



Memorandum

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Re: Nicor Gas Market Transformation Initiatives Documentation

1 Objective

This memo will serve as a documentation-focused deliverable, highlighting the historic and 2025 market transformation initiative (MTI) activities for high-performance windows (HPWs), residential gas heat pumps (RGHPs), and efficient rooftop units (ERTUs). For each MTI, Guidehouse documents program activities and data sources related to the MT Savings Protocol Progress, such as developing the logic model and market progress indicators (MPI), natural market baseline (NMB) and estimating savings.

While this 2025 Memo primarily details Nicor Gas' 2025 MT activities, it's important to note that Nicor Gas has been actively engaging in the MT landscape in Illinois and beyond since 2019. This memo provides an overview of activities prior to 2025 for each MTI. Historical MT activities undertaken from 2019-2024 have been summarized by Nicor Gas through existing quarterly reporting to the commission, and other more detailed information and share outs have been presented at the MT Working Group, a working group of the Illinois Stakeholder Advisory Group (SAG).¹

Program Definitions:

- HPWs: windows that meet ENERGY STAR v7.0 criteria by incorporating advanced glazing configurations, such as triple-pane or thin-triple designs, that improve thermal performance.² These products reduce energy consumption without requiring structural changes to the home but typically cost more than traditional dual-pane windows.
- RGHPs: heat pumps that use gaseous fuel as the primary energy input rather than an electrically driven compressor. These systems achieve up to 140% heating efficiency and operate in cold climates at temperatures as low as -20°F.³

¹ [Illinois Energy Efficiency Stakeholder Advisory Group, Market Transformation Savings Working Group](#)

² MTI Annual Evaluation Memo 2024.12.2

³ MTI Annual Evaluation Memo 2024.12.2

- ERTUs: incorporate a combination of energy-saving features, hybrid (dual-fuel) systems, shell insulation, low-leakage dampers, and energy recovery ventilators (ERVs). ERTUs can be easily installed to replace existing RTUs, reducing HVAC energy use by 12-40%.⁴

2 Summary of Previous Activities

Nicor Gas has three active MTI programs at varying stages of supporting document development and review. Table 2-1 summarizes the major Nicor Gas market transformation activity milestones for each MTI. All activities are key to MTI development, but not all activities have been presented to the SAG.

Table 2-1. Market Transformation Initiative Status

Market Transformation Activity	High Performance Windows	Residential Gas Heat Pumps	Efficient Rooftop Units
MTI Measure Development			
Concept Development	Complete	Complete	Complete
Strategy Development	Complete	Complete	Complete
Savings Protocol	Complete	Complete	Complete
Logic Model	Complete	Complete	Complete
Market Progress Indicators	Complete	Complete	Complete
Natural Market Baseline	Complete	Complete	Complete
Energy Savings Framework	In Progress	In Progress	In Progress
Theory Based Evaluation	Complete	Complete	Not Started
Active Measure Evaluation			
Program Review	Not Started	Not Started	Not Started
Data Collection	In Progress	In Progress	In Progress

3 High Performance Windows

For purposes of this initiative, HPWs are windows that meet ENERGY STAR v7.0 performance criteria. These products can include high-performing double-pane, triple-pane, thin-triple, and other advanced glazing

⁴ NEEA_AHR_E-RTU_Handout

configurations designed to improve thermal performance while remaining practical for residential new construction and replacement applications.^{5 6}

Multiple activities took place in 2023 to develop supporting documents for the HPW MTI. First, Nicor Gas and Resource Innovations (RI) used nine data sources (2021–2023) to develop the HPW NMB⁷ Second, Nicor Gas developed the logic model and list of MPis. Following the development of these supporting documents, Guidehouse reviewed these inputs and finalized the theory-based evaluation plan in 2024.⁸

3.1 Historic Program Activities

The HPW MTI focused on early-stage development, including planning, market characterization, and stakeholder engagement. Below is a high-level summary of activities.

