



MEEA
Midwest Energy Efficiency Alliance

**SHOW ME EFFICIENCY:
ENERGY EFFICIENCY IN MISSOURI'S STATE ENERGY PLAN**

Julia Friedman
October 30, 2014

Midwest Energy Efficiency Alliance (MEEA)

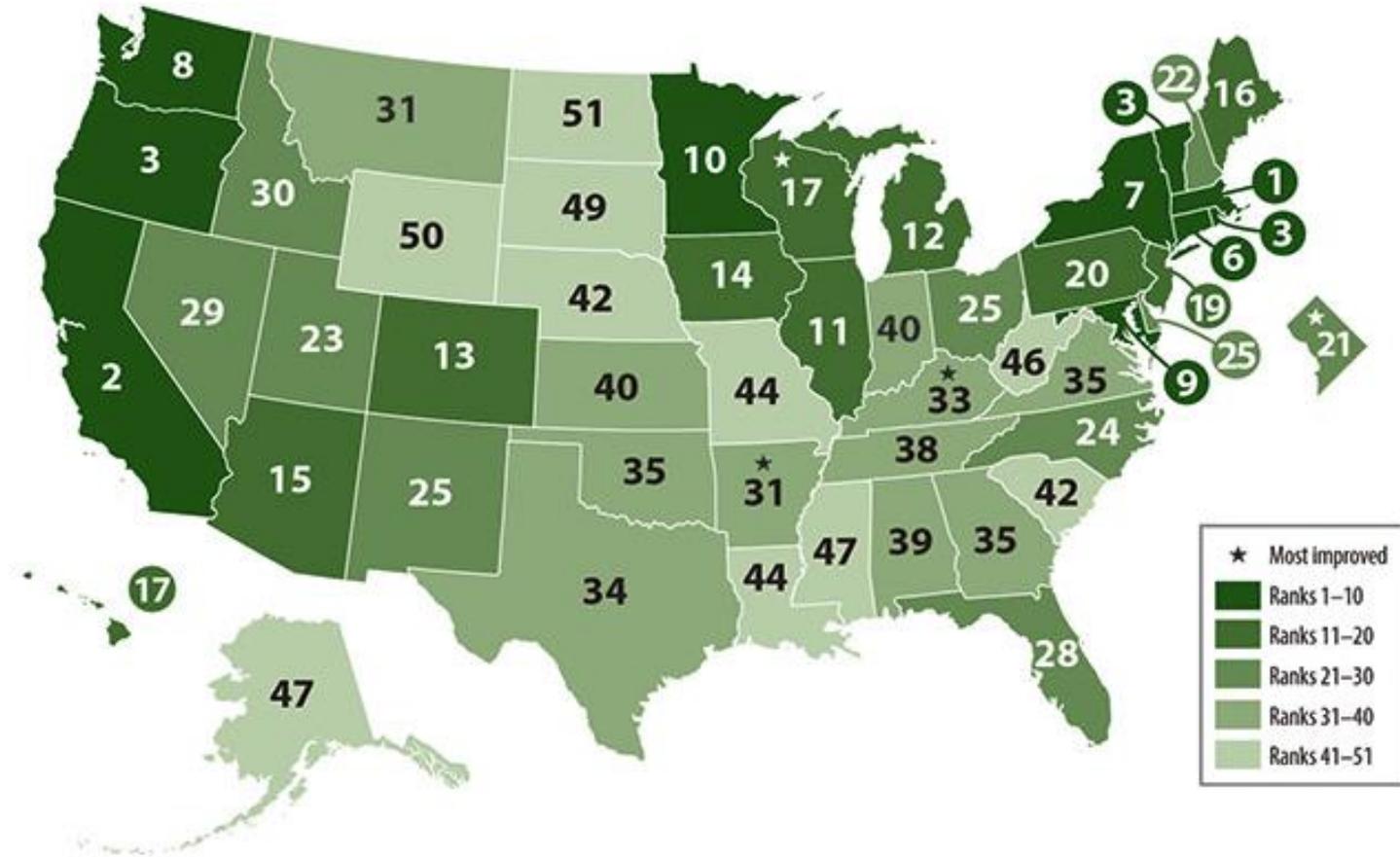
- MEEA is a collaborative network whose purpose is to **advance energy efficiency** to support sustainable economic development and environmental preservation.
- Formed in 1999 to bring strategic partners together to improve market conditions for energy efficiency.



Why Invest in Energy Efficiency?

- Creates jobs and economic development opportunities
- It is the lowest cost energy resource in the Midwest (ACEEE, LBNL)
- Reduces reliance on the most costly generation sources
- ROI for certain energy efficiency programs can be upwards of \$8 of benefits for every \$1 spent on energy efficiency
- Energy efficiency generates non-energy benefits such as environmental, public health, and economic development benefits

ACEEE 2014 State Energy Efficiency Scorecard Rankings



Midwest Efficiency Targets and Funding Levels

2010 \$1.11 billion
2015 \$1.67 billion

Wisconsin

No specific targets
0.6% elec current est.
0.5% gas current est.

North Dakota South Dakota Nebraska Kansas

Voluntary energy efficiency only

Minnesota

1.5% elec by 2010
1.0% gas by 2010
(gas goal reduced by commission)

Iowa

Set on a utility basis
1.2% elec current plans
0.85% gas current plans

Michigan

1% elec by 2012
0.75% gas by 2012

Indiana

Overtaken 2014
Future legislation & funding unclear

Ohio

Two-year "freeze" after 2014
Future legislation & funding unclear.

