



# **Energy Codes in the Midwest and Regionally Coordinated Efforts to Train Beyond Code**

**Presented to:  
National Conference on Building Energy Codes  
Atlanta, GA**

**June 25<sup>th</sup>, 2002**



- Who is MEEEA?
- 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?



# WHO IS MEEEA?

# MEEA HISTORY



- MEEA is a regional network of organizations collaborating to promote energy efficiency
- Formed in 1999 with early support from the Energy Foundation, U.S. EPA, U.S. Department of Energy, and our founding members
- MEEA has become a strong organization with diverse support from various stakeholders in the region and nationally over the past three years
- This broad portfolio of support has allowed MEEA to create entrepreneurial programs that combine private-sector interests and contributions with public sector priorities.

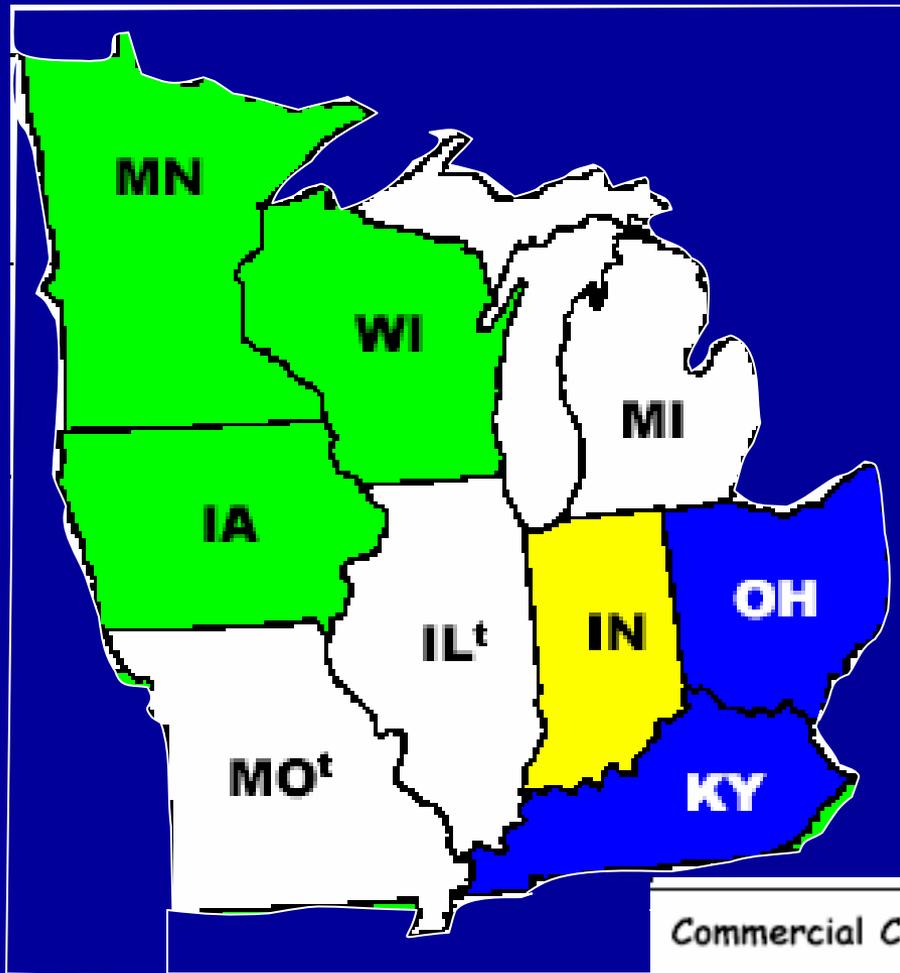
# MEEEA Members



- Academic and Research Institutions
- Manufacturers and Retailers
- Utilities (IOUs, Munis and Coops)
- State and Local Governments
- Energy and Environmental Non-profits
- Energy Service Companies, Contractors and Consultants
- *This diversity is critical to the coordinated success of regional efficiency programs*



