Opinion Dynamics

Memorandum

To: Nick Warnecke, Tammy Jackson, AIC; Seth Craigo-Snell, SCS Analytics; and Elizabeth Horne, ICC Staff

From: The Opinion Dynamics Evaluation Team

Date: December 16, 2024

Re: AIC 2024 Midstream HVAC Channel Market Effects and Process Research Findings

Introduction

Ameren Illinois Company (AIC) operates the Market Rate Single Family Initiative - Midstream HVAC channel (referred to throughout this memo as "the Midstream HVAC channel") as part of its Residential Program. The Midstream HVAC channel encourages market actors, such as distributors and contractors, in AIC territory to promote and install high-efficiency air-source heat pumps (ASHPs), ductless heat pumps (DHPs), central air conditioners (CACs), gas furnaces, ENERGY STAR®-certified advanced thermostats, and heat pump water heaters (HPWHs).[1] The channel provides an incentive to distributors for approved sales of efficient equipment that will, in turn, lower the cost of efficient equipment for contractors, thus encouraging them to (1) pass those savings onto their customers and (2) install more efficient HVAC and water heating equipment than they would otherwise. Incentivized equipment sales are tracked as part of the AIC Residential Program, and energy savings associated with these sales are claimed as part of the AIC energy efficiency portfolio.

The Midstream HVAC channel is designed to overcome a range of barriers to installing high-efficiency HVAC and water heating equipment, including:

- The cost of high-efficiency equipment
- Customer awareness of newer high-efficiency technologies
- The availability of high-efficiency equipment
- Lack of contractor trust in cold climate heat pumps to meet customer needs
- Customer and distributor acceptance of HPWH technology

In addressing these barriers through the Midstream HVAC channel, AIC aims to broadly affect the HVAC and HPWH market within their service territory. The channel's program theory logic model (PTLM) hypothesizes that its various forms of marketing, education, and training should also increase sales of efficient equipment beyond those products directly incentivized by the channel. While some of these market changes are expected to occur over a long-term time horizon, AIC expects that the Midstream HVAC channel will directly or indirectly lead to increased sales of efficient, eligible units that do not receive channel incentives and, therefore, are not included in tracking data.

[1] The ENERGY STAR® name and mark are registered trademarks owned by the US Environmental Protection Agency (USEPA).

As part of the 2024 evaluation of the Midstream HVAC channel, Opinion Dynamics conducted in-depth interviews with participating contractors to gauge market effects and collect process-oriented feedback. The evaluation team used contractors' responses to develop two multiplicative factors necessary for calculating the number of non-incentivized channel-eligible sales claimable by the channel due to market effects (*market effects units*): the **In-Region Factor** represents the share of non-incentivized channel-eligible sales installed in AIC territory; and the **Attribution Factor** accounts for the share of non-incentivized channel-eligible sales attributable to channel interventions. This memo presents methods and results associated with each factor but does not estimate *market effects units* or *market effects savings* in the absence of a reliable estimate of non-incentivized channel-eligible sales.[2] Additionally, this memo summarizes contractors' feedback regarding their participation and recommendations contractors provided for improving the channel in the future.

Key Findings

Market Effects Findings

The evaluation team calculated the In-Region and Attribution Factors as the average of respondent-level results from 2023 and 2024 contractor research to help bolster sample sizes.[3] We estimated an In-Region Factor of 0.675 and an Attribution Factor of 0.357. These results reflect a 0.025 increase in the In-Region Factor and a 0.168 decrease in the Attribution Factor relative to 2023 results.[4] We conducted in-depth interviews in 2024, which allowed a skilled interviewer to probe for clarification and ensure contractors fully understood the framing of nuanced market effects questions, which likely helped improve reliability of results relative to the 2023 web survey. Table 1 presents the calculated In-Region Factor and Attribution Factor.

