIFY)
RE2C88 Don't know

RE5 *[IF RE2C01 = 1 OR RE2C02 = 1]* When you purchased the equipment, did the [IF RE2C02 = 1: retailer; IF RE2C01 = 1: contractor; IF RE2C01 = 1 AND RE2C02 = 1: contractor or retailer]…[*PROGRAMMER NOTE: ROTATE A – E]*

For RE5A through RE5E:
01 Yes
02 No
77 Not Applicable
88 Don't know

RE5A provide brochures or literature about ways you can save energy in your home?
RE5B discuss with you the potential energy savings you could achieve by installing energy efficient equipment?
RE5C provide instructions or assistance with installation?
RE5D show you how to maintain your new equipment?
RE5E [IF THERMOSTAT (EEMEAS=5)] discuss temperature settings for your equipment?

RE6 Who completed the application for this program? Was it you, the contractor or retailer, or both of you together?

01 Customer (respondent)
02 Contractor / Retailer
03 Both customer and contractor/retailer
88 Don't know

RE6A *[IF RE6 = 01 OR 03]* Did you find the application easy to complete?

01 Yes
02 No
88 Don't know

RE7 *[IF RE6A = 02]* What made the application difficult to complete?
[RECORD VERBATIM]

RE8 Did you contact MidAmerican program staff for assistance with this program?

01 Yes
02 No
88 Don't know

RE9 *[IF RE8 = 01]* What did you need assistance with? *[DO NOT READ LIST; SELECT ALL THAT APPLY]*

For RE9R1 through RE9R4:
0 Not mentioned
1 Mentioned

RE9C01 Determining if I was an eligible customer
RE9C02 Determining if the equipment was eligible
RE9C03 Assistance in filling out the application
RE9C04 Other (SPECIFY)
RE9C88 Don't know

RE10 *[IF RE8 = 1]* Did you find the MidAmerican program staff helpful?

01 Yes
02 No
88 Don't know

RE11 Had you purchased energy-efficient equipment prior to participating in the Residential Equipment program?

01 Yes
02 No
88 Don't know

RE12 How likely do you think you are to buy energy efficient equipment again in the future? Would you say you are not at all likely, somewhat likely, very likely, or extremely likely?

01 Not at all likely
02 Somewhat likely
03 Very likely
04 Extremely likely
88 Don’t know

CENTRAL AIR CONDITIONER

[ASK IF CENTRAL AIR CONDITIONER MEASURE SAMPLED (EEMEAS=1)]

CAC1 Now I’m going to ask you some questions about the central air conditioner you purchased through the program. Is this central air conditioner currently installed in your home?
01 Yes
02 No (SPECIFY: Why isn’t this equipment installed?) [SKIP TO NEXT SECTION]

CAC2 Prior to participating in the program, what type of air conditioning system, if any, did you **primarily** use in your home? *[READ LIST IF NEEDED; SELECT ONE ANSWER]*

01 Did not have air conditioning
02 Central air conditioner
03 Room or wall air conditioner
04 Evaporative cooler or swamp cooler
05 Geothermal (ground-source) heat pump
06 Air-to-air (air-source) heat pump
07 Add-on heat pump
08 Other (SPECIFY)
88 Don't know
99 Refused

CAC2C03O [ASK IF CAC2=03] How many room or wall air conditioners?

__ Number of room/wall AC units [0-20]
88 Don't know
99 Refused

CAC3 *[ASK IF CAC2 = 02, 04, 05, 06, OR 07 ELSE SKIP TO CAC6]* How old was this air conditioning unit when it was replaced?

__ RECORD AGE IN YEARS [0-75]
88 Don't know
99 Refused

CAC5 Was the old air conditioning system in good, fair, poor, or non-working condition?

01 Good
02 Fair
03 Poor
04 Non-working
88 Don't know

CAC4 Which statement best describes the way your household used the **old air conditioning unit** during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, or turned on just about all summer?

01 Not used at all
02 Tuned on only a few days or nights when really needed
03 Turned on quite a bit
04 Turned on just about all summer
05 Something else (SPECIFY)
88 Don't know
99 Refused

CAC6 Which statement best describes the way your household uses the **new air conditioning unit** during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, or turned on just about all summer?

01 Not used at all
02 Tuned on only a few days or nights when really needed
03 Turned on quite a bit
04 Turned on just about all summer
05 Other (SPECIFY)
88 Don't know
99 Refused

HEAT PUMP / MINI SPLIT

[ASK IF HEAT PUMP MEASURE SAMPLED (EEMEAS=4)]

HP1 Now I'm going to ask you some questions about the heat pump you purchased through the program. Is this heat pump currently installed in your home?

01 Yes
02 No (SPECIFY: Why isn't this equipment installed?) [SKIP TO NEXT SECTION]

HP2 Is your heat pump system used to heat your home, cool your home, or both heat and cool your home?

01 Only heat
02 Only cool
03 Both
88 Don't know

SYSTEM [SET SYSTEM=HP2]

01 heating system
02 cooling system
03 heating and cooling system
88 heating or cooling system

HP3 *[IF HP2 = 01 OR 03]* Prior to participating in the program, what type of equipment did you **primarily** use to heat your home? *[READ LIST IF NEEDED; SELECT ONE ANSWER]*

01 Natural gas furnace
02 Electric furnace
03 Electric space heater
04 Geothermal (ground-source) heat pump
05 Air-to-air (air-source) heat pump
06 Add-on heat pump
07 Other (SPECIFY)
88 Don't know

HP4 *[IF HP2 = 02 OR 03]* Prior to participating in the program, what type of equipment did you **primarily** use to cool your home? *[READ LIST IF NEEDED; SELECT ONE ANSWER]*

01	Nothing	[SKIP TO NEXT SECTION]
02	Central air conditioner	
03	Room air conditioner	
04	Evaporative cooler or swamp cooler	
05	Geothermal (ground-source) heat pump	
06	Air-to-air (air-source) heat pump	
07	Add-on heat pump	
08	Other (SPECIFY)	
88	Don't know	[SKIP TO NEXT SECTION]

HP5 How old was the <HP4> when you replaced it?

__	RECORD AGE IN YEARS [0-75]
88	Don't know
99	Refused

HP8 Was the old <HP4> in good, fair, poor, or non-working condition?

01	Good
02	Fair
03	Poor
04	Non-working
88	Don't know

FURNACE

[ASK IF FURNACE MEASURE SAMPLED (EEMEAS=2)]

FUR1 Now I'm going to ask you some questions about the furnace you purchased through the program. Is this furnace currently installed in your home?

