



Illinois Stretch Codes Market Transformation Initiative Theory-Based Evaluation Plan for CY2024–CY2028 June 10, 2024

Prepared by Guidehouse

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1. Introduction

The Illinois Stretch Codes Market Transformation Initiative (MTI) is a ComEd-supported effort to promote greater energy efficiency adoption through policy advancement and improved implementation of stretch energy codes. This initiative extends across Illinois through the implementation of stretch residential and commercial energy codes that exceed the minimum requirements in the Illinois statewide energy code. The ComEd-funded MTI is implemented through strategic partnerships, stakeholder engagement, and technical assistance, including direct collaboration with participating municipalities and the Illinois Metropolitan Mayor’s Caucus.

In Illinois, electric and gas utilities administering a building energy code initiative can claim savings through a Market Transformation (MT) approach to program design and evaluation. Illinois TRM (IL TRM) v12 *Attachment C: Framework for Counting Market Transformation in Illinois*¹ defines MT as “the strategic process of intervening in a market to create lasting change that results in the accelerated adoption of energy efficient products, services, and practices.” Using an MT approach for stretch energy codes, utilities can claim savings in two distinct roles:

Policy advancement: utilities can support state and municipal efforts to advance and adopt stretch codes through technical guidance and policy development.

Compliance support: utilities can provide stretch code compliance support through programs that provide technical assistance and training for municipalities, contractors, designers, and building owners.

In 2021, the utility sponsor, ComEd, launched the Stretch Codes MTI. Slipstream and its partner, Midwest Energy Efficiency Alliance (MEEA), implement the Stretch Codes MTI for ComEd. Guidehouse, the MTI evaluator, is working collaboratively with ComEd, Slipstream, MEEA, Illinois Commerce Commission (ICC), and the Illinois Stakeholder Advisory Group (SAG) MT Working Group (WG) members to examine if the preponderance of evidence (PoE) suggests the Stretch Codes MTI is achieving the desired outcomes, and to develop and refine the Energy Savings Framework (ESF)². This stretch code MTI was previously funded in part by other Illinois utilities including Nicor Gas, Peoples Gas and Northshore Gas, and Ameren.

¹ [IL TRM Effective 010124 v12.0 Vol 4 X-Cutting Measures and Attach 09222023 FINAL.pdf \(ilsag.info\)](#).

² Slipstream / MEEA, Stretch Codes Energy Savings Framework, June 2024.

IL TRM Attachment C describes three documents needed to define the MT approach: an energy savings framework, a program plan/logic model, and an evaluation plan. This document describes the evaluation plan for the Stretch Codes MTI, including the activities planned for CY2024–CY2025 and in future years through CY2028.

The evaluation plan includes the following sections which cover the proposed evidence gathering approaches for the Stretch Codes MTI for CY2024–CY2028.

1. Introduction
2. General Initiative Support
3. Overview of Evaluation Activities
4. Evaluation Activity Detail
5. Determining Stretch Codes MTI Energy Savings
6. Evaluation of Evidence Gathered
7. Market Progress Evaluation Report (MPER)

2. General Initiative Support

A stretch code is a locally mandated code or alternative compliance path that requires a higher level of energy efficiency than the adopted base energy code. Guidehouse collaborated with stakeholders and the Illinois SAG MT Working Group to support the development of the evaluation pathways framework on stretch codes. The core of this framework was developed by Slipstream and MEEA and received multiple rounds of comments in the SAG meetings. In CY2023, Guidehouse worked collaboratively with Slipstream and MEEA to address all comments and finalize the codes subsection.

Passed 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. CEJA mandated a stretch code which will be available for adoption by municipalities no later than June 30, 2024³ and will offer a pathway to driving higher energy performance in buildings located in municipalities that adopt a stretch code. While the legislation does not require that a municipality adopt the stretch code and enforce its compliance, utilities can influence and motivate local stretch code adoption or provide compliance support.