Kentucky

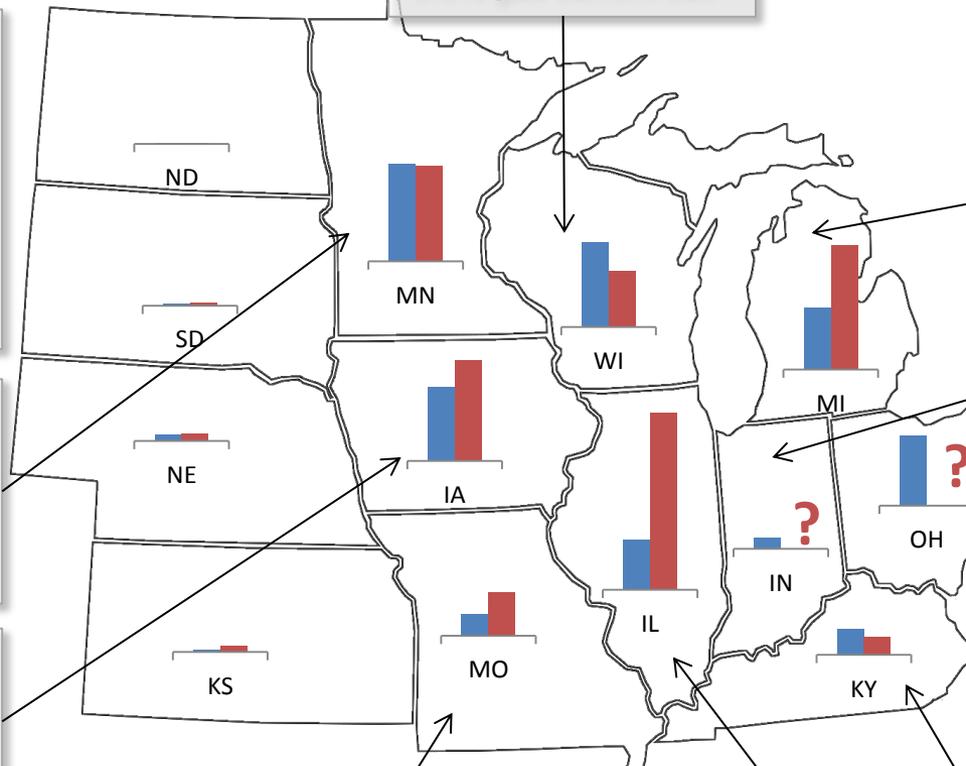
Voluntary electric and gas

Missouri

IRP process;
Voluntary electric

Illinois

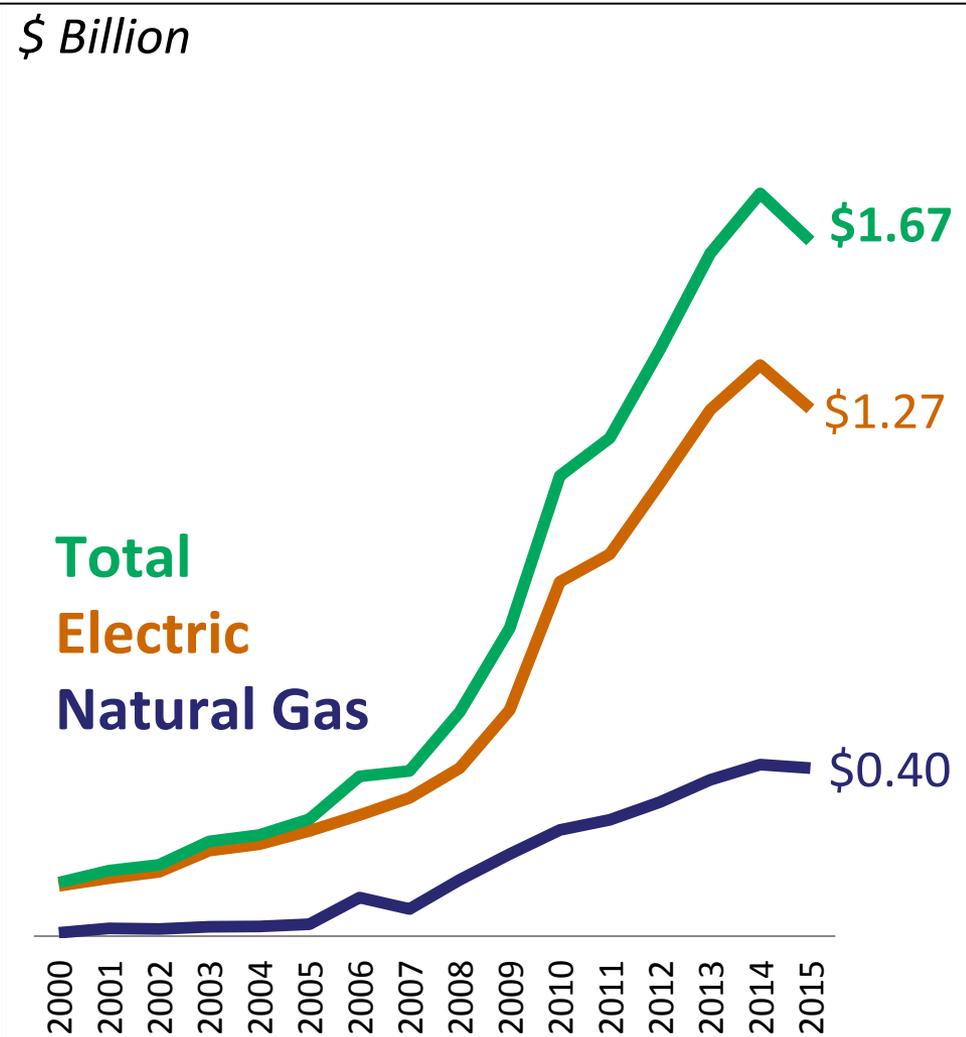
2% elec by 2015
1.5% gas by 2017



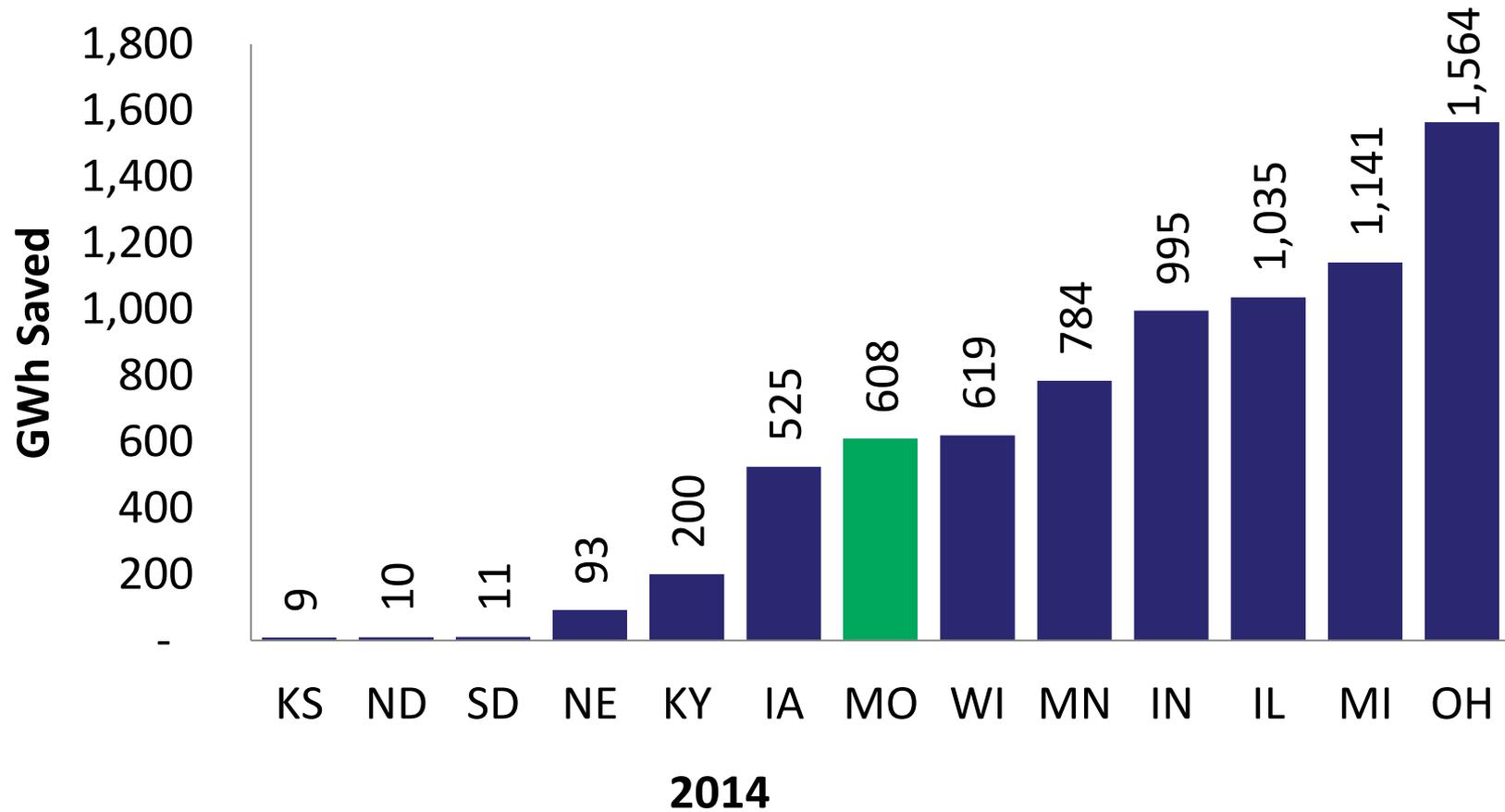
Timeline of Midwest EE Policies

1983	MN	Pilot legislation
1990	IA	Initial legislation
1991	MN	CIP requirement adopted
1996	IA	Legislation updated
1999	WI	Public Benefit Fund adopted (electric & gas)
2007	IL	EERS legislation adopted (electric)
2007	MN	EERS legislation adopted (electric & gas)
