



# Midwest Energy Efficiency Trends: Emerging Programs & Policy Overview

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Pierre, SD



# Presentation Overview

- What is MEEA?
- Why Energy Efficiency?
- Midwestern Policy Trends
- Emerging Program Solutions
- Regional Partnerships & Resources



# Midwest Energy Efficiency Alliance

MEEA is a nonprofit organization bridging the gap between energy efficiency policy development and program implementation



# MEEA's Role in the Midwest

- Nonprofit serving 13 Midwest states
- 10+ years promoting energy efficiency
- Serving state & local governments, utilities, advocates, manufacturers & retailers, ESCOs, consultants, academic & research organizations
- Staff of 27 in Chicago
- Activities
  - Designing & Administering EE Programs
  - Evaluating & Promoting Emerging Technologies
  - Regional Voice for DOE/EPA & ENERGY STAR
  - Coordinating Utility Program Efforts
  - Delivering Training & Workshops
  - Advancing EE Policy
  - Promoting Best Practices



# Why Energy Efficiency?

## Overall Benefits:

- First step in ensuring *low-cost, reliable energy*
- Least-cost *supply-side* resource
- Creates local *jobs* and keeps money in local economy

## Energy Use in South Dakota:

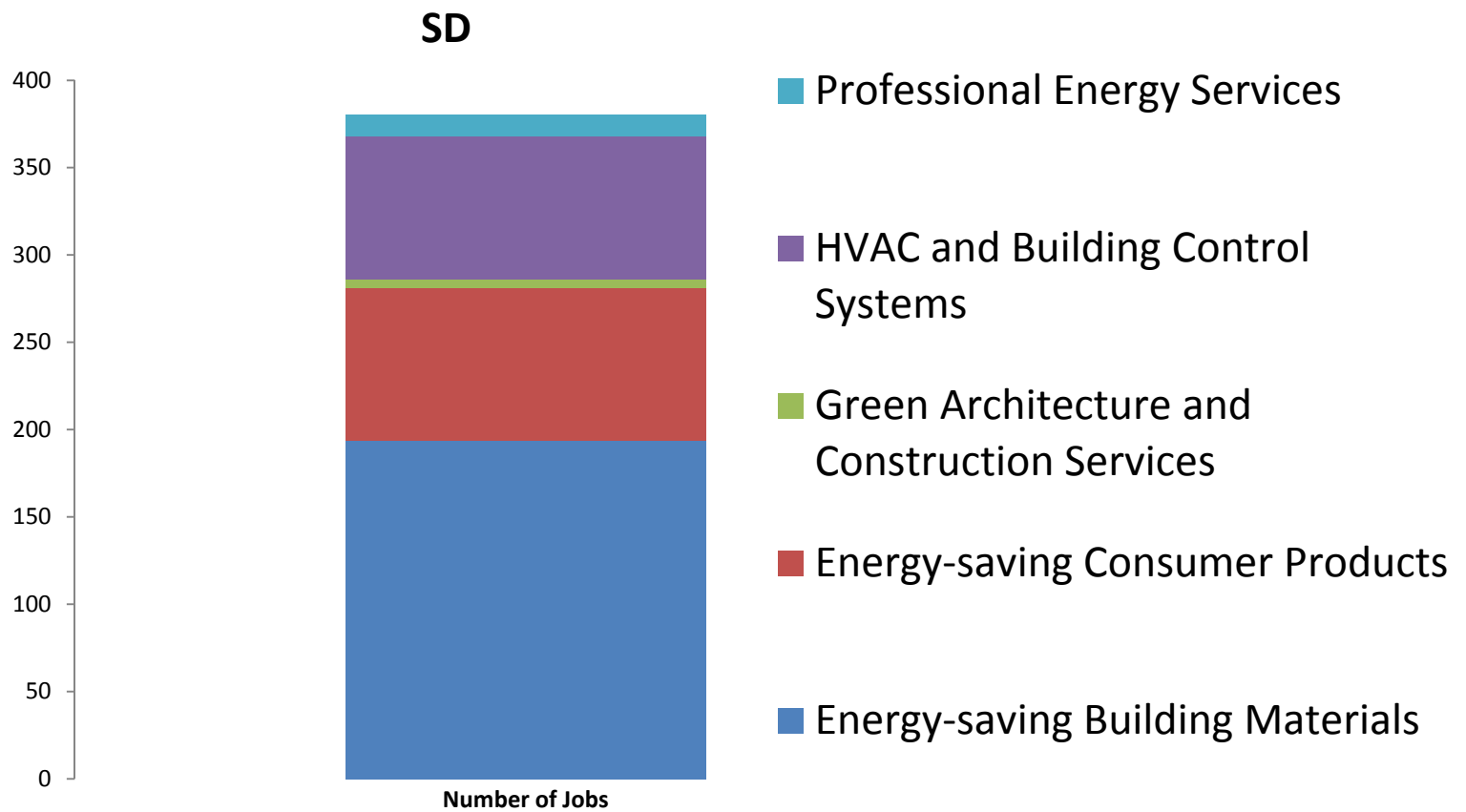
- Industry accounts for **40%** of South Dakota's total energy use (**EIA, 2011**)
  - Sector faces pressures with energy price volatility and environmental compliance costs
- Transportation = **25.1%**
- Residential = **18.6%**
- Commercial = **16.3%**

# Why Energy Efficiency?

Availability of effective EE programs/resources key to:

