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# Ameren Illinois Company
# Energy Efficiency Portfolio Evaluation Plan

## 2022-2025 Plan

**Final**
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# 1. Introduction

This document presents the multi-year evaluation plan for Ameren Illinois Company's (AIC) sixth Electric and Gas Energy Efficiency and Demand Response Plan, covering calendar years 2022-2025 ("Plan 6").[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 Plan 6 portfolio. In this document, we provide a high-level overview of the evaluation activities planned for each year of the plan cycle. In addition, we provide a detailed evaluation plan capturing the specific efforts planned to occur for the 2022 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[4] 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.

[3] Ibid.

[4] Note that at the time of this plan, no formal updates to Plan 6 had been approved by the ICC, but through discussion with AIC, we understand that updates to the Plan will be made to align with CEJA's requirements.

We are actively engaging 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.

## 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

| Residential Program | Business Program | Voltage Optimization Program |
|---|---|---|
| ▪ Retail Products<br>▪ Income Qualified<br>▪ Market Rate Single Family<br>▪ Market Rate Multifamily<br>▪ Public Housing<br>▪ Direct Distribution of Efficient Products | ▪ Standard<br>▪ Small Business<br>▪ Midstream<br>▪ Custom<br>▪ Retro-Commissioning<br>▪ Streetlighting | |

# 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 10.0[5]
- The Illinois Energy Efficiency Policy Manual (Policy Manual) Version 2.1[6]
- The Policy Document for the Illinois Statewide Technical Reference Manual for Energy Efficiency (IL-TRM Policy Document) Version 3.1[7]
- Documents in ICC Docket 21-0158, including the AIC Plan 6 filing, the settlement stipulation between AIC and stakeholders memorializing agreement on plan objectives, and the final order approving Plan 6
- Draft AIC documents relating to Plan 6 and the 2022 program year

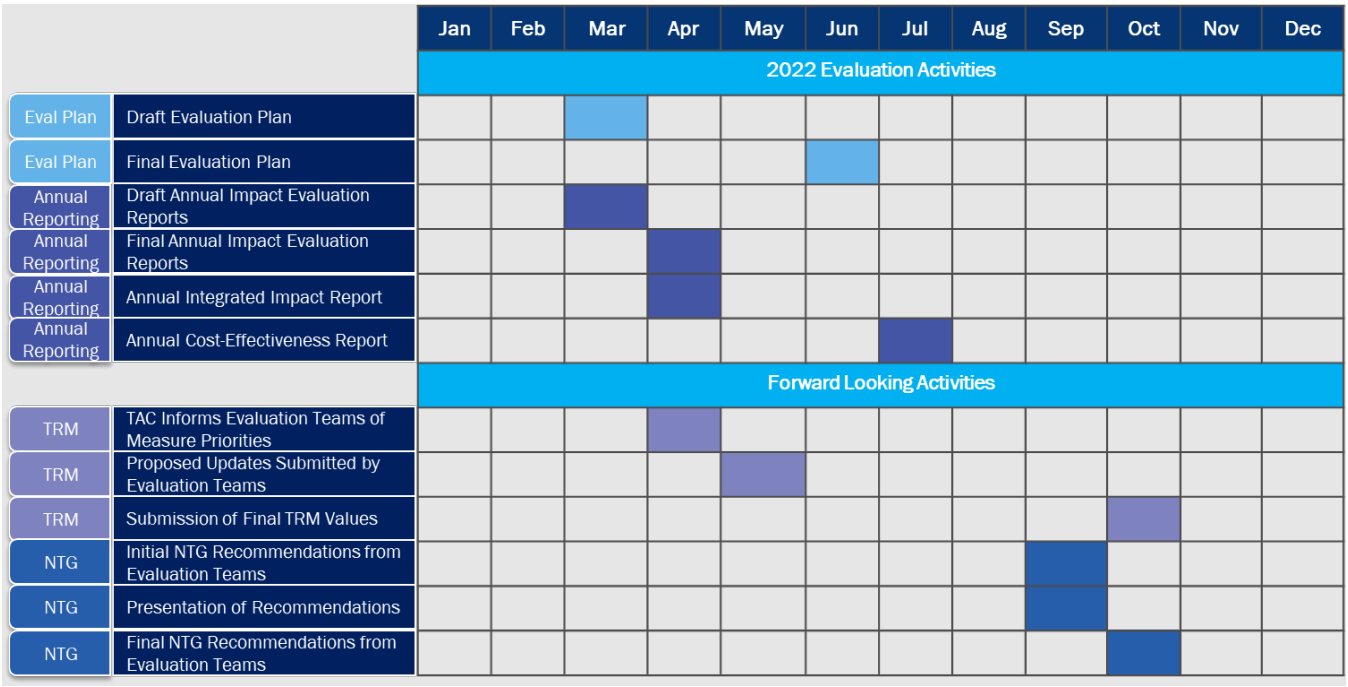
Within this section, we outline key requirements around when evaluation-based information should become available. We also provide a set of key terms and definitions used within this document so that stakeholders have a clear understanding of what is planned.

[5] https://www.ilsag.info/technical-reference-manual/il-statewide-technical-reference-manual-version-10-0/
[6] https://ilsag.s3.amazonaws.com/IL_EE_Policy_Manual_Version_2.1_Final_12-7-2021-1.pdf
[7] https://ilsag.s3.amazonaws.com/IL-TRM_Policy_Document-Version-3.1_Final_12-6-2021.pdf

## 2.1 Evaluation Requirements

Figure 1 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.

Figure 1. Annual Evaluation Milestones




Beyond the stipulated timelines presented in Figure 1, 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 2, relates to gross and net energy (MWh and therm) and demand (MW) savings.[8]

Table 2. 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) |

Within Table 3, the evaluation team also defines each of the impact evaluation activities outlined within 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 3. Impact Evaluation Activity Definitions

| Prescriptive Measures | Custom Measures |
|---|---|
| Definition: Measures with predetermined savings values or IL-TRM algorithms for use in determining savings<br>Example: A-Line LED bulb | Definition: Unique or complex measures for which there is not an IL-TRM algorithm<br>Example: Compressed air system resequencing |
| **Impact Evaluation Activity Definitions** | |
| ■ **Database Review**: This activity involves reviewing the program or initiative-tracking data to check that incentivized measures meet all program requirements.<br>■ **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.<br>■ **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.<br>■ **On-Site Verification**: This activity involves on-site visits, typically with a sample of projects, to verify that incentivized measures are installed and operational. | ■ **Database Review**: This activity involves reviewing the program or initiative-tracking data to check that incentivized measures meet all program requirements.<br>■ **Engineering Desk Review**: This activity involves reviewing project documentation and calculations, and making any associated revisions to account for analytical errors, incorrect assumptions, etc.<br>■ **On-Site Measurement & Verification**: This activity involves conducting site specific measurement and verification (M&V) (for example, metering equipment runtime), typically with a sample of projects, to estimate site-specific savings.<br>■ **Consumption Analysis**: This analysis involves the use of regression models with historic customer energy usage information to calculate annual energy savings.<br>■ **Modeling**: The use of building simulation models to estimate building-level energy savings. |

[8] 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 Plan 6 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 qualified LEDs, 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 discounted LEDs, advanced thermostats, advanced power strips, air purifiers, dehumidifiers, or bathroom vent fans through the AIC Online Marketplace.

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 4 summarizes the evaluation activities planned for the Retail Products Initiative over the four-year plan period.

Table 4. Retail Products Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | Retail Non-Lighting NTG Research | ✓ | | | |
| | ECT Participant Survey | ✓ | ✓ | ✓ | ✓ |

The rationale for these activities is as follows:

- **2022:** In the first year of the program cycle, the evaluation team will prioritize NTG research for non-lighting products. In particular, the evaluation team is planning customer surveys to inform the estimation of non-lighting free ridership and to gauge the influence of ECT engagement on energy-efficient product purchases.
- **2023:** Following on the extensive evaluation activities of 2022, the evaluation team will spend 2023 focused on impact evaluation and documenting any changes and lessons learned associated with Initiative implementation. The evaluation team will also survey likely ECT users to gauge the influence of ECT engagement on energy-efficient product purchases.
- **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 additional process and NTG research as needed based on changes to Initiative offerings or implementation strategies. The evaluation team will also survey likely ECT users to gauge the influence of ECT engagement on energy-efficient product purchases.

### 3.1.2 Income Qualified Initiative – Single Family Whole Home Channels

The Income Qualified (IQ) Initiative includes two 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 (also known as Home Efficiency Income Qualified, or HEIQ) and the CAA Channel. Both 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 programmable/advanced thermostats at no cost. Following the audit, customers may also receive additional retrofits, in some cases with a copayment,[9] such as air sealing and insulation improvements, central air conditioner (CAC) replacements, and air source heat pump (ASHP) replacements.

For the Single Family Channel, an AIC implementation partner and BPI-certified AIC Program Allies serve moderate and low income single family customers who did not participate in the Illinois Home Weatherization

[9] Moderate income participants in the Single Family Core channel may have copayments for certain measures. Low income participants in Single Family Core and CAA Channel have no copayments.

Assistance Program (IHWAP). For the CAA Channel, CAAs with support from an AIC implementation partner, 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 Single Family Channel also includes Safe and Virtual Energy Efficiency (SAVE) Kits as a well as ad-hoc offerings (e.g., kits, the Bloomington-Normal pilot, and community events) that vary each year. The SAVE Kit includes several energy and water saving products (e.g., LEDs, low flow showerheads, advanced power strips, and door sweeps), a booklet of installation instructions, and the tools customers needed to install the products (e.g., a screwdriver and plumber's tape). Once customers have received the kit, they may choose from two verification options, a video call with a Personal Energy Advisor (Virtually Assisted Install) or to complete a postcard survey response. In some cases, customers may not be responsive to either verification options or follow up requests from the Program, resulting in some SAVE Kits being categorized as "unverified".

Table 5 summarizes the evaluation activities planned for the IQ Initiative's Single Family Whole Home Channels over the four-year plan period.

Table 5. IQ Initiative Single Family Whole Home Channels – Four Year Plan

| Timing | Activity | 2022 | 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 CAAs | ✓ | | | |
| | In-depth Interviews with Program Allies | | ✓ | | |
| | Site Visits (health and safety opportunities) | | ✓ | | |
| | Evaluation of New Offerings (as applicable) | ✓ | ✓ | ✓ | ✓ |

The rationale for these activities is as follows:

- **2022:** The evaluation team will begin the cycle by conducting core process and impact evaluation activities, as well as interview CAAs, who are a key implementation partner. The CAA interviews will focus on understanding these partners' experience, successes, and challenges with delivering the Initiative. Particularly for CAAs this cycle, we will explore how CEJA and potentially new federal weatherization funding and/or policy changes are affecting their operations overall; and how that ultimately impacts AIC customers.
- **2023:** We will continue to conduct core process and impact evaluation activities and include two additional efforts: 1) we will interview Program Allies who complete Single Family Channel projects; and 2) we will consider conducting 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 both efforts..
- **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 activities in these years.

### 3.1.3 Income Qualified Initiative – Smart Savers Channel

The Smart Savers Channel provides advanced thermostats at no-cost to IQ customers. The overarching goals of the Initiative 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.

As part of the Initiative, customers in target IQ zip codes receive email invitations to apply online or by phone for a free Ecobee3 Lite or Google Nest E 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. Customers who live in rural areas in which there are no participating Program Allies only have the self-install option.[10] If participants choose to install the advanced thermostat themselves, they receive an incentive once the implementer verifies that the thermostat is installed and activated. After participants complete their journey through the Smart Savers Channel, the AIC Residential Program cross promotes additional offerings that these customers may benefit from.

Table 6 summarizes the evaluation activities planned for the IQ Initiative Smart Savers Channel over the four-year plan period.

Table 6. IQ Initiative Smart Savers Channel – Four Year Plan

| Timing | Activity | 2022 | 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:

- **2022:** The evaluation team will begin the cycle by conducting core process and impact evaluation activities, as well as completing participant surveys. Topics will include verification of household characteristics; potential new incentive models; influence of Smart Savers participation in other Initiatives; thermostat installation experience; and use of advanced features (e.g., using "away mode", receiving performance reports, and connecting to peripherals like smart speakers or sensors).
- **2023-2025:** In addition to annual impact evaluation activities, we plan to conduct targeted process evaluation activities in each year of the cycle. As noted under the Singe Family Whole Home Initiative, AIC frequently makes changes to optimize program delivery for IQ customers and the evaluation team will earmark funds on an annual basis to address key emergent evaluation questions. For instance, we may evaluate new design changes for Smart Savers as they arise or map historic participation to help AIC refine future targets as examples.

[10] The Smart Savers Channel actively seeks to recruit contractors in rural areas to ensure that majority of customers have the option to have a Program Ally install their advanced thermostat.

### 3.1.4 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. This year the Home Efficiency Channel has added DI measures such as as LEDs, showerheads, faucet aerators, advanced power strips, pipe insulation, and programmable/advanced thermostats at no cost. Table 7 summarizes the evaluation activities planned for the Home Efficiency Channel over the four-year plan period.

Table 7. Home Efficiency Channel Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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:

- **2022:** During the first year of the program cycle, the evaluation team will conduct both process and impact evaluation activities. Given that the Home Efficiency Channel is in only its second full year, we will conduct a limited process evaluation including program ally interviews. In particular, we will focus on the program ally experience to identify barriers to participation and understand the impact of incentives and DI measures and the program process on participation.
- **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:** 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.

### 3.1.5 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. 2022 is the second year of the Midstream Channel and it 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 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 8 summarizes the evaluation activities planned for the Midstream HVAC Channel over the four-year plan period.

