

GETTING TO 30%
ENSURING A SMOOTH TRANSITION
TO A MORE EFFICIENT FUTURE

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Responsible Energy Codes Alliance

Introductions

- ▣ **RECA** is a broad coalition of energy efficiency professionals, regional organizations, product and equipment manufacturers, trade associations, and environmental organizations that promote the adoption and implementation of the most recent version of the *IECC* nationwide.
- ▣ **EECC** is a diverse set of state and local governments, energy efficiency advocates, energy consumers, environmental groups and industry experts who joined forces in mid-2007, creating the Energy Efficient Codes Coalition to mount a comprehensive, integrated effort to achieve an initial 30% boost in the energy efficiency of the 2009 International Energy Conservation Code (IECC) over its 2006 counterpart.

Model Code Development



Model Code Development



Model Code Development

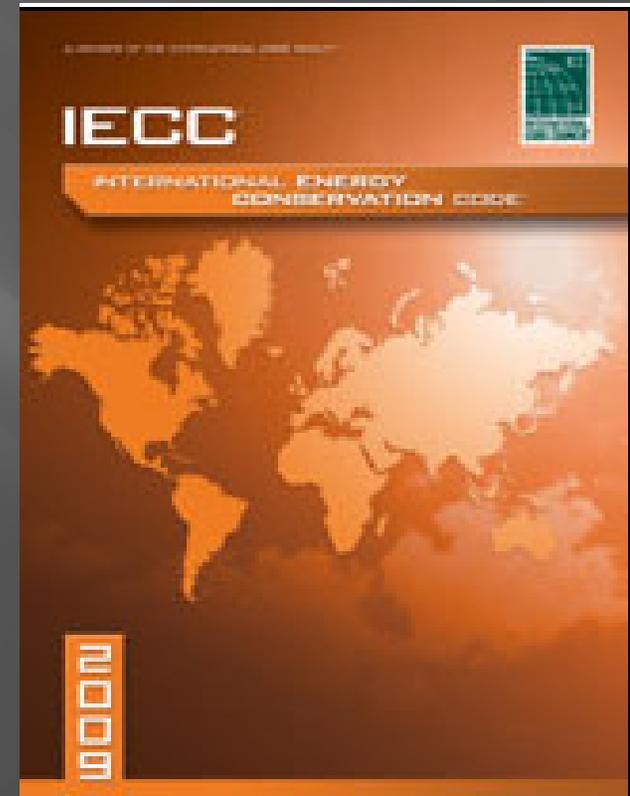
Code Change
Proposals Submitted

Code Development
Committee Hearing

Public Comments

Final Action Hearing

New Model
Code Published



Summary and Sample Ballot

- ▣ Summary Description
- ▣ Committee Recommendation
- ▣ Summary of Public Comments
- ▣ Final Action Recommendation

