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Ameren Illinois Company Energy Efficiency Portfolio Evaluation Plan 2023-2025 Plan

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1. Introduction

This document presents the 2023 update to the multi-year evaluation plan for Ameren Illinois Company's (AIC) sixth Electric and Gas Energy Efficiency and Demand Response Plan, covering calendar years 2023-2025.¹ Opinion Dynamics, along with its subcontractors Guidehouse, Inc., Michaels Energy, INCA Energy Efficiency, Utilivate Technologies, and Ridge & Associates (“the evaluation team”) has been contracted by AIC to provide independent evaluation of the 2022-2025 (“Plan 6”) portfolio. In this document, we provide a high-level overview of the evaluation activities planned for calendar years 2023-2025. In addition, we provide a detailed evaluation plan capturing the specific efforts planned to occur for the 2023 program year.

On an annual basis, we will revise this document to present similar detailed evaluation plans for each subsequent year of the cycle. While the multi-year evaluation plan overview presented in this document will serve as the foundation for the annual revisions to the evaluation plan, AIC's programs and evaluation priorities may change from year to year.

The primary goal of the annual evaluation efforts is to determine the electric energy, electric demand, and gas savings from AIC's energy efficiency program offerings, as well as what steps, if any, could be taken to optimize program performance from either an energy savings or customer satisfaction and engagement perspective. Findings from the evaluation process may be used by AIC and relevant stakeholders to demonstrate progress against savings targets, modify program design and operations, inform strategies to achieve deeper program savings, and ensure customer satisfaction and cost effectiveness.

The following sections describe the AIC energy efficiency portfolio to be evaluated, as well as key evaluation considerations guiding the evaluation team's approach and planned outcomes.

1.1 Legislative Mandates Informing Energy Efficiency and Evaluation

AIC's Plan 6 portfolio is governed by components of Illinois state law (220 ILCS 5/8-103B [“Section 8-103B”] and 220 ILCS 5/8-104 [“Section 8-104”]) which directs large regulated utilities to offer electric and gas energy efficiency programs. Plan 6 was filed by AIC and approved by the Illinois Commerce Commission (ICC) while versions of Section 8-103B and Section 8-104 that were revised as part of Senate Bill 2814 (the Future Energy Jobs Act, or “FEJA”) were in effect, and therefore was designed to meet the requirements presented in FEJA.

Specifically, FEJA introduced changes to utility electric savings targets, planning cycles and requirements, and to performance incentive mechanisms that continue to be relevant to both implementation and evaluation of electric energy efficiency programs:

- **Cumulative Persisting Annual Savings (CPAS):** Since 2018, electric energy savings goals for Illinois utilities have been primarily defined based on persisting savings as a percentage of sales. As such, annual evaluations of AIC's electric energy efficiency programs must present both annual and persisting savings over the life of delivered measures. As a result, AIC and its program implementer have also sought to deliver programs that achieve savings that persist for a longer period of time.
- **Weighted Average Measure Life (WAML):** FEJA replaced the existing funding mechanism for electric energy efficiency in Illinois by allowing AIC to create a regulatory asset and amortize and recover the total expenditures of that regulatory asset “over a period that is equal to the weighted average of the measure lives implemented for that year that are reflected in the regulatory asset.”² Therefore, annual

¹ Approved by the ICC in Docket 21-0158: <https://www.icc.illinois.gov/docket/P2021-0158>.

² Illinois Energy Efficiency Stakeholder Advisory Group. *Weighted Average Measure Life Report*. 2018.

evaluations of AIC's electric energy efficiency programs must present a WAML in accordance with the guidelines for calculation presented in the Illinois Stakeholder Advisory Group's (SAG) WAML Report.³

- **Applicable Annual Incremental Goal (AAIG):** Section 8-103B allows AIC to earn a rate of return on their energy efficiency spending if they create a regulatory asset, as discussed above. The rate of return that is earned can be adjusted either up or down as a function of AIC's performance relative to its AAIG. The AAIG is defined as the difference between the cumulative persisting electric savings goal for the year being evaluated and the cumulative persisting electric savings goal for the previous year. AIC must achieve sufficient savings through its programs to replace savings from measures at the end of their measure life before progress can be counted toward the AAIG. Therefore, annual evaluations of AIC's electric energy efficiency programs must assess AIC's performance against its AAIG.

On September 15, 2021, after Plan 6 had been filed and approved, Illinois Public Act 102-0662 (the Climate and Equitable Jobs Act, or "CEJA") was signed into law. CEJA introduced further changes to electric energy efficiency that will inform both the implementation and evaluation of Plan 6. A full accounting of these changes is beyond the scope of this plan, but in particular, the following key items have the potential to significantly affect Plan 6:

- **Electrification:** CEJA includes statutory language that enables electric utilities to use their energy efficiency programs to offer and promote measures that electrify enduses, such as space and water heating, that would otherwise be served by fossil fuels.

As a result, we understand that AIC will likely be pursuing program strategies in Plan 6 that seek to begin limited electrification activities. In particular, we expect targeted efforts to electrify enduses for low income customers currently served by delivered fuels, such as propane.

- **Large Customer Opt-Outs:** As a provision of FEJA, all nonresidential electric customer sites with peak 15 minute demand greater than 10MW become ineligible to participate in utility energy efficiency programs as of June 1, 2017. This change significantly affected AIC's electric energy efficiency programs, which historically had achieved a large amount of electric energy savings from these customers. AIC made a number of changes to the Business Program in the 2018-2021 cycle to compensate, including significantly increased investment in small business-focused efforts.

CEJA has modified this provision significantly. All previously exempt public sector customers are once again eligible for AIC programs. Previously exempt private sector customers have the option to opt-out or participate in AIC programs, and if they choose to opt out they may further exempt any other sites associated with their business even if their peak 15 minute demand is not greater than 10MW. As a result, we expect continued changes in the delivery and targeting of AIC programs during Plan 6; in particular, we anticipate increased investment in the Custom Initiative, which is a commonly-used channel through which large customers can pursue energy efficiency upgrades with AIC's assistance.

- **Savings Conversion:** A provision of FEJA allowed electric utilities to "convert" non-electric energy savings achieved to electric savings for the purposes of goal attainment in certain cases. The total amount of savings allowed to be converted was capped at a maximum of 10% of the utility's AAIG as part of FEJA. Updates in CEJA increase the conversion cap to 10% of the utility's annual applicable total savings requirement (a number significantly higher than the AAIG), which will increase the ability of electric utilities to claim alternate fuel savings achieved through their programs against their goals.

We continue to actively engage with AIC, ICC Staff, and the SAG on these issues, as well as collaborating with other evaluation teams in the state to ensure the evaluation of Plan 6 achieves these key objectives.

³ Ibid.

1.2 AIC's Energy Efficiency Portfolio

AIC's energy efficiency portfolio for Plan 6 is made up of three programs: the Residential Program, the Business Program, and the Voltage Optimization Program. The Residential and Business Programs are further subdivided into multiple initiatives that take different approaches to serving AIC customers. Initiatives in turn include channels that target specific market segments and/or equipment types.

Both programs generate electric and gas savings for AIC's customers. While initiatives and channels have changed in name, level of effort, and organization from previous AIC plan cycles, the core components of the portfolio continue to be implemented in a consistent manner. Table 1 provides high level detail on the organization of the AIC portfolio.

Table 1. AIC 2022-2025 Energy Efficiency Programs and Initiatives

PROGRAM		
Voltage Optimization Program	Residential Program	Business Program
INITIATIVES		
	<ul style="list-style-type: none"> ▪ Market Rate SF ▪ Market Rate MF ▪ Direct Distribution ▪ Retail Products ▪ Income Qualified ▪ Public Housing ▪ Electrification ▪ Market Transformation 	<ul style="list-style-type: none"> ▪ Standard ▪ Small Business ▪ Midstream ▪ Custom ▪ Retro-Commissioning ▪ Streetlighting ▪ Market Transformation

2. Evaluation Policies and Definitions

In preparing this plan, the evaluation team reviewed key documents guiding energy efficiency policy in Illinois, including:

- The governing statutes for electric and gas energy efficiency in Illinois, Section 8-103B and Section 8-104, with particular focus paid to legislative changes made as part of CEJA that affect 8-103B
- The Illinois Statewide Technical Reference Manual for Energy Efficiency (IL-TRM) Version 11.0⁴
- The Illinois Energy Efficiency Policy Manual (Policy Manual) Version 2.1⁵
- The Policy Document for the Illinois Statewide Technical Reference Manual for Energy Efficiency (IL-TRM Policy Document) Version 3.1⁶
- Documents in ICC Docket 21-0158, including the initial and revised AIC Plan 6 filings, the initial and revised settlement stipulations between AIC and stakeholders memorializing agreement on plan objectives, and the initial and revised final orders approving Plan 6
- Draft AIC documents relating to Plan 6 and the 2023 program year

Within this section, we outline key requirements around when evaluation-based information should become available. We also provide a set of key terms and definitions used within this document so that stakeholders have a clear understanding of what is planned.

⁴ <https://www.ilsag.info/technical-reference-manual/il-statewide-technical-reference-manual-version-11-0/>

⁵ https://ilsag.s3.amazonaws.com/IL_EE_Policy_Manual_Version_2.1_Final_12-7-2021-1.pdf

⁶ https://ilsag.s3.amazonaws.com/IL-TRM_Policy_Document-Version-3.1_Final_12-6-2021.pdf

2.1 Evaluation Requirements

Table 2 outlines the dates at which the evaluation team must provide inputs to and outputs from its evaluation efforts. These include evaluation plans and reports, and research and evaluator recommendations related to net-to-gross (NTG) ratios, and the IL-TRM.

Table 2. Annual Evaluation Milestones

		2022		2023										...	2024					
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	...	Mar	Apr	May	Jun	Jul	
		2023 Evaluation Activities																		
Eval Plan	Draft Evaluation Plan													...						
Eval Plan	Final Evaluation Plan													...						
Annual Reporting	Draft Annual Impact Evaluation Reports													...						
Annual Reporting	Final Annual Impact Evaluation Reports													...						
Annual Reporting	Final Annual Integrated Impact Report													...						
Annual Reporting	Draft Annual Cost-Effectiveness Report													...						
Annual Reporting	Final Annual Cost-Effectiveness Report													...						
		Forward Looking Activities																		
TRM	TAC Informs Evaluation Teams of IL-TRM V12.0 Measure Priorities													...						
TRM	Proposed Updates Submitted by Evaluation Teams													...						
TRM	Submission of Final IL-TRM V12.0													...						
NTG	Initial 2024 NTG Recommendations													...						
NTG	Presentation of 2024 NTG Recommendations													...						
NTG	Final 2024 NTG Recommendations													...						

Beyond the stipulated timelines presented in Table 2, it is important to note that the NTG policies included in the Policy Manual state that:

- Free-ridership must be assessed for each program when conducting NTG research;
- Spillover should be included whenever feasible, and the use of secondary sources should be considered if primary research is not possible; and
- Portfolio-level spillover analysis should be considered at least once during a Plan period if feasible.

2.2 Evaluation Terms and Definitions

Within this section, we outline and define the key terms used throughout this plan and in reporting on AIC’s energy efficiency achievements. The first set of terms, presented in Table 3, relates to gross and net energy (MWh and therm) and demand (MW) savings.⁷

Table 3. Savings-Related Terminology and Definitions

Savings Terminology	Definition
Ex Ante Gross Savings	Gross savings present in the final program-tracking database provided by AIC
Ex Ante Net Savings	Net savings present in the final program-tracking database provided by AIC
Verified Gross Savings	Gross savings calculated by the evaluation team
Verified Net Savings	Net savings calculated by the evaluation team based on IL SAG approved NTGRs (or approved research based values applied retrospectively)

In Table 4, the evaluation team also defines each of the impact evaluation activities outlined in the evaluation plan. Note that we have differentiated between activities applicable to prescriptive and custom measures, respectively, and use this terminology consistently throughout the evaluation plan.

Table 4. Impact Evaluation Activity Definitions

Prescriptive Measures	Custom Measures
<p><u>Definition:</u> Measures with predetermined savings values or IL-TRM algorithms for use in determining savings</p> <p><u>Example:</u> Tier 1 Advanced Power Strip</p>	<p><u>Definition:</u> Unique or complex measures for which there is not an IL-TRM algorithm</p> <p><u>Example:</u> Compressed air system resequencing</p>
Impact Evaluation Activity Definitions	
<ul style="list-style-type: none"> ■ Database Review: This activity involves reviewing the program or initiative-tracking data to check that incentivized measures meet all program requirements. ■ Engineering Desk Review: This activity involves reviewing supporting project documentation, as well as initiative-tracking data to ensure that original data was entered correctly from invoices/documentation. ■ IL-TRM Application Review: This activity involves reviewing initiative-tracking data to see that the correct deemed input values and IL-TRM specified algorithms are used in calculating savings. ■ On-Site Verification: This activity involves on-site visits, typically with a sample of projects, to verify that incentivized measures are installed and operational. 	<ul style="list-style-type: none"> ■ Database Review: This activity involves reviewing the program or initiative-tracking data to check that incentivized measures meet all program requirements. ■ Engineering Desk Review: This activity involves reviewing project documentation and calculations, and making any associated revisions to account for analytical errors, incorrect assumptions, etc. ■ On-Site Measurement & Verification: This activity involves conducting sitespecific measurement and verification (M&V) (for example, metering equipment runtime), typically with a sample of projects, to estimate site-specific savings. ■ Consumption Analysis: This analysis involves the use of regression models with historic customer energy usage information to calculate annual energy savings. ■ Modeling: The use of building simulation and statistical models to estimate building-level energy savings.

⁷ Gross savings are the change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated. Net savings are the change in energy consumption and/or demand that is attributable to a particular energy-efficiency program (SEE Action Energy Efficiency Program Impact Evaluation Guide).

3. Multi-Year Evaluation Plan

In this section of the evaluation plan, we outline the anticipated evaluation activities by year during 2023-2025 for the Residential, Business, and Voltage Optimization Programs. In addition, we highlight key expected research around pilots as well as expected cross-cutting research activities.

In order to best serve AIC and stakeholders, we have considered the delivery strategy and unique characteristics for each AIC offering and organized our evaluation activities to most effectively use evaluation resources, minimize customer touchpoints, and provide research insights.

As a result, evaluation efforts are not always organized in a way that perfectly aligns with portfolio organization. For example, we choose to group all three distinct AIC multifamily offerings (the Public Housing Initiative, all channels of the Market Rate Multifamily Initiative, and the Multifamily channel of the Income Qualified Initiative) together for efficiency.

3.1 Residential Program

3.1.1 Retail Products Initiative

The objective of the Retail Products Initiative is to increase awareness and sales of high efficiency products through retail and online stores. The Initiative provides incentives for a range of products, including omnidirectional and specialty LEDs, advanced thermostats, and a range of appliances and consumer electronics. Additionally, customers can use the Efficient Choice Tool (ECT), which does not offer incentives but instead provides an online platform for comparing and reviewing residential home appliances and consumer electronics. The ECT helps AIC customers conduct relevant product research, providing a range of information that includes product specifications, pricing, tips for use, reviews, images, and vendor locations.

For the incentive-based components of the Initiative, customers can receive a discount or rebate for their purchase of qualifying products through the following channels:

- By receiving a point-of-sale (POS) discount on purchases of advanced power strips, air purifiers, dehumidifiers, bathroom vent fans, and water dispensers at participating retailers;
- By submitting an online or mailed-in rebate application for the purchase of qualified advanced thermostats, variable-speed pool pumps, refrigerators, freezers, clothes washers, heat pump water heaters, and electric clothes dryers purchased at brick and mortar or online retailers;
- By registering online and downloading a coupon for qualified advanced thermostats that can be used to receive a POS discount at select brick and mortar or online retailers; and
- By visiting the AIC Online Marketplace to purchase advanced thermostats, advanced power strips, air purifiers, dehumidifiers, or bathroom vent fans through the AIC Online Marketplace.
- In stores designated as easily accessible to IQ communities, by receiving a point-of-sale (POS) discount on purchases of LED lighting products.

The implementation contractor works with participating retailers to promote qualifying products through in-store marketing, special product placement, and product demonstrations. Implementation staff also visit participating retailers to provide sales associates with training on how to best promote the Initiative with customers.

Table 5 summarizes the evaluation activities planned for the Retail Products Initiative over the three-year evaluation plan period.

Table 5. Retail Products Initiative Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	ECT Participant Survey		TBD	

The rationale for these activities is as follows:

- **2023:** In 2023, The evaluation team will conduct a prescriptive impact evaluation for the Retail Products Initiative in 2023 and document any changes and lessons learned associated with Initiative implementation. 2023 will also include a prescriptive impact assessment for the ECT channel, using deemed purchase rate assumptions from the evaluation team’s extensive 2021-2022 evaluations of ECT.
- **2024 and 2025:** In the latter years of the program cycle, the evaluation team will continue to conduct core impact and process evaluation activities, but also plans to scope and conduct research as needed based on changes to Initiative offerings or implementation strategies. The evaluation team will also consider primary research to update deemed purchase rate and NTG assumptions for ECT users in 2024.

3.1.2 Income Qualified Initiative – Single Family Whole Home Channels

The Income Qualified (IQ) Initiative includes three channels that provide low- and moderate-income households with in-home audits, direct install measures, and building shell and HVAC upgrades: the Single Family Channel, the CAA Channel, and the Joint Utility Channel. For evaluation purposes, the team addresses these channels as a group, given their similar design and measures. There are additional “third party” IQ Initiative channels, which we discuss in subsequent sections, that have significantly different target markets, designs, and/or evaluation needs.

The “Single Family Whole Home” channels provide no-cost Building Performance Institute (BPI) energy audits that identify building shell and HVAC retrofit opportunities. During the audit, implementation staff also install energy-efficient direct install (DI) measures such as LEDs, showerheads, faucet aerators, advanced power strips, pipe insulation, and advanced thermostats at no cost. Following the audit, customers may also receive additional retrofits, in some cases with a copayment,⁸ such as air sealing and insulation improvements, central air conditioner (CAC) replacements, and air source heat pump (ASHP) replacements. These channels also include Safe and Virtual Energy Efficiency (SAVE) Kits as well as ad-hoc offerings (e.g., kits and handouts at community events) that vary each year. Through the Single Family Whole Home channels, AIC is also expected

⁸ Moderate income participants in the Single Family Channel may have copayments for certain measures. Low income participants in Single Family and CAA channels have no copayments.

to complete electrification projects targeting AIC electric customers who currently use propane for space heat and other enduses.

For the Single Family Channel, AIC implementation partners and BPI-certified AIC Program Allies serve moderate and low income single family customers who are not also participating in the Illinois Home Weatherization Assistance Program (IHWAP). For the CAA Channel, CAAs, with support from other AIC implementation partners, serve low income customers that participate in the IHWAP program at the same time. The CAAs combine AIC and IHWAP funding to provide comprehensive energy efficiency and health and safety improvements.

The Joint Utility Channel began as a pilot and was scaled up to a full offering in 2022. It has similar design and implementation processes to the Single Family Channel but is a partnership between AIC and Nicor Gas to serve low and moderate income customers in the shared utility territory of Bloomington-Normal. AIC partners with Resource Innovations to implement this channel.

Table 6 summarizes the evaluation activities planned for the IQ Initiative’s Single Family Whole Home Channels over the three-year evaluation plan period.

Table 6. IQ Initiative Single Family Whole Home Channels – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Site Visits (Health and Safety Opportunities)	✓		
	Evaluation of New Offerings (as applicable)	✓	✓	✓

The rationale for these activities is as follows:

- **2023:** We will continue to conduct core process and impact evaluation activities and include one additional effort: Single Family Channel site visits focused specifically on health and safety topics and opportunities. We will work closely with AIC at the beginning of 2023 to further refine the focus of this effort.
- **2024–2025:** In the later years of the cycle, the evaluation team will scope targeted process evaluation research as needed based on changes in Initiative design and implementation. AIC is constantly seeking ways to enhance its offerings for IQ customers and, as such, we anticipate a range of potential evaluation research opportunities in these years.

3.1.3 Income Qualified Initiative – Smart Savers Channel

The Smart Savers Channel is a “third party” offering that provides advanced thermostats at no-cost to IQ customers. The overarching goals of the channel are to achieve energy savings through advanced thermostat installation, reach customers who have not previously benefited from AIC’s Residential Program, and act as an entry point into other AIC energy efficiency offerings.

Customers in target IQ zip codes receive email invitations to apply online or by phone for a free advanced thermostat to install in their homes. Most participating customers have the option of installing the thermostat themselves or selecting a Program Ally to install the device. After participants complete their journey through the Smart Savers Channel, AIC cross-promotes additional offerings, such as the IQ Single Family Channel or the Online Marketplace.

Table 7 summarizes the evaluation activities planned for the IQ Initiative Smart Savers Channel over the three-year evaluation plan period.

Table 7. IQ Initiative Smart Savers Channel – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Participant Survey			
	Additional Research (as applicable)	✓	✓	✓

The rationale for these activities is as follows:

- **2023:** The team will plan to focus on core process and impact evaluation activities. While not budgeted in this plan, we will work with AIC staff to identify any additional opportunities for research, if needed. For example, there may be opportunities to follow up on the 2022 participant survey.
- **2024-2025:** In addition to annual impact evaluation activities, we plan to conduct targeted process evaluation activities as needed throughout the cycle. AIC frequently makes changes to optimize delivery for IQ customers and the evaluation team will earmark funds on an annual basis to address key emergent evaluation questions. For example, there may be opportunities to assess the value of any connections between Smart Savers and the Accessibility Pilot, evaluate new design changes for Smart Savers, or map historic participation to help AIC refine future targets.

3.1.4 Income Qualified Initiative – Mobile Homes & Air Sealing Channel

The Mobile Homes & Air Sealing (MHAS) Channel is a “third party” offering that delivers energy efficiency and other improvements to IQ customers living in manufactured and mobile homes. The channel provides kits with energy-saving products as well as larger weatherization and HVAC upgrades, including some mobile home-specific measures like “belly board” (i.e., subfloor) insulation. Customers will also receive energy literacy education and select health and safety measures, such as carbon monoxide (CO) and smoke detectors and fire extinguishers. In addition, AIC and its partners are actively recruiting and training Program Allies to work on mobile home projects, as well as developing partnerships with CAAs and community-based organizations (CBOs) for channel delivery and community engagement.

Table 8 summarizes the evaluation activities planned for the IQ Initiative MHAS Channel over the three-year evaluation plan period.

Table 8. IQ Initiative MHAS Channel – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	In-Depth Interviews with Delivery Partners	✓	✓	✓
	Participant Survey		✓	
	Program Ally Survey			✓
	Site Visits (if needed)		✓	

The rationale for these activities is as follows:

- **2023:** The team will provide core impact evaluation activities as well as a deep-dive process evaluation of this new channel. The process evaluation will include in-depth interviews with Program Allies, community partners (i.e., CAAs and other CBOs), and participants.
- **2024-2025:** In addition to annual evaluation activities, we plan to conduct broader surveys with participants and Program Allies to monitor their experiences and overall channel performance. We will also interview any new delivery partners as the channel expands to new regions. If needed for impact evaluation purposes, such as updating key savings assumptions, we will conduct site visits of participant homes in 2024.

3.1.5 Income Qualified Initiative – Healthier Homes Channel

The Healthier Homes Channel is a “third party” offering that partners with healthcare providers and local community organizations to identify IQ or underserved households with a history of asthma or other respiratory ailments. AIC provides a suite of energy efficiency and health and safety services to deliver both energy bill savings and preventative care to these households. The offering includes an in-home health and energy assessment; various energy saving products like LEDs; larger weatherization and HVAC upgrades like air sealing and advanced thermostats; and indoor air quality (IAQ) improvement measures such as hypoallergenic bedding, mold remediation, IAQ monitors, and CO detectors. Some measures, such as dehumidifiers and air purifiers, are “hybrid measures” that intend to both save energy and improve IAQ.

Table 9 summarizes the evaluation activities planned for the IQ Initiative Healthier Homes Channel over the three-year evaluation plan period.