2008	MI	EERS legislation adopted (electric & gas)
2008	OH	EERS legislation adopted (electric)
2008	IA	EE mandated by Executive Order (electric & gas)
2009	IL	EERS legislation adopted (gas)
2009	IN	EERS implemented by regulatory order
2009	MO	Voluntary EE standard legislation adopted (electric)
2010	WI	EERS implemented by regulatory order
2011	WI	EERS adjusted by legislation
2014	IN	EERS overturned by legislation
2014	OH	EERS "frozen" by legislation

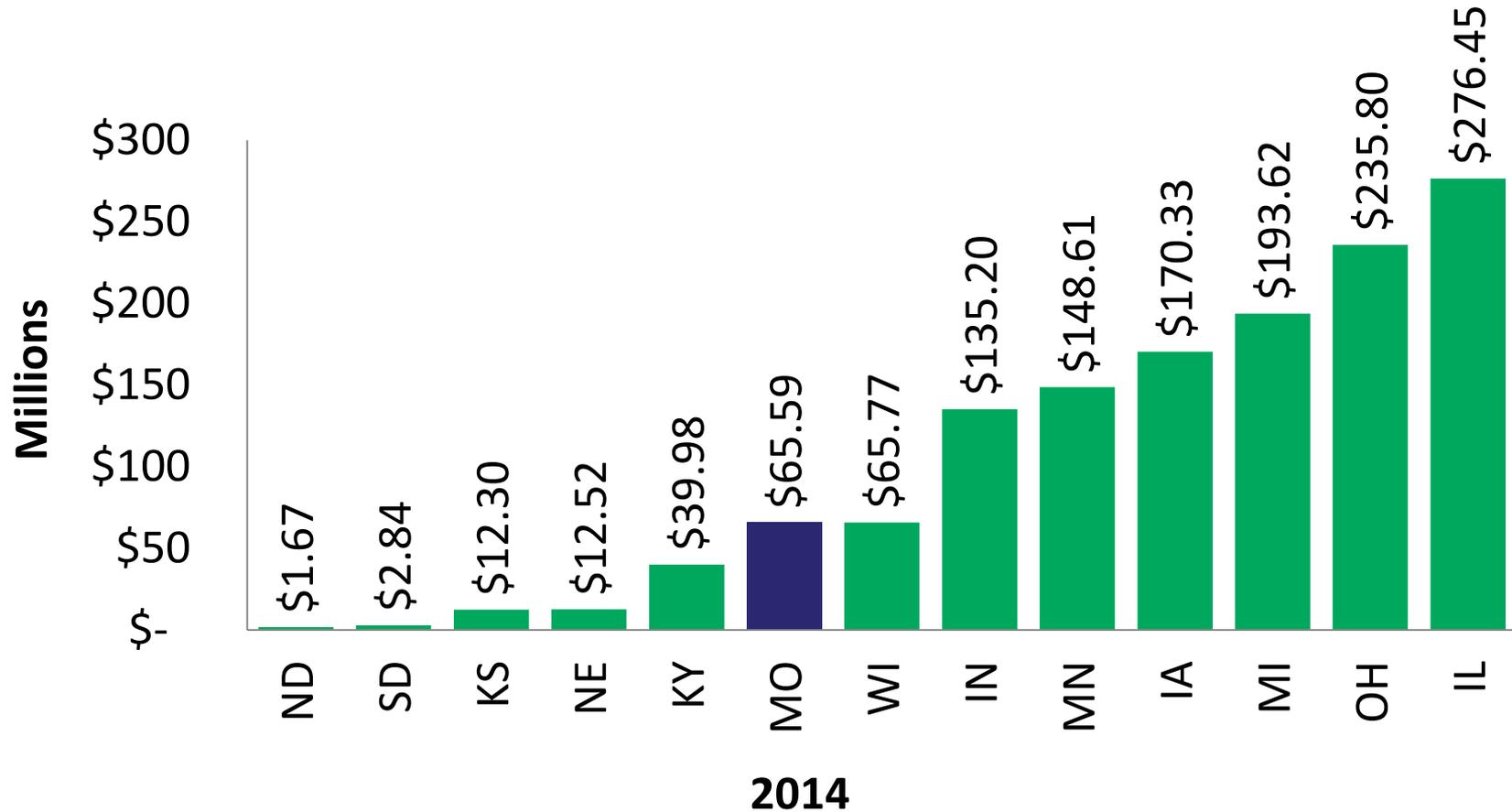
Energy Efficiency Policies & Investment in the Midwest