# WHAT IS THE STATUS OF ENERGY CODES IN THE MW?

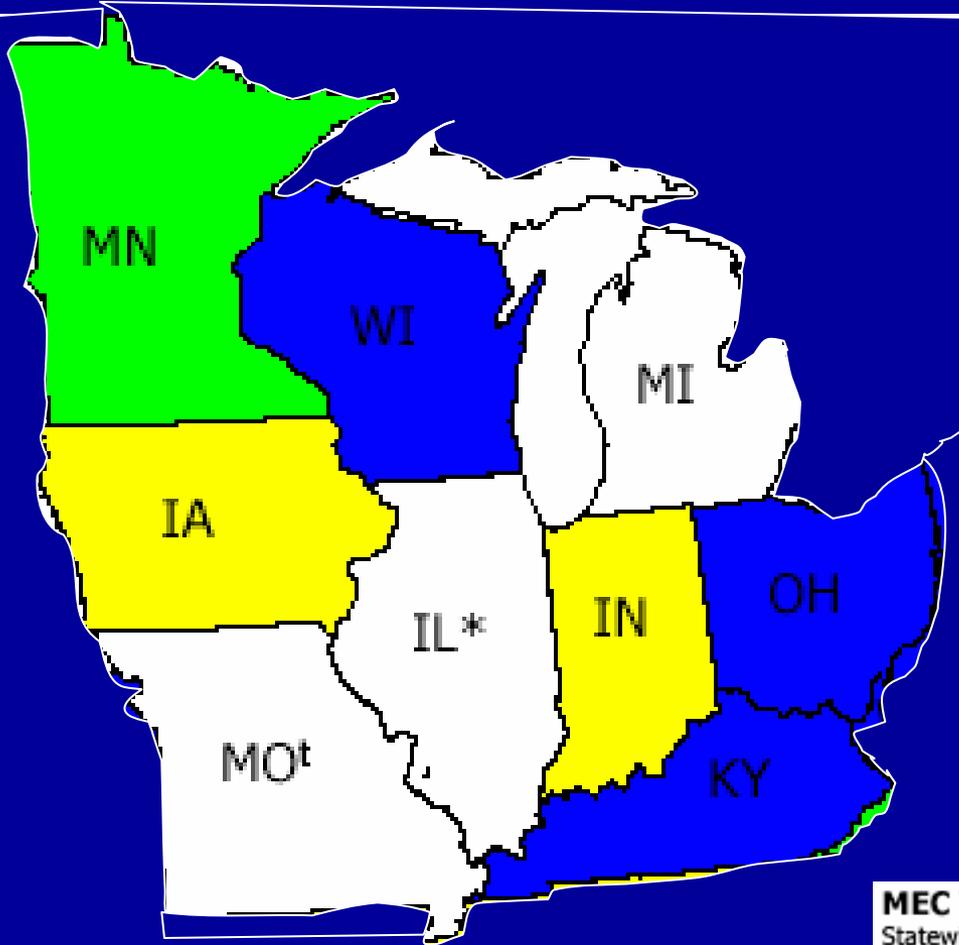


## Status of Commercial Building Codes in the MEEEA Midwest States

### Commercial Code

- (18) ■ 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
- (16) ■ Weaker/None

\* Code implementation depends upon voluntary adoption by local jurisdictions.  
 † Mandatory for State Owned Buildings



# 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 EPAct 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: State-owned and City of Chicago-owned buildings must comply with ASHRAE/IESNA 90.1-1989
- No set review schedule, but codes are reviewed annually for possible revisions
- Some communities (12) have adopted the 2000 IECC requirements
- Legislation introduced in 2003 to adopt the 2000 IECC failed, but Illinois Building Commission is organizing a round-table discussion to try to facilitate adoption of an energy code.
- Limited Code Compliance Training programs for the City of Chicago and those communities that have adopted IECC 2000.

# 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-last update was December 31, 1992
- 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 and several (12) have already adopted IECC 2000.
- 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 is forming a group to make recommendations for updating the Codes. Their recommendations should be complete by September 2003. Codes update is a legislative process, so accepting the recommendations is up to the legislature.
- 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

# Michigan



- Residential Energy Code: Michigan Uniform Energy Code Part 10 Rules are less stringent than 1992 MEC
  - Building Codes committee has issued a matrix detailing the proposed rules and set a Public Forum for July 23, 2003
  - New rules do not meet IECC 1998 or MEC 1995
- Commercial Energy Code: ASHRAE 90.1-1999
- Three-year review cycle-Commercial code was updated in April 2003
- The Bureau of Construction Codes offers ongoing training to codes officials
  - The Bureau is developing online codes training tools available to the public

# 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
- 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 is designing 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 – blatantly plagiarized 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