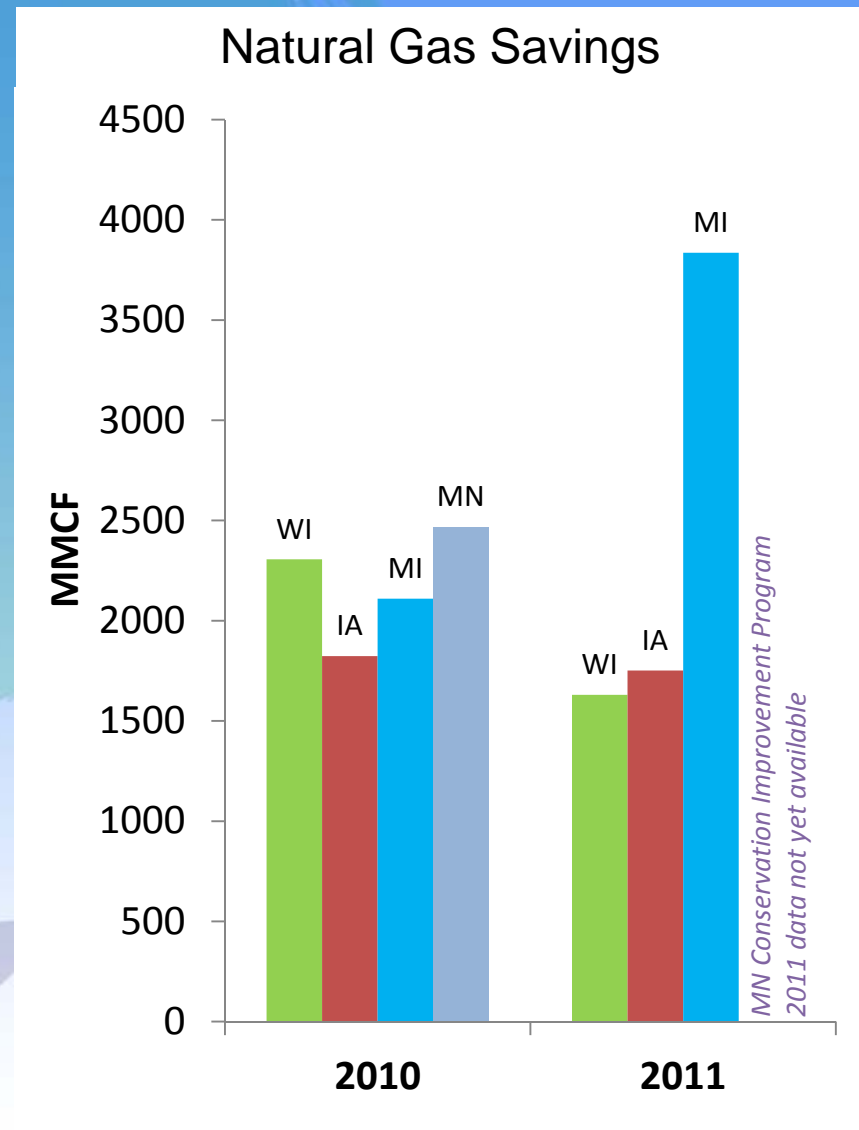
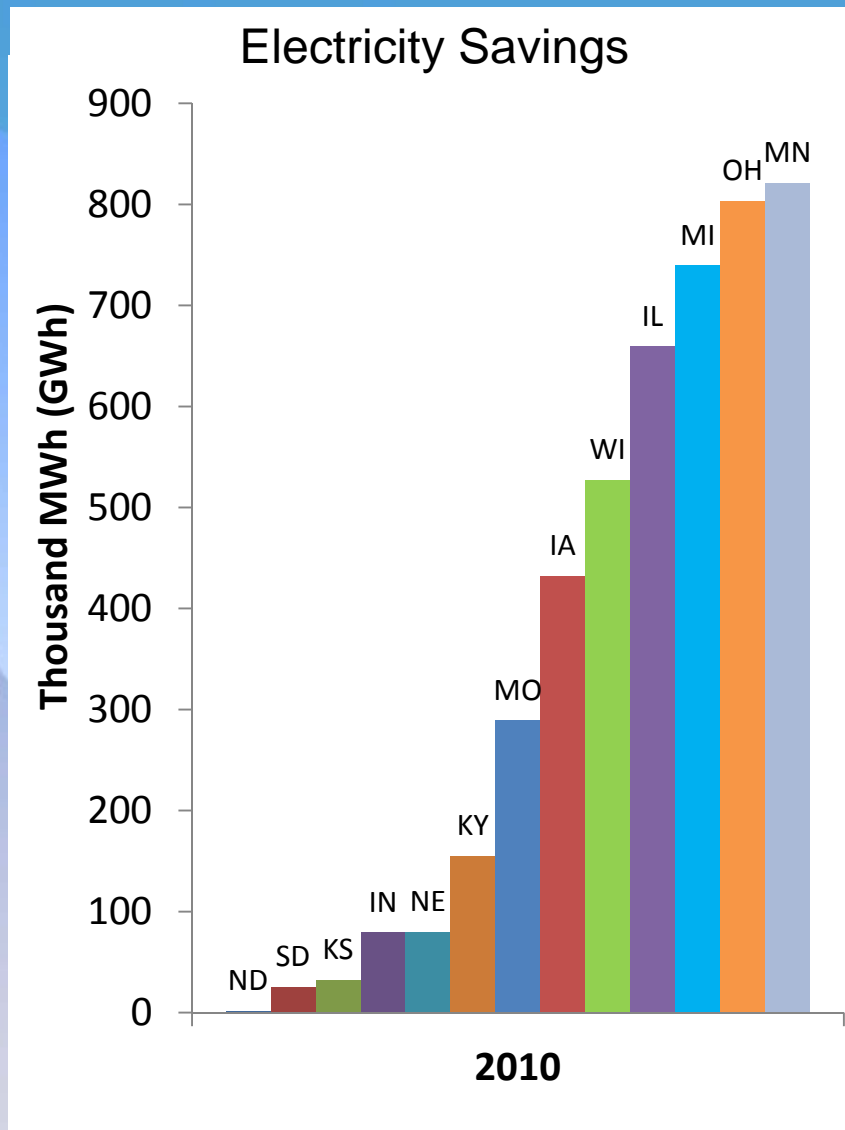
- Reducing energy ***expenditures***
- Increasing ***competitiveness***
- Retaining skilled ***workforce***
- Expanding ***productivity***