01	Yes
02	No (SPECIFY: Why isn't this equipment installed?) [SKIP TO NEXT SECTION]

FUR2 Before participating in the program, what type of heating system did you primarily use to heat your home? *[READ LIST IF NEEDED; SELECT ONE ANSWER]*

01	Natural gas furnace
02	Electric furnace
03	Electric space heater
04	Geothermal (ground-source) heat pump
05	Air-to-air (air-source) heat pump
06	Add-on heat pump
07	Other (SPECIFY)
88	Don't know

FUR3 How old was your heating unit when you replaced it?

__ [RECORD AGE IN YEARS] [0-75]
88 Don't know
99 Refused

FUR4 Was the old heating system in good, fair, poor, or non-working condition?

01 Good
02 Fair
03 Poor
04 Non-working
88 Don't know

SMART THERMOSTATS

[IF THERMOSTAT MEASURE SAMPLED (EEMEAS=5)]

T1 Now I'm going to ask you some questions about the thermostat(s) you purchased through the program. Is this thermostat currently installed in your home?

01 Yes
02 No (SPECIFY: Why isn't this equipment installed?) [SKIP TO NEXT SECTION]

T2 Is your thermostat programmed to automatically change the temperature settings at different times of the day or days of the week, or are you manually changing the temperature as needed?

01 Automatically changes temperature settings
02 Manually adjusting
03 Both
88 Don't know
99 Refused

T3 *[IF T2 = 01]* Did you program the thermostat for different settings throughout the day or is it a smart or learning thermostat that adjusts based on your occupancy and other factors?

01 I programmed it
02 Smart/Learning thermostat
88 Don't know
99 Refused

T4 What type of thermostat did your new thermostat replace?

01 Manual thermostat
02 Standard programmable thermostat
03 Smart or learning thermostat
04 Other (SPECIFY)
88 Don't know

FREE-RIDERSHIP

[ONLY ONE MEASURE SAMPLED PER PARTICIPANT; SAME MEASURE AS VERIFICATION SECTION]

[ASK IF: CAC1=01 or HP1=01 or FUR1=01 or FF1=01 or T1=01 ELSE SKIP TO NEXT SECTION]]

RR5 Now, I'd like to ask you about your decision to install the <EEMEAS> through the Residential Equipment program. Please think back to the time when you decided to purchase the equipment you installed through the program, perhaps recalling things that occurred in your household shortly before and after <DATE>.

What factors motivated you to purchase this equipment?
[DO NOT READ; SELECT ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

For RR5C01 to RR5C88:
0 Not mentioned
1 Mentioned

RR5C01 Old equipment didn't work
RR5C02 Old equipment working poorly
RR5C03 The program and/or audit recommendation
RR5C04 The program and/or audit technical assistance
RR5C05 Wanted to save energy
RR5C06 Wanted to reduce energy costs
RR5C07 The information provided by the auditor
RR5C08 Because of past experience with another utility program
RR5C09 Recommendation from other utility program
RR5C10 Recommendation of someone else
RR5C11 Advertisement in newspaper
RR5C12 Radio advertisement
RR5C13 Environmental concerns
RR5C14 Global warming
RR5C15 Part of a remodeling project
RR5C16 Other (SPECIFY)
RR5C77 None
RR5C88 Don't know

RR5C09O [ASK IF RR5C09=1] What other utility program was the recommendation from?
RR5C10O [ASK IF RR5C10=1] Who recommended the program?
RR5C11O [ASK IF RR5C11=1] What program was the newspaper advertisement for?
RR5C12O [ASK IF RR5C12=1] What program was the radio advertisement for?
RR5C16O [ASK IF RR5C16=1] Other motivation factor specified.

FR1 Who, if anyone, recommended you purchase and install the <EEMEAS> rebated through the Residential Equipment program? *[DO NOT READ; SELECT ONE ANSWER]*

01 Trade ally / contractor
02 Retailer
03 Auditor or Energy expert
04 Family / friends / neighbor
05 No one
06 Other person [SPECIFY]
88 Don't know
99 Refused

FR14 I'm going to ask you to rate how various factors might have influenced your decision to install the <EEMEAS>. Please rate the influence of each of the following using a scale of 0 to 10, where 0 is "not at all influential" and 10 is "very influential." How influential was… [ROTATE OPTIONS]

For FR14A through FR14D:
RECORD INFLUENCE 0 - 10
77 Not applicable (used in FR14d)
88 Don't know
99 Refused

FR14A *[ASK IF FR1 = 01, 02, 03, 04, OR 06]* the <FR1> recommendation on your decision to install the <EEMEAS>?
[USED IN PRELIMINARY PROGRAM INFLUENCE SCORE]
FR14B the age or condition of the old equipment?
FR14C the availability of the program rebate?
[USED IN PRELIMINARY PROGRAM INFLUENCE SCORE]
FR14D previous experience with a MidAmerican energy efficiency program?

FR6 According to our records, the Residential Equipment program provided to you a rebate of $<REBAMT> for the <EEMEAS>. If the program had not been available, what is the likelihood you would have purchased the **exact same** <MEASTYPE>? Please rate on a 0 to 10 scale, where 0 is "not at all likely" and 10 is "completely likely." [INTERNAL NOTE: BY EXACT SAME MEASURE WE'RE INCLUDING EXACT SAME EFFICIENCY]
USED FOR PRELIMINARY NO-PROGRAM SCORE

__ [RECORD LIKELIHOOD (0-10)]
88 Don't know
99 Refused

FR7 *[SKIP IF FR6 = 0]* Without the program, what is the likelihood you would have purchased the same <EEMEAS> within 12 months? Please rate on a 0 to 10 scale, where 0 is "not at all likely" and 10 is "completely likely."
USED TO CALCULATE TIMING SCORE FOR NO-PROGRAM SCORE.

__ [RECORD LIKELIHOOD (0-10)]
88 Don't know
99 Refused

FR8 *[SKIP IF FR6 = 0 OR QTY <=1]* Without the program, what is the likelihood you would have purchased fewer <EEMEAS>?
Again, please use a 0 to 10 scale, where 0 is "not at all likely" and 10 is "completely likely."
USED TO CALCULATE QUANTITY SCORE FOR NO-PROGRAM SCORE

__ [RECORD LIKELIHOOD (0-10)]
88 Don't know
99 Refused

FR10b Had you already been planning to install the same <EEMEAS> before you learned about the rebate available through the Residential Equipment program?
USED TO ADJUST THE PROGRAM INFLUENCE SCORE. IF RESPOND YES, ADJUST PROGRAM INFLUENCE SCORE BY 0.5 (50%).