- In 2020, Nicor Gas established the HPW MTI.
- In 2022, the MTI submitted comments to ENERGY STAR v7.0.
- In 2022, the MTI submitted a market characterization report with Nicor Gas partners, including Ameren Illinois and Commonwealth Edison.
- In 2023, Nicor Gas completed a quantitative market research report.
- In 2023, the IL TRM was updated with HPW information.
- In 2023, Nicor Gas Finalized the logic model and Nicor Gas presented the MPis to the Stakeholder Advisory Group (SAG) Market Transformation Savings Working Group (MT Savings Working Group).
- In 2024, Nicor Gas presented the NMB and theory-based evaluation to the MT Savings Working Group.⁹
- In 2024, Nicor Gas shared HPW pilot design recommendations with relevant stakeholders.

3.1.1 2025 Implementation Activities

The HPW MTI transitioned from planning and market framework development to its first year of sustained market-facing implementation in 2025.

The implementation team finalized an HPW Evaluation Survey in early 2025, fielded the survey in Q3 of 2025, and delivered results to Nicor Gas in Q4.¹⁰ The evaluation survey results showed that while most builders recognize the ENERGY STAR label, they lack understanding of v7.0's more technical criteria. Builders, raters, and manufacturers all expressed interest in training that covers v7.0 performance and the practical benefits of HPWs. The Implementation team delayed other interventions until after the survey was conducted so that the survey would serve the initial point of contact.

Nicor Gas completed an HPW new construction pilot in 2025, aiming to engage 40-50 homes, but completed installations in two homes with two builders. The pilot installed 22 HPWs, representing 82.12 therms of savings per the IL TRM. Nicor Gas did not claim these savings in 2025 and will instead evaluate

⁵ MTI Annual Evaluation Memo 2024.12.2

⁶ [Nicor Gas High Performance Windows 10.25.2023](#)

⁷ [Nicor-Gas_Q2-2024-MT-SAG-Presentation_06.10.2024_High-Performance-Windows.pdf](#)

⁸ <https://www.ilsag.info/wp-content/uploads/Theory-Based-Evaluation-Approach-for-Nicor-Gas-MTI-Programs.pdf>

⁹ [Nicor-Gas_Q2-2024-MT-SAG-Presentation_06.10.2024_High-Performance-Windows.pdf](#)

¹⁰ Nicor Gas 2025 High Performance Windows Transformation Outreach Report, November 2025.

them in future market effects analyses. During this pilot it became clear that in addition to the 22 HPW installed, there were triple-pane windows installed that do not meet the HPW definition. Clear market education on qualifying programs need to be developed to help with future program success.

The implementation team contacted 15 suppliers to request sales data; five agreed to participate. The pilot also identified that some installed triple-pane windows did not meet the HPW definition, highlighting the need for improved market education on qualifying criteria.

Nicor Gas continued to collaborate with the Windows and Doors Manufacturing Association (WDMA), an industry group that collects data for ENERGY STAR. In 2025, Nicor Gas declared the intention to leverage existing channels to spin up savings and began developing research and coordination. Alongside Minnesota's Efficient Technology Accelerator (MN ETA) program, Nicor Gas co-founded the HPW Golden Carrot, which uses a coordinated approach to bring builder grade HPWs to the Illinois service territory.

Nicor Gas focused on integrating HPWs into existing delivery channels, such as the Smart Neighborhood Builder and Air Sealing and Insulation programs. These efforts included developing supporting materials and collaborating with the evaluator to design surveys and interviews to support establishment of the pre-implementation baseline. The team continued ongoing supply chain market research and MPI baseline data collection.

A HPW measure was included in the Nicor Gas Affordable Housing New Construction (AHNC) program in 2025. The HPW MTI logic model incorporates the use of incentives under Nicor Gas' resource acquisition programs and promotes the uptake of HPWs; AHNC fulfills that intervention strategy by incentivizing the HPW measure. Feedback from the AHNC program can help inform the value proposition for the affordable housing market segment.

