Advanced Building Energy Efficiency Policy Task Force (ABEEP) meeting

Building Energy Policies and Municipal Opportunities in Illinois

December 11, 2023

Agenda

- Quick introductions (5 minutes)
- Guest speaker: Madison Byarley, Indianapolis (30 minutes)
- Illinois Energy Code Update (10 minutes)
- 1:1 municipal engagement (5 minutes)
- Resources and technologies to meet policies (30 minutes)
- 2024 Plans and Scope of work (10 minutes)

Introductions

Project Background

Project goal

- Engage with municipalities to adopt and implement advanced building policies
- Develop support programs to help implementation
- Develop savings and attribution methodologies that follow market transformation protocols

Utility funders

- ComEd, Nicor Gas, Peoples Gas and North Shore Gas

Advanced Building Policies Overview

Stretch codes

Target: New Buildings

Alternative compliance path that defines a higher level of energy efficiency

Building Performance Standard (BPS)

Target: Existing buildings

Focus on improving existing building stock through setting targets for efficiency upgrades

Illinois Energy Code Update

Illinois Energy Code Update

Residential Base Code

Status: Capital Development Board has **approved** 2021 IECC w/slight weakening amendments

Next Steps: Will take effect statewide Jan 1, 2024

Commercial Base Code

Status: Capital Development Board has **approved** 2021 IECC w/slight weakening amendments

Next Steps: Will take effect statewide Jan 1, 2024

Residential Stretch Code

Status: In development. Advisory Council will have final vote to move to CDB in December.

Next Steps: Should be available for adoption July 1, 2024; municipalities should review now.

Commercial Stretch Code

Status: In development. Advisory Council will have final vote to move to CDB in December.

Next Steps: Should be available for adoption July 1, 2024; municipalities should review now.

One-on-One Municipality Updates

1-on-1 Assistance

Goals

- Provide technical assistance directed at each city's circumstances
- Help drive forward adoption of stretch code and BPS

Requirements

- Recurring meetings at cadence that works for each city
- Consider the policies in earnest with no need to commit

1:1 Municipal Engagement

Engaged Municipalities

- Broadview
- Elgin
- Evanston
- Naperville
- Northbrook
- Oak Park

Examples of Technical Assistance

- Town Hall or public meeting presentations and material support
- Internal presentations on stretch code details
- Analysis of building data to estimate savings
- Comparison of stretch vs base code
- Benchmarking “data jam” facilitations

Program Support Resources

Benchmarking Implementation

Data Reporting

Reporting tool:
ENERGY STAR Portfolio Manager

Reporting frequency:
annually

Verification:
recommended to require third-party verification every 3 years

Ongoing Implementation

Utility support:

- Tools to push energy data directly to ESPM
- Technical assistance with data analysis
- Assistance with data jams

Ongoing implementation:

- Tools like BEAM track compliance and streamline administration

Potential Savings

ENERGY STAR:

- 2.4% average savings annually

Minneapolis

- 3.4% reduction in energy from 2014 to 2016
- $21 million savings per year

Policy Champion Coalition

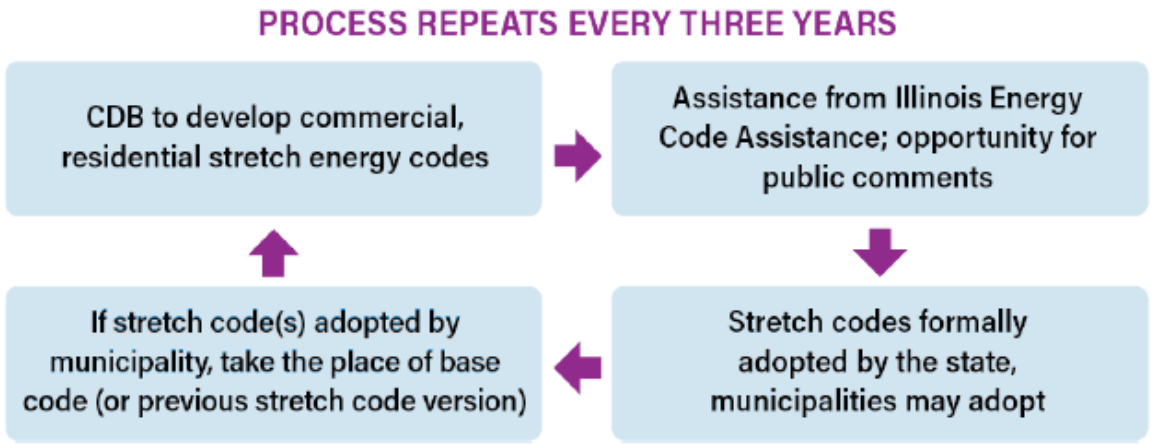
Guiding Selection and Engagement with Policy Champion Coalition				
The table below illustrates one way to plan how to develop a policy champion coalition. It describes different people to engage, information to share, when to share information, and how to share information. Slipstream and MEEA can help with this planning and with providing information to share with stakeholders.				
Stakeholder Group Represented	**Information to Share**	**Timing of When to Involve**	**Method of Sharing**	**Ongoing Engagement Cadence**
City staff, elected officials, committee members, resident/ business representative	Elevator pitch, technical details, case studies, benefits, etc.	Right away, after staff buy-in, etc.	Email, meeting, phone call, etc.	Quarterly, monthly, biweekly, weekly

Stretch Code Frequently Asked Questions

Stretch code timeline

Available for adoption by July 2024

Stretch code adoption process



Benefits of stretch code adoption

- Energy and operating cost savings
- Policy mechanism to address climate goals
- Improved air quality
- Increased ability to maintain safe indoor conditions
- Driving market acceptance of more efficient codes

Energy Efficiency of Various IL Codes

Single-family and low-rise multifamily buildings

Residential			
	IL Base Code (now)	**IL Upcoming Base Code (Jan 1, 2024)**	**IL Upcoming Stretch Code (Available July 1, 2024)**
Model Code	2018 IECC w/ weakening amendments	2021 IECC w/weakening amendments	2021 IECC w/strengthening amendments
Site Energy Index	0.79	~0.69	0.60
Efficiency over 2006 IECC	21%	~31%	40%

Energy Efficiency of Various IL Codes

Commercial buildings and multifamily buildings higher than 3 stories

Commercial			
	IL Base Code (now)	**IL Upcoming Base Code (Jan 1, 2024)**	**IL Upcoming Stretch Code (Available July 1, 2024)**
Model Code	2018 IECC w/ weakening amendments	2021 IECC w/weakening amendments	2024 IECC (draft) w/strengthening amendments
Site Energy Index	0.66	~0.64	0.50
Efficiency over 2006 IECC	34%	~36%	50%

Residential Compliance Paths Comparison

Single-family and low-rise multifamily buildings

Compliance Path Options (Meet all Overall Requirements, then choose ONE Compliance Path)		
Compliance Path	Illinois Base Energy Code	IL Residential Stretch Code (draft)
Prescriptive Path	2021 IECC (slightly weakened)	Strengthened to meet CEJA targets; more stringent than 2021 IECC
Simulated Total Building Performance (Total UA) Path	2021 IECC	Revised to be based on a Site Energy metric instead of utility cost to align with CEJA targets; more stringent than 2021 IECC
Energy Rating Index (ERI) Path	2021 IECC	Aligned ERI ventilation calculation and ERI metric with CEJA targets; more stringent than 2021 IECC
Passive House Path	Not Available	Certify to PHIUS or PHI; more stringent than 2021 IECC and CEJA targets
Residential Zero Energy Path	Not Available	Meet requirements of Appendix RC; ERI values of 46 for no on-site power, requires adding on-site power to meet ERI of 0. Minimum backstop of R406. More stringent than 2021 IECC and CEJA targets
Optional Electrification Appendix (only applies where adopted)	Not Available	Appendix must be adopted by municipality (in addition to stretch code) in order to be enforced. Requires electrification on top of chosen compliance path.