Table 9. IQ Initiative Healthier Homes Channel – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓

Timing	Activity	2023	2024	2025
Phased	Program Design Review	✓		
	In-Depth Interviews with Delivery Partners		✓	
	In-Depth Interviews with Participants		TBD	
	NEI Research		TBD	

The rationale for these activities is as follows:

- **2023:** The team will provide core impact evaluation activities for any completed projects in 2023. This channel focuses on energy savings as well as health and other non-energy outcomes. As such, we will use the 2023 evaluation activities to understand best practices from similar offerings, develop a detailed program theory and logic model (PTLM), and, if applicable, lay the groundwork for future research into non-energy impacts (NEI) associated with the channel.
- **2024-2025:** In addition to annual evaluation activities, we plan to consider primary research with delivery partners (e.g., Program Allies, healthcare providers, any other community partners) and participants. If we proceed with an NEI study, we will survey participants before and after they participate (i.e., pre/post) to both measure NEIs and collect feedback on their experience.

3.1.6 Market Rate Single Family Initiative – Home Efficiency Channel

The Market Rate Single Family Initiative Home Efficiency Channel focuses on providing home weatherization/envelope efficiency measures to market rate customers and operates in conjunction with the IQ Initiative's Single Family Channel. The Home Efficiency Channel and the IQ Initiative's Single Family channel both offer the same weatherization measures coupled with a tiered incentive system that provides higher incentives for low- and moderate- income customers treated through the IQ Initiative and somewhat lower incentives for market-rate customers served through the Home Efficiency Channel. The Home Efficiency Channel also includes DI measures such as showerheads, faucet aerators, advanced power strips, pipe insulation, and advanced thermostats. Table 10 summarizes the evaluation activities planned for the Home Efficiency Channel over the three-year evaluation plan period.

Table 10. Home Efficiency Channel Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Program Ally Interviews		✓	
	Participant Survey		✓	

The rationale for these activities is as follows:

- **2023:** During the second year of Plan 6, the team will focus on impact evaluation and documenting any changes and lessons learned associated with initiative implementation.

- **2024:** The evaluation team plans to revisit program processes in greater detail and conducting surveys with program allies and participants in 2024.
- **2025:** Finally, the evaluation team plans at this time to focus on the impact evaluation in 2025. We will also capture any changes or lessons learned associated with initiative implementation that can be used moving into the next plan period.

3.1.7 Market Rate Single Family Initiative – Midstream HVAC Channel

The Market Rate Single Family Initiative - Midstream HVAC Channel is designed to influence distributor stocking and sales practices related to high efficiency HVAC and heat pump water heater (HPWH) measures. 2023 is the third year of AIC's implementation of the Midstream HVAC Channel, and is expected to include air source heat pumps (ASHPs), central air conditioners (CACs), ENERGY STAR certified advanced thermostats, ductless mini splits, and HPWHs. The Initiative provides an incentive to distributors that will motivate them to participate in the Initiative, market the Initiative to contractors, as well as provide training to contractors. This training coupled with incentives that will lower the cost of efficient equipment for contractors will encourage them to (1) pass those savings onto their customers and (2) promote and install more efficient heating and cooling equipment, and water heaters than they would otherwise. This training and marketing support from distributors will also increase contractor acceptance of the technology and cause them and the end customer to value and adopt this technology.

The Midstream HVAC Channel is designed to overcome a range of barriers to installing high efficiency HVAC and water heating equipment:

- 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
- Contractor and distributor acceptance of HPWH technology

In addressing these barriers through the Midstream Channel, AIC aims to increase sales and acceptance for HVAC and HPWH technologies within their service territory. As such, the implementation and evaluation teams will continue to incorporate market effects design and research considerations into their work across the 2022-2025 plan cycle with a focus on assessing program effects and behavior change in AIC's service territory. In addition, the evaluation team will coordinate the evaluation of the Residential Midstream HVAC Channel closely with the evaluation of the Business Program Midstream Initiative (Section 3.2.4).

Table 11 summarizes the evaluation activities planned for the Midstream HVAC Channel over the three-year evaluation plan period.

Table 11. Midstream HVAC Channel Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Estimation of Market Effects Impacts	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Distributor Interviews	✓	✓	✓
	Contractor Interviews		✓	
	Participant Survey		✓	

The rationale for these activities is as follows:

- **2023:** The evaluation team will conduct core impact and process evaluation activities for the Midstream Channel in the second year of Plan 6. In addition, the evaluation team will conduct additional evaluation activities to support net impact estimation and market effects impact estimation.
 - Based on discussions between the evaluation team, the AIC team, and stakeholders, the evaluation team will re-assess NTG from the distributor perspective in 2023. These interviews will also help to provide ongoing feedback on Channel processes and implementation, as well as lessons learned.
 - In addition, using market effects quantification methodology developed in 2022, with results from the currently-in-progress 2022 contractor research, the evaluation team plans to estimate market effects impacts related to program qualified, non-incentivized units sold by program participating distributors in 2023.
- **2024:** The evaluation team plans to more broadly revisit NTG assumptions in 2024 and determine if any updates are needed to deemed NTGRs based on program or market changes. If we determine an update is needed, we plan to conduct research with program actors (at minimum, contractors, and potentially additional research). The evaluation team will also consider conducting a participant survey to follow up on currently in-progress 2022 research.
- **2025:** Evaluation activities in the final year of the plan cycle will consist of core impact and process evaluation activities with targeted data collection with participating distributors.

3.1.8 Multifamily Initiatives

The Multifamily Initiatives include the Multifamily Channel of the Income Qualified Initiative, the Market Rate Multifamily Initiative, and the Public Housing Initiative. The Initiatives offer multifamily customers comprehensive property assessments, health and safety evaluations, in-unit and common area direct install measures, as well as deeper energy saving weatherization and HVAC measures.

The Initiatives use a “one-stop shop” model, where AIC provides property managers with a concierge, called an Energy Advisor, to support them as they participate in one or more offerings across the entire AIC portfolio.

Using this delivery strategy, AIC and its implementation partners strive to provide a seamless participation experience designed to overcome traditional barriers to participation, as well as barriers to implementing a broad set of energy efficiency upgrades typically offered through multiple discrete AIC offerings.

Table 12 summarizes the evaluation activities planned for the Multifamily Initiatives over the three-year evaluation plan period.

Table 12. Multifamily Initiatives Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Multifamily Energy Advisor Interviews		✓	
	Property Manager/Owner Survey	✓		✓
	Tenant Survey	✓		
	Analysis of Participation Trends		✓	

The rationale for these activities is as follows:

- **2023:** The team will focus on core impact and process evaluation activities, as well as conduct primary research to monitor property managers’ participation experience and gather insights from tenants living in rental units upgraded through the Initiatives. Research with property managers will be entirely focused on process topics. However, research with tenants will include both impact and process topics, such as measure verification, satisfaction with the in-unit visit, and their perceptions and ease of use of certain technologies installed through the Initiatives (e.g., heat pumps).
- **2024 and 2025:** The evaluation activities planned for the later years of the plan period mirror those conducted earlier in the cycle with targeted research planned with property managers/owners and Multifamily Energy Advisors. The team will also continue to analyze Initiative tracking data to understand the depth of savings achieved through the one-stop shop delivery strategy.

3.1.9 Residential Kit Initiatives

The objectives of AIC’s Residential Kit Initiatives are to reach underserved communities, as well as low-moderate income customers with free energy saving measures and educational materials designed to engage them in energy efficiency and give them immediate tools they can use to improve their quality of life. During the 2022-2025 plan cycle, AIC will operate three channels to achieve these objectives:

- **Direct Distribution Initiative – School Kits Channel:** This channel provides school presentations and energy savings kits to students in participating middle school (largely 5th grade) classrooms with a focus on underserved communities in AIC service territory. By providing the kits in conjunction with energy conservation education in the classroom, AIC hopes to establish an interest in energy efficiency and also reduce energy use in participating student homes.
- **Direct Distribution Initiative – High School Innovation Channel:** This channel provides school presentations and energy savings kits to students in participating middle school (largely 5th grade)

classrooms with a focus on underserved communities in AIC service territory. By providing the kits in conjunction with energy conservation education in the classroom, AIC hopes to establish an interest in energy efficiency and also reduce energy use in participating student homes.

- **Income Qualified Initiative – Community Kits Channel⁹:** This channel provides energy saving kits and educational materials to AIC low and moderate-income customers in under-served/challenged communities. The objective of the initiative is to provide no cost energy saving measures that will improve quality of life and start these customers on a longer-term journey around energy efficiency.

Table 13 summarizes the evaluation activities planned for the Residential Kit Initiatives over the three-year evaluation plan period.

Table 13. Residential Kit Initiatives Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Annual	Initiative Material and Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Gross Impact Analysis – Database Review	✓	✓	✓
	Gross Impact Analysis – IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR Application	✓	✓	✓
Phased	Community Partner Interviews		✓	
	Participating Teacher Survey		✓	
	Participating Parent Survey		✓	

The rationale for these activities is as follows:

- **2023:** During the second year of evaluation, the team will focus on impact evaluation and documenting any changes and lessons learned associated with initiative implementation.
- **2024:** In the third year of evaluation, the team will conduct deeper research to better understand the impacts of AIC’s Kit Initiatives, including:
 - In-depth interviews with community partners supporting the IQ Community Kits Channel to better assess Initiative effectiveness in reaching underserved communities.
 - Research with teachers and parents participating in the School Kits Channel. The purpose of these activities will be to understand the impact of the presentation and energy efficiency kits on students in participating classrooms from the perspective of teachers and parents. The latter group is particularly important in determining the rate at which measures included in the kits are installed in student homes.
- **2025:** Barring any significant changes to the Initiatives, the final year of evaluation will again focus on impact evaluation and documenting any changes and lessons learned associated with initiative implementation that can be used moving into the next plan period.

⁹ The Community Kits Channel is reported up through the IQ Initiative for impact evaluation purposes.

3.2 Business Program

3.2.1 Standard Initiative

The Standard Initiative offers AIC private and public sector business customers fixed incentives for the installation of prescriptive energy efficiency measures. The Initiative will primarily focus on lighting retrofits, lighting controls, motors, HVAC equipment, steam traps, and specialty applications such as agricultural and refrigeration measures. In Plan 6, the Standard Initiative covers a smaller cross-section of program efforts as compared to the 2018-2021 cycle. In particular, efforts focused toward small businesses and midstream incentives are now captured in standalone initiatives (see Sections 3.2.3 and 3.2.4).

Table 14 provides a summary of planned Standard Initiative evaluation activities for the years 2023-2025. Each year, the evaluation team will quantify gross and net electric energy, electric demand, and gas savings through a detailed engineering analysis and application of SAG-approved NTGRs. In 2023, the evaluation team will conduct research to update the SAG-approved NTGRs for future application, including participant survey research to estimate free-ridership and, if viable, program ally spillover research to estimate participant spillover.

Table 14. Standard Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Review	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	NTG/Process Research	✓		

In addition to Standard Initiative-specific evaluation activities, the evaluation team expects to conduct a number of cross-cutting Business Program research activities during Plan 6 which will support the Standard Initiative in part. These activities are discussed further in Section 3.2.9.

3.2.2 Custom Initiative

The Custom Initiative offers incentives to AIC Business Program customers for energy efficiency projects involving equipment not covered through other AIC initiatives. The Custom Initiative allows customers to propose additional measures and tailor projects to the specific needs of their facilities. It also provides an avenue for piloting new measures prior to incorporating them into the Standard Initiative.

Business customers often represent the highest potential for energy savings, but these savings frequently result from highly specialized equipment designed for particular industries or types of facilities.

The Custom Initiative is delivered to customers through several different channels. Two core offerings are typically responsible for all of the savings claimed through the Initiative:

- The Custom Incentives channel provides incentives for electric and gas measures not incented through other AIC offerings. Some examples of common Custom Incentives measures include compressed air

improvements, energy management systems (EMS), and industrial process measures, including heat recovery, process heat, and improvements to steam systems.

- The New Construction Lighting channel offers additional incentives for lighting measures in new construction projects.

Additionally, AIC offers a number of smaller channels through the Custom Initiative, including Metering and Monitoring, Feasibility Studies, Agricultural Energy Audits, and Building Energy Assessments. These offerings typically serve the purpose of engaging AIC’s business customers more deeply with energy efficiency and typically do not yield savings.

Table 15 provides a summary of planned evaluation activities for the years 2023-2025.

Table 15. Custom Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Review	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
	Early Project Reviews	✓	✓	✓
Phased	Process Mapping	✓		
	Stakeholder Interviews	✓		
	Program Ally Interviews	✓		
	Benchmarking and Best Practices Research	✓		
	NTG/Process Research		✓	

Each year, the evaluation team will quantify gross and net energy and demand savings through detailed engineering analysis, including desk reviews and on-site M&V. In particular, the evaluation team expects to continue to explore opportunities to refine the sampling approach historically used for the Custom Initiative during Plan 6, with an eye toward more enduse-specific sampling if possible.

In addition, the evaluation team will continue to coordinate with the implementation team around efforts to improve the realization rates for the Initiative, including evaluation suggestions around templates for implementation data collection as well as ongoing early reviews of planned Custom Initiative projects to ensure accuracy in implementation savings estimates. To support these efforts, the evaluation team will conduct a comprehensive process evaluation in 2023, including process mapping and interviews with program staff, program allies, and other key stakeholders.

In 2024, the evaluation team will conduct customer research to update the SAG-approved NTGR for the Initiative as well as exploring limited process topics where possible.

In addition to Custom Initiative-specific evaluation activities, the evaluation team expects to conduct a number of cross-cutting research activities during Plan 6 which will support the Custom Initiative. These activities are discussed further in Section 3.2.9.

3.2.3 Small Business Initiative

The Small Business Initiative will incentivize customers to install energy efficient products and perform energy saving retrofits. The Initiative will be implemented by program allies with experience and training in servicing the target market. In 2023, the Initiative will be comprised of two channels:

- **Small Business Direct Install (SBDI):** This channel will focus on rapidly deployable lighting and refrigeration measures and target financially and time constrained small businesses, non-profits, schools, and public sector customers. Eligible customers will receive a free on-site assessment and assessment report outlining recommended measures, project costs, estimated energy savings, and estimated bill savings. The SBDI channel will be the main driver of electric savings for the Initiative.
- **Small Business Energy Performance (SBEP):** This channel will target private and public facilities located in Empower communities. Measures will focus on building envelope upgrades, HVAC improvements, and other non-SBDI measures supported by participating Allies.

Table 16 provides a summary of planned evaluation activities for the years 2023-2025.

Table 16. Small Business Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Review	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	Small Business Direct Install NTG/Process Research		✓	
	Small Business Market Study	✓		

Each year, the evaluation team will conduct core impact and process activities to quantify and understand gross and net energy, demand, and gas savings from the Initiative. In addition, we propose a number of targeted evaluation activities for the Initiative over the course of Plan 6. The rationale for these activities is as follows:

- **2023:** In 2023, we plan to take learnings from the evaluations of the Initiative to date and launch a Small Business Market Study to support future Initiative implementation. In particular, the evaluation team expects to explore topics that appear relevant or necessary to best support the Initiative based on information gathered in 2022. We envision this may include things such as: customer awareness of/interest in AIC’s offerings, their largest energy users, knowledge of EE equipment, current barriers to investment in EE, and potential financing mechanisms that might be attractive to this customer segment, but the final objectives of the study will depend on previous evaluation activities and progress of the Initiative to date.
- **2024:** In 2024, the evaluation team will conduct research to update the recommended NTGR for the SBDI channel and explore selected process topics through a survey of SBDI participants.

3.2.4 Midstream Initiative

The Midstream Initiative provides incentives to distributors and wholesalers to reduce prices at the point of sale for efficient equipment. The goal is to increase the adoption of high efficiency equipment without requiring the end-customer to submit a rebate application. The Initiative will include three channels:

- **Midstream Lighting:** The Midstream Lighting channel incentivizes the sale of linear LED tubes and mogul-based LED lamps at the distributor level and is a significant contributor of savings for the portfolio.
- **Midstream HVAC:** AIC began offering midstream incentives for nonresidential HVAC equipment during the 2018-2021 cycle. The Midstream HVAC channel will incentivize the sale of air source heat pumps, single package and split air conditioners, advanced thermostats, notched V-belts, and air source heat pump water heaters. During Plan 6, the evaluation team plans to coordinate research efforts for this channel closely with those conducted for the Residential Program’s Market Rate Single Family Initiative – Midstream HVAC channel wherever possible.
- **Midstream Food Service:** The Midstream Food Service channel will incentivize the sale of commercial food service equipment such as freezer/refrigerator doors, griddles, fryers, ovens, and broilers. This channel launched in 2022 and is implemented at a statewide level. Wherever possible, the evaluation team will specifically seek to coordinate research efforts for this channel with other Illinois evaluators; because the channel is implemented at a statewide level, coordinated research will be important to ensure that evaluation findings can be effectively used to improve the offering.

Table 17 provides a summary of planned evaluation activities for the years 2023-2025.

Table 17. Midstream Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Review	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	Midstream HVAC NTG & Process Research	✓		
	Midstream Food Service NTG & Process Research	✓		

The rationale for these activities is as follows:

- **2023:** In addition to our core impact and process evaluation activities, in 2023 the evaluation team expects to conduct research to establish Illinois-specific NTGRs for the Midstream HVAC and Midstream Food Service channels, which currently use planning assumptions. In addition, as these channels are in early years of implementation, we plan to use distributor, trade ally, and customer research to explore effectiveness of program implementation, customer, ally, and distributor satisfaction with the program, and opportunities for improvement to help the channels continue to develop into core components of the portfolio.
- **2024-2025:** In later portfolio years, the evaluation team will continue to conduct core impact and process evaluation activities to ensure accurate quantification and exploration of energy savings produced by the Initiative.

3.2.5 Retro-Commissioning Initiative

Over time, deferred maintenance and changing operating directives and practices can lead to inefficient operation of building systems. Retro-commissioning is a process that examines current operations relative to the needs of equipment owners and those served by the equipment and determines opportunities for increasing equipment efficiency through maintenance, system tune-ups, scheduling, and optimization of operations.

The Retro-Commissioning (RCx) Initiative helps AIC business and public sector customers identify and implement no-cost and low-cost efficiency optimizations to achieve energy savings in existing energy-using systems. The Initiative includes the following channels:

- Large Facilities RCx
- Industrial Refrigeration
- Retro-Commissioning Lite
- Virtual Commissioning¹⁰
- Monitoring-Based Retro-Commissioning

Secondary objectives of the Initiative include:

- Channeling participation into other AIC Business Program initiatives to implement cost-effective equipment replacements and retrofits (e.g., healthcare retro-commissioning studies might recommend that laminar flow restrictors be installed through the Standard Initiative).
- Developing a network of retro-commissioning service providers (RSPs) that will continue to operate in the AIC service territory.

Table 18 provides a summary of planned evaluation activities for the years 2023-2025.

Table 18. Retro-Commissioning Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Reviews	✓	✓	✓
	Verification Activities	✓	✓	✓
	Engineering Analysis	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	NTG Research		✓	

The rationale for these activities is as follows:

- **2022-2025:** Each year, the evaluation team will quantify gross and net energy, demand, and gas savings through detailed engineering analysis and verification activities.

¹⁰ While the Virtual Commissioning offering is a component of the Retro-Commissioning Initiative, its evaluation plan is provided separately in Section 3.2.6 due to substantial differences in required evaluation activities.

- **2024:** In 2024, the evaluation team will conduct research to update the NTGRs used to calculate the Initiative’s net savings.

3.2.6 Virtual Commissioning Offering

Virtual Commissioning™ is an approach that remotely targets the traditionally hard-to-reach customer segment of small and medium business customers to support low- and no-cost energy-saving measures. The Virtual Commissioning™ approach leverages Advanced Metering Infrastructure (AMI) data to support targeted insights for hard-to-reach customers through the design, implementation, and evaluation phases of the channel.

Power TakeOff uses their internal software to complete an initial analysis of AMI data from AIC’s small and medium business customers to identify prospective participants. Power TakeOff then uses the outcomes of this analysis to remotely identify opportunities for low- and no-cost energy-saving improvements at the participants’ facilities. These opportunities commonly include HVAC system modifications and lighting scheduling adjustments.

Power TakeOff energy advisors then contact potential participants to share the results of the analysis, confirm the energy-saving opportunities, and verify facility characteristics. After participants implement the recommended changes, Power TakeOff develops individual facility-level regression models using the participants’ pre- and post-participation energy and gas consumption to estimate savings. The models must meet certain criteria for robustness in order for Power TakeOff to claim savings. If a project both demonstrates continued savings for three months and meets the model robustness criteria, Power TakeOff can claim annualized savings for the project for the program year.

Table 19 provides a summary of planned evaluation activities for the years 2023-2025.

Table 19. Virtual Commissioning Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Annual Impact Analysis (AM&V)	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	NTG Research	✓		

The rationale for these activities is as follows:

- **2023-2025:** Each year, the evaluation team will quantify gross and net energy and demand savings through advanced M&V modelling techniques.
- **2023:** The evaluation team will conduct customer research to update the SAG-approved NTGR for the channel as well as exploring limited process topics where possible.

3.2.7 Streetlighting Initiative

The Streetlighting Initiative incentivizes the replacement of streetlighting using high-pressure sodium (HPS) and mercury vapor (MV) lighting with energy-efficient LED technology. The Initiative targets streetlighting for upgrades through two channels:

- **Municipality-Owned Streetlighting (MOSL):** Through this channel, AIC targets municipal customers who own their streetlighting fixtures. Incentives are provided to encourage customers to replace existing MV and HPS streetlights with LED streetlights.
- **Utility-Owned Streetlighting (UOSL):** Through this channel, AIC targets municipal customers who have AIC-owned streetlighting fixtures. Early replacement of functioning HPS and MV streetlights with LED streetlights is available to customers through the Initiative for a per-fixture fee. The Initiative incentivizes customers to request early replacement of these fixtures and provides an incentive to decrease the per-fixture cost of the early replacement to customers. In addition, through this channel, AIC claims savings from ongoing replacement of existing AIC-owned HPS streetlighting with LED streetlights upon burnout.

Table 20 provides a summary of planned evaluation activities for the years 2023-2025.

Table 20. Streetlighting Initiative Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	Engineering Desk Review	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓
	Net Impact Analysis – SAG Approved NTGR	✓	✓	✓
Phased	Municipality-Owned Streetlighting NTG Research		✓	

The rationale for these activities is as follows:

- **2023-2025:** The evaluation team will conduct core process and impact evaluation efforts in each year of the cycle to ensure accurate quantification and exploration of energy savings produced by the Streetlighting Initiative.
- **2024:** In 2024, the evaluation team will conduct NTG research to update the SAG-approved value for the MOSL channel.

3.2.8 Building Operator Certification

AIC offers the Building Operator Certification (BOC) Training to building operators in AIC territory. BOC is a nationally recognized course and certification training that was developed by the Northwest Energy Efficiency Council (NEEC) and includes classroom training, project assignments to be completed at the participant's facility, and in-class tests at the end of each day. Graduates who elect to take the Certification Exam and pass, earn the BOC Certification and become a Certified Building Operator. While participants do not need to be AIC customers to enroll in the course, AIC provides tuition reimbursements to customers in their service territory upon completion of the course to incentivize participation.

Table 21 provides a summary of planned evaluation activities for the years 2023-2025. Each year, the evaluation team will quantify verified energy and demand savings through the application of the prescriptive algorithm in the IL-TRM.

Table 21. Building Operator Certification Training Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Initiative Material & Database Review	✓	✓	✓
	Initiative Staff Interviews	✓	✓	✓
	IL-TRM Application Review	✓	✓	✓

3.2.9 Cross-Cutting Business Program Evaluation Activities

AIC operates its Business Program in a coordinated fashion wherever possible to ensure continuity of customer service and conversion of opportunities wherever possible. In particular, the Standard and Custom Initiatives are operated in a closely integrated manner with the same implementer and shared resources shared across initiatives. As a result, the evaluation team looks for opportunities to conduct cross-cutting research for the Program in a cross-cutting fashion wherever possible.

Table 22 provides a summary of planned cross-cutting Business Program evaluation activities for the years 2023-2025.

