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Memorandum

AIC 2022 Single Family Market Rate – Midstream HVAC Channel NTG Research

To: Seth Craigo-Snell, SCS Analytics, Matt Armstrong, Ameren Illinois Company, David Brightwell and Elizabeth Horne, Illinois Commerce Commission Staff

From: Opinion Dynamics Evaluation Team

Date: October 18, 2022

Re: AIC 2022 Single Family Market Rate Initiative – Midstream HVAC Channel Net-To-Gross Research

Introduction and Key Findings

As part of the 2022 evaluation of the Ameren Illinois Company (AIC) Single Family Market Rate Initiative's Midstream HVAC Channel, Opinion Dynamics conducted research with distributors participating in the Initiative to update the net-to gross ratios (NTGRs) for HVAC and HPWH equipment for application in 2023.

The net-to-gross (NTG) methodology used for this research was taken from Version 10.0 of the Illinois TRM (IL-TRM). Specifically, we used the IL-TRM's Midstream Free-Ridership (FR) Protocol.[1] Per this protocol, FR in midstream programs may be calculated using distributor and/or end-use customer research based on the program design, end-use customer awareness, and constraints for conducting high quality end-use customer and distributor research. The NTGR estimates presented in this memo include only FR assessed from the distributor perspective, and do not include the participant (end-use customer) perspective on FR or assessment of spillover (SO). This research decision is discussed in greater depth in the Use of Midstream FR Protocol section of this memo.

Summary of NTG Results

Table 1 presents the results of our NTG analysis. The NTG Methods and Results section of this memo provides a detailed methodology for calculating the FR score presented here, which is consistent with the FR questions and algorithm specified in the IL-TRM Midstream Free-Ridership Protocol.

Table 1. Residential Midstream HVAC Channel NTGRs from 2022 Research

Measure	FR	SO	NTGR (1-FR)
CAC/ASHP/HPWH/Advanced Thermostats	0.417	Not researched	0.583

[1] IL-TRM V10.0 Attachment A: Illinois Statewide Net-to-Gross Methodologies, Section 5.4: Midstream Free-Ridership Protocol.

The distributor FR score presented in this memo was researched collectively for all Midstream HVAC Channel measures. For our 2023 NTG Recommendations, we will adjust this NTGR for application to cooling savings from advanced thermostat measures, consistent with stakeholder-agreed adjustments reflecting the nature of the gross cooling savings estimates for advanced thermostats included in the IL-TRM.[2] The adjusted NTGR that will be recommended for advanced thermostats is 0.792.

Data Collection and Sampling Methodology

Distributor Research

The evaluation team fielded a survey with 11 distributors in Q3 2022 to inform the NTGR estimates as part of our 2022 evaluation activities. We attempted a census with all 30 participating distributors for the 2022 Midstream HVAC Channel. This list of distributors was obtained in July 2022 and outreach started the following week to ensure the accuracy of the distributor list and contact information. We initially contacted all current distributors by email and then followed up with individual calls. In addition, the evaluation team had recently completed process research with distributors for the 2021 evaluation to inform our understanding of their experience and set the stage for this additional research. We informed distributors that there may be additional research and primed them that we would potentially be reaching out for this study.

Weighting

The IL-TRM outlines that the FR score should be weighted by verified gross kWh savings for each respondent. The evaluation team reviewed the Q1 and Q2 2022 ex ante kWh savings for each distributor. Given that these savings do not represent a full year of program participation, the team combined verified gross kWh savings from Q3 and Q4 of 2021 for Midstream measures (excluding any measures from the legacy downstream HVAC offering) in 2021 with current 2022 ex ante kWh savings. The 11 distributors that completed surveys represent 60.2% of 2021 and 2022 Midstream HVAC Channel kWh savings. These weights were applied to the reported distributor FR scores.