Energy Efficient Codes Coalition

Prop.	IECC Standing Motion	IRC Standing Motion	EECC Recommendation	Proposal Summary
EC 4	D		Support D	Allows 3 options for determination of U-factor/SHGC: 1) NFRC; 2) AAMA 507; 3) Default table. PC 1 (Oppose) - limits alternative rating systems to curtain wall and storefront.
EC 6	AS		Support AS	Above Code Programs must comply with IECC mandatory language
EC 9	D			Redefines "conditioned space" differently for energy purposes and mechanical purposes.
EC 14	D		Oppose D Support AM PC1	PC 1 (Support) - Revised 30% Full Code package PC 2 (Oppose) - Alters U-factor & SHGC in zones 1&2 to .65 and .35 (higher than recommended by IECC Committee in EC 14).
EC 15	AM			As modified by IECC Committee: R-19 batts compressed into 2x4 cavity, where R-value is reduced by R-1 or more, must be marked for full and compressed R-values.
EC 16 Part 2		D		PC1 - Revises Part 2 to match Part 1.
EC 16	AS		Support AS	Lowers fenestration U-factor in zones 1-4 to .65/.50/.40/.35. PC 1 (Oppose) - Alters U-factor in zones 2&3 to 0.65 and zone 4 to 0.40 (higher than recommended by IECC Committee in EC 14).
EC 18	D		Support D (assuming EC16 is approved)	Lowers fenestration U-factor in zones 2&3 to 0.55, but allows higher U-factor for impact rated glazing. PC 1 (Oppose) - Alters U-factor in zones 2, 3, & 4 to .65/.50/.35, alters exception to apply only to fenestration complying with IBC Section R501.2.1.2. PC 2 (Oppose) - Alters U-factor in zone 2 to 0.65, keeps impact rated glazing exception. PC 3 (Oppose) - Alters U-factor in zones 2, 3 & 4 to .65/.50/.38, alters exception to apply only to fenestration complying with IBC Section 1609.1.2. If EC16 is disapproved, then support PC 1.
EC 18 Part 2		AM	Oppose AM Support AM PC 2 or AM PC 3 as fallback	As modified by IRC Committee: Lowers U-factor in zones 2 & 3 to .65/.55, but allows U-factor of 1.20 for impact rated fenestration in zone 2. PC 1 (Oppose) - Lowers U-factor in zones 2, 3 & 4 to .65/.50/.35, but allows impact rated glazing in zones 2 & 3 to have U-factor .75/.65. PC 2 (Support if PC 3 fails) - Lowers U-factor in zones 2 & 3 to .50/.40 (no exception for impact rated glazing). PC 3 (Support) - Lowers U-factor in zones 1, 2 & 3 to .65/.50/.40/0.35 (no exception for impact rated glazing). PC 4 (Oppose) - Lowers U-factor in zones 1-4 to .65/.50/.40/.35, but allows impact rated glazing in zones 2 & 3 to have U-factor .75/.65.
EC 21	D		Support D Support AM PC 4	Original proposal: Lowers fenestration U-Factor in zones 6-8 to 0.32, but allows 0.35 if SHGC ≥ 0.45. PC 3 (Oppose) - Lowers U-factor in zones 6-8 to 0.32, but allows 0.35 if SHGC ≥ 0.45 and no more than 110 sq. ft. glazing face west. PC 4 (Support) - Lowers U-Factor in zones 6-8 to 0.32 (no exception for high SHGC).
EC 21 Part 2		D	Support D Support AM PC 4	PC 3 (Oppose) - Lowers U-factor in zones 6-8 to 0.32, but allows 0.35 if SHGC ≥ 0.45 and no more than 110 sq. ft. glazing face west. PC 4 (Support) - Lowers U-Factor in zones 6-8 to 0.32 (no exception for high SHGC).
EC 22	D		Support D	Lowers fenestration SHGC in zones 1-3 to 0.30; allows 0.40 SHGC for impact rated glazing. PC 1 & 2 (Oppose) - Lowers fenestration SHGC in zones 1-3 to 0.35, allows 0.40 SHGC for impact rated fenestration complying with IBC Section 1609.1.2.
EC 22 Part 2		D	Oppose D Support AM PC 1	PC 1 & 2 (Oppose) - Lowers fenestration SHGC in zones 1-3 to 0.35, allows 0.40 SHGC for impact rated fenestration complying with IBC Section 1609.1.2. PC 3 (Support) - Lowers fenestration SHGC in zones 1-3 to 0.30; eliminates exception for impact rated glazing.
EC 25 Part 2		AM	Oppose AM, Support D Support AM	Eliminates SHGC requirement for fenestration with projection factor of ≥ 0.50. PC 1 (Oppose) - Clarifies horizontal requirement of overhang. As modified by IECC Committee: Lowers SHGC in zones 1-3 to 0.30. PC 2 (Oppose) - Alters SHGC requirement in zones 1-3 to .35/.35/.40. PC 3 (Oppose) - Alters SHGC requirement in zones 1-3 to .35. PC 4 (Oppose) - Creates exception that allows impact rated glazing to have SHGC 0.40.
EC 26	AM		Support AM	As modified by IECC Committee: Lowers SHGC in zones 1-3 to 0.30. PC 2 (Oppose) - Alters SHGC requirement in zones 1-3 to .35/.35/.40. PC 3 (Oppose) - Alters SHGC requirement in zones 1-3 to .35. PC 4 (Oppose) - Creates exception that allows impact rated glazing to have SHGC 0.40.

