Ameren Missouri Energy Codes Compliance Collaborative

Ian Blanding Program Manager Residential Energy Code Support Program



Safety 101: The Do's and Don'ts of Summer Heat

- Drink plenty of fluids bring a water bottle when you are outside, even if it's a short trip
- Protect against the sun wear sunscreen, a wide brim hat and loose-fitting clothing
- Get acclimated Limit time spent working or exercising in heat until you're conditioned to it

Don't:

- Leave anyone or any pet in a parked car
- Do strenuous activity or stay outside long periods of time during the hottest part of the day



Agenda

- Introductions: 9:30 9:45am
- Program Update: 9:45 10:30am
- Break: 10:30 10:45am
- Discussion | Compliance Challenges: 10:45 11:30am
- New Opportunities/Next Steps: 11:30am 12:00pm
- Lunch and Networking: 12:00 1:00 pm



About MEEA

- We are a nonprofit membership organization with 160+ members including:
 - Utilities
 - Research Institutions and advocacy organizations
 - State and local governments
 - Energy efficiency-related businesses
- As the key resource and champion for energy efficiency in the Midwest, MEEA helps a diverse range of stakeholders understand and implement cost-effective energy efficiency strategies that provide economic and environmental benefits







Introductions

- First, let's get to know each other!
 - Name
 - Job Title and Employer
 - Location of Workplace
 - What residential energy code has your city adopted?



MAmeren Program Update

Ameren Missouri Residential Energy Code Support Program

- What?
 - A 3-year comprehensive program funded by Ameren Missouri to improve understanding and support compliance with local residential energy codes.
- Why?
 - Currently resources and training on local residential energy codes are limited. Better understanding of codes = improved compliance = more efficient construction = greater customer satisfaction
- How?
 - Collaborative Discussion, Proactive Engagement, In-Person Training, Useful Resources



Background

- MEEA managed a statewide residential energy code baseline study funded by Missouri Division of Energy
- Baseline study surveyed residential construction practices (2016) relative to the energy code
- Five key opportunities for improved compliance were identified
- Ameren Missouri included a code support program in their 3-year filing
- MEEA developed the program and hired a team



Goals and Rationale of Study

- Comply with American Recovery and Reinvestment Act (ARRA) requirements
- Establish residential energy code compliance baseline
- Determine potential energy savings from improved compliance
- 1-year, statewide study focused on new, never occupied single family homes
- Study was funded by Division of Energy and led by MEEA
- Data collection was conducted March June 2016



Potential Energy Savings (Annual) *Measure Level Savings*

Measure	Electricity Savings (kWh at meter)	Natural Gas Savings (therms)	Energy Savings (MMBtu)	Electricity Savings	Natural Gas Savings (dollars)	Energy Cost Savings (dollars)
Basement Wall Insulation	732,822	847,765	87,277	\$89,990	\$971,746	\$1,061,737
Duct Leakage	3,706,493	400,964	52,743	\$455,157	\$459,603	\$914,760
Lighting Efficacy	4,830,095	-64,040	10,076	\$593,136	\$-73,405	\$519,731
Wall Insulation	1,624,312	203,688	25,911	\$199,466	\$233,476	\$432,942

Fuel Prices		
Electricity	0.12	\$/kWh
Natural Gas	1.15	\$/therm

# Homes	
CZ4	10,061
CZ5	278



Potential Energy Savings (Annual) *Measure Level Savings*

Measure	Electricity Savings (kWh at meter)	Natural Gas Savings (therms)	Energy Savings (MMBtu)	Electricity Savings	Natural Gas Savings (dollars)	Energy Cost Savings (dollars)
Window U- Factor	329,806	75,268	8,652	\$40,500	\$86,276	\$126,776
Ceiling Insulation	222,191	21,867	2,945	\$27,285	\$25,065	\$52,351
TOTAL	11,445,719	1,485,512	187,604	\$1,405,534	1,702,761	\$3,108,297

Fuel Prices		
Electricity	0.12	\$/kWh
Natural Gas	1.15	\$/therm

# Homes	
CZ4	10,061
CZ5	278



Installed AC Units Tons Oversized









Overview of Program

- Code Compliance Collaborative
 - Space for residential construction professionals to discuss opportunities and barriers to energy code compliance
- In-Field Code Consultant
 - Proactively engages building industry to educate, investigate and improve energy code understanding in a small group or 1-on-1 setting
- In-Person Classroom Training
 - Full day training focused on the what, why and how of the residential energy code



Collaborative Outcomes

- Improved ease and rates of compliance
- Identification and coordination of support activities and incentives
- Increased education/training opportunities
- Opportunity to learn from shared experiences
- Collective understanding of code interpretations and verification
- Awareness of common practices, compliance rates and opportunities for improvement