# Midwest Jobs in Energy Efficiency Market in 2010



Source: Brookings, 2011, using data from NBLs and Dun & Bradstreet

# Midwest Energy Savings from Energy Efficiency



Sources: ACEEE, MPSC, IUB, MN DOC, Focus on Energy



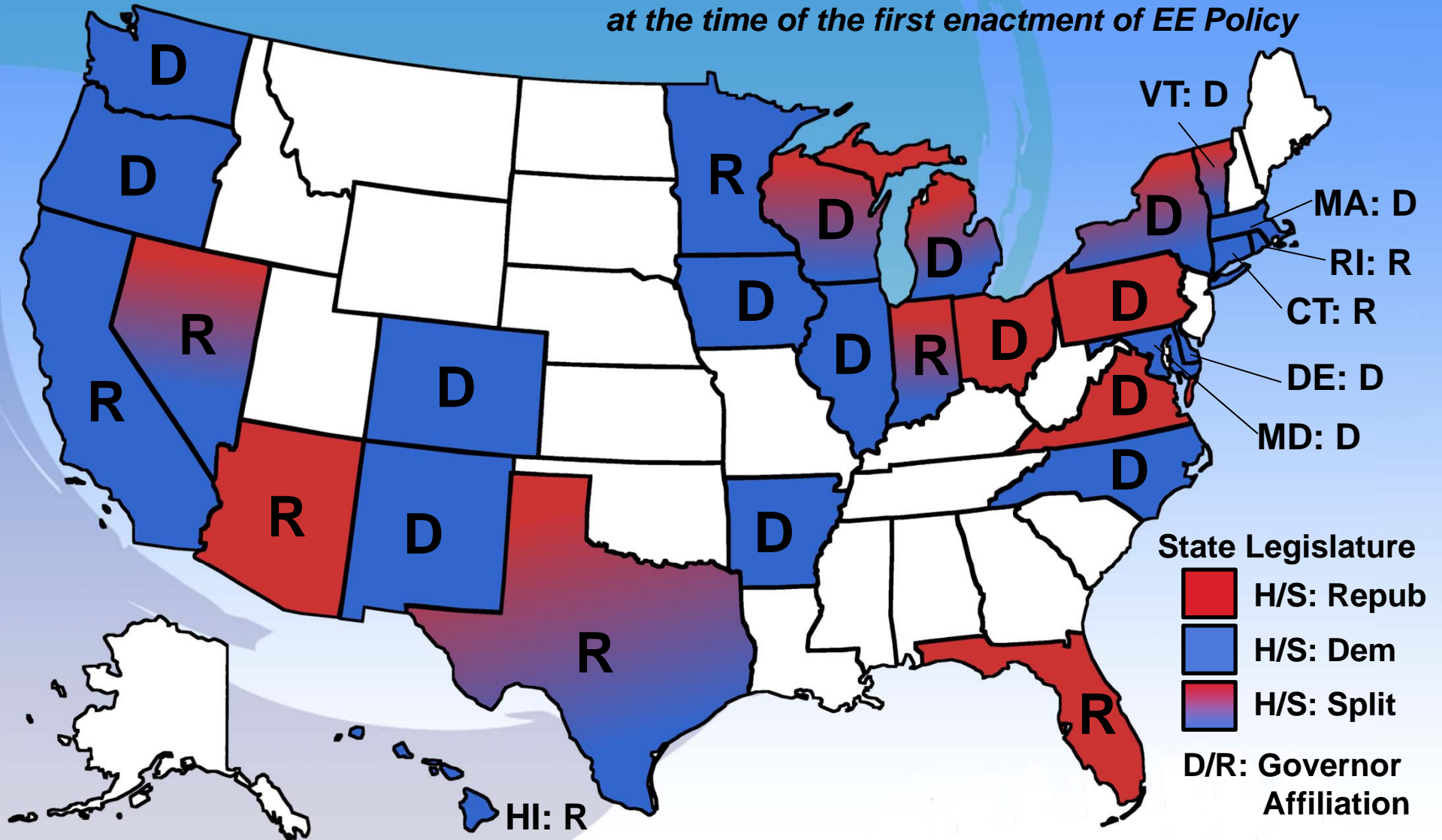
