



Cost Analysis Approach for Codes

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Context—DOE's Improvement Goals for the Residential IECC

- DOE has a goal to develop cost-effective, energy efficient improvements to the 2015 IECC while making the code easier to adopt, deploy, and comply with
 - Historically, codes have hovered at minimum levels; debates often concentrated on what many considered obvious
 - Recent code cycles have seen much greater improvement (2012 IECC is more than 30% improved relative to 2006)
 - Further development will go beyond the “obvious”

- Strike balance between long-term energy savings and shorter-term builder/consumer interests
- Cover multiple uses
 - National (tracking progress): energy cost savings
 - Climate Zone (assessment of code change proposals): add life-cycle cost & consumer cash flow
 - State (assessment of new codes): add simple payback

- Energy Analysis (define prototypes, select tool[s], establish assumptions)
- Cost Analysis (establish cost data repository)
- Cost Effectiveness Analysis (define metrics, establish assumptions)
- Stakeholder Input (publish RFI, collect/review comments, publish methodology)

- The “obvious” changes are largely done; further efficiency improvements will happen at the margin; a standard methodology allows new measures to be adopted when ready
- A standard methodology allows new measures to be analyzed in a consistent manner
- Reliance on a standard methodology avoids appearance of favoritism

- In some sense, cost effectiveness defines market readiness
- A standard methodology arbitrates among conflicting preferences
 - Many stakeholders are focused on concerns other than cost effectiveness to consumers
 - Builder preferences often conflict with what is most cost effective
 - Consumers often favor features and minimizing near-term costs over long-term energy cost performance

Pros

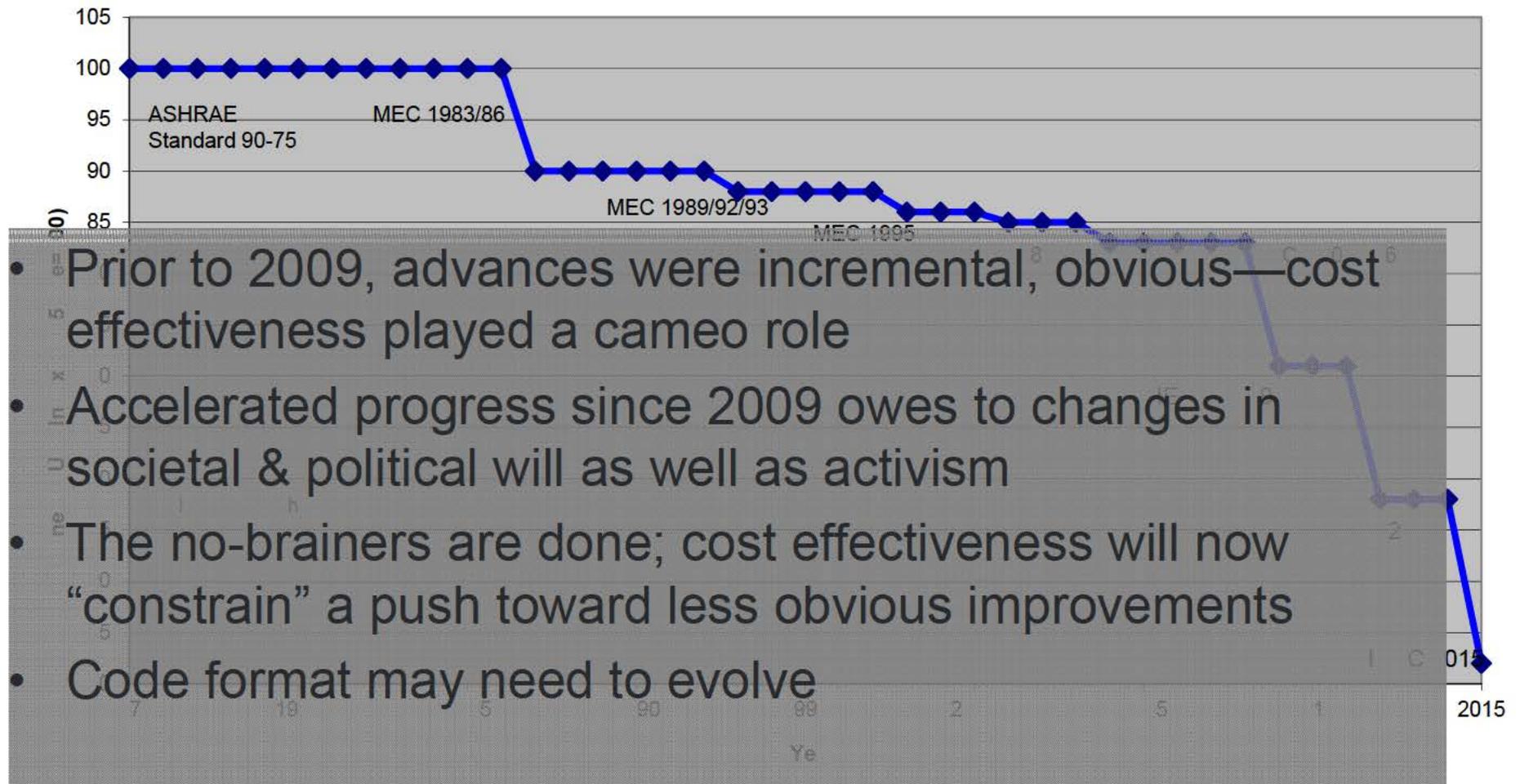
- Consistent, fair, balanced
- Acts as a natural governor on efforts to push the envelope

Cons

- Cost data are elusive, hard to maintain
- Hard to accurately capture market transformation effects
- At-hearing changes are hard to evaluate
- Cost effectiveness differs by situation
- Complicates accommodating the subjective, intangible, etc.

History and Prophecy

Decades of Progress - New Residential Construction Code Stringency 1975-2010
(2010 to 2015 are project improvements based on 30% and 50% goals)



- Prior to 2009, advances were incremental, obvious—cost effectiveness played a cameo role
- Accelerated progress since 2009 owes to changes in societal & political will as well as activism
- The no-brainers are done; cost effectiveness will now “constrain” a push toward less obvious improvements
- Code format may need to evolve

- Methodology:
<http://www.energycodes.gov/development/residential/methodology/>
- Docket (RFI):
<http://www.regulations.gov/#!documentDetail;D=EERE-2011-BT-BC-0046-0001>
- To provide feedback watch (specific URL TBD):
<http://www.energycodes.gov/development/residential/>
- To participate in ICC development process:
<http://www.iccsafe.org/cs/codes/Pages/default.aspx>