Table 1. 2024 In-Region Factor and Attribution Factor

Factor	Value
In-Region Factor (n=18)	0.675
Attribution Factor (n=7)	0.357

Note: 2023 web survey (In-Region Factor 0.658, n=6; Attribution Factor 0.533, n=3); 2024 in-depth interviews (In-Region Factor 0.683, n=12; Attribution Factor 0.225, n=4).

The evaluation team determined that, in the absence of a reliable estimate of non-incentivized channel-eligible sales, it was not appropriate to calculate *market effects units* or *market effects savings* at this time. The evaluation team plans to apply the In-Region Factor and Attribution Factor presented in this deliverable to calculate 2024 *market effects savings* once reliable and well-populated distributor sales data becomes available. The anticipated approach to estimating market effects savings is detailed in the Methods section of this deliverable.

[2] Currently available distributor sales data available (provided in February 2024) was insufficient to produce an estimate of non-incentivized channel-eligible sales. The evaluation team plans to calculate *market effects units* and *market effects savings* once reliable and well-populated distributor sales data becomes available.

[3] Three contractors responded to both the 2023 web survey and 2024 in-depth interviews. For these contacts, we excluded previous survey responses and relied on the more recent interview responses.

[4] See Appendix B. 2023 Midstream HVAC Channel Market Effects Memo

Process Findings

The feedback from contractors interviewed in 2024 built upon process feedback explored as part of the 2023 evaluation of the Midstream HVAC channel.[5] Feedback from participating contractors suggests most were satisfied with the channel; however, some expressed concerns about the midstream model. Such growing pains are to be expected given the channel's transition from a downstream model in 2021, and implementation staff have an opportunity to leverage this feedback to enable more seamless collaboration between participating contractors and distributors. Below we offer several key findings and recommendations to improve the contractor participation process, inform future implementation, and support the overall success of the channel.

- **About half of the contractors were fully satisfied with the midstream structure and their experience working with distributors, but others felt distributors' role as middlemen was unnecessary and led to a disjointed participation experience.** Those dissatisfied with the midstream structure indicated that the distributor's role as a go-between for contractors and implementation staff added unnecessary hassle around incentive tracking and submissions, leading to delays and errors. Some also indicated that individual distributors handled the participation process differently in terms of how they asked contractors to submit project details, the portions of the incentives they retained, and the lead time between project detail submission and incentive distribution.
  - **Recommendation:** Explore opportunities to bring contractors and distributors together to clarify expectations, workshop solutions, and start a dialogue around potential for standardization. Although anecdotal, key topics to cover include the process for submitting project details (including timing and format), distributors' incentive retention practices, and incentive turnaround time.
- **Contractors who benefited from the channel's marketing and education elements generally expressed high satisfaction with the available support (i.e., marketing, tools, and training), but not all contractors were exposed to them.** Of the 13 interviewed contractors, six were not familiar with the channel's marketing materials and tools, two were not exposed to training on participation processes, and one was not aware of available educational information on high-efficiency equipment. Implementation staff pointed to challenges reaching all contractors directly to provide marketing support, as only contractors registered as Program Allies had access to the website with cobranded materials. They therefore focused on enabling distributors to relay marketing materials to contractors. Two of the three interviewed Program Allies were not exposed to marketing support, suggesting even those with access to the materials may not be aware of them. Six of ten non-Program Allies did receive marketing support, suggesting they had access to the support through means other than the cobranded materials webpage. Contractors' level of engagement with these marketing and educational support elements has direct implications for program influence in terms of both free ridership and market effects.
  - **Recommendation:** Explore opportunities to improve reach to all participating contractors and help ensure their familiarity with the marketing and educational support available through the channel. This could include direct outreach from implementation staff to Program Allies as well as further encouragement of distributors to actively disseminate channel resources to non-Program Allies as well.