Table 8. Midstream HVAC Channel Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | Midstream NTG Research | ✓ | | ✓ | |
| | Distributor Interviews | ✓ | ✓ | ✓ | ✓ |
| | Contractor Interviews | ✓ | | ✓ | |
| | Participant Survey | ✓ | | ✓ | |

The rationale for these activities is as follows:

- **2022:** The evaluation team plans to prioritize NTG research for the Midstream Channel in 2022, and conduct research with distributors, contractors and end-use customers.
  - Distributor interviews will provide insights into the Midstream Channel's program processes and implementation, market trends, and inform NTG research.

- We will leverage contractor interviews to gather process insights specific to the data provision requirements for participating contractors as the Midstream Channel enters its second year and may inform NTG updates.
- The evaluation team will conduct participant surveys with customers who have received discounted HVAC and HPWH equipment through this Channel to gather data to inform updated NTG estimates and provide process insights.
- The evaluation team will develop a market effects quantification methodology for capturing savings related to qualified, non-incentivized units, as well as how specific design changes have increased the throughput of the Channel.

- **2023:** The evaluation team will continue to conduct annual research with participating distributors in 2023 and beyond. These interviews will help to provide ongoing feedback on Channel processes and implementation, as well as lessons learned. The team will also conduct core impact and process evaluation activities in the second year of the cycle.
- **2024:** The evaluation team plans to revisit NTG 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 distributors, contractors, and customers. Additionally, the evaluation team anticipates shifting its market effects evaluation focus to the broader HVAC and HPWH markets in 2024. We will work closely with AIC and their implementation team to solidify the timing and methodological approach for this work over the course of the preceding program years.
- **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.

### 3.1.6 Multifamily Initiatives

The objectives of AIC's multifamily initiatives are to drive comprehensive energy efficiency upgrades within multifamily properties through a one stop shop delivery model. 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 programs.

Across the multifamily initiatives, which include the Multifamily channel of the Income Qualified Initiative, the Market Rate Multifamily Initiative, and the Public Housing Initiative, AIC offers multifamily customers comprehensive property assessments, health and safety evaluations, in-unit and common area direct install measures, as well as deeper energy saving weatherization measures.

Table 9 summarizes the evaluation activities planned for the Multifamily Initiatives over the four-year plan period.

Table 9. Multifamily Initiatives Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Phased | Multifamily Energy Advisor Interviews | ✓ | | ✓ | |
| | Property Manager/Owner Survey | ✓ | ✓ | | ✓ |
| | Tenant Survey | | ✓ | | |
| | Analysis of Participation Trends | ✓ | | ✓ | |

The rationale for these activities is as follows:

- **2022:** Given the evolution in AIC's offerings for multifamily customers over the past two years and the need for updates to key impact evaluation parameters, the evaluation team has prioritized extensive process evaluation for 2022.
  - We will conduct in-depth interviews with Multifamily Energy Advisors, who are central to the customer experience. These program staff members are responsible for educating the customer about energy saving opportunities and helping them navigate the project completion process. We will explore their perceptions of successes and challenges to initiative implementation, the effectiveness of the delivery strategy in achieving comprehensive projects, customer barriers to participation and recommendations for initiative improvement.
  - Gathering feedback from participating property managers/owners will also be a focus of evaluation in 2022. In particular, the evaluation team will use surveys with property managers/owners to gather information needed to update in-service rates and net-to-gross ratios for the initiatives.
  - To complement the perspectives of program implementation partners and participating property managers/owners, the evaluation team will analyze program tracking data to assess the extent to which customers are completing more comprehensive projects under the one-stop-shop model. If feasible and necessary, we may review supplemental tracking data or assessment report information to understand what recommendations properties received and the uptake rate for key measures.
- **2023:** During the second year of evaluation, the team will focus on impact evaluation, documenting any changes and lessons learned associated with initiative implementation, and gathering insights from tenants living in rental units upgraded through the Initiatives. The evaluation team's research with tenants will focus on satisfaction with installed measures, as well as perceptions and ease of use of certain technologies installed through the program (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 program-tracking data to understand the depth of savings achieved through the one-stop-shop delivery strategy.

### 3.1.7 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 two 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.

- **Income Qualified Initiative – Community Kits Channel**[11]: 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 10 summarizes the evaluation activities planned for the Residential Kit Initiatives over the four-year plan period.

Table 10. Residential Kit Initiatives Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | | | ✓ | |
| | Geospatial Analysis of IQ Community Kit Distribution | ✓ | | | |
| | Participating Teacher Survey | | | ✓ | |
| | Participating Parent Survey | | | ✓ | |

The rationale for these activities is as follows:

- **2022:** The evaluation team will begin the cycle by conducting core process and impact evaluation activities for both initiatives, as well as a targeted process activity aimed at the IQ Community Kits Initiative. This activity –a geospatial analysis of participation – will allow the team to assess Initiative effectiveness in reaching underserved communities.
- **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 shift its focus to the School Kits Initiative and conduct research with participating teachers and parents. 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.

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

### 3.1.8 Cross-Cutting Residential Program Evaluation Activities

As in past years, we will conduct cross-cutting Residential Program evaluation activities to inform program evaluation and the overall implementation approach to serving residential customers in AIC territory. Given changes made to energy efficiency in Illinois as a result of CEJA as well as commitments made by AIC as part of Plan 6 design, we see the need for targeted research to support AIC's program implementation.

Table 11 presents currently planned Residential Program cross-cutting research activities. The evaluation team will assess the need for each of these activities as we progress through the cycle and revise planned activities and their scopes accordingly, but we will complete research estimating residential nonparticipant spillover (NPSO) associated with the Program at some point during the cycle regardless of any changes.

Table 11. Residential Kit Initiatives Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Phased | | | | | |
| | Mobile Homes Study | ✓ | Further research as needed | | |
| | Residential NPSO Study | | ✓ | | |
| | Low Income Needs Assessment Followup | As needed | | | |

The rationale for these activities is as follows:

- **Mobile Homes Study:** The 2021 AIC Low Income Needs Assessment identified manufactured homes as a high priority customer segment with high energy burdens and energy costs relative to their size. AIC has launched a Mobile` Homes Weatherization & Air Sealing offering to support this customer segment. To support this effort, as well as existing AIC offerings that may already serve manufactured homes, we will conduct a manufactured homes study to provide both market research as well as IL-TRM updates to support program delivery to these customers.
- **Residential NPSO Study:** Existing evaluation estimates for residential non-participant spillover are relatively old and reflect an AIC portfolio that has since significantly evolved. We will conduct research to update this assumption portfolio wide.
- **LINA Followup:** We will discuss the results of the 2022 LINA and any necessary followup with AIC staff and stakeholders in early 2022. For example, there may be a need to support specific pilot offerings or marketing, education, and outreach (ME&O) efforts AIC is planning related to the studied groups/communities; perform deep dives into specific groups/communities; or collect and compile additional data as follow-ups to specific findings from the initial studies. We will work closely with AIC staff to develop a roadmap for LINA followup studies throughout the 2022-2025 cycle.

## 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 12 provides a summary of planned Standard Initiative evaluation activities for the years 2022-2025. Each year, the evaluation team will quantify gross and net electric energy, electric demand, and gas savings through a detailed engineering analysis. In 2022, the evaluation team will conduct net-to-gross (NTG) research to update the SAG-approved values.

Table 12. Standard Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | | ✓ | | |

Each year, the evaluation team will quantify gross and net electric energy, electric demand, and gas savings associated with the Initiative through a detailed engineering analysis and application of SAG-approved NTGRs. In 2023, the evaluation team will also 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.

In addition to Standard Initiative-specific evaluation activities, the evaluation team expects to conduct a number of cross-cutting research activities during Plan 6 which will support the Standard Initiative. 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 though 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.

Notably, from 2018-2021, customers with electric demand exceeding 10MW were ineligible to participate in AIC's energy efficiency programs. Beginning in 2022, some of these customers will be again eligible 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. The evaluation team plans to coordinate closely with AIC to understand expected participation in and savings from the Custom Initiative in Plan 6 and will revise our evaluation plans accordingly to best support AIC's needs.

Table 13 provides a summary of planned evaluation activities for the years 2022-2025.

Table 13. Custom Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | 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 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 expects to 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.

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 2022, the Initiative will be comprised of three channels, two of which are pilots:

- **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 pilot was originally launched in 2020 and offered weatherization services to school districts throughout AIC's service territory. In 2022, the channel will target customers located in Empower Communities, including schools, community support facilities, Residential/Business combination buildings, and multi-site customers. Measures will focus on building envelope upgrades, HVAC improvements, and other non-SBDI measures supported by participating Allies.
- **HVAC Pilot**: the implementation team will explore the development of a pilot focused on HVAC upgrades and maintenance, with specific emphasis on technologies that can be installed as retrofits of existing HVAC systems, such as Demand Control Ventilation and Advanced Rooftop Controls.

Table 14 provides a summary of planned evaluation activities for the years 2022-2025.

Table 14. Small Business Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 | PTLM Development | ✓ | | | |
| | Small Business Energy Performance NTG/Process Research | | ✓ | | |
| | 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:

- **2022:** In 2022, the evaluation team will collaborate with Initiative staff to develop a Program Theory and Logic Model (PTLM) for the Initiative. While program processes for the SBDI channel are well understood, we believe that developing a PTLM will help support a consistent understanding between the program and evaluation teams on how the various Initiative components fit together to best serve AIC small business customers.
- **2023:** In early 2023, we will conduct a survey with SBEP participants to support the development of channel-specific NTGRs and explore satisfaction with channel processes. Later 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 we gather 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**: AIC has offered midstream incentives for efficient nonresidential lighting since PY7 (2014-2015). 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 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 will be implemented at a statewide level and is expected to launch during 2022. 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 15 provides a summary of planned evaluation activities for the years 2022-2025.

Table 15. Midstream Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 Lighting NTG & Process Research | ✓ | | | |
| | Midstream HVAC NTG & Process Research | | ✓ | | |
| | Midstream Food Service NTG & Process Research | | ✓ | | |

The rationale for these activities is as follows:

- **2022:** In 2022, the evaluation team will quantify gross and net energy, demand, and gas savings for each channel through a detailed engineering analysis. In addition, we will conduct NTG research to

update the SAG-approved value for the Midstream Lighting channel. Illinois stakeholders have indicated a belief that the market for linear LEDs is rapidly evolving and expect ongoing changes in attribution for this measure; early NTG research should allow for reasonable assumptions to be used throughout the cycle. In addition, we will use trade ally and customer research necessary to update NTGRs to explore limited process topics of interest to AIC.

- **2023:** In addition to our core impact and process evaluation activities, in 2023 the evaluation team expects to conduct customer 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 trade ally and customer research to explore effectiveness of program implementation, customer and ally 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 Commissioning[12]
- 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 16 provides a summary of planned evaluation activities for the years 2022-2025.

[12] 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.

Table 16. Retro-Commissioning Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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.
- **2023:** In 2023, the evaluation team will conduct research to update the NTGRs used to calculate the Initiative's net savings.

### 3.2.6 Virtual Commissioning Offering

AIC launched Virtual Commissioning™, implemented by Power TakeOff, as a pilot in 2020. 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 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 17 provides a summary of planned evaluation activities for the years 2022-2025.

Table 17. Virtual Commissioning Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Annual | Initiative Material & Database Review | ✓ | ✓ | ✓ | ✓ |
| | Initiative Staff Interviews | ✓ | ✓ | ✓ | ✓ |

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| | Annual Impact Analysis (AM&V) | ✓ | ✓ | ✓ | ✓ |
| | Net Impact Analysis – SAG Approved NTGR | ✓ | ✓ | ✓ | ✓ |
| | | | | | |
| Phased | NTG Research[a] | | ✓ | | |

[a] Pending NTG Working Group discussions in 2022.

The rationale for these activities is as follows:

- **2022-2025:** Each year, the evaluation team will quantify gross and net energy and demand savings through advanced M&V modelling techniques.
- **2023:** Dependent on 2022 discussion in the Illinois NTG Working Group to establish the necessity for research and appropriate protocol to conduct research with, the evaluation team tentatively plans to conduct NTG research to update the SAG-approved value for Virtual Commissioning™.

### 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 18 provides a summary of planned evaluation activities for the years 2022-2025.

Table 18. Streetlighting Initiative Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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:

- **2022-2025:** 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.
- **2023:** In 2023, the evaluation team will conduct NTG research to update the SAG-approved value for the MOSL channel.

### 3.2.8 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.

In 2022, BOC will transition to a prescriptive savings approach based on the algorithm outlined in IL-TRM V10.0. The previous impact approach required a year lag between participation and impact evaluation. Since the prescriptive approach does not require this lag period, the 2022 impact evaluation will include energy savings from both 2021 and 2022 participants -- since 2021 participants were not included in the 2021 impact evaluation due to lag period.

Table 19 provides a summary of planned evaluation activities for the years 2022-2025. Each year, the evaluation team will quantify verified energy and demand savings through the application of the prescriptive algorithm in the IL-TRM.

Table 19. Building Operator Certification Training Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 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 20 provides a summary of planned cross-cutting Business Program evaluation activities for the years 2022-2025.

