Guidehouse
Outwit Complexity

Nicor Gas Evaluation Plans – 2022-2025 Compendium

2024 Update - FINAL

Presented to:

Nicor Gas

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1. Introduction

This document presents evaluation, measurement, and verification (EM&V) plans for evaluating Nicor Gas energy efficiency programs in 2022 through 2025, which is Energy Efficiency Plan (EEP) 2022-2025 (Plan 4). The next sections include an overview of evaluation approaches and a proposed high-level schedule for program year evaluation tasks. The Appendix includes program-level evaluation plans.

When developing and implementing this plan, Guidehouse will coordinate with and/or seek input from other Illinois utilities (ComEd, Peoples Gas and North Shore Gas, Ameren Illinois) and their evaluators, the SAG, ICC staff, and the TRM administrator:

- When planning evaluation research and survey activities
- When conducting evaluation research where collaboration to achieve broader coverage and larger sample sizes may improve the research results

This portfolio EM&V plan will be updated annually to reflect updated research priorities. Specifically, Guidehouse will submit proposed updates to the portfolio EM&V plan annually by December 15. This updated draft evaluation plan shall be submitted to Program Administrators, the SAG Facilitator, and ICC Staff concurrently for review and comment, including a summary outline of actual evaluation activities that have occurred already, as well as tentatively planned and proposed evaluation activities for the four-year portfolio EM&V plan.

2. Core Evaluation Tasks

The next sections present an overview of the core evaluation tasks with summary tables. The Appendix provides detailed, program-level evaluation plans. The core evaluation tasks are:

- Impact Evaluation
- NTG Research and Framework Application
- Market Transformation Evaluation
- Portfolio Research
- Evaluation Portfolio Support and Reporting

2.1 Impact Evaluation

The primary goal of impact evaluation is to verify the gross and net savings claimed by Nicor Gas to be applied toward statutory goals. The effort has secondary goals of improving the accuracy of ex ante impact estimates, improving the accuracy and relevance of the TRM, and improving the accuracy and usefulness of the program tracking systems.

2.1.1 Guiding Principles

1. Verify the gross and net savings to be applied toward statutory goals for all programs each Nicor Gas program year. Use gross savings calculated from the Illinois Technical Reference Manual (TRM) or custom impact evaluation research and calculate net savings by applying the Illinois Energy Efficiency Stakeholder Advisory Group (SAG) deemed net-to-gross (NTG) value. When programs are delivered jointly with electric utilities, calculate verified gross natural gas savings without interactive effects from the reduction of electricity usage.
2. Where practical, conduct impact evaluations and measure research using randomized controlled trials (RCT) or quasi-experimental design (QED) and energy consumption data. When Guidehouse believes that RCTs or QEDs are not practical, as part of its evaluation plan, we will provide an explanation and support for its decision.
3. Coordinate impact evaluation of jointly delivered programs with the ComEd evaluation team to reduce duplication of work, customer disruption, and evaluation spending.
4. Conduct technical reviews and gather Illinois-specific data to update the TRM and recommend updated verification approaches for applicable measures.

2.1.2 Approach

The impact analysis of a program portfolio will typically include the following components:

- **Program Tracking Data Review**. Verify the type of measures installed and the quantities claimed for accuracy as reported in the program tracking database and supplemental data provided by implementation contractors.

- **Savings Verification for TRM-Based Measures**. For TRM-based measures, Guidehouse will verify ex ante gross measure savings against the allowable input values and algorithms provided in the relevant ICC-approved version of the TRM.
- **Savings Verification for Custom Measures.** For non-TRM "custom" measures, Guidehouse will conduct evaluation research to verify gross impacts. For each project selected for the participant research sample, an in-depth application review is performed to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. For each measure in the sampled project, engineers estimate verified gross savings based on their review of documentation and engineering analysis. Validation of savings through gas consumption (billing) data analysis may be used in combination with the engineering review for individual sites. Site-specific data will be collected for a subset of sampled projects, either through telephone interviews with site contacts, or an onsite visit that follows required safety protocols. For most projects, onsite data collection includes interviews that are completed at the time of the onsite visit, visual inspection of the systems and equipment, recording EMS settings, and collecting energy management system (EMS) trend data or production records when available and necessary. To support this review, Guidehouse requests project documentation in electronic format for each sampled project.
- **Gross Realization Rates**. The evaluation team will calculate gross savings realization rates to adjust ex ante savings based on verified gross savings estimates. The realization rate is defined as the percentage of ex ante gross savings achieved as determined through the independent evaluation review. A realization rate of 1.0, or 100%, indicates no difference between the ex ante gross and verified gross savings for a particular measure. For 2024, the evaluation team will consider applying the 2023 realization rate to reported savings for select programs.[1] In such instances, the evaluation team will confirm the program tracking data is consistent with the previous year and calculate verified net savings by applying the previous year's realization rate to the program tracking data review results. If the program tracking data is inconsistent (for example, due to a substantial savings calculation change or new measure added to the program), the evaluation team may adjust the plan to re-evaluate the identified discrepancy (at the measure, end use, or program level, as appropriate, based on the program and portfolio savings impact).
- **Parallel Path / Large Project Review**. Guidehouse will conduct project file reviews that fall under a "Parallel Path" designation. These are projects that the implementation contractor has identified early in the project application cycle that may pose a risk to realization of verified gross impacts, either due to the size of the project, the complex technical nature, or difficulty in baseline determination. As budget allows, Guidehouse conducts a review of project documentation and energy saving estimates and prepares a brief response that identifies further questions or revisions to the gross savings estimates. The findings are discussed with the implementation contractor, who then adopts the findings going forward or proceeds as originally intended with a better knowledge of evaluation risk for the project.
- **Impact Sampling.** For custom measures, impact-related sampling will be designed to achieve a 90%/±10% level of confidence and precision at the program level and may

1 A program that accounts for less than 3% of portfolio savings and has a history of consistent verified savings realization rates with values close to 100% at both the measure level and program level will be considered for applying the previous year's realization rates. Candidate programs include Elementary Energy Education, Income Eligible Kits (both Single Family and Multifamily), Energy Savings Kits, and Public Housing Energy Savings programs.

also include selected high priority measures at the 90/10 level. Savings verification of TRM-based measures is performed on a census of claimed installations (not sampled).

- **Consumption Data (Billing) Analysis with Statistical Validation Check**. A standard regression approach for estimating program natural gas energy savings is a preferred method for the evaluation of the energy use impacts of certain programs and measures. Guidehouse will perform billing analysis to evaluate programs, projects, and measures when appropriate. Where practical, program evaluations will be conducted using RCTs or QEDs. When Guidehouse believes that RCTs or QEDs are not practical, we will provide an explanation and support for this decision as part of the program's evaluation plan.
- **Net Savings Verification**. The net savings impact evaluation for each measure will apply the net-to-gross (NTG) ratio deemed through the Illinois SAG consensus process.
- **Jointly Implemented or Coordinated Programs.** Evaluations of joint or coordinated programs will be designed to meet the needs of Nicor Gas and ComEd, as well as other Illinois utilities, when appropriate. When programs are delivered jointly with electric utilities, Guidehouse calculates verified gross natural gas savings without applying an interactive effects penalty from the reduction of electricity usage.

2.1.3 Deliverables and Timing

- **Interim Impact Evaluation.** Guidehouse will conduct mid-year impact evaluation for most programs[2] if data are available prior to the end of year. Guidehouse will conduct a review of the adjustable savings goal calculations in December (if available) and January, checking for correct adoption of updated TRM algorithms and inputs. For programs with TRM-based measures, Guidehouse will conduct an interim review of per-unit savings from tracking data during the third quarter (results by September 16 if data is available by July 5). For programs with non-TRM custom measures, Guidehouse will draw savings verification samples one to three times during the program-year, depending on the number of completed projects, with the first sample drawn about July 1. Guidehouse will review implementer developed ex ante savings calculations if requested or when a new delivery channel is added to the portfolio.
- **End of Year Impact Evaluation.** Final program year impact evaluation will take place after the program-year ends when we receive final tracking data, expected by January 30. The target delivery for draft joint reports is March 15, with all joint reports final by April 30. For Nicor Gas only programs, best efforts will be made to deliver a draft report by March 15 and a final report by April 30. However, this schedule is dependent on delivery of final tracking data by January 30 of each year and adherence to review schedules. For Nicor Gas only programs with only TRM-based measures, we expect draft delivery not later than April 15, with final reports by June 3. For programs with custom measures, we expect draft delivery not later than May 6, with final reports by June 24. We expect billing usage analyses will occur after the end of the program year when final billing data is available (which may be several weeks after January 30) and may include multiple program years to accommodate a full heating season.

[2] Programs that account for less than 1% of portfolio savings and have a history of realization rates near 100% may not receive interim impact review.

Table 2-1 and Table 2-2 summarize the impact evaluation approach by program and market offering.

Table 2-1. Income Qualified and Residential Programs Impact Evaluation Approach for 2024

Program/Market Offering	Gross Impact Evaluation Approach	Custom Project Parallel Path Review	Interim Review Type
Income Qualified Programs			
Single Family Weatherization*			
IHWAP, Contractor Channel and Healthy Home	TRM	--	TRM
Multi-Family Weatherization*			
IHWAP, Contractor Channel and Healthy Home	TRM & Custom	If Requested	TRM
Public Housing Authority†	2023 RR	If Requested	TRM‡
Affordable Housing New Construction	Custom	If Requested	--
Energy Saving Kits†	2023 RR	--	TRM‡
Residential Programs			
Energy Education & Outreach†			
Energy Education Kits*	2023 RR	--	TRM‡
Energy-Saving Kits	2023 RR	--	TRM‡
Home Energy Reports	RCT Pop. Consumption Data Analysis	--	--
Home Energy Savings*			
Assessments and DI	TRM	--	TRM
Advanced Thermostats	TRM	--	TRM
Weatherization Rebates	TRM	--	TRM
Home Energy Efficiency Rebates			
Space & Water Heating Rebates	TRM	--	TRM
Advanced Thermostats	TRM	--	TRM
Residential New Construction	TRM	--	TRM
Multi-Family Program			
Assessments and DI	TRM	--	TRM
Rebates: Prescriptive	TRM	--	TRM
Rebates: Custom	Custom	If Requested	Q3, Q4 Samples
Central Plant Optimization	TRM	--	TRM

Source: Guidehouse.