Use of Midstream FR Protocol

The IL-TRM Midstream FR Protocol directs evaluators that FR in midstream programs may be calculated using distributor and/or end-use customer research based on the program design, end-use customer awareness, and constraints for conducting high quality end-use customer and distributor research. The NTGR estimates presented in this memo include only FR assessed from the distributor perspective, and do not include the participant (end-use customer) perspective on FR or assessment of spillover (SO).

The choice of approach for the FR research presented in this memo included multiple factors, including timing of research. The Initiative's design includes significant direct interactions with and attempts to influence the behavior of distributors, and therefore assessment of the distributor perspective on FR is critical to accurately assess attribution for the Initiative. End-use customer awareness of the Initiative's interventions, however, is currently unclear. Opinion Dynamics will be conducting end-user customer research for the Initiative in late 2022, which will assess end-use customer awareness, knowledge of participation, and if applicable, attribution. The IL-TRM protocol allows for FR estimates based solely on distributor research, and given the

[2] For further detail on this point, please see Joint Evaluator Presentation: Appropriate NTG Treatment for IL-TRM Measures Characterized with Consumption Analysis (Opinion Dynamics and Guidehouse), September 25, 2020. https://www.ilsag.info/wp-content/uploads/Consumption-Analysis-NTG-Evaluator-Presentation-2020-09-25.pdf

above, we chose in this memo to present results including only that perspective. Should our subsequent research find meaningful end-user customer awareness of the Initiative's interventions, we will consider incorporating the end-user perspective on FR with these results and presenting an updated value in a future memo.

The choice to not include estimates of SO in this memo relate to the perspectives able to be provided by research participants. In the specific case of this Initiative, we do not feel that distributors are able to provide well-grounded feedback on SO, with the exception of what the implementation team refers to as "program qualified non-incented units." Discussion on how to handle these units is still underway between the evaluation and implementation teams, and inclusion of these units in our research would lead to future double counting. Therefore, we chose not to research SO through distributors. Future research with contractors and end-user customers will assess participant SO using IL-TRM prescribed protocols.

NTG Methods and Results

The Midstream HVAC Channel distributor FR score is calculated for each distributor as the average of three elements: (1) the Program Components FR Score, (2) the Program Influence FR Score, and (3) the No-Program FR Score:

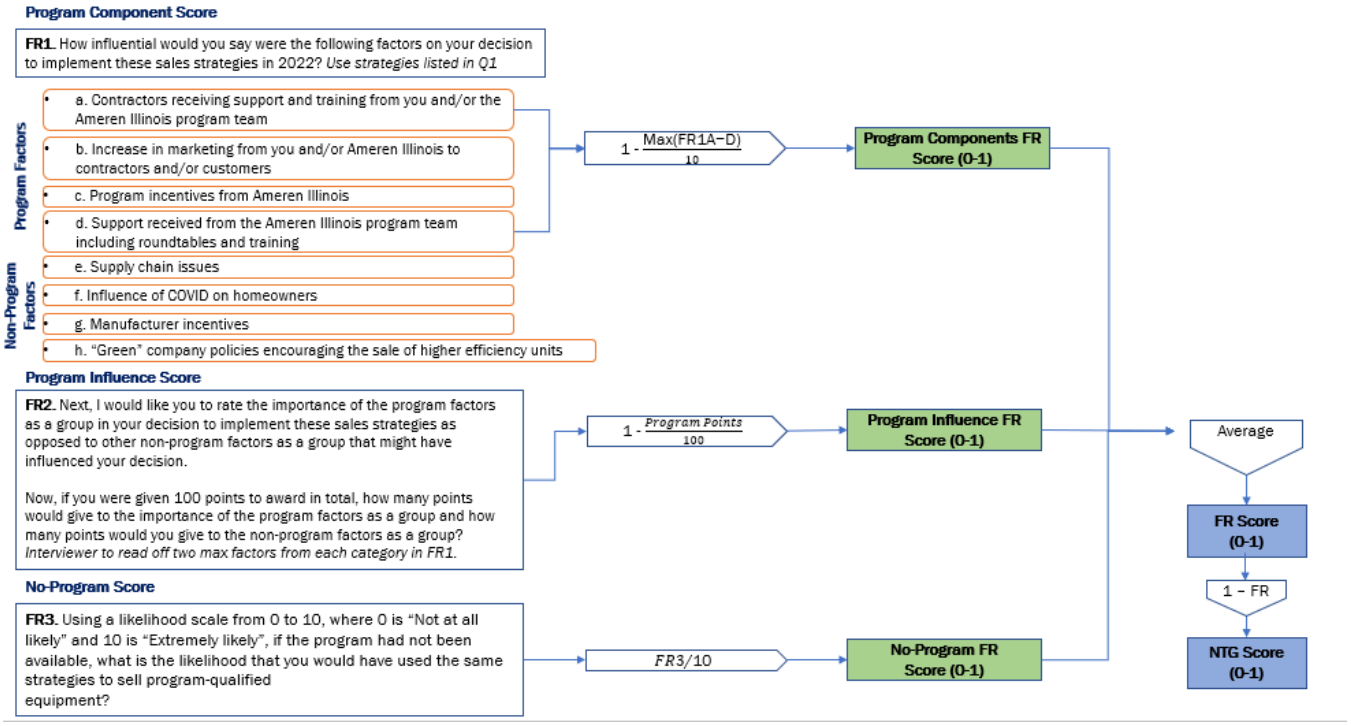
Equation 1. Midstream Distributor FR Score