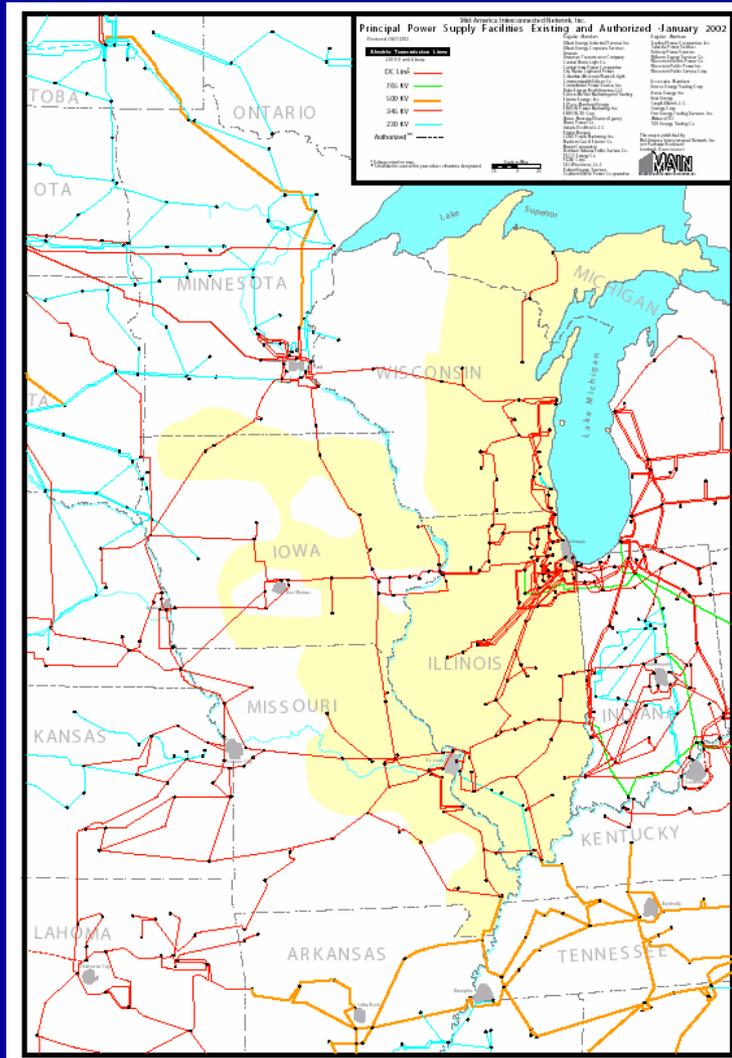


- We are all connected through the same grid
- There are diminishing pots of money, so leveraging resources is essential
- The most robust part of the economy right now is housing starts for residential, multi-family, and commercial buildings
- Sharing infrastructure for delivery of programs & materials 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**