Table 20. Cross-Cutting Business Program Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Phased | Energy Advisor Interviews | ✓ | | | |
| | Program Ally Interviews | | ✓ | | |

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| | Non-Participant Spillover Research | | ✓ | | |
| | Empower Communities Followup | As needed | | | |

The rationale for these activities is as follows:

- **Energy Advisor Interviews:** We will conduct interviews with the Business Program Energy Advisors, who lead customer recruitment efforts across the Program wherever possible, in 2022. The interviews will cover topics such as Energy Advisors' perceptions of customer interest in the initiatives, interactions with customers, processes for coordination between the Energy Advisors and Key Account Executives, success bringing projects into the initiatives, and suggestions for improvements to the Initiatives. The interviews will include a particular focus on changes to implementation in the 2022 cycle, and how these changes affected the Initiatives. We will plan to interview all active Energy Advisors.
- **Program Ally Interviews:** We will interview Business Program allies, specifically those who support the Standard and Custom Initiatives, in 2023 to investigate topics such as initiative participation processes, trade ally and participant satisfaction, barriers to participation, and impacts of initiative participation on trade ally business and practices. The interviews will include a particular focus on changes to initiative implementation in the 2022 cycle, and how these changes affected allies. We will plan to conduct up to 25 interviews of a purposive sample of trade allies, including allies who have completed projects through both the Standard and Custom initiatives. Our sample will include a mix of highly active Business Program allies with allies who have completed a smaller number of projects, and potentially previously active allies who have become inactive.
- **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 expects to conduct this study as a statewide effort coordinated with the evaluators for ComEd, Nicor Gas, and Peoples Gas/North Shore Gas.
- **Empower Communities Study Followup:** We will discuss the results of the 2022 Empower Communities Study and any necessary followup with AIC staff and stakeholders in early 2022. For example, there may be a need to support specific pilot offerings or marketing, education, and outreach (ME&O) efforts AIC is planning related to the studied groups/communities; perform deep dives into specific groups/communities; or collect and compile additional data as follow-ups to specific findings from the initial studies. We will work closely with AIC staff to develop a roadmap for Empower Communities followup 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 during Plan 6.

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 1,047[13] total circuits to be deployed by 2024.

As defined in the AIC Voltage Optimization Plan,[14] 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 21 outlines the planned evaluation activities for the VO Program during Plan 6.

Table 21. Voltage Optimization Program Evaluation Activities – 2022-2025 Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Annual | Program Staff Interviews | ✓ | ✓ | ✓ | ✓ |
| | Data Request and Materials Review | ✓ | ✓ | ✓ | ✓ |
| | Electric Energy Impact Analysis (Modeling & IL-TRM Algorithm Application) | 4x | 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 plan 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 Plan 6:

- **IL-TRM Measure Review:** During the 2022 development process for IL-TRM V11.0, we expect that the Voltage Optimization Working Group, which initially developed the IL-TRM Voltage Optimization measure, will reconvene to discuss and review the measure to ensure it performs as reliably as possible. As needed, we will provide guidance to AIC and the Illinois Technical Advisory Committee (TAC) to support this review.
- **AIC Voltage Model Review:** Throughout the 2018-2021 cycle, we consistently saw small but meaningful differences in voltage reduction estimates provided by AIC vs. those estimated by the evaluation team.

[13] 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.
[14] 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.

AIC has expressed interest in further investigating these discrepancies with the goal of aligning the approach AIC uses to estimate voltage reduction as closely as possible with the approach used by the evaluation team. During 2022 (and beyond as necessary), we will convene discussions with the VO Program team and AIC EM&V staff to investigate these discrepancies and resolve them if possible.

- **Assess Viability of Additional VO Program Investments:** As currently approved, AIC's VO Plan indicates that deployment of voltage optimization measures will conclude in 2024, which means that 2025 will be the final year in which new VO Program savings would be evaluated. We understand that AIC may consider further voltage optimization investments beyond the currently approved VO Plan based on deployment results and energy efficiency savings requirements, and expects to ask for guidance from the evaluation team to support it doing so.
- **Voltage Optimization Measure Life.** Per the original statutory text in FEJA enabling Illinois electric utilities to implement and claim savings from voltage optimization as an energy efficiency measure (Section 8-103B subsection (b-20)), the measure life for savings from voltage optimization is deemed at 15 years. CEJA adds a new provision in (b-20) that indicates utilities may claim savings from voltage optimization for more than 15 years if they can demonstrate that they have made investments necessary to allow savings to continue beyond 15 years, and explicitly notes that such demonstration is subject to independent evaluation. We expect that it is likely AIC will choose to pursue this extension of VO savings and will require evaluation activities to verify assumptions.

## 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 2022 materially 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).

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)
- Thin Triple Pane 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, distributers, and retailers with the AIC territory.

Table 22 summarizes the evaluation activities planned for the Pilot over the four-year plan period.

Table 22. LLLC Pilot Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Annual | Pilot Materials Review | ✓ | ✓ | ✓ | ✓ |
| | Pilot Staff Interviews | ✓ | ✓ | ✓ | ✓ |
| | Interviews/Surveys with Participating Trade Allies | ✓ | ✓ | ✓ | ✓ |
| | End User Participant Survey | ✓ | ✓ | ✓ | ✓ |
| | | | | | |
| Phased | Baseline Survey with Non-Participating End Users | ✓ | | ✓ | ✓ |
| | Review of Program Theory and Logic Model (PTLM) and Market Progress Indicators (MPIs) | ✓ | | ✓ | |
| | Natural Market Baseline Review | | ✓ | | ✓ |

The rationale for these activities is as follows:

- **2022:** Along with the core evaluation activities, the evaluation team proposes several foundational activities in the first year of the pilot's operation. While we expect that the first year(s) of the pilot will directly produce net energy savings, which we understand will be captured as part of the Standard Initiative, we also plan to complete several activities aimed at understanding how the pilot might transform the lighting controls market in future years. Specifically, we will complete a review of the LLLC program theory and logic model, along with associated market progress indicators. Additionally, we will complete a survey with non-participating end users to estimate the baseline level of understanding and awareness of LLLC technology in the market.
- **2023:** During the second year of evaluation, our team will continue to execute core annual evaluation activities along with evaluating pilot processes. Additionally, we will complete a review of the implementation team's natural market baseline development with the eventual goal of estimating market transformation savings from the pilot in future years.
- **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.
- In 2021, we expect to be regular participants in the Illinois Lighting Forecast Working Group, formed
- 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 23 identifies some key items we currently plan to pursue during Plan 6 based on discussion with AIC and stakeholders.

Table 23. Planned 2022 IL-TRM Research Activities

| Research Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Guidance on Data Collection for Efficient Hydraulic Oils and Lubricant Verification | ✓ | | | |
| Low Income HVAC and Shell TRM Baseline Updates | ✓ | | | |
| Steam Trap Parameter Updates | ✓ | | | |
| Nonresidential LED Cost Updates | ✓ | | | |
| HVAC Metering Study Update | | TBD | | |
| Prescriptive Air Sealing Study | | TBD | | |
| Connected LED Savings Factor Study | | TBD | | |
| Low Income Appliance Baselines | | TBD | | |

In addition to the items flagged in Table 23, 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 plans 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 begins, 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 Plan 6, the evaluation team will pursue a limited number of NEI-specific research activities as outlined in Table 24 below.

Table 24. LLLC Pilot Evaluation Activities – Four Year Plan

| Timing | Activity | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Phased | Income Qualified Participant NEI Assessment | ✓ | | | |
| | Societal NEI Update | | TBD | | |
| | Nonresidential NEI Followup Research | As needed | | | |

We describe each of these tasks in further detail below:

- **IQ Participant NEI Assessment:** The evaluation team has recently completed pre-treatment surveys for an ongoing longitudinal assessment of Income Qualified Initiative participant health and safety NEIs. Post-treatment surveys will field throughout 2022, with analysis and reporting to conclude the study in early 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.[15] 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. Midway through Plan 6, 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. To develop a roadmap for future research, additional discussion with AIC and stakeholders is needed, but 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

The Policy Manual requires Illinois program administrators to report estimates of job and macroeconomic impacts from their energy efficiency portfolios annually. 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. CEJA further updated the reporting requirement to include provision of these impact estimates by the conclusion of each year's annual impact reporting cycle (April 30 following the year of program implementation).

As a result, the evaluation team restructured the existing analysis into a plug-and-play multiplier-based approach 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.

[15] 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

Midway through Plan 6, in either 2023 or 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.

### 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, with the exception of low-income programs. 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 the New York State Department of Public Service. From 2019 through 2021, he assisted the evaluation of multiple programs implemented by the California IOUs and third parties and advised the CPUC.

As part of the Plan 6 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. 2022 Evaluation Plans

In this section of the evaluation plan, we present detailed evaluation plans for research scoped as part of the 2022 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 qualified LEDs, 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 discounted LEDs, advanced thermostats, advanced power strips, air purifiers, dehumidifiers, or bathroom vent fans through the AIC Online Marketplace.

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 2022 Retail Products Initiative includes both process and impact analyses, and includes an update to NTGRs for non-lighting products, as outlined in the following sections.

##### Research Objectives

###### Impact Questions

The overall objective of the impact evaluation is to estimate the kWh, kW, and therm impacts from the program. As such, the 2022 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?
- What is the estimated NTGR for products sold through the Initiative?
- What are the in-service rates of incentivized products sold through the Initiative?

### Process Questions

The evaluation team will focus on answering the following questions as part of 2022 process evaluation activities:

- How did the various incentive-based channels perform relative to one another? Did incentivized measures align well with the channels through which they were offered?
- How many customers engaged with the ECT and what types of products did they consider?
- Were customers satisfied with the Initiative? How was their experience with the participation process and with the products available?
- Did the Initiative's implementation change from 2021? If so, how and why? Was this an advantageous change?
- Did the Initiative experience any implementation challenges in 2022? If so, what were they, and how were they overcome?
- What were the biggest successes for the Initiatives in 2022? What were the biggest drivers behind these successes?
- What changes could the Initiative make to improve the customer experience and maximize savings?

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

## Evaluation Tasks

Table 24 summarizes the 2022 evaluation activities planned for the Retail Products Initiative.

Table 25. Summary of Retail Products Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Initiative Material & Database Review | | ✓ | | Review the 2022 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 document Initiative design and implementation for 2022 and explore Initiative performance. |
| Participant Surveys | | ✓ | ✓ | Conduct interviews with customers who purchased non-lighting products discounted by the initiative and likely users of the ECT. Use the interview results to estimate NTGRs, installation rates, program satisfaction, and, for ECT users, purchase rates of non-discounted products researched using the ECT. |

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating gross savings. Complete an interim-impact analysis. Determine 2022 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 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 2022. Additionally, we will request tracking data early in the year to support participant survey sampling, mid-year to support an interim impact analysis, and at the close of the year to inform the year-end impact evaluation and sampling for a second wave of the ECT participant survey.

*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 at the 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:* April and December 2022

### Task 3. Non-Lighting and ECT Participant Surveys

The evaluation team will conduct web-based surveys with customers who have purchased non-lighting discounted products through the Initiative. We will use these surveys to estimate NTGRs and installation rates for each product category where feasible. We will also explore participant satisfaction with program measures and processes, as well as customers' use of discounted products. The number of target survey completes by measure type will depend on the number of participants. We will target enough completed surveys to achieve 10% precision at 90% confidence (90/10) for NTGRs and installation rates by measure type.

For ECT, we will survey likely users to estimate the number of energy-efficient products purchased after engaging with the ECT and gauge its influence on purchase decisions. The number of target survey completes by measure type will depend on the number of ECT users and contact information availability.

*Deliverable:* Draft and final data collection instruments *Deliverable Date:* May 2022

*Deliverable:* Key process findings and NTGR memo *Deliverable Date:* May 2023

### Task 4. 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 product type 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. For the ECT, we will rely on survey responses from a sample of likely ECT users to estimate the number of energy-efficient products purchased by ECT users and gauge the influence of the ECT on purchase decisions.

We will use the savings parameters outlined in the IL-TRM V10.0 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. The evaluation team will apply verified installation rates from the IL-TRM V10.0.

We will calculate 2022 verified net savings for the Retail Products Initiative by applying SAG-approved NTGRs to verified gross electric and gas savings. We expect that new products will be introduced in 2022 for which a SAG-approved NTGR is not available, and we expect to provide supplemental NTGR recommendations to SAG for these measures as soon as possible. We will also use the participant surveys to estimate NTGRs for these new measures to support recommended NTGRs for prospective application.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* July 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task 5. 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

## Evaluation Budget and Timeline

Table 26 summarizes the timing and budget associated with each evaluation activity.

Table 26. Retail Products Initiative 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Materials and Database Review | Ongoing | $10,700 |
| 2 | Initiative Staff Interviews | April and December 2022 | $12,500 |
| 3 | Non-Lighting Participant Surveys | June 2022 | $48,300 |
| 4 | ECT Participant Surveys | July 2022 and January 2023 | $47,600 |
| 5 | Impact Analysis | March 2023 | $52,600 |
| 6 | Draft Annual Impact Report | March 15, 2023 | $45,900 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$217,600** |

### 4.1.2 IQ Initiative – Single Family Whole Home Channels

The Income Qualified (IQ) Initiative includes two 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 (also known as Home Efficiency Income Qualified, or HEIQ) and the CAA Channel. Both 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 programmable/advanced thermostats at no cost. Following the audit, customers may also receive additional retrofits, in some cases with a copayment,[16] such as air sealing and insulation improvements, central air conditioner (CAC) replacements, and air source heat pump (ASHP) replacements.

For the Single Family Channel, Walker-Miller and BPI-certified AIC Program Allies serve moderate and low income single family customers who did not participate in the Illinois Home Weatherization Assistance Program (IHWAP). For the CAA Channel, CAAs with support from AIC partner, Resource Innovations, serve low income single family 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 Single Family Channel also includes Safe and Virtual Energy Efficiency (SAVE) Kits as a well as ad-hoc offerings (e.g., kits and community events) that vary each year. The SAVE Kit includes several energy and water saving products (e.g., LEDs, low flow showerheads, advanced power strips, and door sweeps), a booklet of installation instructions, and the tools customers need to install the products (e.g., a screwdriver and plumber's tape). Once customers have received the kit, they may choose from two verification options, a video call with a Personal Energy Advisor (Virtually Assisted Install) or a postcard; or they may choose to do no verification.