KEY:
 PC - Public Comment
 AS - Approved as submitted
 D - Disapproved
 AM - As Modified
 AM PC 1 - As Modified by Public Comment 1, etc.

Final Action Hearing

Three Categories of Proposals

1. Residential
2. Commercial
3. RE 4

1. Residential

Potential for 30% and more



Residential

3 Package Proposals

- ☑ DOE (EC 13)
- ☑ EECC (EC 25)
- ✘ NAHB (EC 16)

Residential

Original EC 13

- ▣ Better windows, skylights, insulation
 - ▣ Hot water system upgrades
 - ▣ High efficiency lighting upgrade
 - ▣ Tighter air leakage and ducts
-
- ▣ Potential legal challenge over preemption

Residential

EC 13 + Public Comment 11 (EECC)

- ▣ Removes mechanical equipment provisions to protect against legal challenge and to ensure smooth implementation into states

Residential

EC 25 – Core of the EECC 30% Solution

- ▣ Parallels EC 13 in form and substance, but contains additional enhancements:
 - Stronger insulation and window & door requirements
 - Improved air sealing inspection requirements
 - Focus on consistency and simplicity
- ▣ Additional strengthening proposals can be added on for additional efficiency

Residential

Complete EECC 30% Solution 2012

- ▣ EC 25 Public Comment 3 (EECC revisions)
- ▣ Individual EECC Proposals that make up the core
- ▣ EECC Proposals that go beyond 30%
- ▣ Proposals refined by EECC Public Comments

Residential

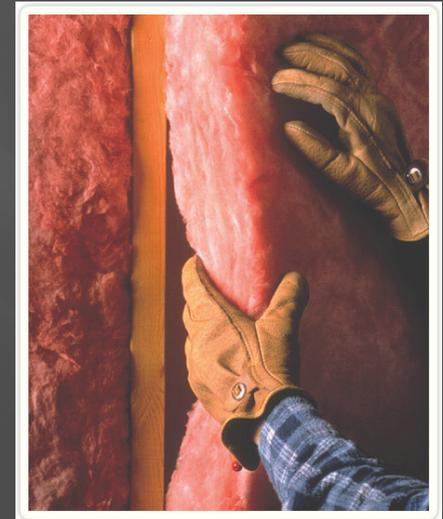
EC 16 – NAHB

- ▣ All or nothing approach makes upgrades difficult
- ▣ Code is frozen at < 30%
- ▣ Retraining of code officials
- ▣ Unclear impact on ARRA 90% Compliance

Residential

Key Insulation Proposals

- ▣ Ceiling insulation in climate zones 2-5, 7-8
 - EC 45, EC 46
- ▣ Wall insulation in climate zones 3-4, 6-8
 - EC 47, EC 48
- ▣ Basement wall insulation in climate zones 5-8
 - EC 50
- ▣ Calculation Methods
 - EC 57



Residential

Key Window, Door, and Skylight Proposals

- ▣ Lower U-factors in all climate zones
 - EC 34, EC 39,
 - EC 41, EC 42
 - EC 68
 - EC 96
- ▣ Lower SHGC in climate zones 1-4
- ▣ Improved sunrooms
- ▣ Improved fenestration trade-off maximums



Residential

Duct and Air Leakage Proposals

- ❑ EECC improved air leakage testing & inspection
- ❑ DOE air leakage and testing (prefer EECC)
- ❑ EECC Improved duct tightness
- ❑ DOE duct tightness (prefer EECC)

➤ EC 81

➤ EC 79

➤ EC 103

➤ EC 107



Residential

System Efficiency

- ▣ Ducts in conditioned space or efficient equipment
- ▣ Programmable thermostat & zones
- ▣ Hot water heating
- ▣ HVAC sizing