* Jointly implemented with ComEd

† Programs that evaluation may use previous year's realization rate.

‡ Interim review will be conducted only if our review of the tracking database finds substantial changes from 2023.

Table 2-2. Business and Public Sector Programs Impact Evaluation Approach for 2024

Program/Market Offering	Gross Impact Evaluation Approach	Custom Project Parallel Path Review	Interim Review Type
Business and Public Sector Programs			
Business Energy Efficiency Rebates			
Assessment and DI	TRM	--	TRM
Rebates	TRM	--	TRM
Business Optimization	TRM	--	TRM
Commercial Food Service	TRM	--	TRM
Coordinated† New Construction	Custom	--	Q3 Sample
Business Custom			
Custom Incentives	Custom	If Requested	Q3, Q4 Samples
Combined Heat and Power	Custom	If Requested	--
Stand-Alone Retro-Commissioning	Custom	If Requested	Q3, Q4 Samples
Coordinated† Retro-Commissioning	Custom	--	Quarterly Sample
Small Business			
Assessments and DI	TRM	--	TRM
Rebates: Prescriptive	TRM	--	TRM
Rebates: Custom	Custom	--	Q3, Q4 Samples
Strategic Energy Management*	Custom	If Requested	--
Building Operator Certification	TRM	--	--

Source: Guidehouse.

* Jointly implemented with ComEd

† Coordinated with ComEd

2.2 NTG Research and Framework Application

The primary goal of the NTG research is to estimate the change in energy consumption that is attributable to a particular energy efficiency program or to the combined influence of the energy efficiency portfolio. The net savings analysis requires the evaluator to assess the influence of Nicor Gas programs versus other factors on the customer's decision to install energy efficiency measures, either through the programs or outside of these. This change in energy use may include consideration of factors such as free-ridership, participant and non-participant spillover, and induced market effects. The NTG research efforts have secondary goals of identifying strategies for improving net savings and gathering additional feedback from participants to improve the program.

2.2.1 Guiding Principles

1. Estimate the NTG ratio for each program, including adjustments for free-ridership and spillover, to support annual prospective deeming of NTG ratios consistent with the Illinois

NTG Policy. Conduct NTG research at least once during the four-year program cycle for each program following the NTG protocols in the TRM and when the program or market changes substantially. Some programs do not require primary NTG research when NTG values are deemed by consensus without primary research.

2. Where budget and schedule can accommodate, target a larger number of completions for NTG surveys than the minimum required for a 90%+/-10% level of confidence and precision program-level result.
3. Wherever possible, consider performing free-ridership research online in real time (soon after the participant decision is made), following TRM protocols, and collect spillover information after participants have had ample opportunity to take additional actions.
4. A sector or Portfolio-level Spillover analysis should be considered by each utility at least once every Plan period when it is feasible and considered viable by evaluation.[3]

2.2.2 Approach

Evaluation efforts will measure net savings considering free-ridership and participant spillover in all programs (except those where consensus values are deemed statewide without further research), and, where supported by the program delivery model, non-participant spillover and market transformation effects. The NTG surveys may include process questions as an optional research task, decided on a case-by-case basis in consultation with Nicor Gas.

The NTG analysis will apply, follow, and incorporate the Illinois Statewide NTG Methodologies Framework (NTG Framework or Framework) agreed to among the Illinois SAG participants, approved by the Illinois Commerce Commission, and documented in the effective Illinois TRM Version and any subsequent updates to the Illinois NTG Methodologies Framework.

Guidehouse expects that most NTG research can be conducted through online surveys, supplemented by telephone interviews in some studies. Using program tracking data with participants' email addresses, telephone numbers, and mailing addresses, we will conduct research on participant free ridership through a survey via online (preferred) and/or telephone (if needed). The surveys will target customers and include trade allies if they are important to the program delivery approach. If the program supports it and Nicor Gas is willing, we can survey participants who submit their program applications online to be able to click through the application confirmation page to take the survey. Otherwise, shortly after completing their project, participants with email addresses will receive an email invitation to the online survey. Participants without email addresses may be solicited through the postal service to take an online survey or will be sampled for a telephone survey if they are a significant proportion of the population.

Spillover surveys may be conducted online or through a telephone interview, but timing must allow ample time for spillover actions to take place, usually 12 to 18 months after project completion. Guidehouse will target participating customers for participant spillover research and, if indicated by the program theory, the trade ally perspective on participant and non-participant spillover. Non-participating customers are the target for sector-level non-participant spillover.

[3] Illinois Energy Efficiency Policy Manual Version 3.0, Section 7.5, Free Ridership and Spillover.

2.2.3 Deliverables and Timing

Deliverables include:

- Draft and final survey research instruments
- Non-confidential data from survey respondents, upon request
- Draft and final NTG research findings memos
- NTG recommendations for SAG consensus

The timing for NTG research is driven by an Illinois energy efficiency policy requirement for the evaluators to send initial NTG recommendations to the SAG for the upcoming program year by September 1.

- **October 1 to January 15**: Initiate the next round of NTG research with interviews with program staff on program design, delivery, and marketing and customer targets to inform survey development. Produce a draft survey instrument during Q4, allow Nicor Gas 15 days for initial review, revise, and reach a final version by January 15.
- **January 15 to April 30**: Prepare survey for fielding and launch. Survey field data collection occurs for five to six months when online surveys and rolling telephone interviews are employed. The survey ends when sample quotas are reached.
- **May 1 to July 15**: Analyze NTG data and report results. When NTG research is conducted on a program, the results will be summarized in a memo that is delivered in draft not later than July 15.
- **July 15 to August 31**: Finalize all NTG research memos.
- **September 1**: Evaluators send initial NTG recommendations to the SAG, as required by Illinois Policy.
- **September 1 to September 30**: Evaluators present initial recommended NTG ratios for each energy efficiency program, subprogram, and/or measure group (where applicable) to the SAG, intended to represent the best estimates of future actual NTG values likely to occur for the upcoming program year. SAG participants, Nicor Gas, and Guidehouse will make best efforts to reach consensus by October 1 regarding NTG ratios appropriate for deeming for the upcoming program year.
- **October 1**: Final consensus NTG ratios for deeming for the upcoming program year beginning January 1.
- **January 1**: New consensus NTG ratios in effect.

Table 2-3 and Table 2-4 summarize the NTG research approach by program and market offering.

Table 2-3. Residential NTG Research Approach and Timing

Program / Market Offering	Previous NTG Research	Free-ridership Approach	Spillover Approach	Timing	New NTG Effective
Residential Programs					
Sector-Level NPSO	--	--	Online	Completed 2022	2023
Energy Education & Outreach					
Energy Education Kits	--	Deemed	Deemed	--	--
Energy Saving Kits	2021	Online	Online	Start Q4 2024	2026
Home Energy Reports	--	RCT	RCT	--	--
Home Energy Savings					
Assessments and DI	2018	Online / Real-Time Post-Participation	Online	Completed 2023	2024
Advanced Thermostats	Secondary	Online / Real-Time Post-Participation	Online	Completed 2023	2024
Weatherization Rebates	2019	Online / Real-Time Post-Participation	Online	Start Q4 2023	2025
Home Energy Efficiency Rebates					
Space & Water Heating Rebates	2020	Online / Real-Time Post-Participation	Online	Start Q4 2024	2026
Advanced Thermostats†	Secondary	Online / Real-Time Post-Participation	Online	Continue Q4 2024	2026
Residential New Construction	Secondary	Online + Telephone	Online + Telephone	Start Q4 2024	2026
Multi-Family Program					
Assessments and DI	2019	Online + Telephone	Online + Telephone	Start Q4 2024	2026
Rebates: Prescriptive	2019	Online + Telephone	Online + Telephone	Start Q4 2023	2025
Rebates: Custom	2019	Online + Telephone	Online + Telephone	Start Q4 2023	2025
Central Plant Optimization	2019	Online + Telephone	Online + Telephone	Start Q4 2023	2025

Source: Guidehouse.

† Research slated to be completed in Q3 2023; however, due to some issues associated with instances where rebates were provided to trade allies, this research will continue in 2024-2025 and be combined with prior research for NTG reporting in September 2025.

Table 2-4. Business and Public Sector NTG Research Approach and Timing

Program/Market Offering	Previous NTG Research	Free-ridership Approach	Spillover Approach	Timing	New NTG Effective
Business and Public Sector Programs					
Sector-Level NPSO	--	--	Online+ Telephone	Start Q1 2023	2024
Business Energy Efficiency Rebates					
Assessment and DI	2019	(Online + Telephone) / Real-Time Post-Participation	Online + Telephone	Start Q4 2023	2025
Rebates	2019	(Online + Telephone) / Real-Time Post-Participation	Online + Telephone	Start Q4 2023	2025
Business Optimization	Secondary	(Online + Telephone) / Real-Time Post-Participation	Online + Telephone	Start Q4 2023	2025
Commercial Food Service	Secondary	(Online + Telephone) / Real-Time Post-Participation	Online + Telephone	Start Q4 2024	2026
Coordinated New Construction†	2021	(Telephone) / Real-Time Post-Participation	Telephone	Completed 2023 Start Q4 2024	2024 2026
Business Custom					
Custom Rebates	2021	(Online + Telephone) / Real-Time Post-Participation	Online + Telephone	Start Q4 2024	2026
Combined Heat and Power	Secondary	Telephone	Telephone	As Needed	-
Coordinated Retro-Commissioning	2021	Online + Telephone	Online + Telephone	Start Q4 2023	2025
Stand-Alone Retro-Commissioning††	2021	Telephone	Telephone	Start Q4 2023	2025
Small Business					
Assessments and DI	2021	(Online + Telephone) / Real-Time Post-Partic.	Online + Telephone	Start Q4 2024	2026
Rebates: Prescriptive	2021	(Online + Telephone) / Real-Time Post-Partic.	Online + Telephone	Start Q4 2024	2026
Rebates: Custom	2021	(Online + Telephone) / Real-Time Post-Partic.	Online + Telephone	Start Q4 2024	2026

Source: Guidehouse.

† Conducted twice during the 2022-2025 Period.

†† Level of activity in this program is very small, so NTG research is not likely to be conducted in 2023-2024 as indicated but will be revisited in 2024-2025.