#### Evaluation Approach

The 2022 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 overall objective of the impact evaluation is to estimate the kWh, therm and kW impacts from the program. As such, the 2022 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? (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 2022 process evaluation activities:

[16] Moderate income participants in the Single Family Core channel may have copayments for certain measures. Low income participants in Single Family Core and CAA Channel have no copayments.

- 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 CAA and non-CAA single family projects? Did CAA channel participation meet expectations? If not, why?
- What other ad-hoc offerings (e.g., additional kits or community events), if any, were there in 2022 through the Single Family or CAA channels (i.e., in addition to IQ Kits in Direct Distribution)? How many participants did these offerings reach and how many measures did they provide?
- How many SAVE kits were distributed?
- Is the Initiative being implemented according to design?
- Have there been any modifications to design or implementation to the core Single Family or CAA Channels, or to SAVE kits, in 2022? What have been the successes and challenges associated with these changes?
- Did implementation and design changes/enhancements in 2021 or 2022 achieve their intended outcomes? What areas for improvement exist?
- What were the Single Family channel's marketing and outreach efforts, including cross-promotion with other AIC offerings (Smart Savers, SAVE Kits, other Initiatives)? What efforts have been the most and least successful in 2022? How effectively are the various implementation partners working together to achieve the goals of the Initiative? Are there any ways to improve the efficiency of their coordination?
- What are CAA experiences, successes, and challenges implementing Initiative projects? How has or how might CEJA and new federal policies promoting weatherization and prioritizing disadvantaged communities (e.g., the Biden Administration's Justice40 Initiative[17]) affect CAA operations in general? How might state and federal policies affect CAA offerings to AIC customers, through IQ Initiative projects and/or their other services?

## Evaluation Tasks

Table 27 summarizes the 2022 evaluation activities planned for the IQ Initiative Single Family Whole Home channels.

Table 27. Summary of IQ Initiative Single Family Whole Home Channels Evaluation Activities for 2022

| 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 2022. |
| Initiative Material & Database Review | | ✓ | | Review the 2022 database, relevant administrative reports, and marketing and outreach materials to document Initiative design and changes. |
| In-Depth Interviews with CAAs | | ✓ | ✓ | Conduct interviews with up to CAAs who complete IQ Initiative projects to understand their experiences and impacts of state and federal policy on their services to AIC customers. |
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified |

[17] https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/. Last Accessed March 9, 2022.

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| | | | | algorithms are used in calculating gross savings. Determine 2022 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 AIC implementation contractor staff. We will schedule the first round in Q2 2022 to discuss planned or executed changes to Initiative design and implementation and discuss the goals of the CAA in-depth interviews. We will also discuss planned 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 2022. We will also conduct another round of interviews in Q4 2022 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 2022

### 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 2021, we will request interim program tracking data through June 2021 and other Initiative materials. We will use this data to complete the interim impact analysis (see Task 4), develop the CAA in-depth interview contact list (see Task 3), and fully understand Initiative progress to date. We will request final program tracking data in January 2023 for use in the final impact evaluation.

*Deliverable:* Interim data request *Deliverable Date:* July 2022

*Deliverable:* Final data request *Deliverable Date:* January 2023

### Task 3. In-Depth Interviews with CAAs

We will conduct interviews with the CAAs that implement IQ Initiative projects. We will contact all 20+ CAAs that participate in the Initiative and anticipate completing 10-15 interviews based on CAA availability. The CAA interviews will focus on understanding these partners' experience, successes, and challenges with the Initiative. We will also explore how CEJA and potentially new federal weatherization funding and/or policy changes are affecting their operations overall; and how that ultimately impacts AIC customers. We will work with AIC understand what information the Company is already collecting on these topics and where additional research would be valuable.

*Deliverable:* Draft and final interview guide *Deliverable Date:* June 2022

*Deliverable:* Key results memo *Deliverable Date:* September 2022

### Task 4. Impact Analysis

The 2022 evaluation will include gross and net impact estimates. The impact evaluation team will use savings algorithms from the IL-TRM V10.0, and data inputs from the Initiative tracking database to estimate verified gross savings. Finally, we will calculate 2022 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 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

#### Task 5. 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 28 summarizes the timing and budget associated with each evaluation activity.

Table 28. IQ Initiative Single Family Whole Home Channels 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Staff Interviews | May and December 2022 | $6,900 |
| 2 | Initiative Materials and Database Review | July 2022 and January 2023 | $8,200 |
| 3 | In-Depth Interviews with CAAs | June and September 2022 | $45,700 |
| 4 | Impact Analysis | September 2022 and March 2023 | $123,900 |
| 5 | Draft Annual Impact Report | March 15, 2023 | $30,300 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$215,000** |

## 4.1.3 IQ Initiative – Smart Savers Channel

The Smart Savers channel provides advanced thermostats at no-cost to IQ customers. The overarching goals of the Initiative 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 Ecobee3 Lite or Google Nest E 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. Customers who live in rural areas in which there are no participating Program Allies only have the self-install option.[18] If participants choose to install the advanced thermostat themselves, they receive a $25 incentive once the implementer verifies that the thermostat is installed and activated. After participants complete their journey through the Smart Savers channel, the implementer passes their contact information to Leidos for additional marketing and recruitment for other AIC Residential Program offerings.

[18] The Smart Savers channel actively seeks to recruit contractors in rural areas to ensure that majority of customers have the option to have a Program Ally install their advanced thermostat.

## Evaluation Approach

The 2022 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 overall objective of the impact evaluation is to estimate the kWh, therm and kW impacts from the Smart Savers channel. As such, the 2022 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 2022 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 (Ecobee and Nest)? 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 2022? What have been the successes and challenges associated with these changes?
- Did implementation and design changes/enhancements in 2021 or 2022 achieve their intended outcomes? What areas for improvement exist?
- What were the Smart Savers channel's marketing and outreach efforts, including recruitment for Smart Savers and promotion of other AIC offerings? What efforts have been the most and least successful in 2022?
- What are the characteristics of participant households? What vulnerable or less vulnerable populations is Smart Savers serving? How accurate are current IL-TRM assumptions used for Smart Savers savings?
- What incentive model do self-install participants find most attractive? Is the incentive necessary, would alternative inducements (e.g., a SAVE Kit, an Online Marketplace coupon, or a thermostat sensor pack) be sufficient, or is any incentive needed at all?
- How satisfied are customers with their participation experience and the device? How are they using the device and, specifically, are they taking advantage of the advanced features of the thermostat? How does this experience vary by thermostat model, if at all?
- How is Smart Savers functioning as a channeling tool for the IQ Initiative Single Family channel or other AIC offerings? How often do customers decide to continue their journey through the IQ Initiative Single Family channel or participate in other offerings after participating in Smart Savers? How influential is their Smart Savers experience on this decision?

## Evaluation Tasks

Table 29 summarizes the 2022 evaluation activities planned for the IQ Initiative Smart Savers channel.

Table 29. Summary of IQ Initiative Smart Savers Channel Evaluation Activities for 2022

| 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 2022. |
| Initiative Material & Database Review | | ✓ | | Review the 2022 database, relevant administrative reports, and marketing and outreach materials to document Initiative design and changes. |
| Smart Savers Participant Surveys | | ✓ | ✓ | Conduct surveys with Smart Savers participants to collect feedback on their experience, inform future design, and confirm savings assumptions. |
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating gross savings. Determine 2022 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 channel manager and AIC implementation contractor staff. We will schedule the first round in Q2 2022 to discuss planned or executed changes to Initiative design and implementation and discuss the goals of the participant survey. We will also conduct another round of interviews in Q4 2022 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 2022

### 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 2021, we will request interim program tracking data through June 2021 and other Initiative materials. We will use this data to complete the interim impact analysis (see Task 4), develop the participant survey sample (see Task 3), and fully understand Initiative progress to date. We will request final program tracking data in January 2023 for use in the final impact evaluation.

*Deliverable:* Interim data request *Deliverable Date:* July 2022

*Deliverable:* Final data request *Deliverable Date:* January 2023

### Task 3. Participant Survey

We will conduct surveys with participants in the first half of 2022. Topics will include verification of household characteristics; potential new incentive models; influence of Smart Savers participation in other Initiatives; thermostat installation experience; and use of thermostat advanced features. We will determine exact completion goals and survey mode (e.g., web, phone, or mail-push-to-web) based on participation counts

through June and contact information availability, respectively. Based on 2021 participation (over 5,000 thermostats), we anticipate having a sample frame of several thousand participants and using a stratified random sampling approach to ensure ample representation of the different housing and installation types in the analysis. Depending on the number of participants, we may perform a census of multifamily projects. We anticipate surveying approximately 200 participants.

*Deliverable:* Draft and final survey *Deliverable Date:* June 2022

*Deliverable:* Key findings memo *Deliverable Date:* September 2022

#### Task 4. Impact Analysis

The 2022 evaluation will include gross and net impact estimates. The impact evaluation team will use savings algorithms from the IL-TRM V10.0, and data inputs from the Smart Savers tracking database to estimate verified gross savings. Finally, we will calculate 2022 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 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

#### Task 5. Reporting

The evaluation team will include 2022 Smart Savers 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 30 summarizes the timing and budget associated with each evaluation activity.

Table 30. IQ Initiative Smart Savers Channel 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Staff Interviews | May and December 2022 | $3,500 |
| 2 | Initiative Materials and Database Review | July 2022 and January 2023 | $1,900 |
| 3 | Participant Survey | June and September 2022 | $38,800 |
| 4 | Impact Analysis | September 2022 and March 2023 | $19,300 |
| 5 | Draft Annual Impact Report | March 15, 2023 | $8,200 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$71,700** |

## 4.1.4 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 2022 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 2022 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 2022 process evaluation activities:

- How was Home Efficiency implemented in 2022?
- 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 2022, and how did Home Efficiency staff overcome them?
- What were the biggest successes for the channel in 2022? What were the biggest drivers behind these successes?

Table 2 summarizes the 2022 evaluation activities planned for the Home Efficiency channel.

Table 31. Summary of Home Efficiency Channel Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Initiative Material & Database Review | ✓ | ✓ | | Review the 2022 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 2022. We will explore staff experiences with Initiative administration, design |

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| | | | | changes, impacts from COVID-19 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 V10.0 specified algorithms are used in calculating gross savings. Determine 2022 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 2022

### 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 V10.0 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 2022 verified net savings by applying SAG-approved NTGRs to verified gross electric and gas savings.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* June 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task 4. Reporting

The evaluation team will include 2022 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

## Evaluation Budget and Timeline

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

Table 32. Home Efficiency Channel 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Materials and Database Review | Ongoing | $4,600 |
| 2 | Initiative Staff Interviews | May and December 2022 | $5,600 |
| 3 | Impact Analysis | March 2023 | $31,000 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $16,000 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$57,200** |

## 4.1.5 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. 2022 is the second year that AIC has offered the Midstream Channel, which 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 in turn lower the cost of efficient equipment for contractors thus encouraging them to (1) pass those savings onto their customers and (2) install more efficient heating and cooling equipment, and water heaters than they would otherwise.

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 change the market for HVAC and HPWH equipment within their service territory. While many of these market changes are expected to occur over a long-term time horizon, the Channel's existing program theory and logical model (PTLM) presents

several short-term (1 – 2 years) outcomes, which the evaluation team will explore as part of the 2022 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 33 summarizes the outcomes, as well as the Key Performance Indicators (KPIs) articulated by the implementation team.

Table 33. 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<br>Marketing/advertising/education materials |
| Increased products available | Total territory sales |
| Greater trained and knowledgeable HVAC sales force | Education materials available<br>Distributors and manufacturers support training<br>Customer awareness |
| Increased numbers of customers select EE HVAC and HPWH solutions | Total territory sales<br>Trade ally participation<br>Sales materials/process include applicable info on EE HVAC solutions |
| Increased HVAC & HPWH sales | Total territory sales<br>Program sales |

Source: Implementation Team Program Theory and Logic Model

## Evaluation Approach

The assessment of the 2022 Midstream HVAC Channel is grounded in the PTLM and 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 the kWh, therm and kW impacts from the program. As such, the 2022 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?
- What is the estimated NTGR for the Channel by measure type for prospective application?

#### Process and Market-Focused Questions

The evaluation team will focus on answering the following questions as part of 2022 process evaluation activities:

- Design and Implementation
  - Did the Channel's implementation change from 2021? 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 2022? If so, what were they, and how were they overcome?
- What changes could the Initiative make to improve the distributor, contractor and customer experience and generate greater energy savings?

- 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 and contractor participation and how can they be overcome?
  - How satisfied are distributors, contractors and end-use customers with the Channel, the products, and the process for participation?
- Market Effects
  - What effect have Channel activities had on the promotion of energy efficient HVAC and HPWH technologies?
  - What effect have Channel activities had on market actor training opportunities and knowledge?
  - What effect have Channel activities had on trade ally sales and installations of energy efficient HVAC and HPWP technologies within program?
  - What effect have Channel activities had on participating distributor stocking decisions?
  - 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)?

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

### Evaluation Tasks

Table 34 summarizes the 2022 evaluation activities planned for the Midstream Channel.