- EC 126 (P.C. 1)
- EC 100, EC 101
- EC 114, EC 112
- EC 121, EC 108



Residential

Negative Proposals

- ▣ Return of HVAC Trade-off removed in 2009
- ▣ Elimination of fenestration U-factor and SHGC maximums
- ▣ Unnecessary Trade-downs such as residential projection factor trade-offs, product specific requirements

2. Commercial

Potential for 30% and more

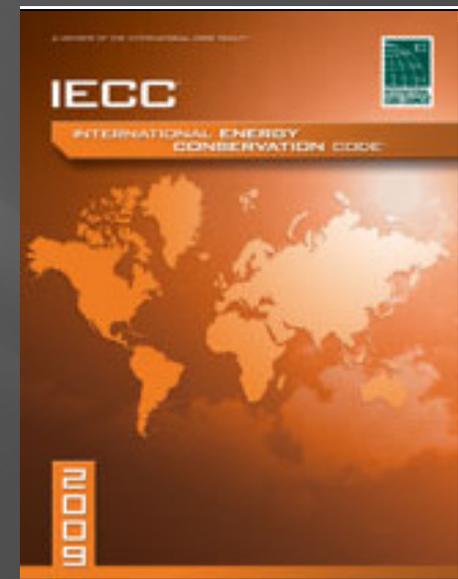
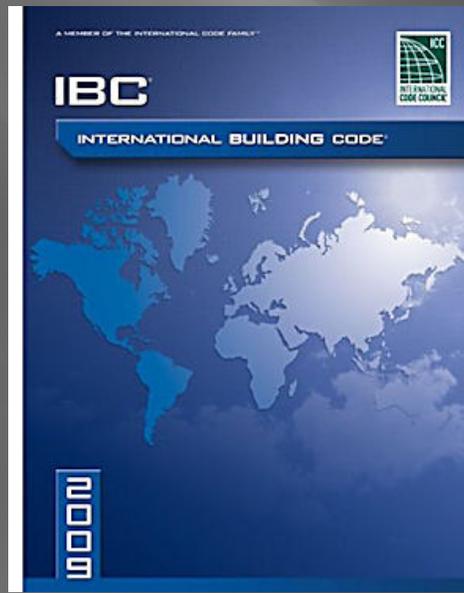
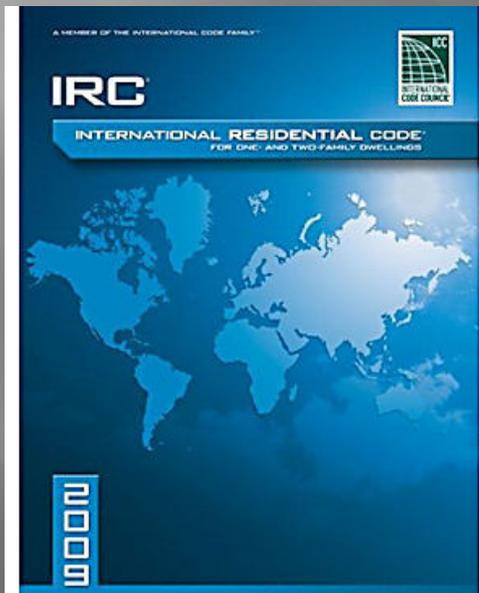


Commercial

- ▣ EECC Summary & Sample Ballot will have recommendations for commercial proposals as well.
- ▣ EECC Supporters also have commercial proposals and public comments. These go through an identical vetting process by the EECC Technical Committee
- ▣ Priority on efficiency, consistency, and seamless compliance/enforcement.