3.2 Data Sources Leveraged for Developing HPW NMB

Resource Innovation (RI) developed the NMB for HPWs from Q2 of 2023 to Q1 of 2024 with review from NEEA and Cadmus. The team used the following sources to develop the baseline:

- Triple Pane Window research paper prepared by Stephen Selkowitz¹¹
- Studies completed by Cadmus, NEEA and RI¹²
- RESNET (Residential Energy Services Network)/HERS (Home Energy Report) data¹³
- Energy STAR v7.0 data package
- Nicor Gas presentation on High Performance Windows MT Initiative – Natural Market Baseline¹⁴

The Selkowitz's paper is one of the primary sources for NMB development and is based on a market growth S curve. This curve references several key data points that must be accurately defined to properly estimate the NMB including an initial market share, start of hypergrowth (rapid change point of the S curve), ramp

¹¹ Market Baseline for Triple Pane Windows. Selkowitz.

¹² High Performance Windows - IL Market Characterization Report

¹³ 2023 Data Trends Report of HERS Rated Homes

¹⁴ [Nicor Gas Presentation: High Performance Windows MT Initiative – Natural Market Baseline](#)

period, and maximum market share and factor (of growth). The Selkowitz estimates a NMB saturation of 10%-30% by 2040, which is significantly lower than RI's estimation of 36% saturation by 2040.

3.3 Potential Data Sources for Estimating Savings for HPW

Nicor Gas must collect local market data to estimate the impact of HPWs because existing national datasets do not provide climate-zone-specific information for this technology (e.g. ENERGY STAR Retail Products Program). This data should include but not limited to:

- 2025 program pilot data
- Surveys and interviews with manufacturers, raters, and homebuilders to establish baseline market awareness and availability
- Market intelligence interviews with industry participants and future trade allies to better understand specification practices
- Sales data collection

As Nicor Gas identifies data sources for these measures, Guidehouse will work with the Nicor team to develop an evaluation approach for the MT program. The type and quantity of data collected will inform the evaluation, and ongoing coordination between teams will be required as data is collected and shared.

4 Efficient Rooftop Units (ERTU)

ERTUs provide greater energy efficiency than standard RTUs¹⁵ and can operate as either gas-only systems or hybrid systems that incorporate a heat pump with gas backup. The two tiers of equipment considered are:

1. Tier 1 incorporates box upgrades such as box insulation and low-leak dampers.
2. Tier 2 incorporates Tier 1 components and an energy recovery ventilator.¹⁶

In 2024, Guidehouse reviewed and finalized the logic model, market progress indicators (MPIs), NMB and theory based evaluation for the ERTU MTI.

4.1 Historic Program Activities

The ERTU MTI has made progress toward completing several steps outlined in the MT Protocol Process defined by the IL TRM. A summary of activities include:

- In 2021, Nicor Gas co-funded the ERTU MTI with NEEA.
- In 2023, Nicor Gas developed initial drafts for the ERTU logic model, MPIs, and Operations Plan.
- In 2024, Nicor Gas presented the logic model, MPIs, and NMB to the MT Savings Working Group.^{17,18}

¹⁵ [Nicor-Gas_Q2-2024-MT-SAG-Presentation_06.10.2024_Efficient-Rooftop-Units.pdf](#)

¹⁶ [Nicor Gas Efficient Rooftop Units Natural Market Baseline 8.29.2024](#)

¹⁷ [Efficient Rooftop Unit Program Logic Model](#)

¹⁸ [Efficient Rooftop Units Market Progress Indicators Table](#)

- In 2024, Nicor Gas staff engaged with a variety of organizations, including the Consortium for Energy Efficiency (CEE)'s Air Conditioning and Heat Pump Committee, to align on a product definition for the next generation of RTUs. Staff also engaged with partners including NEEA, California Public Utilities Commission's CalMTA, and MN ETA to support consensus on product specifications, savings modeling, and product definition to advance fuel-neutral measures.