# MIDWESTERN POLICY TRENDS

*The Source On Energy Efficiency*

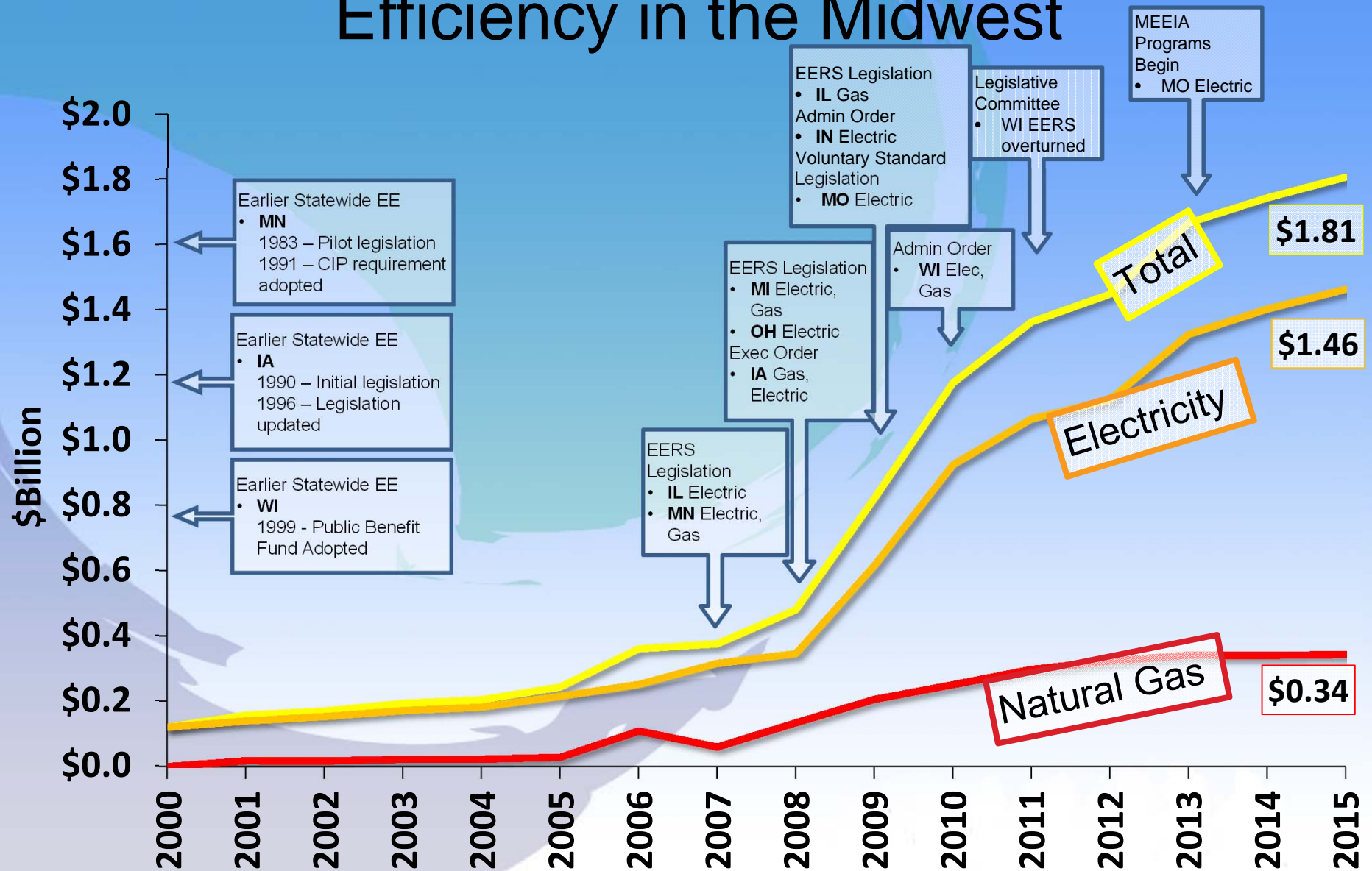


# Energy Efficiency is a Bipartisan Issue

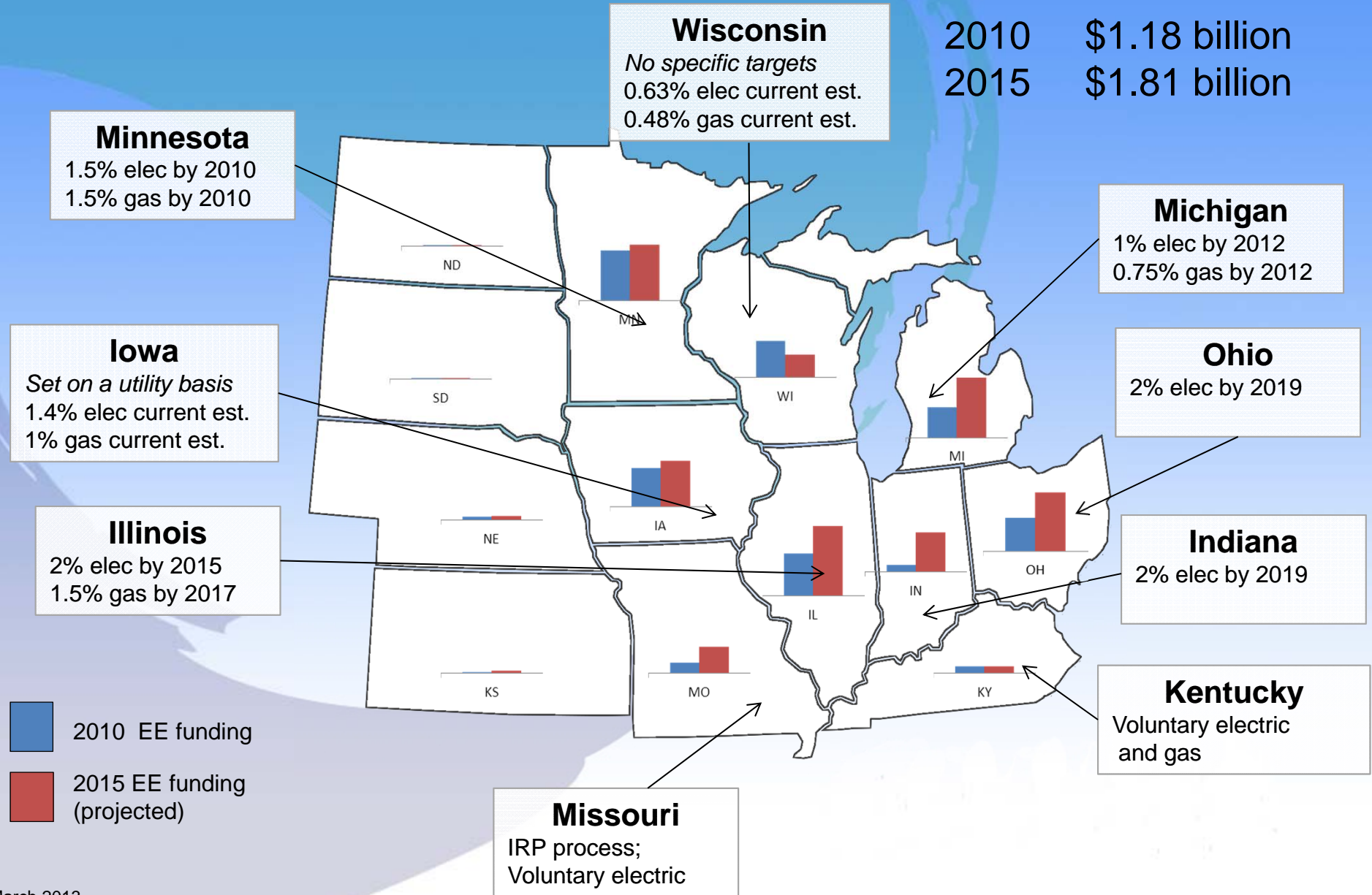
*State House/Senate and Governor party affiliation  
at the time of the first enactment of EE Policy*