01 Yes
02 No
88 Don't know
99 Refused

FR15 Now I want to focus on what it would have cost your household to install this equipment on your own without the program.
On a scale of 0 to 10, with 0 being "not at all likely" and 10 being "very likely," how likely is it that you would have paid the additional $<REBAMT> on top of the amount you already paid, to implement [IF QTY>1, SHOW: "the same quantity and efficiency"; IF QTY=1, SHOW: "the same efficiency"] of <MEASTYPE> at the same time as when you participated in the program?

__ [RECORD LIKELIHOOD (0-10)]
88 Don't know
99 Refused

FR16 Could you please tell me, in your own words, what influence, if any, the Residential Equipment program had in your decision to install the <EEMEAS> [IF EEMEAS<>3 FURNACE FAN SHOW: "instead of the standard efficiency"]?
[RECORD VERBATIM]

SPILLOVER

[ASK OF ALL]
SP1 Did your participation in MidAmerican Energy's program influence you to purchase any other type of energy efficient or ENERGY STAR equipment?

01 Yes
02 No [SKIP TO NEXT SECTION]
88 Don't know [SKIP TO NEXT SECTION]

SP2 What energy efficient equipment have you purchased? *[DO NOT READ; SELECT ALL THAT APPLY]*

01 LEDs
02 Lighting other than LEDs
03 Central air conditioner
04 Furnace
05 Heat pump
06 ENERGY STAR listed Wifi enabled smart thermostat
07 Other (SPECIFY: What kind of equipment?)
88 Don't know [SKIP TO NEXT SECTION]
99 Refused [SKIP TO NEXT SECTION]

SP2C02O *[ASK IF SP2 = 02]* Can you describe what type of lighting other than LEDs?
[RECORD VERBATIM]

SPD3 *[ASK IF SP2 = 05]* What type of equipment did the new energy efficient heat pump replace?

01 Existing Heat Pump
02 Central Air Conditioner w/ Gas Heating
03 Central Air Conditioner w/ Electric Heating
04 Other (SPECIFY)
88 Don't know

[START ROSTER SP4 to SP6 FOR EACH MENTIONED IN SP2 EXCEPT 7]
SP4 *[SKIP IF SP2 = 01, 02]* Did you receive a MidAmerican Energy rebate for the <SP2_EQUIP>?

01 Yes [SKIP TO END OF LOOP]
02 No, but from other source (Note: those who received rebates, but only NON-MidAmerican rebates, go here)
03 No rebate received
88 Don't know

SP3 How many <SP2_EQUIP> did you purchase?

__ RECORD AMOUNT PURCHASED [0-75]
88 Don't know
99 Refused

SP3a *[SKIP IF SP2 = 01, 02]* How do you know the <SP2_EQUIP> is energy efficient? [PROBE: Is it ENERGY STAR rated? Do you know the SEER level?]
[RECORD RESPONSE VERBATIM]

P5 On a scale of 0 to 10, with 0 being "not at all important" and 10 being "extremely important," how important was your participation in the MidAmerican Residential Equipment program on your decision to purchase <SP2_EQUIP> on your own?

__ [RECORD IMPORTANCE (0-10)]
88 Don't know
99 Refused

SP6 If you had not participated in MidAmerican Energy's program, how likely is it you would have still purchased <SP2_EQUIP>, using a 0 to 10 scale, where 0 is you "definitely WOULD NOT have purchased" and 10 means you "definitely WOULD have purchased"?

__ [RECORD LIKELIHOOD (0-10)]
88 Don't know
99 Refused

[END ROSTER; SKIP TO NEXT SECTION]

SATISFACTION

[ASK OF ALL]

SAT1 Overall, how satisfied are you with the Residential Equipment program? Are you not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied?

01 Not at all satisfied
02 Somewhat satisfied
03 Very satisfied
04 Extremely satisfied
88 Don't know
99 Refused

SAT2 [ASK IF SAT1<>88,99] Why did you rate your satisfaction with the program that way? [RECORD VERBATIM]

SAT3 How satisfied are you with the following aspects of the program? Please respond with not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied? [PROGRAMMER NOTE: ROTATE A – E]

For SAT3A to SAT3E:
01 Not at all satisfied
02 Somewhat satisfied
03 Very satisfied
04 Extremely satisfied
88 Don't know
99 Refused

SAT3A the length of time it took to receive the rebate?
SAT3B the type of equipment eligible for the program?
SAT3C *[IF RE2C01 = 1]* the contractor who installed the equipment?
SAT3D the rebate application process?
SAT3E the amount of incentive received through the program?

SAT4 How likely are you to recommend the Residential Equipment program to a family member or friend? Please answer on a scale of 0 to 10, where 0 is extremely unlikely and 10 is extremely likely.

[NUMERIC 0-10]
88 Don't know
99 Refused

SAT5 The next questions ask about your experience with MidAmerican as your energy provider. How would you rate the service provided by MidAmerican? Would you say not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied?

01 Not at all satisfied
02 Somewhat satisfied
03 Very satisfied
04 Extremely satisfied

SAT8 Compared to prior to your participation in the Residential Equipment program, are you more satisfied, just as satisfied, or less satisfied with MidAmerican as your energy provider?

01 More satisfied
02 Just as satisfied
03 Less satisfied
88 Don't know

SAT9 *[IF SAT8 = 01 OR 03]* Why do you say that?
[RECORD VERBATIM]

BEN2 What could MidAmerican Energy do to help your home become more energy efficient?
[RECORD VERBATIM]

FINAL PROCESS

[ASK OF ALL]

PP1 People participate in energy efficiency programs for different reasons. Why did you decide to participate in this program? *[DO NOT READ; SELECT ALL THAT APPLY]*

For PP1C01 to PP1C88
0 Not mentioned
1 Mentioned

PP1C01 Saving money on my energy bills
PP1C02 The financial incentive (rebate, payment for participating)
PP1C03 The program was recommended to me by MidAmerican
PP1C04 Someone I know had a positive experience with the program
PP1C05 The program was a way for me to do something good for the environment
PP1C06 Improving the comfort of my home
PP1C07 Increasing the value of my home
PP1C08 The program was recommended to me by a contractor
PP1C09 Other (SPECIFY)
PP1C88 Don't know

C13 Energy efficiency programs like the Residential Equipment program can affect people's lives in different ways. I am going to read to you a list. Thinking about your experience since participating in the Residential Equipment program, please indicate if each statement is completely true, somewhat true, somewhat untrue, or completely untrue. [PROGRAMMER NOTE: ROATE A – E]

For C13A through C13E:
01 Completely true
02 Somewhat true
03 Somewhat untrue
04 Completely untrue
88 Don't know
99 Refused

C13A I am saving money on my utility bill
C13B The value of my home has increased
C13C I am more comfortable in my home
C13D I learned about how to conserve energy in my home
C13E My utility bills are the same as before I participated in the program

C10 Thinking about your household over the next six months, are you… not at all likely, somewhat likely, very likely, or extremely likely to do the following?
[PROGRAMMER NOTE: ROTATE A – E]

For C10A through C10E:
01 Not at all likely
02 Somewhat likely
03 Very likely
04 Extremely likely
88 Don't know
99 Refused

C10A To purchase new energy efficient equipment or appliances for your home?
C10B To allow a contractor into your home to service existing equipment or appliances?
C10C To look for additional ways to save energy in your home that are low cost or no cost?
C10D To start a major home renovation or remodeling project?
C10E To build a new home?