Table 34. Summary of Midstream Channel Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Initiative Material & Database Review | | ✓ | | Review the 2022 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 2022. We will explore staff experiences with Initiative administration, design changes during year two of implementation, and impacts from COVID-19 and supply chain limitations, among other topics. |
| Distributor Interviews | | ✓ | ✓ | Conduct participating distributor interviews to gain process insights, explore market trends, and inform NTG updates. |

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Contractor Interviews | | ✓ | ✓ | Conduct contractor interviews to understand the participation experience and satisfaction, and barriers to participation, explore market trends, and gather data to support NTG updates. |
| Participant Survey | | ✓ | ✓ | Conduct interviews with participating customers to explore Channel awareness and satisfaction, in-service rates, and gather data to support NTG updates. |
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating gross savings. Determine 2022 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.

Foreshadowing 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 NTG 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 2022

### Task 4. Contractor Interviews

Within the Midstream Channel, contractors serve as a conduit for delivering incentives from the distributor to end-use customers. As part of Channel implementation, program staff provide sales and educational tools and training to contractors to increase their skill and knowledge related to energy efficient HVAC and HPWH equipment. The goal is that these contractors will then sell and install more energy efficient equipment and come to place greater value on heat pumps in cold climates.

Given Channel activities and expected outcomes associated with contractors, the evaluation team will conduct research directly with this group to explore a range of topics related to program processes, market effects, and NTG. From a process perspective, we are particularly interested in understanding the process by which contractors provide AIC customer account information to distributors and the extent to which that may present a barrier to participation and lead qualifying equipment, influenced by the Channel, to flow to customers outside of the program. We will also pay particular attention to how the availability of Channel incentives has impacted their sales of Channel qualifying equipment and their assessment of how the Channel is impacting the broader market for efficient HVAC and water heating equipment.

From a NTG perspective, we will explore how the Midstream Channel might have changed contractor behavior relative to the promotion, sales, and installation of energy efficient HVAC and HPWH equipment. In particular, we will gather contractor perspectives on the influence of Channel training and tools/resources on their knowledge and recommendations to customers, the influence of the incentive on the customer's purchase decision, and the extent to which equipment availability influenced the contractor and end-use customers.

To achieve all of these research objectives, the evaluation team plans to conduct the interviews in two stages starting with qualitative, in-depth interviews followed by an online survey. We will first conduct an initial set of in-depth interviews with up to 10 contractors using an incentive to encourage participation. These interviews will focus on program processes and market trends. We will then field a modified survey instrument to a broader set of contractors in an online format to gather insights related to Channel influence, as well as the proportion of sales to residential vs. commercial customers. Given that the implementation team does not track contractor participation, we will use AIC's contractor network list as the sample source for this effort. We hope to complete interviews with upwards of 50 contractors.

*Deliverable:* Draft and final data collection instruments *Deliverable Date:* May 2022

### Task 5. Participant Surveys

The evaluation team will conduct surveys with customers who have purchased HVAC and HPWH equipment through the Channel. The survey will explore customer awareness of the incentive they received through the Midstream Channel, the influence of that incentive on their purchase decision, and the extent to which the mix of available equipment influenced their purchase decision. We will also measure participant satisfaction with their contractor and the HVAC or HPWH equipment.

While we anticipate conducting the survey online, we will work with the implementation team to confirm the best method of survey outreach. The number of target survey completes by measure type will depend on the number of participants, but we will target enough completes to achieve 10% precision at 90% confidence (90/10) for NTGRs by measure type.

*Deliverable:* Draft and final data collection instruments *Deliverable Date:* June 2022

### Task 6. Process and Market Effects Report

Drawing on our process evaluation activities for 2022, the evaluation team will prepare an overarching process evaluation report for the Midstream HVAC Channel. The report will aim to provide a holistic assessment of the operation of the Midstream Channel, incorporating program administrator, implementation partner, market actor and customer perspectives. Additionally, the report will include a market effects quantification methodology for capturing interim savings related to qualified, non-incentivized units, as well as how specific design changes have increased the throughput of the Initiative.

*Deliverable:* Analysis in process evaluation report *Deliverable Date:* October 2022

### Task 7. 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 2022 for an interim analysis, as well as end of year program participation data.

We will use the savings parameters outlined in the IL-TRM V10.0 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 V10.0.

For all measures rebated by the Midstream HVAC Channel, we will calculate 2022 verified net savings by applying SAG-approved NTGRs to verified gross electric and gas savings. We will also use data from the distributor interviews, contractor interviews, and participant survey to develop updated estimates of NTGR for HVAC and HPWH measures for prospective application.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* July 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task 8. 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

## Evaluation Budget and Timeline

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

Table 35. Midstream HVAC Channel 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Materials and Database Review | Ongoing | $4,600 |
| 2 | Initiative Staff Interviews | May and December 2022 | $5,600 |
| 3 | Distributor Interviews | June 2022 | $38,500 |
| 4 | Contractor Interviews | June 2022 | $56,000 |
| 5 | Participant Survey | July 2022 | $52,100 |
| 6 | Process and Market Effects Report | October 2022 | $27,500 |
| 7 | Impact Analysis | March 2023 | $39,300 |
| 8 | Draft Annual Impact Report | March 15, 2023 | $25,500 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$249,100** |

## 4.1.6 Multifamily Initiatives

AIC's Multifamily Initiatives are designed to provide a range of measures that result in lower energy use, lower costs of living and increased comfort for tenants and lower operating costs for building owners of subsidized or low-income housing, publicly owned housing serving low-income customers, and non-subsidized or market-rate multifamily and mixed-use buildings with three or more units. AIC serves these multifamily residents through IQ Multifamily, the Public Housing Initiative, and the Multifamily Initiative, respectively. Overall, the delivery models and measure offerings for these initiatives are similar, with some variation.

Leidos and CMC work together to implement the Multifamily Initiatives. Leidos' role is to provide oversight for the Multifamily Initiatives, including support for marketing efforts and initiative implementation, while CMC is responsible for conducting outreach, measure installations,[19] QA/QC inspections on direct install measures, and managing project submissions, inventory, and initiative tracking data.

AIC transitioned the delivery of the Multifamily Initiatives to a one-stop shop model beginning in 2020. The goal of the one-stop shop model is to make access to Multifamily Initiative offerings as streamlined and seamless as possible for property managers and Housing Authorities. AIC provides property managers with a single point of contact, which guides them through the process of accessing offerings from multiple distinct

[19] CMC did not conduct in-unit direct installations in 2021 due to the COVID-19 pandemic social distancing protocols.

AIC Initiatives. This delivery model provides the property manager with an opportunity to develop a trusted relationship with their Energy Advisor (EA), through whom they can obtain technical assistance on any aspect of their project.

The CMC outreach coordinator generates the bulk of leads for the Multifamily Initiatives by conducting outreach to multifamily properties, Public Housing Associations, and other housing organizations in AIC service territory via phone, email, and postcard. The Leidos team also refers customers to the Initiatives.

The one-stop shop approach begins when the property manager completes an online application and an interview with an Energy Advisor (EA) from CMC to support a full property assessment and identification of the available energy-saving opportunities for which the property may qualify. CMC staff act as a central point of contact for initial identification and coordination of direct install and program ally installed measures. This process involves an extensive interview with the property manager, during which implementation staff obtain a detailed understanding of the history of building envelope and interior upgrades at the property. Upon assessment completion, the EA recommends appropriate upgrades to the property manager and the no-contact options available to receive measures at their property. Implementation staff are heavily involved in providing installation instructions and support for property staff and tenants receiving in-unit direct install measures. As customers engage with the Multifamily Initiatives, the EA introduces them to the AIC Multifamily resources webpage which is set up as a resource for customers to access information regarding incentive offerings, energy efficiency grants, loans, and rebates.[20] Property managers and tenants may also access educational and support resources, including ENERGY STAR information and the Efficient Choice Tool for selecting energy efficient appliances.[21]

## Evaluation Approach

The 2022 evaluation of the Multifamily Initiatives includes both impact and process analysis as outlined below. To support these efforts, the evaluation team plans to interview the AIC initiative managers and implementation team, conduct interviews with participating property managers, review relevant background materials and documentation, and conduct an engineering analysis to determine gross and net impacts.

### Research Objectives

#### Impact Questions

The 2022 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 through the multifamily initiatives still in place and operating?
- What is the estimated NTGR for program measures to be applied prospectively?

#### Process Questions

[20] Ameren Illinois. "Multifamily Property Managers." Last modified March 9, 2022. https://www.amerenillinoissavings.com/multifamily-properties.
[21] Ameren Illinois. "Efficient Choice Tool." Last modified March 9, 2022. https://amerenillinoissavings.com/residential/efficientchoice/.

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

- How many and what types of projects were completed in 2022? By how many customers?
- Did participation meet initiative expectations? In not, how did it differ and why?
- What changes have been made to the Multifamily Initiatives compared to prior years? Why? Have these changes led to the outcomes desired by program staff? If not, why?
- What role do tenants play in initiative implementation (e.g., access to units, influence on property managers/owners to make upgrades)?
- How do participating property managers/owners experience the initiatives? Are they satisfied? What value do they see in participation?
- To what extent are participants implementing a broader set of energy-efficient upgrades under the One-Stop Shop delivery model?
- What barriers exist to implementing broader energy-efficient upgrades? How do program staff address those barriers?
- What implementation challenges have occurred in 2022, and how have the Initiatives overcome them?
- What have been the biggest successes for the Initiatives in 2022? What are the reasons for these successes?

## Evaluation Tasks

Table 36 summarizes the 2022 evaluation activities planned for the Multifamily Initiatives.

Table 36. Summary of Multifamily Initiatives Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Initiative Material & Database Review | | ✓ | | Review the 2022 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 2022. |
| Multifamily Energy Advisor Interviews | | ✓ | | Conduct interviews with Multifamily Energy Advisors to explore their experience and any lessons learned from working with participating customers. |
| Property Manager Survey | ✓ | ✓ | ✓ | Survey participating property managers to investigate initiative processes and participant satisfaction. Gather data for estimating in-service rates and NTGRs (i.e., free-ridership and spillover). |
| Analysis of Participation Trends | | ✓ | | Analyze program-tracking data to assess the comprehensiveness of projects completed through the Initiatives, and make recommendations for initiative strategies to increase comprehensiveness as needed. |
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating |

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| | | | | gross savings. Determine 2022 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, customer communications, and extracts from the tracking database. The purpose of this review is to document the design and implementation of the Multifamily Initiatives in 2022. 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 Multifamily Initiatives design and implementation in 2022. These interviews will also provide AIC and implementation staff with an opportunity to discuss their evaluation priorities for 2022. In total, we expect to complete six interviews: one interview each with Leidos, CMC, 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 2022

### Task 3. Multifamily Energy Advisor Interviews

We will use this set of interviews to understand the role of Energy Advisors in guiding AIC customers through the MF Initiatives participation process and their perceptions of the One-Stop-Shop delivery strategy's impact on project comprehensiveness. We will also seek their feedback on how the initiatives can be improved going forward.

As part of this task, we anticipate completing six interviews. This will include interviews with Energy Advisors working specifically with IQ, Market Rate and Public Housing participants. To administer these interviews, we will reach out by e-mail to schedule conversations with each target respondent. We anticipate each interview lasting between thirty and forty-five minutes. Consistent with our analysis practices and framework, we will record and transcribe these interviews for analysis.

*Deliverable:* Draft and final interview guide *Deliverable Date*: July 2022

### Task 4. Property Manager Survey

The evaluation team will conduct an online survey with participating property managers to gather inputs needed to update in-service rates and NTGRs for initiative measures. In addition, the team will use the survey to explore property manager experience and satisfaction with the initiatives, the value of participating in the program and suggestions for improvement. We will determine the target number of completed interviews by initiative (e.g., IQ, Market Rate and Public Housing) based on participation levels with an overall goal of 70 completed interviews.

We plan to field the survey in fall 2022. Results will be provided in a memorandum in December 2022.

*Deliverable:* Draft and final survey instruments *Deliverable Date:* July 2022

*Deliverable:* Draft memorandum *Deliverable Date:* November 2022

*Deliverable:* Final memorandum *Deliverable Date:* December 2022

### Task5. Analysis of Participation Trends

One of the goals of adopting the One Stop Shop delivery strategy was to make it easier for eligible customers to participate in the Multifamily Initiatives, and to implement more comprehensive projects as a result of greater integration of energy efficiency offerings across the traditional residential and non-residential initiative channels. To asses the extent to which the one-stop-shop delivery strategy is having its intended effects, the evaluation team will analyze initiative tracking data to assess the extent to which customers are completing more comprehensive projects under the one-stop-shop model. This analysis will involve defining comprehensiveness and assessing the scope of completed projects in 2022 based on that definition. Where feasible, the evaluation team will also compare 2022 project scopes with those of projects in prior years to identify any trends. If feasible and necessary, we may review supplemental tracking data or assessment report information to understand what recommendations properties received and the uptake rate for key measures.

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task6. Impact Analysis

To determine gross impacts associated with the Multifamily 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 V10.0 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 V10.0. We will complete a mid-year impact review with partial 2022 program year data and provide to AIC and ICC Staff for review.

For net impacts, we will apply the SAG-approved NTGRs for 2022, which vary by channel.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* September 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2022

### Task 6. 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

## Evaluation Budget and Timeline

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

Table 37. Multifamily Initiatives 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Materials and Database Review | Ongoing | $7,700 |
| 2 | Initiative Staff Interviews | May and December 2022 | $7,600 |
| 3 | Multifamily Energy Advisor Interviews | July 2022 | $17,100 |
| 3 | Property Manager Survey | July 2022 | $42,000 |
| 4 | Analysis of Participation Trends | March 2023 | $13,700 |
| 4 | Impact Analysis | March 2021 | $43,200 |
| 5 | Draft Annual Impact Report | March 15, 2022 | $31,500 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2022 | |
| **Total Budget** | | | **$162,800** |

### 4.1.7 Residential Kits Initiatives

AIC will offer two, third party energy efficiency kit channels as part of the 2022 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.
- IQ Community Kits Channel[22]: 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.

