

Stretch Energy Codes Market Transformation Initiative

Update to IL SAG Market Transformation Working Group

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Agenda

- Project background and goal of this meeting
- Overview of stretch code market transformation initiative (MTI) logic model
- Key elements of the Energy Savings Framework (ESF)
- Overall evaluation approach
- Questions and next steps



Project Background and Goal

Advanced Building Policies Overview

Stretch Energy Codes

Locally mandated code that defines a higher level of energy efficiency for new construction and major renovation

Building Performance Standard (BPS)

Policy that requires improvements to the existing building stock through setting performance targets for efficiency upgrades

Project Background

Project goal

- Engage with municipalities to adopt and implement stretch energy codes and building performance standards (BPS)
- Develop support programs to help implement these policies
- **Develop savings and attribution methodologies that follow market transformation protocols in IL TRM Attachment C**



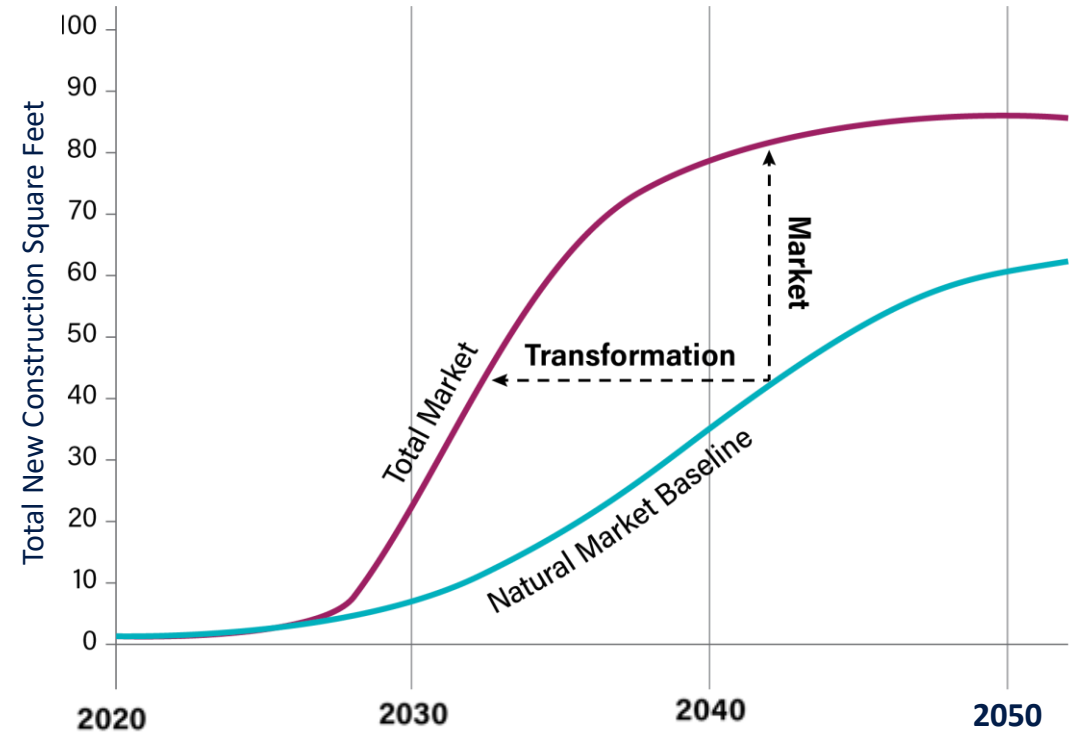
Role of Utility

Support for policy adoption/advancement and policy implementation/compliance

- Support can include incentives for builders and property owners, training and technical guides, plan review assistance, compliance support, and technical analysis
- Implementation support designed to increase likelihood of adoption

MT versus Resource Acquisition

- Long-term vision, goal is structural change
- Focus on savings that occur over a longer time horizon, incorporating many levels of engagement