C11 Thinking about the last five statements that I read to you, did the COVID-19 pandemic influence any of your responses?

01 Yes
02 No
88 Don't know

C12 *[IF C11 = 01]* How did it influence your responses?
[RECORD VERBATIM]

DEMOGRAPHICS

[ASK OF ALL]

We are almost done; I just have a few final questions.

DEM1 What type of home do you live in? Is it a . . .? *[READ LIST; SELECT ONE ANSWER]*

01 Single-family detached house
02 Single-family attached house (townhouse, row house, or duplex)
03 Apartment building with 2-4 units
04 Apartment building with 5 or more units
05 Mobile home or house trailer
06 Other (Specify)
88 Don't know
99 Refused

DEM2 Do you own your home or are you renting? [CHECK ONE]

01 Own/ buying
02 Rent
88 Don't know
99 Refused

DEM3 In approximately what year was your home built?

____ Year [1800-2020]
8888 Don't know
9999 Refused

DEM3a [If DEM3=8888] When was your home built? Please stop me when I get to the appropriate category. *[READ LIST UNTIL R ANSWERS; SELECT ONE ANSWER]*

01 1930s or earlier
02 1940s
03 1950s
04 1960s
05 1970s
06 1980s
07 1990s
08 2000s
09 2010s
88 Don't know
99 Refused

DEM4 What is the **main** fuel used to heat your home? [*DO NOT READ; SELECT ONE ANSWER]*

01 Electricity
02 Natural gas
03 Bottled gas propane
04 Fuel oil
05 Wood
06 Other (SPECIFY)
88 Don't now
99 Refused

DEM5 What is the main fuel used to heat **your water**? *[DO NOT READ; SELECT ONE ANSWER]*

01 Electricity
02 Natural gas
03 Bottled gas propane
04 Fuel oil
05 Other (SPECIFY)
88 Don't know
99 Refused

DEM6 Do you have central air conditioning in your home?

01 Yes
02 No
88 Don't know

DEM7 How many working **room or window air conditioners** do you have in your home?

__ Number of units [0-20]
88 Don't know
99 Refused

DEM8 How many years have you lived in your home*? [ENTER 0 IF LESS THAN ONE FULL YEAR]*

___ Number of years [0-100]
888 Don't know
999 Refused

DEM9 Not including unfinished basements or crawlspace, which of the following best describes the square footage of your home? Is it… *[READ LIST UNTIL R ANSWERS; SELECT ONE ANSWER]*

01 Less than 1,000 square feet
02 1,000 to 1,500 square feet
03 1,501 to 2,000 square feet
04 2,001 to 3,000 square feet
05 More than 3,000 square feet
88 Don't know
99 Refused

DEM10 Counting yourself, how many people normally live in this household on a full-time basis?

__ Number of people [0-20]
88 Don't know
99 Refused

DEM13 How old were you on your last birthday? Were you… *[READ LIST UNTIL R ANSWERS; SELECT ONE ANSWER]*

01 18 to 24
02 25 to 34
03 35 to 44
04 45 to 54
05 55 to 64
06 65 or older
88 Don't know
99 Refused

DEM14 Including wages, salaries, pensions, Social Security and other sources of income for all members of your household, what was your total household income before taxes in 2019? Please select from the following categories. Was it… *[READ LIST UNTIL R ANSWERS; SELECT ONE ANSWER]*

01 Less than $24,000
02 $24,000 to less than $50,000
03 $50,000 to less than $75,000
04 $75,000 to less than $100,000
05 $100,000 or greater
88 Don't know
99 Refused

CONCLUSION

E1 As part of our evaluation, we may need to follow-up on some of this information. Would it be all right if someone called you if needed?

01 Yes
02 No

E2 Thank you for taking the time to complete this survey. Do you have any additional comments or questions?

01 Yes [RECORD COMMENT]
02 No

DEM15 [DO NOT ASK] Record respondent gender

01 Male
02 Female
88 Don't know

APPENDIX D: NONPARTICIPANT SURVEY

MidAmerican Energy
Residential Nonparticipant Survey

Survey Sections:

- Sample Variables
- Introduction
- Household Characteristics
- Overall Program Awareness
- MidAmerican Website
- Program Specific Awareness
- Lighting
- Energy Efficiency Attributed and Barriers
- Satisfaction
- Demographics
- Conclusion

Sample Variables

CASEID Unique case identifier

PHONE_NUM Contact's telephone number

CONTACT_NAME Contact name listed in participant database

ADDRESS Address where equipment was installed

CITY

STATE

ZIP

ACCOUNT_NUM Account number

TRF_TYPE_CD Type of Account

1 Residential

METER_TYPE Electric, Gas

REP Assigned replicate

Introduction

INTRO *[INTERVIEWER INSTRUCTION: Please dial the phone number **<PHONE_NUM>** and enter the call result.]*

01	Connected	**[PROCEED]**
02	Did not connect	**[DISPO CASE OUT]**

INT01 Hello, my name is _____ calling from Tetra Tech on behalf of MidAmerican Energy. We are conducting a study about MidAmerican's energy efficiency offerings. This is not a sales call, and your responses will provide MidAmerican Energy with the opportunity to collect direct customer feedback that will inform and improve MidAmerican Energy's energy efficiency programs.

May I speak with one of the people in your household that is most knowledgeable about your household's energy usage?

[IF CONTACT_NAME IS NOT BLANK SHOW "The name we have on record is <CONTACT_NAME>."]

01	Yes	
02	No, R not knowledgeable	**[SKIP TO OTHER_R]**
03	No, R is not currently available	**[SCHEDULE CALLBACK]**
04	Did not connect	**[DISPO CASE OUT]**

PREAMBLE [IF NEEDED: I'm not selling anything; I'd just like to ask your opinions. Let me assure you that your responses will be kept confidential and your individual responses will not be revealed to anyone unless you grant permission.]

Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored.

01 Continue

FAQ [THE FOLLOWING IS AVAILABLE ONLY IF NEEDED:

Who is doing this study: MidAmerican Energy has hired our firm to gather this information.