Table 2-5 provides the NTG survey schedule by year.

Table 2-5. NTG Research Schedule by Year

			2022				2023				2024				2025				2026
Program (s)	Target/Measures	Research	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Residential Sector	All Measures	NPSO																	
Home Energy Efficiency Rebates	Advanced Thermostats	FR, PSO																	
Home Energy Savings	Advanced Thermostats, Assessments, and Direct Install	FR, PSO																	
Coordinated NRNC	All C&I and Public Sector	FR, PSO																	
Non-Residential Sector	All Measures	NPSO																	
Home Energy Savings	Weatherization	FR, PSO, TA													EFF				
Multi-Family	All Measures except Assessments/DI	FR, PSO, TA													EFF				
Business Energy Efficiency Rebates	All Measures except Commercial Food Service	FR, PSO, TA													EFF				
Coordinated RCx	All C&I and Public Sector	FR, PSO, TA													EFF				
Nicor Gas RCx (Standalone)	All C&I and Public Sector	FR, PSO, TA													EFF				
Res New Construction	All Measures	FR, PSO																	EFF
Business Energy Efficiency Rebates (Commercial Food Service)	Commercial Food Service	FR, PSO, TA																	EFF
Home Energy Efficiency Rebates	HVAC, Water Htg & Advanced Thermostats	FR, PSO, TA																	EFF
Energy Saving Kits	All Measures	FR, PSO																	EFF
Small Business	All Measures	FR, PSO																	EFF
Coordinated NRNC	All C&I and Public Sector	FR, PSO																	EFF
Business Custom	All Measures	FR, PSO																	EFF

Net-to-Gross Key	
FR= Free-rideship	Survey Design/Sample Prep
PSO = Participant Spillover	Fielding
NPSO=Non-Participant Spillover	NTG Analysis and Reporting
TA = Trade Allies	Year NTG Effective: EFF

Source: Guidehouse.

2.3 Market Transformation Evaluation

Market transformation (MT) programs will be more prominent in Plan 4. Guidehouse will support MT efforts with two types of activities: 1) provide advice and insight to support Nicor Gas' activities to develop, deliver, and improve each MT initiative, and 2) apply theory-based evaluation to estimate savings attributable to the MT initiative.

1. **Advise:** Guidehouse will advise Nicor Gas and its implementation partners as elements of the market transformation initiative are established following protocols in the TRM, including Logic Model (LM), Market Progress Indicators (MPIs), Energy Savings Framework (ESF), Natural Market Baseline (NMB), MT savings work papers, and methodologies for savings attribution in relation to the Natural Market Baseline. As part of the annual evaluation planning process, Guidehouse will work with Nicor Gas to identify research that could be conducted to improve MT Initiative performance during implementation.
2. **Prepare or Verify:** Savings measurement for the Market Transformation evaluation will follow the IL Statewide TRM – Volume 4: Cross-Cutting Measures and Attachments, Attachment C: Framework for Counting Market Transformation Savings in Illinois. [4] The TRM protocols provide the framework for measuring interim and long-term indicators of market progress and structural changes, attribution to the program, and cumulative

[4] https://www.ilsag.info/wp-content/uploads/IL-TRM_Effective_010124_v12.0_Vol_4_X-Cutting_Measures_and_Attach_09222023_FINAL.pdf

energy impacts. Guidehouse will participate in the SAG MT Working group, communicating methodologies to the Working Group and documenting refinements in the TRM. This may include developing and verifying a Natural Market Baseline, Energy Savings Framework and Market Progress Indicators. Delphi panels may be used to gauge the effectiveness of and inform the evaluation of MT activities.

Table 2-6 summarizes the active Market Transformation efforts in Illinois and the evaluation activities. The specific initiatives currently in discussion statewide include:

- **Stretch Codes**[5]: Building energy codes are recognized as an effective way to move the market towards more efficient buildings for new construction, additions, and major renovation projects. The Illinois Utilities and other parties in Illinois are investigating initiatives designed to influence the building energy code and allow the utility administering the program to claim savings through a market transformation initiative where utilities influence municipalities to adopt stretch codes as defined in the Climate and Equitable Jobs Act (CEJA). The program additionally seeks to influence market actors to have high compliance rates with the CEJA stretch code where the stretch code is adopted. Utilities have unique opportunities to be involved in influencing stretch energy codes advancement. These opportunities are divided into three parts: 1) utility-initiated research, 2) advocacy for advancing policy, and 3) the creation of utility programs to support implementation and compliance with stretch energy codes. The amount of savings attributed to the utilities would be a direct reflection of the amount of effort and influence put forth by the utilities.

Utilities have unique opportunities to be involved in influencing stretch energy codes advancement. These opportunities are divided into three parts: 1) utility-initiated research, 2) advocacy for advancing policy, and 3) the creation of utility programs to support implementation and compliance with stretch energy codes. The amount of savings attributed to the utilities would be a direct reflection of the amount of effort and influence put forth by the utilities.

- **Building Performance Standards (BPS) for Existing Buildings**: Building Performance Standards (BPS) are recognized as an effective way to move the market towards more efficient energy use in existing buildings by requiring a minimum performance score be achieved for buildings greater than a specified minimum area in square footage. The Illinois Utilities and other parties in Illinois are investigating initiatives designed to influence BPS and allow the utility administering the program to claim savings through market transformation initiatives that support the adoption of, and/or compliance with BPS adopted by municipalities.

  Utilities have unique opportunities to be involved in influencing BPS. These opportunities are divided into three parts: 1) utility-initiated research, 2) advocacy for advancing policy, and 3) the creation of utility programs to support implementation and compliance with

[5] A stretch code is a locally mandated code or alternative compliance path that requires a higher level of energy efficiency or sustainability than the adopted base energy code. In September 2021, Illinois Public Act 102-0662 (the Climate and Equitable Jobs Act, or CEJA) directed the Illinois Capital Development Board (CDB), which manages the state building energy code adoption process, to create a residential and commercial stretch energy code that can be adopted by individual municipalities. Once formally adopted by a municipality, the stretch code would take the place of the municipality's existing energy code (likely the state base energy code) and establish new minimum energy efficiency requirements for new construction, additions, and major renovation projects. While the CEJA legislation does not require that a municipality adopt the stretch code and enforce its compliance, utilities can influence local stretch code adoption and/or provide compliance support.

BPS. The amount of savings attributed to the utilities would be a direct reflection of the amount of effort and influence put forth by the utilities.

- **High Performance Windows**: More than two decades ago, the Lawrence Berkeley National Laboratory, LBNL identified a novel technology pathway to thermally upgrade windows by adding a thin third pane of glass into the traditional two pane insulating glass unit (IGU), adding a second low-E coating, and replacing the argon gas fill with krypton. This results in a drop-in replacement IGU that converts standard R3 windows to energy efficient ~R5 without structural redesign of the window and home. The thin glass needed has since become readily available and affordable because of high demand by the flat screen TV and computer monitor industry. While the initial market opportunity is the residential sector, thin triple-pane windows would be applicable to the commercial sector as well.

  The MT plan would require directly engaging window industry partners who make and sell windows in the Midwest and their critical supply chain partners. The plan assumes the utility and educational/training/outreach partners that have served other efforts in the past could be leveraged. To reduce risk and provide the largest possible market stimulus, the plan suggests combining utility customer rebates/incentives with manufacturing and supply chain support. The market transformation would be secured by establishing sufficient market demand to move ENERGY STAR efficient window specifications to the more efficient R5 Advanced Window, and potentially building energy codes.

- **Residential and Commercial HVAC Gas Heat Pumps:** A subset of heat pumps whose primary input drive energy is a gaseous fuel, instead of an electrically driven compressor, have up to 140% heating efficiency and superior performance in cold climates, performing reliably at temperatures as low as -20°F. Customers can expect maintenance requirements similar to those of existing equipment and high reliability due to few internal components. In collaboration with the Gas Technologies Institute and gas utilities across the country, a residential pilot is being conducted in Illinois to help test out gas heat pumps and bring these to market.
- **Gas Heat Pump Water Heaters (GHPWH):** Water heaters that use natural gas to heat water by moving heat from the surrounding environment to the water tank. These products are not currently on the market and use a gas-fired heat pump and have a Uniform Energy Factor (UEF) >1.
- **Efficient Rooftop Units (RTUs):** Increasing the efficiency of RTUs through product differentiation and increased Federal Standards. There is a significant energy-saving potential among Efficient RTUs through low-cost efficiency measures, offering an opportunity to differentiate these products in the market.

Table 2-6. Current Illinois Market Transformation Status and Evaluation Activities

Market Transformation Activity	Stretch Energy Codes	Building Performance Standards	High Performance Windows	HVAC CGas Heat Pumps	Gas Heat Pump Water Heaters	Efficient Rooftop Units
Concept Development	Advise	Advise	Advise	Advise	Advise	Advise
Strategy Development	Advise	Advise	Advise	Advise	Advise	Advise
Savings Protocol	Verify	Verify	Verify	Verify	Verify	Verify
Logic Model	Advise	Advise	Advise	Advise	Advise	Advise
Natural Market Baseline	Verify	Verify	Verify	Verify	Verify	Verify
Energy savings Framework	Verify	Verify	Verify	Verify	Verify	Verify
Market Progress Indicators	Verify	Verify	Verify	Verify	Verify	Verify

Source: Guidehouse.

Evaluation research plans for specific MT initiatives are provided in the Appendix.

2.4 Portfolio Research

Guidehouse conducts additional research above and beyond annual impact and process evaluation activities as requested, keeping budget priorities in consideration. Guidehouse will work with Nicor Gas and other Illinois parties to identify the programs and measures that could most benefit from these supplemental research activities, being mindful of overall budget availability. Additional research may be requested as needed and considered as a part of the annual evaluation planning process. Guidehouse will leverage research opportunities through jointly funded studies with ComEd, PGL and NSG, and Ameren Illinois when possible.