3. RE 4

CONSISTENCY AMONG CODES



RE 4

- ▣ IRC/IECC Overlap
- ▣ DOE: 2009 IRC is Weaker than 2009 IECC
- ▣ Recovery Act Implications

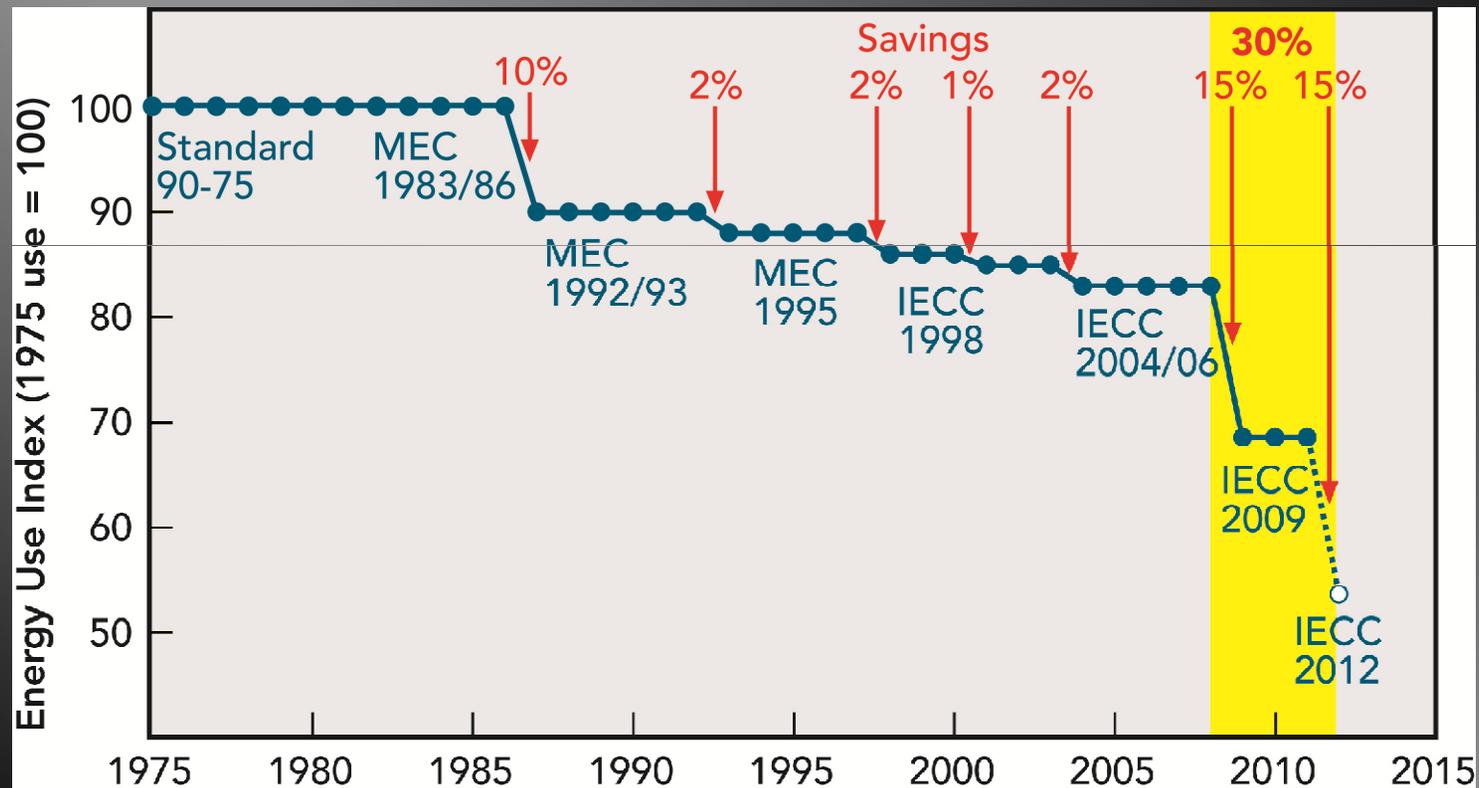
RE 4

Solution: Borrow from MD, GA, NJ, and others

- ▣ IRC Chapter 11 (energy) is replaced with reference to IECC requirements.
- ▣ Result: IECC, IRC, and IBC contain identical energy efficiency requirements
- ▣ RE 4 is preferred, RE 2 is a backstop

Conclusion

30% (and more) is within reach.



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