Why are you conducting this study: Studies like this help MidAmerican Energy better understand customers' need for energy efficiency programs and services.

Timing: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALLBACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.

Sales concern: I am not selling anything; we would simply like to hear about your experiences with MidAmerican and their programs. Your responses will be kept confidential and not revealed to anyone unless you grant permission. If you would like to talk with someone from MidAmerican Energy about this study, feel free to call the MidAmerican Energy call center at 888-427-5632**.**

OTHER_R Is it possible that someone else in your household would be more knowledgeable about your household's energy usage?

01	Yes	
02	No	*[INT81 – INELIGIBLE]*
-8	Don't know	*[INT81 – INELIGIBLE]*
-9	Refused	*[INT91 – REFUSAL]*

AVAILABLE_R May I please speak with them?

01	Yes	*[SKIP TO INT01]*
02	Yes, but R is not currently available	*[INT15 – CALLBACK]*
03	No	*[INT91 – REFUSAL]*
-8	Don't know	*[INT81 – INELIGIBLE]*
-9	Refused	*[INT91 – REFUSAL]*

Household Characteristics

We would first like to understand a little bit more about your household.

I3 Are you, or is anyone in your household, a current or former employee of MidAmerican?

01	Yes	*[THANK & TERMINATE – INELIGIBLE 83]*
02	No	
-8	Don't know	*[THANK & TERMINATE – INELIGIBLE 83]*
-9	Refused	*[THANK & TERMINATE – INELIGIBLE 91]*

DEM2 Do you own your home or are you renting? *[SELECT ONE]*

01	Own/ buying
02	Rent
-8	Don't know
-9	Refused

CW1 Which of the following type of appliances do you have in your home? Do you have… *[READ LIST; SELECT ALL THAT APPLY]*

For CW1C01 through CW1C88

0	Not mentioned
1	Mentioned

CW1C01 Refrigerator; with or without freezer
CW1C02 Secondary refrigerator; with or without freezer that is plugged in and in use
CW1C03 Secondary stand-alone freezer that is plugged in and in use
CW1C77 [DO NOT READ] None
CW1C88 [DO NOT READ] Don't know

CW2A [ASK IF CW1C01=1] Approximately how old is the primary refrigerator? *[SELECT ONE]*

01 5 years old or less
02 6-10 years old
03 11-20 years old
04 Over 20 years old
-6 Programmed skip
-8 Don't know
-9 Refused

CW2B [ASK IF CW1C02=1] Approximately how old is the secondary refrigerator? [SELECT ONE]

01 5 years old or less
02 6-10 years old
03 11-20 years old
04 Over 20 years old
-6 Programmed skip
-8 Don't know
-9 Refused

CW2C [ASK IF CW1C03=1] Approximately how old is the secondary stand-alone freezer? [SELECT ONE]

01 5 years old or less
02 6-10 years old
03 11-20 years old
04 Over 20 years old
-6 Programmed skip
-8 Don't know
-9 Refused

CW3 What is the **primary** heating system you use in your home? *[READ LIST IF NEEDED; SELECT ONE]*

01 Forced air system
02 Radiant heat system
03 Hydronic system (hot water baseboard)
04 Steam radiant system
05 Geothermal system
06 Other (SPECIFY)
-8 Don't know *[SKIP TO DEM4]*
-9 Refused *[SKIP TO DEM4]*

CW3O Other primary heating system used in home

CW4 Approximately how old is the <CW3 >? *[DO NOT READ; SELECT ONE]*

01 5 years old or less
02 6-10 years old
03 11-20 years old
04 Over 20 years old
-6 Programmed skip
-8 Don't know
-9 Refused

DEM4 What is the **main** fuel used to heat your home? [*DO NOT READ; SELECT ONE]*

01 Electricity
02 Natural gas
03 Bottled gas propane
04 Fuel oil
05 Wood
06 Other (SPECIFY)
-8 Don't now
-9 Refused

DEM4O Other main fuel used to heat home

CW6 What is the **primary** cooling system you use in your home? *[READ LIST IF NEEDED; SELECT ONE]*

01 Central air conditioning
02 Geothermal system
03 Room air conditioner
04 Other (SPECIFY)
05 No cooling system
-8 Don't know
-9 Refused

CW6O Other primary cooling system used in home

CW8 [ASK IF CW6 = 01, 03, 04] Approximately how old is the <CW6>? *[DO NOT READ; SELECT ONE]*

01 5 years old or less
02 6-10 years old
03 11-20 years old
04 Over 20 years old
-6 Programmed skip
-8 Don't know
-9 Refused

CW9a Do you have a "smart" thermostat? A "smart" thermostat is wi-fi enabled, and learns and adjusts to your household patterns. Brands of smart thermostats include Nest and Ecobee. *[INTERVIEWER NOTE: THIS IS NOT A PROGRAMMABLE THERMOSTAT]*

01 Yes
02 No
-8 Don't know
-9 Refused

CW9b [ASK IF CW9a = 1] Is your smart thermostat an ENERGY STAR smart thermostat?

01 Yes
02 No
-6 Programmed skip
-8 Don't know
-9 Refused

Overall Program Awareness

P1 MidAmerican Energy offers rebates and services to customers to help them save energy.

Before today, had you heard of these rebate programs?

01 Yes
02 No
-8 Don't know
-9 Refused

C1 [ASK IF P1 = 01] How did you learn about these programs and services*? [DO NOT READ; SELECT ALL THAT APPLY]*

For C1C01 through C1C99
0 Not mentioned
1 Mentioned
-6 Programmed skip

C1C01 MidAmerican utility bill insert
C1C02 MidAmerican website
C1C03 MidAmerican brochure
C1C04 MidAmerican call center representative
C1C05 Retail store
C1C06 Contractor
C1C07 Home show / conference / trade show
C1C08 Newspaper
C1C09 Radio
C1C10 Television
C1C11 Billboard
C1C12 Friend / family member / other business
C1C13 Email from MidAmerican
C1C14 Key Account Manager (nonresidential only)
C1C15 Signage at local event such as school or sporting event?
C1C16 Other (SPECIFY)
C1C88 Don't know
C1C99 Refused

C1C16O [ASK IF CAC16=1] Other way learning about program and services specified.

MidAmerican Website

C2 In the past year, have you visited the MidAmerican website?