Guidehouse will work with Nicor Gas to identify research priorities and document these in the annual evaluation plans. Areas for portfolio research include:

- Support for TRM Updates
- Process Evaluation Research
- Other Cross-Cutting Research

2.4.1 Guiding Principles

1. There are limited evaluation resources and Guidehouse will work with Nicor Gas to identify priorities and document these in the annual evaluation plans. Activities will focus first on programs that have not been evaluated, have been significantly modified, provide the most savings, or have activities that were not fully evaluated in an earlier round of evaluations.
2. Gather participant data, perform analysis, and produce recommendations to help improve the functioning and effectiveness of Nicor Gas programs.
3. Within budget constraints, collaborate with Peoples Gas, North Shore Gas, ComEd, and other Illinois utilities to identify, prioritize, and conduct research, including process evaluation of joint programs and studies of energy efficiency technologies, industry best practices, non-participant characteristics, market characterizations, or other topics of interest.
4. When available to evaluators and appropriate, use gas consumption data when analyzing impacts and customer usage patterns.

2.4.2 Support for TRM Updates

Activities

The evaluation team will provide support to improve the TRM by participating in the Technical Advisory Committee (TAC) meetings and update process. Guidehouse will work with Nicor Gas to identify priorities and research needs for new measures or updates.

Activities may include reviewing TRM draft versions; developing workpapers for new measures or to update existing measures; and analyzing data from completed evaluation activities to support new measures or update TRM assumptions. Guidehouse will provide technical review for workpapers developed by Nicor Gas and its implementation contractors if requested.

Deliverables

- When identified, submit TRM update or new measure requests to the TRM Administrator
- If a TRM new measure or update request is accepted, produce the corresponding TRM update workpaper

Timing

The TRM is updated annually based on input from Program Administrators, evaluators, and other interested stakeholders through a consensus-based decision-making process. The following TRM schedule will be followed, unless changes are accepted by the TRM TAC:

- **February 26**: Submit TRM update requests to the TRM administrator.
- **April 1:** TRM TAC informs Program Administrators, evaluators, and SAG which measures are high or medium priority measures, for which work papers need to be prepared.
- **May 15:** Proposed updates to existing measure work papers to clarify terms or approaches, as well as proposed work papers for new measures, are submitted to the TRM Administrator.
- **May 15 – September 24**: Ongoing TAC meetings and review/comment on submitted workpapers to reach consensus on TRM updates.
- **October 1:** Final TRM values effective January 1 for the following program year.
- **October/November:** Discussions on evaluation priorities for TRM updates.

2.4.3 Process Evaluation Research

Activities

We will work closely with Nicor Gas to select which programs and issues would benefit most from process evaluation. The procedure for selecting process evaluation work will be informed by the latest information on program performance, market status, joint-program collaboration opportunities, budget, and Nicor Gas priorities. We will develop study-specific plans, conduct the evaluation, and deliver insights and recommendations in time for Nicor Gas to incorporate these into the next program year. We will work with Nicor Gas throughout the year to identify emerging issues that could be illuminated by new research (not anticipated in the evaluation plan process) and schedule and implement that research (budget allowing). As appropriate, Guidehouse will coordinate process activities across programs and across utilities for joint programs to address the whole of Nicor Gas approach to the market.

The process evaluation for each program, when conducted, will include in-depth qualitative interviews with Program Administration staff and Program Implementers. These interviews will be used to develop a complete understanding of the final design, procedures, and implementation strategies for each program. Through these interviews, available program materials, including marketing and outreach materials, such as web-based promotional content, point of purchase (POP) materials, print and radio advertising copy, and any cooperative marketing materials developed, will be collected.

While the process evaluation methods for each individual program will vary depending on the program's needs and stage of development, key tasks in conducting process evaluations using interview techniques and documentation review include:

- Develop interview and/or online survey guides.
- Identify appropriate parties to interview or survey. Frequently, the evaluation will include in-depth qualitative interviews with those directly involved in each program, including program managers and implementation contractors, and conduct interviews or online surveys with participating trade allies and participating customers.
- Conduct interviews or online surveys and other research data collection tasks.
- Analysis and reporting of findings and recommendations.

Depending upon the circumstances, Guidehouse will use either a survey house to conduct structured surveys, online survey tools, or senior staff members to complete interviews. Process evaluation surveys will be conducted concurrently with NTG surveys, when appropriate, to minimize the burden on the customer and/or trade ally. Process evaluation findings and recommendations may be summarized in a report separate from the impact evaluation report.

Deliverables

- Presentation of process evaluation research findings and recommendations, in memo format or PowerPoint presentation.

Timing

- A schedule will be established for each process evaluation deliverable. To support Nicor Gas' annual planning process for program implementation, initial draft process findings and recommendations will be delivered prior to September 15.

Table 2-7 below lists the process evaluation research for 2024.

Table 2-7. Process Evaluation Research in 2024

Program/Market Offering	Description	Proposed Methods	Timeframe and Deliverable
Home Energy Savings* **Air Sealing and Insulation**	-Participation Drivers -Comparison w/other States	Secondary Research and Add-on Questions with NTG Survey	Q3 2024 PowerPoint
Business Energy Efficiency Rebates **Business Optimization**	-Process Assessment of Core Delivery Paths -Comparison of Similar Cohort	Secondary Research and Add-on Questions with NTG Survey	Q3 2024 PowerPoint
Residential New Construction	-External Research (Incentivize ICF Walls) -Expansion into Measures beyond Code	Secondary Research	Q3 2024 PowerPoint
Non-residential New Construction†	-Actionable recommendations	Secondary Research and Program Engagement	Q2 2024 Memo

Source: Guidehouse.

* Jointly implemented with ComEd

† Coordinated with ComEd

2.4.4 Other Cross-Cutting Research

In addition to TRM support and process research, cross-cutting evaluation research includes initiatives that contribute toward energy savings and other portfolio goals, such as EUL and new

measure research, Market Transformation Initiatives, NTG research, and NEI research. Evaluation research is coordinated statewide with the evaluators for ComEd, Ameren Illinois, and PGL and NSG and jointly funded and implemented when possible.

2.4.5 Evaluation Research Activities

Table 2-8 summarizes evaluation research tasks underway or in the planning stages. The evaluation team will revisit this list on an ongoing basis as, for example, the SAG releases new updates on TRM research priorities and the Nicor Gas portfolio measure mix shifts over time. This regular review will enable Guidehouse's research to focus on the most important topics for the Companies' evaluation and SAG stakeholders. Guidehouse will develop research plans over the course of 2022 and as new needs arise and include those in the appendices.

Table 2-8. Portfolio Evaluation Research

Research Task	Description	Joint	2022	2023	2024	2025
NTG Research: Non-Res New Construction Mock NTG Interviews	Conduct "mock" NTG interviews with non-residential new construction implementers to improve free ridership survey questions. Completed 2023.	Yes	✓			
NTG Research: Residential Sector Non-Participant Spillover Study	Residential Non-Participant Spillover Study, Nicor Gas only during 2022. This will be an on-line survey of Nicor Gas residential customers that have not participated in a Nicor Gas program within the prior three years (2019-2021).Completed 2022.	No	✓			
NTG Research: Non-Residential Non-Participant Spillover Combined Statewide Study	To develop business sector NPSO estimates, conduct a non-participant survey with eligible business customers who have not participated in a Business Program within the past three years. The non-participant survey will focus on assessing NPSO resulting from the program. Completed 2023.	Yes		✓		
NTG Research: Non-Res New Construction NTG Benchmarking	Non-Residential New Construction NTG Benchmarking – The benchmarking study was a secondary research task to investigate what other programs are reporting for NTG (higher or lower) and why the values are different than Illinois: Is it because of the program design and delivery or the evaluation protocol? Completed 2023.	No	✓			

Research Task	Description	Joint	2022	2023	2024	2025
TRM Support: Energy Saving Kits In-Service Rate Follow-up Survey	Conduct a follow-up survey in 2022 with participants of the 2021 ESK kit spillover and free-ridership surveys. The next iteration of this study would be designed to follow-up with participants that indicated they planned to install remaining uninstalled items but had not done so at the time of the survey. Depending on the weatherization measure, approximately 400 to 500 of the 2021 survey respondents "planned to install ". For water saving measures, 21 to 27 respondents planned to install their measures, Both kit types will be included in the follow-up survey. Completed 2023.	No	✓			
TRM Support: Water Heater Temperature Setback	Compile Water Heater Temperature Setback default values from historical Elementary Energy Education program survey data. Study cost assumed joint funding. October 2021 TRM TAC request. Completed 2023.	TBD	✓			
Fuel Switching Measures (Air Source Heat Pump)	Compare existing IL TRM air source heat pump measures to other jurisdictions to review potential gas savings from fuel switching for air source heat pump measures. Completed 2023	Yes		✓		
TRM Support: Income Eligible Measures	Compile Income Eligible Building and Equipment Baseline Efficiency Characteristics from Historical Program Tracking Data – There currently is very limited distinction made in the TRM for Income Eligible (IE) populations. The TRM Administrator would like to see data routinely collected and analyzed across all applicable studies that would allow distinctions to be made between income qualified versus non-income qualified populations, to allow the TRM to appropriately account for differences where these appear. Examples where differences are thought to exist include kit measure ISRs, appliance efficiencies, central HVAC age and efficiencies, insulation levels, secondary market purchases, and electric versus gas heating. October 2021 TRM TAC request. Completed 2023.	Yes	✓			
Commercial Food Service Process Research	The evaluation team will perform net-to-gross (NTG) savings research to update the pilot's NTG ratio. This research will include process evaluation into the pilot's market engagement and customer satisfaction.	✓				✓

Research Task	Description	Joint	2022	2023	2024	2025
Stretch Energy Codes Market Transformation Initiative	For Stretch Energy Codes MT, Guidehouse participates in working group meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, and market progress indicators as these are produced.	✓	✓	✓	✓	✓
Building Performance Standards (BPS) Market Transformation Initiative	For BPS MT, Guidehouse participates in working group meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, and market progress indicators as these are produced.	✓	✓	✓	✓	✓
High Performance Windows Market Transformation Initiative	For High Performance Windows, Guidehouse participates in meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, market progress indicators, and evaluation methodologies as these are produced.	TBD		✓	✓	✓
Residential and Commercial HVAC Gas Heat Pumps Market Transformation Initiative	For Residential HVAC Gas Heat Pumps, Guidehouse participates in meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, market progress indicators, and evaluation methodologies as these are produced.	TBD		✓	✓	✓
Gas Heat Pump Water Heaters Market Transformation Initiative	For Gas Heat Pump Water Heaters, Guidehouse participates in meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, market progress indicators, and evaluation methodologies as these are produced.	TBD		✓	✓	✓
Efficient Rooftop Units Market Transformation Initiative	For Efficient Rooftop Units, Guidehouse participates in meetings and will review and advise development of MT program elements, such as program theory, logic models, per unit savings, natural market baselines, market progress indicators, and evaluation methodologies as these are produced.	TBD		✓	✓	✓

Source: Guidehouse.