Table 22. Cross-Cutting Business Program Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
	Non-Participant Spillover Research	✓		
	Empower Communities Followup	As needed		

The rationale for these activities is as follows:

- Non-Participant Spillover Research:** In 2023, the evaluation team will update Business Program-wide non-participant spillover (NPSO) estimates by conducting a non-participant survey with eligible AIC business customers who have not participated in the Business Program within the past three years. The non-participant survey will focus on assessing NPSO resulting from the Program, as well as on barriers to participation that AIC can overcome to boost engagement among key market segments. The evaluation team currently expects to conduct this study as a statewide effort coordinated with ComEd, Nicor Gas, and Peoples Gas/North Shore Gas.
- Empower Communities Study Follow-up:** We will continue to work closely with AIC staff to develop a roadmap for Empower Communities follow-up studies throughout the 2022-2025 cycle.

3.3 Voltage Optimization Program

Throughout Plan 6, AIC will be operating and claiming savings from the Voltage Optimization Program (VO Program) as part of its energy efficiency portfolio. In this section, we discuss the VO Program and outline the anticipated evaluation activities for the Program from 2023-2025.

Voltage optimization is a form of energy efficiency technology implemented by electric utilities at the distribution substation or circuit level that optimizes voltage levels along distribution circuits to reduce electricity usage. There are two main VO technologies: Conservation Voltage Reduction (CVR) and Volt-VAR Optimization (VVO). CVR reduces customer energy consumption by reducing line voltage and VVO improves the power factor to reduce line losses. Once implemented, VO technologies are intended to operate 24 hours a day, 365 days a year. AIC will implement hardware and software solutions using VO technologies.

AIC launched its VO Program in 2018, leveraging experience gained from a 2012 VO pilot project. Since 2018, AIC has been installing hardware, software, and communications components on selected feeders on a phased basis. During the 2018-2021 plan period, AIC successfully deployed and claimed savings from VO on 324 circuits. During Plan 6, AIC expects to deploy VO on 723 additional circuits, culminating in 1,047¹¹ total circuits to be deployed by 2024.

As defined in the AIC Voltage Optimization Plan,¹² AIC claims savings only for VO circuits that were operational during a full calendar year. Therefore, each year of VO Program evaluation studies circuits completed in the prior calendar year.

Table 23 outlines the planned evaluation activities for the VO Program during the evaluation period.

Table 23. Voltage Optimization Program Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Program Staff Interviews	✓	✓	✓
	Data Request and Materials Review	✓	✓	✓
	Electric Energy Impact Analysis (Modeling & IL-TRM Algorithm Application)	4x	4x	4x
	Peak Demand Impact Analysis (Modeling & IL-TRM Algorithm Application)	✓	✓	✓
	Verification of VO Deployment	✓	✓	✓
Phased	Ad-Hoc VO Program Support	As needed		

In each year, we will conduct interviews with program staff and request and review program materials to ensure we are up to date on the current status of the VO Program.

The VO Program is a major component of the AIC Plan 6 portfolio and is expected to account for 17-18% of AIC’s total achieved electric energy savings annually throughout Plan 6. Accordingly, the evaluation team will conduct four rounds of evaluation annually, providing three interim estimates of electric energy savings throughout each year before providing final estimates of energy and demand savings in the final evaluation report. Building on the approach used in the 2021 evaluation, we will continue to deliver interim evaluation results using a PowerBI dashboard to allow AIC to easily track results on a circuit level.

In addition, we expect to provide ad-hoc support to AIC on a number of VO Program items throughout 2023-2025, including potential support around assessment of viability of additional VO Program investments.

3.4 Pilots & Emerging Areas

Throughout the 2022-2025 cycle, we understand that AIC is likely to implement a number of pilot efforts that fall outside the bounds of the Residential, Business, and VO Programs as currently defined. To support pilot efforts, the evaluation team reserves ad-hoc budget every year to engage with AIC on issues of program design and evaluability. In addition, as available and based on guidance from AIC, the evaluation team reserves additional budget to support specific pilot research efforts. Based on early discussions with AIC, the evaluation team currently has developed research to support one key pilot effort in 2023 materially separate from other initiatives (the Luminaire Level Lighting Controls [LLLC] Pilot, discussed below) and has reserved additional

¹¹ The number of circuits planned for VO deployment was determined based on calculated assumptions, industry results, and past AIC VO pilot results. The actual number of feeders with VO could increase based on deployment results.

¹² Ameren Illinois Voltage Optimization Plan, filed in ICC Docket 18-0211 on January 25, 2018. Accessed at: <https://www.icc.illinois.gov/downloads/public/edocket/463457.pdf>.

budget to scope and implement research for additional pilots as they emerge, including pilot efforts currently expected to be conducted as channels of existing initiatives.

Beyond additional discrete pilot efforts, we expect that AIC will continue to monitor discussions in Illinois around market transformation (MT), including but not limited to the following MT efforts currently being pursued by other Illinois utilities:

- ENERGY STAR Retail Products Platform (ESRPP)
- Advanced Windows
- Code Support/Advancement

We expect to participate in statewide discussions related to these efforts with the goals of staying engaged to ensure that discussion considers any specific details relevant to AIC and helping to inform AIC’s decision-making relative to future emerging program designs and implementation.

3.4.1 Luminaire Level Lighting Controls Pilot

AIC is offering an incentive directly to program trade allies for LLLCs as part of the LLLC Pilot. LLLCs are a subset of networked lighting controls in which each light fixture has its own built-in sensor that enables it to communicate and transmit data wirelessly. This system allows one to group and regroup lighting as needed, as granular as at the individual fixture level, to adhere to different control schemes including occupancy sensing and daylight harvesting.

The objective of the LLLC Pilot is to encourage more LLLC adoption by overcoming current market barriers. The Pilot is currently designed to provide training and resources for trade allies and AIC staff to 1) increase the number of skilled trade allies that could market and install LLLCs and 2) build more market awareness among business owners, lighting designers, distributors, and retailers with the AIC territory.

Table 24 summarizes the evaluation activities planned for the Pilot over the three-year evaluation plan period.

Table 24. LLLC Pilot Evaluation Activities – 2023-2025

Timing	Activity	2023	2024	2025
Annual	Review Program Materials	✓	✓	✓
	Pre/Post Training Surveys	✓	✓	✓
	Baseline Surveys (End Users and Trade Allies)	✓	✓	✓
	Natural Market Baseline Review	✓	✓	✓
Phased	MPI Assessments	✓		✓
	Expert Panel Review of NMB		✓	
	Estimation of Market Transformation Savings		✓	✓

The rationale for these activities is as follows:

- **2023:** In the second year of the LLLC Pilot, the evaluation team will complete a number of core evaluation activities designed to ensure that the PTLM appropriately specifies the program design and that we have adequate baseline measurements to show any progress towards market transformation goals in future years. Additionally, we will begin to provide assessments on the short-term market progress indicators (MPIs) specified in the PTLM. Finally, in 2023 we will provide support as the

implementation team develops a natural market baseline that will be used in future years to claim market transformation savings.

- **2024 and 2025:** The evaluation team will continue to conduct core research to support annual impact and process evaluations. However, as the pilot matures, we expect to see broader shifts in the lighting controls market. As such, we will focus evaluation activities on estimating the pilot’s market transformation impacts.

3.5 Cross-Cutting Evaluation Activities

As part of the evaluation process, the team will also perform a number of annual portfolio-level activities. We describe each of these activities within the following sections.

3.5.1 Illinois Statewide Technical Reference Manual Support

The evaluation team is actively involved in the annual IL-TRM update process in a number of ways.

- We are regular participants in Illinois Technical Advisory Committee (TAC) meetings, including participation in weekly calls, as well as reviewing and commenting on IL-TRM update items presented to the TAC. This includes participation in TAC subgroups as needed, including the IQ TRM Working Group.
- Similarly, we are regular participants in Illinois NTG Methods Working Group meetings, and often lead discussion of various topics for consideration during the update cycle.
- We coordinate and collaborate with other Illinois evaluation teams as needed on key IL-TRM related research.
- We reserve ad-hoc budget and time to support the IL-TRM Administrator, VEIC, and other Illinois stakeholders in all of the above.

In addition, we scope and execute research activities outside of annual program evaluations and specifically designed to result in IL-TRM updates on an as-needed basis. Throughout Plan 6, we will coordinate with AIC, its implementation team, and other Illinois stakeholders to identify and pursue research to update the IL-TRM. Table 25 identifies some key items we currently plan to pursue during 2023-2025 based on discussion with AIC and stakeholders.

Table 25. Planned 2023 IL-TRM Research Activities

Research Activity	2023	2024	2025
Low Income Appliance Baseline Research	✓		
Nonresidential LED Cost Updates	✓		
Mogul LED Characterization Updates	✓		
Small Business Parameter Updates	✓		
Air Source Heat Pump Parameter Updates	✓	TBD	
Prescriptive Air Sealing Study	TBD		
Connected LED Savings Factor Study	TBD		

In addition to the items flagged in Table 25, the evaluation team is aware that as a result of legislative changes made through CEJA, significant additional focus will be paid to electrification of enduses historically served by fossil fuels. The evaluation team will continue to work with AIC, its implementation team, the IL-TRM

Administrator, and other Illinois stakeholders as the process of updating the IL-TRM to reflect electrification measures continues and has reserved budget to support this effort.

3.5.2 Non-Energy Impacts

Throughout the 2018-2021 evaluation cycle, the evaluation team conducted ongoing research around non-energy impacts (NEIs). In 2023-2025, the evaluation team will pursue a limited number of NEI-specific research activities as outlined in Table 26 below.

Table 26. NEI Evaluation Activities – Three Year Plan

Timing	Activity	2023	2024	2025
Phased	Income Qualified Participant NEI Assessment	✓		
	Societal NEI Update		✓	
	Nonresidential NEI Followup Research	As needed		

We describe each of these tasks in further detail below:

- **IQ Participant NEI Assessment:** The evaluation team will conclude an ongoing longitudinal assessment of Income Qualified Initiative participant health and safety NEIs in 2023.
- **Societal NEI Update:** During the 2018-2021 cycle, the evaluation team completed an assessment of societal NEIs resulting from decreased particulate matter emission associated with energy savings from the AIC portfolio.¹³ These NEIs have been used by AIC in cost-effectiveness analysis to support Plan development and are used by the evaluation team in annual verified cost-effectiveness analysis. In 2024, we will update this study using the latest US Environmental Protection Agency tools as well as updated grid characteristics to support AIC’s seventh energy efficiency plan filing.
- **Nonresidential NEI Followup Research:** During the 2021 evaluation, the evaluation team conducted a proof-of-concept nonresidential NEI study, the results of which are forthcoming. We envision the possibility for some additional targeted nonresidential NEI research to support specific measures as part of ongoing program work. For example, the LLLC pilot (discussed in Section 3.4.1) is likely to yield significant NEIs that could be quantified to support program efforts.

3.5.3 Economic and Employment Impacts

Illinois statute requires Illinois program administrators to report estimates of job and macroeconomic impacts from their energy efficiency portfolios annually at the conclusion of each year’s annual impact reporting cycle (April 30 following the year of program implementation).¹⁴ During 2018 and 2019, the evaluation team collaborated with the ComEd evaluation team to develop a methodology for estimating these impacts, which was approved by the Illinois SAG.

This analysis is currently conducted using a plug-and-play multiplier-based approach, built in Microsoft Excel, that uses portfolio savings estimates and cost information to estimate job and macroeconomic impacts. We will provide these estimates each year as part of the Annual Integrated Impact Evaluation Reports.

In 2024, we expect to coordinate with other Illinois evaluation teams to purchase and analyze economic data that will be used to update the multipliers for our evaluation approach. Illinois stakeholders have also shared

¹³ Ameren Illinois Company 2018 Societal Health Non-Energy Impacts Report. <https://ilsag.s3.amazonaws.com/AIC-Societal-NEI-Results-REVISED-FINAL-2021-04-09.pdf>

¹⁴ Reporting requirements are further defined in the Policy Manual.

a desire to continue discussion of depth of research that could be conducted by the evaluation teams to better quantify economic development at a more granular level of reporting. We expect to continue this discussion in 2023.

3.5.4 Cost-Effectiveness Analysis

Section 8-103B and Section 8-104 direct utilities to operate cost-effective energy efficiency programs, and to demonstrate that their energy efficiency portfolios are cost-effective using the Illinois Total Resource Cost (TRC) test. In accordance with law, relevant Illinois Commerce Commission (ICC) orders, and policy developed by the Illinois Stakeholder Advisory Group (SAG), we conduct a cost-effectiveness analysis of AIC's energy efficiency portfolio on an annual basis.

Cost-effectiveness testing for the Illinois TRC conducted as part of our annual evaluations will align with national standard practice, as well as directives presented in the Policy Manual, and will incorporate information from AIC program tracking data, Opinion Dynamics' annual evaluations of AIC's portfolio, and supporting information from the IL-TRM.

To assess cost-effectiveness, the team monetizes each initiative's net resource benefits, as measured by the avoided costs, total incremental costs of measures installed, and administrative costs to calculate initiative-level benefit-cost ratios. These results are aggregated to produce program- and portfolio-level benefit-cost ratios, as well. We will work closely with AIC and its implementer to ensure we accurately capture costs and benefits associated with the portfolio.

State law requires AIC's energy efficiency portfolio to be cost-effective at the portfolio level,¹⁵ but does not prescribe cost-effectiveness requirements at the program level. Nevertheless, to the degree possible, our analysis will provide insights into the cost-effectiveness of various components of AIC's portfolio to provide further insight for program planning. In addition to the Illinois TRC test, we will conduct the program administrator cost test (PA/UCT) to support SAG requested reporting.

We will report the results of our analysis in an annual verified cost-effectiveness report to be delivered after yearly program impacts have been finalized. We will utilize best efforts to provide the final verified cost-effectiveness report for each program year no later than July 1 in the year following implementation.

Additionally, we will provide ad hoc support to AIC and its implementation teams by screening proposed measures and implementation scenarios for cost-effectiveness.

3.6 Quality Assurance and Control

Per our contract, the team must hire a separate entity for quality assurance/quality control (QA/QC) review and work collaboratively with this entity to ensure the quality of our evaluation plans, analysis, and reporting. Since PY4, the team has worked with Dr. Richard Ridge, who has a long history in energy efficiency evaluation. In recent years, Dr. Ridge has used his expertise to help write evaluation protocols and oversee other firms in their evaluation efforts, as well as continuing to perform evaluations across the country. From 2005 through 2012, Dr. Ridge was a consultant to the California Public Utilities Commission (CPUC) evaluation staff, where he worked with them to understand evaluation needs, review contractor plans, and participate in many aspects of a multi-million-dollar evaluation effort. From 2008 through 2016, he provided similar support to

¹⁵ State law specifically exempts measures delivered to low-income customers from this requirement, which means that the cost-effectiveness requirement is for the portfolio, less all effects of low-income programs.

the New York State Department of Public Service. From 2019 through 2022, he assisted in the evaluation of multiple programs implemented by the California IOUs and third parties and advised the CPUC.

As part of the 2023-2025 evaluation efforts, Dr. Ridge will continue to (1) discuss portfolio evaluation plans with the evaluation team, providing advice as needed; (2) participate in ongoing sampling and evaluation design efforts as requested (including the Illinois Net-to-Gross Working Group); (3) review draft evaluation reports to ensure quality and accuracy; and (4) provide the ICC with a report on the efforts in which he was involved.

3.7 Integrated Reporting

The evaluation team will provide an integrated report with impact findings for all AIC portfolio efforts by April 30 following each year of program implementation. This report will include detailed EM&V tables, an overall AIC portfolio WAML, overall AIC portfolio CPAS calculations, as well as a high impact measure summary table for the Residential Program and Business Program.

4. 2023 Evaluation Plans

In this section of the evaluation plan, we present detailed evaluation plans for research scoped as part of the 2023 evaluation of the AIC portfolio. As discussed in Section 3, evaluation efforts are not always organized in a way that perfectly aligns with portfolio organization. For example, we choose to group all three distinct AIC multifamily offerings (the Public Housing Initiative, all channels of the Market Rate Multifamily Initiative, and the Multifamily channel of the Income Qualified Initiative) together for efficiency.

4.1 Residential Program

4.1.1 Retail Products Initiative

The Retail Products Initiative provides discounts for a range of products, including omnidirectional and specialty LEDs, advanced thermostats, and a range of appliances and consumer electronics. Additionally, customers can use the Efficient Choice Tool (ECT), which does not offer incentives but instead provides an online platform for comparing and reviewing residential home appliances and consumer electronics. The ECT helps AIC customers conduct relevant product research, providing a range of information that includes product specifications, pricing, tips for use, reviews, images, and vendor locations.

Within the brick and mortar and online store outlets, customers can receive a rebate for their purchase of qualifying products through the following channels:

- By receiving a point-of-sale (POS) discount on purchases of advanced power strips, air purifiers, bathroom vent fans, dehumidifiers, EISA-exempt LED lighting, and water dispensers at participating retailers;
- By submitting an online or mailed-in rebate application for the purchase of qualified advanced thermostats, variable-speed pool pumps, refrigerators, freezers, clothes washers, heat pump water heaters, and electric clothes dryers purchased at brick and mortar or online retailers;
- By registering online and downloading a coupon for qualified advanced thermostats that can be used to receive a POS discount at select brick and mortar or online retailers; and
- By visiting the AIC Online Marketplace to purchase advanced thermostats, advanced power strips, air purifiers, dehumidifiers, or bathroom vent fans through the AIC Online Marketplace.
- In stores designated as easily accessible to IQ communities, by receiving a point-of-sale (POS) discount on purchases of EISA-impacted LED lighting products.

The implementation contractor works with participating retailers to promote qualifying products through in-store marketing, special product placement, and product demonstrations. Implementation staff also visit participating retailers to provide sales associates with training on how to best promote the Initiative with customers.

Evaluation Approach

The assessment of the 2023 Retail Products Initiative includes both process and impact analyses.

Research Objectives

Impact Questions

The overall objective of the impact evaluation is to estimate the electric energy, peak demand, and natural gas impacts from the Initiative. As such, the 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the Initiative?
- What are the estimated net energy and demand impacts from the Initiative?
- How many non-incented energy-efficient products are purchased by ECT users?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How was the Retail Products Initiative implemented in 2023?
- Was Retail Products implementation effective and streamlined?
- In what areas could Retail Products improve to increase its overall effectiveness, or ease of implementation?
- What implementation challenges occurred in 2023, and how did Retail Products staff overcome them?
- What were the biggest successes for the channel in 2023? What were the biggest drivers behind these successes?

We will explore each of these questions through the activities described in this evaluation plan.

Evaluation Tasks

Table 27 summarizes the 2023 evaluation activities planned for the Retail Products Initiative.

Table 27. Summary of Retail Products Initiative Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Material & Database Review		✓		Review the 2023 database, relevant administrative reports, and marketing and outreach materials to document initiative design and any changes.
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to document Initiative design and implementation for 2023 and explore Initiative performance.
Impact Analysis	✓			For the Point-of-Purchase and Online Marketplace channels, review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Complete an interim impact analysis. Determine 2023 net impacts using SAG-approved NTGR values. For the ECT channel, use researched purchase rates in conjunction with IL-TRM V11.0 deemed savings to calculate gross savings. Determine 2023 net impacts using SAG-approved NTGRs.

We describe each of these activities in detail below.

Task 1. Initiative Materials and Database Review

The evaluation team will conduct a comprehensive review of all available initiative materials and program sales and savings tracking data. Materials include initiative implementation plans, marketing plans, QA/QC documents, marketing outreach and in-store advertising, and ECT website traffic. We expect to submit a request early in the program year to obtain materials related to initiative design and at the end of the year to ensure we have a complete set of materials used throughout the year. Review of these materials will inform the process evaluation and allow us to document the design and implementation of the Retail Products Initiatives in 2023. Additionally, we will request tracking data mid-year to support an interim impact analysis, and at the close of the year to inform the year-end impact evaluation.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

The evaluation team will conduct up to six in-depth phone interviews with AIC and implementation staff involved in the design and administration of the Retail Products Initiative. We will conduct two rounds of interviews. We will schedule the first round early in the program year to understand initiative design elements that could impact evaluation methods. We will conduct another round of interviews towards the end of the program year to gather feedback on the initiative performance and implementation challenges that occurred during the year.

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 3. Impact Analysis

For the Point-of-Purchase and Online Marketplace channels, the evaluation team will review all records in the Initiative database. We will check to ensure that the correct savings assumptions have been applied for each product type to verify that the database contains the correct information. We will also assess the database to ensure that other project data has been recorded fully and correctly. We will resolve any discrepancies found in the database and report on findings.

For the ECT channel, the evaluation team will use deemed purchase rates¹⁶ (and where necessary, deemed assumptions for the average number of measures purchased per shopper) developed from our 2021-2022 evaluations of the ECT. We will deliver a methodology memo in April 2023, after the conclusion of the second survey wave for the 2022 ECT evaluation, summarizing deemed purchase rates to be used in the 2023 evaluation. While the exact specifics of the purchase rates deemed for 2023 will depend on the results of the second survey wave from the 2022 ECT evaluation (as well as any necessary decisions around weighting or combining of purchase rates for statistic), Table 28 presents purchase rates for a handful of key ECT measures developed as an average of 2021-2022 purchase rates as an example of what may be expected to be seen.

Table 28. Example 2023 ECT Purchase Rates

Measure Type	2021 Wave 1	2021 Wave 2	2022 Wave 1	Average
Advanced Thermostats	6.0%	4.3%	5.4%	5.2%
Air Purifiers	16.2%	0.0%	11.2%	9.1%
Dehumidifiers	26.8%	2.6%	18.9%	16.1%

¹⁶ Deemed purchase rates will be representative of all of the component parts of ECT purchase rates as defined in the IL-TRM V11.0.

Measure Type	2021 Wave 1	2021 Wave 2	2022 Wave 1	Average
Heat Pump Water Heaters	2.4%	0.0%	8.0%	3.5%

Note: Table is presented for example purposes only and does not reflect the final 2023 purchase rates that will be applied in the ECT evaluation.

Deemed purchase rates (and average number of measures purchased per shopper, where appropriate) will be applied to actual 2023 Unique Active Shopper counts provided by the implementation team to estimate the number of efficient measures purchased as a result of the ECT.

For all channels, we will use the savings parameters outlined in the IL-TRM V11.0 to estimate gross energy and demand savings for each measure determined to have been installed as a result of the Initiative. The evaluation team will use these values and data from the initiative tracking database to calculate gross initiative savings. The evaluation team will apply verified installation rates from the IL-TRM V11.0.

We will calculate 2023 verified net savings for the Retail Products Initiative by applying SAG-approved NTGRs to verified gross electric and gas savings.

- Deliverable:* 2023 ECT impact evaluation methodology memo *Deliverable Date:* April 2023
- Deliverable:* Interim impact analysis memo *Deliverable Date:* July 2023
- Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2024

Task 4. Reporting

The evaluation team will include 2022 initiative impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report. We will submit separate deliverables containing results from process and forward-looking research tasks.

- Deliverable:* Chapter in draft annual Residential Program impact report *Deliverable Date:* March 15, 2024
- Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 29 summarizes the timing and budget associated with each evaluation activity.

Table 29. Retail Products Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Materials and Database Review	Ongoing	\$7,500
2	Initiative Staff Interviews	April and December 2023	\$5,000
3	Impact Analysis	April and July 2023, March 2024	\$60,900
4	Draft Annual Impact Report	March 15, 2024	\$42,700
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$116,100

4.1.2 IQ Initiative – Single Family Whole Home Channels

The Income Qualified (IQ) Initiative includes three channels that provide low- and moderate-income households with in-home audits, direct install measures, and building shell and HVAC upgrades: the Single Family Channel, the CAA Channel, and the Joint Utility Channel. For evaluation purposes, the team addresses these channels as a group, given their similar design and measures. There are additional “third party” IQ Initiative channels, which we discuss in subsequent sections, that have significantly different target markets, designs, and/or evaluation needs.

The “Single Family Whole Home” channels provide no-cost Building Performance Institute (BPI) energy audits that identify building shell and HVAC retrofit opportunities. During the audit, implementation staff also install energy-efficient direct install (DI) measures such as LEDs, showerheads, faucet aerators, advanced power strips, pipe insulation, and advanced thermostats at no cost. Following the audit, customers may also receive additional retrofits, in some cases with a copayment,¹⁷ such as air sealing and insulation improvements, central air conditioner (CAC) replacements, and air source heat pump (ASHP) replacements. These channels also include Safe and Virtual Energy Efficiency (SAVE) Kits as well as ad-hoc offerings (e.g., kits and handouts at community events) that vary each year. Through the Single Family Whole Home channels, AIC is also expected to complete electrification projects targeting AIC electric customers who currently use propane for space heat and other enduses.

