



Energy Codes in the Midwest and Regionally Coordinated Efforts to Train Beyond Code: ReDeux

**Presented to:
National Conference on Building Energy Codes
Philadelphia, PA
July 21, 2004**



What is the status of energy codes in the Midwest?

- What is the status of code training and/or beyond code training in the Midwest?
- What is the “value proposition” of regionally coordinated beyond code training programs?
- What are the benefits and to whom do the benefits accrue?
- What can we do to increase their influence in the region?

MEEA MW SEO



- Minnesota
 - Dept of Commerce
- Wisconsin
 - Dept of Administration
- Illinois
 - Dept of Commerce & Economic Opportunity
- Ohio
 - Dept of Development
- Missouri
 - Energy Center
- Kentucky
 - Dept of Energy



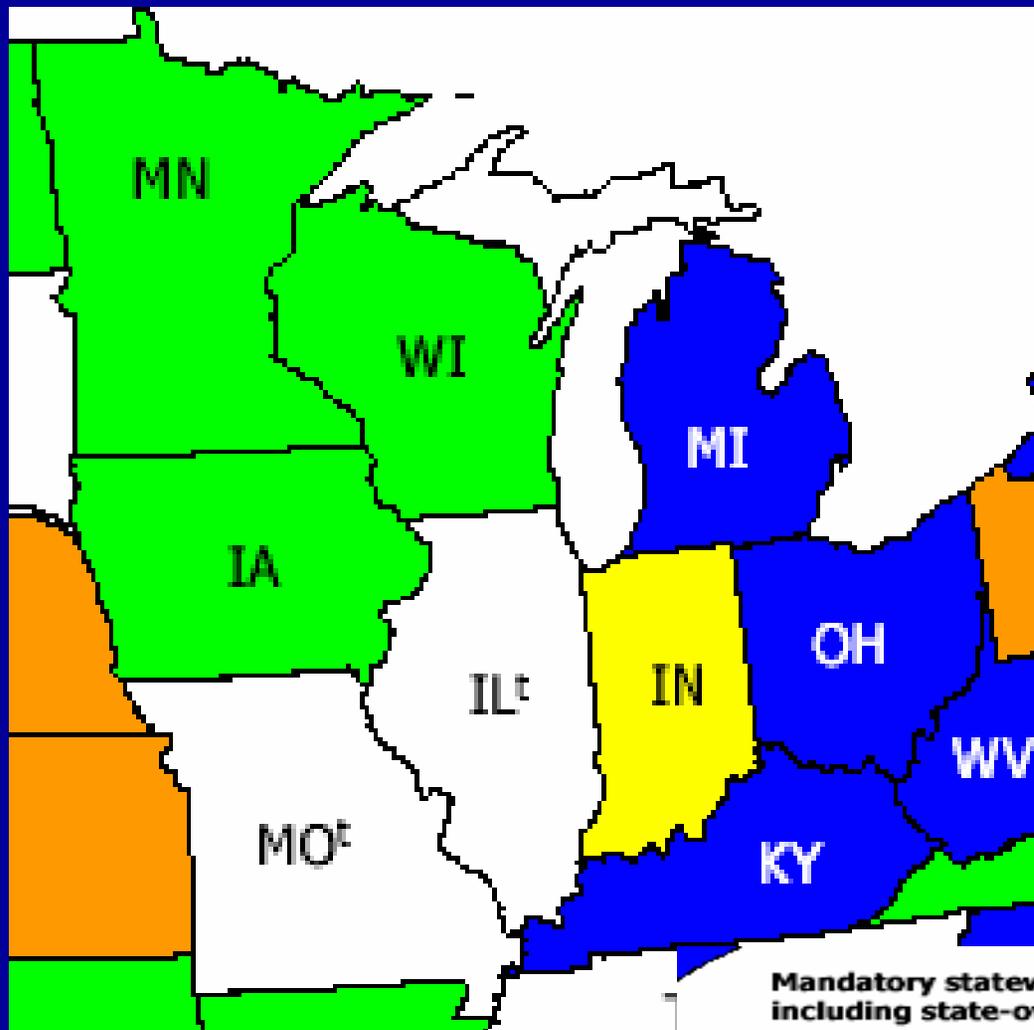
WHAT IS THE STATUS OF ENERGY CODES IN THE MW?