2.5 Evaluation Portfolio Support and Reporting

2.5.1 Annual Review of Nicor Gas' Adjustable Savings Goals

Each year, Nicor Gas requests that Guidehouse, as its Independent Evaluator, verify the accuracy in the TRM calculations used to derive the measure savings that form the savings

goals in the adjustable savings goal spreadsheet in advance of filing the completed adjustable savings goal spreadsheet.

Guidehouse will work with the Program Administrator to review the Adjustable Savings Goals Spreadsheet each year for 2022 through 2025. After our review, if we find instances of measures that do not accurately match the effective Illinois TRM Version, Guidehouse will recommend Nicor Gas make updates. Guidehouse will review a revised version of the Adjustable Savings Goals Spreadsheet provided by Nicor Gas to confirm it implemented the recommended measure updates correctly.

Deliverables

- Findings and recommendations from review of draft annual Adjustable Savings Goals templates for Nicor Gas.

2.5.2 Ad-Hoc Evaluation Support Requests

Guidehouse will produce periodic ad-hoc memos and presentations to assist Nicor Gas and Program Implementer with guidance and program development assistance through the lens of the evaluation contractor perspective, when requested.

2.5.3 Cost-Effectiveness Review and Summary Reporting

Guidehouse will conduct a TRC cost-effectiveness analysis at the conclusion of the four-year program plan pursuant to Section 8-104(f)(8). Guidehouse will provide a brief annual portfolio summary report for each program year, 2022 through 2025, and will produce a final report summarizing the combined results for the four program years after the conclusion of 2025. The annual portfolio summary reporting will be presented in three spreadsheet documents, using templates recommended by the SAG, accompanied by a memo describing Guidehouse's approach and source of assumptions. The tables included are:

1. TRC and Program Administrator Cost Test (PACT) Cost-Effectiveness Results Tables
2. Verified Energy Savings and Program Cost Summary Tables
3. High-Impact Measures Tables

Results will include benefit-cost ratios as well as the net present value (NPV) of benefits, costs, and net benefits for the following scenarios:

- with and without non-energy impacts (NEIs) (if available at the time of evaluation), as well as,
- at the portfolio-level TRC, with and without income qualified programs.

The final summary for the four years will include the annual and four-year results in a standard report format. The annual and four-year cost-effectiveness reporting will include a separate joint-utility memo providing the gas and electric costs, benefits, and TRCs for the joint energy

efficiency programs that the gas companies offer in conjunction with electric program administrators.

2.5.4 Job and Macroeconomic Impact Reporting

Guidehouse will produce a draft and final report annually encompassing economic and employment impacts analysis for the Nicor Gas energy efficiency portfolio. This analysis will be alignment with the Illinois Energy Efficiency Policy Manual (the Policy Manual) requirement that each program administrator in Illinois must annually report estimates of the economic development and employment impacts of its energy efficiency programs. The reports may also include estimated impacts for individual Programs. Estimates will include direct, indirect, and induced effects on employment, industry output, and labor income.

Direct effects may include, but are not limited to, the initial changes in employment and demand for regional production triggered by the implementation and management of utility Energy Efficiency Programs. These effects include jobs managing and implementing Programs, Program Implementation Contractor incentives, participant rebates, and bill savings.

Indirect effects may include, but are not limited to, secondary impacts generated from business-to-business spending as firms and households directly impacted by the Energy Efficiency Programs increase purchases from their suppliers, who must in turn increase purchases from their suppliers and so forth as the initial expenditure ripples through interconnected industries. These effects include the impact of contractors purchasing equipment from distributors or manufacturers that is needed to implement programs.

Induced effects may include, but are not limited, to secondary impacts generated from household to business spending as labor income changes that result from both direct and indirect activity affect the local economy. This is the effect of additional household income resulting from jobs that are created.

Deliverables

- Annual program summary reporting of verified impacts, cost-effectiveness results and job and macroeconomic reporting.
- A four-year summary report of verified impacts and cost-effectiveness results and job and macroeconomic reporting produced after the end of 2025.

Timing

- Work on the annual cost-effectiveness spreadsheet reports will begin May 1, with draft results available thirty days after all annual impact evaluation reports are final and receiving final program cost data from Nicor Gas. Assuming all final reports and cost data are received by July 15, the first draft will be delivered August 15, and the final report by October 15.

- Assuming all final reports and cost data are received by July 15, the first draft of the Job and Macroeconomic Impact Reporting will be delivered August 31, and the final report by October 31, or best efforts.

2.6 Evaluation Budget

The evaluation budget for work represented in this evaluation plan is presented in Table 2-9.

Table 2-9. Evaluation Budget

Evaluation Activity	PY2022	PY2023	PY2024	PY2025	Portfolio Total
Management (annualized)	$114,000	$117,420	$120,943	$124,571	$476,933
Participate in EM&V Meetings and Calls, Overall Management (Internal/External) Submit Timely and Accurate Budget Forecasts, Invoices, and Accruals					
Crosscutting	$140,000	$144,200	$148,526	$152,982	$585,708
Four-Year Portfolio EM&V Work Plan and Annual Updates Annual and 4-Year Total Resource Cost, Economic Impact, and Summary Reporting Annual Review of the Companies' Adjustable Savings Goals Support ICC Staff Requests and Participate in SAG Meetings					
Impact Evaluation	$660,000	$679,800	$700,194	$721,200	$2,761,194
Annual Impact Evaluation and Reporting for Each Program					
NTG Research					$868,000
2022	$70,000				
2022-23 Wave	$158,000				
2023-24 Wave		$318,000			
2024-25 Wave			$322,000		
Portfolio Research (Four-Year Allocation)		$530,412			$530,412
Provide Technical Research and Support to Update the IL-TRM Advise Market Transformation Activities and Participate in Joint MT Evaluation Research Conduct Other Research, including Joint Research with ComEd					
Subtotal					$ 5,222,247
Administrative Adder (5%)					$ 261,112
TOTAL					**$ 5,483,359**

Appendix A. Detailed Program Evaluation Plans

Guidehouse has developed program-specific plans to evaluate the entire portfolio of Nicor Gas energy efficiency programs. The following programs are covered in this plan:

- **Residential Programs**
  - Energy Education and Outreach
  - Home Energy Savings
  - Home Energy Efficiency Rebates
  - Residential New Construction
  - Multi-Family Program
- **Income Qualified Programs**
  - Income Qualified Weatherization
  - Public Housing Authority
  - Affordable Housing New Construction
  - Income Qualified Energy Saving Kits
- **Business and Public Sector Programs**
  - Business Energy Efficiency Rebates
  - Custom Incentives
  - Strategic Energy Management
  - Coordinated Retro-Commissioning
  - Coordinated Non-Residential New Construction
  - Small Business
- **Market Transformation Initiatives**
  - Building Operator Certification
  - Stretch Energy Codes
  - Building Performance Standards (BPS)
  - Advanced Windows

A.1 Residential Programs

A.1.1 ENERGY EDUCATION AND OUTREACH

The Energy Education and Outreach program's objective is to increase residential customers' understanding of energy usage in their homes and educate these customers on available energy efficiency opportunities. The program will include offerings that will be delivered jointly with electric utility partners for Energy Education Kits (EEK) and by Nicor Gas only for Energy-Saving Kits (ESK) and Home Energy Reports (HER).

- The EEK offering is designed to educate fifth grade students about using energy wisely. Each student will also receive an energy-saving kit, which may include natural gas and electricity-saving products.
- Nicor Gas will continue distributing free ESKs during 2022-2025. There are two versions of ESKs, specifically 1) a water-saving kit and 2) a weatherization kit.
- This behavior modification offering generates energy savings through residential customer engagement and behavioral change strategies. This offering will provide individualized energy use information through HERs tailored to customer usage and habits to drive changes in energy usage behavior. HERs may use historical energy use data, customer demographics, and other information to provide personalized, actionable tips to customers.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
Energy Education Kits	Impact	Savings Calculator and Work Paper Review	X	X	X	X
Energy Education Kits	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Energy Education Kits	Impact	Interim Impact Analysis	X	X	X	X
Energy-Saving Kits	Impact	Savings Calculator and Work Paper Review	X	X	X	X
Energy-Saving Kits	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Energy-Saving Kits	Impact	Interim Impact Analysis	X	X	X	X
Energy-Saving Kits	General	Staff Interview			X	
Energy-Saving Kits	NTG	Net Savings Research – Customer Free Ridership Survey				X
Energy-Saving Kits	NTG	Net Savings Research – Customer Spillover Survey				X
Energy-Saving Kits	Process	Research Optional, Discuss with Program				X
Home Energy Reports	General	Implementer Interview	X	X	X	X
Home Energy Reports	Impact	Program Tracking Data Review	X	X	X	X
Home Energy Reports	Impact	Population-level Consumption Data Analysis	X	X	X	X

Source: Guidehouse.

For NTG and Process research "X" indicates reporting year

A.1.2 HOME ENERGY SAVINGS

The Home Energy Savings (HES) program helps customers complete comprehensive retrofits in existing single-family buildings by providing financial, education, and logistical

support to overcome key market barriers. The program promotes energy assessments with direct installation of energy-saving measures as well as the installation of building envelope improvements.

With home energy assessments, customers begin their energy efficiency customer journey by learning about offerings in the portfolio and what changes they can make in their homes. Energy Advisors directly install energy-saving products at the time of the assessment and educate on how these products help save energy and money. Energy Advisors create tailored reports for each assessment, identifying additional savings opportunities, efficiency upgrades and available rebates. Direct installation measures include pipe insulation, showerheads, faucet aerators, programmable and advanced thermostats, as well as LED lamps and other electric measures where the Program has a partnership with an electric utility.

The weatherization rebate offering provides financial incentives to customers installing air sealing, insulation, or duct sealing measures. This work must be performed by a contractor that is industry certified and program approved. After a customer has expressed interest in the program, a participating contractor schedules a site visit to the home. No assessment is required. The participating contractor completes the work and provides an instant discount to the customer (in other words applies the incentive and deducts the cost directly on the bill to the customer).