#### Evaluation Approach

The assessment of the 2022 Residential Kits Initiatives will focus largely on estimating initiative impacts. However, the evaluation team also plans to conduct a targeted process analysis of the IQ Community Kits Initiative focused on community partners and initiative reach.

##### Research Objectives

###### Impact Questions

The overall objective of the impact evaluation is to estimate the kWh, therm and kW impacts from the program. As such, the 2022 impact evaluation will answer the following questions:

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

- 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 2022 process evaluation activities:

- How were the Initiatives implemented in 2022?
- How did the Initiatives perform with respect to participation levels and participation within underserved communities?
- What implementation challenges occurred in 2022, and how did Initiative staff overcome them?
- What were the biggest successes for the Initiatives in 2022? What were the biggest drivers behind these successes?
- What was the participant experience like for IQ Community Kit partner organizations? What recommendations do they have for initiative improvement?
- How well is the IQ Community Kit Initiative reaching underserved communities? What changes, if any, are needed to Initiative design to achieve greater reach?

## Evaluation Tasks

Table 38 summarizes the 2022 evaluation activities planned for the Residential Kits Initiatives.

Table 38. Summary of Residential Kits Initiatives Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Initiative Material & Database Review | | ✓ | | Review the 2022 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 2022. |
| Geospatial Analysis (IQ Community Kits Only) | | ✓ | | Analyze initiative tracking-data using GIS with an overlay of relevant census data to assess initiative effectiveness in reaching communities with the greatest need. |
| Impact Analysis | ✓ | | | Review initiative tracking data for accuracy, completeness, and to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating gross savings. Determine 2022 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 2022. 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 2022, as well as provide AIC and implementation staff with an opportunity to discuss their evaluation priorities for 2022. 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 2022

### Task 3. Geospatial Analysis of IQ Community Kit Distribution

Given the emphasis on targeting low-moderate income AIC customers in underserved areas, the evaluation team will incorporate a geospatial analysis of initiative tracking data (participating customers and partner organizations) overlaid with census data on language, income, and other relevant demographics. In doing so, the evaluation team will be able to assess if the current distribution strategy is optimized to serve the needs of AIC's low-moderate income customers or whether different approaches are needed to meet the needs of these customers.

*Deliverable:* Draft and final GIS map *Deliverable Date:* March 2023

*Deliverable:* Key findings memo *Deliverable Date:* March 2023

### Task 4. 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 V10.0 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 V10.0. We will complete a mid-year impact review with partial 2022 program year data and provide to AIC and ICC Staff for review.

For net impacts, we will apply the SAG-approved NTGRs for 2022, which are 100% for both initiatives given their targeting of low-income communities and students.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* July 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

#### Task 5. 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, 2023

*Deliverable:* Chapter in final annual Residential Program impact report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

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

Table 39. Residential Kits Initiatives 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Materials and Database Review | Ongoing | $6,700 |
| 2 | Initiative Staff Interviews | May and December 2022 | $6,700 |
| 3 | Geospatial Analysis | March 2023 $22,300 | |
| 4 | Impact Analysis | March 2023 | $37,300 |
| 5 | Draft Annual Impact Report | March 15, 2023 | $24,200 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$97,300** |

## 4.1.8 Mobile Homes Study

### Research Approach

AIC launched a Mobile Home Weatherization offering in 2021 and plans to continue that offering in the new plan cycle. Further, the 2021 Low Income Needs Assessment[23] identified mobile homes as a high priority customer segment, with high energy burdens and energy costs relative to their size; and IQ customers in mobile homes are particularly vulnerable. As such, the overarching purpose of this research is to map and characterize mobile home customers and communities, creating opportunities for future primary data collection to better understand their technological and household characteristics, high priority energy-related and health, comfort and safety (HCS) needs, and barriers and motivators to participation in AIC energy efficiency offerings. Further, in many cases, the IL-TRM V10.0 does not have specific assumptions related to mobile homes, defaulting to single family home assumptions in these instances. As such, the Evaluation Team will review the IL-TRM and identify gaps in mobile homes assumptions that could be addressed through future primary data collection.

This study is intended to be the first phase in a larger research effort. This phase will rely on secondary data and a review of the IL-TRM to identify options for a second phase that may include primary data collection. The next phase could, for example, have a broader mobile home market focus or could more narrowly focus on an evaluation of AIC's Mobile Homes Program. The team will work collaboratively with AIC to review the results of this study and decide on the objectives and timing of the next phase.

[23] https://ilsag.s3.amazonaws.com/AIC-2021-LINA-Report-FINAL-2022-06-01.pdf.

## Research Objectives

We have designed this research to address the following questions:

- What are the common types of mobile home communities in AIC territory (e.g., mobile home park, mobile housing communities for seniors)? Based on AIC's customer data and/or general knowledge of this segment, are these typically communities master-metered or individually metered for gas, electricity?
- Where are there concentrations of mobile homes or mobile home communities in AIC's territory?
- What are the characteristics of AIC's mobile home customers (e.g., income level, language spoken, age, employment, medical status, etc.) according to census data? Where possible to understand based on secondary data, to what extent are mobile home customers vulnerable in some way (e.g., health and financial hardships; insecurity related to immigration status)?
- What gaps exist related to mobile homes in the IL-TRM (i.e., a lack mobile home-specific assumptions)? How could future primary data collection address these gaps?

## Research Tasks

Table 40 summarizes the research activities currently planned for the Mobile Homes Study.

Table 40. Summary of Mobile Homes Study Activities

| Activity | Details |
|---|---|
| AIC Staff and Implementer Interview | Interviews with AIC and Mobile Homes Program implementation staff to discuss planned 2022 offerings; identify priority IL-TRM updates; and review/refine research objectives. |
| IL-TRM Gap Analysis | Review the IL-TRM v.10 Volume 3 (Residential Measures), and any relevant errata, to identify which measures lack mobile homes assumptions; which gaps should be priorities for updates; and where updates are feasible through planned data collection activities. |
| Mapping and Community Selection | Map AIC mobile home customers and overlay census and other data. |
| Reporting | Analyze and compile research results into a final presentation and provide recommendations for future mobile home customer research. |

We describe each of these activities in detail below.

### Task 1. AIC Staff and Implementer Interview

We will conduct up to three exploratory interviews with AIC staff and other organizations involved in planning or implementing mobile homes offerings for AIC customers; or who are specifically knowledgeable about priority updates for the IL-TRM. The objectives of these interviews will be to fully understand AIC's latest plans to serve mobile homes customers (e.g., types of mobile homes; types of communities; specific offerings); discuss the results of the 2021 Mobile Home Program and plans for the offering in 2022; and review and refine the research objectives for this study to collect data that would be the most useful for their planned efforts.

*Deliverable:* Completed interviews *Deliverable Date:* June 2022

#### Task 2. IL-TRM Gap Analysis

We will review the IL-TRM V10.0 Volume 3 (Residential Measures), and any relevant errata, to identify which measures lack mobile homes assumptions and which gaps should be priorities for updates based on the measures in planned pilots or offerings. We will document the result of this research in an interim memorandum and facilitate a study scoping meeting where we confirm priorities and discuss how to leverage this study to collect relevant data for IL-TRM updates. We will also communicate the results of this analysis to the IQ TRM Working Group for discussion. We will also develop an IL-TRM workpaper on potential updates for consideration in the IL-TRM V11.0 update cycle.

*Deliverable:* Interim memorandum *Deliverable Date:* August 2022

#### Task 3. Community Mapping

We will develop a map of AIC mobile homes customers using AIC customer data, which contains housing type, to identify concentrations of mobile homes in AIC's territory. Once we identify the concentrations, we will overlay additional data, such as census data on socioeconomic characteristics (e.g., income, employment) and/or AIC's Empower Communities data, and use online searches to identify and better characterize specific communities. We will develop a memorandum outlining the results of the mapping exercise.

*Deliverable:* Interim memorandum *Deliverable Date:* September 2022

#### Task 4. Final Presentation and Discussion

We will summarize the results of our work in a presentation, including recommendations for future mobile homes research, and facilitate up to three discussions with AIC and stakeholders.

*Deliverable:* Presentation and discussion *Deliverable Date:* October 2022

### Research Budget and Timeline

Table 41 summarizes the timing and budget associated with each research activity.

Table 41. Mobile Homes Study Schedule and Budget

| Task | Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | AIC Staff and Implementer Interview | June 2022 | $8,900 |
| 2 | IL-TRM Gap Analysis | August 2022 | $30,600 |
| 3 | Community Mapping | September 2022 | $41,100 |
| 4 | Final Presentation and Discussion | October 2022 | $10,000 |
| **Total Budget** | | | **$90,600** |

## 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 will primarily focus on lighting retrofits, lighting controls, motors, HVAC equipment, steam traps, and specialty applications such as agricultural and refrigeration measures.

## Evaluation Approach

The 2022 evaluation of the Standard Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2022.

### Research Objectives

#### Impact Questions

The 2022 impact evaluation will answer the following impact-related questions:

- What are the estimated gross electric energy, electric demand, and natural gas impacts attributable to the Standard Initiative?
- What are the estimated net electric energy, electric demand, and natural gas impacts attributable to the Standard Initiative?

#### Process Questions

The 2022 evaluation of the Standard Initiative will also include process research, including interviews with implementation staff and review of initiative materials. We 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
  - Did the Initiative experience any implementation challenges in 2022? 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 2022 Standard Initiative evaluation (Table 42).

Table 42. Summary of Standard Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative design, implementation and performance in 2022. |
| Initiative Staff Interviews | | ✓ | Explore changes made since 2021 and gather information about 2022 design and implementation. |
| Impact Analysis | ✓ | | Review Initiative tracking data to ensure that correct deemed values and IL-TRM V10.0 specified algorithms are used in calculating savings. Estimate |

| Activity | Impact | Process | Details |
|---|---|---|---|
| | | | gross impacts through review of the tracking database and application of the IL-TRM V10.0. |

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:* Submit data requests *Deliverable Date:* Ongoing

### Task 2. Initiative Staff Interviews

To support our evaluation, we will develop an in-depth interview guide for 2022 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 2022, 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 2022 to follow-up on any relevant items.

*Deliverable:* Completed interviews *Deliverable Date:* July and November 2022

### Task 3. 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 V10.0 algorithms are used in calculating savings and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2022. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2022 to gross savings.

In addition to the year-end final impact analysis, we will complete and deliver an interim impact analysis memo in August 2022 to provide the implementation team with early feedback on the performance of the Initiative.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* August 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task 4. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program Impact Report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 43 summarizes the timing and budget associated with each evaluation activity.

Table 43. Standard Initiative 2022 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 2022 | $4,000 |
| 3 | Impact Analysis | August 2022 and March 2023 | $49,200 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $32,300 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$90,500** |

## 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. 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 allows customers to propose additional measures and tailor projects to their facility and equipment needs.

The Custom Initiative is delivered to customers though 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, 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, some of these customers will be again eligible 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. The evaluation team plans to coordinate closely with AIC to understand

expected participation in and savings from the Custom Initiative in Plan 6 and will revise our evaluation plans accordingly to best support AIC's needs.

## Evaluation Approach

The 2022 evaluation of the Custom Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2022.

### Research Objectives

#### Impact Questions

The 2022 impact evaluation will answer the following impact-related questions:

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

#### Process Questions

The 2022 evaluation of the Custom Initiative will also include core process research, including interviews with implementation staff and review of initiative materials. We 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
  - Did the Initiative experience any implementation challenges in 2022? If so, what were they, and how were they overcome?
  - How satisfied were participants with Initiative processes?
  - 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 2022 Custom evaluation (Table 44).

Table 44. Summary of Custom Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative design, implementation and performance in 2022. |

| Activity | Impact | Process | Details |
|---|---|---|---|
| 2022 Initiative Staff Interviews | | ✓ | Explore changes made since 2021 and gather information about 2022 design and implementation. |
| 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 2022 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:* Submit data requests *Deliverable Date:* Ongoing

### Task 2. Initiative Staff Interviews

To support our evaluation, we will develop an in-depth interview guide for 2022 to explore Initiative performance, changes since 2021, and other topics relevant to our research objectives. We will conduct up to two interviews with Business Program staff: (1) an interview in early 2022 to understand changes made to the Initiative from 2021 and to provide time for the evaluation team to modify any research tasks as necessary and (2) if needed, an interview toward the end of 2022 allowing implementation staff the opportunity to comment on the Initiative's performance throughout 2022. We will conduct an interview specific to the Custom Initiative to focus specifically on trends and evaluation topics specific to Custom.

*Deliverable:* Completed interviews *Deliverable Date:* June and December 2022

### Task 3. 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 10 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 Total[25]

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

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 2022 and desirable sample sizes for the impact evaluation. We will determine the optimal sampling approach based on the number, type, and size of projects completed in 2022, and target 10% relative precision at 90% confidence (90/10) by fuel type. For budgeting purposes, we assume that we will conduct 50 project reviews. We believe this is a conservative sample size that will be sufficient to provide 90/10 precision at the Initiative level, at a minimum. As the 2022 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 2022. 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.

[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.

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 2022, we will also explore stratifying our sample by project type. Historically, we have aggregated all Custom Initiative projects into one sample frame for impact evaluation. However, 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 2022. If we are able to pursue this approach, we will likely 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, 2022. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by January 30, 2023.
- Deliver 15 additional completed project reviews by January 30, 2023. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by February 28, 2023.
- Deliver all remaining project reviews by February 28, 2023. Hold meeting to discuss the findings and answer any questions with AIC, its implementation team, and ICC Staff by March 15, 2023.