4.1.1 2025 Implementation Activities

Nicor Gas worked towards ERTU program launch through several activities during the 2025 program year:

- **Energy Savings Framework:** Nicor Gas completed the Energy Savings Framework and is awaiting review by the evaluator, Guidehouse.
- **Industry Engagement:** Nicor Gas engaged the CEE's Air Conditioning and Heat Pump Committee and adopted the committee's new efficient product definition for the next generation of RTUs into the ERTU Product Definition. Nicor Gas also engaged several industry partners (CalMTA, NEEA, MN ETA) on a quarterly and ad hoc basis to collaborate on specifications, savings modeling, and product definition, and participated in monthly meetings hosted by CEE to advance ERTU development.
- **ERTU Pilot:** Nicor Gas launched the ERTU pilot in Q2 of 2025 in collaboration with GTI Energy and conducted site monitoring and data collection at two pilot sites. Nicor Gas also collaborated with AAON and Daikin to install three ERTU units at pilot sites, initiated market research efforts in Q4 2025, and plans to continue the pilot through 2027.
- **Program Planning Considerations:** Nicor Gas initiated planning for a future program launch, identified barriers, and recommended key program design considerations including TRM measure assumptions, incentive levels, program delivery channel recommendations, and key market actor collaborations.
- **ERTU Modeling:** Nicor Gas used NEEA-based RTU building simulation models to estimate Illinois-specific electric impacts associated with replacing gas RTUs with dual-fuel RTUs or air-source heat pumps (ASHPs). Expanded modeling also addressed electric, economic, and emissions impacts, with the NEEA model providing energy savings estimates across multiple measures and technologies in 11 climate zones.
- **2026 ERTU Workplan:** Nicor Gas staff identified key activities for 2026 to advance ERTUs according to the MT Protocol Process, including updating operational plans, engaging key market actors, continuing ERTU pilot activities and case studies, and expanding modeling.

4.2 Data Sources Leveraged for Developing ERTU NMB

RI developed the NMB for ERTU in 2024 with supporting information from GTI Energy, NEEA, CEE and review from Guidehouse. ERTUs have low historical participation (less than 0.5%), limited manufacturing support, and no forthcoming codes or standards to drive market adoption. As a result, the NMB is conservative, with projected market share below 1% by 2040 and a maximum adoption of 20%. Nearly all adoption of this

technology is expected to be attributable to program activities. In 2024 the ERTU NMB was presented to the SAG MT Working Group and no additional comments were provided.¹⁹

4.3 Potential Data Sources for Estimating Savings for ERTU

The ERTU program is in an early stage with limited participation and awareness of the technology. Potential data sources to support this program include:

- GTI has launched ERTU pilots that include monitoring and data collection and market research efforts such as pilot interviews.
- Nicor is developing a ERTU simulation model, continues to engage with market actors, and is planning a pilot and case study.

As ERTUs are implemented in the market, Nicor will closely monitor savings and impacts. As the program advances beyond the pilot stage, data collection may expand but is expected to remain limited to a small group of key market actors installing the technology.

5 Residential Gas Heat Pumps (RGHP)

RGHPs are a cold climate heat pumps that provide space conditioning, water heating, and combined (“combi”) space and water heating options. These systems extract heat from outdoor air and transfer it indoors for space conditioning, using natural gas as the primary energy input.²⁰²¹

In 2024, Nicor Gas developed the logic model and MPIs²² using market research from GTI Energy and Northwest Energy Efficiency Alliance (NEEA) energy modeling. The following year, Guidehouse reviewed and provided feedback on the NMB.²³

5.1 Historic Program Activities

The following summary of activities have advanced RGHPs from an emerging technology to an active MTI:

- In 2019, Nicor Gas identified RGHPs as a priority MTI.
- In 2020, Nicor Gas was a founding member of the North American Gas Heat Pump Collaborative (NAGHPC), an organization that now consists of 17 gas and dual fuel utilities and energy efficiency program administrators who strategically intervene in the HVAC market to accelerate the market adoption of GHPs.
- In 2024, key components of the MT Savings Protocol Process were created, submitted and approved by the MT Savings Working Group including logic model and MPIs, NMB, and theory-based evaluation.²⁴