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
Direct Install, Weatherization	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Direct Install, Weatherization	Impact	Interim Impact Analysis	X	X	X	X
Direct Install, Weatherization	General	Staff Interview	X			
Direct Install, Weatherization	General	Implementer Interview	X			
Direct Install	NTG	Net Savings Research – Customer Free Ridership Survey		X		
Direct Install	NTG	Net Savings Research – Customer Spillover Survey		X		
Weatherization	NTG	Net Savings Research – Customer Free Ridership Survey			X	
Weatherization	NTG	Net Savings Research – Customer Spillover Survey			X	
Weatherization	NTG	Net Savings Research – Contractor Free Ridership Survey			X	
Weatherization	NTG	Net Savings Research – Contractor Spillover Survey			X	
Weatherization	Process	360° Process Review of Air Sealing & Insulation			X	
Advanced Thermostats	General	Staff Interview	X			
Advanced Thermostats	General	Implementer Interview	X			
Advanced Thermostats	NTG	Net Savings Research – Customer Free Ridership Survey		X		
Advanced Thermostats	NTG	Net Savings Research – Customer Spillover Survey		X		

Source: Guidehouse.
For NTG and Process research “X” indicates reporting year

Advanced Thermostat NTG research will include thermostats distributed through rebated purchase (Home Energy Efficiency Rebate Program) or part of an assessment and direct installation program (Home Energy Savings and Multi-Family programs).

Process evaluation efforts related to air sealing & insulation measures to be conducted in CY2024 include a 360º-process review. Evaluation activities related to this item will include an assessment of participation drivers, identification of specific barriers to participation, as well as exploring customers' understanding of IRA tax credits as they relate to the program. As applicable, this process research will include comparisons with other jurisdictions.

A.1.3 HOME ENERGY EFFICIENCY REBATE

The objective of the Home Energy Efficiency Rebate (HEER) program is to obtain energy savings by overcoming market barriers to the purchase and installation of high-efficiency natural gas space and water heating equipment and other targeted measures in residential applications. This program provides incentives for the purchase and installation of high-efficiency natural gas furnaces and boilers, advanced thermostats, and other high-efficiency natural gas equipment. Customers are encouraged to install the most efficient gas heating equipment and appliances available when replacing older, less efficient equipment.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
Equipment, Thermostats	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Equipment, Thermostats	Impact	Interim Impact Analysis	X	X	X	X
Equipment	General	Staff Interview			X	
Equipment	General	Implementer Interview			X	
Equipment	NTG	Net Savings Research – Customer Free Ridership Survey				X
Equipment	NTG	Net Savings Research – Customer Spillover Survey				X
Equipment	NTG	Net Savings Research – Trade Ally Free Ridership Survey				X
Equipment	NTG	Net Savings Research – Trade Ally Spillover Survey				X
Equipment	Process	Research Optional, Discuss with Program				X
Advanced Thermostats	General	Staff Interview	X			
Advanced Thermostats	General	Implementer Interview	X			
Advanced Thermostats	NTG	Net Savings Research – Customer Free Ridership Survey		X		X†
Advanced Thermostats	NTG	Net Savings Research – Customer Spillover Survey		X		X†
Advanced Thermostats	Process	Research Optional, Discuss with Program		X		

Source: Guidehouse.
For NTG and Process research "X" indicates reporting year
† Indicates a continuation of research from CY2023 (See Table 2-3).

The Advanced Thermostat NTG research will include thermostats distributed through rebated purchase (Home Energy Efficiency Rebate Program) or part of an assessment and direct installation program (Home Energy Savings and Multi-Family programs). As noted, NTG research that began in CY2023 will be continued in CY2025 due to some issues associated with instances where rebates were provided to trade allies as noted in Table 2-3.

A.1.4 RESIDENTAL NEW CONSTRUCTION

The objective of the Residential New Construction (RNC) program is to obtain energy savings by increasing the energy efficiency of new construction single-family detached homes and townhomes. The program provides participating new home builders and their verifier companies a financial incentive to either a) exceed state and local building code requirements regarding duct and air sealing, along with the installation of specific high-efficiency equipment, or b) install prescriptive high-efficiency equipment only.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Measure-Level Deemed Savings Review	X	X	X	X
Impact	Interim Impact Analysis	X	X	X	X
General	Staff Interview		X		
General	Implementer Interview		X		
NTG	Net Savings Research – Builder Free Ridership Survey				X
NTG	Net Savings Research – Builder Spillover Survey				X
Process	Research Optional, Discuss with Program			X	

Source: Guidehouse.
For NTG and Process research "X" indicates reporting year

The Advanced Thermostat NTG research will include thermostats distributed through rebated purchase (Home Energy Efficiency Rebate Program) or part of an assessment and direct installation program (Home Energy Savings and Multi-Family programs). Residential New Construction NTG research is likely to provide a single free ridership value for all measures, and not break out advanced thermostats.

Process evaluation efforts consisting of secondary research includes an assessment of ICF (Insulating Concrete Form) walls and potential opportunities to incentivize and increase adoption of this measure. In addition, measures going above code will be assessed related to this program. Evaluation activities will consist of secondary research only. As applicable, this process research will include comparisons with other jurisdictions.

A.1.5 MULTI-FAMILY

The Multi-Family (MF) program addresses residential (living units) and common areas (central plants, laundry rooms, etc.) in multi-family buildings with 5 units or more. The program goal is to overcome market barriers to the installation of energy efficiency measures by offering comprehensive assessments, a range of rebate offerings, generous financial incentives (including free offerings), and technical assistance. The program employs a “one-stop shop” approach that allows customers to easily navigate the different services available to these customers across the portfolios of Nicor Gas and its partner electric utilities.

The program includes seven components that work together to provide customers with turnkey, umbrella services to drive comprehensive energy upgrades. The offerings include:

- Free energy assessments to identify comprehensive opportunities
- Free direct installation of low-cost measures in living units and common areas
- Prescriptive rebates for standard upgrades applicable to most buildings
- Custom rebates for more complex projects or other opportunities not covered by the other offerings
- Free Central Plant Optimization (CPOP) to upgrade centralized boiler systems
- Structured weatherization rebates for air sealing and insulation projects
- Technical assistance to help customers navigate the program, take advantage of all program services, coordinate with other offerings, and follow through to implement project

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
DI, Prescriptive, CPOP	Impact	Measure-Level Deemed Savings Review	X	X	X	X
DI, Prescriptive, CPOP	Impact	Interim Impact Analysis	X	X	X	X
Custom	Impact	Custom Savings Review	X	X	X	X
Custom	Impact	Wave impact analysis	X	X	X	X
Custom	Impact	Survey, Phone, or Virtual Verification	X	X	X	X
Custom	Impact	Onsite Verification	X	X	X	X
All	General	Staff Interview		X		
All	General	Implementer Interview		X		
Prescriptive, Custom, CPOP	NTG	Net Savings Research – Customer Free Ridership Survey			X	
Prescriptive, Custom, CPOP	NTG	Net Savings Research – Customer Spillover Survey			X	
Prescriptive, Custom, CPOP	NTG	Net Savings Research – Trade Ally Free Ridership Survey			X	
Prescriptive, Custom, CPOP	NTG	Net Savings Research – Trade Ally Spillover Survey			X	
All	Process	Research Optional, Discuss with Program			X	
Advanced Thermostats	General	Staff Interview	X			
Advanced Thermostats	General	Implementer Interview	X			
Advanced Thermostats	NTG	Net Savings Research – Customer Free Ridership Survey		X		
Advanced Thermostats	NTG	Net Savings Research – Customer Spillover Survey		X		
Advanced Thermostats	Process	Research Optional, Discuss with Program		X		

Source: Guidehouse.

For NTG and Process research “X” indicates reporting year

The Advanced Thermostat NTG research will include thermostats distributed through rebated purchase (Home Energy Efficiency Rebate Program) or part of an assessment and direct installation program (Home Energy Savings and Multi-Family programs).

A.2 Income-Qualified Programs

A.2.1 INCOME-QUALIFIED WEATHERIZATION PROGRAM

The IQ Weatherization program provides comprehensive no-cost weatherization and other improvements to IQ customers. The program targets Nicor Gas residential households with income at or below 80% of area median income as determined by the federal HUD guidelines. The program targets homeowners, renters, and owners of multi-family buildings who rent to IQ households. For the purpose of program delivery and tracking, Nicor Gas defines multi-family as buildings with at least of five living units. Smaller multi-family buildings are tracked along with detached single-family residences.

The program includes three separate offerings, each of which has separate single-family and multi-family components.

The IHWAP offering coordinates with the statewide IHWAP program that offers weatherization services through federal programs administered by the U.S. Department of Energy and U.S. Department of Health and Human Services. The IHWAP offering directly supplements these IHWAP programs, providing funds to expand IHWAP's reach into more homes, and directly using the infrastructure IHWAP has developed to deliver these services through a statewide network of CAAs.

The Contractor Channel offering delivers services in communities where local CAAs do not have the capacity or expertise to fully serve all households in financial need. Nicor Gas, along with ComEd and other partners, has identified additional contractors to serve these communities.

The Healthy Home offering partners with CBOs, health care providers, insurance companies, and other groups to provide IQ households with comprehensive services that combine energy efficiency, health, safety, and other initiatives to ensure that homes are safe, dry, and warm.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
All	Impact	Measure-Level Deemed Savings Review	X	X	X	X
All	Impact	Interim Impact Analysis	X	X	X	X
Multi-Family Custom	Impact	Custom Savings Review	X	X	X	X
Multi-Family Custom	Impact	Survey, Phone, or Virtual Verification	X	X	X	X
All	General	Staff Interview	X			
All	General	Implementer Interview	X			
Single-Family	Process	Research - IHWAP Participant Survey	X			
All	Process	Research Optional, Discuss with Program	X			

Source: Guidehouse.

The ComEd evaluation team will conduct additional income eligible process evaluation research in 2023 and 2024 to support ComEd's compliance with the Plan 6 Stipulation Agreement.[6] As the ComEd evaluation plan for this research develops further, we will discuss with Nicor Gas program staff the opportunities and merits for joint collaboration or coordination.