Once the stretch code is finalized and implemented, Guidehouse will initiate the evaluation process by verifying certain values, such as baselines, and assessing primary inputs, such as compliance rates and achievable savings. The process will include assembling a panel of neutral market experts (expert judgment panel), providing applicable research, and facilitating the panel's consideration of key market metrics. The panel's recommended input will be factored into the evaluation as a primary data source for CY2024–CY2026. In CY2027, the

³ <https://cdb.illinois.gov/business/codes/illinois-energy-codes/illinois-stretch-energy-code.html>.

expert judgment panel process will be repeated relative to the updated statewide base code and stretch codes that will be in effect during CY2026–CY2028.

As of this writing, the CEJA stretch code should be available for municipalities to adopt by October 31, 2024. Once the stretch code is available, municipalities may voluntarily adopt, implement, and enforce these codes. Guidehouse then will evaluate utility attribution scores in CY2024 and beyond as municipalities adopt the stretch code as outlined in the evaluation pathways. As early as CY2025, evaluation of CY2024 stretch code MTIs can be finalized with the calculation of Market Potential Savings and the final Market Transformation Savings attributed to a utility.

For the Stretch Codes MTI, Guidehouse will review and provide feedback on MTI elements such as program theory (PT), logic model (LM), natural market baseline (NMB), market progress indicators (MPIs), and energy savings framework (ESF).

3. Overview of Evaluation Activities

This plan includes research activities to support the Stretch Codes MTI through CY2028. Given the time necessary to develop, implement, expand upon, and realize the benefits of a market transformation initiative, the Stretch Codes MTI evaluation is designed to proceed in conjunction with the initiative’s implementation, as opposed to solely a post implementation assessment.

Table 1 shows the anticipated activities and the year in which Guidehouse expects these to occur. As the Stretch Codes MTI is evolving, Guidehouse will revise this schedule each year as part of the evaluation planning process. While this plan outlines anticipated activities through CY2028, Guidehouse would expect evaluation activities to continue as long as ComEd intends to claim savings from the initiative. Given the time necessary to develop, implement, expand upon, and realize the benefits of a market transformation initiative, the Stretch Codes MTI evaluation is designed to proceed in conjunction with the initiative’s implementation, as opposed to solely a post implementation assessment.

Table 1. Guidehouse Schedule of Stretch Codes MTI Evaluation Activities

| # | Tasks | CY2024 | CY2025 | CY2026 | CY2027 | CY2028 |
|----------------|--|--------|--------|--------|--------|--------|
| General | | | | | | |
| 1 | ComEd and IC Staff Interviews | X | X | X | X | X |
| 2 | Coordinate with Stakeholders | X | X | X | X | X |
| 3 | Participate in SAG MT Meetings | X | X | X | X | X |
| 4 | Review MT Program Elements Developed by Implementation Contractor (IC) | X | X | X | X | X |
| 5 | Conduct Secondary Research for Expert Judgment Panel | -- | X | -- | X | -- |
| 6 | Assemble Expert Judgment Panel and Facilitate Meetings | -- | X | -- | X | -- |
| # | Tasks | CY2024 | CY2025 | CY2026 | CY2027 | CY2028 |
| Impact | | | | | | |
| 7 | Evaluate IC Natural Market Baseline (NMB) Survey Data | X | X | X | X | X |
| 8 | Evaluate and Augment Natural Market Baseline Assessment | X | X | X | X | X |
| 9 | Support Research by IC | X | X | X | X | X |

| # | Tasks | CY2024 | CY2025 | CY2026 | CY2027 | CY2028 |
|----|---|--------|--------|--------|--------|--------|
| 10 | Review Tracking Data, Savings Calculations and Work Papers | X | X | X | X | X |
| 11 | Conduct Residential and Commercial Compliance Field Studies | -- | -- | X | X | -- |
| 12 | Evaluate Compliance Rates, Achievable Savings | -- | X | X | X | X |
| 13 | Evaluate Market Transformation Savings | -- | X | X | X | X |
| 14 | Calculate Market Potential Savings | -- | X | -- | -- | X |
| 15 | Produce Market Progress Evaluation Report | -- | X | -- | -- | X |