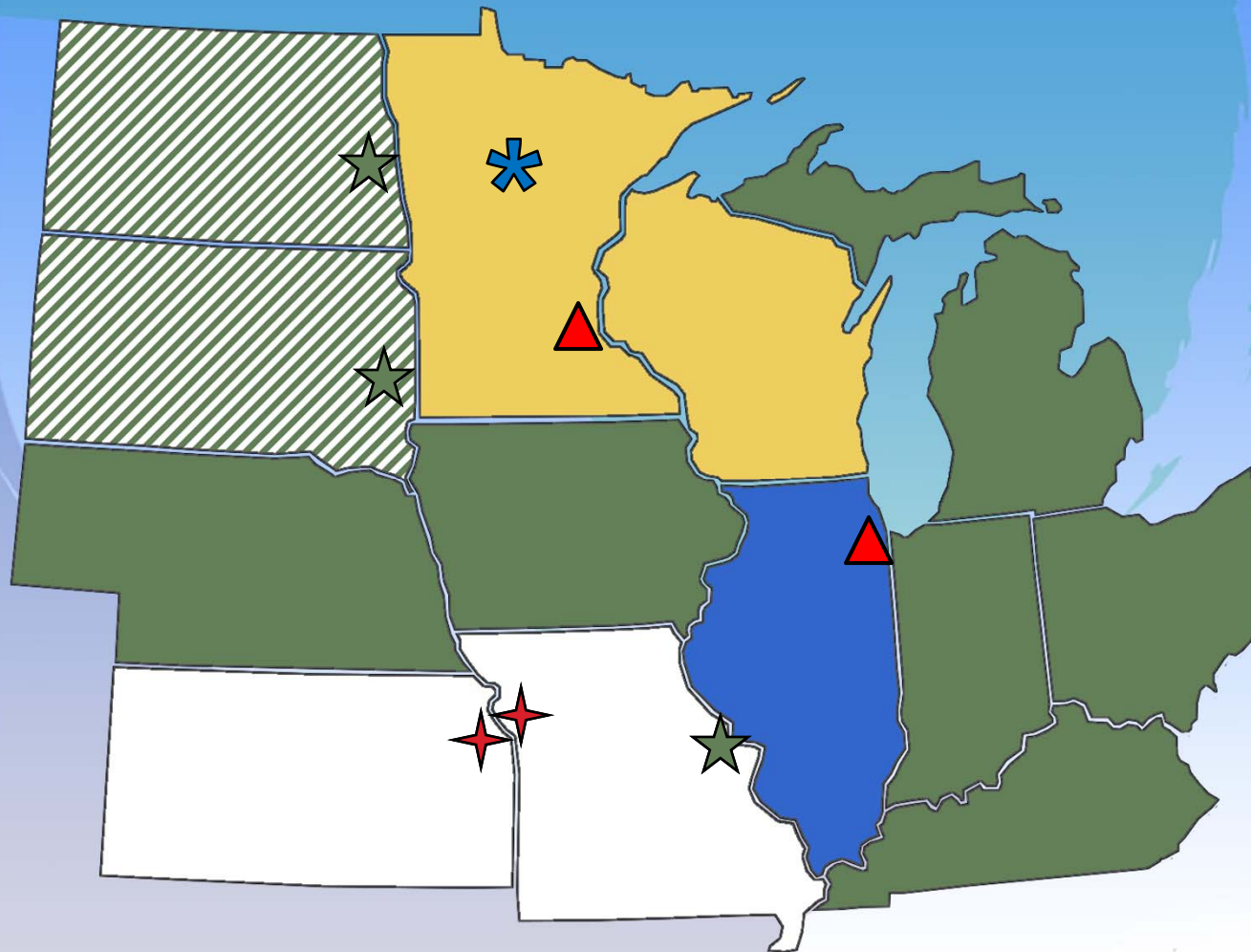
# Estimated Annual Investment in Energy Efficiency in the Midwest



# Midwest Efficiency Targets and Funding Levels



# 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

# Emerging Program Solutions



building operator certification



Energy Efficiency Through Operator Training

Building Operator Certification (BOC) is a nationally recognized training and certification program for building operators offering improved job skills and more comfortable, energy-efficient facilities.



# Emerging Program Solutions

- Building Energy Code Compliance Program
- Education & Training
  - Building Operator Certification/PEM
  - Building Science Training Series
  - HVAC Save
  - Lights for Learning
- Home Performance with Energy Star
- Midwest Industrial Initiative
- Midwest Peer Exchanges & Collaboratives
  - Midwest Advanced Lighting Network
  - Midwest Home Performance Collaborative



# Potential Building Energy Codes Savings

If not built right, lose an opportunity for 50+ yrs!

## Potential Savings for Average Home:

(2012 IECC vs. 2009 IECC modeled to IL climate)

- 10% Electric Usage Reduction
- 22% Gas Usage Reduction

## Potential Savings for Average Commercial Bldg:

(ASHRAE 90.1-2010 vs. ASHRAE 90.1-2007 modeled to IL climate)

- 23% Electric Usage Reduction
- 43% Gas Usage Reduction



# Energy Code Program

## 1. Establish Code Collaborative

- Form and manage group of stakeholders to have regular discussions on energy code compliance issues in the state.

## 2. Provide Resources to Inspectors/Builders

- Develop guides, checklists, manuals, equipment loan, etc.
- Continue and expand upon energy code trainings.

## 3. Offer Codes Circuit Riders

- Energy Code experts that travel around the state to advise building departments on best practices related to energy code enforcement.

## 4. Third Party Plan Reviewers & Inspectors

- Certified building inspectors that specialize in the energy code hired by municipalities or builders to perform energy code plan reviews and inspections. Rebates available to subsidize cost.