$$FR_{Mid.Dist_i} = Mean(Program\ Components\ FR\ Score, Program\ Influence\ FR\ Score, No\ Program\ FR\ Score)$$

All three elements are averaged to assess the degree of FR on a scale from 0 to 1, where 0 means the respondent is not a FR and a 1 means that the respondent is a full FR. The following sections provides details on how each of these elements are computed. The NTG score is then calculated by subtracting the Midstream Distributor FR score from 1.

The FR algorithm and calculation of the NTGR from FR is graphically depicted in Figure 1 below.

Figure 1. AIC Midstream HVAC Channel Distributor FR Algorithm



The first question asked of distributors is to find out the variety of strategies used to sell Midstream HVAC Channel qualifying equipment. This question is used to prime distributors to think about the various sales strategies they use to promote qualifying equipment and prepares them for a mention of such strategies in FR1, FR2, and FR3.

> Q1. Thinking about the various strategies you might have used to sell program qualifying equipment, please indicate which ones you have used.
>
> a. Upsell contractors to purchase program qualifying units
> b. Conduct training workshops for contractors
> c. Increase marketing of program qualifying units
> d. Reduce the prices of program qualifying units
> e. Increase the stocking or assortment of program qualifying units
> f. Discuss the benefits of program qualifying units with design professionals
> g. Other (Please describe: _____)

Program Component FR Score

The Program Component FR Score is assessed by asking respondents about the influence of various program elements on their decision to implement these sales strategies.

FR1. How influential would you say were the following factors on your decision to implement these sales strategies in 2022?

The program elements include: [3]

- **FR1a:** Contractors receiving support and training from you and/or the AIC Initiative team
- **FR1b:** Increase in marketing from you and/or AIC Initiative team to contractors and/or customers
- **FR1c:** Program incentives from AIC Midstream Initiative
- **FR1d:** Support you received from the AIC Initiative team including roundtables and training

The Program Component FR Score is then computed as:

$$Program\ Component\ FR\ Score = 1 - \frac{Max(FR1A - D)}{10}$$

In addition, the team included four non-program elements included in the FR1 question to prime respondent's understanding of additional factors that may be factors in their decisions to implement specific sales strategies.