¹⁹ [Nicor Gas Efficient Rooftop Unit Initiative – Overview of Natural Market Baseline Review for Comments](#)

²⁰ [Nicor Gas Presentation: Residential HVAC Gas Heat Pumps 2.28.2024](#)

²¹ MTI Annual Evaluation Memo 2024.12.2

²² [Nicor-Gas_Q2-2024-MT-SAG-Presentation_06.10.2024_Efficient-Rooftop-Units.pdf](#)

²³ <https://www.ilsag.info/wp-content/uploads/Nicor-Gas-ERTU-NMB-MT-SAG-08-29-2024-Slides.pdf>

²⁴ <https://www.ilsag.info/wp-content/uploads/Theory-Based-Evaluation-Approach-for-Nicor-Gas-MTI-Programs.pdf>

- In late 2024, one RGHP manufacturer had commercially available units in limited quantities. Nicor Gas initiated an RGHP pilot with 15 residential sites. The RGHP Pilot installed units during the 2024/2025 heating season to obtain quantitative and qualitative data.

5.1.1 2025 Implementation Activities

Nicor Gas undertook planning activities for a future RGHP program launch and completed several activities during the 2025 program year. These efforts included development of a detailed roadmap outlining key activities, timelines, and staff roles, as well as marketing materials for upcoming pilots and programs informed by market research, pilot findings, and stakeholder interviews.

In late 2024, one manufacturer began selling the first RGHPs in the United States in limited quantities. During the 2024/2025 heating season, Nicor Gas focused on its RGHP Pilot, and installed 15 combi GHPs in residential homes. GTI Energy managed the installations and conducted quantitative analysis.

RI conducted a qualitative analysis that captured the pilots' lessons learned through the perspective of all market actors: residential homeowners, RGHP installer business owners, RGHP installers, and the installers training experience. The analysis included a combination of in-person and phone interviews to capture the participant experience during the installation and approximately six months post installation.

Nicor Gas also conducted market research to assess the potential of offering its customers RGHP technology and its viability as a rebate offering for residential customers. In-person customer focus groups identified RGHPs perceived benefits and barriers to market adoption. Two types of interviews were conducted:

1. Residential homeowner customers were divided equally into two groups who self-identified as 1) early adopters or 2) conservative in their technology adoption.
2. Trade Ally focused customers were divided into residential HVAC contractors, commercial HVAC contractors, and residential new construction builders.

Report results will be available in 2026.

Nicor Gas continued their annual funding for the NAGHPC, including the Residential HVAC GHP Committee. Additionally, in program year 2025, Nicor Gas worked to incorporate RGHPs into the IL TRM. Effective January 1, 2026, RGHPs were included in the 2026 Illinois TRM v14.0, Vol. 3 as a space heating only and combi measure.²⁵

5.2 Data Sources Leveraged for Developing RGHP NMB

RGHP NMB, like ERTU, has limited residential-focused manufacturers, no codes or standards pushing the technology, and little historical installation in North America. Nicor Gas has identified one manufacturer that began selling RGHPs in late 2024 in limited quantities. Given the limited availability and acceptance of RGHP technology, Guidehouse agrees that the NMB for this technology is currently zero therefore any installation of this technology can be attributable to Nicor's MTI activities. In 2024, Nicor Gas presented the

²⁵ [IL-TRM_Effective_010126_v14.0_Vol_3_Res_09192025_FINAL.pdf](#)

logic model, MPIs, and NMB to the MT Savings Working Group and no additional comments were provided by the SAG Market Transformation working group.²⁶²⁷²⁸

5.3 Potential Data Sources for Estimating Savings for RGHP

Given the limited manufacturing base of RGHP, Nicor Gas plans to work directly with the RGHP supply chain to track sales volumes and market uptake.

²⁶ [Nicor Gas Residential HVAC GHP Logic Model](#)

²⁷ [Nicor-Res-HVAC-GHP-MPI-Table-2.16.24-MT-SAG.xlsx](#)

²⁸ [Residential HVAC Gas Heat Pumps Natural Market Baseline](#)