



## 27 IECC Proposals with a Significant Impact on Building Energy Efficiency<sup>1</sup>

### 6 Residential Proposals that Improve or Protect Energy Conservation

**RE18 (EECC)** Improves residential floor insulation requirements in climate zones 2 and 4, making homes more comfortable and improving energy efficiency by roughly **1-2%** in these zones.

**RE19 (EECC)** Improves residential energy efficiency by strengthening the fenestration U-factor requirement in climate zones 3-8, improving energy efficiency by **0.6%** to **1.1%**, depending on climate zone; creates an exception to new U-factor requirement where impact-resistant glazing is required or where windows are installed in high altitudes. *See also RE31 PC1.*

**RE103 (EECC)** Establishes a trade-off backstop for duct tightness, helping to maintain better heating and cooling system efficiency and improving comfort for occupants.

**RE135 (EECC)** Improves residential energy efficiency by creating backstop requirements for the “performance path” compliance path – specifically requiring a minimum level of thermal envelope performance equivalent to that required for the ERI compliance path. This proposal promotes more equivalency between the various compliance paths and will reduce the negative impact of any trade-offs under the performance path. *See also RE134 PC2.*

**RE173 (LBA)** Increases ERI target compliance scores from a range of 51-55 depending on the climate zone to a range of 57-62, but implements a separate, more stringent backstop for the use of on-site renewable energy as a trade-off for efficiency. This proposal received broad support from a wide range of building, efficiency, and environmental stakeholders at the PCH and received near-unanimous support.

**RE179 (EECC)** “Flex Points” proposal was unanimously endorsed by the U.S. Conference of Mayors. Improves overall residential building energy efficiency across all IECC compliance paths by about **5%** through a new points-based table of additional energy efficient options from which a code user may select one or more improvements to meet the required energy efficiency level.

### 6 Commercial Proposals that Improve or Protect Energy Conservation

**CE43 (EECC)** Improves the overall efficiency of the IECC commercial provisions by roughly **5%**.

**CE54 (EECC)** Improves the efficiency of the commercial opaque envelope table by adopting the most efficient values from the IECC and ASHRAE 90.1 prescriptive tables.

**CE91 (EECC)** Improves efficiency requirements for fenestration in low-rise commercial buildings by applying a set of requirements similar to those that apply to low-rise multifamily buildings. Overall efficiency of these buildings could improve by roughly **0.5%** to **1.6%**, depending on climate zone.

**CE92 (EECC)** Improves efficiency of commercial buildings in climate zones 4-6 by roughly **2%** to **5%** by requiring lower fenestration SHGC.

**CE93 (EECC)** Improves the efficiency and simplicity of the IECC by specifying a single, more efficient fenestration SHGC requirement in the prescriptive path and establishing a projection factor/SHGC trade-off table for projects that include permanent shading.

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<sup>1</sup> This document includes brief summaries of (1) IECC proposals that will have the most significant positive impact on energy efficiency; and (2) IECC proposals that roll back the energy efficiency of the code and/or are likely to have a significant negative impact on efficiency, along with estimates of impact on energy efficiency (where available). This is *not a complete list, but it does illustrate the importance and magnitude of the energy efficiency issues to be decided by the ICC governmental representatives this Fall.*

**CE251 (Floyd)** Limits credit for on-site energy production in commercial performance path to 5%. This helps reduce the likelihood that a building's permanent thermal envelope efficiency will be traded away for on-site power production.

## 8 Residential Proposals that Weaken Energy Efficiency

**RE17 (NAHB)** Creates a complete exemption from thermal envelope requirements of the IECC for log homes designed in accordance with ICC-400 (Log Homes). This could roll back efficiency from **2%** up to **23%**, depending on climate zone.

**RE28 (CFEC)** Creates a prescriptive path trade-off that would permit the use of R-25 wall insulation in climate zones 6-8 where fenestration with a U-factor no higher than 0.26 is used. This proposal is technically unsound and adds unnecessary complication to the simple prescriptive path.

**RE58 (NAHB)** Allows envelope tightness to be traded off in performance compliance options and establishes a mandatory trade-off backstop. Proposal contains several technical flaws and could result in a significant loophole.

**RE108 (NAHB)** – Allows an option for testing post-construction duct leakage to outdoors. This ignores the possibility that an excessive amount of conditioned air could be spilling into the furnace room instead of the intended rooms.

**RE130 (EEI)** Establishes “performance path” compliance trade-offs for lighting, by adding it to the standard reference design baseline. This proposal permits trade-offs between lighting and thermal envelope components with much longer lifecycles based on a one-year energy usage snapshot. This could result in a **1.4%** to **7.2%** loss in energy efficiency and substantial confusion for code enforcers.

**RE134 (NAHB)** Establishes “performance path” compliance trade-offs for heating, cooling, and water heating equipment; adds UA-based thermal envelope backstop that permits 15% higher total UA and 60% higher SHGC than current prescriptive requirements. This rollback and compliance loophole has been rejected consistently since 2009, but if reinstated, could result in an **11%** to **22%** reduction in efficiency nationwide. *PC2 would reduce the negative impact by eliminating the trade-off.*

**RE146 (CFEC)** Sets glazing area assumption in the “performance path” standard reference design at a fixed 15%, creating a trade-off loophole (credit) that allows reduction in envelope efficiency in homes with less than 15% glazing area. This rollback and compliance loophole has been rejected consistently for many years, but if adopted, the resulting efficiency losses would be between **1%** and **6%** for such homes, depending on glazing area and climate zone.

**RE156 (NAHB)** Replaces current ERI backstop (based on the 2009 IECC envelope) with a UA-based thermal envelope backstop that permits 15% higher total UA and 60% higher SHGC than current prescriptive requirements. The net result will be a weaker thermal envelope and loss of energy efficiency.

## 7 Commercial and Admin Proposals that Weaken Energy Efficiency

**CE18 Part 2 (Cain)** Includes on-site renewable energy in performance path as a trade-off against energy conservation measures. The result could be a significant weakening of the building's thermal envelope efficiency.

**CE42 (Foster), CE46 (EEI)** Reduces efficiency of commercial performance path by raising the allowable energy use from 85% of the base case to 95% (CE42) or 100% (CE46).

**ADM42 Parts 1&2 (NAHB), ADM43 Parts 1&2 (EEI)** Revises intent of IECC to cover the “net” energy use of building (ADM42) or to regulate the conservation and production of energy (ADM43). This could lead to confusion for code enforcers and disputes over the relative value of energy generation versus conservation.

**ADM45 Parts 1&2 (NAHB)** Removes “over the useful life of the building” from the scope of the IECC. This is an important touchstone for the IECC that maintains the focus on the long-term economics for building owner.

**ADM46 Parts 1&2 (NAHB)** Eliminates requirement for so-called “above-code” programs to meet mandatory provisions of the IECC, allowing such programs to avoid minimum code requirements and result in reduced efficiency.