Source: Guidehouse

Guidehouse expects that the process for determining attribution and weighing evidence will evolve over time, with increasing rigor and increased buy-in from stakeholders as the potential savings increase. Guidehouse will engage an expert judgment panel for the CY2024–CY2025 impact evaluation and MPI assessment. Guidehouse will consider evidence from each of the MPIs assessed against the expected outcomes outlined in the program theory and logic model to assess (1) whether the indicators suggest the program is producing expected outcomes, and (2) whether, when considered all together, the indicators show evidence the program is causing the observed outcomes. The expert judgment panels will allow Guidehouse to gather input on the degree of progress the Stretch Codes MTI has made towards expected outcomes. Guidehouse will reconvene a structured expert judgment panel every two to three program years.

4. Evaluation Activity Detail

During CY2024–CY2025, Guidehouse will focus additional attention on activities which support the preponderance of evidence assessment, as well as continue to support the SAG MT WG, support refining the ESF, and conduct annual impact reporting.

MPIs Assessment

Guidehouse will report on progress toward the goals and objectives described in the MTI’s logic model (LM) and market progress indicators (MPIs) as provided by Slipstream and MEEA⁴, to establish the initiative’s influence on stretch codes adoption and implementation in ComEd’s territory. IL TRM Attachment C provides the following guidance regarding attribution and evaluation of MT initiatives:

Because the unit of analysis is an entire market not a single transaction, MT evaluations tend to require numerous pieces of evidence that 1) change is occurring; and 2) the program is influential in that change. A preponderance of evidence approach, rather than proof, is most often required.⁵

Assessment of MPIs requires incorporation of multiple judgments of progress based on a preponderance of evidence approach. This information can be qualitative (based on in-depth interviews or observational data collection) or quantitative (based on market share or production

⁴ Slipstream / MEEA, Stretch Codes Logic Model, June 2024.

⁵ [IL TRM Effective 010124 v12.0 Vol 4 X-Cutting Measures and Attach 09222023 FINAL.pdf \(ilsag.info\)](#).

data). MPIs which have been classified by the evaluator as leading or having demonstrated some measurable progress will be reviewed against the preponderance of evidence standard.

For CY2024-CY2028, Guidehouse will consider evidence from each of the MPIs assessed in the program year against the expected outcomes outlined in the program theory and logic model to assess whether the indicators suggest the program is producing expected outcomes and whether, when considered all together, the MPIs show sufficient evidence the program is causing the observed outcomes.

To present a comprehensive case for attribution of observed savings, Guidehouse will combine evidence from the assessments of the following MPIs (**Error! Reference source not found.**) and the corresponding logic model outcomes for CY2024-CY2028.

Table 2. Stretch Codes MTI Market Progress Indicators

| MPI | Logic Model Output / Outcome | Data Source |
|---|---|--|
| OC1.1. Increased understanding of requirements | Increase market actors understanding of stretch code requirements | Survey responses for municipal staff and design / new construction stakeholders across ComEd’s territory (measured across time) |
| OC2.1. Increased number of adopted stretch code ordinances | Municipalities have adopted stretch code within shortened timeline | Meeting notes, policy drafts, passed policy language, and survey responses for municipal staff across ComEd’s territory (measured across time) |
| OC2.2. Increased interest in adopting policy | Municipalities have increased willingness to adopt stretch code or to adopt within shortened timeline | Survey responses for municipal staff and council people across ComEd’s territory (measured across time) |
| OC3.1. Increased Interest in EE construction | Increase market actors’ willingness in EE construction to meet or exceed stretch code | Survey responses for design / new construction (measured before program implementation and after, across time) |
| OC4.1. Increased engagement with online stretch code resources | Increased understanding of building officials on where to find technical resources. ComEd to help develop resources and help market materials. | Data on number of website visits and length of time on page, phone calls to hotlines, etc.; survey responses on website |
| OC4.2. Increased use of compliance resources and tools | Increased building officials understanding of technical resources and where to find. Documented usage and engagement trends for online resources. | Survey responses from building officials (measured directly before adoption, after adoption and at least 1 year later) |
| OC5.1. Increased energy efficiency measures installed | Increase energy efficiency practices in construction | Program participation data; efficiency measures installed data, survey responses (before and after adoption). |
| OC6.1. Number of buildings with permits for stretch code | Increased number of buildings and square footage that are built according to stretch code | Permit data from IL municipalities; percent over time that are stretch code |

| MPI | Logic Model Output / Outcome | Data Source |
|---|---|--|
| OC6.2. Compliance rates for new construction buildings | Increased number of buildings and square footage that are built according to stretch code | Compliance study and/or expert judgment panel completed (measured before and after statewide code updates) |