Illinois Stretch Code timeline

Updates on Capital Development Board process

- On April 9, CDB voted 6-1 to approve proposed language of stretch codes
- Decarb provisions remain in the body of the stretch codes (i.e., sections re. heat pump products, demand response, EV readiness, electrical energy storage system readiness, solar readiness, electric readiness)
- All-electric appendices removed
- Codes now go to JCAR for final review and approval with opportunity for public comment

Timeline for adoption

- Expected to be available for municipalities to adopt later this year, by 10/31/2024
- CEJA originally required it be available for adoption on 1/1/2024

MT Program Supporting Documents

Document	Energy Savings Framework	Program Plan/Logic Model	Evaluation Plan
Summary of Document	<i>Market Characterization (Historical trends; market projection with NMB; unit sales & energy savings)</i>	<i>Program actions & intent; expected short-term and long-term outcomes; MPI's & measurement</i>	<i>Proposed evaluation research methods and plan – MPI's & ESF</i>
Document Developer	<i>Program Administrator (utility) with Implementation Contractor</i>	<i>Program Administrator (utility) with Implementation Contractor</i>	<i>Program Evaluator</i>
Review	<i>Program Evaluator (especially NMB); SAG</i>	<i>Program Evaluator; SAG</i>	<i>Program Administrator (utility) with Implementation Contractor; SAG</i>
Updating Process	<i>Evaluator assesses on-going adequacy of ESF; Change Recommendation reviewed by Program Administrator (utility) with Implementation Contractor and SAG</i>	<i>As needed by Program Administrator (utility) with Implementation Contractor with Recommendations by Evaluator</i>	<i>Updated annually by Evaluator; reviewed by Program Administrator (utility) and SAG</i>

Slipstream & MEEA



Guidehouse



Goal of this Meeting

Provide a high-level overview of three supporting documents

- We will send MT supporting documents after the meeting
- Answer questions that come up during meeting
- Some questions will be answered in documents

