



Summary of IECC CE (Commercial & Residential) Proposals and Online Voting Recommendations

Detailed Online Voting Recommendations

**Final Post-PCH Version
November 8, 2019**

The IECC is the nation’s model building energy code and is revised every three years. Online voting by ICC Governmental Member Voting Representatives is the culmination of years of work by numerous stakeholders and determines the content of the next version of the IECC. To vote on these proposals, go to www.cdpass.com and vote between 11/18/19 and 12/5/19.

This Guide has been prepared by the EECC to provide a brief outline of the CE Proposals (primarily commercial building-related but also some residential) and EECC’s voting recommendations for ICC Governmental Member Voting Representatives for purposes of the ICC’s Online voting process. We strongly encourage Voting Representatives to vote on all of the proposals listed below if possible. Previous hearings, including the recent Public Comment Hearings, have pared down the proposals for consideration by online voters. This document does not include those proposals that have been resolved through the consent agenda or where EECC offers no voting recommendation (see earlier versions of EECC’s guides for info on these proposals) and only includes the voting options available to online voters. For more information, see www.energyefficientcodes.com.

The summaries and recommendations below reflect careful consideration by the EECC Technical Committee and, as such, represent the EECC’s views at this time. Included for many of the proposals is a brief analysis and support for EECC’s recommendations. This document is not intended as a substitute for reviewing and assessing the actual proposals and public comments as published by ICC, and we encourage a full review. EECC makes no representations or warranties as to this document or its use. **See also EECC's separate summary for RE proposals, which also addresses residential building proposals.**

Prop. #	Cmtee Result	PCH Result	EECC Vote Recommendation	Proposal Summary	EECC Analysis, Support for Recommendation and Notes
CE1 Part I	AS	AS	D	Expands scope of IECC to cover energy-using systems in areas outside the structure.	This proposal could significantly broaden the scope of the IECC into uncertain territory and apply code provisions across multiple buildings or building sites.
CE1 Part II	D	D	D	Expands scope of IECC to cover energy-using systems in areas outside the structure.	
CE2	D	D	D	Specifies that load shifting from on- to off-peak periods shall be considered part of the effective use of energy.	Time of use of energy is inherently a consideration as to the effective use of energy, making this proposal unnecessary. We believe this change would overemphasize this single consideration and possibly invite new trade-offs or measures that would weaken the overall efficiency of the code. In our view, the current intent of the IECC has worked well and does not require changes.
CE3 Part I	D	D	D	Adds renewable energy and energy storage systems to the scope of the IECC; also adds intent to achieve the most cost-effective means of compliance.	In our view, the current intent of the IECC has worked well and does not require changes -- energy conservation, not energy generation or storage, should be the focus of the IECC. This proposal would expand the scope of the IECC in ways that could lead to unanticipated negative consequences including reduced energy efficiency. Moreover, by adding a reference to the "most cost-effective means of compliance", this proposal could be read to imply a comparative cost-effectiveness test that would be very problematic and create confusion among code adopters and users.
CE3 Part II	D	D	D	Adds renewable energy and energy storage systems to the scope of the IECC; also adds intent to achieve the most cost-effective means of compliance.	

KEY:

PC – Public Comment AS – Approve as Submitted AM – Approve As Modified by Committee AM PC 1 – Approve As Modified by Public Comment 1, etc. D – Disapprove