MEEEA

Midwest Energy Efficiency Alliance

Status of Commercial Building Codes in the MEEEA Midwest States



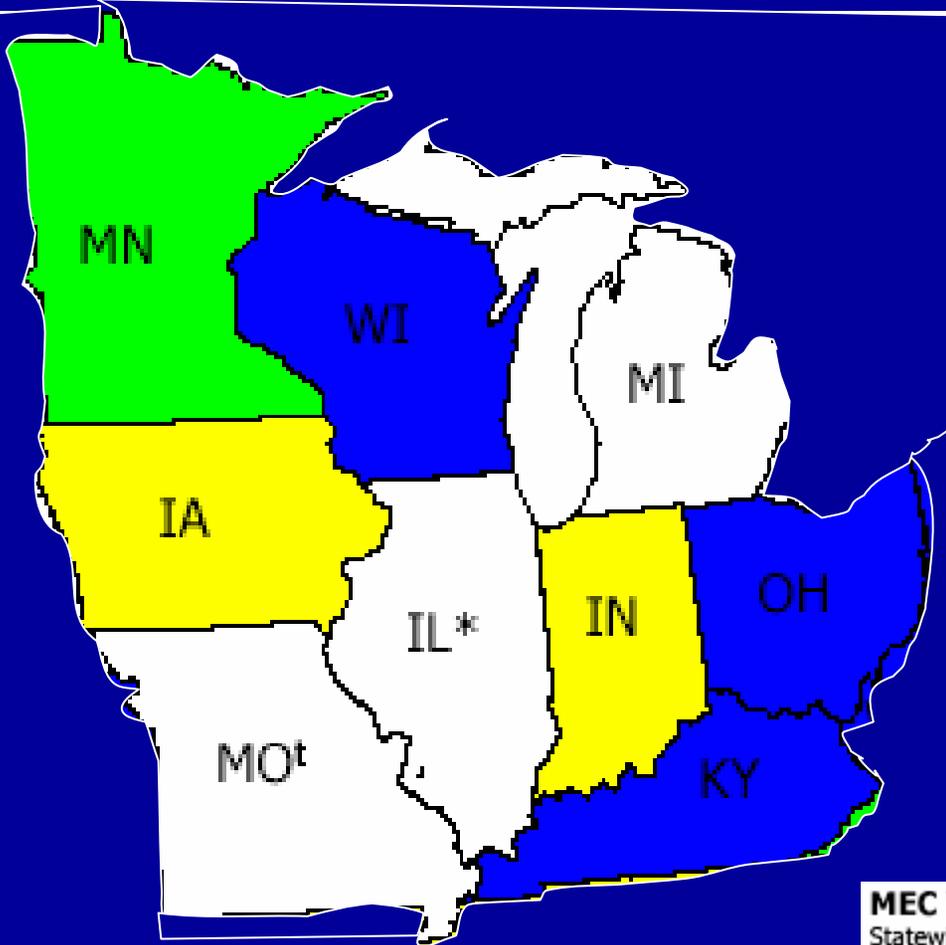
Mandatory statewide code including state-owned buildings

- (8)  2003 IECC / ASHRAE 90.1-2001
- (17)  ASHRAE 90.1-1999 or equivalent state code adoption or in adoption process.
- (14)  ASHRAE 90.1-1989
- (1)  State developed code does not meet 90.1-1989
- (10)  Weaker/None

* Code implementation depends upon voluntary adoption by local jurisdictions.

† 90.1 Mandatory for state owned buildings

NOTE: This map should be used in conjunction with BCAP's Status of the State newsletter. Go to bcap-energy.org to view current newsletter.



Status of Residential Energy Codes in the MEEEA Midwest States

MEC Versions

Statewide code both mandatory and voluntary

- (21)  2000 IECC or IRC or equivalent state code adoption or in adoption process
- (1)  1998 IECC
- (8)  1995 MEC or equivalent state code
- (1)  1995 MEC or equivalent state code (partial adoption)
- (3)  1993 MEC or equivalent state code
- (5)  1992 MEC or equivalent state code
- (11)  No code or code not EPAAct compliant

*Code implementation depends upon voluntary adoption by local jurisdictions.

†90.1 Mandatory for state owned residential buildings three stories or less in height.

Illinois



- Residential State Wide Energy Code: None
- Commercial State Wide Energy Code: Recently adopted IECC 2000 for all commercial buildings over 4 stories. This legislation is sitting on the Governor's desk awaiting signature. Previously, State-owned buildings were required to comply with ASHRAE/IESNA 90.1-1989.
- No set review schedule, but codes are reviewed annually for possible revisions
- Some communities (44) have adopted the 2000 IECC requirements; Legislation introduced in 2003 to adopt the 2000 IECC (residential) failed.
- Currently there are modest efforts toward training, but will expand in the coming year.

