Illinois Statewide Utility Claimed Savings Program for Enhanced Energy Code Compliance

(sorry, no acronym…yet!)

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Status of Illinois Energy Codes

- Recently adopted the 2012 IECC Statewide residential and ASHRAE 90.1-2010 commercial
- Update code every 3 years
- Some ability for stretch codes
- Code Compliance remains an issue (est. 70%)
- Significant code training/support funded by DCEO

Illinois
Department of Commerce
& Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Why Is This Important???

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

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Utility Efforts in Other States

Other States: CA

- Comprehensive Needs Assessment
- Role-based Training (participatory, not lectures)
- Compliance Improvement Advisory Group (CIAG)
- Testing and Certification of Professionals
- Best-practices Assessment
- Support of 3rd Party testing (e.g., HERS Raters, Acceptance Testing)
- Guides, checklists, manuals, etc.

Other States: WA

- Establishment of Utility Codes Group in 1994
- Special Plans Examiner/Inspection Program
- Helped Improve Compliance from about 55% to 75%.
- Cost of Program: $1.5 million/year (in the 1990's)
- Note: commercial buildings only!

Other States: MA & RI

- Stakeholders have established that increasing compliance is a desired policy goal
- MA- 3 Year Plan in pilot phase (RFP for implementer about to be released)
- RI- 3 Year Plan approved by PUC (RFP for implementer completed)
- Rough budget: 1% Program Cost
- Savings Estimates: 3% of Program Savings Goal for Electric and Gas utilities

IL Utility/DCEO Effort

Illinois
Department of Commerce
& Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

DCEO Codes Training PY 12-13

- **42 Full-day training events:**
  - **27 trainings on 2012 IECC**
  - **15 trainings on ACCA Manuals J, S, and D**
  - 1 Better Buildings Better Business Conf.
  - 10 full-days for Chicago Building Dept.

- **1,635 Participants Trained**

- **Most attendees in following lines of work:**
  - Building Officials and Field Inspectors
  - Builders and Contractors
  - Architects
  - Building Performance Contractors, Raters
  - Engineers
  - Educators

- **19 Presentations to National, State, and Local Professional and Trade Organizations at the request of the Energy Office**

- **More than 20 strategic plan review and field inspection consultations to Municipalities and Jurisdictions as State's Circuit Rider**

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

DCEO Codes Technical Assistance PY 12-13

Illinois Energy Office

Energy Codes **HOT LINE 708-770-0554**

Technical Assistanace

Verbal inquiries and e-mail interpretations FREE to designers, builders, code officials and anyone looking for unbiased advice on:

- *the Illinois Energy Efficient Building Act,*
- *Code compliance, IECC, IgCC, ASHRAE 90.1,*
- *COMcheck, REScheck,*
- *REM/Rate, REM/Design*
- Same-day response or w/in 24-hrs.

- **Responded to 402 Inquiries**
- 321 e-mail and written responses
- 81 verbal inquiries
- www.ildceo.net/energycode

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

DCEO Residential Third Party Pilot Program

- DCEO established a market-based, third-party residential pilot program in response to municipal and homebuilder concerns
- The program will offer third-party inspections by qualified individuals at no cost to the municipality or homebuilder
- Cost of third-party inspections will be rebated up to $400 per home
- DCEO's pilot program will provide useful data on energy savings and program design for the roll-out of the statewide utility sponsored program

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Overview of the IL Codes Claimed Savings Working Group

- All of the IOUs and DCEO (MEEA facilitated)
- Facilitated agreement around launching a ***statewide*** claimed savings program
- Provided input from national models/programs
- Developed IL specific estimates for energy and construction
- ***Statewide*** program design and cost effectiveness screens

Ameren ILLINOIS | nicor GAS An AGL Resources Company | Energy Efficiency Program | PEOPLES GAS NATURAL GAS SAVINGS PROGRAM REDUCE TODAY. SAVE TOMORROW. | NORTH SHORE GAS NATURAL GAS SAVINGS PROGRAM REDUCE TODAY. SAVE TOMORROW. | ComEd An Exelon Company | powering lives

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA Midwest Energy Efficiency Alliance

Utilities Codes Program Rationale

- Code Compliance levels remain relatively low:
  - Traditional responsibility of code officials has been Health/Safety codes
  - Increasing complexity of energy codes
  - Need for resources/training
- Increasing goals for EEPS requires finding non-traditional ways to claim savings for EE programs
- Utilities have experience with design and construction of energy efficient buildings (new construction, E STAR, etc.)
- First ***Statewide*** IL program to be filed!!!