Distribute and request feedback from the group after meeting

- We are seeking feedback and approval of the MT supporting docs and approaches



Overview of stretch code Market Transformation Initiative Logic Model

Introduction of Stretch Code MTI Logic Model

Overview

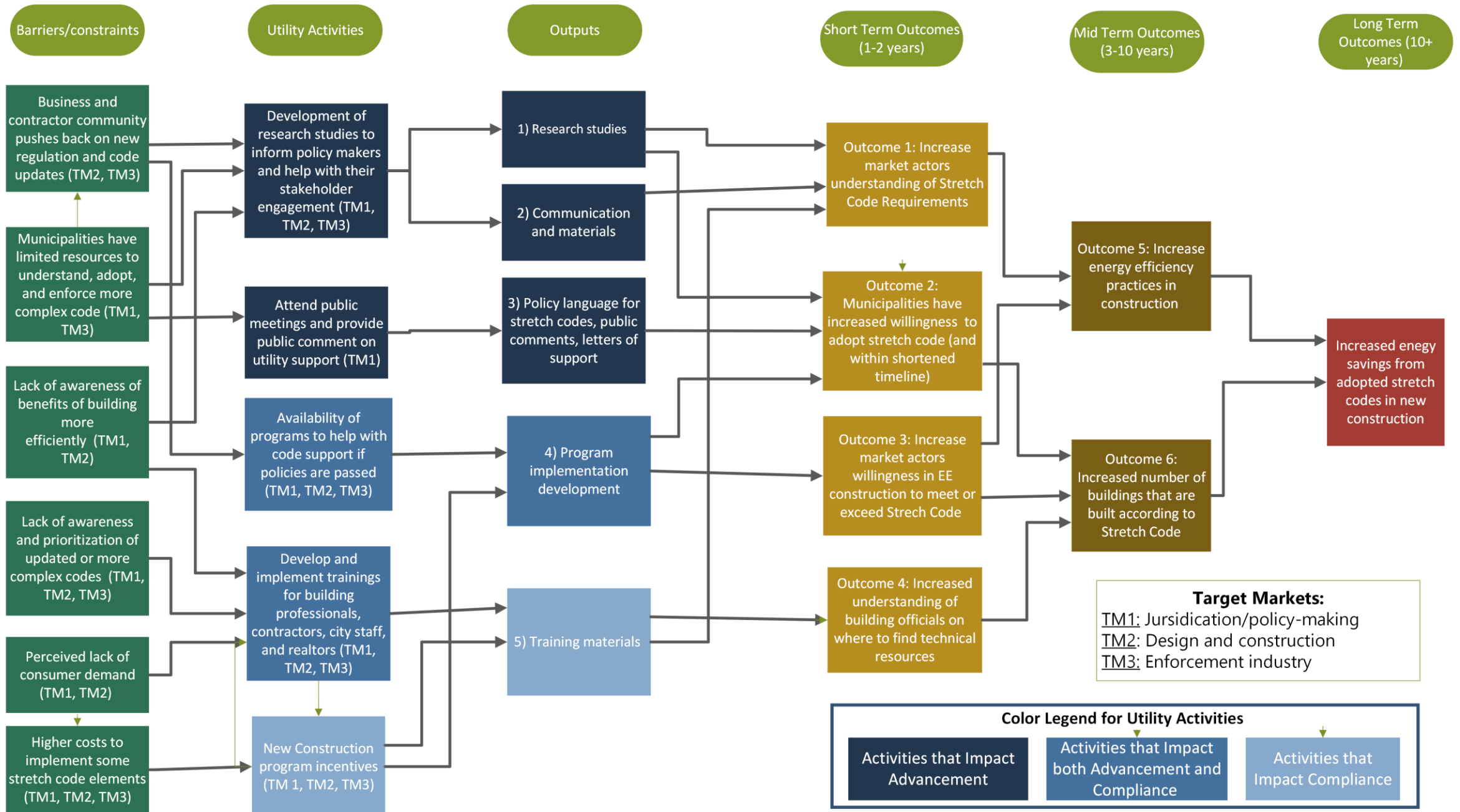
- Define barriers, utility activities, expected output
- Outline expected short-term, mid-term, and long-term effects
- Market transformation process is meant to be comprehensive and long-term, which is reflected in logic model
- Utility activities can build off each other

Adoption versus Compliance

- Some activities address both adoption and compliance

Logic Model for Stretch Codes Advancement and Compliance Support

Purpose for stretch code program: to transform the new construction market by advancing building energy stretch code adoption and support code compliance



Stretch Codes – Market Barriers

Business and contractor and inspection community concerns with updates to the building code and new requirements

Municipalities often have limited resources to understand, adopt, and enforce new and more efficient codes

Design and construction contractors and municipalities may not be aware of the benefits of building more efficiently

Design and construction contractors and municipalities may not be aware of or prioritize updated or more complex codes.

Higher upfront costs for some energy efficiency investments

Design and construction contractors and municipalities may perceive a lack of consumer demand.

Potential Utility Activities

- Conducting and disseminating research and technical analysis to city staff, building professionals, policymakers, or the general public
- Actively participating in discussions at public or decision-making meetings
- Assisting municipalities with drafting of policy language to formally adopt state stretch code language or amended version
- Submitting policy language, recommendations, or public comment for consideration of adoption to the state or local municipalities
- Funding and conducting participation in public processes via proxy
- Giving public testimony in support of or against specific policy language/ideas/activities
- Create programs that provide financial incentives
- Develop and implement trainings for targeted market

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
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)



Key elements of the Energy Savings Framework (ESF)

MT Energy Savings Equations

MT Energy Savings of Stretch Codes Adoption

= Number of MT Units (Square Feet of New Construction and Major Renovation)
x Unit Energy Savings of Stretch Codes Adoption (change in EUI)