[5] See Appendix C. 2023 Midstream HVAC Channel Process Memo

- **Most contractors felt that the equipment eligibility criteria and incentive levels were appropriate, while some suggested the channel could benefit from broadening equipment eligibility and increasing incentives for select measures.** Two contractors expressed interest in expanding channel eligibility to include mid-level equipment and a third wanted eligibility broadened to non-match systems.[6] Several also suggested incentives should be higher for gas furnaces, CACs, and heat pump equipment.
  - **Consideration:** Implementation staff should consider this input as they continue to evaluate eligibility requirements and incentive sizes on an ongoing basis to ensure alignment with market developments and inflationary pressures and maximize impact on installation of high-efficiency equipment in homes.

Methodology

Data Collection and Sampling Methodology

The results presented in this memo are inclusive of two primary research efforts across two evaluation years: 2023 contractor web surveys (n=9); and 2024 contractor in-depth interviews (n=13).

Due to the midstream nature of the channel, AIC does not directly track contractors associated with each project; as such, there is no reliable list of recently engaged contractors. To ensure the inclusion of a broad group of contractors likely to be actively engaged with the channel, the evaluation team compiled the 2024 interview sample from five AIC data sources:

1) 2024 list of legacy HVAC contractors historically engaged with AIC offerings (N=322)
2) 2023 HPWH plumber training contact list (N=12)
3) June 2023 list of Program Allies (N=34)
4) 2021 year-end tracking data (N=120)
5) 2020 year-end tracking data (N=200)

The evaluation team reviewed, standardized, and excluded duplicate records by company name, keeping the record from the most recent data source, resulting in a sample of 345 unique contractors. We fielded interviews in June and July 2024, sending each contact an initial scheduling email and up to two follow-up emails. We initially targeted 15 completed interviews but encountered scheduling challenges, possibly due to a spike in demand for HVAC services during the intense heat wave occurring at the time. To maximize reach, we conducted outbound calling to select contacts, prioritizing those registered as Program Allies, identifiable as HPWH installers, or who completed the 2023 contractor survey. We reached out via telephone to each of these contacts up to three times. The final completed interviews included 13 contractors for a yield of 4%.[7] Additional details regarding the data collection and sampling approach for the 2023 contractor research effort are included in the AIC 2023 Midstream HVAC Channel Market Effects Memo finalized in early 2024 included in Appendix B. 2023 Midstream HVAC Channel Market Effects Memo

[6] Mid-level equipment refers to equipment that is more efficient than standard efficiency equipment but does not meet the high-efficiency requirements of channel-eligible equipment. Non-match systems refer to cases where a customer replaces or upgrades one element of their HVAC system, such as their CAC, but does not change out the other half of the system, such as their furnace.

[7] Note, a yield of 4% implies a slightly higher response rate as yield does not account for the portion of non-responses assumed to be ineligible.

Market Effects Methodology

The evaluation team plans to calculate *market effects savings* for 2024 once reliable and well-populated distributor sales data becomes available, as outlined in a July 2024 presentation to the Illinois Stakeholder's Advisory Group.[8] This methodology combines estimates of non-incentivized channel-eligible equipment sales (based on distributor sales data) with two key multiplicative factors to estimate the portion of non-incentivized energy-efficient sales attributable to the channel: the In-Region Factor and the Attribution Factor.

The **In-Region Factor** reflects the share of non-incentivized channel-eligible sales installed in AIC service territory. The 2023 contractor web survey and 2024 in-depth interviews both asked contractors to estimate what percentage of their total HVAC, thermostat, and water heater projects in Illinois in the past year were for customers in AIC service territory. The evaluation team averaged respondent-level responses from both 2023 and 2024 research to calculate the In-Region Factor, excluding survey responses from three 2023 respondents who also completed an in-depth interview in 2024. The final In-Region Factor was an average of 18 contractor responses ranging from 25% to 100%.[9]