Annual Electricity Savings

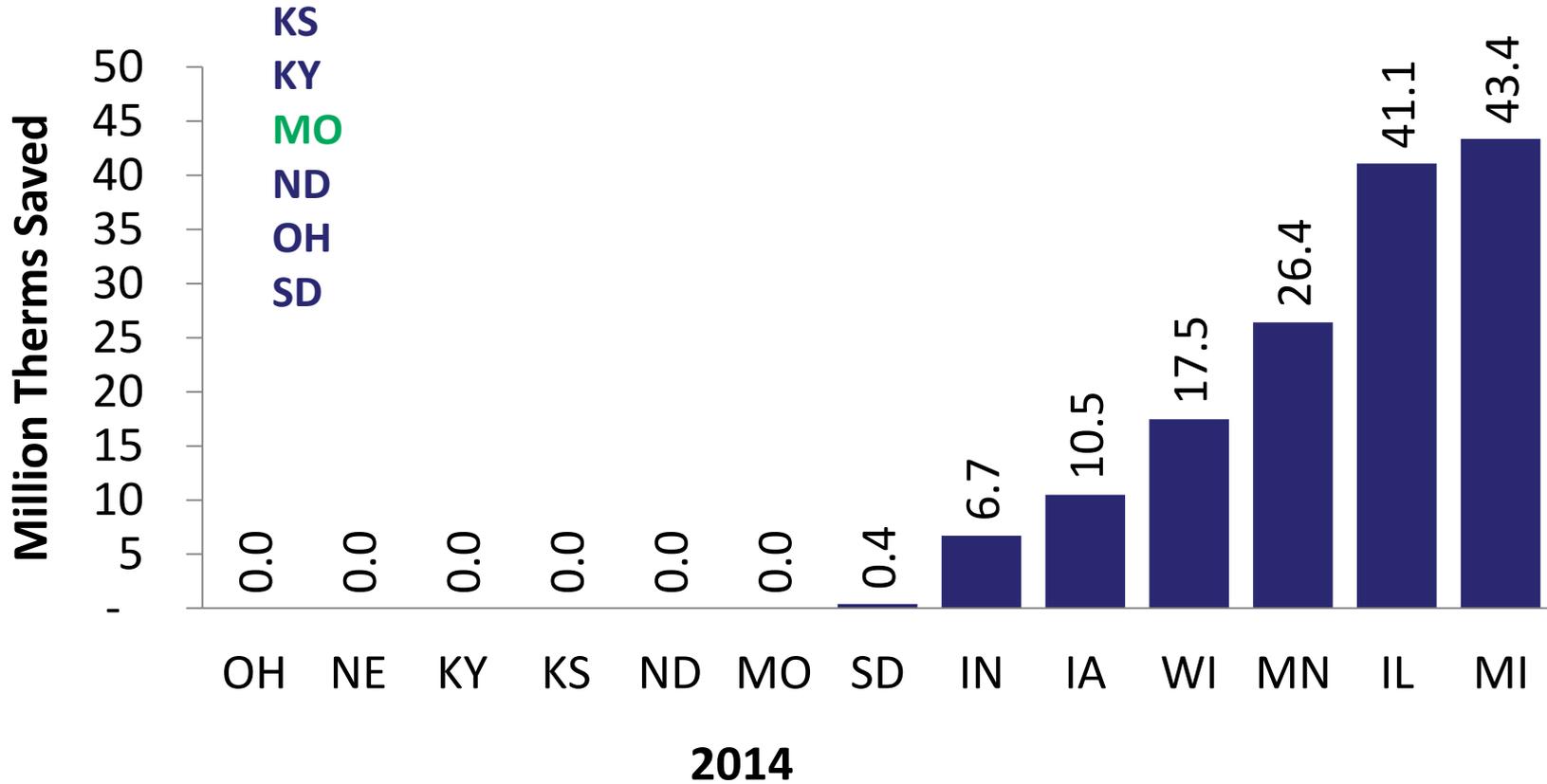


Annual Electric Energy Efficiency Budgets

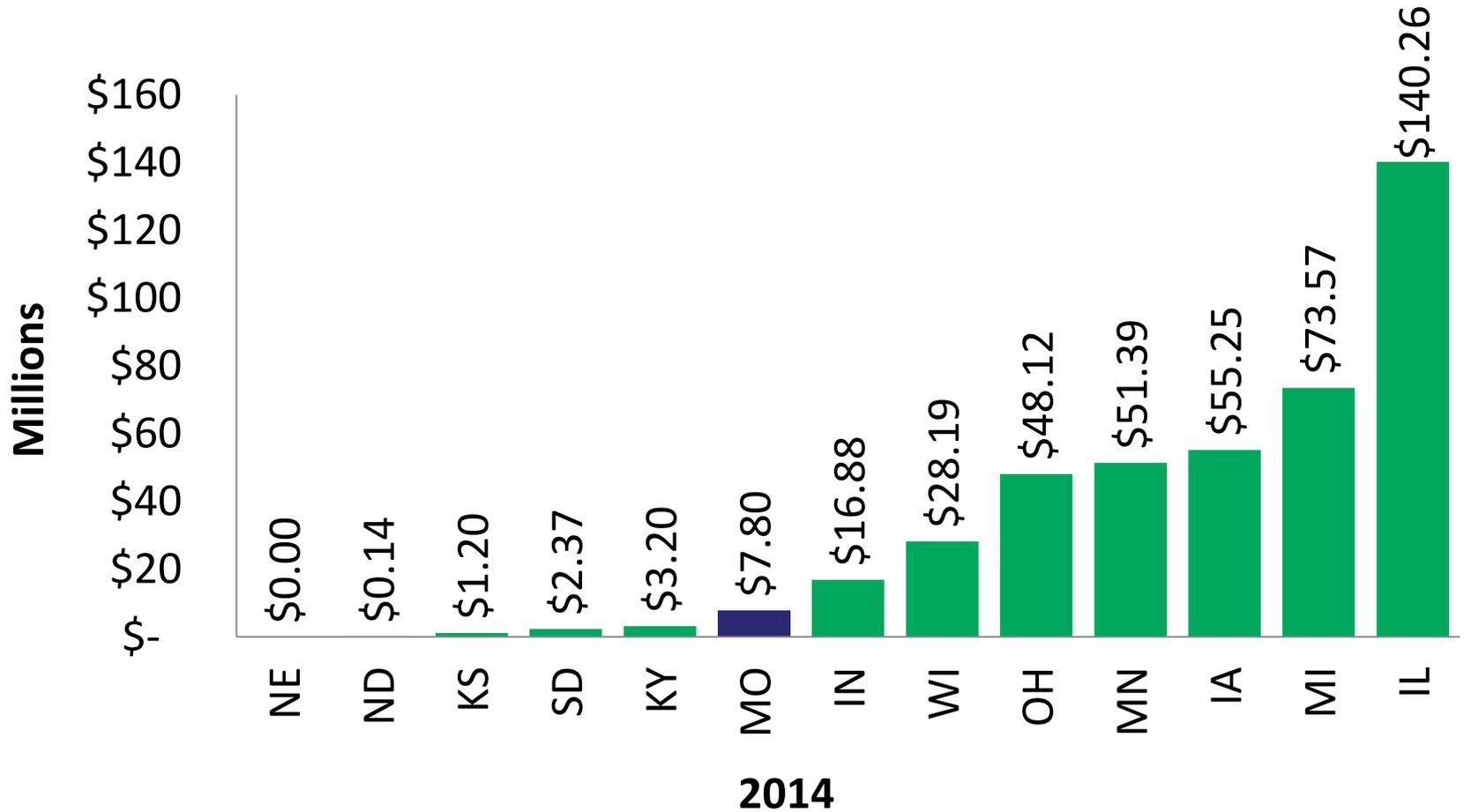


Annual Natural Gas Savings

*Gas EE budget identified,
but no savings data available:*



Annual Natural Gas Energy Efficiency Budgets



MO's Existing Energy Efficiency Policies & Programs*