MT Energy Savings of Stretch Code Compliance

= Number of MT Units (Square Feet of New Construction and Major Renovation)
x Unit Energy Savings of Stretch Codes Compliance (change in EUI)

MT Potential Energy Savings of Stretch Code Compliance = (*Market Baseline Consumption – Code Compliance Consumption*)

MT Gross Energy Savings of Stretch Code Compliance = 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** = EUI of base code with historic compliance rate *minus* EUI of stretch code with historic compliance rate
- **Unit Energy Savings of Compliance** = 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 baseline
- **AF** = Attribution factor

Determining Market Transformation Units

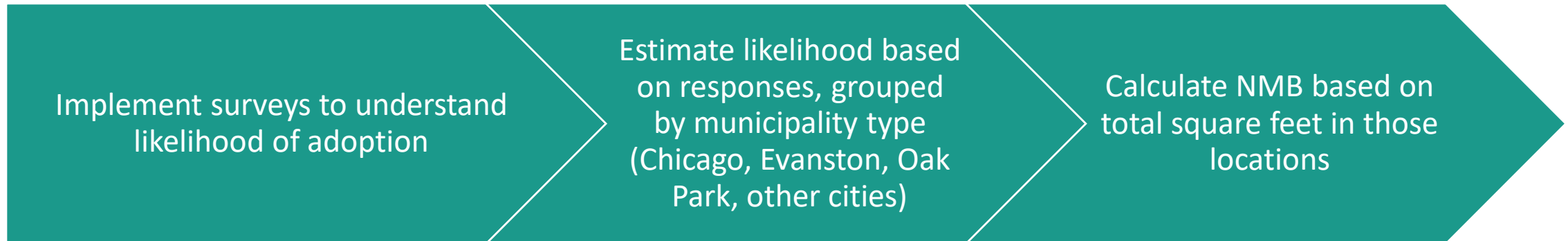
Historical Square Feet Data

- Gather historical new construction square feet data by municipality and building type
- Use average growth by municipality and building type as projection for future growth

Natural Market Baseline (NMB) Curve

- Estimate the likelihood of adoption for municipalities **without** utility support
- Assume that likelihood of adoption is directly related to percent of square feet that is part of NMB curve
- Based on surveys of a sample of municipalities