# Potential Savings from Energy Codes in South Dakota

- Commercial New Construction up 234% in 2012 (since 2011)
  - The potential savings (going from a 70% compliance baseline) would be about 41,000 mWh and 2,100,000 therms
- Residential New Construction up 148% in 2012 (since 2011)
  - The potential savings (going from 70% compliance baseline from 2012 code) would be 339,684 therms & 1,135,578 kWh



## MEEA Flagship Program: Building Operator Certification®

- Nationally recognized, award winning program
- 11,000 graduates worldwide
- Midwest metrics:
  - 3,300+ graduates, 200+ series
  - 9 states (IL, IA, KS, MI, MN, MO, NE, OH, WI\*)
    - \*PEM administered in WI
  - Saved 424+million kWh & 10 million therms since 2003
  - 50+ partnerships

Learn more:

[www.boccentral.org](http://www.boccentral.org)



# BOC-trained Operators Achieve Energy Savings

BOC Program Evaluation	No. Sample Sites	Avg. Ft <sup>2</sup>	kWh Savings/ BOC-Operator/ Ft <sup>2</sup>	Therm Savings/ BOC-Operator/ Ft <sup>2</sup>	Equivalent Cost Savings for 200,000 Ft <sup>2</sup> Facility*
Illinois BOC (2012)	43	508,100	0.794	0.001	<b>\$14,520</b>
Minnesota BOC (2011)	50	194,500	0.721	0.018	<b>\$15,965</b>

\*Uses Midwest weighted average retail commercial energy prices  
Evaluations conducted by Navigant Consulting.  
View full reports at [www.boccentral.org](http://www.boccentral.org).

## Benefits of BOC in South Dakota

- Missouri River Energy Services co-sponsored BOC training in member community Detroit Lakes, MN (2012)
- Paid 50% tuition for Detroit Lakes customers

*“... We found the BOC training to be a very valuable tool for commercial and industrial customers who are interested in energy efficiency. Participants learned practical ways to achieve substantial energy savings in their facilities and how to operate a predictive maintenance program to ensure those savings will continue. For customers, optimizing their existing equipment and systems is one of the most cost-effective and easiest ways to save energy and save money. For MRES, encouraging energy efficiency can help delay or reduce the need for new power plants. MRES supports the BOC program and would be happy to see it offered in South Dakota.”*

***Lisa Fischer - Energy Services Field Representative, MRES***



## Illinois BOC Veterans Workforce Pilot

BOC Vet Pilot Grad, Alex Dawson. Alex is an aircraft electrician in the Army who served a year in Afghanistan and is finishing up his Associates degree in energy management to pursue a job as a Stationary Engineer.

## HVAC System Adjustment & Verified For Efficiency

- HVAC quality installation training and certification program developed by MEEA and Energy Stewards International (ESI)
- MEEA partnered with Alliant, Black Hills & MidAmerican Energy on IA launch



### Program Benefits:

- Builds awareness among consumers, contractors and utilities on the potential energy savings from HVAC system improvements
- Allows homeowners to identify quality contractors
- Provides better data on installations, system performance and tune-ups
- Trains large contractor pool to QI standards allowing for seamless transition to next generation HPwES program
- Systems tested and verified to meet minimum performance levels required by the program

# HVAC SAVE Program Participation

- 54 Trainings
- 400+ HVAC companies
- 898+ certified contractors
- 3,332+ quality installations

## Preliminary results

- 127 annual therm savings, SAVE QM (heating)
- 706 kWh savings, SAVE QM (cooling)
- Achieved additional savings from QI of new equipment



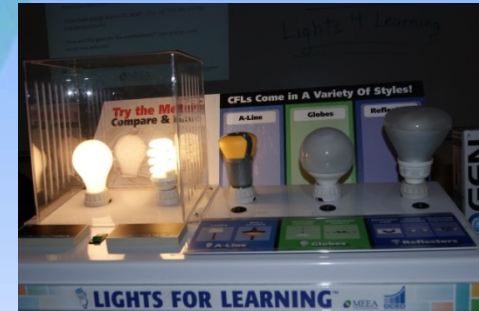


# Lights for Learning (L4L)

**Free hands-on educational presentations and fundraisers to advance and promote Illinois student awareness of energy efficiency.**

**Promotes ENERGY STAR® qualified CFLs, LEDs & energy-efficient products**

- Students as EE educators
- Presentations focus on:
  - Energy saving products
  - Home energy conservation
  - ENERGY STAR® campaign
- Participate in Innovative Fundraiser
- Reaches IL clubs, schools & groups including park districts, Boy/Girl Scouts, 4-H Clubs, Church Groups, etc.



**Learn more: [lights4learning.org](http://lights4learning.org)**

# L4L Successes (2005-13)

- Reached 100,000+ students
- Conducted 1,000+ fundraisers
- Sold 172,000+ energy efficient items
- Raised over \$250,000 for schools
- Achieved estimated energy savings of 7,120 annual MWh & 59,355 lifetime MWh
  - Equivalent annual energy usage= 631 single family homes\*

\*Source: eia.gov

**Martinez Middle School, Romeoville** - students worked with the Romeoville Recycling Center to promote & host 'Romeoville Recycles Day'.

**Minooka Community High School, Minooka** - Junior and senior high students developed a platform for providing energy efficiency programs to elementary school students throughout their district.

**Rock Island Center for Math and Science, Rock Island** – L4L Fundraiser proceeds used to implement additional STEM (Science, Technology, Engineering & Math) modules throughout the school.