Source: Slipstream / MEEA, Stretch Codes Logic Model, June 2024.

Specific evaluation activities will be planned for CY2024-CY2028, as shown in **Error!**

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Table 3. Stretch Codes MTI Proposed Data Sources for MPIs Assessment

| Data Source | Responsible Party | MPI | CY2024 | CY2025 | CY2026 | CY2027 | CY2028 |
|---|-------------------------|----------------------------------|--------|--------|--------|--------|--------|
| Municipal / Building Code Officials Survey | Slipstream / Guidehouse | OC1.1 OC4.2 | X | X | X | X | X |
| Design / New Construction Stakeholders Survey | Slipstream / Guidehouse | OC1,1 OC3.1 OC5.1 | X | X | X | X | X |
| Literature Review | Slipstream / Guidehouse | -- | X | X | X | X | X |
| Documentation Review | Slipstream / Guidehouse | OC2,1 OC2.2 OC4,1 OC5.1 | X | X | X | X | X |
| Permit Data Review | Slipstream / Guidehouse | OC6.1 | X | X | X | X | X |
| Expert Judgment Panel | Guidehouse | OC6.2 | -- | X | -- | X | -- |
| Compliance Studies | Guidehouse | OC6.2 | -- | -- | X | X | -- |

Source: Guidehouse.

Outcome (OC)

SAG MT WG Participation

In concert with interested stakeholders and other parties, Guidehouse will continue to assist in refining the protocols and addendums to Attachment C of the IL TRM. Market transformation programs are inherently dynamic, and Guidehouse expects that the Stretch Codes MTI evaluation protocol will need to be revisited periodically to ensure it is consistent with the current practices and processes of the initiative. During CY2024–CY2025, Guidehouse will participate in the SAG MT WG meetings to discuss the Stretch Codes MTI, participate in any small group discussions related to Stretch Codes MTI, and assist with edits to the IL TRM Attachment C and the ESF, as needed.

5. Determining Stretch Codes MTI Energy Savings

Reviewing Stretch Codes Natural Market Baselines

The evaluation of the Stretch Codes MTI will estimate the savings above the natural market baseline (NMB), as provided by ComEd, Slipstream and MEEA. Guidehouse, in collaboration with ComEd/Slipstream/MEEA, will use the best available data to determine if any adjustments need to be made to the natural market baselines as a prospective update, including any external factors that could adjust the baseline forecast. While some external factors may be difficult to quantify, Guidehouse will consider directional impacts (whether likely to increase or decrease expected market shares) and reasonable magnitude of changes. Potential triggers for the NMB include, but are not limited to: CEJA stretch code update, other code updates

applicable to participating municipalities, significant new market data, greater than expected stretch code adoption, or significant impacts from other MT initiatives.

Guidehouse will use data from ComEd and the IC for each municipality to determine the number of single-family and multifamily residential new construction permitted units and permits and square footage for new commercial buildings and major renovations. This will allow Guidehouse to validate the MTI’s trend assumptions used to determine NMB estimates and identify any adjustments specific to a municipality. Guidehouse will review the initiative data to ensure Slipstream is consistently assigning the appropriate building typologies in order to assess baseline market shares by home or commercial building type, as well as the application of a construction lag assumption to account for the time between permit issue date and construction completion. All assumptions will be clearly documented, as well as the strengths and limitations of the available evidence. Additionally, any gaps or limitations identified in the available data will be noted with possible remedies for future evaluation years.

