Energy Efficiency in the Midwest

NAESCO Midwest Regional Meeting
June 6, 2013
Status of Energy Efficiency in the Midwest

- What is MEEA
- Why Energy Efficiency
- Midwestern Policies
- Energy Efficiency Investment and Jobs
- Efficiency Programs
- Future Opportunities
MEEA’s Role in the Midwest

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

- First step in ensuring low-cost, reliable energy
- Least-cost supply-side resource
- Cheaper than renewables
- Create local jobs and keeps money in local economic
- Reduces energy consumption
- Alleviates peak demand periods
- No NIMBY issues (often opposite effect)
- Consumers understand and support 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
MEEA’s Regulatory Framework for EE Funds

• Ensure adequate and long-term funding
• Engage participation by electric and natural gas utilities
• Ensure program offerings for all rate classes
• Require sufficient interim energy savings targets, not just spend targets
• Allow cost-recovery for cost-effective investments
• Provide incentives for early compliance and penalties for non-compliance
• Reward for statewide collaboration
• Provide lost revenue recovery
Estimated Annual Investment in Energy Efficiency in the Midwest

- **EERS Legislation**
  - IL Gas
  - MN Electric, Gas
  - MI Electric, Gas
  - OH Electric
  - IA Gas, Electric
  - MO Electric
  - IN Electric

- Legislative Committee
  - WI EERS overturned

- **Earlier Statewide EE**
  - MN
    - 1983 – Pilot legislation
    - 1991 – CIP requirement adopted
  - IA
    - 1990 – Initial legislation
    - 1996 – Legislation updated
  - WI
    - 1999 - Public Benefit Fund Adopted

- **National Average Investment Costs**
  - 2000: $0.0
  - 2001: $0.2
  - 2002: $0.4
  - 2003: $0.6
  - 2004: $0.8
  - 2005: $1.0
  - 2006: $1.2
  - 2007: $1.4
  - 2008: $1.6
  - 2009: $1.8
  - 2010: $2.0
  - 2011: $1.81
  - 2012: $1.46
  - 2013: $0.34
  - 2014: $1.81
  - 2015: $1.46

- **Total**
  - $1.81

- **Electricity**
  - $1.46

- **Natural Gas**
  - $0.34

The Source On Energy Efficiency

Midwest Energy Efficiency Alliance
April 2013
Midwest Efficiency Targets and Funding Levels

**2010** $1.18 billion
**2015** $1.81 billion

- **Illinois**
  - 2% elec by 2015
  - 1.5% gas by 2017

- **Iowa**
  - Set on a utility basis
  - 1.4% elec current est.
  - 1% gas current est.

- **Wisconsin**
  - No specific targets
  - 0.63% elec current est.
  - 0.48% gas current est.

- **Minnesota**
  - 1.5% elec by 2010
  - 1.5% gas by 2010

- **Michigan**
  - 1% elec by 2012
  - 0.75% gas by 2012

- **Ohio**
  - 2% elec by 2019

- **Indiana**
  - 2% elec by 2019

- **Kentucky**
  - Voluntary electric and gas

**March 2013**

*The Source On Energy Efficiency*

**IRP process; Voluntary electric**
<table>
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<th>Created by</th>
<th>Missouri</th>
<th>Illinois</th>
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<th>Iowa</th>
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<td>Participation</td>
<td>Voluntary</td>
<td>Mandatory</td>
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<td>Utilities</td>
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<td>Electric &amp; Gas</td>
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<tr>
<td>Required energy savings</td>
<td>Guidelines, set by rules</td>
<td>Hard targets, set in legislation</td>
<td>Hard targets, set on a utility-by-utility basis</td>
<td>Hard targets, set by legislation</td>
<td>Hard targets, set by legislation</td>
<td>Hard targets, set by legislation</td>
<td>Hard targets, set by legislation</td>
<td>No energy savings targets; mandatory spending levels</td>
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<td>Cost recovery</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Lost revenues</td>
<td>Lost revenue recovery allowed by legislation; Mechanism approved on a case-by-case basis</td>
<td>No revenue recovery in legislation; Decoupling rejected by order; Lost revenue recovery on a case-by-case basis</td>
<td>Decoupling; Allowed on a case-by-case basis for gas utilities.</td>
<td>Decoupling; Approved on a case by case basis</td>
<td>Decoupling; Pilots approved on a case-by-case basis</td>
<td>Decoupling; Lost revenue recovery and decoupling; Approved on a case-by-case basis</td>
<td>Decoupling; Approved on a case-by-case basis</td>
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<td>Incentives / Shared Benefits</td>
<td>Yes; Mechanism approved on a case-by-case basis</td>
<td>No</td>
<td>Approved on a case-by-case basis</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Approved on a case-by-case basis</td>
<td>Approved on a case-by-case basis</td>
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</table>