The Statewide Tasks

1. **Determine Potential Energy Savings**
   - Compliance Study and Software Modeling
2. **Select Program Elements**
   - Code Trainings, 3rd Party Inspectors, Code Collaboratives, etc.
3. **Determine Attribution Rates**
   - Not all energy savings due to increased compliance comes from utility actions
4. **Allocation (among utilities and DCEO)**
   - Multiple utilities within state; Different utilities cover different fuels
5. **Utility Cost Effectiveness Test**
   - Total Resource Cost Test – Potential Savings vs. Costs, among other inputs
6. **Prepare and file statewide program plan**

IL Savings Potential

Illinois
Department of Commerce
& Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Residential Energy Savings

1. Potential energy savings: Used residential energy modeling software (**REM Design**):
   - Based on 2400 sq ft home (in climate zones 4A and 5A)
   - Difference in energy usage of modeled 2012 code compliant home compared to modeled non-compliant home (used 2009 IECC), using DOE-energy use data
2. Building Forecast: Used historical construction data from **US Census** and **utility construction forecasts**, in each utility service territory
   - (Savings/home * # of new homes) = potential savings

Residential Claimable Savings Estimates (annual average)

- **Statewide Potential:**
  - ✓Over 1,600,000 therms and 9,000 MWh
  - ✓*Assumes base 70% compliance rate*

- **Statewide Utility Claimable:**
  - ✓Over 546,000 therms and 3,020 MWh
  - ✓*Assumes program affects 10% of non-compliant homes*

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Commercial Energy Savings

1. Potential energy savings. Used **PNNL building model energy use data** to determine:
   - Weighted average of 10 commercial building types specific to each utility territory
   - Difference in energy usage of a compliant building (built to new energy code), compared to non-compliant building
2. Building Forecast. Used historical construction data from **Reed Construction Data** and **utility construction forecasts** to determine number of new buildings

- Square feet of new construction per building type * savings per square foot = potential savings (modeling 10 bldg types)

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Commercial Claimable Savings Estimates (annual average)

- **Statewide Potential:**
  - ✓Over 1,500,000 therms and 28,500 MWh
  - ✓*Assumes base 70% compliance rate*

- **Statewide Claimable:**
  - ✓Over 530,000 therms and 9,500 MWh
  - ✓*Assumes program affects 10% of non-compliant bldgs*

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Assumed Claimed Energy Savings

	Average Annual Gas Savings	Average Annual Electric Savings
Residential	**546,851 Therms**	**3.02 GWh**
Commercial	**531,251 Therms**	**9.57 GWh**
Total	**1,078,102 Therms**	**12.59 GWh**

* Program Savings represent 5% of non-compliant buildings in first year; 10% in second year, and 15% in third year.

IL Program Elements

Illinois
Department of Commerce
& Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Program Elements

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 DCEO's effective code trainings
3. Codes Jurisdictional Assistance(Circuit Riders)
   - Energy Code experts that travel around the state to advise building departments on best practices related to energy code enforcement
   - Will expand on DCEO's current efforts in this space
4. Third Party Plan Reviewers and 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.
   - Will build on DCEO's third party residential inspection pilot program

Estimated Statewide Program Budget

Program Year 1: $2.66M ($1.12M in rebates)

Program Year 2: $3.75M ($2.07M in rebates)

Program Year 3: $4.78M ($2.82M in rebates)

Total: $11.19M ($6.01M in rebates)

*Note: Working group has developed a methodology to allocate costs and savings by each utility and DCEO

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

IL Program TRC

Illinois
Department of Commerce
& Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Cost Effectiveness Calculations

- MEEA worked extensively with each utility individually and as a group to determine TRC inputs
- Determined specific inputs, including energy savings, avoided costs, program costs, and incremental costs
- Worked with DCEO's evaluator and statewide evaluator to form consensus on inputs
- DCEO program design team calculated Statewide TRC

- **Statewide TRC is 5.85** (including gas and electric)

Utility/DCEO Team

- **ComEd**: Jim Fay, Sandra Henry
- **Ameren**: Keith Goerss
- **Nicor**: Hammad Chaudhry
- **PG/NS Gas**: Michael Marks (AEG), Matthew Lillard (AEG)
- **DCEO**: Mel Nickerson, Agnes Mrozowski, David Baker, Bruce Selway
- **ADM**: David Diebel
- **MEEA**: Isaac Elnecave, Chris Burgess, Matt Giudice, Jay Wrobel

Ameren ILLINOIS
nicor GAS An AGL Resources Company | Energy Efficiency Program
PEOPLES GAS NATURAL GAS SAVINGS PROGRAM REDUCE TODAY. SAVE TOMORROW.
NORTH SHORE GAS NATURAL GAS SAVINGS PROGRAM REDUCE TODAY. SAVE TOMORROW.
ComEd An Exelon Company powering lives
Illinois Department of Commerce & Economic Opportunity Pat Quinn, Governor
MEEA Midwest Energy Efficiency Alliance

First Statewide Program!

- Utilities/DCEO agreed on the input/output numbers
- Team worked collaboratively for almost 1 year
- Utilities/DCEO have an agreed upon allocation system
- Commitment to jointly support IL codes compliance
- Statewide TRC calculations
- Important because:
  - Builders and inspectors work across utility boundaries
  - Mandatory statewide energy code needs consistency
  - Program elements need to be one state resource
  - Low compliance is a statewide concern!

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance

Thank You!

Upcoming Codes Event…

To learn more about regional and national codes efforts, come to:

4th Annual Midwest Energy Codes Conference
October 22-24, Louisville, KY

MEEA building energy codes site:
http://mwalliance.org/policy/building-energy-codes

Illinois Department of Commerce & Economic Opportunity
Pat Quinn, Governor

MEEA
Midwest Energy Efficiency Alliance