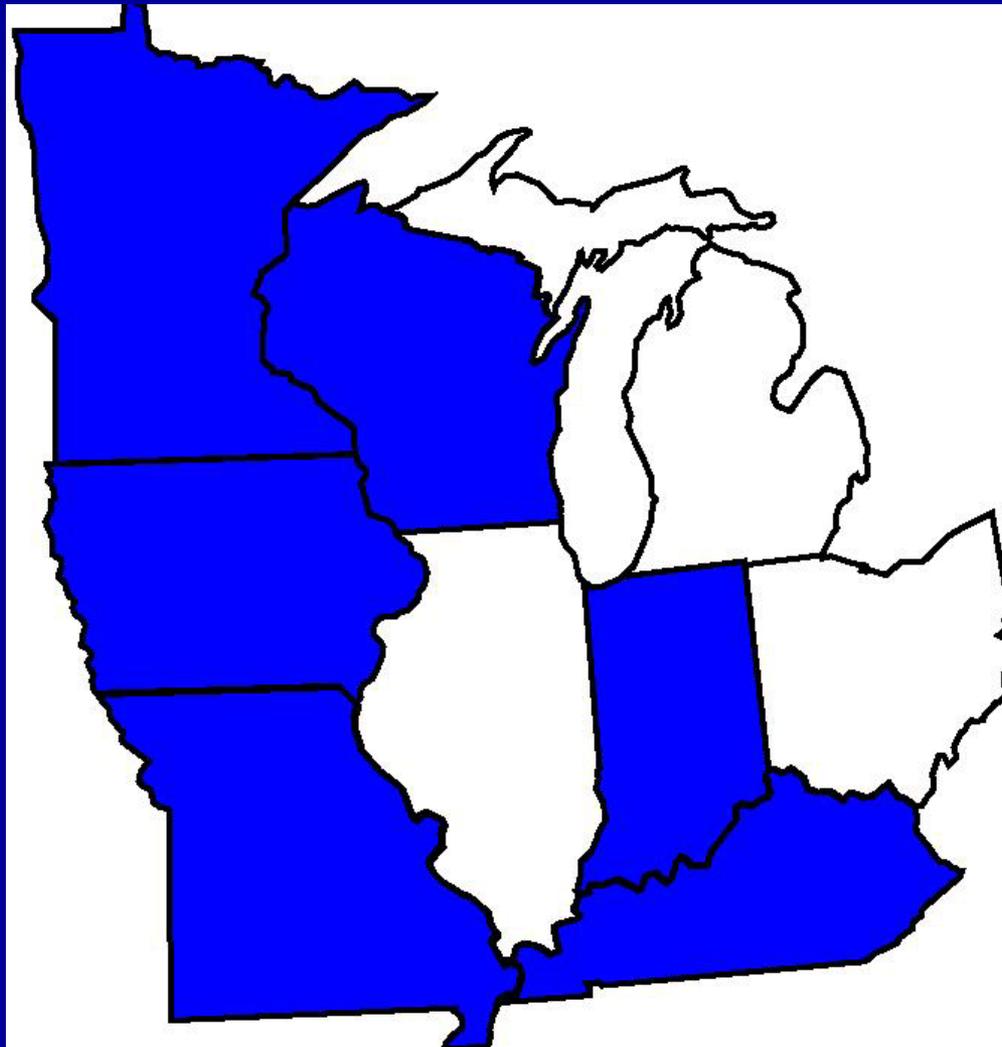
**Missouri**

**Wisconsin**

**MAIN**

Mid-American Interconnected Network, Inc.