April Meeting | Collaborative Discussion

- Maintain the same level of engagement from the first meeting
- Support the training program
- Emphasis on renovations in program
- Opportunities for homebuyer engagement
- Representation from builders, supply houses, realtors & appraisers
- More information about compliance from the field



Energy Code Consultant

- Qualified expert on energy codes travels to all parts of Ameren Missouri territory on a regular basis
- Proactively engages building industry to provide individualized, targeted training and assistance
- Engages all residential building industry stakeholders (builders, code officials, raters, architects, supply houses, realtors, appraisers)
- Provides information about available trainings, online resources and energy code guidance



Consultant Outreach | Locations Visited



Consultant Outreach | **People and Professionals**





From the Field | Key Compliance Challenges

- 1. Ventilation
- 2. HVAC Oversizing
- 3. Understanding of Moisture Management
- 4. Air Sealing
- 5. 2018 IECC Implementation
- 6. Existing Buildings/Retrofit
- 7. Basement Insulation
- 8. Insulation Installation
- 9. Duct Sealing
- 10. Lack of Energy Code Consistency
- 11. Differential Enforcement
- 12. Appraisal Training
- 13. Occupant education



Code Consultant | Next Steps

- Informal 2018 IECC Training 1-hour course
- Collaboration with supply houses
- Encouraging Training Participation



Matt's Contact Information

Matt Belcher Energy Code Consultant (314) 749-4189 matt@moenergycodesupport.org



In-person Training

- Statewide baseline study identified five key areas of compliance improvement opportunities
- Curriculum was developed and will be refined throughout the program in response to attendee feedback and energy code developments
- In addition to explaining energy code requirements, trainings describe building science concepts related to the energy code
- It's critical to not only focus on what is required, but the rationale (building science) behind the requirements



Residential Energy Code Concepts and Construction Techniques

- In this training, you'll learn:
 - Basic building science concepts
 - Requirements in the energy code
 - How to overcome common code compliance challenges
 - Best practices and construction techniques
 - Opportunities to cut costs and improve your business



May Trainings: People and Professions





May Trainings: General Feedback

- Overall Satisfaction: 9.5/10
- Liked Best: Great Instructor and content

Recommended Future Topics

- More Code Focus 2018 IECC
- Ventilation
- Moisture Management
- Existing Buildings
- HERS and Code Compliance
- Solar Energy



Upcoming Training Schedule

August Trainings

 August 20, 9:00am – 3:00pm HBA of St. Louis & Eastern Missouri
St. Louis MO

St. Louis, MO

 August 21, 9:00am – 3:00pm Drury Plaza Hotel 3351 Percy Dr.
Cape Girardeau, MO



Next Steps

- Informal 2018 IECC Training 1-hour course (Matt Belcher)
- Developing 2018 IECC 6-hour Course (Southface)
- Developing Fact Sheets (MEEA + Collaborative)
 - Air Sealing, Moisture, Ventilation House as a system
 - Existing Buildings and the Energy Code
 - Guide to Efficient Lighting
 - Guide to HVAC Sizing
 - Guide to Basement Insulation
 - Guide to Duct Sealing





From the Field/Study: Key Compliance Challenges

- 1. Ventilation
- 2. HVAC Oversizing
- 3. Understanding of Moisture Management
- 4. Air Sealing
- 5. 2018 IECC Implementation
- 6. Existing Buildings/Retrofit
- 7. Basement Insulation
- 8. Insulation Installation
- 9. Duct Leakage
- 10. Lack of Energy Code Consistency



Discussion | Compliance Challenges

Possible Questions

- What other challenges are you experiencing with compliance in the field?
- What are your top 3 challenges out of our list?
- What compliance challenges have been introduced with the 2018 IECC?
 - What should be the focus of future training curriculum?





Real Estate & Appraiser Training Program

- Potential for training efforts to expand to real estate and appraisers
- Program Length: September 1, 2019 December 31, 2021
- Program Components
 - Real Estate and Appraiser Subcommittee
 - Outreach to Realtors and Appraisers
 - 7 Green Realtor Courses
 - 3 Green Appraisal Courses
 - Collaborate with Missouri Home Energy Certification (MHEC)



Subcommittees | Engagement Opportunities

- Commercial Subcommittee (Meet Quarterly)
 - Survey of key challenges
 - Document Listing Key Changes
 - Commercial Compliance Checklist
- Real Estate & Appraiser Subcommittee (Awaiting Real Estate Program)
 - Renovation Education
 - MLS Engagement + Education
 - Meet the Green Realtor, Builder Appraiser Event



Next Collaborative Meeting: Save the Date

- Date: Wednesday, October 16, 2019
- Location

Missouri Botanical Garden EarthWays Center 4651 Shaw Blvd. St. Louis, MO 63110

• Last meeting of 2019





Contact Information

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