01 Yes
02 No *[SKIP TO HC1]*
-8 Don't know *[SKIP TO HC1]*
-9 Refused *[SKIP TO HC1]*

C3 Why did you visit the MidAmerican website? *[DO NOT READ; SELECT ALL THAT APPLY]*

For C3C01 through C3C88
0 Not mentioned
1 Mentioned
-6 Programmed skip

C3C01 Look for information on the program
C3C02 Look for additional ways/opportunities that MidAmerican offers to help me save energy/money at home
C3C03 Information on energy efficient appliances
C3C04 Information on energy efficiency in general
C3C05 Information on COVID-19
C3C06 Other (specify)
C3C88 Don't know

C3C01O [ASK IF C3C01=1] Which programs were you looking for information about?

C3C05O [ASK IF C3C05=1] What specific information were you looking for about COVID-19?

C1C06O [ASK IF CAC06=1] Other reason for visiting MidAmerican website specified.

C4 How easy was it to find the information you were looking for? Was it not at all easy, somewhat easy, very easy, or extremely easy? [*SELECT ONE]*

01 Not at all easy
02 Somewhat easy
03 Very easy
04 Extremely easy
-6 Programmed skip
-8 Don't know

C5 How helpful was the information you found on the website? Was it not at all helpful, somewhat helpful, very helpful, or extremely helpful? *[SELECT ONE]*

01 Not at all helpful
02 Somewhat helpful
03 Very helpful
04 Extremely helpful
-6 Programmed skip
-8 Don't know

Program-Specific Awareness

[SKIP TO REA1 IF DEM2 = 2, -8, -9]

Next I'd like to ask if you're aware of some of the specific energy efficiency programs MidAmerican offers its customers.

HC1 The HomeCheck Online program offers a free online home energy assessment with recommendations for making energy saving improvements. The program also offers energy efficiency kits with easy to install products, such as LED bulbs or low flow showerheads.

Before today had you heard of this program?

01	Yes	
02	No	*[SKIP TO HC3]*
-6	Programmed skip	
-8	Don't know	*[SKIP TO HC3]*
-9	Refused	*[SKIP TO HC3]*

HC2 Has your household completed the free HomeCheck Online energy assessment?

01	Yes
02	No
-6	Programmed skip
-8	Don't know
-9	Refused

HC3 [ASK IF HC1=02,-8,-9 OR HC2=02,-8] Based on how I described the program, how interested would you be in completing the HomeCheck Online energy assessment? Would you say you are not at all interested, somewhat interested, very interested, extremely interested? *[SELECT ONE]*

01	Not at all interested
02	Somewhat interested
03	Very interested
04	Extremely interested
-6	Programmed skip
-8	Don't know
-9	Refused

REA1 MidAmerican Energy also provides rebates for the purchase of energy efficient equipment such as heating and cooling equipment and smart thermostats. Before today had you heard anything about the rebates available for this equipment?

01	Yes	
02	No	*[SKIP TO REA4]*
-6	Programmed skip	
-8	Don't know	*[SKIP TO REA4]*
-9	Refused	*[SKIP TO REA4]*

REA2 Has your household ever received a rebate from MidAmerican for these types of high efficiency equipment? [IF NEEDED: Equipment such as heating and cooling equipment, and thermostats.]

01	Yes	
02	No	*[SKIP TO REA4]*
-6	Programmed skip	
-8	Don't know	*[SKIP TO REA4]*
-9	Refused	*[SKIP TO REA4]*

REA2A When did you receive the rebate? *[READ LIST UNTIL R ANSWERS; SELECT ONE]*

01	Less than 6 months ago
02	6 months to less than 1 year
03	1 year to less than 2 years
04	2 or more years
-6	Programmed skip
-8	Don't know
-9	Refused

REA3 For what type of equipment did you apply for a rebate? *[DO NOT READ; SELECT ALL THAT APPLY]*

For REA3C01 through REA3C88:

0	Not mentioned
1	Mentioned
-6	Programmed skip

REA3C01 High efficiency heating equipment (furnace/boiler/furnace fan)
REA3C02 Water heater
REA3C03 Central air conditioner
REA3C04 Room air conditioner
REA3C05 Programmable thermostat
REA3C06 Heat pump (geothermal, air-source, etc.)
REA3C07 Refrigerator
REA3C08 Freezer
REA3C09 Clothes washer
REA3C10 Dishwasher
REA3C11 Duct work improvement
REA3C12 Other (SPECIFY)

REA3C88 Don't know

REA3C12O [ASK IF REA3C12=1] Other type of equipment applied for specified.

REA4 [ASK IF REA1 = 02 OR REA2 = 02, -8, -9] How interested would you be in learning more about rebates for energy efficient equipment such as heating and cooling equipment, and thermostats?

Would you say you are not at all interested, somewhat interested, very interested, extremely interested? *[SELECT ONE]*

01 Not at all interested
02 Somewhat interested
03 Very interested
04 Extremely interested
-6 Programmed skip
-8 Don't know
-9 Refused

AR1 [ASK IF METER_TYPE="Electric" ELSE SKIP TO LT3] MidAmerican Energy also offers an Appliance Recycling program, which gives customers $50 for recycling older refrigerators or freezers. MidAmerican Energy picks up and recycles the appliances so they cannot be used again. Before today had you heard anything about the Appliance Recycling program?

01 Yes
02 No *[SKIP TO AR3]*
-6 Programmed skip
-8 Don't know *[SKIP TO AR3]*
-9 Refused *[SKIP TO AR3]*

AR2 Has your household recycled an appliance through this program?

01 Yes
02 No
-6 Programmed skip
-8 Don't know
-9 Refused

AR2A [ASK IF AR2 = 01] When was your most recent year of participation?

____ Year [1900-2020]
-6 Programmed skip
-8 Don't know
-9 Refused

AR2B [ASK IF AR2 = 01] Did you use the self-scheduling tool to schedule your appliance pick-up?

01 Yes
02 No
-6 Programmed skip
-8 Don't know
-9 Refused

AR3 [SKIP IF AR1=01 AND AR2=01] How interested would you be in participating in the Appliance Recycling program? Would you say you are not at all interested, somewhat interested, very interested, extremely interested? *[SELECT ONE]*

01 Not at all interested
02 Somewhat interested
03 Very interested
04 Extremely interested
-6 Programmed skip
-8 Don't know
-9 Refused

AR4 [ASK IF AR3 = 02, 03, OR 04] The program offers a self-scheduling tool option to schedule pick-ups. If you were to participate in the program, would you use the self-scheduling tool to schedule your appliance pick-up?

01 Yes
02 No
-6 Programmed skip
-8 Don't know
-9 Refused

Lighting

I would next like to ask you a few questions about your lighting.

LT3 Thinking about all of the sockets inside and outside your home that are for screw-in type bulbs, what percent of these sockets have CFLs currently installed?
[IF NEEDED: Your best estimate if fine.] [IF NEEDED: CFLs usually do not look like regular incandescent bulbs. The most common type of compact fluorescent bulb is made with a glass tube bent into a spiral, resembling soft-serve ice cream, and it fits in a regular light bulb socket.]

