



Midwest Building Energy Program

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Purpose

- Reduce Energy Use in New Construction (Energy Codes)
- Reduce Energy Use in Existing Construction (Benchmarking)

Objectives

- Technical Assistance to States In Midwest Adopt Latest Model Energy Codes
- Foster Maximum Compliance with Current Energy Codes
- Introduce Innovative Compliance Policies in at least Two States
- Focus on Major Municipalities & States to Adopt Benchmarking Ordinances
- Identify One State or Jurisdiction for Stretch Code
- Promote National Technology Resources and Trainings

Strategies Developed by MEEA

- Develop Customized Code Adoption, Compliance and Benchmarking Strategies for Each State and Targeted Municipalities with Specific Action Plans
- Identify Resources to Assist In Code Adoption, Benchmarking and Compliance
- Develop and Disseminate Success Stories
- Provide Sensitive Status Updates to National Collaborative

Barriers that Prevent the Realization of the Energy Efficiency Potential of Energy Codes / Benchmarking

- Coordinated Opposition by Powerful Interest Groups in States
- Decentralized Nature of Energy Codes Adoption/Implementation
- Lack of Resources For Enforcement
- Multiple Stakeholders with Conflicting Goals
- Lack of Factual Policy / Technical Information

Alignment with BTO Program Goals

- Generates Significant Energy Savings at Low Cost
- Provides Foundation for Other EE Policies: Appliance Standards, EE Programs
- Brings in Multiple Stakeholders into EE Advocacy
- Implementing Tools and Policies Supporting Benchmarking and Building Labeling Leads to Better Management of Operational Expenses, Creation of Green Jobs in EE / Technology Sectors.

- Research and Identify Target States/Municipalities for Adoption, Compliance and Benchmarking
- Establish In-State Coalitions with Advocates, Utilities and Industry Groups Through Targeted Outreach
- Develop and Provide Time Sensitive, Factual (Credible) Technical and Policy Information/Data
- Establish Communication Channels for Timely Dissemination of Information
- Develop/Pilot Innovative Approaches to Code Compliance
 - Claimed Savings Programs for Code Compliance Enhancement
 - Third Party
 - Circuit Riders

Approach

- Formation and Facilitation of Local Stakeholder Group
- Identify Consumer Benefits and Potential Energy Savings
- Technical Assistance on Ordinance Language
- Education of Elected Officials and Staff
- Follow Through with PSC on Data Privacy (underway in MN)

Key Issues / Lessons Learned:

- Continuous Benchmarking (+/- ES Rating) and Public Disclosure
- Variety of Building Types – Public, Commercial and/or Residential
- Staggered Reporting Dates for Building Owners
 - (Lg) >100,000 sqft First Round & (Med) >50,000 sqft Second Round
 - Incremental Public Disclosure (one year post-reporting)
- Adjust Energy Conservation Measure (ECM) Requirements to Meet Opposition / Critics and State Code Mandates
 - Develop an Implementation Plan Simultaneously but Separately from Ordinance

2012 Model Energy Code

- 1st State Adopted 2012 IECC Statewide (IL)
- 2nd State at Public Comment Stage (MN)

2009 Model Energy Code

- 6 States Adopted the 2009 IECC Since 2010
 - KY, OH, IN, MI, NE, and IA
- Additional Large Municipalities Adoption
 - St. Louis, MO; Kansas City, MO; Sioux City, SD; and Fargo, ND

Claimed Savings for Utilities

- State of Illinois in Process of Establishing Claimed Savings Program for Code Compliance Enhancement / Education
- State Energy Offices, Utilities and Advocates in IA, IN, MI, MN and OH monitoring IL process. Expect action in those states in 2014

Accomplishments

- MEEA assisted in passage of a Commercial/Public Building Rating and Disclosure Ordinance for the City of Minneapolis (2/8/2013)
 - 600 Buildings with an estimated 200M sqft
 - Estimated savings at 7% over 3 years = 700 MkBtu's
- Lead author for State of Illinois benchmarking and building energy labeling study
 - Developed roadmap for State to track and reduce building energy consumption
 - Assessed training and technology tools to maximize energy savings

Progress on Goals

- City of Chicago is posed to introduce legislation for Benchmarking and Rating of all Buildings > 50,000 sqft in April 2013
 - 3,500 Buildings with an estimated +2,440M sqft
 - Estimated savings at 7% over 3 years = 3,017 MkBtu's