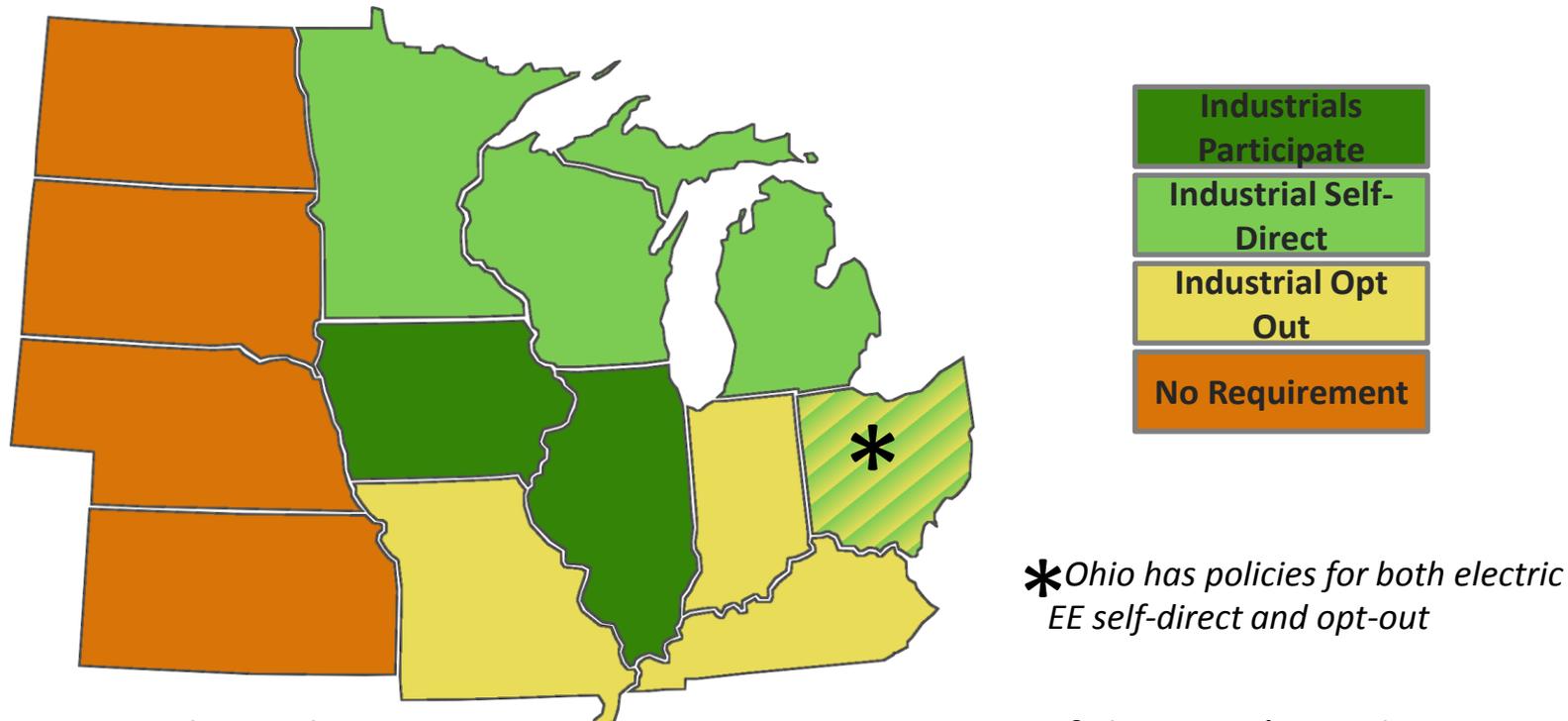
Utilities	Government Initiatives	Financing
Missouri Energy Efficiency Investment Act	State Agency Energy Reduction Requirements	Commercial PACE
Utility IRP Filings	Statewide Benchmarking for Public Buildings	State Loan Programs
	Energy Savings Performance Contracting	