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CE5 Part I	AM	AM	D	Revises intent of IECC as regulating buildings for <i>"the health, safety, and welfare of the public while regulating the effective use and conservation of energy ..."</i>	We agree with the concept that the IECC has an important role in supporting life safety as part of the ICC's comprehensive set of life safety codes. However, we think that the intent of the IECC is the effective use and conservation of energy in order to promote life safety, health and the public welfare. We think the best course of action at this point is to retain the current scope of the IECC rather than creating inconsistent scoping provisions for residential versus commercial provisions.
CE5 Part II	D	D	D	Revises intent of IECC as regulating buildings "for <u>life safety along with</u> the effective use and conservation of energy ..."	
CE6 Part I	D	D	D	Revises intent of IECC as regulating buildings for "the effective use and conservation of energy <u>primarily for human comfort</u> over the useful life of each building."	While we agree that human comfort is an important consideration in energy conservation, we would not consider it the "primary" goal of the IECC. This proposal does not seem necessary and may be interpreted by some to exempt buildings that are not primarily used for human occupancy (warehouses) or preclude considerations other than comfort.
CE7 Part I	AM	AM	D	Adds energy production and storage to scope of IECC.	The proposed change could take the focus off the IECC's core objective of conserving the energy used in a building. The code is not written to comprehensively address energy production or storage in any significant way and this change would unnecessarily expand the scope of the code with potential negative consequences.
CE7 Part II	D	D	D	Adds energy production and storage to scope of IECC.	
CE9 Part II	D	AS	AS	Adds energy conservation to list of considerations when code official approves alternative materials, designs, or methods of construction.	Part I of this proposal was recommended for approval by the IECC-Commercial Committee and is on the consent agenda. Approval of Part II would make this provision consistent for both residential and commercial code provisions. Energy conservation should be considered on an equal footing with other considerations when a code official approves an alternative for compliance with the energy conservation code.
CE12 Part II	D	D	AS	Requires buildings constructed to approved above-code programs to also meet or exceed thermal envelope requirements of 2009 IECC.	A reasonable thermal envelope backstop (mandatory minimum envelope measures) should be established for above-code programs just like it is for the ERI compliance path.
CE21	D	AM PC1	AM PC1	Adds new definitions for <i>bio gas</i> and <i>biomass</i> ; revises definition of <i>on-site renewable energy</i> to cover bio gas, biomass, or extracted from hot fluid or steam heated within the earth.	These definitions will provide clear guidance to code officials as to what qualifies as biomass and biogas for IECC compliance.
CE35	AM	AM	AM	Revises definition for <i>wall, above-grade</i> to include between-floor spandrels, peripheral edges of floors, roof and knee walls, dormer walls, gable end walls, walls enclosing mansard roof, and skylight shafts.	This proposal closes a potential loophole in the current code and improves efficiency.
CE43	D	D	D	Creates new compliance option for data centers to comply with ASHRAE 90.4.	As written, this new compliance option may be incorrectly interpreted to cover more than just data centers, allowing code users to bypass key efficiency requirements.

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CE44	D	AM PC2	AM PC2	Creates an exception from compliance with commercial code for dwelling units in R-2 buildings without systems serving multiple units, provided they comply with the ERI.	This proposal could provide an efficient option for demonstrating compliance, as long as each individual unit is verified to meet all the requirements of Section R406.
CE49	D	D	AS	Increases efficiency of the performance path by requiring proposed design to demonstrate energy cost $\leq 80\%$ of standard reference design building, rather than 85%.	This proposal reduces energy use for commercial buildings complying under the performance path by over 5%.
CE54 Part II	AS	D	D	Revises and further weakens tropical zone compliance alternative; allows buildings to comply with "limited air conditioning option" where $\leq 1/2$ of occupied space is air conditioned, renewable energy is used for 80% of water heating, glazing in conditioned spaces has ≤ 0.40 SHGC or ≤ 0.30 PF, operable fenestration provides ventilation area $\geq 14\%$ of floor area in each room or has equivalent ventilation, roof or ceiling is insulated to $\geq R-15$, etc.; allows buildings with no air conditioning to comply with no U-factor or SHGC requirements and very few other minimum requirements.	The requirements for the current tropical climate zone compliance alternative are less efficient than standard requirements in the IECC; the changes proposed in CE54 would result in even less efficiency. Also note that the companion proposal for a new compliance option for commercial buildings was rejected.
CE55	AS	AS	AS	Adds new requirement for thermal envelope certificate that includes R-values, U-factors, and SHGC values for thermal envelope components and the results of any testing performed on building.	The certificate requirement in the residential IECC has worked very well for many years, and this proposal would implement a similar certificate in the commercial chapter. This proposal was approved by the Committee 15-0.
CE56	D	D	AS	Adds requirements for mechanically heated or cooled greenhouses, which are currently exempt from envelope requirements of code; sets skylight U-factor at 0.5 and vertical fenestration U-factor at 0.7; revises definition of fenestration to include glazing materials used in greenhouses; revises definition of greenhouse to include only those structures erected for ≥ 180 days; adds new definition of internal curtain system; adds requirement for opaque envelope assemblies to comply with code.	These thermal envelope requirements would be some improvement over the current code for certain greenhouses.
CE57	D	D	D	Adds new category for low-energy buildings to cover buildings $\leq 1,100$ sq. ft. and used solely to house electric distribution system equipment.	This code change seems unnecessary and duplicative, particularly in light of current code language in section C402.1.2 and the approval of CE58. We are also concerned that this could be used to exempt a broader range of buildings than intended.