For the Single Family Channel, Walker-Miller Energy Services and BPI-certified AIC Program Allies serve moderate and low income single family customers who are not also participating in the Illinois Home Weatherization Assistance Program (IHWAP). For the CAA Channel, CAAs, with support from Walker-Miller Energy Services, serve low income customers that participate in the IHWAP program at the same time. The CAAs combine AIC and IHWAP funding to provide comprehensive energy efficiency and health and safety improvements.

The Joint Utility Channel began as a pilot and was scaled up to a full offering in 2022. It has similar design and implementation processes to the Single Family Channel but is a partnership between AIC and Nicor Gas to serve low and moderate income customers in the shared utility territory of Bloomington-Normal. AIC partners with Resource Innovations to implement this channel.

Evaluation Approach

The 2023 evaluation of the IQ Initiative Single Family Whole Home channels includes both process and impact analyses as outlined in the following sections.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the channels?
- What are the estimated net energy and demand impacts from the channels?¹⁸

¹⁷ Moderate income participants in the Single Family Channel may have copayments for certain measures. Low income participants in Single Family and CAA channels have no copayments.

¹⁸ Note: the IQ Initiative uses an assumed net-to-gross ratio (NTGR) of 1.0; gross and net savings are identical.

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How many single-family homes received audits, direct install measures, and shell/HVAC/water heating measures? Has participation met expectations? If not, why?
- What was the distribution of projects across the three channels? Did each channel’s participation meet expectations? If not, why?
- How many SAVE Kits were distributed? How did AIC promote SAVE Kits (e.g., through what venues and tactics) and did they target any specific customer subgroups within the IQ segment? Did participation meet expectations?
- What other ad-hoc offerings (e.g., additional kits or community events), if any, were there in 2023 (i.e., in addition to IQ Kits in Direct Distribution)? How many participants did these offerings reach and how many measures did they provide?
- Are there any potential opportunities to reduce the costs of SF Channel whole home upgrades from the perspective of Initiative staff and the implementation team? If so, what sorts of changes (e.g. to design, measures, or customer service) would need to occur?
- Are the channels being implemented according to design? Have there been any modifications to design or implementation in 2023? What have been the successes and challenges associated with these changes?
- How effectively are AIC and its implementation partners working together to achieve the goals of the channels? Are there any ways to improve the efficiency of their coordination?
- What health and safety measures has the Single Family Channel provided? Are they accurately tracked in channel data? What, if any, opportunities exist to provide additional health and safety measures?

Evaluation Tasks

Table 30 summarizes the 2023 evaluation activities planned for the IQ Initiative Single Family Whole Home channels.

Table 30. Summary of IQ Initiative Single Family Whole Home Channels Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative performance and evaluation priorities for 2023.
Initiative Material & Database Review		✓		Review the 2023 database, relevant Initiative materials and reports, and marketing and outreach materials to document Initiative design and changes.
Single Family Channel Site Visits and Desk Reviews		✓	✓	Site visits and engineering-based desk reviews of Single Family Channel projects to verify tracking data accuracy and identify any additional opportunities for health and safety measures.
Impact Analysis	✓			Review Initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM

Activity	Impact	Process	Forward Looking	Details
				V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Staff Interviews

We will conduct two rounds of interviews with the AIC Initiative manager and implementation staff. We will schedule the first round in Q2 2023 to discuss progress to date, planned or executed changes to Initiative design and implementation, and discuss the goals of the Single Family Channel site visits. We will also discuss planned or executed marketing and outreach efforts, any planned ad-hoc offerings (e.g., kits or events), and any opportunities or challenges Initiative staff have faced or anticipate they will face in 2023. We will conduct another round of interviews in Q4 2023 to get retrospective feedback on Initiative performance and implementation challenges that occurred during the year. We anticipate conducting four interviews per round (eight total).

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 2. Initiative Materials and Database Review

We will review Initiative materials, including implementation plans, marketing plans and collateral, and tracking databases to assess Initiative implementation and provide recommendations for improvement, where applicable. In July 2023, we will request interim Initiative tracking data through June 2023 and other Initiative materials. We will use this data to complete the interim impact analysis, develop the site visit contact list, and fully understand Initiative progress to date. We will request final Initiative tracking data in January 2024 for use in the final impact evaluation.

Deliverable: Interim data request

Deliverable Date: July 2023

Deliverable: Final data request

Deliverable Date: January 2024

Task 3. Single Family Channel Site Visits

We will review detailed project documentation and conduct on-site visits of Single Family Channel participants’ homes for the purposes of identifying any additional opportunities to provide health and safety measures. AIC has historically provided non-energy-saving health and safety measures through the Single Family channel on a project-by-project basis, considering both the needs and safety of the customer and the Program Allies completing retrofits. Common examples include ventilation system repair, vapor barriers, gas leak repairs, and critical water heater or HVAC repairs. In response to CEJA, AIC began undertaking efforts in 2022 to significantly increase the amount of health and safety measures they provide in tandem with energy efficiency retrofits. As such, the goals of this research are to ensure that health and safety measures are properly tracked and to identify two kinds of opportunities: 1) potential “missed opportunities” to provide measures the Initiative currently offers; and 2) potential “remaining opportunities” to provide new measures that the Initiative does not currently offer.

The sample frame will include all single-family projects completed in the first half of 2023, regardless of whether they received health and safety upgrades. We expect to complete approximately 40 site visits. To improve the representativeness of the findings across a variety of home conditions and scenarios (i.e., homes

with many versus few qualifying health and safety issues), we will sample roughly 20 projects that received health and safety measures and 20 that did not.

Prior to conducting site visits, we will perform engineering desk reviews of project documentation (e.g., applications, invoices) to familiarize ourselves with the properties and projects and ensure the accuracy of Initiative tracking data. To allow for enough time to review documentation before conducting site visits, the evaluation team will request documentation for a sample of approximately 100 projects, but we will only review documentation for recruited sites.

We will develop an interim memo that summarizes desk review and site visit findings.

Deliverable: Data collection instrument

Deliverable Date: August 2023

Deliverable: Data request

Deliverable Date: August 2023

Deliverable: Draft and final memo

Deliverable Date: December 2023

Task 4. Impact Analysis

To estimate verified gross impacts associated with measures installed through the Single Family Channels, we will conduct an IL-TRM application review for all projects. We will review channel tracking data to ensure that correct deemed input values and IL-TRM V11.0 algorithms are used in calculating savings and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2023. In addition, we will calculate net savings by applying the SAG-approved NTGR of 1.0 to gross savings.

In addition to the year-end final impact analysis, we will complete and deliver an interim impact analysis memo in August 2023 to provide the implementation team with early feedback on the performance of the Initiative.

The 2023 evaluation will include gross and net impact estimates. The impact evaluation team will use savings algorithms from the IL-TRM V11.0, and data inputs from the Initiative tracking database to estimate verified gross savings. Finally, we will calculate 2023 net savings by applying the SAG-approved NTGR of 1.0 to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo

Deliverable Date: August 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 5. Annual Reporting

The evaluation team will provide all impact findings in the Residential Program Annual Impact Evaluation Report in March 2023. The evaluation team will provide a draft report for AIC, ICC Staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Residential Program Impact Report
2024

Deliverable Date: March 15,

Deliverable: Chapter in final annual Residential Program Impact Report
2024

Deliverable Date: April 30,

Evaluation Budget and Timeline

Table 31 summarizes the timing and budget associated with each evaluation activity.

Table 31. IQ Initiative Single Family Whole Home Channels 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Staff Interviews	May and December 2023	\$9,400
2	Initiative Materials and Database Review	July 2023 and January 2024	\$8,700
3	Single Family Site Visits and Desk Reviews	August and December 2023	\$117,000
4	Impact Analysis	September 2023 and March 2024	\$124,800
5	Draft Annual Impact Report	March 15, 2024	\$27,700
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$287,600

4.1.3 IQ Initiative – Smart Savers Channel

The Smart Savers Channel is a “third party” offering that provides advanced thermostats at no-cost to IQ customers. The overarching goals of the channel are to achieve energy savings through advanced thermostat installation, reach customers who have not previously benefited from AIC’s Residential Program, and act as an entry point into other AIC energy efficiency offerings.

Customers in target IQ zip codes receive email invitations to apply online or by phone for a free advanced thermostat to install in their homes. Most participating customers have the option of installing the thermostat themselves or selecting a Program Ally to install the device. After participants complete their journey through the Smart Savers Channel, AIC cross-promotes additional offerings, such as the IQ Single Family Channel or the Online Marketplace.

Evaluation Approach

The 2023 evaluation of the IQ Initiative Smart Savers Channel includes both process and impact analyses as outlined in the following sections.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross electric energy, electric demand and therm impacts attributable to the channel?
- What are the estimated net electric energy, electric demand and therm impacts attributable to the channel?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How many single-family and multifamily homes participated in Smart Savers? What was the mixture of self-install and Program Ally install; and of thermostat models? Has participation met expectations? If not, why?

- Is the channel being implemented according to design? Have there been any modifications to design or implementation in 2023? What have been the successes and challenges associated with these changes?
- How effectively are AIC and its implementation partners working together to achieve the goals of the channel? Are there any ways to improve the efficiency of their coordination?
- What were the Smart Savers Channel's marketing and outreach efforts, including recruitment for Smart Savers and cross-promotion of other AIC offerings? What efforts have been the most and least successful in 2023, according to AIC and implementation staff?

Evaluation Tasks

Table 32 summarizes the 2023 evaluation activities planned for the IQ Initiative Smart Savers Channel.

Table 32. Summary of IQ Initiative Smart Savers Channel Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative performance and evaluation priorities for 2023.
Initiative Material & Database Review		✓		Review the 2023 database, relevant Initiative materials and reports, and marketing and outreach materials to document Initiative design and changes.
Impact Analysis	✓			Review Initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Staff Interviews

We will conduct two rounds of interviews with the AIC staff and implementation staff. We will schedule the first round in Q2 2023 to discuss progress to date and planned or executed changes to Initiative design and implementation. We will also discuss planned or executed marketing and outreach efforts and any opportunities or challenges Initiative staff have faced or anticipate they will face in 2023. We will conduct another round of interviews in Q4 2023 to get retrospective feedback on Initiative performance and implementation challenges that occurred during the year. We anticipate conducting two interviews per round (four total).

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 2. Initiative Materials and Database Review

We will review channel materials, including implementation plans, marketing plans and collateral, and tracking databases to assess Initiative implementation and provide recommendations for improvement, where applicable. In July 2023, we will request interim Initiative tracking data through June 2023 and other Initiative materials. We will use this data to complete the interim impact analysis and fully understand Initiative progress to date. We will request final Initiative tracking data in January 2024 for use in the final impact evaluation.

Deliverable: Interim data request *Deliverable Date:* July 2023

Deliverable: Final data request *Deliverable Date:* January 2024

Task 3. Impact Analysis

The 2023 evaluation will estimate gross and net impacts. The impact evaluation team will use savings algorithms from the IL-TRM V11.0, and data inputs from the Smart Savers Channel tracking database to estimate verified gross savings. Finally, we will calculate 2023 net savings by applying the SAG-approved NTGR of 1.0 to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo *Deliverable Date:* September 2023

Deliverable: Analysis in draft annual impact evaluation report *Deliverable Date:* March 2024

Task 4. Annual Reporting

The evaluation team will include 2023 Smart Savers Channel impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Residential Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 33 summarizes the timing and budget associated with each evaluation activity.

Table 33. IQ Initiative Smart Savers Channel 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Staff Interviews	May and December 2023	\$4,200
2	Initiative Materials and Database Review	July 2023 and January 2024	\$8,700
3	Impact Analysis	September 2023 and March 2024	\$15,200
4	Draft Annual Impact Report	March 15, 2024	\$10,900
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$39,000

4.1.4 IQ Initiative – Mobile Homes & Air Sealing (MHAS) Channel

The Mobile Homes & Air Sealing (MHAS) Channel is a “third party” offering that delivers energy efficiency and other improvements to IQ customers living in manufactured and mobile homes. The channel provides kits with energy-saving products as well as larger weatherization and HVAC upgrades, including some mobile home-specific measures like “belly board” (i.e., subfloor) insulation. Customers will also receive energy literacy education and select health and safety measures, such as carbon monoxide (CO) and smoke detectors and fire extinguishers. In addition, AIC and its partners are actively recruiting and training Program Allies to work on mobile home projects, as well as developing partnerships with CAAs and community-based organizations (CBOs) for channel delivery and community engagement.

Evaluation Approach

The 2023 evaluation of the IQ Initiative MHAS Channel includes both process and impact analyses as outlined in the following sections.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the channel?
- What are the estimated net energy and demand impacts from the channel?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How many customers participated in MHAS? What are the socioeconomic characteristics of these customers? Has participation met expectations? If not, why?
- What communities is this channel serving and what socioeconomic issues or environmental justice issues do they face?
- Is the channel being implemented according to design? Have there been any modifications to design or implementation in 2023? What have been the successes and challenges associated with these changes?
- How does the channel identify and prioritize mobile home communities for recruitment? How does it recruit participants within those communities? What efforts have been the most and least successful in 2023, according to AIC and implementation staff?
- What are the respective roles of AIC, the implementation partners, and the various delivery partners? How effectively are these organizations working together to achieve the goals of the channel? Are there any ways to improve the efficiency of their coordination?
- What community partnerships, if any, is the MHAS channel leveraging; and in what capacity (e.g., outreach, referrals, implementation)? Are current processes for identifying and recruiting partners well suited to support expansion of the channel into additional markets (e.g., different geographies, types of customers, or types of communities)?

- What strategies did the channel use to recruit delivery partners? Did recruitment levels meet expectations? If not, why? Are there additional types of delivery partners that the channel wants to recruit but has not been able to partner with? If so, why?
- What feedback do community partners have about the channel and their role? Are there opportunities to better support their current role, help them better serve AIC customers, and/or expand their involvement with the channel?
- What feedback do Program Allies implementing projects have about the channel, including successes and challenges with coordination processes, paperwork requirements, interactions with customers, and completing projects? What technical barriers do Program Allies experience when completing mobile homes projects, and is more training needed?

Evaluation Tasks

Table 34 summarizes the 2023 evaluation activities planned for the IQ Initiative MHAS Channel.

Table 34. Summary of IQ Initiative MHAS Channel Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative performance and evaluation priorities for 2023.
Initiative Material & Database Review	✓	✓		Review the 2023 database, relevant Initiative materials and reports, and marketing and outreach materials to document Initiative design and changes.
In-depth Interviews with Delivery Partners		✓		Conduct interviews with channel delivery partners to understand and collect feedback on channel processes and performance.
Impact Analysis	✓			Review Initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Staff Interviews

We will conduct two rounds of interviews with the AIC staff and Future Energy Enterprises implementation staff. We will schedule the first round in Q2 2023 to discuss planned or executed changes to Initiative design and implementation and discuss the goals of the delivery partner and participant interviews. We will also discuss planned or executed marketing and outreach efforts and any opportunities or challenges Initiative staff have faced or anticipate they will face in 2023. We will conduct another round of interviews in Q4 2023 to get retrospective feedback on Initiative performance and implementation challenges that occurred during the year. We anticipate conducting two interviews per round (four total).

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 2. Initiative Materials and Database Review

We will review Initiative materials, including implementation plans, marketing plans and collateral, tracking databases, and AIC's own participant survey data (i.e., data fielded and analyzed by the implementation team) to assess Initiative implementation and provide recommendations for improvement, where applicable. In July 2023, we will request interim Initiative tracking data through June 2023 and other Initiative materials. We will use this data to complete the interim impact analysis, develop the delivery partner and participant interview samples, and fully understand Initiative progress to date. We will request final Initiative tracking data in January 2024 for use in the final impact evaluation.

Deliverable: Interim data request

Deliverable Date: July 2023

Deliverable: Final data request

Deliverable Date: January 2024

Task 3. In-Depth Interviews with Delivery Partners

We will interview delivery partners, including participating Program Allies, CAAs, and any other CBOs involved in channel implementation or participant recruitment. The goal of these interviews will be to understand how the channel functions from a partner perspective and understand early successes and challenges facing delivery partners. Interviews will also garner feedback from delivery partners to improve channel operations for partners and participants. We will refine the target topics in collaboration with Initiative staff.

We will develop multiple interview guides to account for the specific roles and appropriate topics for the various types of partners. We anticipate completing 8-10 interviews, but specific completion goals will depend on the number of delivery partners.

Deliverable: Draft and final interview guide(s)

Deliverable Date: July 2023

Task 4. Process Evaluation Results Memo

We will compile the results of tasks 1 through 4 into a memorandum that summarizes key findings and conclusions about current channel performance, as well as recommendations for future design and delivery. Before finalizing the memorandum, we will facilitate a discussion with AIC and implementation staff to discuss results and recommendations.

Deliverable: Draft and final memo

Deliverable Date: October 2023

Task 5. Impact Analysis

The 2023 evaluation will include gross and net impact estimates. The impact evaluation team will use savings algorithms from the IL-TRM V11.0, and data inputs from the MHAS Channel tracking database to estimate verified gross savings. Finally, we will calculate 2023 net savings by applying the SAG-approved NTGR of 1.0 to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo

Deliverable Date: September 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 6. Annual Reporting

The evaluation team will include 2023 MHAS Channel impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Residential Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 35 summarizes the timing and budget associated with each evaluation activity.

Table 35. IQ Initiative MHAS Channel 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Staff Interviews	May and December 2023	\$6,300
2	Initiative Materials and Database Review	July 2023 and January 2024	\$7,900
3	In-Depth Interviews with Delivery Partners	July 2023	\$22,200
4	Process Evaluation Results Memo	October 2023	\$14,000
5	Impact Analysis	September 2023 and March 2024	\$31,200
6	Draft Annual Impact Report	March 15, 2024	\$22,200
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$103,800

4.1.5 IQ Initiative – Healthier Homes Channel

The Healthier Homes Channel is a “third party” offering that partners with healthcare providers and local community organizations to identify IQ or underserved households with a history of asthma or other respiratory ailments. AIC provides a suite of energy efficiency and health and safety services to deliver both energy bill savings and preventative care to these households. The offering includes an in-home health and energy assessment; various energy saving products like LEDs; larger weatherization and HVAC upgrades like air sealing and advanced thermostats; and indoor air quality (IAQ) improvement measures such as hypoallergenic bedding, mold remediation, IAQ monitors, and CO detectors. Some measures, such as dehumidifiers and air purifiers, are “hybrid measures” that intend to both save energy and improve IAQ.

Evaluation Approach

As of January 2023, AIC is in the process of procuring an implementation partner and will finalize the design of this channel thereafter. Depending on the status of these efforts, the 2023 evaluation of the IQ Initiative Healthier Homes Channel may include both process and impact analyses as outlined in the following sections.

Research Objectives

Impact Questions

The need for impact evaluation will depend on whether AIC completes any projects in 2023 and claims savings for them. The overall objective of the impact evaluation is to estimate the electric energy, peak demand, and

gas impacts from the Healthier Homes Channel. As such, the 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the channel?
- What are the estimated net energy and demand impacts from the channel?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- What is the initial design of the channel? What are the respective roles of AIC, the implementation partners, and the various delivery partners?
- How many customers, if any, participated in Healthier Homes in 2023? Has participation met expectations? If not, why?
- How does the initial design of the channel compare to similar programs, if any, across the country? What design and implementation best practices or lessons learned do these other programs offer?
- What is the underlying theory of change for the Healthier Homes Channel?

Evaluation Tasks

Table 36 summarizes the 2023 evaluation activities planned for the IQ Initiative Healthier Homes Channel.

Table 36. Summary of IQ Initiative Healthier Homes Channel Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Staff Interviews		✓		Conduct interviews with AIC to further understand Initiative design, performance (if applicable), and evaluation priorities for 2023.
Initiative Material & Database Review		✓		Review the 2023 database, relevant Initiative materials and reports, and marketing and outreach materials to document Initiative design and changes.
Program Design Review		✓		Review of similar programs across the country and development of a Program Theory and Logic Model (PTLM) that accurately reflects inputs, activities, outputs, and intended outcomes of the channel.
Impact Analysis	✓			Review tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Staff Interviews

We will conduct two rounds of interviews with the AIC staff. We will schedule the first round in Q2 2023 to discuss the status of implementation partner selection and channel design, and discuss the goals of the

design review. We will conduct another interview in Q4 2023 to get retrospective feedback on Initiative performance and implementation challenges that occurred during the year. We anticipate two total interviews.

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 2. Initiative Materials and Database Review

When a partner has been selected (assuming by May 2023), we will request and review the selected implementation partner's initial bid, as well as any additional implementation and marketing plans, to understand planned channel design, measures, and implementation processes, where applicable. We will request final Initiative tracking data in January 2024 for use in the final impact evaluation.

Deliverable: Data request

Deliverable Date: May 2023

Deliverable: Final data request

Deliverable Date: January 2024

Task 3. Program Design Review

We will scan the industry for similar types of programs, implemented by utilities or non-utilities, to develop an understanding of design and implementation best practices, as well as compile lessons learned from other program administrators. Based on the results of the industry scan, we will review initial channel plans, and discuss with AIC and implementation staff. We will also review or create a PTLM that accurately represents the empirical and theoretical connections between channel inputs, activities, outputs, and outcomes. We will compile the results of this task into a memorandum that includes the proposed PTLM, summarizes key findings and conclusions from the review of other programs, and provides recommendations for future design and delivery. Before finalizing the memorandum, we will facilitate a discussion with AIC and implementation staff to discuss the PTLM, results, and recommendations.

Deliverable: Draft and final memos

Deliverable Date: September 2023

Task 4. Impact Analysis

The 2023 evaluation will estimate gross and net impacts. The impact evaluation team will use savings algorithms from the IL-TRM V11.0, and data inputs from the Healthier Homes Channel tracking database to estimate verified gross savings. Finally, we will calculate 2023 net savings by applying the SAG-approved NTGR of 1.0 to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo

Deliverable Date: September 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 5. Reporting

The evaluation team will include 2023 Healthier Homes Channel impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Residential Program impact report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 37 summarizes the timing and budget associated with each evaluation activity.

Table 37. IQ Initiative Healthier Homes Channel 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Staff Interviews	May and December 2023	\$4,300
2	Initiative Materials and Database Review	May 2023 and January 2024	\$6,900
3	Program Design Review	September 2023	\$23,900
4	Impact Analysis	September 2023 and March 2024	\$12,300
5	Draft Annual Impact Report	March 15, 2024	\$6,000
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$53,400

4.1.6 Market Rate Single Family Initiative – Home Efficiency Channel

The Market Rate Single Family Initiative’s Home Efficiency channel (“Home Efficiency”) focuses on providing home weatherization/envelope efficiency measures to market rate customers and operates in conjunction with the IQ Initiative’s Single Family channel. Home Efficiency and the IQ Initiative’s Single Family channel offer the same weatherization measures coupled with a tiered incentive system that provides higher incentives for low- and moderate- income customers treated through the IQ Initiative and somewhat lower incentives for market-rate customers served through Home Efficiency.

Evaluation Approach

The 2023 assessment of the Home Efficiency channel includes both process and impact analyses, as outlined in the following sections.

Research Objectives

Impact Questions

The overall objective of the impact evaluation is to estimate the electric energy, peak demand, and natural gas impacts from the channel. As such, the 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the channel?
- What are the estimated net energy and demand impacts from the channel?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How was Home Efficiency implemented in 2023?
- Was Home Efficiency implementation effective and streamlined?

- In what areas could Home Efficiency improve to increase its overall effectiveness, or ease of implementation?
- What implementation challenges occurred in 2023, and how did Home Efficiency staff overcome them?
- What were the biggest successes for the channel in 2023? What were the biggest drivers behind these successes?

Table 38 summarizes the 2023 evaluation activities planned for the Home Efficiency channel.