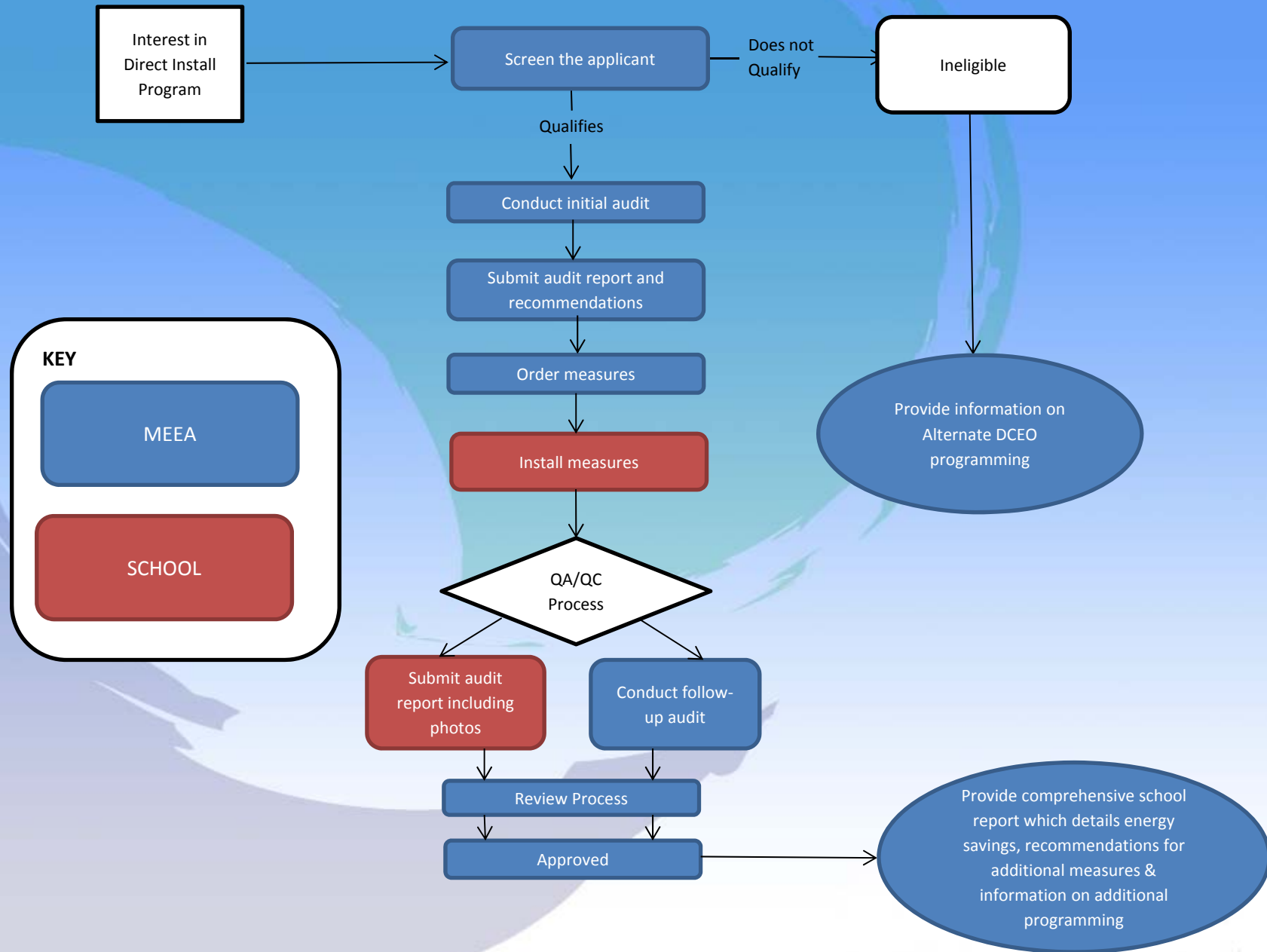
**MEEA**  
Midwest Energy Efficiency Alliance

## Savings Through Efficient Products (STEP)

- Launched November 1, 2012
- Provides FREE Energy Efficiency Measures to eligible Illinois public schools or park district facilities in approved utility territories
- Funded by the State Energy Office
- Goals:
  - Immediate no cost energy savings = instant cost savings
  - Increased uptake in other utility energy efficiency programs



# Direct Install Program Process Flowchart





- Program Piloted in 2012/13 in partnership with:
  - 74 public schools
  - IAPD, utilities, state energy office, SEDAC, ERC and others
- Saved approximately 24,600 therms & 731,000 kWh
- 2013/14 Program Expansion
  - Launched Tiered Incentive Program (TIP) to encourage deeper retrofits
  - Offered to additional public facilities including parks/recreation & fire houses



# Illinois Home Performance

- Awarded 1050 Silver & 23 Gold Certificates
- Improve comfort, safety, value & efficiency
- Capture the value of EE investment
  - MRED Northern MLS
- Building Science Training Series
  - Trained 120 contractors & 50 real estate appraisers



- Rebates & financing
- Whole home focus
- National HPwES program partner

## Program Partners:

State of Illinois,  
5 electric & gas  
utilities, 5 non  
profits



**Illinois**  
**Department of Commerce**  
& Economic Opportunity  
Pat Quinn, Governor

**Learn More: [illinoishomeperformance.org](http://illinoishomeperformance.org)**



**Illinois Home  
Performance**

www.IllinoisHomePerformance.org

# Silver Certificate of Completion

**Home address:**

123 Memory Lane  
Decatur, IL 62526

**Contractor:**

Conservation Services Group







**Program Provider:**

Ameren Illinois

**Work Completed On\*:**

9/10/2012

**This home has achieved an estimated total energy reduction of at least **15%\*** after the following home energy upgrades:**

-  Air sealing performed, reducing total air leakage rate by 38%
-  Attic insulation improved to R-49
-  Wall insulation improved to R-13
-  95% AFUE natural gas furnace installed
-  Programmable thermostat installed
-  Two exhaust fans from bathroom and kitchen vented through the roof

\*Certificate issued 10/02/2012 by the Midwest Energy Efficiency Alliance (MEEA) on behalf of the Illinois Energy Office based solely on the reporting by or estimates of contractor. A minimum of 15% is required to receive a Certificate of Completion. See reverse.

\_\_\_\_\_  
**Agnes Mrozowski**  
**Acting Deputy Director, Illinois Energy Office**



Home Performance with ENERGY STAR offers a comprehensive, whole-house approach to home improvement that results in better energy efficiency, greater comfort, and lower energy bills.

ENERGY STAR is a voluntary partnership sponsored by the U.S. EPA and the U.S. DOE to protect the environment through superior energy efficiency.