Awards/Recognition

- Letter of gratitude from Minneapolis Council Member Elizabeth Glidden

Communications

- National Codes Collaborative (Information Sharing)
- Midwest Codes Conference
- Biweekly Updates & Quarterly Teleconference
- Social Media/Blogs/Twitter

Collaborations

- Local Building Professional Groups - AIA, USGBC, ASHRAE
- Individual Utilities
- State Regulators and Municipal Agencies
- Local Advocates – environmental groups
- National Partners - C40, NRDC, IMT, and EPA
- Industry Groups – Chemical Council, Insulation Manufacturers
- Energy Professionals – Energy Raters, ESCOs
- Building Owners – Individual, Portfolio and National

Technology Transfer

- Blower Door Certification (Employment Enhancement)
- ENERGY STAR Portfolio Manager and ES Rating
- DOE Home Energy Score and Commercial Energy Asset Rating are suggested as next steps / ability to have a higher impact on the market.
- EPA Target Finder = continuum of data/assessment

Building Energy Codes in Midwest

Residential Construction Potential Annual Savings: **3.7 Billion Btu**

Commercial Construction Potential Annual Savings: **1.9 Billion Btu**

Benchmarking (Nationally)

A potential of 1.6 quads of energy and \$60 billion that could be saved between 2014 and 2030 (ACEEE Report 3/2013)

An EPA ENERGY STAR Portfolio Manager Study suggests benchmarking alone (no upgrades) saves buildings on average 2.4% annually or 7% over 3 years (EPA Data Trends Report Oct 2012)

Commercial Energy Savings: Achieved and Potential

	Previous / Current Energy Code (ASHRAE 90.1)	Current Energy Code Adoption Date	Annual Energy Savings- Previous Energy Code vs Current Energy Code* (Billion BTU)	Additional Annual Energy Savings If All States Adopt ASHRAE 90.1-2010 / IECC 2012* (Billion BTU)
Illinois	2004 / 2010	2013	700	0
Indiana	1989 / 2007	2010	230	280
Iowa	2004 / 2007	2010	30	150
Kentucky	2004 / 2007	2011	40	230
Michigan	2001 / 2007	2010	230	360
Minnesota	2004 / 2007	2013	250	0
Nebraska	2001 / 2007	2011	70	110
Ohio	2004 / 2007	2011	90	560
Wisconsin	2004 / 2007	2010	40	230
Kansas City Metro	2004 / 2010	2012	60	0
TOTAL (Billion Btu)			1,740	1,920
			Equivalent to 10,750 Homes	Equivalent to 11,900 Homes

Residential Energy Savings: Achieved and Potential

	Previous / Current Energy Code (IECC)	Current Energy Code Adoption Date	Annual Energy Savings- Previous Energy Code vs Current Energy Code* (Billion BTU)	Additional Annual Energy Savings If All States Adopt ASHRAE 90.1-2010 / IECC 2012* (Billion BTU)
Illinois	2006 / 2012	2013	900	0
Indiana	1992 / 2009	2010	660	790
Iowa	2006 / 2009	2010	230	460
Kentucky	2006 / 2009	2011	220	400
Michigan	2003 / 2009	2010	430	740
Minnesota	2006 / 2012	2013	370	0
Nebraska	2003 / 2009	2011	180	300
Ohio	2006 / 2009	2011	510	1010
TOTAL (Billion Btu)			3,500	3,700
			Equivalent to 21,600 Homes	Equivalent to 22,900 Homes