Determining Likelihood of Adoption Without Utility Support

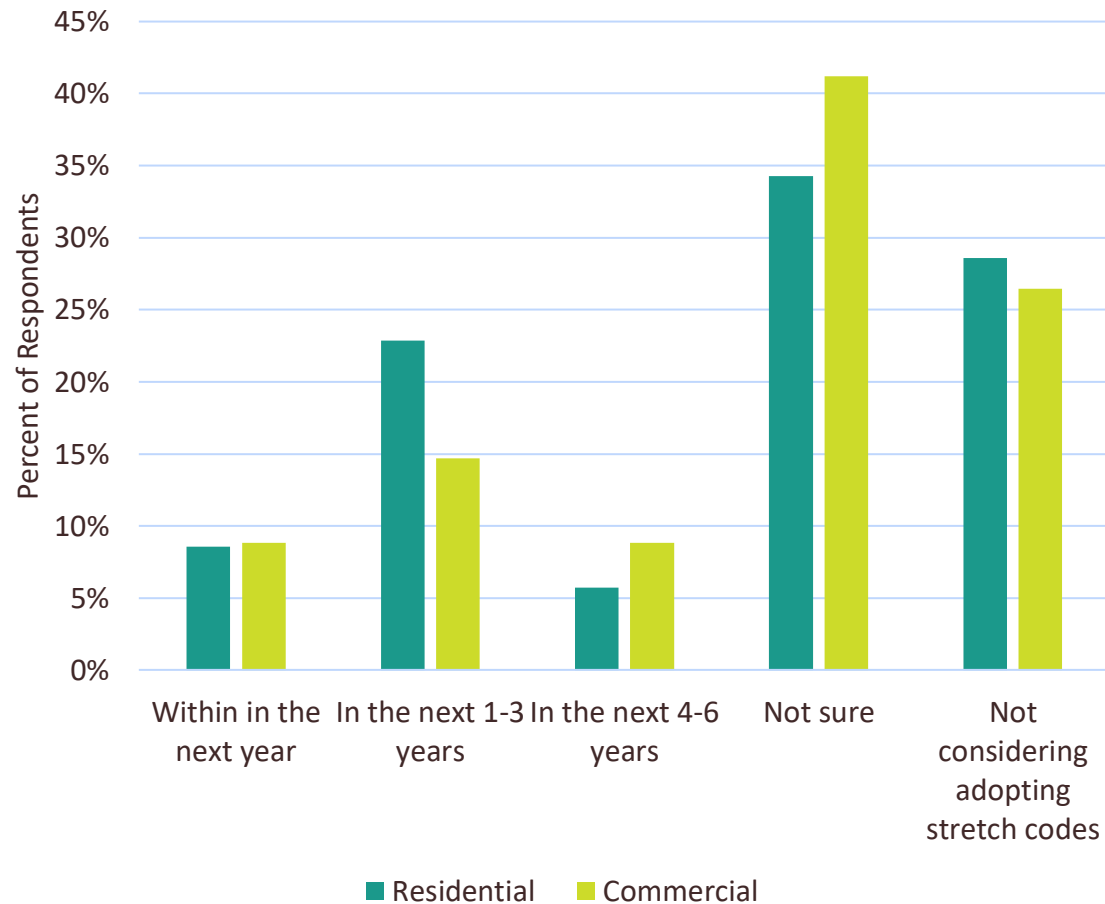


Survey methods and instruments developed in coordination with Guidehouse
First conducted in August and September 2023; will continue to conduct on an annual basis to support evaluation

Determining Likelihood of Adoption Without Utility Support

If your municipality is considering adoption, what is the estimated timeline for adoption?

Stretch Codes



Determining duration of claimed savings

Compliance savings duration

- In the TRM (screenshot below), title and explanation are not matching and could be misleading.

2.8.1 Duration of Enhanced Energy Code Compliance Savings

Similar to the duration of savings credit for other MT initiatives, the actual value is a policy call. However, in the case of enhanced code compliance activities, duration of the activities is usually deemed to be the period of time that the particular code is in place. Once the code changes, (for example, every three years for the International Energy Conservation Code (IECC)), then credit for compliance-enhancement savings from the prior code would be stopped. This is because compliance savings are tied to a specific set of measures, and those measures may change when the code changes. |

Estimated Technical Potential Electricity Savings for ComEd

Commercial buildings

Year	Year 1 Adoption Savings (MWh)	Year 1 Compliance Savings (MWh)	Lifetime Adoption Savings (MWh)	Lifetime Compliance Savings (MWh)
2025	1,546-2,078	474-637	26,290-35,334	11,856-15,935
2026	13,227-17,909	4,056-5,492	330,687-447,721	101,411-137,301
2027	10,822-14,653	3,319-4,493	270,562-366,317	82,972-112,337
2028	10,822-14,653	3,319-4,493	270,562-366,317	82,972-112,337
2029	18,037-24,421	5,531-7,489	450,937-610,528	138,287-187,229
2030	15,632-21,165	4,794-6,491	390,812-529,124	119,849-162,265

Interactions with Resource Acquisition Programs

ComEd currently has related programs

- Commercial/Industrial New Construction
- All electric Homes New Construction
- Affordable Housing New Construction

Current and ongoing conversations with MTI & NC contractors

- Savings will be determined to avoid double counting with programs



Overview of Evaluation Approach

Overall Stretch Codes MTI Evaluation Approach

IL TRM Attachment C describes three documents needed to define MT approach

(1) energy savings framework, (2) program plan/logic model, (3) **evaluation plan**