*Not an exhaustive list

Ways to enhance existing EE policies and programs:

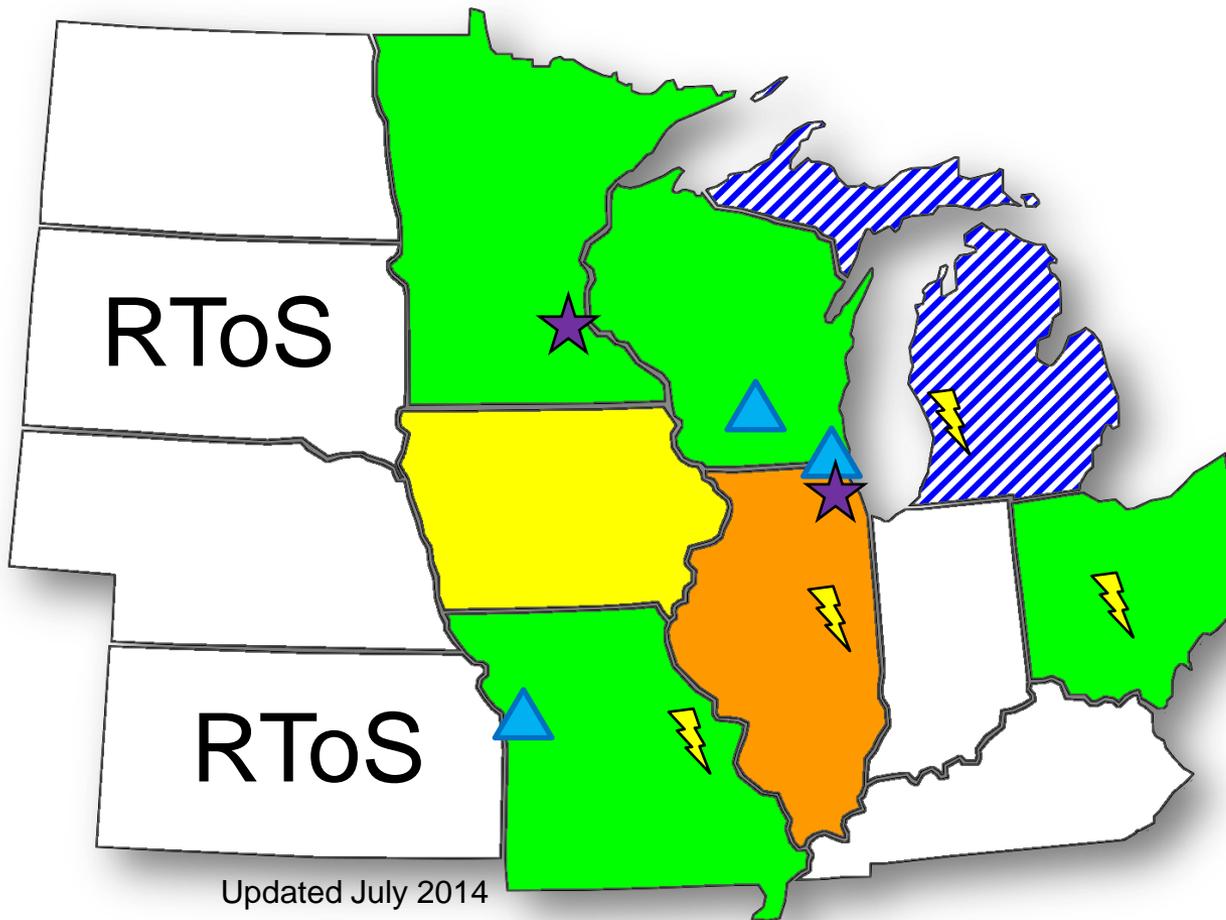
- Adopt a statewide technical reference manual to create greater regulatory certainty around utility energy efficiency investments
- Include non-energy benefits in benefit-cost analysis of efficiency measures and programs
- Adopt on-bill financing to cover upfront costs of energy efficiency improvements
- Explore investing public funds into the Warehouse for Energy Efficiency Lending to expand the reach of state loan programs

Industrial Electric Energy Efficiency Policies



- Industrial energy consumption represents ~20 of the state's total energy consumption
- Allowing industrials to opt-out of utility EE programs, leaves significant amounts of potential energy efficiency on the table
- Industrial energy efficiency programs typically have the highest returns on investment
- All customers benefit from energy efficiency programs and should therefore contribute to ratepayer funded efficiency programs

Midwest Benchmarking Legislation Status



State Owned/Operated Building Benchmarking

- State Pilot Underway
- State Pilot Complete
- State Owned Considering
- State Owned Enacted

Municipal + Private Owned Benchmarking Ordinance

- Challenge Program Underway in Municipality
- Legislation In Progress by Municipality
- Adopted by Municipality

RToS

National Trends of Benchmarking & Disclosure Policies

Seattle WA:

- 1/2010
- Municipal, commercial, multifamily
- Tenant & transactional disclosure only

Minneapolis MN:

- Passed 2/2013
- Municipal, commercial
- Public disclosure

Boston, MA:

- 5/2013
- Municipal, commercial multi-family
- Public Disclosure
- Mandatory Audits

New York, NY:

- 12/2009
- Municipal, commercial, multi-family
- Public Disclosure
- Mandatory Audits, Retro-commissioning, Lighting upgrades

San Francisco, CA:

- 2/2011
- Municipal, commercial
- Public & transactional disclosure
- Mandatory audits

Chicago, IL:

- 9/2013
- Municipal, commercial, multi-family
- Data verification
- Public disclosure

Washington DC:

- 7/2008
- Municipal, commercial, multi-family
- Public disclosure

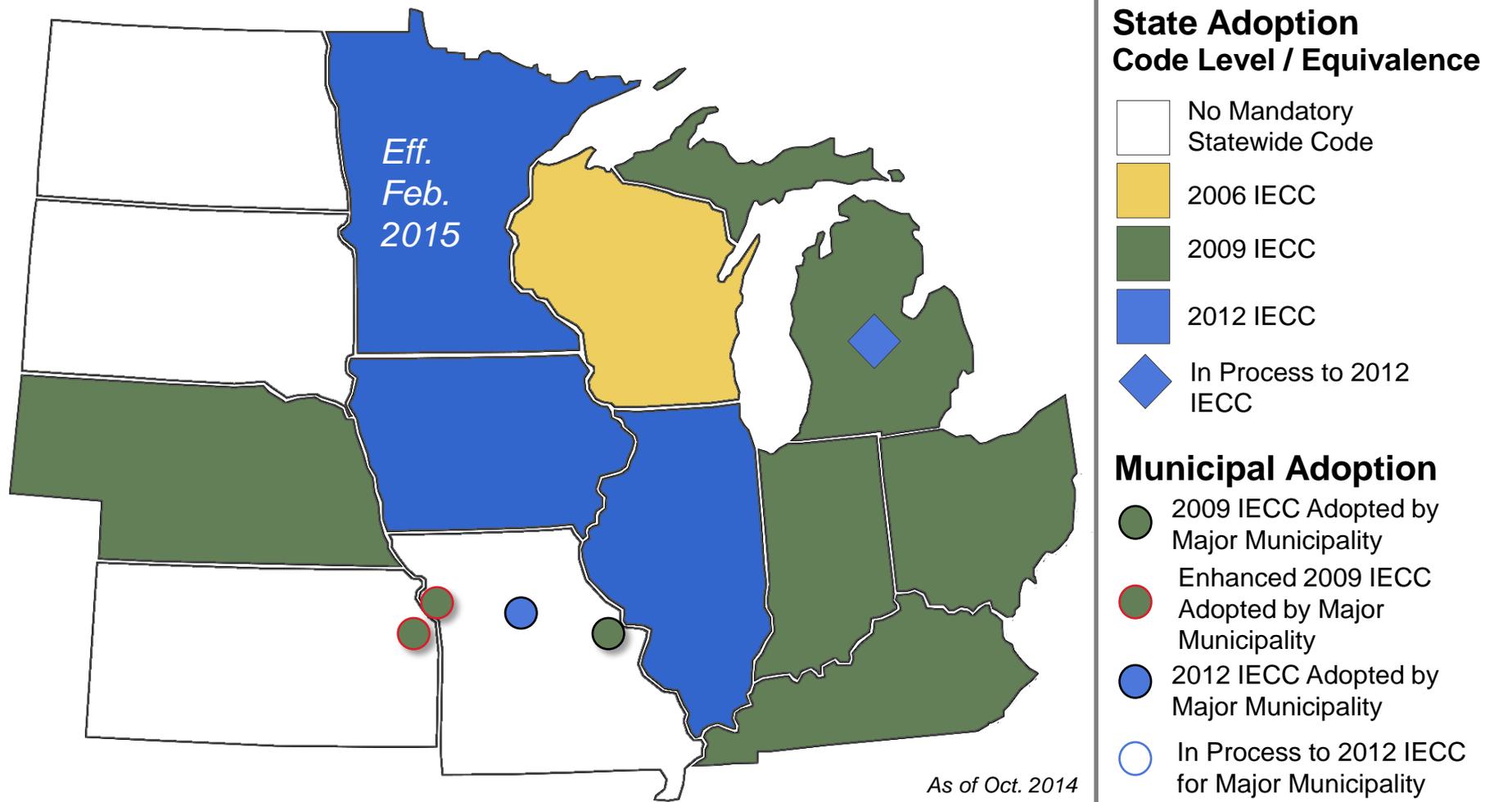
Austin, TX:

- 11/2008
- Municipal, commercial, multi-family
- Transactional disclosure
- Mandatory audits for multifamily

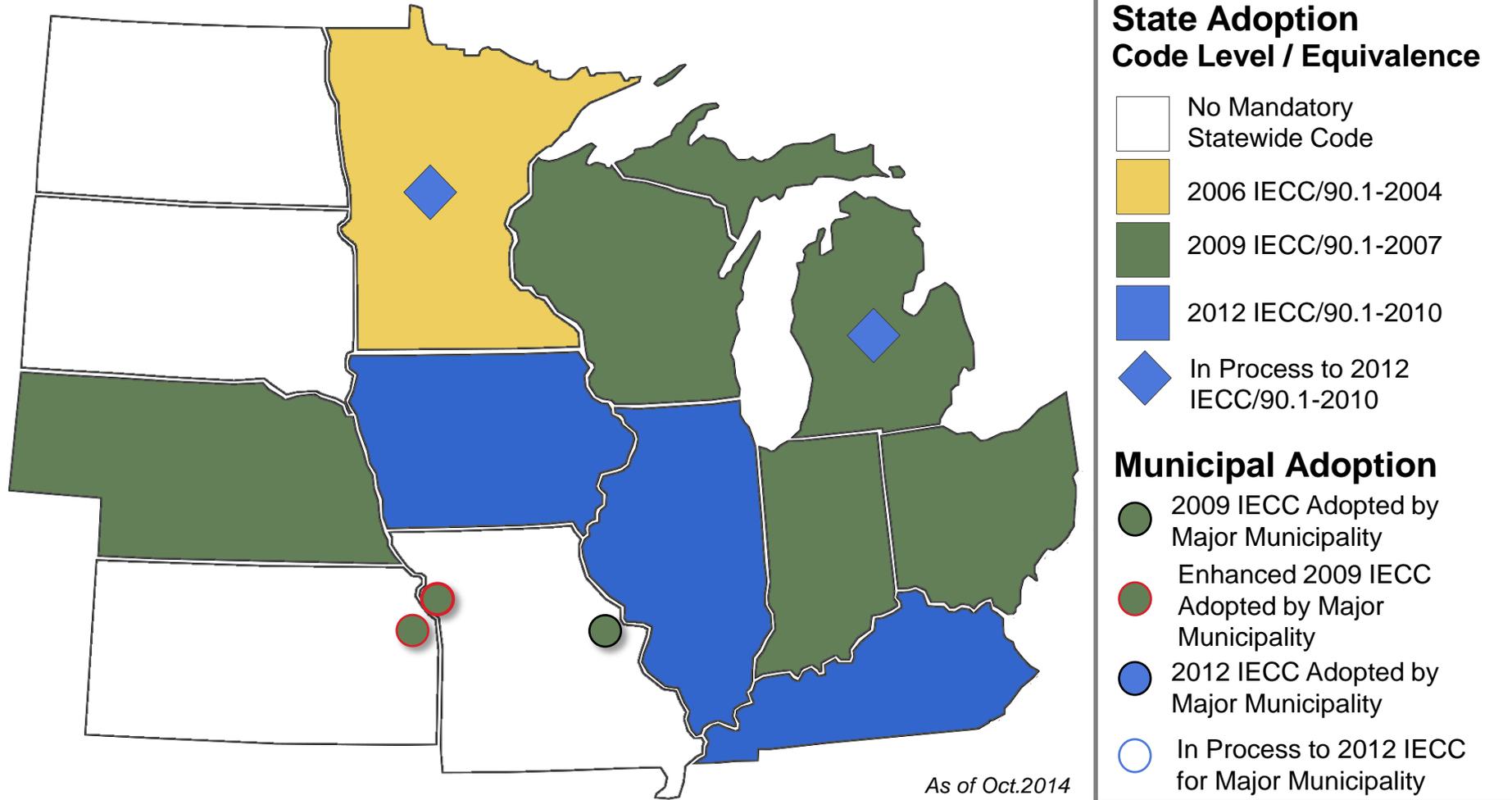
Philadelphia, PA:

- 6/2012
- Commercial
- Public & Transactional disclosure

Residential Building Energy Code Adoption in the Midwest



Commercial Building Energy Code Adoption in the Midwest



Missouri's Benchmarking, Disclosure, and Building Energy Codes

- Expand benchmarking legislation to cover commercial buildings
 - U.S. EPA estimates that, on average, benchmarking can reduce building energy usage by 2.4% annually
- Adopt energy disclosure laws allowing owners and third party energy service providers to gain access to building energy data
- Adopt a statewide building energy code.
 - Statewide adoption of the 2009 IECC code would result in 6.1 trillion BTUs saved in the residential sector and 9.3 trillion in the commercial sector by 2020 (EIA). Assumes 100% compliance rate and compliance rates.
 - However, building energy code compliance rates generally range from 16% - 70%.
- Develop a utility building energy codes claimed savings program for commercial and residential buildings
 - IL recently developed a utility building energy codes claimed savings program for commercial and residential buildings. Potential claimed savings of approximately 1M therms and 12.5 GWh based on estimated compliance.
 - Other states are pursuing similar program models, including Rhode Island, Massachusetts, and California
- MEEA's Codes and Benchmarking Team is happy to assist Missouri!

Overview of Missouri's 2030 Goal Calculation in the Clean Power Plan

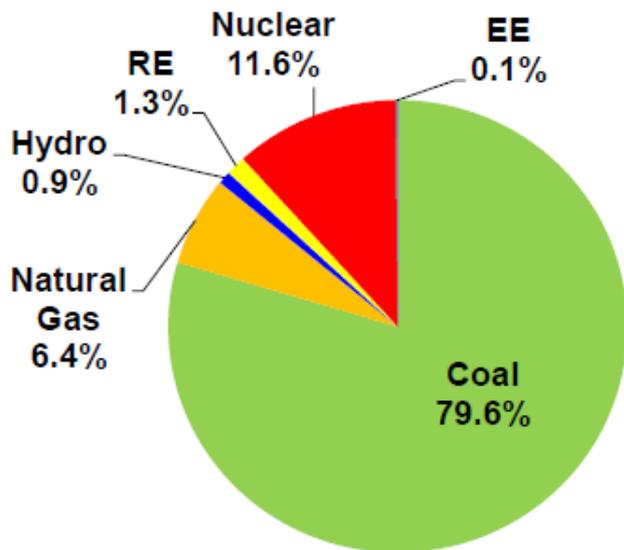
Step		Rate (lbs CO ₂ /MW-h)	
Starting rate	2012 statewide adjusted average emission rate	1,963	} - 114 lbs/MW-h (6%)
After Block 1	Reduce CO ₂ emissions 6% due to heat rate improvements at MO's coal fleet on average	1,849	
After Block 2	Re-dispatch generation from coal to existing NGCC fleet (70% utilization)	1,742	} - 107 lbs/MW-h (5%)
After Block 3	Increase generation from zero- and low-emitting sources	1,711	
After Block 4	Increase cumulative benefits of energy efficiency programs	1,544	} - 31 lbs/MW-h (2%)
			} - 167 lbs/MW-h (9%)

Proposed 2030 goal of 1,544 lbs/MW-h is ~21% reduction from 2012 emission rate

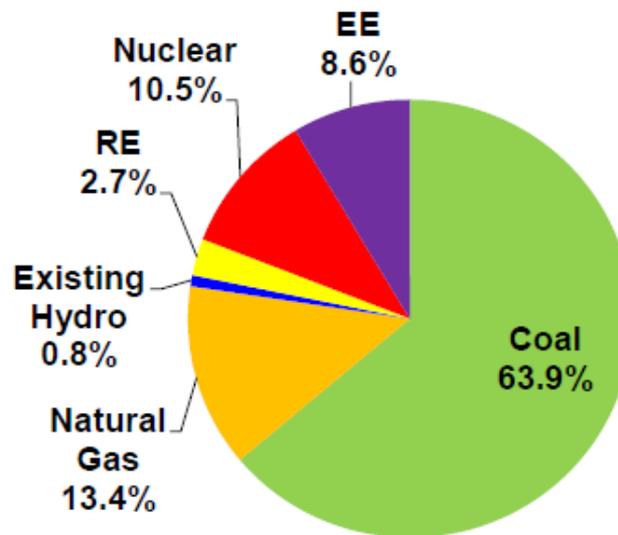
Missouri Department of Natural Resources

Missouri's Fuel Mix Comparison under the Clean Power Plan (2012 Baseline and 2030)

Actual 2012 Generation



2030 Scenario Based on Application of EPA's Building Blocks as Proposed



Note: This is for illustrative purposes only. The 2030 pie chart depicts one possible scenario based on applying EPA's building blocks exactly as proposed. EPA is not prescribing this approach; Missouri's 111(d) plan can be based on any mix of measures provided the goals are met in the established timeframe.

Missouri Department of Natural Resources

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