The **Attribution Factor** accounts for the share of non-incentivized channel-eligible sales that can be attributed to Midstream HVAC channel interventions. The 2023 contractor web survey and 2024 in-depth interviews asked contractors who made sales of high-efficiency equipment that did not go through the Midstream HVAC channel how influential their experience with the channel (including related materials, marketing, and training) was in helping them persuade customers to install high-efficiency equipment without the incentive. The evaluation averaged respondent-level responses from both 2023 and 2024 research to calculate the Attribution Factor, excluding three 2023 respondents who also completed an in-depth interview in 2024. Of the 19 contractors included in the analysis, 12 indicated they did not make any non-incentivized, channel-eligible sales; as such, the final Attribution Factor was an average of seven contractor responses ranging from 0% to 80%.

The evaluation team will calculate *market effects units* for each equipment type by multiplying non-incentivized channel-eligible sales (from distributor sales data) by the In-Region Factor and the Attribution Factor. We will then calculate the estimated *market effects savings* by applying measure-level average savings achieved through the Midstream HVAC channel for each equipment type (as established by application of Illinois Technical Reference Manual Version 12.0 recommendations).

[8] https://www.ilsag.info/wp-content/uploads/AIC-Midstream-HVAC-Market-Effects-Evaluation-Approach_2024-07-16.pdf

[9] One interviewed contractor could not provide an estimate of In-Region Factor.

Quantifying Non-Incentivized Channel-Eligible Sales

Beginning in 2024, implementation staff adapted their approach to tracking non-incentivized channel-eligible sales (i.e., sales of equipment that qualify for an incentive but did not receive one). They began requesting quarterly extracts of distributor sales data using a new template that asks distributors to report their total HVAC, HPWH, and advanced thermostat sales occurring in Illinois with the necessary information to determine equipment eligibility. Once well-populated distributor sales data becomes available, implementation staff plans to standardize key fields (date/year of sale, distributor branch location, equipment model, efficiency specification) to identify the channel-eligible sales based on timing, location, and efficiency level. The evaluation team will then subtract the total incentivized sales (based on channel tracking data) from the total channel-eligible sales (identified in distributor sales data) to estimate the number of non-incentivized channel-eligible sales for each equipment type.

The evaluation team conducted a comprehensive review of a small sample of 2023 distributor sales data available in the new format as of February 2024 to determine if it included all the information needed to reliably estimate channel-eligible sales. We identified the following:

- Data included the fields needed to determine channel-eligible sales (date/year of sale, distributor branch location, equipment efficiency specifications) in a clear and accessible format but was limited to two distributors.
- Data fields were generally well-populated; however, one distributor was missing the distributor branch location, preventing the team from confirming the sales occurred in Illinois or in proximity to AIC service territory. Additionally, several thermostats were missing the equipment details necessary for confirming equipment eligibility and estimating savings.
- For one of the two distributors included, 2023 Midstream HVAC channel year-end tracking data indicated more sales of *incented* CAC and heat pump equipment than were reflected in the distributor sales data as total (incented and non-incented) sales during the same timeframe.

We anticipate that the new distributor sales data format will allow for defensible estimation of non-incentivized channel-eligible sales, provided the necessary data fields are well-populated for a representative sample of distributors. Achieving this will require ongoing engagement with distributors to ensure they regularly provide the requested data in its intended format.

Detailed Results

Market Effects Results

The evaluation team calculated the In-Region and Attribution Factors as the average of respondent-level In-Region and Attribution Factors from 2023 and 2024 contractor research to help bolster sample sizes.[10] We estimated an In-Region Factor of 0.675 and an Attribution Factor of 0.357. These results reflect a 0.025 increase in the In-Region Factor and a 0.168 decrease in the Attribution Factor relative to the 2023 results.

Table 2 presents the calculated In-Region Factor and Attribution Factor.

Table 2. 2024 In-Region Factor and Attribution Factor

Factor	Value
In-Region Factor (n=18)	0.675
Attribution Factor (n=7)	0.357

Note: 2023 web survey (In-Region Factor 0.658, n=6; Attribution Factor 0.533, n=3); 2024 in-depth interviews (In-Region Factor 0.683, n=12; Attribution Factor 0.225, n=4).