Indiana



- Residential State Wide Energy Code: Indiana Energy Conservation Code based on 1992 MEC
- Commercial State Wide Energy Code: State-developed code that does not meet ASHRAE/IESNA 90.1-1989
- Codes are revised as necessary; Res Code Format was updated/revised in April, 2004.
- The Office of the State Building Commissioner offers one and two-day seminars on the entire building code, no energy specific offerings

Iowa



- Residential State Wide Energy Code: 1992 Model Energy Codes
- Commercial State Wide Energy Code: ASHRAE/IESNA 90.1-1989
- No set review schedule; Most recent update was April 2002
- Jurisdictions can adopt more stringent residential and commercial codes; several (12) have already adopted IECC 2000.
- Iowa Comprehensive Energy Plan 2002 Recommends:
 - Establish Public Benefits Fund
 - Adopt 2000 IECC for residential and commercial buildings
- Division of State Fire Marshall's Building Code Bureau still needs to hire a commissioner; This is forestalling additional efforts
- Iowa Energy Office has published materials for cities & counties as well as builders, homeowners and other stakeholders
- Iowa Energy Center offers HVAC digital controls training

Kentucky



- Residential State Wide Energy Code: 2000 IECC external envelope requirements only
- Commercial State Wide Energy Code: 2000 IECC external envelope requirements only
- Three year review/update cycle by the Department of Housing, Buildings and Construction-Last update August 15, 2001
- In August KY will review and make recommendations regarding the 2003 IECC.

Michigan



- Residential Energy Code: Michigan Uniform Energy Code Part 10 Rules are less stringent than 1992 MEC
 - Bureau is completing the administrative process to adopt an update that incorporates Ch. 11 of the IRC with reference to the IECC 2000 prescriptive table
 - Scheduled to go into effect January 1, 2005
- Commercial Energy Code: ASHRAE 90.1-1999
- Three-year review cycle-Commercial code was updated in April 2003
- The Bureau of Construction Codes offers training to codes officials
- Currently, Michigan State Construction Management Program is moving forward with development of a training curriculum for the revised code

Minnesota



- Residential Energy Code: MN State Energy Code based on the 1995 MEC
- Commercial Energy Code: MN State Energy Code exceeds ASHRAE/IESNA 90.1-1989
- No set review schedule-last residential update was April 15, 2000 and last commercial update was July 20, 1999
- The Department of Administration, Building Codes and Standards Division is in the process of reviewing the current codes and is investigating adoption 2004 IECC (RICC, EC48, IECC Supplement)
- The Commerce Department offers ongoing codes training classes throughout the year

Missouri



- Residential State Wide Energy Code: No statewide code. State-owned residential buildings must comply with the latest edition of the MEC or ANSI/ASHRAE standard 90.2-1993.
- Commercial State Wide Energy Code: No statewide code. State-owned buildings must comply with ASHRAE/IESNA 90.1-1989.
- No set review cycle-most recent was January 26, 1996

Ohio



- Residential Energy Code: 2000 IECC with 2001 update
- Commercial Energy Code: ASHRAE/IESNA 90.1-1999
- Most recent update was January 1, 2002
- Whole House Energy Performance Training Program
- Ohio Department of Development has a web-based training guide

Wisconsin



- Residential State Wide Energy Code: State-developed code meets or exceeds 95 MEC
- Commercial State Wide Energy Code: 2000 IECC
- Codes are updated on an ongoing basis through various citizen advisory committees and the Wisconsin Building Code Advisory Review Board-Most recent update was July 1, 2002
- Safety and Buildings Division and Focus On Energy sponsor ongoing continuing education classes dealing with energy codes



**WHAT IS THE VALUE
PROPOSITION OF
REGIONALLY
COORDINATED
TRAINING?**

Buildings info – “borrowed” from Jeff Johnson’s slides...