While ComEd and the MTI implementer are responsible for any subsequent updates to the NMB and Energy Savings Framework, the NMB review may be initiated and supported by any or all parties. In addition to the initial review of the NMB, Guidehouse plans to review the NMB in CY2028. Future NMB reviews beyond CY2025 will be executed in response to key circumstances where it may be appropriate to update the initial NMB forecast as identified in the IL TRM v12.0.

Estimating Energy Savings

Guidehouse’s approach to estimating savings for the Stretch Codes MTI will align with the approach developed by Slipstream / MEEA in the Energy Savings Framework⁶. The approach will use the best data available to determine the savings attributable to the initiative and ComEd. Key variables to assess include: permitted units per municipality for the period being evaluated, energy savings per building type (gross and net unit energy savings on a per square foot basis), attribution factors and natural market baselines.

The general equations for estimating energy savings from Stretch Codes MTI adoption or compliance support activities are:

MT Energy Savings of Stretch Codes Adoption

$$= \text{Number of MT Units (Square Feet of New Construction and Major Renovation)} \\ \times \text{Unit Energy Savings of Stretch Codes Adoption (change in EUI)}$$

MT Energy Savings of Stretch Code Compliance

$$= \text{Number of MT Units (Square Feet of New Construction and Major Renovation)} \\ \times \text{Unit Energy Savings of Stretch Codes Compliance (change in EUI)}$$

and more specifically, accounting for noncompliance, natural market baseline, and utility attribution:

MT Potential Energy Savings of Stretch Code Compliance

$$= (\text{Market Baseline Consumption} - \text{Code Compliance Consumption})$$

MT Gross Energy Savings of Stretch Code Compliance

⁶ Slipstream / MEEA, Stretch Codes Energy Savings Framework, June s2024.

= Potential Energy Savings X CAF

MT Net Energy Savings of Stretch Code Compliance

= Gross Energy Savings – NMB

MT Utility Energy Savings of Stretch Code Compliance

= Net Energy Savings X AF

Where:

- **Number of MT Units** = Annual Square Feet of new construction covered by stretch code policy *minus* NMB Square Feet covered by stretch code policy
- **Unit Energy Savings of Adoption** = Energy Use Intensity (EUI) of base code with historic compliance rate *minus* EUI of stretch code with historic compliance rate
- **Unit Energy Savings of Compliance** = Energy Use Intensity (EUI) of stretch code with historic compliance rate *minus* EUI of stretch code with improved compliance rate
- **Energy Use Intensity (EUI)** = Total building energy use per square foot
- **CAF** = Compliance adjustment factor
- **NMB** = Natural market baseline⁷
- **AF** = Attribution factor

Apportioning Savings Between Market Transformation and Resource Acquisition

Through traditional resource acquisition (RA) programs, ComEd offers several programs that address new construction directly, including the New Construction – Bus/Pub, Affordable Housing New Construction, and Electric Homes New Construction. These programs count savings for anything installed above the base code as defined in Illinois. However, the programs do not currently incentivize based on stretch code or expected stretch requirements.

To avoid double counting savings achieved by the stretch code MTI, the RA programs will apply the relevant baseline for new construction projects based on the status of stretch code adoption for each project’s municipality. I.e., the relevant RA programs will apply stretch code as the baseline for municipalities that implement the stretch code; while maintaining base code as the baseline for municipalities that do not adopt the stretch code. In this way, the RA program will report savings for (1) anything installed above the stretch code for municipalities that adopt the more advanced code, and (2) savings relative to base code for projects in areas that have not adopted the stretch code. This method allows the existing RA programs to continue to count savings above the applicable code for each municipality, while the MTI captures and reports all savings between base and stretch code for municipalities that adopt the stretch code, ensuring

⁷ [IL TRM Effective 010124 v12.0 Vol 4 X-Cutting Measures and Attach 09222023 FINAL.pdf \(ilsag.info\)](#). Natural Market Baseline is synonymous with Naturally Occurring Market Adoption or NOMAD; a forecast of the future in which no utility-funded energy efficiency programmatic intervention exists.

the appropriate portion of total energy savings is apportioned between the Stretch Codes MTI and RA programs.