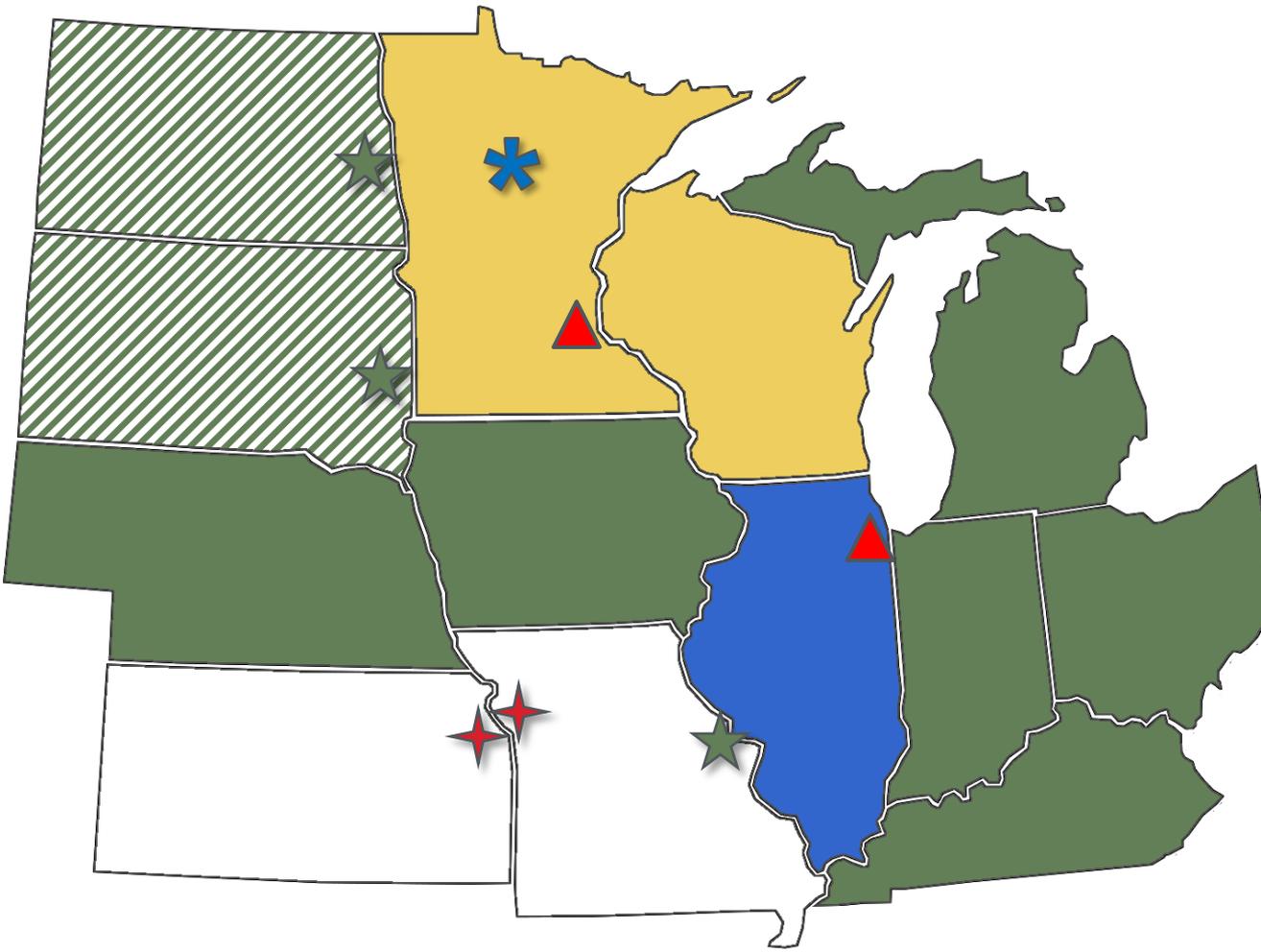
Building Energy Codes

1. Use Lessons Learned In Adoption Process from Illinois and Minnesota in Future States.
2. Focus on Adoption of IECC 2012 in Iowa and Michigan Based on Current Environment
3. Use Claimed Savings Program Developed in Illinois as Template for other Midwest States:
 - Minnesota
 - Iowa
 - Indiana
 - Ohio
 - Michigan

Benchmarking

1. Support City of Chicago Benchmarking and Energy Rating ordinance development and assist with implementation strategies
2. Develop State of Michigan “time of sale” or home energy rating program w/ stakeholders, possible pilot in select cities
3. Expand Benchmarking Ordinances to other Midwest Municipalities:
 - Columbus, OH
 - Population (2010) 787,033 (15th in U.S.)
 - Kansas City, MO
 - Population (2010) 459,787 (37th in U.S.)
 - MEEA will leverage established relationship with stakeholders, local utilities, and building professionals
4. Offer DOE Building Performance Database (BPD) as means to store benchmarking information for municipal/state analysis

Residential and Commercial Building Energy Code Adoption in the Midwest



Code Level / Equivalence

- No Mandatory Statewide Code
- 2006 IECC/90.1-2004
- 2009 IECC/90.1-2007
- 2012 IECC/90.1-2010
- Voluntary 2009 IECC/90.1-2007
- 2009 IECC/90.1-2007 Adopted by Major Municipality
- Enhanced 2009 IECC/90.1-2007 Adopted by Major Municipality
- State in Process to 2012 IECC/ 90.1-2010
- Municipality adopted commercial benchmarking ordinance (Chicago in process)

As of March 2013