Table 38. Summary of Home Efficiency Channel Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Material & Database Review	✓	✓		Review the 2023 database, relevant administrative reports, and marketing and outreach materials to document initiative design and changes.
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative design and implementation for 2023. We will explore staff experiences with Initiative administration, design changes, and supply chain and program ally resource limitations.
Impact Analysis	✓			Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Materials and Database Review

The evaluation team will conduct a comprehensive review of all channel materials and tracking data. Materials include initiative implementation plans, marketing plans, as well as program ally outreach materials and training materials. We expect to submit a request at the beginning of the program year to obtain materials related to initiative design. We will request additional materials at the end of the program year to ensure we have a complete set of materials used throughout the year.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

The evaluation team will conduct up to four in-depth interviews with AIC and implementation team staff involved in the design and administration of the Home Efficiency channel. We will conduct two rounds of interviews. We will schedule the first round at the beginning of the program year to understand initiative design elements that will inform survey instrument design. We will conduct another round of interviews towards the end of the program year to gather feedback on the initiative performance and implementation challenges that occurred during the year.

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 3. Impact Analysis

The evaluation team will review all records in the initiative database. We will check to ensure that the correct savings assumptions have been applied for each measure, to verify that the database is providing correct information. We will also assess the database to ensure that project data has been recorded fully and correctly. We will resolve any discrepancies found in the database and report on findings.

We will use the savings parameters outlined in the IL-TRM V11.0 to estimate gross energy and demand savings for each measure. The evaluation team will use these values and data from the initiative tracking database to calculate gross initiative savings.

For all measures rebated by the Home Efficiency channel, we will calculate 2023 verified net savings by applying SAG-approved NTGRs to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo *Deliverable Date:* July 2023

Deliverable: Analysis in draft annual impact evaluation report *Deliverable Date:* March 2024

Task 4. Reporting

The evaluation team will include 2023 Home Efficiency impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report. We will submit separate deliverables containing results from process and forward-looking research tasks.

Deliverable: Chapter in draft annual Residential Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 39 summarizes the timing and budget associated with each evaluation activity.

Table 39. Home Efficiency Channel 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Materials and Database Review	Ongoing	\$5,000
2	Initiative Staff Interviews	May and December 2022	\$5,000
3	Impact Analysis	March 2023	\$38,000
4	Draft Annual Impact Report	March 15, 2024	\$18,000
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$66,200

4.1.7 Market Rate Single Family Initiative – Midstream HVAC Channel

The Market Rate Single Family Initiative - Midstream HVAC Channel is designed to influence distributor stocking and sales practices related to high efficiency HVAC and heat pump water heater (HPWH) measures. 2023 is the third year of AIC’s implementation of the Midstream HVAC Channel, and is expected to include air source heat pumps (ASHPs), central air conditioners (CACs), ENERGY STAR certified advanced thermostats, ductless mini splits, and HPWHs. The Initiative provides an incentive to distributors that will motivate them to

participate in the Initiative, market the Initiative to contractors, as well as provide training to contractors. This training coupled with incentives that will lower the cost of efficient equipment for contractors will encourage them to (1) pass those savings onto their customers and (2) promote and install more efficient heating and cooling equipment, and water heaters than they would have otherwise. This training and marketing support from distributors will also increase contractor acceptance of the technology and cause them and the end customer to value and adopt this technology.

The Midstream HVAC Channel is designed to overcome a range of barriers to installing high efficiency HVAC and water heating equipment:

- The relatively high incremental 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
- Contractor and distributor acceptance of HPWH technology

In addressing these barriers through the Midstream Channel, AIC aims to change the market for HVAC and HPWH equipment within their service territory. The Channel’s existing program theory and logic model (PTLM) presents several short-term (1 – 2 years) outcomes, which the evaluation team will explore to a limited extent as part of the 2023 evaluation. These anticipated outcomes include increased promotion and product availability, as well as increased contractor and distributor knowledge and acceptance of energy efficient HVAC and HPWH technologies. Table 40 summarizes the outcomes, as well as the Key Performance Indicators (KPIs) articulated by the implementation team.

Table 40. Midstream Channel Expected Outcomes and KPIs

Short-Term Anticipated Outcomes (1-2 years)	Key Performance Indicators (KPI)
Increased EE HVAC and HPWH promotion	Marketing/promotional materials
Increased trade ally sales and installations of EE HVAC & HPWHs	Total territory sales Marketing/advertising/education materials
Increased products available	Total territory sales
Greater trained and knowledgeable HVAC sales force	Education materials available Distributors and manufacturers support training Customer awareness
Increased numbers of customers select EE HVAC and HPWH solutions	Total territory sales Trade ally participation Sales materials/process include applicable info on EE HVAC solutions
Increased HVAC & HPWH sales	Total territory sales Program sales

Source: Implementation Team Program Theory and Logic Model

Evaluation Approach

The assessment of the 2023 Midstream HVAC Channel includes both process and impact analyses, as well as activities to assess market effects.

Research Objectives

Impact Questions

The overall objective of the impact evaluation is to estimate electric energy, peak demand, natural gas impacts from the program. As such, the 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the Initiative associated with rebated measures?
- What are the estimated net energy and demand impacts from the Initiative associated with rebated measures?
- What are the estimated net energy and demand impacts from the Initiative associated with Channel qualifying measures sold by distributors without a rebate from AIC?¹⁹
- What is the estimated free-ridership, from the distributor perspective, for the Channel by measure type?

Process and Market-Focused Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- Design and Implementation
 - Did the Channel's implementation change from 2022? If so, how and why? Was this an advantageous change?
 - Was Channel implementation consistent with the PTLM? If not, how did it differ and why?
 - Did the Channel experience any implementation challenges in 2023? If so, what were they, and how were they overcome?
 - What changes could the Initiative make to improve the distributor experience and generate greater energy savings?
 - To what extent has the Inflation Reduction Act affected the design and implementation of the Channel?
- Channel Participation
 - How many projects were completed? By how many different customers? What types of projects did customers complete?
 - Did distributor participation meet expectations? If not, how and why is it different from expectations?
 - What barriers exist to distributor participation and how can they be overcome?
 - How satisfied are distributors customers with the Channel, the products, and the process for participation?

¹⁹ We will refer to these impacts throughout this evaluation as "market effects," though the evaluation team notes that these could also be referred to as an alternative perspective on "like" spillover.

- To what effect has the Inflation Reduction Act affected the design and implementation of the Channel?
- Did the Inflation Reduction Act cause notable changes in throughput for the Channel in 2023?
- Market Effects
 - To what extent are Channel qualifying units not being incentivized through the Channel (e.g., distributor sales of qualifying equipment that contractors do not provide AIC customer account numbers for), and to what extent are these units being sold as a result of the influence of the Channel?

We will explore each of these questions through the activities described in this evaluation plan.

Evaluation Tasks

Table 41 summarizes the 2023 evaluation activities planned for the Midstream Channel.

Table 41. Summary of Midstream Channel Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Material & Database Review		✓		Review the 2023 database, relevant administrative reports, and marketing and outreach materials to document channel design and changes.
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand channel design and implementation for 2023. We will explore staff experiences with Initiative administration, design changes during year three of implementation, and impacts from the Inflation Reduction Act, among other topics.
Distributor Interviews		✓	✓	Conduct participating distributor interviews to gain process insights, explore market trends, and inform NTG updates.
Market Effects Impacts	✓			Use methodology developed by the evaluation team in 2022 in combination with inputs from 2022 data collection activities and 2023 market data reports provided by the implementation team to estimate market effects associated with the channel in 2023.
Impact Analysis	✓			Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Materials and Database Review

The evaluation team will conduct a comprehensive review of all initiative materials, distributor and program sales and savings tracking data. Materials include initiative implementation plans, marketing plans and outreach materials, training materials, and distributor tracking workbooks. We expect to submit a request at the beginning of the program year to obtain materials related to initiative design. We will request additional materials at the end of the program year to ensure we have a complete set of materials used throughout the year.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

The evaluation team will conduct up to five in-depth phone interviews with AIC and implementation team staff involved in the design and administration of the Midstream Channel. We will conduct two rounds of interviews. We will schedule the first round at the beginning of the program year to understand Channel design elements that could impact evaluation methods. Based on these interviews and a review of Channel materials, the evaluation team will develop an updated and simplified logic model to guide ongoing evaluation efforts. We will conduct another round of interviews towards the end of the program year to gather feedback on Channel performance and implementation challenges that occurred during the year with AIC and implementation staff. If possible, we will conduct a coordinated interview with staff for both the Midstream Channel as well as the Business Program Midstream Initiative to ensure we are appropriately coordinating evaluation activities across sectors.

Deliverable: Completed interviews

Deliverable Date: April and December 2022

Task 3. Distributor Interviews

Distributors play a key role in the promotion and delivery of midstream incentives. As such, these interviews will probe a range of topics such as motivations to participate, experience with the program, opportunities for improvement, market trends related to product availability, market actor acceptance, and increased sales, and the effect of the Channel's incentives on distributor behavior (i.e., free-ridership). The evaluation team will interview up to 20 participating distributors.

Anticipating that a few distributors will account for the bulk of the program savings, we will target the more active distributors in our sample. Distributor sales volumes will also be used to weight free-ridership estimates to ensure that distributors with more activity are more heavily represented in the results. We will offer potential respondents an incentive to encourage participation in the interviews.

Deliverable: Draft and final data collection instruments

Deliverable Date: May 2023

Deliverable: NTG memo

Deliverable Date: July 2023

Task 4. Market Effects Impact Analysis

Using the draft market effects quantification methodology developed by the evaluation team in 2022 for capturing savings related to qualified, non-incentivized units, in conjunction with primary data collected as part of 2022 evaluation activities and 2023 market data reports provided by the implementation team, we will estimate and report on market effects produced by the Channel in 2023.

Deliverable: Market effects included in interim impact memo

Deliverable Date: July 2023

Deliverable: Market effects included in draft annual impact report

Deliverable Date: March 2024

Task 5. Impact Analysis

The evaluation team will review all records in the Channel database. We will check to ensure that the correct savings assumptions have been applied for each measure, to verify that the database is providing correct information. We will also assess the database to ensure that project data has been recorded fully and correctly. We will resolve any discrepancies found in the database and report on findings. We will request program tracking data in May 2023 for an interim analysis, as well as end of year program participation data.

We will use the savings parameters outlined in the IL-TRM V11.0 to estimate gross energy and demand savings for each measure. The evaluation team will use these values and data from the Channel tracking database to calculate gross initiative savings. The evaluation team will apply verified installation rates from the IL-TRM V11.0.

For all measures rebated by the Midstream HVAC Channel, we will calculate 2023 verified net savings by applying SAG-approved NTGRs to verified gross electric and gas savings.

Deliverable: Interim impact analysis memo *Deliverable Date:* July 2023

Deliverable: Analysis in draft annual impact evaluation report *Deliverable Date:* March 2024

Task 6. Reporting

The evaluation team will include 2023 Initiative impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report. We will submit separate deliverables containing results from process and forward-looking research tasks.

Deliverable: Chapter in draft annual Residential Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 42 summarizes the timing and budget associated with each evaluation activity.

Table 42. Midstream HVAC Channel 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Materials and Database Review	Ongoing	\$5,500
2	Initiative Staff Interviews	May and December 2023	\$6,600
3	Distributor Interviews	June 2023	\$28,500
4	Market Effects Impact Analysis	July 2023, March 2024	\$19,500
5	Impact Analysis	July 2023, March 2024	\$39,300
6	Draft Annual Impact Report	March 15, 2024	\$25,500
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$124,900

4.1.8 Multifamily Initiatives

The Multifamily Initiatives include the Multifamily Channel of the Income Qualified Initiative, the Market Rate Multifamily Initiative, and the Public Housing Initiative. The Initiatives offer multifamily customers comprehensive property assessments, health and safety evaluations, in-unit and common area direct install measures, as well as deeper energy saving weatherization and HVAC measures.

The Initiatives use a “one-stop shop” model, where AIC provides property managers with a concierge, called an Energy Advisor, to support them as they participate in one or more offerings across the entire AIC portfolio. Using this delivery strategy, AIC and its implementation partners strive to provide a seamless participation

experience designed to overcome traditional barriers to participation, as well as barriers to implementing a broad set of energy efficiency upgrades typically offered through multiple discrete AIC offerings.

Evaluation Approach

The 2023 evaluation of the Multifamily Initiatives includes both impact and process analysis as outlined below.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the Initiatives?
- What are the estimated net energy and demand impacts from the Initiatives?
- To what extent are energy saving measures installed in tenant units still in place and operating?

Process Questions

The evaluation team will also explore the following process-related research questions:

- How many multifamily properties completed projects, and how many tenant units were served? What types of projects were completed, and in what sectors? Has participation met expectations? If not, why?
- Are the Multifamily Initiatives being implemented according to design? Have there been any modifications to design or implementation in 2023? What have been the successes and challenges associated with these changes?
- Are there any potential opportunities to reduce the costs of Multifamily Initiatives whole-building upgrades from the perspective of Initiative staff and the implementation team? If so, what sorts of changes (e.g. to design, measures, or customer service) would need to occur?
- How do participating property managers/owners experience the Initiatives? Are they satisfied with their experience? What feedback do they have about the One-Stop Shop approach?
- According to property managers, is the one-stop shop design (e.g., the single point of contacts, streamlined approach) achieving its intended goal of influencing participation in other AIC Initiatives? What motivators and barriers exist amongst property managers to implementing broader energy-efficient upgrades? How do Initiative staff address the barriers?
- What are tenants' experiences with Initiative delivery of in-unit measures? Are tenants setting up or using the measures in ways that maximize energy savings?

Evaluation Tasks

Table 43 summarizes the 2023 evaluation activities planned for the Multifamily Initiatives.

Table 43. Summary of Multifamily Initiatives Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative performance and evaluation priorities for 2023.
Initiative Material & Database Review		✓		Review the 2023 database, relevant Initiative materials and reports, and marketing and outreach materials to document Initiative design and changes.
Property Manager Survey		✓		Process-focused survey with managers and/or owners of participating properties to measure satisfaction with various aspects of their participation experience; gather feedback on the one-stop shop design; and understand plans and/or barriers to completing larger upgrades through Multifamily or other AIC Initiatives.
Tenant Survey	✓	✓		Surveys with tenants of participating properties to gather their feedback on their participation experience, verify persistence of tenant measures, and better understand end-use behavior with certain measures.
Impact Analysis	✓			Review Initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Staff Interviews

We will conduct two rounds of interviews with the AIC Initiative manager and implementation staff. We will schedule the first round in Q2 2023 to discuss progress to date, planned or executed changes to Initiative design and implementation, and discuss the goals of the property manager and tenant surveys. We will also discuss planned or executed marketing and outreach efforts and any opportunities or challenges Initiative staff have faced or anticipate they will face in 2023. We will conduct another round of interviews in Q4 2023 to get retrospective feedback on Initiative performance and implementation challenges that occurred during the year. We anticipate conducting three interviews per round (six total).

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 2. Initiative Materials and Database Review

We will review Initiative materials, including implementation plans, marketing plans and collateral, and tracking databases to assess Initiative implementation and provide recommendations for improvement, where applicable. In July 2023, we will request interim Initiative tracking data through June 2023 and other Initiative materials. We will use this data to complete the interim impact analysis, develop the property manager and tenant survey samples, and fully understand Initiative progress to date. We will request final Initiative tracking data in January 2024 for use in the final impact evaluation.

Deliverable: Interim data request

Deliverable Date: July 2023

Deliverable: Final data request

Deliverable Date: January 2024

Task 3. Property Manager Survey

We will conduct surveys with property managers who participated in the Multifamily Initiatives, across all sectors (IQ, Public Housing, and Market Rate). This survey will serve as a follow-up to 2021 in-depth interviews, covering similar topics but with a larger sample of respondents. The overarching purpose of this survey is to gather feedback from property managers on various aspects of their participation experience (e.g., application, property assessment, and project implementation) and the one-stop shop design (e.g., whether process of participating in other Initiatives was seamless or challenging). For property managers who have gone on to complete additional work through other Initiatives, we will ask them to comment on the influence of the Multifamily Initiatives and their Energy Advisor in that decision. For those who have not gone on to participate in another Initiative, we will ask about any plans and/or barriers to doing so. We will refine the target topics in collaboration with Initiative staff.

We will field this survey as a census (i.e., attempting to contact all sample points). Completion goals will depend on the number of projects in the tracking data, but we anticipate completing approximately 30-40 surveys. We will begin with a sample based on Initiative tracking data through June, and field the survey in the summer, but will consider fielding another wave in the fall using tracking data through September, if necessary.

We have budgeted this task as a web survey with email outreach, but will consider switching to a phone approach, if necessary, to increase response rates. We will also limit the length of the survey and offer a \$50 incentive to increase the response rate.

Deliverable: Draft and final survey instruments

Deliverable Date: July 2023

Task 4. Tenant Survey

We will survey tenants who received in-unit measures through the Multifamily Initiatives, across all sectors. The purpose of the survey will be to gather input on their experience (e.g., the convenience of the visit, satisfaction with the measures); verify measure installation to update in-service rates; and better understand end-use behavior related to advanced thermostats, advanced power strips, or ductless heat pumps. We will refine the target measures and topics in collaboration with Initiative staff.

We will administer this survey as a web survey. However, we do not anticipate having tenant email addresses, so we have budgeted for a mail-push-to-web approach (i.e., we will mail tenants an invitation to go online and take the survey). We will also offer a call-in option for those who wish to complete the survey by phone.

We will field this survey as a census (i.e., attempting to contact all sample points). Completion goals will depend on the number of tenants residing in participating properties, and the mixture of measures needed for verification purposes, but we have budgeted for completing approximately 100 surveys. Our sample frame will

include both 2023 participants through June, as well as late 2022 participants, increasing the likelihood that we survey participants who have experienced cooling and/or heating seasons in order to gather more informed feedback on ductless heat pump performance in the winter. We plan to field the survey in September and will offer a \$25 incentive to increase the response rate.

Deliverable: Draft and final survey instruments

Deliverable Date: August 2023

Task 5. Process Evaluation Results Memo

We will compile the results of tasks 1 through 4 into a memorandum that summarizes key findings and conclusions about current Initiative performance, as well as recommendations for future design and delivery. Before finalizing the memorandum, we will facilitate a discussion with AIC and implementation staff to discuss results and recommendations.

Deliverable: Draft and final memo

Deliverable Date: December 2023

Task 6. Impact Analysis

The 2023 evaluation will estimate gross and net impacts. The impact evaluation team will use savings algorithms from the IL-TRM V11.0, and data inputs from the Initiative tracking database to estimate verified gross savings. For net impacts, we will apply the SAG-approved NTGRs for 2023, which vary by channel.

Deliverable: Interim impact analysis memo

Deliverable Date: September 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 7. Annual Reporting

The evaluation team will include 2023 Initiative impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Residential Program impact report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 44 summarizes the timing and budget associated with each evaluation activity.

Table 44. Multifamily Initiatives 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Staff Interviews	May and December 2022	\$6,400
2	Initiative Materials and Database Review	July 2023 and January 2024	\$15,000
3	Property Manager Survey	July 2022	\$38,700
4	Tenant Survey	July 2022	\$47,600
5	Process Evaluation Results Memo	December 2022	\$16,300
6	Impact Analysis	September 2023 and March 2024	\$53,200
7	Draft Annual Impact Report	March 15, 2024	\$33,600
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$210,800

4.1.9 Residential Kits Initiatives

AIC will offer three energy efficiency kit channels as part of the 2023 Residential Program. While both delivery channels are focused on reaching underserved communities within AIC service territory, they take two distinct approaches: school-based distribution and community organization-based distribution.

- **School Kits Channel:** This Channel provides school presentations and energy savings kits to students in participating middle school (largely 5th grade) classrooms with a focus on underserved communities in AIC service territory. By providing the kits in conjunction with energy conservation education in the classroom, AIC hopes to establish an interest in energy efficiency and also reduce energy use in participating student homes.
- **High School Innovation Kits Channel:** This Channel provides school presentations and energy savings kits to students in participating middle school (largely 5th grade) classrooms with a focus on underserved communities in AIC service territory. By providing the kits in conjunction with energy conservation education in the classroom, AIC hopes to establish an interest in energy efficiency and also reduce energy use in participating student homes.
- **IQ Community Kits Channel²⁰:** This Channel provides energy saving kits and educational materials to AIC low and moderate-income customers in under-served/challenged communities. The objective of the initiative is to provide no cost energy saving measures that will improve quality of life and start these customers on a longer-term journey toward energy efficiency.

AIC also occasionally provides kits on an ad-hoc basis through other initiatives (past kit distribution efforts include Credit & Collections Kits, Food Bank Kits, and more). For the purposes of our evaluation planning, we will conduct impact evaluation for these kits under the tasks in this evaluation plan section.

²⁰ The Community Kits Channel is reported up through the IQ Initiative for impact evaluation purposes.

Evaluation Approach

The assessment of the 2023 Residential Kits Initiatives will focus on estimating initiative impacts.

Research Objectives

Impact Questions

The overall objective of the impact evaluation is to estimate electric energy, peak demand, and natural gas impacts from the Initiatives. As such, the 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts from the Initiatives?
- What are the estimated net energy and demand impacts from the Initiatives?

Process Questions

The evaluation team will focus on answering the following questions as part of 2023 process evaluation activities:

- How were the Initiatives implemented in 2023?
- How did the Initiatives perform with respect to participation levels?
- What implementation challenges occurred in 2023, and how did Initiative staff overcome them?
- What were the biggest successes for the Initiatives in 2023? What were the biggest drivers behind these successes?

Evaluation Tasks

Table 45 summarizes the 2023 evaluation activities planned for the Residential Kits Initiatives.

Table 45. Summary of Residential Kits Initiatives Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Material & Database Review		✓		Review the 2023 database, relevant administrative reports, and marketing and outreach materials to document initiative design and changes.
Initiative Staff Interviews		✓		Conduct interviews with AIC and implementation staff to further understand Initiative performance and evaluation priorities for 2023.
Impact Analysis	✓			Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating gross savings. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Materials and Database Review

The evaluation team will conduct a comprehensive review of all initiative materials and tracking data including marketing and implementation plans, educational materials, and extracts from the tracking database. The

purpose of this review is to document the design and implementation of the Residential Kits Initiatives in 2023. We anticipate requesting tracking data at mid-year and the end of the year to support the impact evaluation.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

We will conduct early-evaluation and year-end interviews with AIC and implementation contractor staff to confirm our understanding of the Residential Kits Initiatives design and implementation in 2023, as well as provide AIC and implementation staff with an opportunity to discuss their evaluation priorities for 2023. Areas of exploration will include initiative successes and challenges, customer experience and feedback, community and school partnerships and overall initiative performance among other topics. In total, we expect to complete up to six interviews: one interview each with Leidos, the selected third-party implementer, and AIC staff early in the program year and another interview with each of the three parties at the end of the year.

Deliverable: Completed interviews

Deliverable Date: May and December 2023

Task 3. Impact Analysis

To determine gross impacts associated with the Residential Kits Initiatives, we plan to review all records in the initiative tracking database to identify database errors and duplicate records, and to ensure that the implementer correctly applied savings algorithms and assumptions stated in the IL-TRM. We will resolve any discrepancies found in the database, report on findings, and provide details related to any gross savings adjustments.

The team will use algorithms and assumptions from the IL-TRM V11.0 to calculate verified gross savings associated with the measures recorded in the database. The evaluation team will use these values and data from the initiative tracking database to calculate gross initiative savings. The evaluation team will apply verified installation rates from the IL-TRM V11.0. We will complete a mid-year impact review with partial 2023 program year data and provide to AIC and ICC Staff for review.

For net impacts, we will apply the SAG-approved NTGRs for 2023, which are 100% for all channels given their targeting of low-income communities and students.

Deliverable: Interim impact analysis memo

Deliverable Date: July 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 5. Reporting

The evaluation team will include 2023 Initiative impacts in the draft Residential Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Residential Program impact report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Residential Program impact report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 46 summarizes the timing and budget associated with each evaluation activity.

Table 46. Residential Kits Initiatives 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Materials and Database Review	Ongoing	\$5,000
2	Initiative Staff Interviews	May and December 2022	\$5,000
4	Impact Analysis	March 2023	\$13,500
5	Draft Annual Impact Report	March 15, 2024	\$14,900
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$38,400

4.1.10 Income Qualified Benchmarking Research

Increasingly, a primary focus of the AIC Residential Program from a budget and energy savings perspective is on whole-building energy efficiency and electrification efforts for single family and multifamily low income customers. These efforts have traditionally been more expensive on a dollars per unit of energy savings basis as compared to other program designs, which limits the number of customers AIC has been able to serve while still delivering a portfolio that meets its energy savings goals.