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CE61	AS	AS	AS	Improves roof insulation requirements by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 14-1. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.
CE63	AS	AS	AS	Improves above-grade wall insulation requirements by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 13-2. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.
CE64	AS	AS	AS	Improves below-grade wall insulation requirements by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 14-1. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.
CE65	AS	AS	AS	Corrects joist-framing insulation R-value in cz 1 to be consistent with requirement in U-factor table.	The Committee recommended approval of this correction by a vote of 14-1.
CE66	AS	AS	AS	Improves floor insulation requirements by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 12-3. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.
CE68	AS	AS	AS	Improves slab-on-grade floor insulation requirements by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 13-2. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.
CE69	AS	AS	AS	Improves unheated slab insulation requirements in cz 7-8 by adopting more efficient requirements from ASHRAE Std. 90.1.	The Committee recommended approval of these increases in stringency by a vote of 11-4. The modified values were produced by the ASHRAE consensus process and found to be cost-effective. It is reasonable to only adopt ASHRAE values that would improve efficiency and not roll back current values in the IECC that are more stringent than corresponding ASHRAE 90.1 values.

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CE73	AS	AS	AS	Corrects U-factor requirement for roof insulation for All Other metal buildings in cz 1, making it consistent with corresponding R-value in Table C402.1.3.	The Committee recommended approval of this correction by a vote of 13-2.
CE75	AS	AS	AS	Corrects U-factors for wall insulation in cz 5 & 7, making them consistent with corresponding R-values in Table C402.1.3.	The Committee recommended approval of this correction by a vote of 13-2.
CE79	AM	AM	AM	Revises and moves current provisions related to slab-on-grade perimeter insulation into new section outlining slab insulation installation requirements; reclassifies section as Prescriptive, not Mandatory.	
CE80	AS	AS	AS	Designates requirements related to airspaces as "mandatory."	
CE93 Part I	D	D	D	Creates exception from fenestration U-factor and SHGC requirements for storm shelters complying with ICC 500.	This proposal reduces efficiency by exempting such buildings from all fenestration U-factor and SHGC requirements. This overbroad approach is unnecessary. If the specific fenestration U-factor and SHGC for the window used does not meet the prescriptive requirements, it can be offset by improving the performance of the rest of the building.
CE96	AM	AM	AM	Adds new definition for <i>testing unit enclosure area</i> ; requires dwelling and sleeping unit enclosures to be air leakage tested to ≤ 0.30 cfm/sq.ft.; provides option for sampling and several exceptions; requires testing 2 units after each failed sample.	While we are concerned with the option for sampling (and would like to see it removed or at least strengthened in the future), an air leakage testing requirement for these buildings would improve energy efficiency over the current code. See CE97.
CE97	AM	AM	AM	Requires most buildings not in occupancy groups R and I to be tested for air leakage at ≤ 0.40 cfm/sq.ft.; permits area-weighted averaging; provides remedial measures for buildings that test >0.40 cfm/sq.ft, but ≤ 0.60 cfm/sq.ft.	While we are concerned with the option for sampling (and would like to see it removed or at least strengthened in the future), an air leakage testing requirement for these buildings would improve energy efficiency over the current code. See CE96.
CE99	AM	AM	AM	Adds new requirement that continuous air barrier be verified by code official, registered design professional, or approved agency; requires final commissioning report of air barrier.	Verification of the air barrier through a review of construction documents and during construction will improve the quality and efficiency of buildings.
CE104	D	D	D	Deletes requirements to insulate and seal rooms containing fuel-burning appliances.	This proposal would reduce energy efficiency and could result in indoor air quality issues. The Committee recommended disapproval 15-0.
CE111	AM	AM	AM	Adds new Fault Detection and Diagnostics requirements for certain large HVAC systems; exempts R1 and R2 occupancies.	FDD systems will help quickly identify problems in large HVAC systems, and will ultimately save energy. The Committee recommended approval as modified 15-0.