___ [RECORD PERCENT 0-100]
-8 Don't know
-9 Refused

LT5 Another type of light bulb that is also being used in homes is called an LED. These bulbs look like regular light bulbs. We are not referring to battery-operated LEDs, holiday lights, or decorative strands. Thinking about all of the sockets inside and outside your home that are for screw-in type bulbs, what percent of these sockets have LEDs currently installed?
[IF NEEDED: Your best estimate if fine.]

___ [RECORD PERCENT 0-100]
-8 Don't know
-9 Refused

Energy Efficiency Attributed and Barriers

C6 Please tell me, when considering an appliance or equipment purchase for your home, how important are each of the following factors in your decision? Please respond with not at all important, somewhat important, very important, or extremely important to you. How important is… *[PROGRAMMER NOTE: ROTATE A – G]*

For C6A through C6G:
01 Not at all important
02 Somewhat important
03 Very important
04 Extremely important
-8 Don't know
-9 Refused

C6A saving money on my energy bills?
C6B the cost of equipment?
C6C the availability of a rebate, such as those offered by MidAmerican Energy or the manufacturer?
C6D it that someone you know had a positive experience with the equipment?
C6E improving the comfort of your home?
C6F increasing the value of your home?
C6G it that the equipment was recommended to you by a contractor or retailer?

EEA2 What challenges, if any, do you face in saving energy in your home?

[RECORD VERBATIM]

C10 Thinking about your household over the next six months, are you not at all likely, somewhat likely, very likely, or extremely likely to do the following?
[PROGRAMMER NOTE: ROTATE A – E]

For C10A through C10E:
01 Not at all likely
02 Somewhat likely
03 Very likely
04 Extremely likely
-8 Don't know
-9 Refused

C10A purchase new energy efficient equipment or appliances for my home?
C10B allow a contractor into my home to service existing equipment or appliances?
C10C look for additional ways to save energy in my home that are low cost or no cost?
C10D start a major home renovation or remodeling project?
C10E build a new home?

C11 Thinking about the last five statements that I read to you, did the COVID-19 pandemic influence any of your responses?

01 Yes
02 No
-8 Don't know

C12 [ASK IF C11 = 01] How did it influence your responses?

[RECORD VERBATIM]

Satisfaction

SAT5 This next question asks about your experience with MidAmerican Energy in general as your energy provider. How would you rate the service provided by MidAmerican Energy? Would you say not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied? *[SELECT ONE]*

01 Not at all satisfied
02 Somewhat satisfied
03 Very satisfied
04 Extremely satisfied
-8 Don't know *[SKIP TO DEM1]*
-9 Refused *[SKIP TO DEM1]*

SAT5a Why did you rate your satisfaction with MidAmerican Energy as "<SAT5>"?

[RECORD VERBATIM]

Household Demographics

We are almost done; I just have a few final questions.

DEM1 What type of home do you live in? Is it a . . .? *[READ LIST; SELECT ONE]*

01 Single-family detached house
02 Single-family attached house (townhouse, row house, or duplex)
03 Apartment building with 2-4 units
04 Apartment building with 5 or more units
05 Mobile home or house trailer
06 Other (Specify)
-8 Don't know
-9 Refused

DEM1O Other type of home specified.

DEM3 In approximately what year was your home built?

____ Year [1800-2020]
-8 Don't know

DEM3a [ASK IF DEM3 = -8] When was your home built? Please stop me when I get to the appropriate category. *[READ LIST UNTIL R ANSWERS; SELECT ONE]*

01 1930s or earlier
02 1940s
03 1950s
04 1960s
05 1970s
06 1980s
07 1990s
08 2000s
09 2010s
-6 Programmed skip
-8 Don't know
-9 Refused

DEM8 How many years have you lived in your home*? [ENTER 0 IF LESS THAN ONE FULL YEAR]*

___ Number of years [0-100]
-8 Don't' know
-9 Refused

DEM9 Not including unfinished basements or crawlspace, which of the following best describes the square footage of your home? Is it… *[READ LIST UNTIL R ANSWERS; SELECT ONE]*

01 Less than 1,000 square feet
02 1,000 to 1,500 square feet
03 1,501 to 2,000 square feet
04 2,001 to 3,000 square feet
05 More than 3,000 square feet
-8 Don't know
-9 Refused

DEM10 Counting yourself, how many people normally live in this household on a full-time basis?

__ Number of people [0-20]
-8 Don't know
-9 Refused

DEM13 How old were you on your last birthday? Were you… *[READ LIST; SELECT ONE]*

01 18 to 24
02 25 to 34
03 35 to 44
04 45 to 54
05 55 to 64
06 65 or older
-8 Don't know
-9 Refused

DEM14 Including wages, salaries, pensions, Social Security and other sources of income for all members of your household, what was your total household income before taxes in 2019? Please select from the following categories. Was it… *[READ LIST UNTIL R ANSWERS; SELECT ONE]*

01 Less than $24,000
02 $24,000 to less than $50,000
03 $50,000 to less than $75,000
04 $75,000 to less than $100,000
05 $100,000 or greater
-8 Don't know
-9 Refused

THANK Those are all the questions I have for you today. Thank you so much for your time. MidAmerican Energy appreciates your participation in this survey.

01 End survey

DEM15 [DO NOT ASK] Record respondent gender

01	Male
02	Female
-8	Don't know

INT99 [Count case as complete.]

CP	Completed on phone
-1	Partially completed survey

APPENDIX E: TRADE ALLY INTERVIEW GUIDE

MIDAMERICAN ENERGY RESIDENTIAL EQUIPMENT PROGRAM
TRADE ALLY INTERVIEW GUIDE

Interviewee(s):	
Interviewer(s):	
Program/Area of responsibility:	
Date(s):	

This guide will be used to understand the perspectives of participating trade allies involved with the MidAmerican Energy Residential Equipment program during 2019 and early 2020.

The Residential Equipment program encourages residential customers to purchase energy efficient equipment by providing rebates to offset the higher purchase cost of efficient equipment, as well customer education of energy efficiency opportunities. The program is available to all residential customers and landlords for both new and existing buildings in MidAmerican's service territories in Iowa and Illinois.

Trade allies play a key role in the implementation and delivery of the Residential Equipment program. Trade allies are one of the primary customer outreach arms of the program, informing customers of the program and available rebates for qualifying energy efficient equipment. Trade allies also commonly build program rebates into their project quotes to customers, and help customers complete and submit rebate applications. MidAmerican utilizes trade ally ambassadors to keep participating contractors informed of program opportunities and changes. Specific outreach efforts include MidAmerican's Trade Ally Central website and annual Trade Ally meetings across MidAmerican's service territory with participating trade allies.