To support continued growth of these efforts within the Residential Program and help assess whether opportunities exist for cost savings opportunities within whole-building programs, the evaluation team suggests benchmarking research that seeks to compare the IQ Initiative’s Single Family Whole Building Channels and the Multifamily Initiatives to comparable programs in other jurisdictions and regions from a design, measure mix, budget, and energy savings perspective.

Evaluation Approach

The evaluation team will review similar single family and multifamily low income whole building programs in other jurisdictions to seek to identify opportunities or program approaches that could lead to cost savings or increased yield.

Research Objectives

This research will focus on the following questions:

- How do the AIC Income Qualified Single Family channel and Multifamily Initiatives compare to programs offered in other jurisdictions throughout the country in terms of:
 - Delivery mechanisms
 - Measures offered
 - Energy savings and other benefits achieved
 - Cost of implementation²¹

²¹ Where possible; we anticipate that this information will not be publicly available for all comparable programs.

- How do these findings inform potential changes that could be made to the AIC offerings to achieve greater energy savings yield per dollar spent or other cost-effectiveness improvements?

The evaluation team will plan to conduct a review of programs offered in 5-10 other jurisdictions, including programs offered in similar Midwestern areas, including northern Illinois, as well as other regions. We will document each program and provide information on each of the areas detailed above so that it can be directly compared to the AIC offerings. We will summarize our findings in a standalone memo.

Deliverable: Draft benchmarking memo

Deliverable Date: August 2023

Deliverable: Final benchmarking memo

Deliverable Date: September 2023

We have allocated a budget of \$50,000 for this activity.

4.2 Business Program

4.2.1 Standard Initiative

The Standard Initiative offers AIC private and public sector business customers fixed incentives for the installation of prescriptive energy efficiency measures. The Initiative primarily focuses on lighting retrofits, lighting controls, motors, HVAC equipment, steam traps, and specialty applications such as agricultural and refrigeration measures.

Evaluation Approach

The 2023 evaluation of the Standard Initiative will include both impact and process evaluation activities.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross electric energy, electric demand, and therm impacts attributable to the Standard Initiative?
- What are the estimated net electric energy, electric demand, and therm impacts attributable to the Standard Initiative?
- What is the free-ridership rate among participants?
- What is the spillover rate among participating contractors?

Process Questions

The 2023 process evaluation will seek to answer the following questions:

- Initiative Participation
 - How many unique customers participated in the Initiative? What were the characteristics of participating customers?

- How many projects were completed through the Initiative? What types of projects did customers complete?
- Did customer participation meet expectations? If not, how and why was it different from expectations? Were any changes in the mix of customers and projects desirable?
- Initiative Design and Implementation
 - How satisfied were participants with the Initiative?
 - Did the Initiative experience any implementation challenges in 2023? If so, what were they, and how were they overcome?
 - What changes could the Initiative make to improve the customer experience and generate greater energy savings?

Evaluation Tasks

This section outlines the planned tasks for the 2023 Standard Initiative evaluation (Table 47).

Table 47. Summary of Standard Initiative Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Initiative Material and Database Review	✓	✓		Gather information about Initiative design, implementation and performance in 2023.
Initiative Staff Interviews		✓		Explore changes made since 2022 and gather information about 2023 design and implementation.
Participant Survey		✓	✓	Conduct NTG research with Initiative participants to inform updates to SAG-approved NTGRs. Explore participant satisfaction with Initiative processes.
Trade Ally Survey		✓	✓	Conduct spillover research with participating contractors to inform future SAG-approved NTGRs. Explore ally satisfaction with Initiative processes.
Impact Analysis	✓			Review Initiative tracking data to ensure that correct deemed values and IL-TRM V11.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V11.0.

We describe each of these activities in detail below.

Task 1. Initiative Material and Database Review

The team will conduct a comprehensive review of all Initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We request extracts from AMPLIFY on a regular basis and will continue to communicate with AIC and Leidos about data needs.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

We will develop an in-depth interview guide for 2023 to explore Initiative implementation, performance, and other topics relevant to our research objectives. We will conduct up to two interviews with Business Program staff involved in the Standard Initiative: (1) a brief interview mid-cycle to understand the design and implementation strategy of the Initiative in 2023, allow implementation staff the opportunity to comment on the Initiative's performance to-date, and to provide time for the evaluation team to modify any research tasks as necessary and, (2) if needed, an additional interview toward the end of 2023 to follow-up on any relevant items.

Deliverable: Completed interviews

Deliverable Date: July and November 2023

Task 3. Participant Survey

The evaluation team will survey Standard Initiative participants to estimate free-ridership associated with the Initiative.²² The team will use the data collected to develop enduse-level NTGRs, which will be used to update NTG recommendations. The evaluation team will also use the participant survey collect feedback on participant satisfaction with Initiative processes and opportunities to improve the Initiative and its offerings moving forward.

Deliverable: Draft participant survey

Deliverable Date: October 2023

Deliverable: Final NTGRs

Deliverable Date: January 2024

Deliverable: Process results provided in a memo

Deliverable Date: January 2024

Task 4. Trade Ally Survey

The evaluation team will survey active Standard Initiative trade allies, consistent with Illinois Statewide Net-to-Gross Methodologies as outlined in Volume 4 of the IL-TRM V11.0, to estimate the trade ally perspective on program spillover. The team will use the data collected to develop an Initiative-level spillover value to be incorporated into the 2024 NTG recommendation process. The evaluation team will also collect feedback on ally satisfaction with Initiative processes and opportunities to improve the Initiative and its offerings moving forward.

Deliverable: Final survey and interview instruments

Deliverable Date: May 2023

Deliverable: Spillover and process findings memo

Deliverable Date: August 2023

Task 5. Impact Analysis

To estimate verified gross impacts associated with measures installed through the Standard Initiative, we will conduct an IL-TRM application review for all Standard projects. We will review Initiative tracking data to ensure that correct deemed input values and IL-TRM V11.0 algorithms are used in calculating savings and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2023. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2023 to gross savings.

²² The evaluation team will not research spillover associated with the Initiative from the participant perspective so as not to double count findings associated with Task 4.

In addition to the year-end final impact analysis, we will complete and deliver an interim impact analysis memo in August 2023 to provide the implementation team with early feedback on the performance of the Initiative.

Deliverable: Interim impact analysis memo

Deliverable Date: August 2023

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 6. Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC Staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program Impact Report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Business Program Impact Report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 48 summarizes the timing and budget associated with each evaluation activity.

Table 48. Standard Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$5,000
2	Initiative Staff Interviews	July and November 2023	\$4,000
3	Participant Survey	October 2023 and January 2024	\$47,400
4	Trade Ally Survey	May 2023 and August 2023	\$31,000
5	Impact Analysis	August 2023 and March 2024	\$45,000
6	Draft Annual Impact Report	March 15, 2024	\$30,000
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$162,400

4.2.2 Custom Initiative

The Custom Initiative offers incentives to AIC Business Program customers for energy efficiency projects involving equipment not covered through other AIC initiatives. Business customers often represent the highest potential for energy savings, but these savings frequently result from highly specialized equipment designed for particular industries or types of facilities. The Custom Initiative allows customers to propose additional measures and tailor projects to the specific needs of their facilities. It also provides an avenue for piloting new measures prior to incorporating them into the Standard Initiative.

The Custom Initiative is delivered to customers through several different channels. Two main offerings are typically responsible for all of the savings claimed through the Initiative:

- The **Custom Incentives** channel provides incentives for electric and gas measures not incented through other AIC offerings. Some examples of common Custom Incentives measures include compressed air

improvements, energy management systems (EMS), and industrial process measures, including heat recovery, process heat, and improvements to steam systems.

- The **New Construction Lighting** channel offers additional incentives for lighting measures in new construction projects.

Additionally, AIC offers a number of smaller channels through the Custom Initiative, including Metering and Monitoring, Feasibility Studies, Agricultural Energy Audits, Building Energy Assessment, Competitive Large Incentive Project (CLIP), and Geothermal. These offerings typically serve the purpose of engaging AIC's business customers more deeply with energy efficiency and typically do not yield savings.

Notably, from 2018-2021, customers with electric demand exceeding 10MW were ineligible to participate in AIC's energy efficiency programs. Beginning in 2022, these customers became eligible again to participate in AIC's programs. Historically, most Custom Initiative savings have come from larger customers; therefore, the volume of large customers that are eligible for AIC's programs could have a disproportionate impact on the Custom Initiative.

Evaluation Approach

The 2023 evaluation of the Custom Initiative will include high-rigor impact and process evaluation activities.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy, demand, and therm impacts attributable to the Custom Initiative? What channels make up the largest proportions of these impacts?
- What are the estimated net energy, demand, and therm impacts attributable to the Custom Initiative?

Process Questions

In 2023, the evaluation team will conduct a detailed process evaluation of the Custom Initiative focused primarily on internal Initiative design and implementation. We expect to continue the ongoing conversation with AIC around the specific objectives related to this evaluation in early 2023 before determining a final scope for the 2023 evaluation. As a result, we expect that the research questions, activities, budgets, and timelines for this evaluation may change between now and the delivery of the final evaluation plans. At the present moment, the evaluation team is considering research to answer the following questions:

- Initiative Design and Implementation
 - Pipeline Development and Management
 - How does the Initiative develop and manage its pipeline of potential projects?
 - What role do AIC staff, Initiative staff, Program Allies, and other key staff each play in pipeline development and management?
 - What is the lifecycle of a typical Custom Initiative project in the pipeline? How much does this vary?
 - What share of Custom Initiative pipeline leads convert into completed projects?

- Are there opportunities to improve Initiative pipeline development and management to help deliver greater and more predictable energy savings?
- Ex Ante Impact Approach
 - How does the Initiative develop ex ante impact estimates for pending and completed projects?
 - What role do AIC staff, Initiative staff, Program Allies, and other key staff each play in development of ex ante impact estimates?
 - How does the Initiative leverage evaluation Early Reviews to support ex ante impact development? How effective have these been in improving the Initiative’s outcomes?
 - Are there opportunities to improve the ex ante impact approach to generate more optimal gross realization rates? Do these opportunities vary by type of project?
- Program Ally Engagement and Management
 - How do Initiative staff engage with and manage Program Allies?
 - What roles do Program Allies play in the delivery of the Initiative?
 - How effectively do Program Allies fulfill these roles?
 - In what areas do Initiative staff provide support for Program Allies?
 - How do these areas align with perspectives from Allies, Initiative staff, and other Initiative stakeholders on where support is needed?
 - Do Program Allies feel that support they are receiving is sufficient?
 - Are there opportunities to improve this support to improve Program Ally performance?
 - Do Initiative staff evaluate Program Ally effectiveness? If so, how?
- QA/QC
 - How do Initiative staff conduct QA/QC for Initiative projects? At what stages do QA/QC occur? What share of projects are reviewed, and in what form?

Evaluation Tasks

This section outlines the planned tasks for the 2023 Custom evaluation (Table 49).

Table 49. Summary of Custom Initiative Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about Initiative design, implementation and performance in 2023. Analyze Initiative tracking data to assess performance.
Initiative Staff and Stakeholder Interviews		✓	Explore topics related to Initiative design, objectives, and performance.
Process Mapping		✓	Based on review of initiative materials, initial staff and stakeholder interviews, and the evaluation team’s experience, we will develop a process map for the Initiative to frame the remainder of the process evaluation

Activity	Impact	Process	Details
Program Ally Interviews		✓	Conduct targeted interviews with key Program Allies to support process evaluation questions, with a focus on ex ante impact approach and Initiative management and support of allies.
Benchmarking & Best Practices Review		✓	Gather information on up to three comparable custom energy efficiency programs implemented by other utilities to compare the Custom Initiative to best practices implemented elsewhere.
Engineering Desk Reviews	✓		Review project documentation and calculations for a sample of completed projects to account for analytical errors, incorrect assumptions, etc.
On-Site Measurement and Verification	✓		Collect data for a sample of completed projects to inform measure verification and verified gross impacts for completed projects.
Impact Analysis	✓		Use desk review and on-site M&V results to estimate gross impacts and measure lives for the Initiative. Determine 2023 net impacts using SAG-approved NTGR values.
Early Reviews	✓		At implementation team request, review project documentation and calculations to account for analytical errors, incorrect assumptions, etc. for in-process projects.

We describe each of these activities in detail below.

Task 1. Initiative Material and Database Review

The team will conduct a comprehensive review of all initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We will request extracts from AMPLIFY on a regular basis and will continue to communicate with AIC and Leidos about data needs as needed.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff and Stakeholder Interviews

We will develop semi-structured in-depth interview guides for 2023 to explore Initiative design, objectives, performance, and other topics relevant to our research objectives with key stakeholders. In addition to a typical annual interview covering Initiative updates, we expect to conduct up to eight separate interviews with Business Program staff and stakeholders including AIC staff and implementation staff. An interview list and schedule will be developed based on detailed discussions with AIC.

Deliverable: Interview guides & interview target list

Deliverable Date: May 2023

Deliverable: Completed interviews

Deliverable Date: Ongoing

Task 3. Process Mapping

Based on Tasks 1 and 2, as well as the evaluation team’s historic experience with the Custom Initiative, we will develop a process map²³ that documents how the Initiative is currently operating, with a focus on the core flow of projects through the pipeline from prospecting to verification of savings by the evaluation team. The

²³ A process map differs from a Program Theory and Logic Model (PTLM) in the sense that it documents how a program operates but does not seek to explicate the theory behind and outcomes resulting from that process.

process map will serve as a core component of the process evaluation report to ensure that all parties share a common understanding of the processes used by the Initiative to complete projects.

Deliverable: Process map in draft process evaluation report

Deliverable Date: September 2023

Task 4. Program Ally Interviews

We will conduct up to 12 targeted interviews with key Custom Initiative Program Allies to support process evaluation questions. We expect the focus of the interviews will be on Initiative management and support of allies, QA/QC, and ex ante impact activities, but will address emergent topics as needed as well. We expect to select a purposive sample of Program Allies, likely focusing heavily on those most engaged with the Initiative, to ensure that interviewed allies have extensive experience with the Initiative to the degree possible.

Deliverable: Draft interview guides & sampling plan

Deliverable Date: June 2023

Deliverable: Completed interviews

Deliverable Date: July 2023

Task 5. Benchmarking & Best Practices Review

The evaluation team will conduct a literature review of implementation processes and best practices for similar programs in comparable jurisdictions. We will then review the Custom Initiative process map and process findings and evaluate their consistency with implementation processes and best practices in other jurisdictions.

Deliverable: Case studies in draft process evaluation report

Deliverable Date: September 2023

Task 6. Process Reporting

The evaluation team will compile research findings across Tasks 1 through 5 in a comprehensive process evaluation report, including but not limited to:

- Documentation of existing Initiative processes, including pipeline management, ex ante impact approach, Program Ally engagement and management, and QA/QC practices
- Quantitative evaluation documentation assessment of Initiative performance over time
- Stakeholder and Program Ally feedback and assessment of existing Initiative processes
- Case studies from custom programs from other jurisdictions

Using these data, the evaluation team will seek to provide evaluation feedback on the design, implementation, and performance of the Custom Initiative to date in the AIC Business Program and make actionable recommendations for process and implementation improvements if practical.

Deliverable: Draft process evaluation report

Deliverable Date: September 2023

Task 7. Impact Analysis

Conducting gross impact analysis for custom projects requires custom engineering calculations. Since custom projects can have large variability in measures and savings, the gross impact analysis for the Custom Initiative will employ a sample-based, bottom-up approach to estimating gross savings. Consistent with prior years, the impact analysis will be based on site-specific engineering desk reviews and on-site measurement and verification.

We will conduct engineering desk reviews and on-site data measurement and verification for a sample of projects to review and verify savings assumptions. This may include an examination of existing equipment and/or the implementer's measurement and verification results. We will tailor the scope of each on-site visit to the specific measures installed at the site, but at a minimum, the review engineer will perform the following actions during the on-site visits:

- Verify that the installed measure(s), for which the Initiative participants received an incentive payment, is/are still installed and functioning, and that the quantity is consistent with the number of measures incented.
- Collect additional physical data to further analyze and determine the energy savings resulting from the incented measure(s). The pertinent data collected from each site will be determined based on an in-depth review of the site's project files and will be unique to each installed measure.

As part of this process, the team will submit formal M&V plans and reports for a minimum of 6 of the largest and/or most complex Custom Initiative projects.²⁴ Not all Custom Initiative projects will have a written site-specific plan or report.

Based on the results determined for projects in our sample, we will calculate the savings-weighted realization rate (total verified gross savings divided by the total ex ante gross savings). This sample-based realization rate will be used to adjust the ex ante savings for the population of Custom Initiative projects. The ratio estimate of Y , the verified savings for the population of Custom projects, is:

Equation 1. Ratio Estimate of Population Total²⁵

$$\hat{Y}_R = \frac{y}{x} X$$

Where:

y = The total verified savings for the sample of projects

x = The total ex ante savings for the sample of projects

X = The ex ante savings for the population of projects

Given the timing of this evaluation plan, it is too early to predict the level of activity expected for the Custom Initiative in 2023 and desirable sample sizes for the impact evaluation. However, we will determine the optimal sampling approach based on the number, type, and size of projects completed in 2023, and target 10% relative precision at 90% confidence (90/10) by fuel type if possible. Given other needed Custom Initiative evaluation activities in 2023, we may target a slightly higher level of relative precision if needed depending on

²⁴ Projects are selected for formal M&V plans and reports to support discussion with the implementation team; selection of projects for formal M&V plans and reports does not relate to sampling. All projects receive high-rigor impact evaluation regardless of selection for formal M&V plans and reports.

²⁵ Cochran, William. 1977. *Sampling Techniques*. New York: John Wiley & Sons.

population characteristics. For budgeting purposes, we assume that we will conduct 45 project reviews. We believe this is a conservative sample size that will be sufficient to provide 90/15 precision at the Initiative level, at a minimum, and may still allow us to target 90/10. As the 2023 evaluation concludes and we update our understanding of Initiative project characteristics, we will revise our planned sample size as necessary.

In an attempt to conduct impact research in a more “real time” fashion, we will develop our sample for engineering desk reviews and on-site verification in multiple waves, using the Initiative tracking database as a sample frame. We expect to conduct up to three waves of impact research for the Custom Initiative in 2023. For each wave, we will stratify the Custom Initiative projects included in the Initiative tracking database by ex ante savings and select a number of projects proportionate to the share of final Initiative savings we project the wave represents.

We anticipate drawing separate samples for gas and electric projects and, within each sample, stratifying projects by size. Stratification by size allows us to over-sample large savers, thus ensuring that our analysis covers a sufficient share of Initiative savings. From within each stratum, we will randomly sample participants to achieve the precision and confidence targets. As necessary, we will adjust the sample size depending on participation in order to achieve the statistical targets if necessary.

In 2023, we will also likely stratify our sample by project type. Evaluation activities in recent years indicate that separating Custom Incentives and New Construction Lighting projects into separate sample frames may allow us to improve achieved precision around our impact evaluation results while decreasing the need for quick turn-around evaluation results at the close of the program year. We are currently pursuing this approach as part of the 2022 evaluation. If this approach proves to work as expected in 2022, we expect to maintain a sampling approach that uses multiple waves for Custom Incentives, while conducting only one wave of impact evaluation for New Construction Lighting.

The team will share the results of our gross impact analysis with AIC and ICC Staff as project reviews are completed. The Excel file provided for review and discussion will feature the ex ante and verified savings for each project selected for engineering review and/or on-site measurement and verification, the resulting realization rate, and the reasons for the realization rate. Our schedule for delivering draft results will depend on a number of factors specific to the projects chosen for review, but we will look to meet the following milestones if possible:

- Deliver 20 completed project reviews by December 15, 2023. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by January 30, 2024.
- Deliver 15 additional completed project reviews by January 30, 2024. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by February 28, 2024.
- Deliver all remaining project reviews by February 28, 2024. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by March 15, 2024.

We will calculate 2023 net savings by applying the SAG-approved NTGRs for the Custom Initiative.

Deliverable: Site visit M&V plans

Deliverable Date: Rolling

Deliverable: Desk review and site visit results

Deliverable Date: As specified above

Deliverable: Final analysis in draft report

Deliverable Date: March 2024

Task 8. Impact Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC Staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program Impact Report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2024

Task 9. Early Reviews

At the request of the implementation team, the evaluation team will conduct “early reviews” of in-process or pending approval Custom Initiative projects. Early reviews are designed to support a number of aims, including:

- Providing early indications to the implementation team as to whether Custom Initiative projects are likely to be successful,
- To identify data needed for the evaluation that can be collected earlier in the implementation process, and
- To help the implementation team make pre-approval decisions for large/costly Custom Initiative projects.

The evaluation team will budget for up to 15 early reviews in 2023 to support the AIC team. Deliverables will be in the form of project-specific early review memos that memorialize the evaluation team’s review of projects and provide suggestions for ensuring projects are successful.

Deliverable: Project-specific early review memos *Deliverable Date:* Ongoing

Evaluation Budget and Timeline

Table 50 summarizes the timing and budget associated with each Custom Initiative evaluation activity.

Table 50. Custom Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$5,000
2	Initiative Staff and Stakeholder Interviews	May 2023 & Ongoing	\$23,000
3	Process Mapping	September 2023	\$8,000
4	Program Ally Interviews	June & July 2023	\$27,500
5	Benchmarking & Best Practices Review	September 2023	\$18,000
6	Process Reporting	September 2023	\$33,900
7	Impact Analysis	March 2024	\$200,000
8	Draft Annual Impact Report	March 15, 2024	\$44,900
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
9	Early Reviews	Ongoing	\$50,000
Total Budget			\$410,300

4.2.3 Small Business Initiative

The Small Business Initiative incentivizes customers to install energy efficient products and perform energy saving retrofits. The Initiative is implemented by program allies with experience and training in servicing the target market. In 2023, the Initiative will be comprised of two channels:

- **Small Business Direct Install (SBDI):** This channel will focus on rapidly deployable lighting and refrigeration measures and target financially and time constrained small businesses, non-profits, schools, and public sector customers. Eligible customers will receive a free on-site assessment and assessment report outlining recommended measures, project costs, estimated energy savings, and estimated bill savings. A program ally will then install the equipment upgrades the customer selects. The SBDI channel will be the main driver of electric savings for the Initiative.
- **Small Business Energy Performance (SBEP):** This channel will target private and public facilities located in Empower Communities and focuses on delivering building envelope upgrades, HVAC improvements, and other non-SBDI measures supported by participating Program Allies.

Evaluation Approach

The 2023 evaluation of the Small Business Initiative will include both impact and process evaluation activities.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy, demand, and therm impacts from the Initiative? What channels make up the largest proportions of these impacts?
- What are the estimated net energy, demand, and therm impacts from the Initiative?

Process Questions

The 2023 process evaluation will seek to answer the following questions:

- Initiative Participation
 - How many unique customers participated in the Initiative? What were the characteristics of participating customers?
 - How many projects were completed and through which channels? What types of projects did customers complete?
 - Did customer participation meet expectations? If not, how and why was it different from expectations? Were any changes in the mix of customers and projects desirable?
- Initiative Design and Implementation
 - What key market barriers is the Initiative attempting to overcome? Are these the same barriers customers report that they are facing?
 - What specific processes/interventions are in place to overcome the key market barriers? Do customers report that these interventions effectively address the barriers they are experiencing?

- Are AIC’s Small Business customers aware of the Small Business Initiative? If so, are they interested in the Initiative’s offerings?
- How knowledgeable are Small Business customers about their energy-using equipment and energy efficient equipment?
- What financing mechanisms, if any, are attractive to Small Business customers?
- What role will SBDI and SBEP play in the overall strategy of the Small Business Initiative? How do they interact to serve the target market?
- What changes could the Initiative make to improve the customer experience and generate greater energy savings?
- Did the Initiative experience any implementation challenges in 2023? If so, what were they, and how were they overcome?

We will explore each of these questions through the activities described in this evaluation plan.