We will calculate 2022 net savings by applying the SAG-approved NTGRs for the Custom Initiative.

*Deliverable:* Site visit formal 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 2023

### Task 4. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program Impact Report — *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report — *Deliverable Date:* April 30, 2023

#### Task 5. 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 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 20 early reviews per calendar year 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 45 summarizes the timing and budget associated with each Custom Initiative evaluation activity.

Table 45. Custom Initiative 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Material and Database Review | Ongoing | $4,800 |
| 2 | Initiative Staff Interviews | July and November 2022 | $5,800 |
| 3 | Impact Analysis | March 2023 | $210,600 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $48,900 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| 5 | Early Reviews | Ongoing | $51,400 |
| **Total Budget** | | | **$321,500** |

## 4.2.3 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 2022, the Initiative will be comprised of three channels, two of which are pilots:

- **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 pilot was originally launched in 2020 and offered weatherization services to school districts throughout AIC's service territory. In 2022, the channel will target customers located in Empower communities, including schools, community support facilities, Residential/Business combination buildings, and multi-site customers. Measures will focus on

building envelope upgrades, HVAC improvements, and other non-SBDI measures supported by participating Allies.

- HVAC Pilot: the implementation team will explore the development of a pilot focused on HVAC upgrades and maintenance, with specific emphasis on technologies that can be installed as retrofits of existing HVAC systems, such as Demand Control Ventilation and Advanced Rooftop Controls.

## Evaluation Approach

The 2022 evaluation of the Small Business Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2022. Additionally, the evaluation team will conduct a set of process evaluation activities aimed at assessing the design and implementation of the Initiative.

### Research Objectives

#### Impact Questions

The 2022 impact evaluation will answer the following impact-related 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 2022 evaluation of the Small Business Initiative will also include process research, including interviews with implementation staff, review of initiative materials, and development of an Initiative PTLM. We 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? What specific processes are in place to overcome these barriers?
  - What role will SBDI, SBEP, and the HVAC pilot play in the overall strategy of the Initiative? How will they interact to best serve the target market?
  - Did the Initiative experience any implementation challenges in 2022? 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

This section outlines the planned tasks for the 2022 evaluation of the Small Business Initiative (Table 46).

Table 46. Summary of Small Business Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative design, implementation and performance in 2022. |
| Initiative Staff Interviews | | ✓ | Gather information about Initiative marketing, implementation, performance, and barriers. |
| PTLM Development | | ✓ | Collaborate with the Initiative team to document the intended outcomes of each channel and understand how the channels will work together to influence the target market. |
| Impact Analysis | ✓ | | Review Initiative tracking data to ensure that correct deemed input values and IL-TRM V10.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the Initiative tracking database and application of the IL-TRM V10.0. Estimate net impacts using SAG-approved NTGR values for 2021. |

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:* Submit data requests *Deliverable Date:* Ongoing

### Task 2. Initiative Staff Interviews

To support our evaluation, we will develop an in-depth interview guide for 2022 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 2022, 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 2022 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:* Conduct interviews *Deliverable Date:* July and November 2022

### Task 3. PTLM Development

The evaluation team will collaborate with Initiative staff to document each channel's activities, the market barriers they are designed to address, and the short- and long-term goals of the Initiative. This exercise will help to illustrate the role of each channel and how they will fit together to serve the target market segment. It

will also present opportunities for the evaluation team to provide early feedback on the Initiative's design and market strategy, while also identifying key process components to investigate through the participant surveys.

*Deliverable:* PTLM *Deliverable Date:* May 2022

### 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 V10.0 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 2022. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2022 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 2022 to provide the implementation team with early feedback on the performance of the Initiative.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* August 2022

*Deliverable:* Results provided in annual report *Deliverable Date:* March 15, 2023

### Task 5. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program impact report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program impact report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 47 summarizes the timing and budget associated with each evaluation activity.

Table 47. Small Business Initiative 2022 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 2022 | $4,000 |
| 3 | PTLM Development | | May 2022 | $11,900 |
| 4 | Impact Analysis | March 2023 | $39,200 | |
| 5 | Draft Annual Impact Report | | March 15, 2023 | $27,300 |
| | Comments from AIC and ICC Staff | | Within 15 business days | |
| | Final Annual Impact Report | | April 30, 2023 | |
| | | | **Total Budget** | **$87,400** |

## 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**: AIC has offered midstream incentives for efficient nonresidential lighting since PY7 (2014-2015). 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 2022, 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 will be implemented at a statewide level and is expected to launch during 2022. 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.

### Evaluation Approach

The 2022 evaluation of the Midstream Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2022.

#### Research Objectives

##### Impact Questions

The 2022 impact evaluation will answer the following impact-related 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 Midstream Lighting channel?

### Process Questions

The 2022 evaluation of the Midstream Initiative will also include process research, including interviews with implementation staff, review of initiative materials, and a participant survey with Midstream Lighting channel participants. We 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 2022? If so, what were they, and how were they overcome?
  - How satisfied were participants with Lighting channel processes?
  - 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 2022 Midstream evaluation (Table 48).

Table 48. Summary of Midstream Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative design, implementation and performance in 2022. |
| 2022 Initiative Staff Interviews | | ✓ | Gather information about Initiative marketing, implementation, performance, and barriers. |
| Midstream Lighting NTG & Process Research | ✓ | ✓ | Conduct NTG research with participating Midstream Lighting channel customers 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 V10.0 specified algorithms are used in calculating savings. Estimate |

| Activity | Impact | Process | Details |
|---|---|---|---|
| | | | gross impacts through review of the tracking database and application of the IL-TRM V10.0. |

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:* Submit data requests *Deliverable Date:* Ongoing

### Task 2. Initiative Staff Interviews

To support our evaluation, we will develop an in-depth interview guide for 2022 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 2022, 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 2022 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 2022

### Task 3. Midstream Lighting NTG and Process Research

The evaluation team will survey 2022 Lighting Channel participants, consistent with Illinois Statewide Net-to-Gross Methodologies as outlined in volume 4 of the IL-TRM V10.0, to estimate free-ridership and spillover associated with the channel. 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 NTGRs for Lighting Channel *Deliverable Date:* January 2023

*Deliverable:* Process results provided in a memo *Deliverable Date:* January 2023

### 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 V10.0 algorithms are used in calculating savings, and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2022. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2022 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 2022 to provide the implementation team with early feedback on the performance of the Initiative.

*Deliverable:* Interim impact analysis memo *Deliverable Date:* August 2022

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

#### Task 5. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program Impact Report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 49 summarizes the timing and budget associated with each evaluation activity.

Table 49. Midstream Initiative 2022 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 2022 | $6,000 |
| 3 | Midstream Lighting NTG & Process Research | January 2023 | $46,700 |
| 4 | Impact Analysis | March 2023 | $39,200 |
| 5 | Draft Annual Impact Report | March 15, 2023 | $27,300 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$125,200** |

## 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 Commissioning[26]
- 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 2022.

### Research Objectives

#### Impact Evaluation

The 2022 research objectives for the evaluation of the RCx Initiative focus on rigorous impact evaluation. The primary objective of the evaluation is to provide estimates of gross and net electric and gas savings associated with the Initiative. More specifically, the 2022 impact evaluation will answer the following questions:

- What are the estimated gross energy, demand, and therm impacts from the Initiative in 2022? What channels make up the largest proportions of these impacts?
- What are the estimated net energy, demand, and therm impacts from the Initiative in 2022?

#### Process Evaluation

We plan to conduct a limited assessment of Initiative processes in 2022. Our process analysis will primarily focus on changes made by the Initiative moving into 2022 and will be based on our review of Initiative materials and Initiative staff interviews. The 2022 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

[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.

- Did the Initiative's design and implementation change from 2021? If so, how? Why were these changes made?
- Did the Initiative experience any implementation challenges in 2022? 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 50 summarizes the 2022 evaluation activities proposed for the RCx Initiative.

Table 50. Summary of Retro-Commissioning Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative implementation and performance. |
| Initiative Staff Interviews | | ✓ | Explore changes made since 2021 and gather information about Initiative marketing, implementation, and 2022 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 2022 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

To support our evaluation, we will develop an in-depth interview guide for 2022 to explore RCx Initiative performance, changes made since 2021, 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 2022, 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 2022 to follow-up on any relevant items.

*Deliverable:* Completed interviews *Deliverable Dates:* June and November 2021

### 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 reviews[27] 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 2022 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 2022, 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:

- Conduct engineering desk reviews for a census of completed projects in 2022.
- Conduct engineering desk reviews and on-site M&V for a census of completed projects in 2022.
- Conduct engineering desk reviews for a census of completed projects in 2022, 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 2022 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

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

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 2022 net savings by applying SAG-approved NTGRs to electric and gas gross savings.

*Deliverable:* Gross impact analysis summary spreadsheet *Deliverable Date:* TBD[28]

*Deliverable:* Final analysis in annual report *Deliverable Date:* March 2023

#### Task 4. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program impact report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program impact report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 51 summarizes the timing and budget associated with each evaluation activity.

Table 51. Retro-Commissioning Initiative 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Material and Database Review | Ongoing | $2,500 |
| 2 | Initiative Staff Interviews | July and November 2022 | $3,500 |
| 3 | Impact Analysis | March 2023 | $40,000 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $20,000 |
| | Comments from AIC and ICC Staff | Within 15 business days | |
| | Final Annual Impact Report | April 30, 2023 | |
| | | **Total Budget** | **$66,600** |

## 4.2.6 Virtual Commissioning Offering

AIC launched Virtual Commissioning™, implemented by Power TakeOff, as a pilot in 2020. 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.

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

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 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 2022 evaluation of the Virtual Commissioning offering includes gross and net impact analysis activities and limited process analysis as outlined below. To support these efforts, the evaluation team plans to interview AIC, Leidos, and Power TakeOff staff involved with implementing and managing the channel, request and review relevant background materials and data, and complete an impact analysis.

### Research Objectives

The objective of the 2022 Virtual Commissioning channel evaluation is to provide estimates of gross and net electric savings associated with the channel and address a number of process questions. The 2021 evaluation will answer the following questions:

#### Impact Questions

- What are the estimated verified gross electric impacts from the channel?
- What are the estimated verified net electric impacts from the channel?

#### Process Questions

- Did the channel's design and implementation change from 2021? If so, how and why and was this an advantageous change?
- What have been the biggest successes of the channel? What have been the biggest challenges?
- What changes could AIC make to improve the customer participation experience?
- How effective are efforts to channel Virtual Commissioning participants to other AIC Initiatives?

### Evaluation Tasks

Table 52 summarizes the research activities planned for the 2022 Virtual Commissioning channel evaluation.

Table 52. Summary of Virtual Commissioning Evaluation Activities for 2022

| Activity | Impact | Process | 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 2021 and gather information about 2022 design and implementation. |
| Impact Analysis | ✓ | | Determine appropriate modeling approach for 2022. Calculate verified gross and net electric 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 2022 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 2022. These interviews will provide AIC and implementation staff with an opportunity to discuss their goals for the channel, highlight evaluation priorities for 2022, 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 December 2022

### Task 3a. Impact Analysis

The Virtual Commissioning channel partnership is built upon a pay for performance model, in which AIC pays Power TakeOff for savings achieved at the meter, which means that arriving at accurate estimates of savings takes on a new importance. 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.

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 2022.

*Deliverable:* Findings in draft report *Deliverable Date:* March 2023

### Task 3b. 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 2022 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 2022

*Deliverable:* Findings in draft report *Deliverable Date:* March 2023

#### Task 4. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program Impact Report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 53 summarizes the timing and budget associated with each evaluation activity.

Table 53. Virtual Commissioning Evaluation Schedule and Budget

| Task | Evaluation Task | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Material & Database Review | Ongoing | $11,800 |
| 2 | Initiative Staff Interviews | July and December 2022 | $5,000 |
| 3 | Impact Analysis | March 2023 | $47,200 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $36,900 |
| | Comments from AIC and ICC Staff | Within 15 business days | |
| | Final Annual Impact Report | April 30, 2023 | |
| **Total Budget** | | | **$100,900** |

## 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. 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.

## Evaluation Approach

The 2022 evaluation of the Streetlighting Initiative will focus on impact evaluation efforts to quantify savings achieved by the Initiative in 2022.

### Research Objectives

#### Impact Questions

The 2022 impact evaluation will answer the following impact-related 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 2022 Streetlighting evaluation (Table 54).

Table 54. Summary of Streetlighting Initiative Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about Initiative design, implementation and performance in 2022. |
| 2022 Initiative Staff Interviews | | ✓ | Explore changes made since 2021 and gather information about 2022 design and implementation. |
| Impact Analysis | ✓ | | Review Initiative tracking data to ensure that correct deemed values and IL-TRM V10.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V10.0. |

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:* Submit data requests *Deliverable Date:* Ongoing

#### Task 2. Staff Interviews

To support our evaluation, we will develop an in-depth interview guide for 2022 to explore Initiative implementation, performance, and other topics relevant to our research objectives. 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 2022, 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 2022 to follow-up on any relevant items.

*Deliverable:* Completed interviews *Deliverable Date:* July and November 2022

#### 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 V10.0 algorithms are used in calculating savings, and will replicate savings calculations to ensure accuracy. This step will produce gross savings estimates for 2022. In addition, we will calculate net savings by applying the SAG-approved NTGRs for 2022 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 2022.

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

#### Task 4. Reporting

The evaluation team will provide all impact findings in the Business 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 Business Program Impact Report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2023

### Evaluation Budget and Timeline

Table 55 summarizes the timing and budget associated with each evaluation activity.

