

Illinois Energy Codes Energy Efficiency Savings

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About MEEA

The Trusted Source on Energy Efficiency

We are a nonprofit membership organization with 160+ members, including:

- Utilities
- Research institutions
- State and local governments
- Energy efficiency-related businesses

As the key resource and champion for energy efficiency in the Midwest, MEEA helps a diverse range of stakeholders understand And implement cost-effective energy efficiency strategies that provide economic and environmental benefits.





Agenda

- Value of energy codes
- Where is IL?
- Code Compliance
- Beyond Baseline Energy Codes
- Get Involved
- Q&A



ENERGY CODE BASICS



Air Seal, Insulate, Condition, Ventilate



Building Energy Code Impacts in the Midwest Cumulative Savings 2009-2018





Impacts of Energy Codes

Thanks to building energy codes, Midwest states saved:





Energy Codes Who Cares?

Protecting residents –

- future energy bills
- a lot of energy code requirements happen behind the wall
- health benefits

Utilities - have energy efficiency goals

Cities – have identified energy codes and compliance as necessary to meeting climate goals



Midwest Energy Codes Residential Code





Midwest Energy Codes Commercial Code





Residential Building Energy Code Adoption Current Status of Midwest States



As of November 2018

Percentage change is based on EUI of adopted code





Commercial Building Energy Code Adoption Current Status of Midwest States



As of November 2018

Percentage change is based on EUI of adopted code

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ENERGY CODES

Non-compliance

Non-compliance is often due to:

- Lack of awareness and understanding of energy codes;
- Lack of understanding about how to meet the compliance requirements;
- Lack of resources and technical capacity of local building departments; and/or
- Lack of consistent training and funding for compliance improvement.



DOE Energy Code Field Study States





Utility Programs Underway Energy Code Compliance

Illinois

- Funded by major utilities; Future Energy Jobs Act (FEJA)
- Statewide
- Residential Field Study*
- Commercial Field Study*
- Collaborative*
- Statewide code:

 -2015 IECC, moving to the 2018 IECC

 *Recommendations for potential future program





IL Residential Study Background

- Uses US Department of Energy methodology
- Establishes residential energy code compliance baseline, and determine if focused training & support can improve compliance
- All collected data is anonymous



	KY Residential Study – Results						
	Phase I			Phase III			
Measure	Total Energy Savings (MMBtu)	Total Energy Cost Savings (\$)	Total State Emissions Reduction (MT CO2e)	Total Energy Savings (MMBtu)	Total Energy Cost Savings (\$)	Total State Emissions Reduction (MT CO2e)	
Envelope Air Leakage	27,182	484,314	3,092	581	\$10,321	65	
Ceiling Insulation	11,372	215,656	1,080	4,835	\$91,786	595	
Exterior Wall Insulation	9,277	171,044	1,102	8243	\$151,974	976	
Foundation Insulation	6,800	108,156	668	11,676	\$178,905	1,075	
Lighting	5,742	197,544	1,427	4,454	\$153,383	1,130	
Duct Leakage	2,135	43,142	284	17,151	\$342,217	2,251	
TOTAL	62,508	\$1,219,856	7,653	46,941	\$928,585	6,093	
SAVINGS				25%	24%	20%	





KY Residential Study Cumulative Potential Savings

Total Energy Savings (MMBtu)					
5yr	10yr	30yr			
937,620	3,437,939	29,066,211			

Total Cost Savings (\$)					
5yr	10yr	30yr			
\$18,297,844	\$67,092,095	\$567,233,170			

*Based on 7,345 annual new homes



Residential Study Sampling Plan

- Survey team is currently recruiting buildings by contacting jurisdictions and scheduling site visits
 - Data collection underway
- Targeting data collection completion for Summer 2019





Residential Study Key Items

- Envelope Tightness (ACH50)
- Window Solar Heat Gain Coefficient
- Window U-factor
- Wall Insulation (R-value and Quality)
- **Ceiling Insulation** (R-value and Quality)
- Mechanical Ventilation (not a DOE key item)

- Foundation Insulation (R-value and Quality)
- High Efficacy Lighting
 - **Duct Leakage** (CFM25)
- Manual J Data (not a DOE key item)
- Manual D Data (not a DOE key item)



Commercial Study Sampling Plan



- ~40 buildings
- 6 building types
- Survey team is currently recruiting buildings by contacting

jurisdictions and scheduling site visits

 Targeting data collection completion for October 2019



Commercial Survey Overview

- Survey high impact measures and analyze the results
- Will survey around 40 of the most common and highest energyusing building use types
- All data collected is anonymous



Energy Code Compliance Collaborative

Illinois Energy Codes Compliance Collaborative



Illinois

What and Why Energy Codes Compliance Collaboratives

- What: A group of stakeholders that come together on a regular basis to explore common interests and address obstacles related to energy code compliance
- Why: To establish a forum for identifying and tackling obstacles to improving energy code compliance (eventual goal 100%)



Potential Benefits Energy Codes Compliance Collaboratives

- Improved rates and ease of compliance
- Identification and coordination of support and incentives
- Increased education/training opportunities
- Opportunity to learn from shared experiences
- Improved building stock and healthier indoor environments
- Collective understanding of code interpretations and verification
- Awareness of common practices, compliance rates and opportunities for improvement



Collaboratives Sample Members

- Dept of Buildings
- State Energy Office
- Code officials
- MEEA
- EE advocates
- Raters
- HBAs and homebuilders
- AIA and architects

- ASHRAE
- Utilities
- Academics
- League of Municipalities
- Legislative liaison (Nebraska)
- Materials suppliers
- City staff



Midwest Energy Codes Compliance Collaboratives



IL Codes Compliance Collaborative Progress to Date

- Six in-person Collaborative meetings
 - East Peoria
 - O'Fallon
 - Oak Park
 - Oak Brook
- Three web-based Collaborative meetings
 - 1 residential meeting
 - 1 commercial meeting
 - 1 update meeting
- Conducted survey of members to identify biggest issues





Illinois

Upcoming Collaborative Meetings

- <u>Residential Collaborative (by webinar/phone):</u> March 15th
- <u>Commercial Collaborative (by webinar/phone)</u>: March 15th
- In-person meetings (mainly to discuss Residential program elements): Week of April 14th
- Residential Collaborative Update (by phone): Week of May 20th
- Commercial Collaborative Update (by phone): Week of June 3rd
- Residential Collaborative Update (by phone): Week of July 8th
- In-person meetings (mainly to discuss Commercial program elements): Week of August 5th
- Commercial Collaborative Update (by phone): Week of October 7th
- In-person Final Collaborative updates (both Residential and Commercial): Week of November 4th



Stretch Energy Codes Beyond Baseline

- National model energy codes are not advancing fast enough to meet climate goals
- Cities can set requirements for commercial buildings that become mandatory baseline
- Cities can adopt state-developed stretch code (ensuring consistency across jurisdictions)
- IL utilities are exploring stretch energy code technical assistance programs, including assistance for code officials/municipalities



Get Involved Suggestions for Municipalities

- Make energy code compliance a priority
- Participate in IL Energy Code Compliance Collaborative
- Participate in IL utility compliance programs (when available)
- Commit to Stretch Energy Code consideration/utility programs (when available)

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Questions





Thank You For Your Participation!

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