Evaluation Tasks

This section outlines the planned tasks for the 2023 evaluation of the Small Business Initiative (Table 51).

Table 51. Summary of Small Business Initiative Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about Initiative design, implementation and performance in 2023.
Initiative Staff Interviews		✓	Gather information about Initiative marketing, implementation, performance, and barriers.
Market Study		✓	Conduct general population survey with AIC Small Business customers to better understand customer knowledge and interest in AIC’s offerings, equipment that drives their facility’s energy consumption, knowledge of energy efficiency, and barriers to investment. We will also collect technical information, such as size and type of HVAC systems, etc., if possible. We will also seek to investigate whether Small Business customers in disadvantaged communities differ in significant ways from the general population.
Impact Analysis	✓		Review Initiative tracking data to ensure that correct deemed input values and IL-TRM V11.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the Initiative tracking database and application of the IL-TRM V11.0. Estimate net impacts using SAG-approved NTGR values for 2023.

We describe each of these activities in detail below.

Task 1. Initiative Material and Database Review

The team will conduct a comprehensive review of all Initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We request extracts from AMPLIFY on a regular basis and will continue to communicate with AIC and Leidos about data needs.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

We will develop an in-depth interview guide for 2023 to explore Initiative implementation, performance, and other topics relevant to our research objectives. We will conduct up to two interviews with Business Program staff involved in the Small Business Initiative: (1) a brief interview mid-cycle to understand the design and implementation strategy of the Initiative in 2023, allow implementation staff the opportunity to comment on the Initiative's performance to-date, and to provide time for the evaluation team to modify any research tasks as necessary and, (2) if needed, an additional interview toward the end of 2023 to follow-up on any relevant items. We will likely conduct interviews focusing on all Business Program initiatives together, but we will conduct interviews with staff specific to this initiative as needed.

Deliverable: Completed interviews

Deliverable Date: July and November 2023

Task 3. Market Study

The evaluation team will conduct a general population survey with a sample of AIC Small Business customers to support future Initiative implementation. This research will build upon information gleaned through interviews and the development of a Program Theory Logic Model for the Initiative in 2022. In particular, we expect this study to explore topics such as: customer awareness of/interest in AIC's offerings, customer equipment that contributes most to energy bills, knowledge of EE equipment, current barriers to investment in EE, and potential financing mechanisms that might be attractive to this customer segment. The insights gleaned from this survey will help inform Initiative staff on whether the barriers they have identified are reflective of current market conditions, and whether the Initiative's intervention strategies adequately address these barriers. Additionally, to the degree possible, the evaluation team will leverage this survey to gather technical information about Small Business customers to inform IL-TRM V13.0.

Deliverables: Draft and final survey instruments

Deliverable Date: June 2023

Deliverable: Results provided in a memo

Deliverable Date: December 2023

Task 4. Impact Analysis

To estimate verified gross impacts associated with measures installed through the Small Business Initiative, we will conduct an IL-TRM application review for all Small Business Initiative projects. We will review Initiative tracking data to ensure that correct deemed input values and IL-TRM V11.0 algorithms are used in calculating savings and will replicate savings calculations to ensure accuracy. We will also review and verify any custom savings approaches used for the SBEP channel. This step will produce gross savings estimates for 2023. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2023 to electric and gas gross savings.

In addition to the year-end final impact analysis, we will complete and deliver an interim impact analysis memo in August 2023 to provide the implementation team with early feedback on the performance of the Initiative.

Deliverable: Interim impact analysis memo

Deliverable Date: August 2023

Deliverable: Results provided in annual report

Deliverable Date: March 15, 2024

Task 5. Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Business Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 52 summarizes the timing and budget associated with each evaluation activity.

Table 52. Small Business Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$5,000
2	Initiative Staff Interviews	July and November 2023	\$4,000
3	Small Business General Population Survey	June and December 2023	\$135,000
4	Impact Analysis	March 2024	\$51,200
5	Draft Annual Impact Report	March 15, 2024	\$27,300
	Comments from AIC and ICC Staff	Within 15 business days	
	Final Annual Impact Report	April 30, 2024	
Total Budget			\$222,500

4.2.4 Midstream Initiative

The Midstream Initiative provides incentives to distributors and wholesalers to reduce prices at the point of sale for efficient equipment. The goal is to increase the adoption of high efficiency equipment without requiring the end-customer to submit a rebate application. The Initiative will include three channels:

- **Midstream Lighting:** The Midstream Lighting channel incentivizes the sale of linear LED tubes, screw-in LED lamps, and mogul-based LED lamps at the distributor level and is a significant contributor of savings for the portfolio.
- **Midstream HVAC:** AIC began offering midstream incentives for nonresidential HVAC equipment during the 2018-2021 cycle. The Midstream HVAC channel will incentivize the sale of air source heat pumps, single package and split air conditioners, advanced thermostats, notched V-belts, and air source heat pump water heaters. During 2023, the evaluation team plans to coordinate research efforts for this channel closely with those conducted for the Residential Program’s Market Rate Single Family Initiative – Midstream HVAC channel wherever possible.
- **Midstream Food Service:** The Midstream Food Service channel will incentivize the sale of commercial food service equipment such as freezer/refrigerator doors, griddles, fryers, ovens, and broilers. This channel launched in 2022 and is implemented at a statewide level.

Evaluation Approach

The 2023 evaluation of the Midstream Initiative will include both impact and process evaluation activities.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy, demand, and therm impacts attributable to the Midstream Initiative? What channels make up the largest proportions of these impacts?
- What are the estimated net energy, demand, and therm impacts attributable to the Midstream Initiative?
- What are the levels of free-ridership and spillover for the HVAC and Food Service channels?

Process Questions

The 2023 process evaluation will seek to answer the following questions:

- Initiative Participation
 - How many unique customers participated in the Initiative? What were the characteristics of participating customers?
 - How many projects were completed and through which channels? What types of projects did customers complete?
 - Did customer participation meet expectations? If not, how and why was it different from expectations? Were any changes in the mix of customers and projects desirable?
- Initiative Design and Implementation
 - Did the Initiative experience any implementation challenges in 2023? If so, what were they, and how were they overcome?
 - How satisfied were participants with HVAC and Food Service channels?
 - What changes could the Initiative make to improve the customer experience and generate greater energy savings?

Evaluation Tasks

This section outlines the planned tasks for the 2023 Midstream Initiative evaluation (Table 53).

Table 53. Summary of Midstream Initiative Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about Initiative design, implementation and performance in 2023.
Initiative Staff Interviews		✓	Gather information about Initiative marketing, implementation, performance, and barriers.
HVAC NTG & Process Research	✓	✓	Conduct NTG research with participating HVAC channel contractors and distributors to inform future SAG-approved NTGRs. Explore contractor and distributor satisfaction with channel processes.

Activity	Impact	Process	Details
Food Service NTG & Process Research	✓	✓	Conduct NTG research with participating Food Service channel customers and distributors to inform future SAG-approved NTGRs. Explore participant satisfaction with channel processes.
Impact Analysis	✓		Review Initiative tracking data to ensure that correct deemed values and IL-TRM V11.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V11.0.

We describe each of these activities in detail below.

Task 1. Initiative Material and Database Review

The team will conduct a comprehensive review of all Initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We request extracts from AMPLIFY on a regular basis and will continue to communicate with AIC and Leidos about data needs.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

We will develop an in-depth interview guide for 2023 to explore Initiative implementation, performance, and other topics relevant to our research objectives. We will conduct up to two interviews with Business Program staff involved in the Midstream Initiative: (1) a brief interview mid-cycle to understand the design and implementation strategy of the Initiative in 2023, allow implementation staff the opportunity to comment on the Initiative’s performance to-date, and to provide time for the evaluation team to modify any research tasks as necessary and, (2) if needed, an additional interview toward the end of 2023 to follow-up on any relevant items. We will likely conduct interviews focusing on all Business Program initiatives together, but we will conduct interviews with staff specific to this initiative as needed.

Deliverable: Completed interviews

Deliverable Date: July and November 2023

Task 3a. HVAC NTG and Process Research

The evaluation team will conduct in-depth interviews with participating contractors and distributors, consistent with Illinois Statewide Net-to-Gross Methodologies as outlined in volume 4 of the IL-TRM V11.0, to estimate free-ridership and spillover associated with the channel. We will attempt to survey a census of channel participants and interview all participating contractors and distributors. The team will use the data collected to develop measure-level NTGRs to be incorporated into the 2024 NTG recommendation process. The evaluation team will also collect feedback on participant satisfaction with channel processes and opportunities to improve the channel and its offerings moving forward.

Deliverable: Final survey instrument

Deliverable Date: May 2023

Deliverable: Final NTGRs

Deliverable Date: August 2023

Deliverable: Process results provided in a memo

Deliverable Date: September 2023

Task 3b. Food Service NTG and Process Research

The evaluation team will survey 2023 Food Service Channel participants and conduct in-depth interviews with participating distributors, consistent with Illinois Statewide Net-to-Gross Methodologies as outlined in volume 4 of the IL-TRM V11.0, to estimate participant free-ridership and spillover associated with the Initiative. The team will use the data collected to develop measure-level NTGRs to be incorporated into the 2024 NTG recommendation process. The evaluation team will also collect feedback on participant satisfaction with Initiative processes and opportunities to improve the channel and its offerings moving forward. To the extent possible, the evaluation team will coordinate this research with the other Illinois evaluators since the channel is implemented at a statewide level.

- Deliverable:* Final survey instrument *Deliverable Date:* September 2023
- Deliverable:* Final NTGRs *Deliverable Date:* December 2023
- Deliverable:* Process results provided in a memo *Deliverable Date:* January 2024

Task 4. Impact Analysis

To estimate verified gross impacts associated with measures installed through the Midstream Initiative, we will conduct an IL-TRM application review for all Midstream projects. We will review Initiative tracking data to ensure that correct deemed input values and IL-TRM V11.0 algorithms are used in calculating savings, and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2023. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2023 to gross electric savings.

In addition to the year-end final impact analysis, we will complete and deliver an interim impact analysis memo in August 2023 to provide the implementation team with early feedback on the performance of the Initiative.

- Deliverable:* Interim impact analysis memo *Deliverable Date:* August 2023
- Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2024

Task 5. Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC staff, and SAG review and then deliver a final report that incorporates any comments from the review.

- Deliverable:* Chapter in draft annual Business Program Impact Report *Deliverable Date:* March 15, 2024
- Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 54 summarizes the timing and budget associated with each evaluation activity.

Table 54. Midstream Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$6,000
2	Initiative Staff Interviews	July and November 2023	\$6,000

Task	Evaluation Activity	Deliverable Date	Budget
3a	HVAC NTG and Process Research	May, August, and September 2023	\$80,000
3b	Food Service NTG and Process Research	September and December 2023, January 2024	\$80,000
4	Impact Analysis	March 2024	\$49,500
5	Draft Annual Impact Report	March 15, 2024	\$28,400
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$249,900

4.2.5 Retro-Commissioning Initiative

Over time, deferred maintenance and changing operating directives and practices can lead to inefficient operation of building systems. Retro-commissioning is a process that examines current operations relative to the needs of equipment owners and those served by the equipment and determines opportunities for increasing equipment efficiency through maintenance, system tune-ups, scheduling, and optimization of operations.

The Retro-Commissioning (RCx) Initiative helps AIC business and public sector customers identify and implement no-cost and low-cost efficiency optimizations to achieve energy savings in existing energy-using systems. The Initiative includes the following channels:

- Large Facilities RCx
- Industrial Refrigeration
- Retro-Commissioning Lite
- Virtual Commissioning²⁶
- Monitoring-Based Retro-Commissioning

Secondary objectives of the Initiative include:

- Channeling participation into other AIC Business Program initiatives to implement cost-effective equipment replacements and retrofits (e.g., healthcare retro-commissioning studies might recommend that laminar flow restrictors be installed through the Standard Initiative).
- Developing a network of retro-commissioning service providers (RSPs) that will continue to operate in the AIC service territory.

Evaluation Approach

The following sections provide a more detailed description of the evaluation activities planned for 2023.

²⁶ While the Virtual Commissioning offering is a component of the Retro-Commissioning Initiative, its evaluation plan is provided separately in Section 4.2.6 due to substantial differences in required evaluation activities.

Research Objectives

Impact Evaluation

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy, demand, and therm impacts from the Initiative in 2023? What channels make up the largest proportions of these impacts?
- What are the estimated net energy, demand, and therm impacts from the Initiative in 2023?

Process Evaluation

The 2023 process evaluation will answer the following questions:

- Initiative Participation
 - How many unique customers enrolled in the Initiative? What were the characteristics of participating customers?
 - How many projects were completed? What types of projects were completed?
 - Did customer participation meet expectations? If not, how and why did it differ from expectations? Would any changes in the mix of customers or projects have been desirable?
 - How many RSPs actively participated in the various channels? How many projects did each RSP complete?
- Initiative Design and Implementation
 - Did the Initiative’s design and implementation change from 2022? If so, how? Why were these changes made?
 - Did the Initiative experience any implementation challenges in 2023? If so, what were they, and how were they overcome?
 - What changes could the Initiative make to improve the customer experience and generate greater energy savings?

We will explore each of these questions through the activities described in this evaluation plan.

Evaluation Tasks

Table 55 summarizes the 2023 evaluation activities proposed for the RCx Initiative.

Table 55. Summary of Retro-Commissioning Initiative Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about Initiative implementation and performance.
Initiative Staff Interviews		✓	Explore changes made since 2022 and gather information about Initiative marketing, implementation, and 2023 performance.
Impact Analysis	✓		Review project documentation and calculations to identify analytical errors, incorrect assumptions, etc. Collect on-site data to inform measure verification and verified gross impacts. Determine 2023 net impacts using SAG-approved NTGR values.

We describe each of these activities in detail below.

Task 1. Initiative Material and Database Review

The team will conduct a comprehensive review of all Initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We will request extracts from AMPLIFY on a quarterly basis and will continue to communicate with AIC and Leidos about data needs.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Initiative Staff Interviews

We will develop an in-depth interview guide for 2023 to explore RCx Initiative performance, changes made since 2022, and other topics relevant to our research objectives. We will conduct up to two Initiative-specific interviews with Business Program staff involved in retro-commissioning: (1) a brief interview mid-cycle to understand changes made to the Initiative in 2023, allow implementation staff the opportunity to comment on the Initiative's performance to-date, and to provide time for the evaluation team to modify any research tasks as necessary and, (2) if needed, an additional interview toward the end of 2023 to follow-up on any relevant items.

Deliverable: Completed interviews

Deliverable Dates: July and November 2023

Task 3. Impact Analysis

Conducting gross impact analysis for retro-commissioning projects requires custom engineering calculations. Retro-commissioning projects can have large variability in savings among participants. Sources of variability include the physical size of the participant site, the systems installed, the condition of systems prior to retro-commissioning, the extent of control capabilities, the scope and quality of the retro-commissioning study itself, and the willingness of customers to implement recommendations. To appropriately represent this variability, the gross impact analysis for the Retro-Commissioning Initiative will employ a bottom-up approach to estimating gross savings. Consistent with prior years, the impact analysis will be based on site-specific engineering desk reviews²⁷ and on-site M&V (as needed).

Given the timing of this evaluation plan, it is too early to predict the level of activity for the Initiative in 2023 and desirable sample sizes for the impact evaluation. We will determine the optimal sampling approach based on the number and types of projects completed in 2023, and target 90/10 confidence and precision around our results, by fuel type.

We anticipate drawing separate samples for gas and electric projects and stratifying projects into small and large energy savers (or small, medium, and large savers, depending on the Initiative results) within each sample. Stratification of projects by size allows us to over-sample large savers, thus ensuring that our analysis covers a sufficient share of Initiative savings. From within each stratum, we will randomly sample projects to achieve the desired precision and confidence targets. To ensure diversity of measures and offerings, we may consider stratifying the impact sample by channel if the final population of projects appears to require it.

Depending on the overall level of participation and project characteristics (energy savings and channel), we may take one of three sampling approaches to our impact analysis:

²⁷ As needed, engineering desk reviews will include consumption analysis and modeling on a project-specific basis.

- Conduct engineering desk reviews for a census of completed projects in 2023.
- Conduct engineering desk reviews and on-site M&V for a census of completed projects in 2023.
- Conduct engineering desk reviews for a census of completed projects in 2023, followed by a stratified random sample of completed projects that will receive on-site M&V.
 - In this case, we will use a stratified ratio estimation technique to calculate initiative-level savings: we will draw a stratified random sample of projects for on-site verification, determine realization rates for each sampled site (for each impact metric, at the project level), and apply these realization rates to the preliminary verified gross savings values determined for each project through engineering desk reviews to determine overall verified gross savings for the Initiative.

For budgeting purposes, we have assumed that we will conduct 10 engineering reviews and two on-site visits, reflecting recent low levels of activity in the Initiative. If necessary, we will adjust the sample size depending on participation in order to achieve the statistical targets. As needed, and as project completion timing allows, we will conduct our impact analysis in multiple waves to expedite our 2023 evaluation results.

The team will share the results of our gross impact analysis with AIC and ICC staff via Excel file in advance of submitting the draft annual report. The Excel file provided for review and discussion will feature the ex ante and verified savings for each project selected for engineering review and for each site selected for on-site measurement and verification, the resulting realization rate, and the reasons for the realization rate. To the degree time allows, we will also hold a meeting with AIC and its implementation team, as well as with ICC staff, to discuss the findings and answer any questions.

We will calculate 2023 net savings by applying SAG-approved NTGRs to electric and gas gross savings.

Deliverable: Gross impact analysis summary spreadsheet *Deliverable Date:* TBD²⁸

Deliverable: Final analysis in annual report *Deliverable Date:* March 2024

Task 4. Reporting

The evaluation team will provide all impact findings in the Business Program annual impact evaluation report in March 2024. The evaluation team will provide a draft report for AIC, ICC staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program impact report *Deliverable Date:* March 15, 2024

Deliverable: Chapter in final annual Business Program impact report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 56 summarizes the timing and budget associated with each evaluation activity.

Table 56. Retro-Commissioning Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$3,100
2	Initiative Staff Interviews	July and November 2023	\$4,500
3	Impact Analysis	March 2024	\$40,000

²⁸ This is dependent upon the sampling approach chosen for 2022.

Task	Evaluation Activity	Deliverable Date	Budget
4	Draft Annual Impact Report	March 15, 2024	\$20,000
	Comments from AIC and ICC Staff	Within 15 business days	
	Final Annual Impact Report	April 30, 2024	
Total Budget			\$67,600

4.2.6 Virtual Commissioning Channel

Virtual Commissioning™ is an approach that remotely targets the traditionally hard-to-reach customer segment of small and medium business customers to support low- and no-cost energy-saving measures. The Virtual Commissioning™ approach leverages Advanced Metering Infrastructure (AMI) data to support targeted insights for hard-to-reach customers through the design, implementation, and evaluation phases of the channel.

Power TakeOff uses their internal software to complete an initial analysis of AMI data from AIC’s small and medium business customers to identify prospective participants. Power TakeOff then uses the outcomes of this analysis to remotely identify opportunities for low- and no-cost energy-saving improvements at the participants’ facilities. These opportunities commonly include HVAC system modifications and lighting scheduling adjustments.

Power TakeOff energy advisors then contact potential participants to share the results of the analysis, confirm the energy-saving opportunities, and verify facility characteristics. After participants implement the recommended changes, Power TakeOff develops individual facility-level regression models using the participants’ pre- and post-participation energy and gas consumption to estimate savings. The models must meet certain criteria for robustness in order for Power TakeOff to claim savings. If a project both demonstrates continued savings for three months and meets the model robustness criteria, Power TakeOff can claim annualized savings for the project for the program year.

Evaluation Approach

The 2023 evaluation of the Virtual Commissioning channel will include both impact and process evaluation activities.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross electric energy, electric demand, and therm impacts attributable to the channel?
- What are the estimated net electric energy, electric demand, and therm impacts attributable to the channel?
- What are the free-ridership and spillover rates among participants?

Process Questions

The 2023 process evaluation will seek to answer the following questions:

- How satisfied were participants with the channel?
- What changes could AIC make to improve the customer participation experience?
- What have been the biggest successes of the channel? What have been the biggest challenges?
- How effective are efforts to channel Virtual Commissioning participants to other AIC Initiatives?
- Did the channel’s design and implementation change from 2022? If so, how and why and was this an advantageous change?

Evaluation Tasks

Table 57 summarizes the research activities planned for the 2023 Virtual Commissioning channel evaluation.

Table 57. Summary of Virtual Commissioning Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Material & Database Review	✓	✓		Review all channel materials and tracking data. Develop and submit requests for program tracking data extracts.
Staff Interviews		✓		Explore changes made since 2022 and gather information about 2023 design and implementation.
Participant Survey		✓	✓	Conduct NTG research with participating customers to inform future SAG-approved NTGRs. Explore participant satisfaction with channel processes.
Impact Analysis	✓			Determine appropriate modeling approach for 2023. Calculate verified gross and net electric and gas savings using the selected approach. Determine the savings due to participation in other AIC initiatives and make adjustments to account for them. Apply the SAG-approved NTGR values to estimate net impacts.

We describe each of these activities in detail below.

Task 1. Materials and Database Review and Data Management

The evaluation team will conduct a comprehensive review of all channel materials and tracking data including marketing and implementation plans, customer communications, and extracts from the tracking database. We will request data extracts from Power TakeOff at up to two points throughout the implementation period. We plan to request early data extracts with participant AMI data, weather data, savings calculations details, participant information, and supporting data/project records including participant M&V workbooks. The evaluation team will work with Power TakeOff and AIC to determine the appropriate times to request the data extracts based on the number of participants and post-period data availability. The evaluation team will use these initial extracts to set up our data cleaning and modeling approach to prepare for receiving complete 2023 data in January. Upon receipt of the data, we will conduct data reviews to ensure we have the appropriate data inputs listed in the data request and we will follow up as necessary to obtain any additional data.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Staff Interviews

We will conduct early evaluation interviews with AIC and Power TakeOff staff to confirm our understanding of the Virtual Commissioning design and implementation in 2023. These interviews will provide AIC and implementation staff with an opportunity to discuss their goals for the channel, highlight evaluation priorities for 2023, and share early insights on the channel's performance. We plan to conduct one interview early in the implementation period and another at the end of the year with Power TakeOff and AIC/Leidos for a total of four interviews.

Deliverable: Completed interviews

Deliverable Date: July and November 2023

Task 3. Participant Survey

The evaluation team will survey 2023 VCx participants, consistent with Illinois Statewide Net-to-Gross Methodologies as outlined in Volume 4 of the IL-TRM V11.0, to estimate participant free-ridership and spillover associated with the channel. The team will use the data collected to develop a channel-level NTGR to be incorporated into the 2024 NTG recommendation process. The evaluation team will also collect feedback on participant satisfaction with channel processes and opportunities to improve the channel and its offerings moving forward.

Deliverable: Final survey instrument

Deliverable Date: May 2023

Deliverable: Final NTGRs

Deliverable Date: August 2023

Deliverable: Process results provided in a memo

Deliverable Date: September 2023

Task 4a. Impact Analysis

Per discussion and agreement with AIC and Power TakeOff, the evaluation and implementation teams have agreed upon a common modeling approach to analyze project results, detailed in past evaluation reports. We will employ the agreed upon modelling approach in 2023 to calculate verified savings and confirm whether the models meet the robustness criteria required to claim savings. The evaluation team will apply the Illinois SAG-approved NTGR to estimate net impacts. Given the custom nature of the offering, we do not plan to conduct an interim impact analysis for Virtual Commissioning in 2023.

Deliverable: Findings in draft report

Deliverable Date: March 2024

Task 4b. Joint Savings Analysis

A key objective of Virtual Commissioning is to channel small and medium businesses, a previously underserved segment, into other AIC initiatives. Savings from the Virtual Commissioning channel reflect both non-purchase behavioral changes, such as adjusting lighting schedules or HVAC systems, and purchase behaviors. Therefore, savings from equipment that is rebated through other AIC Initiatives will appear in both the savings results for the Virtual Commissioning channel and savings results for rebate initiatives, which will result in a double-counting of savings if adjustments are not made. The evaluation team will calculate a savings adjustment to account for the portion of net savings estimated from the impact analysis that has already been claimed by other AIC initiatives.