Overall Requirements for Residential SF and Low-rise MF

Same EE Components

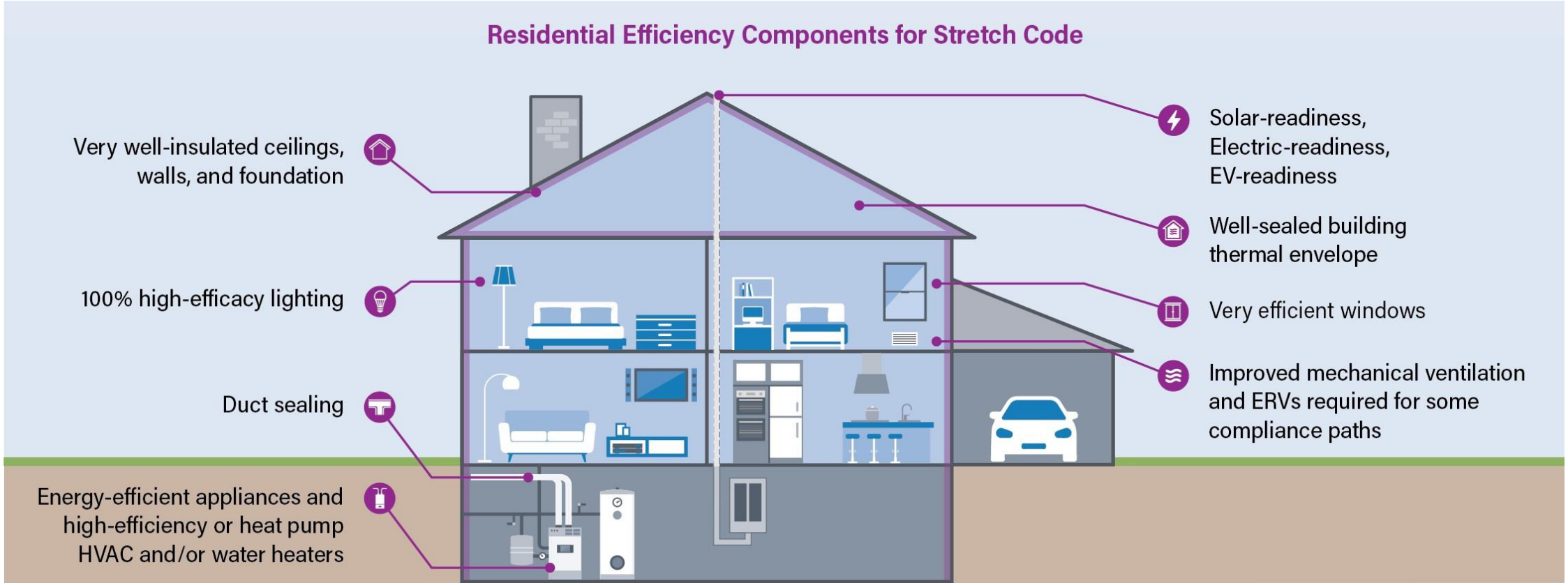
- Blower Door Test
- Duct Testing
- Duct Tightness
- Duct Insulation
- No Cavities as Ducts
- Piping Insulation
- Ventilation
- Ventilation Fan Efficiency
- High Efficacy Lighting

Stretch Code additional requirements

- EV-readiness
- Solar-readiness
- Electric-readiness
- Demand Response

- Additional energy efficiency to meet CEJA targets
  - Very flexible
  - Varies based on compliance path chosen by designer/builder
  - Can be met with multiple options for equipment, appliances, and envelope systems

Residential Stretch Code Elements



Resources for Builders

Background

- Most resources to date have focused on information for city staff and policymakers
- Moving into the next year, resources can also provide technical information for builders or design professionals

Potential Resources

- Checklists or field guides on code compliance
- Trainings customized for builder needs
- Technical guides on technologies available to meet code or BPS
- Highlight current incentives to help meet stretch code