# REG vs DEREG



## Regulated States:

Minnesota  
Iowa  
Missouri  
Indiana  
Kentucky  
Wisconsin

## Deregulated States:

Illinois  
Michigan  
Ohio

# PBFs & OTHER FUNDS IN 2003



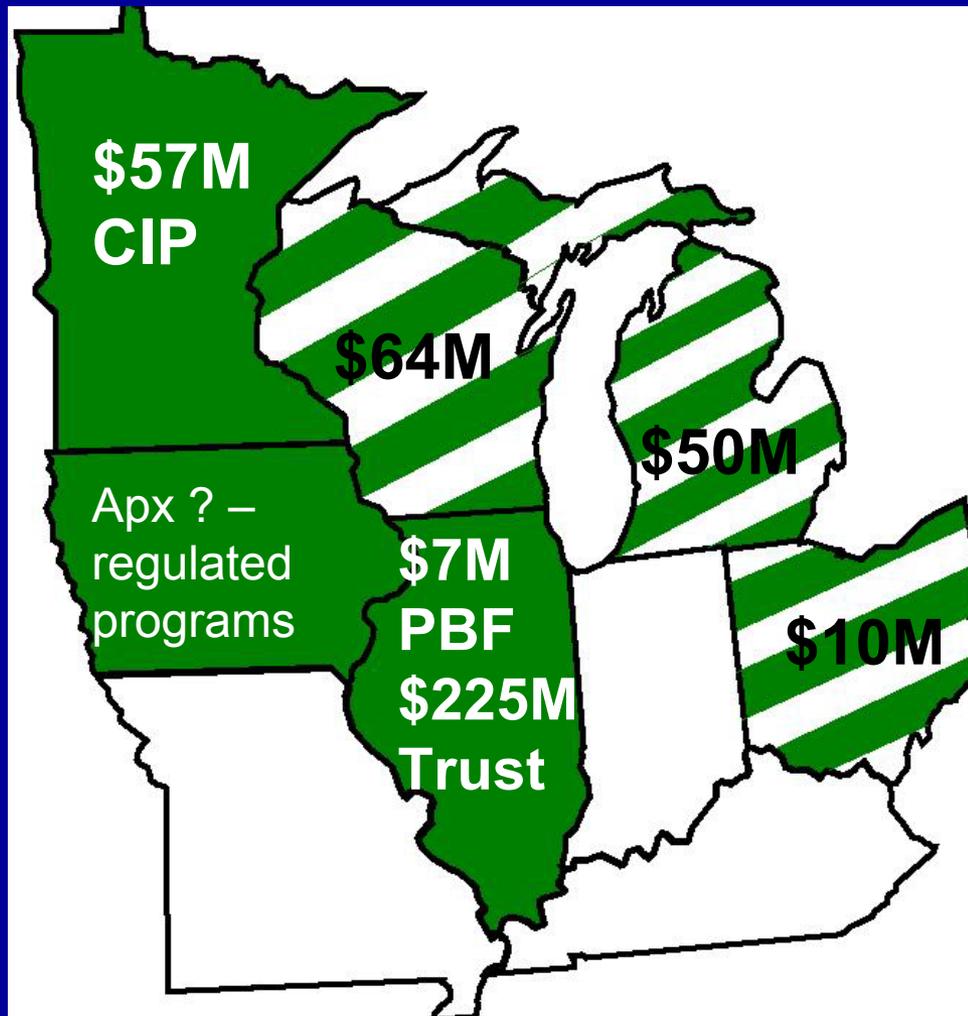
## PBF States

Wisconsin  
Michigan  
Ohio

## “Other Funds”

Minnesota  
Illinois  
Iowa

No Consistent  
Funding  
Mechanism



# PBFs & OTHER FUNDS POST-2003



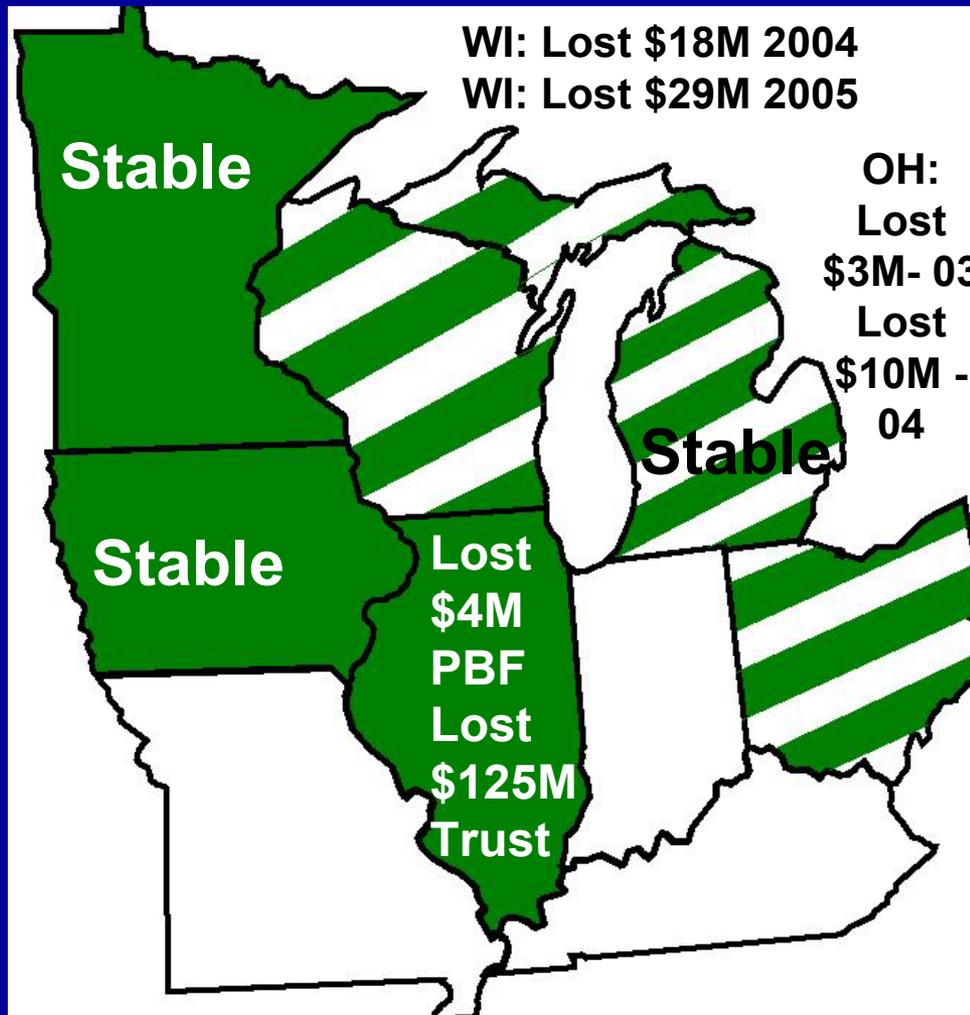
## PBF States

Wisconsin  
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## “Other Funds”

Minnesota  
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Iowa

## No Consistent Funding Mechanism





# 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 Contd...



- 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.”

# Increased Coordination?



- MEEA hosted a meeting with BCAP and the Regional and National Groups
- Umbrella of Funding for coordinated curriculum development, training guidelines, etc
- Sharing of resources is essential/No need to re-create the wheel and it standardizes the materials
- What more can be done?
- Your thoughts ideas and questions?



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