- We spend 90% of our time being directly effected by the built environment
- Buildings ...
 - Consume over 35% of total energy in US
 - Consume over 65% of the total electricity in the US
 - Incur energy costs of over \$228 billion per year
 - Contribute over 35% of US carbon dioxide emissions
 - Constitute \$450 billion of US GDP

Value Proposition



- We are all connected through the same grid
- There are diminishing pots of money, so leveraging resources is essential
- The most robust part of the economy right now is housing starts for residential, multi-family, and commercial buildings
- Sharing infrastructure for delivery of programs & materials for curriculum development just makes sense
- Training to Code isn't sufficient
- Training Beyond Code will require better marketing and promotion in order to make it valuable to the most important constituency – makers of buildings

CONNECTIONS



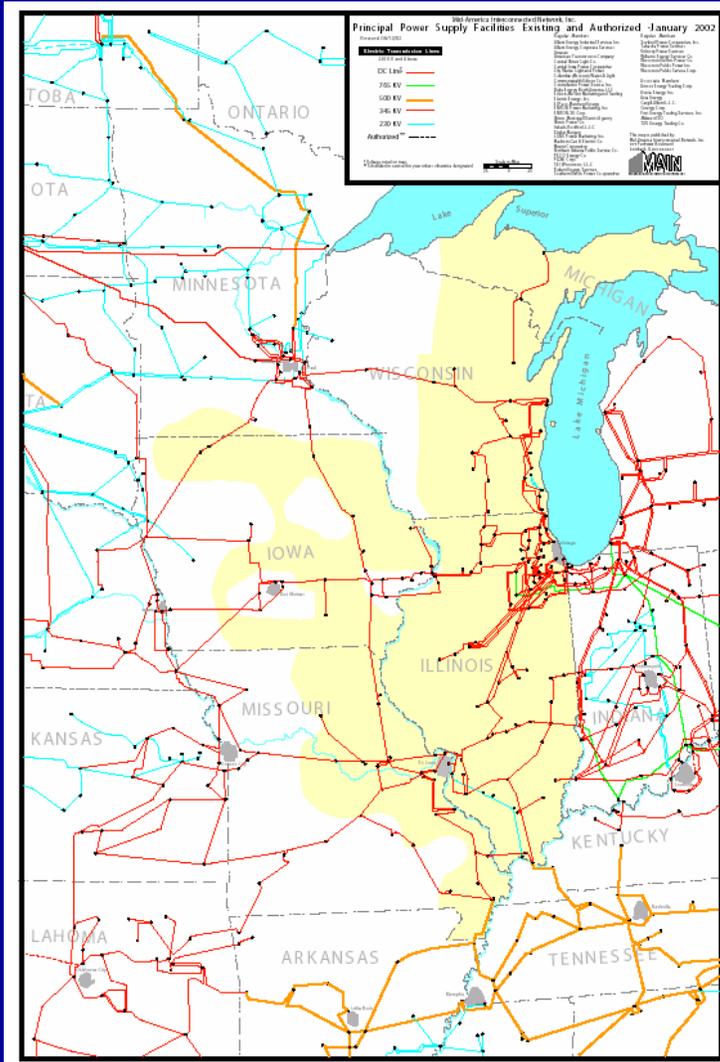
**BECAUSE WE ARE ALL
CONNECTED TO THE SAME
TRANSMISSION GRID**

States

**Illinois
Iowa
Michigan
Minnesota
Missouri
Wisconsin**

MAIN

Mid-American Interconnected Network, Inc.