**Illinois**  
**Department of Commerce**  
& Economic Opportunity  
Pat Quinn, Governor

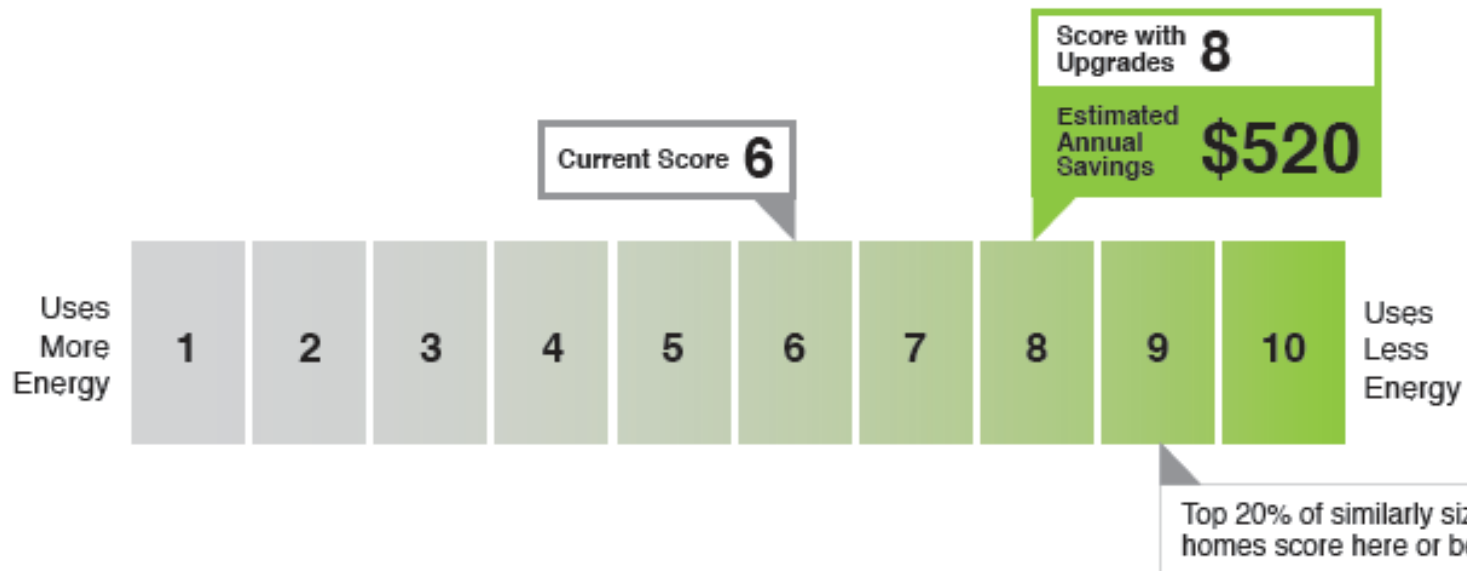
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# HOME ENERGY SCORE

Address **555 Park Lane  
Pittsburgh, PA 99999**

Total Energy **190 MBTUs / year**  
Home Size **1,500 square feet**  
Air Conditioning **Yes**

Climate Zone



Energy use reported in Million British Thermal Units (MBTUs). Estimated savings reflect the amount a homeowner will save on their annual utility bill if all recommended improvements are made. Both energy use and savings estimates assume that 2 adults and 1 child live in the home. Your actual energy use and savings will depend on how you maintain your home, how many people live there, your day-to-day habits and weather. To learn more about how to save energy and money in your home, as well as more about the home energy score, visit:

[homeenergyscore.gov](http://homeenergyscore.gov)



U.S. DEPARTMENT OF  
**ENERGY**

Assessor # **85317** Assessment Date **11/05/2010** Label # **000062465**



*“With all the gloom about housing prices these days, it is great to do something inexpensive that will improve the value of my house. A buyer will pay more for a home that costs less to live in.”*



*“This was well worth the investment. And when I decide to sell my home, it will be listed as green on the MLS. And, from watching these home shows, more and more people are looking at buying and rehabbing green,” Janet Jaback.*

# Midwest Industrial Initiative

In Fall 2010, MEEA created MI2 to:

- Promote adoption of energy efficiency in the industrial sector
- Provide information on electric and natural gas utility energy efficiency rebates and programs
- List national and local energy efficiency best practices and technology information
- Offer catalog of case studies of successful energy efficiency implementation



[www.midwestindustrial.org](http://www.midwestindustrial.org)

- Dedicated website on Industrial Efficiency in the Midwest
  - Utility, state and local case studies
  - Catalogue of utility industrial contacts
  - Utility programs
  - Industrial opt out and self direct policies
  - EIA data by state and fuel



## MI2 Activities

- Quarterly regional utility calls
- Developing Midwest CHP working group
- Serve as a conduit of EE information to industrial companies & industrial associations
- Promote successful EE programs, technologies & financing mechanisms
- Deliver webinar series



## Join Midwestern Partners to Achieve EE Goals



- ✓ Connect with utility colleagues to share program information, case studies & pilot data
- ✓ Identify economies of scale, best practices & partnership opportunities

## Midwest Advanced Lighting Network

- ✓ Increase & support adoption of advanced lighting & SSL throughout Midwest utility programs
- ✓ Attend *utility only* quarterly meetings:
  - October 15-16, 2013, Lexington, KY
  - January 13, 2014, Chicago, IL (in conjunction with MES)

## Midwest Home Performance Collaborative

- ✓ Participate in quarterly phone calls on topics relevant to whole home programs in the Midwest
- ✓ Attend the MWHP One Day Conference, January 2014



## Additional MEEA Program Information

[www.boccentral.org](http://www.boccentral.org)

[www.HVACSAVE.com](http://www.HVACSAVE.com)

[www.illinoishomeperformance.org](http://www.illinoishomeperformance.org)

[www.lights4learning.org](http://www.lights4learning.org)

[www.midwestindustrial.org](http://www.midwestindustrial.org)

[mwalliance.org/programs/midwest-leders](http://mwalliance.org/programs/midwest-leders)

### Questions?

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[www.mwalliance.org](http://www.mwalliance.org)

**312/673-2480**

# ***SAVE THE DATE!***

## **2014 Midwest Energy Solutions Conference**

{ January 14-16, 2014  
{ Fairmont Hotel Chicago

*The Source On Energy Efficiency*