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CE140	AM	AM PC1	AM PC1	Sets efficiency requirements for low-capacity mechanical system ventilation fans; requires air flow and efficacy to be listed or derived from listed power and air flow.	
CE150 Part 1	AS	AS	D	Requires protective barrier on piping insulation to be removable for equipment maintenance.	This proposal would eliminate the use of vapor retarder systems, which also provide protection from physical damage, because they are not readily removable. Also, adding a protective cover to a below ambient system that is not a vapor retarder may cause condensation and loss of efficiency in the system.
CE150 Part 2	AS	AS	D	Requires protective barrier on piping insulation to be removable for equipment maintenance.	
CE162	AM	AM	AM	Requires 90% of permanently installed lighting serving dwelling units to be provided by lamps with efficacy of ≥ 65 lm/W or luminaires with efficacy of ≥ 45 lm/W, or to comply with either specific application controls or lighting power requirements; sets out specific requirements for lighting for refrigerated applications; excludes refrigerated applications and kitchen appliance lighting.	Will improve lighting efficiency.
CE181	AS	AM PC1	AM PC1	Clarifies that spaces required to have light-reduction controls shall have a manual control that allows occupant to reduce connected lighting load by either a switched intermediate step or by continuous dimming control; maintains that light-reduction control is an intermediate step or dimmed level and is not inclusive of full on or full off.	List of methods for light-reduction controls includes all light sources and not just fluorescent; coordinates changes proposed in CE179 and CE181.
CE199	AM	AM PC1, PC2, PC3	AM PC1, PC2, PC3	Adds specific lighting control requirements for parking garages; creates an exception to lighting power reduction requirement where lighting zones are provided with < 1.5 foot-candles of illumination on the floor; specifies that parking garage lighting shall be controlled by occupant sensor requirements or time-switch control, as well as lighting controls; and requires automatic power reduction to luminaires within 20 ft. of perimeter wall openings.	
CE209	AM	AM	AM	Establishes photon efficiency requirements for lighting for plant growth and maintenance; adds reference to ANSI/ASABE S640; designates new section as "Mandatory."	