A.2.2 PUBLIC HOUSING AUTHORITY

The IQ Public Housing Authority (PHA) program provides broad and impactful energy efficiency opportunities to Public Housing Authorities to help the income-qualified households they serve. The PHA program will be delivered jointly with other program administrators including ComEd, Ameren, Peoples Gas and North Shore Gas.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Measure-Level Deemed Savings Review	X	X	X	X

Source: Guidehouse.

A.2.3 AFFORDABLE HOUSING NEW CONSTRUCTION

The objective of the Affordable Housing New Construction (AHNC) program is to provide technical guidance and financial incentives for developers of affordable housing to improve comfort and reduce energy use for IQ households, while exceeding current Illinois building code requirements. The AHNC program will be delivered in coordination with ComEd.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Custom Savings Review	X	X	X	X
Impact	Survey, Phone, or Virtual Verification	X	X	X	X

Source: Guidehouse.

A.2.4 IQ ENERGY SAVING KITS

The IQ Energy-Saving Kit (IQ ESK) program provides free energy-saving products to help IQ customers begin their customer journey toward comprehensive energy efficiency improvements. The IQ ESK offering will be delivered jointly with ComEd and may also be

[6] "Evaluation of Customer Engagement and Targeted Energy Efficiency Delivery Efforts: ComEd will direct its independent evaluator to perform one or more process evaluations of the Customer Engagement and Mapping of Assistance Needs and Targeting Delivery of Weatherization Services efforts described above during the Plan 6 Period and will share the results at a joint SAG and Committee meeting." (Revised Stipulation Agreement, February 28, 2022, section IV.A.6.c)

delivered with other electric utility partners. The IQ ESK may include differentiated offerings, such as a water-saving kit with showerheads, faucet aerators, and a shower timer, as well as a weatherization kit with caulking, weatherstripping, and other air sealing measures. Nicor Gas will work with ComEd to identify lighting and other appropriate electric measures to include in the kit offerings.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Measure-Level Deemed Savings Review	X	X	X	X
Impact	Interim Impact Analysis	X	X	X	X

Source: Guidehouse.

A.3 Business and Public Sector Programs

A.3.1 BUSINESS ENERGY EFFICIENCY REBATES

The Business Energy Efficiency Rebates (BEER) program's goal is to produce natural gas savings in the commercial, public, and industrial sectors by encouraging customers to make energy-saving improvements and offering incentives for qualifying upgrades. The four BEER offerings include assessments, rebates, commercial food service (CFS), and business optimization (BOP).

The midstream commercial food service (CFS) rebate program builds on the progress, analysis, and experience gained from a jointly funded pilot program that has been successfully running since 2018. The goal is to support and sustain a comprehensive list of measures for the food service industry to give operators a range of options for improving energy efficiency in their facilities. The commercial food service offering will be managed jointly with the other Illinois investor-owned utilities.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
C&I and Public Sector	Impact	Measure-Level Deemed Savings Review	X	X	X	X
C&I and Public Sector	Impact	Interim Impact Analysis	X	X	X	X
C&I and Public Sector	General	Staff Interview		X		
C&I and Public Sector	General	Implementer Interview		X		
C&I and Public Sector	NTG	Net Savings Research – Customer Free Ridership Survey			X	
C&I and Public Sector	NTG	Net Savings Research – Customer Spillover Survey			X	
C&I and Public Sector	NTG	Net Savings Research – Trade Ally Free Ridership Survey			X	
C&I and Public Sector	NTG	Net Savings Research – Trade Ally Spillover Survey			X	
C&I and Public Sector	Process	Research Optional, Discuss with Program			X	
Commercial Food Service	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Commercial Food Service	Impact	Interim Impact Analysis	X	X	X	X
Commercial Food Service	General	Staff Interview	X			
Commercial Food Service	General	Implementer Interview	X			
Commercial Food Service	NTG	Net Savings Research – Customer Free Ridership Survey				X
Commercial Food Service	NTG	Net Savings Research – Customer Spillover Survey				X
Commercial Food Service	NTG	Net Savings Research – Trade Ally Free Ridership Survey				X
Commercial Food Service	NTG	Net Savings Research – Trade Ally Spillover Survey				X
Commercial Food Service	Process	Research Optional, Discuss with Program		X		

Source: Guidehouse.
For NTG and Process research "X" indicates reporting year

The evaluation team will perform net-to-gross (NTG) savings research to update the CFS pilot's NTG ratio for reporting in 2025. This research will include process evaluation into the pilot's market engagement and customer satisfaction.

Process evaluation efforts related to the Business Optimization (BOP) offering to be conducted in CY2024 include a 360º-process review. Evaluation activities related to this item will include a process assessment of core delivery paths of this offering in addition to comparisons with other jurisdictions.

A.3.2 CUSTOM REBATES

The purpose of the Custom Incentives (Custom) program is to assist medium to large commercial, industrial, and public sector customers in identifying and implementing cost-effective gas-saving measures that are not otherwise addressed in Nicor Gas' BEER or Small Business offerings. Custom projects may include, but are not limited to, Combined Heat and Power (CHP) systems, process heat recovery technologies, other low-emissions technologies such as gas heat pumps, and more. Additionally, the Custom program offers retro-commissioning (RCx) non-jointly as a Stand-Alone offering, which aims to optimize operations and improve building efficiency by returning facilities to their intended operation or design specifications.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Custom Savings Review	X	X	X	X
Impact	Wave impact analysis	X	X	X	X
Impact	Survey, Phone, or Virtual Verification	X	X	X	X
Impact	Onsite Verification	X	X	X	X
General	Staff Interview			X	
General	Implementer Interview			X	
NTG	Net Savings Research – Customer Free Ridership Survey				X
NTG	Net Savings Research – Customer Spillover Survey				X
Process	Research Optional, Discuss with Program				X

Source: Guidehouse.
For NTG and Process research "X" indicates reporting year

Due to the unique NTG protocol employed for Retro-Commissioning, Nicor Gas Stand-Alone (non-joint) RCx projects will be researched on the same schedule as the Coordinated RCx program NTG research. For CHP, project specific NTG values will be determined by evaluation early in each project.

A.3.3 STRATEGIC ENERGY MANAGEMENT

Strategic Energy Management engages customers in long-term continuous energy efficiency improvements at their facilities by involving site management, leveraging data, and promoting best practices at the site.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Category	Tasks	CY2022	CY2023	CY2024	CY2025
Impact	Custom Savings Review	X	X	X	X
Impact	Survey, Phone, or Virtual Verification	X	X	X	X

Source: Guidehouse.

A.3.4 COORDINATED RETRO-COMMISSIONING

The Retro-Commissioning (RCx) Program seeks to realize energy savings by restoring building HVAC systems and optimizing controls to meet the needs of the current building occupants. The program is managed by ComEd, and ComEd coordinates with Nicor Gas, Peoples Gas, and North Shore Gas to account for gas savings generated through the program.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
C&I and Public Sector	General	Staff Interview	X	X	X	X
C&I and Public Sector	General	Implementer Interview	X	X	X	X
C&I and Public Sector	Impact	Program Tracking Data Review	X	X	X	X
C&I and Public Sector	Impact	Custom Savings Review	X	X	X	X
C&I and Public Sector	Impact	Wave impact analysis	X	X	X	X
C&I and Public Sector	Impact	Survey, Phone, or Virtual Verification	X	X	X	X
C&I and Public Sector	Impact	Onsite Verification	X	X	X	X
C&I and Public Sector	NTG	Net Savings Research – Customer Free Ridership Survey			X	
C&I and Public Sector	NTG	Net Savings Research - Customer Spillover Survey			X	
C&I and Public Sector	NTG	Net Savings Research - EESP Free Ridership Survey			X	
C&I and Public Sector	NTG	Net Savings Research - EESP Spillover Survey			X	

Source: Guidehouse.
For NTG and Process research “X” indicates reporting year

Guidehouse will perform program tracking data review and project reviews quarterly in CY2022. Our overarching goal is to research savings impacts sufficiently to report program-level savings at ±10% precision and 90% confidence. The default strata will be defined by project size and offering type.

The impact research sample will be drawn quarterly based on the projects labeled “Ready for Evaluation” in the Ops Report provided by the implementation contractor. After program ex ante results are final, the progressive quarterly sample will be compared to the year-end program participation and savings, and we will adjust the sample to comply with sampling goals.

The evaluation team will conduct a NTG study to research free ridership and spillover. We will survey participants and interview active EESPs to research free ridership and spillover. We will triangulate the results to inform the final recommended NTG value in 2024 using methods defined in the Illinois TRM.

Due to the unique NTG protocol employed for Retro-Commissioning, Nicor Gas Stand-Alone RCx projects will be researched on the same schedule as the Coordinated RCx program NTG research.

A.3.5 COORDINATED NON-RESIDENTIAL NEW CONSTRUCTION

The New Construction Program is offered jointly to non-residential (including public sector) customers served by ComEd and Nicor Gas.[7] The program aims to capture immediate and long-term energy efficiency opportunities that are available during the design and construction of non-residential and multifamily buildings in ComEd's service territory. The program covers new buildings, additions, and major renovations. Slipstream implements the program for ComEd and Nicor Gas.

Since CY2021, the program offers two different program tracks to tailor program support to different types of participants and specific business segments.

- **Performance path:** Offers a custom, hands-on technical approach to new construction projects and targets projects that are early in the design phase to maximize opportunities to influence the incorporation of high performance design strategies. Technical staff use whole building energy simulations (including energy models and spreadsheet calculations) to optimize the building design for energy performance. Modeling results include incentive amounts and annual energy cost savings estimates. This allows the design team to identify design strategies and technologies that will take their building design further and have the greatest impact on the building's energy use.
- **Best Practices path:** Offers a more prescriptive approach to new construction projects. This pathway was designed for fast-moving, developer-led projects or small projects. This includes predetermined lists of measures and incentives that are available for specific building types along with resources and guidelines for how to best implement those measures. This path provides an optimized and predictable incentive pathway with predefined, per-square foot incentives for achieving specific energy efficiency best practices, as well as optional advanced measures. The building types that are available through the Best Practices path are listed as follows:
    - Warehouse and industrial
    - Multifamily and assisted living
    - Office
    - Retail and grocery
    - Parking garage – being added in 2021

The program is still serving projects that entered the program prior to CY2020 under one of the legacy participation tracks.