Contractors' interview responses suggest that the 2024 in-depth interview format likely enabled more accurate estimates of attribution than the 2023 web survey. Interviewees often appeared to have difficulty conceptualizing the subset of sales relevant for potential market effects. When asked about the influence of the channel (specifically the marketing and educational support elements) on their non-incentivized channel-eligible sales, three of the four contractors with such sales initially continued to focus on the benefit of Ameren Illinois incentives, and two of the respondents explicitly expressed that they found the line of questioning confusing. Fielding the 2024 research as in-depth interviews allowed the interviewer to provide additional clarification and guidance to reorient respondents as needed, which was not possible for the 2023 web survey. Given the confusion we observed during interviews, it is likely that some survey respondents may have similarly conflated non-incentivized sales with incentivized sales, thereby inflating their attribution ratings.

Process Results

Most surveyed contractors expressed satisfaction with the Midstream HVAC channel overall and with individual elements; however, some have concerns related to the midstream model. Contractors rated their satisfaction with the channel and its components on a scale of 0, "Not at all satisfied" to 10, "Extremely satisfied." Of the 13 respondents, only one provided a score of less than five for their overall satisfaction with the channel, indicating most were satisfied with their participation. Average satisfaction ranged from 5.8 to 9.0 across channel elements. Contractors' limited dissatisfaction most often stemmed from growing pains related to the shift to a midstream incentive structure. Six of thirteen respondents indicated lower levels of satisfaction (rating of 5 or less), including five less than satisfied with the midstream incentive structure, three who took issue with the process of submitting project details to distributors, one less than satisfied with the equipment eligible for the channel, and one who raised concerns with the channel's educational materials and training on high-efficiency equipment.

[10] Three contractors responded to both the 2023 web survey and 2024 in-depth interviews. For these contacts, we excluded previous survey responses and relied on the more recent interview-responses.

Table 3 presents the average satisfaction score for each component as well as the minimum and maximum.

Table 3. Contractor Satisfaction with Midstream Instant Incentives Channel

Component	n	Average	Minimum	Maximum
Marketing and sales materials and tools	7	9.0	7	10
Training on channel participation	11	8.9	7	10
Educational materials and training on high-efficiency equipment	12	8.3	0	10
Incentive amounts	13	7.9	5	10
Eligible equipment	13	7.5	3	10
Process of submitting project details	13	6.7	0	10
Midstream incentive structure	13	5.8	0	10
Channel overall	**13**	**7.4**	**0**	**10**

Note: Contractors were instructed to select "Not applicable" for individual components they did not experience, hence the variation in n-values.

While most contractors expressed satisfaction with the Midstream HVAC channel broadly, some had thoughts as to how to improve individual elements. Contractors who expressed low to moderate satisfaction with each element (score of less than seven out of ten) were asked to elaborate on why they were not fully satisfied. Eight of thirteen contractors provided a score of less than seven for at least one component of the channel. Their feedback is described below.