In-depth interviews will be conducted by Tetra Tech staff via telephone. The interviews will be semi-structured. Therefore, the following interview protocol is only a guide to ensure certain topics are covered, but evaluators will follow the flow of the interview and modify questions as needed to fit the interviewee's circumstance and flow of conversation.

We expect the interviews to take approximately 30 minutes. We will attempt to schedule interviews with respondents in advance to accommodate each trade ally's schedule.

INTRODUCTION

Hello, may I speak to [_____]? My name is _____, and I'm calling from Tetra Tech on behalf of MidAmerican Energy. We are conducting interviews with firms that sell or install equipment or provide services rebated through MidAmerican's Residential energy efficiency programs.

We would like to ask you some questions about your participation in the program to help provide insight back to MidAmerican Energy about your experience with the program, what worked well, or

improvements you might recommend. Additionally, we have questions about the program's effect on the market for energy efficiency going forward.

Are you the best person at [COMPANY] to talk to about [COMPANY]'s experience with the MidAmerican Residential rebate programs?

1 Yes [Continue]
2 No -> Can you tell me who I should speak with? [End call if no one is familiar]

Is this a convenient time for you to talk, or would you prefer to schedule another time?
[Proceed or schedule appointment as appropriate.]

The interview should last about 30 minutes. The information you provide will be treated as confidential and will help MidAmerican Energy improve their residential rebate programs in the future.
[If needed: Offer the contact name from below as the person to contact with any questions about the validity of this research.]

Name	Phone Number
Amber Moser	563-333-8049
Dave McCammant	563-333-8864

With your permission, I would like to record the interview. Do I have your permission to do so? [IF NEEDED: We will use the recording to help us compile the results, in order to make sure we accurately represent your responses. No one but Tetra Tech staff will listen to the recording.]

PROGRAM AWARENESS, MARKETING, AND RECRUITMENT

1) What is your role at [COMPANY NAME]?
How many staff are employed there?

2) How many years have you worked with MidAmerican's energy efficiency programs? In 2019, what percentage of your total projects did rebated projects represent?

- Do you also work with MidAmerican's Nonresidential program?

1 Yes -> About what percent of your projects go through MidAmerican's Residential vs Nonresidential Programs?
____ Percent Residential ____ Percent Nonresidential
2 No

3) About what percent of the time are residential customers generally aware of the MidAmerican rebates available prior to working with you?

4) How effective are MidAmerican marketing efforts in making residential customers aware of the program? How could they be more effective?

5) What markets or types of residential customers do you think the programs is reaching well? What markets or customer types are challenging to reach?

6) Does the program affect your sales and recommendation practices? Why or why not?

7) If MidAmerican's programs were not available, would the equipment types or efficiency levels you typically recommended be any different? Why or why not?

8) Do you see the program increasing the interest and demand for energy efficient equipment? If so, to what degree (e.g., some increase or substantial increase)? Why do you say that?

EDUCATION AND OUTREACH

9) Do you feel adequately informed of program changes?

1 Yes
2 No -> How could you be better informed of program changes?

10) What type of support have you received from MidAmerican? What types of program-specific trainings have been made available to your company, if any?

- Did you or your staff attend any of these trainings? If so, how useful were they?
- What other types of trainings would you like to see offered by MidAmerican?

11) Have you worked with a Trade Ally Ambassador?

- Was the Trade Ally Ambassador helpful?
- Do you have suggestions for how the Trade Ally Ambassador role could be improved?

12) How do you assist customers with rebate applications, if at all? Do you have a dedicated staff person to handle applications?

- What percentage of your time do you spend working on the applications for this program?
- What are some tips or lessons learned that you would share with a company that is new to the rebate program and just getting started with the application process?

13) Have you signed up to submit applications electronically?

1 YES -> How has that processed worked for you? What are the benefits to you from the online application? What are the barriers?

2 NO -> Would you be interested in an online application process? If not, what is the barrier in participating?

CALL CENTER AND REBATE PROCESSING

14) Have you had to contact the Energy Efficiency call center?

1 YES -> If yes, how would you rate your experience? What would you recommend for improvements?
- 1 Not at all satisfied
- 2 Somewhat satisfied
- 3 Very satisfied
- 4 Extremely satisfied
- 8 Don't know
- 9 Refused

2 NO

15) Have you recognized a reduction in the amount of time for rebate processing of…

A	Paper applications	YES	NO
B	Online applications	YES	NO

16) MidAmerican often receives rebate applications with missing information (customer and dealer signatures, invoices, dealer agreement checkboxes, AHRI documentation, etc.). This information is vital to MidAmerican's application process.
Have you had any issues gathering all information required on the application? Have you had applications declined or returned for more information?

What are some of the challenges you face collecting the supporting information that MidAmerican requires?

(DO NOT READ) What are some key things to identify that would assist in providing that information with the initial submittal?
What could MidAmerican do to make it easier to complete the applications?

17) This next question focuses on MidAmerican's Residential Alternate Payee process. If the Account Name is different than the name on the application MidAmerican has a process to verify the alternate payee.

A	Are you aware of this process?	YES	NO
B	Has this process impacted you?	YES	NO
C	What recommendations do you have for improving that process?		

SATISFACTION

18) Thinking about the Residential Equipment program overall, how satisfied are you? Are you not at all satisfied, somewhat satisfied, very satisfied, or extremely satisfied?

- 1 Not at all satisfied
- 2 Somewhat satisfied
- 3 Very satisfied
- 4 Extremely satisfied
- 8 Don't know
- 9 Refused

19) Why did you rate your satisfaction with the program in that way?

20) How likely are you to recommend the program to a peer? Please answer on a scale of 0 to 10, where 0 is extremely unlikely and 10 is extremely likely.

_____ [Record 0-10]

21) If you were to recommend anything to MidAmerican regarding the program design or operations, what would it be?

COVID-19

24) How has Covid-19 affected your business? (Probe on the following areas, select all that apply)

1 Has not affected my business
2 Customer projects have been cancelled
3 Customer projects been delayed - by how long?
4 Equipment or other materials and supplies have been taking longer to receive -how much longer?
5 My business has had to reduce the services offered
6 Anything else?

25) How do you expect Covid-19 to impact projects six months from now?

OVERALL PROGRAM

22) Is there anything else you'd like to share with us about MidAmerican's residential energy efficiency programs?

23) In case we would like to clarify anything we discussed, would it be alright if I contacted you again?

If YES, get best phone number and email address

Those are all the questions I have today. If you think of anything you would like to add, please feel free to contact us. Thank you very much for your time.