The evaluation of this program will include the activities shown in Table 1.

[7] Peoples Gas and North Shore Gas offered the program in the previous program cycle and continue to support legacy projects, although they are no longer accepting new applications.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
C&I and Public Sector	General	Staff Interview	X	X	X	X
C&I and Public Sector	General	Implementer Interview	X	X	X	X
C&I and Public Sector	Impact	Program Tracking Data Review	X	X	X	X
C&I and Public Sector	Impact	Custom Savings Review	X	X	X	X
C&I and Public Sector	Impact	Survey, Phone, or Virtual Verification	X	X	X	X
C&I and Public Sector	Impact	Wave Impact Analysis	X	X	X	X
C&I and Public Sector	NTG	Net Savings Research		X		X

Source: Guidehouse.
For NTG and Process research "X" indicates reporting year

The gross impact evaluation will be based on a custom savings review. We will perform a program tracking data review and custom savings review in two waves. The first wave is expected to cover the first half of the calendar year (January 1-June 30) and the second wave is expected to cover the second half (July 1-December 31). Each wave will consist of a tracking data review, followed by stratified random sampling of all completed projects and a custom savings review of sampled projects.

The custom savings review will include desk reviews of all sampled projects, including reviewing and, if needed, revising building energy simulation models. On a project-by-project basis, the evaluation team will determine if survey, phone, or virtual verification activities are necessary to complement desk review activities. We will present realization rate results overall for the program by fuel type, inclusive and exclusive of interactive effects.

Per the program design, the baseline for all projects will typically be based on the applicable Illinois Energy Conservation Code (ICC) for Commercial Buildings. The ICC references the International Energy Conservation Code (IECC), which also allows for use of ASHRAE Standard 90.1 as an alternate compliance method. For each project. the applicable code version will be determined by the issuance date of the construction permit. We will also allow for a grace period (in years) with IECC code updates. Therefore, projects with permit issuance dates at or after January 1 of the year following an IECC code update will be assigned the newest IECC code version as a baseline.

The evaluation will include an assessment of customer free ridership estimated based on in-depth interviews with participating customers and a review of project documentation. Net savings research will entail conducting rolling interviews with program participants in the reservation phase of program participation. Although interviews will be conducted throughout all four calendar years, we will conduct NTG analysis to report NTG ratios in only CY2023 and CY2025. NTG analysis will employ enhanced rigor review for approximately 10%-20% of the largest projects in the pool of completed interviews by ex ante savings.

Microdata from free ridership research will be shared with the program implementation team along with findings upon completion of the NTG analysis. This includes component scores for each project, relevant quotes and excerpts from respondents, and other relevant details that could be used to inform program design or delivery. The data shall be scrubbed of identifying details in order to protect the confidentiality of the respondents.

In 2024, the evaluation team will consider improved approaches to evaluating NTG for this program, in particular, to help program participants distinguish efforts that are beyond code. This may involve specific engagement with the SAG NTG Working Group to update the TRM's NTG approach for this program.

A.3.6 SMALL BUSINESS

The Small Business (SB) program obtains long-term natural gas savings for small business and public sector gas customers by providing financial incentives, information, and direct installation of energy-saving products to overcome key market barriers.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
Presciptive Rebates, DI	Impact	Measure-Level Deemed Savings Review	X	X	X	X
Presciptive Rebates, DI	Impact	Interim Impact Analysis	X	X	X	X
Custom Rebates	Impact	Custom Savings Review	X	X	X	X
Custom Rebates	Impact	Wave impact analysis	X	X	X	X
Custom Rebates	Impact	Survey, Phone, or Virtual Verification	X	X	X	X
All	General	Staff Interview			X	
All	General	Implementer Interview			X	
DI, Rebates	NTG	Net Savings Research – Customer Free Ridership Survey				X
DI, Rebates	NTG	Net Savings Research – Customer Spillover Survey				X
DI, Rebates	NTG	Net Savings Research – Trade Ally Free Ridership Survey				X
DI, Rebates	NTG	Net Savings Research – Trade Ally Spillover Survey				X
All	Process	Research Optional, Discuss with Program				X

Source: Guidehouse.

For NTG and Process research "X" indicates reporting year

A.4 Market Transformation Initiatives

A.4.1 BUILDING OPERATOR CERTIFICATION

The Building Operator Certification (BOC) program is a training and certification for commercial building operators. The curriculum teaches participants how to improve building comfort and efficiency by optimizing the building's systems. The savings for BOC participants are determined by a TRM measure that calculates savings using facility square footage.

The evaluation of this program will include the activities shown in Table 1.

Table 1. Evaluation Activities

Market Offering	Category	Tasks	CY2022	CY2023	CY2024	CY2025
BOC TRM Measure	Impact	Measure-Level Deemed Savings Review	X	X	X	X

Source: Guidehouse.

A.4.2 STRETCH ENERGY CODES

Energy codes are recognized as an effective way to move the market towards more efficient buildings for new construction, additions, and major renovation projects. The SAG Market Transformation Working Group and other parties in Illinois are investigating initiatives designed to influence stretch energy codes and allow the utility administering the program to claim savings through market transformation initiatives. Utilities have unique opportunities to be involved in influencing stretch energy code advancement. These opportunities are divided into three parts: 1) utility-initiated research, 2) advocacy for advancing policy, and 3) the creation of utility programs to support implementation and compliance with stretch energy codes. The amount of savings attributed to the utilities would be a direct reflection of the amount of effort and influence put forth by the utilities.

Detailed plans for Nicor Gas will be added to this Compendium as these are developed. The evaluation plan for ComEd describes the statewide evaluation effort.

A.4.3 Building Performance Standards (BPS)

Building Performance Standards (BPS) are recognized as an effective way to move the market towards more efficient energy use in efficient existing buildings. The SAG Market Transformation Working Group and other parties in Illinois are investigating initiatives designed to influence BPS and allow the utility administering the program to claim savings through market transformation initiatives. Utilities have unique opportunities to be involved in influencing BPS. These opportunities are divided into three parts: 1) utility-initiated research, 2) advocacy for advancing policy, and 3) the creation of utility programs to support implementation and compliance with BPS. The amount of savings attributed to the utilities would be a direct reflection of the amount of effort and influence put forth by the utilities.

Detailed plans for Nicor Gas will be added to this Compendium as these are developed. The evaluation plan for ComEd describes the statewide evaluation effort.

A.4.4 HIGH PERFORMANCE WINDOWS

More than two decades ago, the Lawrence Berkeley National Laboratory, LBNL identified a novel technology pathway to thermally upgrade windows by adding a thin third pane of glass into the traditional two pane insulating glass unit (IGU), adding a second low-E coating, and replacing the argon gas fill with krypton. This results in a drop-in replacement IGU that converts standard R3 windows to energy efficient ~R5 without structural redesign of the window and home. The thin glass needed has since become readily available and affordable because of high demand by the flat screen TV and computer monitor industry. While the initial market opportunity is the residential sector, thin triple-pane windows would be applicable to the commercial sector as well.

The MT plan would require directly engaging window industry partners who make and sell windows in the Midwest and their critical supply chain partners. The plan assumes the utility and educational/training/outreach partners that have served other efforts in the past could be leveraged. To reduce risk and provide the largest possible market stimulus, the plan suggests combining utility customer rebates/incentives with manufacturing and supply chain support. The market transformation would be secured by establishing sufficient market demand to move ENERGY STAR efficient window specifications to the more efficient R5 Advanced Window, and potentially stretch energy codes.

Detailed plans will be added to this Compendium as these are developed.

A.4.5 RESIDENTIAL AND COMMERCIAL HVAC GAS HEAT PUMPS

A subset of heat pumps whose primary input drive energy is a gaseous fuel, instead of an electrically driven compressor, have up to 140% heating efficiency and superior performance in cold climates, performing reliably at temperatures as low as -20°F. Customers can expect maintenance requirements similar to those of existing equipment and high reliability due to few internal components. In collaboration with GTI Energy and North American Gas Heat Pump Collaborative, residential demonstration projects are being conducted in Illinois to help develop the supply channels that will make this technology accessible to Illinois residents and businesses.

The MT plan would require directly engaging HVAC industry partners who make and sell gas heat pumps in the Midwest and their critical supply chain partners. The plan assumes the utility and educational/training/outreach partners that have served other efforts in the past could be leveraged. To reduce risk and provide the largest possible market stimulus, the plan suggests combining utility customer rebates/incentives with manufacturing and supply chain support. The market transformation would be secured by establishing sufficient market demand for HVAC gas heat pumps, and potentially stretch energy codes.

Detailed plans will be added to this Compendium as these are developed.

A.4.6 GAS HEAT PUMP WATER HEATERS

Water heaters that use natural gas to heat water by moving heat from the surrounding environment to the water tank. These products are not currently on the market and use a gas-fired heat pump and have a Uniform Energy Factor (UEF) >1.

The MT plan would require directly engaging water heating industry partners who make and sell water heaters in the Midwest and their critical supply chain partners. The plan assumes the utility and educational/training/outreach partners that have served other efforts in the past could be leveraged. To reduce risk and provide the largest possible market stimulus, the plan suggests combining utility customer rebates/incentives with manufacturing and supply chain support. The market transformation would be secured by establishing sufficient market demand for gas heat pump water heaters with a UEF > 1, and potentially stretch energy codes.

Detailed plans will be added to this Compendium as these are developed.

A.4.7 EFFICIENT ROOFTOP UNITS

Increasing the efficiency of RTUs through product differentiation and increased Federal Standards. There is a significant energy-saving potential among Efficient RTUs through low-cost efficiency measures, offering an opportunity to differentiate these products in the market.

The MT plan would require directly engaging HVAC industry partners who make and sell RTUs in the Midwest and their critical supply chain partners. The plan assumes the utility and educational/training/outreach partners that have served other efforts in the past could be leveraged. To reduce risk and provide the largest possible market stimulus, the plan suggests combining utility customer rebates/incentives with manufacturing and supply chain support. The market transformation would be secured by establishing sufficient market demand for efficient RTUs, and potentially stretch energy codes.

Detailed plans will be added to this Compendium as these are developed.]

A.5 Portfolio Research Plans

Detailed plans will be added to this Compendium as these are developed.