Example Technical Information for Builders

R408.3 Space Conditioning Credit Options

All-electric air-source heat pump

>= 10 HSPF

>= 16 SEER

Ground source heat pump

>= 3.5 COP

Dual-fuel ASHP

>= 10 HSPF

>= 16 SEER

Natural Gas Furnace

>= 95 AFUE

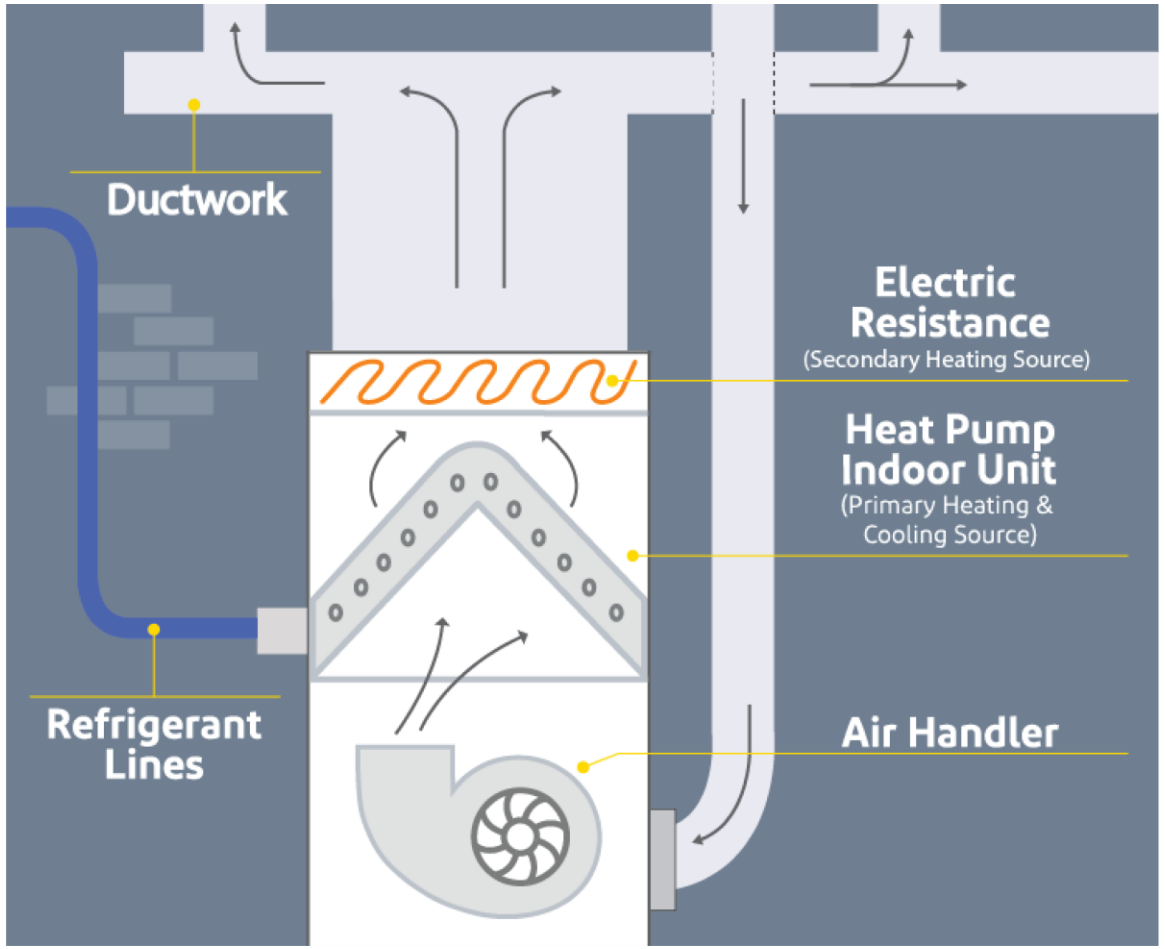
+

Air Conditioner

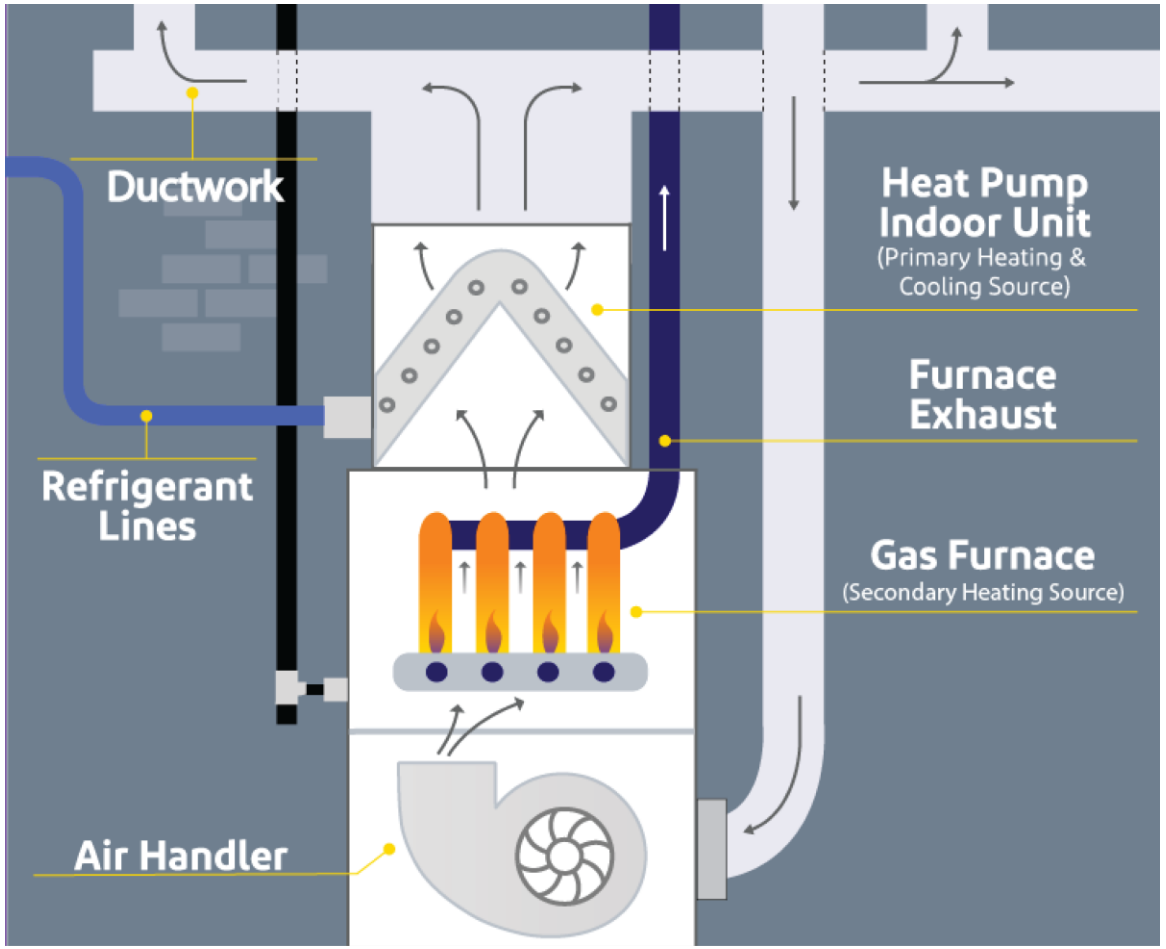
>= 16 SEER

Heat Pump Mechanics

All-Electric



Dual-Fuel



2024 Scope of Work

2024 Resources and Assistance

https://www.menti.com/blbwya587wra

Or menti.com

Code: **9397 8715**

Slipstream and MEEA contacts

Jeannette LeZaks
Slipstream
jlezaks@slipstreaminc.org

Maddie Koolbeck
Slipstream
mkoolbeck@slipstreaminc.org

Alison Lindburg
MEEA
alindburg@mwalliance.org