Midwest Energy Efficiency Alliance (MEEA)
Lost Revenue Recovery in the MEEA Region

Decoupling Authorized
- Electric & Gas
- Gas Only

Other Recovery Mechanism
- Electric & Gas
- Gas Only

Decoupling Pilot Projects
- Natural Gas
- Electricity
On-Bill Financing in the Midwest

Pilot/Pending

Existing On-Bill Programs

Source: ACEEE (2011) & MEEA updates
Residential and Commercial Building Energy Code Adoption in the Midwest

As of March 2013

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)
Cost of Electric Energy Efficiency

State Average Electricity Price
National Average Electricity Price

National Average Cost of Saved Electricity

Data Source: EIA, ACEEE
Cost of Natural Gas Energy Efficiency

**State Average Natural Gas Price**

**National Average Natural Gas Price**

**Cost of Saved Natural Gas**

Data Source: EIA, ACEEE
Midwest Jobs in Energy Efficiency Market in 2010

Comparison of states in MEEA region

Source: Brookings, 2011, using data from NBLS and Dun & Bradstreet
Midwest Energy Savings from Energy Efficiency

Electricity Savings

Natural Gas Savings

Sources: ACEEE, MPSC, IUB, MN DOC, Focus on Energy
The EE Story in 2013

• Now: Low hanging fruit still around
  – ‘Traditional’ suite of incentive programs
    • Residential lighting, refrigerators, C&I
  – CFLs, lighting are around 80%+ electric savings
  – Most gas savings attributed to furnaces, programmable thermostats, direct install of showerheads/aerators
    • Challenging for gas utilities to meet goals
  – Some exploration of behavior change
  – Some piloting of new areas
  – Struggle against standards and codes
Residential Utility EE Programs

- Home Performance with Energy Star
- Energy Efficient Products
- Residential Lighting
- Residential HVAC/CAC Program
- Energy Star New Homes
- Home Energy Comparison Reports
- Refrigerator Recycling
- Direct Install (single and multi-family dwellings)
- Low Income Weatherization
C&I Utility EE Programs

- Energy Audits
- C&I Rebate Programs
  - Prescriptive Rebate
  - Custom Rebate
- Building Operator Certification
- Interruptible Service Programs
- Retro-commissioning
- Business New Building Programs
Need for Industrial EE in the Midwest

- Midwest accounts for >28.3% of industry energy usage in the US
  - 48.3% of total industrial coal consumption (870.1TBtu)
  - 22.9% of total natural gas electricity (1,853TBtu)
Regional Industrial EE Programs

• Characteristics of Utility Funded Rebate Programs, varied across utilities
  – Common Prescriptive Incentives
    • Electric - Lighting, Refrigeration, HVAC, Variable Speed Drives, Sensors, and Weatherization among others
    • Gas – Steam Traps, Boiler Tune-Ups, Pipe Insulation
  – Program Cost Rebates
    • Utilities fund 25%-75% of project costs, under a certain threshold, often $50,000, but can be more (i.e. gas custom programs upwards of $500,000)
  – Energy Audits
    • To guide management in adopting EE technology
Industrial Areas of Opportunity

• Lots of opportunities to promote EE
• Need to prioritize target areas and technologies
• Sample technologies include:
  – Process energy
  – Compressed air
  – Steam
  – Fans
  – Pumps
  – Motors
  – Chilled water systems
  – Waste heat recovery & CHP
  – Building envelope
The EE Story – 2014/5 and beyond

• Future: Finding a new portfolio
  – Lighting savings going down
  – Some program saturation
  – Need ‘new’ programs
    • Whole home (HPwES, air sealing, etc)
    • Systems work (HVAC systems, smart homes, etc)
    • Behavior programs (changing the customer habit)
    • Education
  – Challenges
    • Cost effectiveness (non-energy benefits not counted)
    • More complex (contractors, systems, etc)
What is the Future for EE?

• Lots of savings still out there
  – Codes Claimed Savings
  – Third Party Enforcement
  – Energy Benchmarking
  – Building Energy Ratings
  – Utilities will find the savings, but need help
    • Need stakeholder/PUC/customer support
    • Need more flexibility around cost effectiveness
    • Lots of in-efficient commercial space and homes
    • Need to look at financing/business decision making
    • Need to count non-energy benefits
    • Lots of opportunity in industrial
Questions?

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