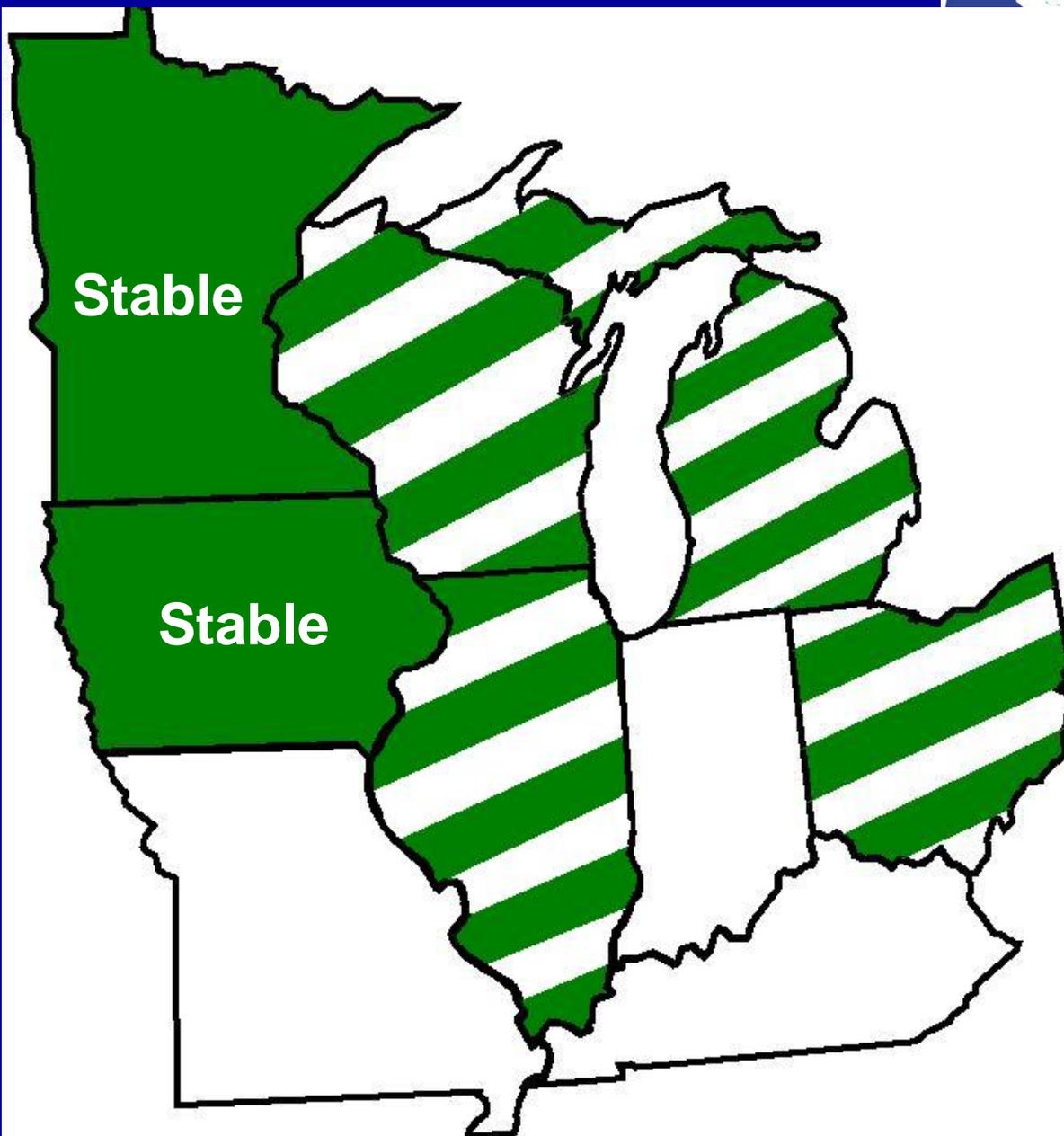


Midwest Funding



MEEFA

Midwest Energy Efficiency Alliance



WI: Lost at least \$18M 2004
WI: Lost approx \$29M 2005

OH: Lost \$3 M 2003
OH: Lost \$10M 2004 (loan)
OH: Potential loss of \$12M 2005

IL: Lost \$4M PBF
IL: Lost \$125M Trust
(Pending)

MI: possible decline

**IN 2003, ROUGHLY \$230M
WAS INVESTED IN ENERGY
EFFICIENCY PROGRAMMING
IN THE MIDWEST**

**IN 2004, THAT NUMBER HAS
THE POTENTIAL TO DECLINE
BY 1/3RD**



WHAT ARE THE BENEFITS?

Benefits of Codes



- **Building Efficiency has many benefits:**

- ENERGY BENEFITS*

- *Avoid building more power plants*
 - *Reduce current energy usage*
 - *Help alleviate transmission and distribution issues*

- ENVIRO BENEFITS*

- *Thus... reducing the introduction of pollutants into the environment*
 - *Create a more sustainable future*

- OTHER BENEFITS*

- *Create better-informed and more aware consumers*
 - *Increase productivity and performance*
 - *Level out the load profiles for the utilities for planning purposes*
 - *Help revitalize the economy by investing in construction of energy efficient buildings using products and services of those manufacturers and contractors who provide them*

Benefits Cont...



- Regionally coordinated programs attract significant interest because it allows organizations like MEEA to spread the development, design and implementation costs over several sponsors.
- We've learned from our BOC program that regional marketing of the value of the training also helps to fill seats, engage participation, and encourage continuous education among those who attend

To Whom Do Benefits Accrue?



- Builders/Designers/Architects/Raters etc
- Occupants
- Owners
- Utilities
- States & Municipalities
- Others
- Beyond Code Training can be truly “win-win.”



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