Table 55. Streetlighting Initiative 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Material and Database Review | Ongoing | $4,500 |
| 2 | Initiative Staff Interviews | October 2022 | $4,500 |
| 3 | Impact Analysis | March 2023 | $18,500 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $17,900 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$45,400** |

## 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.

In 2022, BOC will transition to a prescriptive savings approach based on the algorithm outlined in IL-TRM V10.0. The previous impact approach required a year lag between participation and impact evaluation. Since the prescriptive approach does not require this lag period, the 2022 impact evaluation will include energy savings from both 2021 and 2022 participants -- since 2021 participants were not included in the 2021 impact evaluation due to lag period.

## Evaluation Approach

The evaluation team conducted very detailed BOC evaluations in the 2018-2021 cycle. Given the level of scrutiny BOC has achieved in the past, coupled with the newly prescriptive nature of the BOC savings approach, we anticipate a very low-effort evaluation of BOC in 2022.

### Research Objectives

#### Impact Questions

The 2022 impact evaluation will answer the following impact-related questions:

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

#### Process Questions

In addition, we will seek to answer the following process-related questions:

- How many unique customers/organizations participated in the Initiative?
- Did the implementation of the training change from 2021? If so, how and why? Did these changes result in their intended outcomes?
- Did the implementation team experience any challenges in 2022? If so, what were they, and how were they overcome?

### Evaluation Tasks

This section outlines the planned tasks for the 2022 BOC evaluation (Table 56).

Table 56. Summary of Building Operator Certification Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Initiative Material and Database Review | ✓ | ✓ | Gather information about BOC implementation and performance. |

| Activity | Impact | Process | Details |
|---|---|---|---|
| 2022 Initiative Staff Interviews | | ✓ | Explore changes made since 2021 and gather information about 2022 design and implementation. |
| 2021 and 2022 Impact Analysis | ✓ | | Review initiative tracking data to ensure that correct deemed values and IL-TRM V10.0 specified algorithms are used in calculating savings. Estimate gross impacts through review of the tracking database and application of the IL-TRM V10.0. |

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:* Submit 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 2022 BOC training. The interviews will also cover ex ante savings calculations and data collection, aggregation, and transfer processes.

*Deliverable:* Completed interviews *Deliverable Date:* October 2022

### Task 3. Impact Analysis

The evaluation team will calculate verified energy, demand, and therm savings for the 2021 and 2022 BOC participants using the prescriptive algorithm defined in IL-TRM V10.0 and participant, organization, and facility information from AIC's tracking database.

Given the simplicity of the impact approach used, we do not plan to conduct an interim impact evaluation for BOC in 2022.

*Deliverable:* Analysis in draft annual impact evaluation report *Deliverable Date:* March 2023

### Task 4. Reporting

The evaluation team will include impacts from 2021 and 2022 BOC training participants in the draft Business 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 Business Program Impact Report *Deliverable Date:* March 15, 2023

*Deliverable:* Chapter in final annual Business Program Impact Report *Deliverable Date:* April 30, 2023

## Evaluation Budget and Timeline

Table 57 summarizes the timing and budget associated with each evaluation activity.

Table 57. Building Operator Certification 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Initiative Material and Database Review | Ongoing | $1,200 |
| 2 | Initiative Staff Interviews | October 2022 | $1,200 |
| 3 | Impact Analysis | March 2023 | $3,800 |
| 4 | Draft Annual Impact Report | March 15, 2023 | $3,800 |
| | Comments from AIC and ICC Staff | Within 15 Business Days | |
| | Final Annual Report | April 30, 2023 | |
| **Total Budget** | | | **$10,000** |

### 4.2.9 Cross-Cutting Business Program Evaluation Activities

The Standard and Custom Initiatives are operated in an integrated manner with the same implementer and resources shared across initiatives. Therefore, the evaluation team plans to conduct process research for these Initiatives in a cross-cutting fashion.

#### Task 1. Energy Advisor Interviews

We will conduct interviews with the Business Program Energy Advisors in October 2022. The interviews will cover topics such as Energy Advisors' perceptions of customer interest in the initiatives, interactions with customers, processes for coordination between the Energy Advisors and Key Account Executives, success bringing projects into the initiatives, and suggestions for improvements to the Initiatives. The interviews will include a particular focus on changes to implementation in the 2022 cycle, and how these changes affected the Initiatives. We will plan to interview all active Energy Advisors.

#### Evaluation Budget and Timeline

Table 58 summarizes the timing and budget associated with 2022 evaluation activities.

Table 58. Standard and Custom 2022 Process Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Energy Advisor Interviews | October 2022 | $29,900 |

## 4.3 Voltage Optimization Program

In 2022, 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 2022.

#### Evaluation Approach

The 2022 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, 2023, covering the 2022 program year. This report will include information on 2022 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 59 summarizes the 2022 evaluation activities planned for the VO Program.

Table 59. Summary of Voltage Optimization Evaluation Activities for 2022

| Activity | Impact | Process | Details |
|---|---|---|---|
| Program Staff Interviews | ✓ | | Explore program status, progress deploying VO technology, and potential ramifications for the 2022 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 2022 impacts using algorithmic approach; deliver interim impact results in May, August, and November 2022. |

### Task 1. Program Staff Interviews

We will conduct an interview with AIC engineering staff in early 2022 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:* March 2022

### Task 2. Data Request and Materials Review

The evaluation team will request data needed to calculate impacts using the approach outlined in IL-TRM V10.0. 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 2022 to support providing interim impact results to AIC, and we will submit a final data request in early 2023 to support the final, annual impact analysis.

*Deliverable:* Data requests *Deliverable Date:* May and September 2022, January 2023

### 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 2018-2021. This analysis will take place in early 2023 following a data request by January 2023.

*Deliverable:* VO verification findings in annual impact evaluation report *Deliverable Date:* March 2023

### Task 4. Impact Analysis

The evaluation team will use the methodology detailed in IL-TRM V10.0 to calculate energy savings and summer coincident peak demand impacts from VO. The evaluation team will calculate interim energy savings three times throughout 2022 before delivering final energy savings and peak demand savings results in the annual impact report in March 2023.

*Deliverable:* Interim memos and evaluation dashboards *Deliverable Date:* May, July, and November 2022

*Deliverable:* Results provided in annual impact evaluation report *Deliverable Date:* March 2023

### Task 5. Reporting

The evaluation team will provide all impact findings in the annual impact evaluation report in March 2023. 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:* Results provided in annual impact evaluation report *Deliverable Date:* March and April 2023

### Task 6. Program Support

As discussed in Section 3.3, the evaluation team expects to provide as-needed support to AIC around a number of key items for the VO Program in 2022, including but not necessarily limited to IL-TRM measure review, review of voltage modeling assumptions used by the AIC team vs. those used by the evaluation team, assessment of the viability of additional VO investments, and investigation into VO measure life. The evaluation team has reserved budget to support these activities as needed.

*Deliverables:* As needed *Deliverable Dates:* As needed

## Evaluation Budget and Timeline

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

Table 60. Voltage Optimization 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Program Staff Interviews | March 2022 | $7,200 |
| 2 | Data Request and Materials Review | May & September 2021, January 2022 | $60,500 |
| 3 | Verification of VO Deployment to Date | January 2022 | $36,300 |
| 4 | Impact Analysis: Application of Energy Savings Algorithm | July & November 2021, March 2022 | $116,000 |
| 5 | Draft Annual Impact Report | March 15, 2022 | $40,000 |
| | Comments from AIC and ICC Staff | Within 15 business days | |

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| | Final Annual Impact Report | April 30, 2022 | |
| 6 | Program Support | Ongoing | $50,000 |
| | | **Total Budget** | **$310,000** |

## 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 2022. 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 2022 materially 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.

### 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 amongst trade allies and end users;
- Lack of skills amongst 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 2022 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 2022 evaluation activities:

- How was the Pilot implemented in 2022?
- Was Pilot implementation effective and streamlined?
- In what areas could the Pilot improve to increase its overall effectiveness, or ease of implementation?
- What implementation challenges occurred in 2022, and how did Pilot staff overcome them?

- What were the biggest successes for the Pilot in 2022? What were the biggest drivers behind these successes?
- Were participants satisfied with the Pilot? How was their experience with the participation process?

## Evaluation Tasks

Table 61 summarizes the 2022 evaluation activities planned for the LLLC Pilot.

Table 61. Summary of LLLC Pilot Evaluation Activities for 2022

| Activity | Impact | Process | Forward Looking | Details |
|---|---|---|---|---|
| Pilot Materials Review | ✓ | ✓ | ✓ | 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. |
| Pilot Staff Interviews | | ✓ | | Conduct interviews with AIC and implementation staff to further understand Pilot design and implementation for 2022. |
| Trade Ally Interviews | ✓ | ✓ | ✓ | Conduct interviews with trade allies and internal AIC staff who enroll in the LLLC Pilot training sessions at several different points throughout the year. We will use results from these interviews to determine the increase in LLLC awareness and knowledge following the training. |
| Baseline Survey with Non-participating End Users | ✓ | ✓ | | Conduct surveys with a representative sample of end users that do not receive LLLC incentives in 2022 to understand the baseline awareness and understanding of LLLCs in the market. |
| Survey with Participating End Users | ✓ | ✓ | ✓ | Conduct surveys with customers that do receive incentives through the pilot to explore program attribution components and estimate a first year NTGR. |

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. Pilot Staff Interviews

The evaluation team will conduct in-depth phone interviews with implementation staff from AIC and partners at different points throughout the first year of the pilot's operation. We will focus these interviews on the processes for the delivery of different components of the pilot, early implementation successes and challenges, and any changes to pilot's design that occur over the course of its first year. These interviews will

allow us to fully explore the details of the Pilot design and implementation and to examine the perspective of the people who are in direct contact with participating trade allies and processing Pilot payments and data.

*Deliverable:* Completed interviews *Deliverable Date:* April and December 2022

### Task 3. Trade Ally Interviews

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 interviews—**Develop a baseline estimate for trade allies' understanding of LLLC technology prior to participating in the training.
- **Immediate post-training interviews**—Immediately following the training, the evaluation team will complete a short interview with participates to assess their reactions to and satisfaction with the trainings.
- **Post-training interviews**—Several months post training, the evaluation team will interview participating trade allies to assess if and how the trainings may affect their day-to-day activities. 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:* Completed assessments *Deliverable Date:* Dependent upon training dates

### Task 4. Baseline Customer Survey

The evaluation team will conduct a survey with a sample of end users that did not receive incentives through the LLLC Pilot. Through this survey, our team will develop current estimates of familiarity with LLLC technology, savings potential, and non-energy benefits amongst nonresidential building owners, property managers, and decision makers. We will look to repeat this non-participant survey 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:* Completed assessments and interim memo *Deliverable Date:* July 2022

### Task 5. Participant Survey with End Users

The evaluation team will conduct surveys with customers that purchased LLLCs and received incentives through the Pilot. In addition to collecting data on customers' experiences, we will consider collecting data to estimate an LLLC-specific NTGR.

*Deliverable:* Interim memo *Deliverable Date:* October 2022

## Evaluation Budget and Timeline

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

Table 62. LLLC Pilot 2022 Evaluation Schedule and Budget

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 1 | Pilot Materials Review | Ongoing | $13,200 |

| Task | Evaluation Activity | Deliverable Date | Budget |
|---|---|---|---|
| 2 | Pilot Staff Interviews | April and December 2022 | $5,800 |
| 3 | Trade Ally Interviews | May 2022 and December 2022 | $45,000 |
| 4 | Baseline Customer Survey | July 2022 | $31,000 |
| 5 | Participant Survey with End Users | October 2022 | $30,400 |
| 6 | Reporting | March 15, 2023 | $21,300 |
| **Total Budget** | | | **$147,000** |

## 4.5 2022 Evaluation Budget Summary

The following table outlines the estimated budget to execute the detailed 2022 evaluation plans presented above, as well as budget allocations for other overarching portfolio activities.[29] Estimated budget includes budget holds for additional pilot evaluations and expected LINA and Empower Communities followup research.

Table 63. 2022 AIC Evaluation Budget

| Evaluation Activity | | Budget |
|---|---|---|
| **Program-Specific Activities** | | |
| Residential Program | Retail Products | $217,600 |
| | Market Rate Single Family - Midstream HVAC | $249,100 |
| | Market Rate Single Family - Home Efficiency | $57,200 |
| | Direct Distribution | $97,200 |
| | Income Qualified (SF) | $215,000 |
| | Smart Savers | $71,700 |
| | Multifamily Initiatives | $162,800 |
| | Manufactured & Mobile Homes Study | $90,600 |
| Business Program | Standard | $90,500 |
| | Custom | $321,500 |
| | Small Business | $87,400 |
| | Midstream | $125,200 |
| | Retro-Commissioning | $66,600 |
| | Virtual Commissioning | $100,900 |
| | Streetlighting | $45,400 |
| | Building Operator Certification | $10,000 |
| | Energy Advisor Interviews | $29,900 |
| Pilots | | $247,000 |
| *Total Program-Specific Activities* | | *$2,285,600* |
| **Portfolio-Level Cross-Cutting Activities** | | |
| Non-Energy Impacts Research | | $80,000 |
| LINA & EC Followups | | $150,000 |
| 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 | | $60,000 |
| Other Non-Program Activities (Project Management, Evaluation Planning, etc.) | | $510,000 |
| *Total Portfolio-Level Cross-Cutting Activities* | | *$1,185,000* |
| Contingency | | $108,963 |
| **Total** | | **$3,579,563** |

[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.

## For more information, please contact: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