DOE's Comprehensive Residential IECC Proposal

Bill Prindle
Deputy Director
American Council for an Energy-Efficient Economy
Washington, DC

The Three Pillars of Code Improvement

- Simplicity
- Stringency
- Flexibility

DOE's Proposal

- Is a major step toward simplification
- Makes major improvements in climate zones
- Is seeking to address flexibility

But also needs to:

- Address stringency
- Encourage installed performance, not just component-rated efficiency
- Apply appropriate criteria for tradeoffs

Stringency

- Why expend a huge effort on simplification alone?
- Failing to address stringency now costs homeowners money and ignores compelling wider needs:
  - emissions
  - peak demand
- DOE's mandate is to increase efficiency

From Stringency to Performance

- Nominal component ratings don't guarantee performance in the field
- Marginal gains more likely from encouraging installed performance than from increasing component criteria
- The DOE proposal could be structured to encourage installed performance
- Reduce envelope criteria modestly for homes with documented installation

A Two-Tier Approach

- Tier I requires tighter envelope criteria
- Tier II relaxes envelope criteria, if:
  - HVAC systems are documented for proper sizing and installation
    - Manual J or other credible sizing method
    - Documentation of refrigerant level
    - Documentation of required airflow
    - Documentation of leak-free ducts
    - Presence of TXV or documentation of equivalent performance under peak conditions
  - Envelope components are third-party-inspected for proper installation, and tested for air leakage

Flexibility

- Use one performance path and design it properly
- Don’t create selective tradeoffs
  - Mechanical/envelope tradeoffs are problematic
  - Don’t trade off heating vs. cooling performance
  - Take peak demand and emissions into account
  - Use source energy, or cost as a proxy
- DOE should cut the current tradeoff table