These non-program elements include: [4]

- **FR1e:** Supply chain issues
- **FR1f:** Influence of COVID on homeowners
- **FR1g:** Manufacturer incentives
- **FR1h** "Green" company policies encouraging the sale of higher efficiency units

[3] Each of the four items are scored on a scale from 0 (not at all influential) to 10 (extremely influential),
[4] Each of the four items are scored on a scale from 0 (not at all influential) to 10 (extremely influential),

Table 2 summarizes the influence of program and non-program elements on distributors' decision to implement sales strategies for Initiative-qualified equipment in 2022. The mean scores provided in this table are based on a mean value weighted by distributors' verified gross kWh savings in the Midstream HVAC Channel from 2021 and ex ante kWh savings from 2022. Distributors were asked to rate the influence of program and non-program elements on a scale from 0 (not at all influential) to 10 (extremely influential).

On average distributors found the incentives provided by the Initiative to be very influential (7.72) compared to other program elements. Marketing, trainings, and roundtable support all received relatively low ratings from distributors as shown in Table 2. Among non-program elements, distributors reported that supply chain issues (7.98) and manufacturer incentives (7.33) heavily influenced their sales strategies for Initiative-qualified equipment.

Table 2. Influence of Program and Non-Program Elements

Program Elements	Mean Value	Non-Program Elements	Mean Value
Program incentives from AIC Midstream Initiative	7.72	Supply chain issues	7.98
Increase in marketing from you and/or AIC Initiative team to contractors and/or customers	5.35	Manufacturer incentives	7.33
Contractors receiving support and training from you and/or the AIC Initiative team	4.32	"Green" company policies encouraging the sale of higher efficiency units	4.28
Support you received from the AIC Initiative team including roundtables and training	4.24	Influence of COVID on homeowners	3.54

The detailed results from the program components question are in line with the recent process research conducted with participating distributors.

Program Influence FR Score

The Program Influence FR Score is assessed by asking respondents to quantify the impact of the Midstream HVAC Channel on their decision to implement sales strategies mentioned in Q1 of the survey instrument as opposed to other non-program factors. Respondents are asked to allocate a total of 100 points to the program and to non-program factors. Unlike the factor ratings that go into the Program Components FR Score, this question asks respondents to explicitly make a trade-off between the program and non-program factors, i.e., it assesses the importance of the program relative to non-program factors in their decision to implement specific sales strategies for Initiative-qualifying equipment.

Before asking respondents to allocate the 100 points, they are reminded what is meant by "program" and "non-program factors." Non-program factors considered included supply chain issues, the influence of COVID-19 on homeowners,[5] manufacturer incentives, and "green" company sales policies.

The points allocated to the Initiative by the respondents are the "Program Points." The Program Influence FR Score is then 1 - (Program Points/100). This score can range from 0 (no free ridership) to 1 (full free-rider).

> FR2. Next, I would like you to rate the importance of the program factors as a group in your decision to implement these sales strategies as opposed to other non-program factors as a group that might have influenced your decision.
>
> Now, if you were given 100 points to award in total, how many points would give to the importance of the program factors as a group and how many points would you give to the non-program factors as a group?

The Program Influence FR Score is then computed as:

$$Program\ Influence\ FR\ Score = 1 - \frac{Program\ Points}{100}$$

No-Program FR Score

The No-Program FR Score is the counterfactual. This is calculated using the numeric score of the likelihood that the respondent would have used the same strategies to sell Channel qualifying equipment in the absence of the program divided by 10.

> FR3. Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the program had not been available, what is the likelihood that you would have used the same strategies to sell program qualifying equipment?

$$No\ Program\ Score = \frac{FR3}{10}$$

Final NTG Score

The NTG score is equal to 1 – FR Value. As shown in Figure 1 on p. 4, FR Value is the average of the Program Components FR Score, Program Influence FR Score, and No-Program FR Score.

The final NTG score for the Initiative is the kWh savings-weighted average of respondent NTG scores.

[5] In process research conducted in 2021, distributors specifically mentioned the impact of COVID-19 on homeowner decisions to replace their heating and cooling systems. Additionally, the IL-TRM specifically notes that the evaluator may add any factors deemed relevant to the NTG battery.