- *Incentive Structure:* Six of thirteen contractors provided a score of less than seven. All six of these contractors felt that distributors were unnecessary middlemen in the incentive-pass-through process. Five expressed a desire to return to the previous downstream approach and four specified that the midstream structure introduced additional processing that resulted in errors and longer lag times. Three contacts also expressed concerns related to distributors' ability to retain an amount of the incentive for administrative purposes and two mentioned the process was potentially confusing for customers, as the incentive amounts contractors could pass down to customers varied based on the amount offered by each distributor.
- *Process of Submitting Project Details:* Five of thirteen contractors provided a score of less than seven. Contractors' dissatisfaction with the process of submitting project details to distributors overlapped heavily with their dissatisfaction with the midstream incentive structure. All five contractors indicated it was additional work, with three reporting it felt like an unnecessary extra step in the process compared to the previous downstream model. One contractor noted that they had to keep track of each vendor's individual preferences for how project information should be reported. Another contractor indicated the midstream approach made it more difficult for them to track their sales.
- *Eligible Equipment:* Four of thirteen contractors provided a score of less than seven. One contractor indicated that some of their distributors had a hard time meeting the equipment efficiency levels required for eligibility, particularly for CACs. Another contractor wanted to see incentives for non-matched systems and felt that the seasonal energy efficiency ratio (SEER) eligibility criteria should be more flexible for such systems.[11] A third contractor felt the channel should incentivize mid-level efficiency equipment.[12] The fourth contractor indicated that some high-efficiency equipment did not qualify because it did not have an Air Conditioning, Heating, and Refrigeration Institute (AHRI) number and that some models of thermostats were not eligible despite being advanced thermostats.

[11] Non-match systems refer to cases where a customer replaces or upgrades one element of their HVAC system, such as their CAC, but does not change out the other half of the system, such as their furnace.

[12] Mid-level equipment refers to equipment that is more efficient than standard efficiency equipment but does not meet the high-efficiency requirements of channel-eligible equipment.

- *Incentive Amounts:* Two of thirteen contractors provided a score of less than seven. One contractor indicated they would like to see an increase in the incentives for ASHPs and DHPs. The second contractor felt that the incentives for CAC and efficient gas furnaces should be higher, specifying that the incentive did not significantly cover the price jump from a 14 to 16 SEER AC unit. One contractor, despite providing a score of seven and indicating that the incentives for CACs, ASHPs, and DHPs were appropriate, called out gas furnace incentives for not being high enough.
- *Training on Channel Participation*: Eleven of thirteen contractors reported receiving training on how to participate in the channel, and all indicated high satisfaction.
- *Educational Materials/Training on High-Efficiency Equipment:* Twelve of thirteen contractors were exposed to the channel's educational materials or training on high-efficiency equipment. Of the twelve contractors, one provided a score of less than seven, giving a rating of zero. This contractor felt that, after the shift to midstream, distributors became their main point of contact for assistance and direct support from implementation staff dropped off. The contractor felt the distributor was not informed enough to answer their questions about the channel, and they were unsure who to reach out to for assistance.
- *Marketing Materials/Tools:* Six of thirteen contractors were not exposed to the channel's marketing materials and sales tools; however, those who were familiar expressed high satisfaction with the support. Notably, only contractors registered as Program Allies have access to the channel's cobranded marketing materials webpage. Despite this, two of three interviewed Program Allies were not exposed to these materials, and six of ten non-Program Allies were. This suggests that some Program Allies are not taking advantage of the available resources and several non-Program Allies accessed them through means other than the webpage.

The process for receiving incentives varied by distributor. Of the 12 contractors who provided valid responses, two exclusively received incentives as point-of-sale discounts, seven exclusively received them as post-installation credits, and three received some in each format, depending on distributor preferences.[13] Of the five contractors who reported receiving the incentive at the point of sale, four were required to confirm customer eligibility upfront and one provided customer information after installation with the understanding that the discount could be charged back if the customer did not qualify. Of the 10 contractors who reported receiving the incentive after installation, six were able to provide estimates of how long it typically took to receive the incentive after submitting customer details. Their estimates ranged from a week to two months, suggesting incentive turnaround time varies widely by the distributor. One contractor also noted that some distributors did not allow them to provide the customer eligibility information upfront, regardless of whether it was available, and only provided incentives after installation.

[13] One contractor did not answer this question due to interview time constraints.

Appendix A. 2024 Midstream HVAC Channel Contractor In-Depth Interview Guide

2024 Contractor In-Depth Interview Guide

Appendix B. 2023 Midstream HVAC Channel Market Effects Memo

2023 Market Effects Memo

Appendix C. 2023 Midstream HVAC Channel Process Memo

2023 Process Memo