The evaluation team will base the savings associated with participation in other AIC initiatives on the results of their respective 2023 impact evaluations. As such, the team will conduct a joint savings analysis to calculate adjusted net savings estimates. The joint savings analysis identifies the portion of savings from the Virtual

Commissioning interventions that is double-counted by the Virtual Commissioning channel and other AIC energy efficiency initiatives.

Deliverable: Interim joint savings results

Deliverable Date: October 2023

Deliverable: Findings in draft report

Deliverable Date: March 2024

Task 5. Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC Staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program Impact Report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Business Program Impact Report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 58 summarizes the timing and budget associated with each evaluation activity.

Table 58. Virtual Commissioning Evaluation Schedule and Budget

Task	Evaluation Task	Deliverable Date	Budget
1	Initiative Material & Database Review	Ongoing	\$12,000
2	Initiative Staff Interviews	July and December 2023	\$6,000
3	Participant Survey	May and August 2023	\$44,700
4	Impact Analysis	March 2024	\$47,200
5	Draft Annual Impact Report	March 15, 2024	\$38,100
	Comments from AIC and ICC Staff	Within 15 business days	
	Final Annual Impact Report	April 30, 2024	
Total Budget			\$148,000

4.2.7 Streetlighting Initiative

The Streetlighting Initiative incentivizes the replacement of streetlighting using high-pressure sodium (HPS) and mercury vapor (MV) lighting with energy-efficient LED technology. The Initiative targets streetlighting for upgrades through two channels:

- **Municipality-Owned Streetlighting (MOSL):** Through this channel, AIC targets municipal customers who own their streetlighting fixtures. Incentives are provided to encourage customers to replace existing MV and HPS streetlights with LED streetlights.
- **Utility-Owned Streetlighting (UOSL):** Through this channel, AIC targets municipal customers who have AIC-owned streetlighting fixtures. Early replacement of functioning HPS and MV streetlights with LED streetlights is available to customers through the Initiative for a per-fixture fee. In addition, through this channel, AIC claims savings from ongoing replacement of existing AIC-owned HPS streetlighting with LED streetlights upon burnout.

Evaluation Approach

The 2023 evaluation of the Streetlighting Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2023.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated gross energy and demand impacts attributable to the Streetlighting Initiative?
- What are the estimated net energy and demand impacts attributable to the Streetlighting Initiative?

Evaluation Tasks

This section outlines the planned tasks for the 2023 Streetlighting evaluation (Table 59).

Table 59. Summary of Streetlighting Initiative Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about Initiative design, implementation, and performance in 2023.
Initiative Staff Interviews		✓	Explore changes made since 2022 and gather information about 2023 design and implementation.
Impact Analysis	✓		Review Initiative tracking data to ensure that correct deemed values and IL-TRM V11.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V11.0.

We describe each of these activities in detail below.

Task 1. Material and Database Review

The team will conduct a comprehensive review of all Initiative materials and tracking data. This includes Business Program marketing and implementation plans, customer and ally communications, and extracts from the Business Program tracking database (i.e., AMPLIFY). We request extracts from AMPLIFY on a regular basis and will continue to communicate with AIC and Leidos about data needs.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Staff Interviews

We will develop an in-depth interview guide for 2023 to explore Initiative implementation and performance. We will conduct up to two interviews specifically with Business Program staff involved in the Streetlighting Initiative: (1) a brief interview mid-cycle to understand the design and implementation strategy of the Initiative in 2023, allow implementation staff the opportunity to comment on the Initiative’s performance to-date, and to provide time for the evaluation team to modify any research tasks as necessary and, (2) if needed, an additional interview toward the end of 2023 to follow-up on any relevant items.

Deliverable: Completed interviews

Deliverable Date: July and November 2023

Task 3. Impact Analysis

To estimate verified gross impacts associated with measures installed through the Streetlighting Initiative, we will conduct an IL-TRM application review for all Streetlighting projects. We will review Initiative tracking data to ensure that correct deemed input values and IL-TRM V11.0 algorithms are used in calculating savings, and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2023. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2023 to gross electric savings.

Given the strong performance of the Streetlighting Initiative throughout the previous evaluation cycle and the simplicity of the impact approach used, we do not plan to conduct an interim impact evaluation for the Initiative in 2023.

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 4. Reporting

The evaluation team will provide all impact findings in the Business Program Annual Impact Evaluation Report in March 2024. The evaluation team will provide a draft report for AIC, ICC staff, and SAG review and then deliver a final report that incorporates any comments from the review.

Deliverable: Chapter in draft annual Business Program Impact Report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Business Program Impact Report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 60 summarizes the timing and budget associated with each evaluation activity.

Table 60. Streetlighting Initiative 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$4,680
2	Initiative Staff Interviews	October 2023	\$4,680
3	Impact Analysis	March 2024	\$19,240
4	Draft Annual Impact Report	March 15, 2024	\$19,700
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$48,300

4.2.8 Building Operator Certification

AIC, in partnership with Leidos and the Midwest Energy Efficiency Alliance (MEEA), offers the Building Operator Certification (BOC) Training to building operators in AIC territory. BOC is a nationally recognized course and certification training that was developed by the Northwest Energy Efficiency Council (NEEC) and includes classroom training, project assignments to be completed at the participant's facility, and in-class tests at the end of each day. Graduates who elect to take the Certification Exam and pass, earn the BOC Certification, and become a Certified Building Operator. While participants do not need to be AIC customers to enroll in the course, AIC provides tuition reimbursements to customers in their service territory upon completion of the course to incentivize participation.

Evaluation Approach

The 2023 evaluation will focus on estimating impacts using the prescriptive savings approach recently added to the IL-TRM.

Research Objectives

Impact Questions

The 2023 impact evaluation will answer the following questions:

- What are the estimated energy, demand, and therm impacts attributable to BOC?

Process Questions

The 2023 process evaluation will seek to answer the following questions:

- How many unique customers/organizations participated in the Initiative?
- Did the implementation of the training change from 2022? If so, how and why? Did these changes result in their intended outcomes from the perspective of program staff?
- Did the implementation team experience any challenges in 2023? If so, what were they, and how were they overcome?

Evaluation Tasks

This section outlines the planned tasks for the 2023 BOC evaluation (Table 61).

Table 61. Summary of Building Operator Certification Evaluation Activities for 2023

Activity	Impact	Process	Details
Initiative Material and Database Review	✓	✓	Gather information about BOC implementation and performance.
Initiative Staff Interviews		✓	Explore changes made since 2022 and gather information about 2023 design and implementation.
Impact Analysis	✓		Review initiative tracking data to ensure that correct deemed values and IL-TRM V11.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V11.0.

We describe each of these activities in detail below.

Task 1. Material and Database Review

The team will conduct a review of all BOC materials and tracking data. This includes extracts from the Business Program tracking database (i.e., AMPLIFY) containing participant, organization, and facility information. We will coordinate with AIC and Leidos about the timing of these requests.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Staff Interviews

We will conduct a semi-structured interview with BOC staff at AIC, Leidos, and MEEA to determine any changes to the 2023 BOC training. The interviews will also cover ex ante savings calculations and data collection, aggregation, and transfer processes.

Deliverable: Completed interviews

Deliverable Date: October 2023

Task 3. Impact Analysis

The evaluation team will calculate verified energy, demand, and therm savings for 2023 BOC participants using the prescriptive algorithm defined in IL-TRM V11.0 and participant, organization, and facility information from AIC's tracking database.

Given the simplicity of the prescribed impact approach, we do not plan to conduct an interim impact evaluation for BOC in 2023.

Deliverable: Analysis in draft annual impact evaluation report

Deliverable Date: March 2024

Task 4. Reporting

The evaluation team will include impacts from the 2023 BOC training participants in the draft Business Program annual impact evaluation report. We will incorporate our responses to stakeholder feedback in a final report.

Deliverable: Chapter in draft annual Business Program Impact Report

Deliverable Date: March 15, 2024

Deliverable: Chapter in final annual Business Program Impact Report

Deliverable Date: April 30, 2024

Evaluation Budget and Timeline

Table 62 summarizes the timing and budget associated with each evaluation activity.

Table 62. Building Operator Certification 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Initiative Material and Database Review	Ongoing	\$4,200
2	Initiative Staff Interviews	October 2023	\$1,200
3	Impact Analysis	March 2024	\$5,800
4	Draft Annual Impact Report	March 15, 2024	\$3,800
	Comments from AIC and ICC Staff	Within 15 Business Days	
	Final Annual Report	April 30, 2024	
Total Budget			\$15,000

4.2.9 Business Program Non-Participant Spillover Study

In 2023, the evaluation team will update Business Program-wide non-participant spillover (NPSO) estimates by conducting a non-participant survey with eligible AIC business customers who have not participated in the Business Program within the past three years. The non-participant survey will focus on assessing NPSO resulting from the Business Program, as well as on barriers to participation that AIC can overcome to boost engagement among key market segments. We will also explore limited opportunities to use this survey to estimate general population parameters for the purpose of IL-TRM updates if feasible. In addition to including a suite of questions to assess NPSO, the evaluation team will conduct follow-up engineering analysis as necessary to quantify these savings and update the overall NPSO recommendation for the Business Program for inclusion in SAG-approved NTGRs.

The evaluation team expects to conduct this study in coordination with the evaluation teams for the northern Illinois program administrators (ComEd, Nicor Gas, Peoples Gas/North Shore Gas).

We continue to scope this study in conjunction with the other evaluation teams and will share a detailed scope/methodology document in early 2023 with refined budget and timing estimates for all parties. For the purposes of this evaluation plan, we have reserved \$50,000 in budget for the study, which we expect to be sufficient.

<i>Deliverable:</i> Scope of work	<i>Deliverable Date:</i> February 2023
<i>Deliverable:</i> Draft survey instrument	<i>Deliverable Date:</i> April 2023
<i>Deliverable:</i> Final survey instrument	<i>Deliverable Date:</i> May 2023
<i>Deliverable:</i> NPSO and process results provided in memos	<i>Deliverable Date:</i> July 2023

Evaluation Budget and Timeline

Table 63 summarizes the timing and budget associated with 2023 evaluation activities.

Table 63. 2023 Business Program Non-Participant Spillover Study Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Non-Participant Spillover Study	April 2023 and July 2023	\$50,000

4.3 Voltage Optimization Program

In 2023, AIC will be operating and claiming savings from the VO Program as part of its energy efficiency portfolio. In this section, we outline the anticipated evaluation activities for this program in 2023.

Evaluation Approach

The 2023 evaluation of the VO Program focuses on estimating impacts associated with VO implementation and associated considerations.

In accordance with Illinois evaluation requirements, we will deliver a draft annual Voltage Optimization impact evaluation report on or before March 15, 2024, covering the 2023 program year. This report will include information on 2023 verified impacts.

Research Objectives

Impact Questions

The VO evaluation team seeks to address the following research question:

- What are the estimated energy savings from VO?
- What are the estimated peak demand impacts from VO?

The process evaluation for this program will be limited to annual interviews with program staff, which will aid the evaluation team’s understanding of the status of the program at the start of the evaluation year and inform the team of key developments made as the program matures.

Evaluation Tasks

Table 64 summarizes the 2023 evaluation activities planned for the VO Program.

Table 64. Summary of Voltage Optimization Evaluation Activities for 2023

Activity	Impact	Process	Details
Program Staff Interviews	✓		Explore program status, progress deploying VO technology, and potential ramifications for the 2023 evaluation.
Data Request and Materials Review	✓	✓	Request data needed for impact calculations, review and assess data for quality and completeness.
Verification of VO Deployment to Date	✓		Verify installations made through the program.
Impact Analyses	✓		Calculate 2023 impacts using algorithmic approach; deliver interim impact results in May, October, and December 2023.

Task 1. Program Staff Interviews

We will conduct an interview with AIC engineering staff in early 2023 to learn of any changes to program design and implementation, successes and challenges encountered in deploying VO as planned, and any potential impacts changes could have on the evaluation timeline.

Deliverable: Completed interview

Deliverable Date: April 2023

Task 2. Data Request and Materials Review

The evaluation team will request data needed to calculate impacts using the approach outlined in IL-TRM V11.0. We will conduct a comprehensive review of all data submitted in response to the data request. The data review will include a VO program data inventory, QA/QC of submitted data, and an assessment of data coverage. We will submit data requests three or more times during 2023 to support providing interim impact results to AIC, and we will submit a final data request in early 2024 to support the final, annual impact analysis.

Deliverable: Data requests *Deliverable Date:* April 2023, September 2023, November 2023, January 2024

Task 3. Verification of VO Deployment to Date

As an ongoing evaluation task, the evaluation team will verify continued operation of VO on circuits for each year of the study. The evaluation team will perform an analysis to verify operations of VO on a sample of circuits deployed in 2018-2022. This analysis will take place in early 2024 following a data request by January 2024.

Deliverable: VO verification findings in annual impact evaluation report *Deliverable Date:* March 2024

Task 4. Impact Analysis

The evaluation team will use the methodology detailed in IL-TRM V11.0 to calculate energy savings and summer coincident peak demand impacts from VO. The evaluation team will calculate interim energy savings three times throughout 2023 before delivering final energy savings and peak demand savings results in the annual impact report in March 2024.

Deliverable: Interim memos and evaluation dashboards *Deliverable Date:* May, October, December 2023

Deliverable: Results provided in annual impact evaluation report *Deliverable Date:* March 2024

Task 5. Reporting

The evaluation team will provide all impact findings in the annual impact evaluation report in March 2024. The evaluation team will provide a draft report for AIC and ICC staff review and then deliver a final report that incorporates any comments from the review.

Deliverable: Draft annual Voltage Optimization Impact Report *Deliverable Date:* March 15, 2024

Deliverable: Final annual Voltage Optimization Impact Report *Deliverable Date:* April 30, 2024

Evaluation Budget and Timeline

Table 65 summarizes the timing and budget associated with each evaluation activity.

Table 65. Voltage Optimization 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Program Staff Interviews	April 2023	\$5,000
2	Data Request and Materials Review	April, September, and November 2023, January 2024	\$60,500
3	Verification of VO Deployment to Date	March 2024	\$34,300
4	Impact Analysis: Application of Energy Savings Algorithm	May, October, and December 2023, March 2024	\$120,200

Task	Evaluation Activity	Deliverable Date	Budget
5	Draft Annual Impact Report	March 15, 2024	\$30,000
	Comments from AIC and ICC Staff	Within 15 business days	
	Final Annual Impact Report	April 30, 2024	
Total Budget			\$250,000

4.4 Pilots & Emerging Areas

As discussed in Section 3.4, we understand that AIC is likely to implement a number of pilot efforts that fall outside the bounds of the Residential, Business, and VO Programs in 2023. Every year, the evaluation team reserves ad-hoc budget to engage with AIC on issues of program design and evaluability. Based on early discussions with AIC, the evaluation team currently has developed research to support one key pilot effort in 2023 that is separate from other initiatives (the Luminaire Level Lighting Controls [LLLC] Pilot, discussed below) and has reserved additional budget to scope and implement research for additional pilots as they emerge, including pilot efforts currently expected to be conducted as channels of existing initiatives (such as Manufactured Homes Weatherization and Air Sealing, Smart Home Engagement, Advanced Thermostats with TOU, and One Stop Shop for Homeless Facilities).

As needed, additional pilot research evaluation plans will be developed during the course of the evaluation to address emergent needs.

As needed, additional pilot research evaluation plans will be developed during the course of the evaluation to address emergent needs.

4.4.1 Luminaire-Level Lighting Controls Pilot

AIC and Resource Innovations, the program implementer, will offer training and resources for trade allies and AIC staff through the program, as well as incentives for customers to encourage more LLLC adoption.

The Pilot is designed to overcome the three main barriers to LLLC market adoption as identified by program staff:

- Lack of product awareness and familiarity among trade allies and end users;
- Lack of skills among trade allies that would be necessary to install and commission LLLCs; and
- The high upfront costs of the technology to end users.

Evaluation Approach

The assessment of the 2023 LLLC Pilot will include both process and impact analyses. In the first years of the Pilot’s operation, we expect that impacts from a resource acquisition perspective will be captured through the evaluation of the Standard Initiative. We plan to evaluate the pilot’s impact on the lighting controls market more broadly in future years as the pilot matures.

Research Objectives

The evaluation team will focus on answering the following questions as part of 2023 evaluation activities:

- How was the Pilot implemented in 2023?

- In what areas could the Pilot improve to increase its overall effectiveness, or ease of implementation?
- What were the biggest successes for the Pilot in 2023? What were the biggest drivers behind these successes?
- What do participants take away from the LLLC trainings and do the trainings lead to an increase in recommendations of LLLCs to their customers?
- What is the baseline awareness and understanding of LLLCs among commercial end users and non-participating trade allies?
- How has the Pilot has moved the market according to the market progress indicators outlined in the PTLM?

Evaluation Tasks

Table 66 summarizes the 2023 evaluation activities planned for the LLLC Pilot.

Table 66. Summary of LLLC Pilot Evaluation Activities for 2023

Activity	Impact	Process	Forward Looking	Details
Review Program Materials	✓	✓	✓	Review the 2022 LLLC Pilot implementation plans, program theory logic models, marketing plans, program materials, and marketing materials to document Pilot design and establish market performance indicators.
Pre/Post Training Surveys	✓	✓		Field surveys with trade allies who participate in the LLLC trainings both before and after they complete the trainings to assess their knowledge gain as a result of their participation.
In-Depth Interviews with Participating Trade Allies	✓	✓		Conduct in-depth interviews with trade allies that participated in the trainings several months after their participation to gauge if and how they applied their learnings to their day-to-day job responsibilities.
Natural Market Baseline (NMB) Review	✓		✓	Review NMB developed by the program implementation team and aid in any necessary revisions.
Baseline Survey with Non-participating End Users	✓	✓	✓	Conduct surveys with representative samples of trade allies who did not participate in the trainings and commercial end-users to understand the baseline awareness and understanding of LLLCs in the commercial market within AIC’s service territory.
Short-Term MPI Assessments	✓	✓		Develop estimates for short-term MPIs as specified in the PTLM.

We describe each of these activities in detail below.

Task 1. Pilot Materials Review

The evaluation team will conduct a comprehensive review of all pilot materials. Materials include implementation plans, program theory logic models (PTLM), market progress indicators, marketing plans, materials provided to participating trade allies, as well as mass marketing materials. We expect to work closely with the implementation to request all related materials as they become available throughout the year. Our team's review of these materials will inform the process evaluation, allow us to document the design and implementation of the LLLC Pilot in 2022, and assess how pilot activities may shift the lighting controls market in future years.

Deliverable: Data requests

Deliverable Date: Ongoing

Task 2. Pre- and Post-Training Surveys with Trade Allies

The evaluation team will conduct interviews with trade allies and internal AIC staff that enroll in the LLLC Pilot training sessions. We plan to conduct three rounds of interviews with a sample of participants—that is, interviews before participating in the trainings, immediately after, and several months after the training sessions. The goals for each round are as follows:

- **Pre-training surveys**—Develop a baseline estimate for trade allies' understanding of LLLC technology prior to participating in the training.
- **Immediate post-training surveys**—Immediately following the training, the evaluation team will complete a short interview with participants to assess their reactions to and satisfaction with the trainings.

Deliverable: Completed assessments

Deliverable Date: Ongoing

Task 3. In-Depth Interviews with Participating Trade Allies

The evaluation team will conduct in-depth interviews with trade allies who participated in the trainings several months after their participation. Among other process insights, we will use these interviews to develop an assessment of MPI IV (i.e., increased recommendations of LLLC to customers among outreached trade allies). Further, we expect results from these post-training interviews to highlight if and how pilot activities may begin to shift the lighting controls market in future years.

Deliverable: In-depth interview guide

Deliverable Date: July 2023

Task 4. Natural Market Baseline Review

As the LLLC team prepares to claim market transformation savings in future years, the evaluation team will continue to review and provide input on the development of a NMB. That is, a baseline forecast that projects the expected adoption of LLLCs in AIC's commercial market into the future. Our team will provide input as needed on different components of the NMB (i.e., underlying data sources, proposed algorithm, etc.) throughout the year. We expect the implementation will develop a draft NMB in 2023 and, at that point, the evaluation team will provide detailed comments and feedback in the form of a memo to support the development of a NMB that will be used to claim market transformation savings in 2024.

Deliverable: Memo detailing feedback

Deliverable Date: Ongoing

Task 5. Baseline Customer Survey

The evaluation team will conduct two separate surveys with samples of end users who did not receive incentives through the LLLC Pilot and trade allies who did not participate in any of the trainings. Through this survey, our team will develop current estimates of familiarity with LLLC technology among key populations, savings potential, and non-energy benefits among nonresidential building owners, property managers, and decision makers. We plan to repeat these baseline surveys at different intervals over the course of the 2022-2025 cycle to build an evidence base of shifts in the lighting controls market that may be attributable to the LLLC Pilot.

Deliverable: Survey instruments, Interim memo detailing results

Deliverable Date: April 2023

Task 6. Short-Term MPI Assessments

The evaluation team will develop assessments of the short-term MPIs as specified in the LLLC PTLM and detailed in Table 67 below. We will collect data to support the development of each assessment based on the pre- and post-training surveys (MPI I), participation data tracked by the LLLC team (MPI II), and in-depth interviews with participating trade allies (MPI IV).

Table 67. Short-Term LLLC MPIs

Market Progress Indicator		Data Source
MPI I	Increased awareness and familiarity with LLLC among out-reached trade allies	Pre- and Post-training Surveys
MPI II	Trade allies trained	Program tracking data
MPI IV	Increased recommendations of LLLC to customers among outreach trade allies	Interviews with participating trade allies

Deliverable: Memo detailing assessments

Deliverable Date: August 2023

Evaluation Budget and Timeline

Table 68 summarizes the timing and budget associated with each evaluation activity.

Table 68. LLLC Pilot 2023 Evaluation Schedule and Budget

Task	Evaluation Activity	Deliverable Date	Budget
1	Program Materials Review	Ongoing	\$10,800
2	Pre/Post Training Surveys	Ongoing	\$6,750
3	In-Depth Interviews with Participating Trade Allies	July 2023	\$13,500
4	Natural Market Baseline Review	Ongoing	\$20,250
5	Baseline Surveys	April 2023	\$33,750
6	Short-Term MPI Assessments	August 2023	\$22,950
7	Reporting	March 15, 2024	\$27,000
Total Budget			\$135,000

4.5 2023 Evaluation Budget Summary

The following table outlines the estimated budget to execute the detailed 2023 evaluation plans presented above, as well as budget allocations for other overarching portfolio activities.²⁹

Table 69. 2023 AIC Evaluation Budget

Evaluation Activity		Budget
Program-Specific Activities		
Residential Sector	Retail Products	\$116,100
	Market Rate Single Family - Midstream HVAC	\$124,900
	Market Rate Single Family - Home Efficiency	\$66,200
	Residential Kits Initiatives	\$38,400
Income Qualified Sector	IQ Single Family	\$287,600
	Smart Savers	\$39,000
	Mobile Homes & Air Sealing	\$103,800
	Healthier Homes	\$53,400
	Multifamily Initiatives	\$210,800
	IQ Benchmarking Research	\$50,000
Business Sector	Standard	\$162,400
	Custom	\$410,300
	Small Business	\$267,500
	Midstream	\$249,900
	Retro-Commissioning	\$67,600
	Virtual Commissioning	\$148,000
	Streetlighting	\$48,300
	Building Operator Certification	\$15,000
	Nonparticipant Spillover	\$50,000
Pilots & Emerging Areas		\$160,000
Total Program-Specific Activities		\$2,619,200
Portfolio-Level Cross-Cutting Activities		
Non-Energy Impacts Research		\$80,000
Illinois Statewide Technical Reference Manual Activities		\$145,000
SAG Participation		\$160,000
QA/QC Coordination		\$30,000
Verified Cost-Effectiveness Analysis		\$50,000
Integrated Reporting		\$50,000
Other Non-Program Activities (Project Management, Evaluation Planning, etc.)		\$445,000
Total Portfolio-Level Cross-Cutting Activities		\$960,000
Contingency		\$53,527
Total		\$3,682,727

²⁹ Please note that the evaluation of the VO Program is conducted under a stand-alone budget and is not included in Table 37. A budget for the 2022 VO Program evaluation is provided in Section 4.3.

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