Prop. #	Cmtee Result	PCH Result	EECC Vote Recommendation	Proposal Summary	EECC Analysis, Support for Recommendation and Notes
CE215	AM	AM	AM	Adds new requirements for energy monitoring systems for new buildings $\geq 25,000$ sq. ft.; exempts Group R-2 occupancies provided the space has its own utility services and meters and has less than 5,000 sq. ft. conditioned floor area.	
CE216	AM	AM	AM	Adds automatic receptacle control requirements to specific rooms and locations within a building; designates requirements as mandatory.	
CE217 Part I	AM	AM	AM	Adds new requirement for EV charging in commercial buildings; adds new definitions for <i>electric vehicle supply equipment</i> , <i>EV capable space</i> , and <i>EV ready space</i> ; adds definition for <i>electric vehicle</i> ; adds details to types of receptacles that must be included in EV ready space; designates EV charging as mandatory.	
CE217 Part II	D	D	AS	Adds new requirement for EV charging in residential buildings; adds new definitions for <i>electric vehicle supply equipment</i> , <i>EV capable space</i> , and <i>EV ready space</i> .	
CE218	AM	AM	AM	Replaces Additional Efficiency Package Options with new points-based tables for Group B, R&I, E, M, and "Other" occupancies; requires new buildings to achieve 10 points from tables.	The proposal appears to increase energy efficiency by generally requiring more building options to be incorporated than under the current code to achieve 10 points (which is estimated by proponents as roughly 2.5% overall improvement in building energy efficiency). The proposal also creates the framework to add additional options in the future by allowing more granularity and flexibility.
CE219	D	D	AS	Requires compliance with two Additional Efficiency Options rather than one.	See CE220; requiring two options will double the efficiency from this provision.
CE220	D	D	AS	Requires compliance with two Additional Efficiency Options rather than one.	See CE219
CE226	AM	AM	AM	Replaces Additional Efficiency Package Options with a new points-based option with tables of measures for Group B, R&I, E, M, and "Other" occupancies; requires new buildings to achieve 10 points from tables or to comply with one of the modified Additional Efficiency Options; reduces lighting power density by 15% below current allowance; excludes kitchen appliance light fixtures.	This proposal is consistent with CE218, with an added revision to lighting credits.

Prop. #	Cmtee Result	PCH Result	EECC Vote Recommendation	Proposal Summary	EECC Analysis, Support for Recommendation and Notes
CE240	AS	AS	AS	Revises Additional Efficiency Package Options to add a new points-based option with tables of measures for Group B, R&I, E, M, and "Other" occupancies; requires new buildings to achieve 10 points from tables; adds new Efficiency Option with increased efficiency kitchen equipment for Group A-2 or other facilities that include a commercial kitchen with certain equipment.	
CE247	AS	AS	AS	Corrects standard reference design assumptions for above-grade wall assemblies in performance path.	Proposal will improve efficiency of performance path by removing unnecessary trade-off credit. Committee recommended approval by a vote of 12-3.
CE256	D	D	D	Adds new exception to roof replacement above-deck insulation requirements in alterations where required R-value cannot be provided due to thickness limitations presented by existing rooftop conditions; requires maximum insulation thickness compatible with available space and existing uses.	Roof replacements are one of the few opportunities to improve the efficiency of existing buildings. This exception creates unnecessary and overly broad loopholes in the roof insulation requirements. The language is drafted in a manner that potentially usurps the role of the code official to enforce the code in an effective and fair manner. The exception introduces a term "rooftop condition" that is undefined and adds the unenforceable term "including" followed by a laundry list of existing rooftop conditions. It also introduces a new requirement within an exception – "shall be installed," which is not acceptable code structure.
CE261	D	D	AS	Revises change of occupancy or use requirements; uses Energy Use Intensity as basis for applying requirements.	
CE262	D	D	AS	Adds requirement for energy storage system space in Appendix CA, Solar-Ready Zone.	
CE263 Part I	D	D	D	Adds new appendix CB, which requires solar photovoltaics in certain commercial buildings.	This proposal does not improve efficiency and includes provisions that are problematic and confusing. It establishes a solar requirement, but it permits that requirement to be met by non-permanent (leased) systems. The proposal also does not justify the amount of solar required and establishes vague unenforceable exceptions where the code official determines that the requirements are "infeasible." Moreover, the proposal is unclear about whether solar energy may be permitted as a trade-off against energy efficiency in the performance path. In our view, renewable energy requirements should only be considered for the code after the implementation of cost-effective energy efficiency. See CE263 Part 2, PC3 for further discussion of reasons for disapproval.
CE263 Part II	AM	D	D	Adds new appendix CB, which requires solar photovoltaics in certain residential buildings.	
CE263 Part III	AM	D	D	Adds new appendix U to the IRC, which requires solar photovoltaics in certain residential buildings.	
CE265	D	D	D	Adds on-site energy storage system option to C406.	Energy storage systems can provide benefits related to the effective use of energy, particularly in conjunction with on-site renewables. However, there is no showing that this specific option will save an equivalent amount of energy cost as compared with other packages under C406.