6. Evaluation of Evidence Gathered

Following the assessment of the MPIs in a given evaluation year the evaluation team will review the evidence which purports to establish a link between program activities, as visible through leading MPIs, and effects on the market. Market influence and energy savings characterized in the Energy Savings Framework may be adjusted to account for market impacts due to non-Program causes.

Guidehouse will consider the impacts of all leading MPIs into a final decision on the influence of the MTI for the given year. The assignment of attribution for leading MPI based on the Stretch Codes MTI impacts for ComEd and its implementer will be based on a range of influence. The attribution of each MPI will be rolled up into a weighted average that defines the final Attribution Factor.⁸ The positive assignment of attribution will not require consensus among all the MPIs under evaluation, nor will each MPI be required to determine sufficiency regarding the preponderance of evidence. Overall, the MTI will have had impact in the given year, with all associated savings based on the Energy Savings Framework to be valued accordingly.

As discussed earlier, attribution is typically in part established qualitatively for MT initiatives, yet under the policy framework in place in Illinois, a “net” savings figure must be determined. Subtracting the Natural Market Baseline from Total Market Units is the mechanism by which the initial forecast of savings is created. Once an initial forecast has been made, the focus of evaluation efforts turns to building a case over time as to whether sufficient evidence exists to establish a link between program activities and market effects that are consistent with that forecast. As discussed below, depending on the body of evidence that emerges over time, the initial forecast for both Total Market Units and the Natural Market Baseline may be revised periodically.

Structured Expert Judgment Panel

Guidehouse will convene an expert judgment panel for the CY2025 MPI assessment and review of the NMB. The expert judgment panel will be comprised of subject matter experts representing a wide cross-section of perspectives. The expert judgment panel will allow Guidehouse to gather input on the degree of progress the Stretch Codes initiative has made towards expected outcomes. The panel also will support independent review of MPI weightings as a component of the attribution calculations.

Guidehouse will reconvene a structured expert judgment panel every two to three years, preferably in the evaluation year after the stretch codes are adopted. This structured expert judgment panel is designed to support the preponderance of evidence required to assess the program’s impacts and progress in transforming the market. Specifically, experts in the industry will be able to provide critical insights on the degree to progress in adopting and implementing Stretch Codes.

⁸ Note that this is not actually a statement of causality but rather a measurement by subtraction of Natural Market Baseline. [IL-TRM Effective 010124 v12.0 Vol 4 X-Cutting Measures and Attach 09222023 FINAL.pdf \(ilsag.info\)](#)

The Natural Market Baseline also will be included as a topic for review for the structured expert judgment panel convened for the CY2025 evaluation. The panel will help provide transparency and inform key assumptions about the NMB and assessment of Market Progress Indicators (MPIs). The end goal of the panel is to establish an estimate of expected trends during the program period and estimate market influence absent program intervention. All panel findings will be considered as supporting evidence and not a final decision of attribution for a given year.

Guidehouse will recruit and carefully select experts in the market to participate in the structured judgment panel, including building code/municipal officials, architects/designers/engineers, builders/developers/contractors/general contractors, home energy raters/verifiers, energy efficiency and energy code experts, and evaluation experts. Anonymous bios of the proposed panel members will be submitted to ComEd for review. Details from the results of the structured expert judgment panel will be included as an attachment to the CY2025 Market Progress Evaluation Report, discussed below. Guidehouse will leverage the panel’s feedback on market progress and attribution to estimate savings and impacts throughout the Stretch Codes MTI.

7. Market Progress Evaluation Report (MPER)

For each evaluation, Guidehouse will prepare a Market Progress Evaluation Report (MPER). The MPER will include components of impact and process evaluation, market research, and planning and market assessments to document progress and market change over the initiative’s life cycle. The inclusion of these components and their relative depth will evolve as the initiative and the relative market become more established. Guidehouse will conduct each evaluation to verify the reported savings, baseline, and MPI progress consistent with the guidance in the ESF and the IL TRM Attachment C protocols.