IL TRM Att. C provides 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**

- Evaluation will examine if preponderance of evidence suggests Stretch Codes MTI is achieving desired outcomes

* (IL TRM_Effective_010124_v12.0_Vol_4_X-Cutting_Measures_and_Attach_09222023_FINAL.pdf (ilsag.info))

Overview of Stretch Codes MTI Evaluation Plan

Evaluation Plan – 7 sections

(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 Gathering, (7) Market Progress Evaluation Report (MPER)

Guidehouse reviewed and provided feedback on MTI elements

Program Theory (PT), Logic Model (LM), Market Progress Indicators (MPIs), Energy Savings Framework (ESF), Natural Market Baseline (NMB)

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
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	X
14	Calculate Market Potential Savings	--	X	--	--	X
15	Produce Market Progress Evaluation Report	--	X	--	--	X

Guidehouse will revise schedule each year as part of evaluation planning process

Assessment of Market Progress Indicators

Evaluation of MPis

- Guidehouse will report on progress toward goals and objectives described in logic model (LM) and market progress indicators (MPis) as provided by Slipstream and MEEA, to establish initiative's influence on stretch codes adoption and compliance in ComEd's territory
- Assessment of MPis requires incorporation of multiple judgments of progress based on preponderance of evidence approach
 - Qualitative – based on surveys, in-depth interviews or observational data collection
 - Quantitative – based on market share or production data
- Guidehouse will organize and leverage an experts panel comprised of cross section of local and regional market actors, provide a summary of data (qual and quant), and compile feedback as part of primary data collection process

Attribution Factor

TRM Definition

Attribution, MT Programs – Attribution of all energy savings not counted in the Natural Market Baseline to utility funded interventions, including RA, MT, and supporting infrastructure. Note that this is not actually a statement of causality but rather a measurement by subtraction of Natural Market Baseline.

Attribution, RA Programs – In traditional RA program attribution is generally approached through application of an adjustment factor that adjusts “gross energy savings” measured through the program participants to account for “free-ridership”; i.e., those participants that would have acted without the RA program. For RA programs, this adjustment is usually represented in a “net-to-gross” (NTG) factor that is multiplied by gross energy savings to get “net” energy savings that can be “attributable” to the RA program.

Illinois Statewide Technical Reference Manual – Attachment C: Framework for Counting Market Transformation Savings in Illinois. Glossary

Attribution Approach

- Evaluation team will take into consideration input from –
TRM, implementer survey, additional survey (as needed), stakeholder comments, expert judgment panel, and independent secondary research



Next Steps

Next Steps

- Review the documents by deadline by July 1, 2024
- Depending on type of feedback, consider meeting again with MT working group

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Appendix

Previous SAG Market Transformation Presentations

March 17, 2021: <https://www.ilsag.info/event/wed-march-17-market-transformation-savings-working-group/>

May 7, 2021 – Small group - <https://www.ilsag.info/event/friday-may-7-mt-code-advancement-small-group-meeting/>

July 27, 2021 – Small group - <https://www.ilsag.info/event/tuesday-july-27-mt-code-advancement-small-group-meeting/>

October 4, 2021 - <https://www.ilsag.info/event/monday-october-4-market-transformation-savings-working-group-meeting/>

April 21, 2022- <https://www.ilsag.info/event/thursday-april-21-market-transformation-savings-working-group-meeting/>

August 16, 2022- <https://www.ilsag.info/event/tuesday-aug-16-market-transformation-savings-working-group-meeting/>

May 22, 2023- <https://www.ilsag.info/event/monday-may-22-market-transformation-savings-working-group-meeting/>

Oct 25, 2023- <https://www.ilsag.info/event/wednesday-october-25-market-transformation-savings-working-group-meeting/>

February 28, 2024 - <https://www.ilsag.info/event/wednesday-february-28-market-transformation-savings-working-group-meeting/>