



Summary of IECC RE (Residential) Proposals, Public Comment Modifications and Recommendations

Public Comment Hearing Version #1

Will be replaced by Voting Guide at conclusion of hearing

This summary has been prepared by the EECC to provide a brief outline of the RE Proposals subject to review and individual voting, and EECC's current voting recommendations on those proposals and related public comment modifications that will be considered at the October 2019 Public Comment Hearings. 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 (in many cases, EECC has also submitted public comments that more fully explain its views on a particular proposal). This document, and specifically EECC's recommendations, are subject to change as the process moves forward. 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 certain CE proposals that will also be addressed at the Public Comment Hearing.

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE2	D	NR	Requires construction documents to include vapor management strategy.	PC1: Deletes some details from vapor management declaration.	
RE7	AS	AS	Improves lighting efficacy requirements to 65 lumens/watt for lamps and 45 lumens/watt for luminaires; renames <i>high-efficiency lamps</i> as <i>high-efficiency light sources</i> .	PC1 (Moore): Excludes kitchen appliance lighting fixtures from high-efficiency requirements. PC2 (Rosenstock): Reduces lamp efficacy from 65 to 61 lumens/watt and increases luminaire efficacy from 45 to 50 lumens/watt and bases efficiency on initial light output to be consistent with Energy Star.	The original proposal provides substantial energy savings and the modifications proposed in the two public comments are unnecessary. See also RE145.
RE10	AS	D	Adds new definition of <i>sampling</i> , a process where <100% of units are randomly inspected and/or tested to code requirements.	PC1 (Schwarz): Revises definition of sampling to include dwellings or dwelling units, rather than sleeping units.	By definition, sampling a few homes for compliance does not guarantee that every home complies with the IECC. Sampling results should not be allowed to demonstrate code compliance. See also PC2 for a more detailed discussion of problems with this proposal.
RE14	D	NR	Requires insulation to be installed as Grade 1 per RESNET/ICC 301.	PC1 (Makela): Clarifies that insulation shall meet Grade 1 requirements, but that materials, systems and equipment shall be installed per manufacturer's instructions.	

KEY:

PC – Public Comment AS – Approve as Submitted AMC – Approve As Modified by Committee AM PC 1 – Approve As Modified by Public Comment 1, etc. D – Disapprove
 PCs marked **green** improve the original proposal; PCs marked **red** do not improve the original proposal and should be disapproved.

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RE17	AMC	D	Adds a new compliance alternative based on cooling and heating load per square foot; requires envelope and duct testing and compliance with water heating and lighting requirements, but does not apply prescriptive envelope requirements or any mandatory backstops. Modification requires that heating and cooling envelope loads be calculated in accordance with ACCA Manual J or other approved methodologies.	<p>PC1 (Wright): Clarifies that heating and cooling loads shall be calculated in accordance with ACCA Manual J Block Load method.</p> <p>PC2 (Gary): Adds air leakage testing and mechanical ventilation requirements to list of mandatory requirements.</p>	This proposal risks huge unintended efficiency rollbacks and other negative consequences. It suffers from considerable fatal flaws, including the following: (1) lacks sufficient technical analysis and justification; (2) cannot produce equivalent energy efficiency to current code because it does not reflect variations in cooling and heating load based on the specific weather in each location in the climate zone (potentially resulting in huge losses in energy efficiency in certain locations); (3) creates an exception to mandatory requirements applicable to other compliance paths; (4) does not establish adequate and balanced thermal envelope requirements (including a backstop); and (5) lacks sufficient accreditation, certification and software specifications and therefore will be subject to substantially varying results. There are already numerous code compliance options; another compliance path is unnecessary and will be confusing and complicate code enforcement. See also PC4 – PC7 supporting disapproval for a more detailed discussion of problems with the proposal.
RE18	AS	NR	Requires certificate to include details of onsite renewable energy systems.	PC1 (Cain): Changes certificate language to be more specific to photovoltaics.	
RE20	D	AS or AM PC1	Requires certificate to include name of builder, code edition, and compliance path selected.	PC1 (Schwarz): Deletes requirement to list builder name on certificate and retains original proposed requirement to list code edition and compliance path.	

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RE21	D	AM PC1 or AS	Requires certificate to include area-weighted average efficiency values where available, sizes of HVAC equipment, and ERI score (both with and without on-site generation).	PC1 (Fay): Adds requirement that certificate list applicable code and compliance path and whether ERI score includes on-site generation.	This proposal, as submitted and as modified by PC1, will improve the permanent certificate of energy-related information required to be posted in each home by providing additional useful information for the future use of the homeowner.
RE26	D	NR	Adds F-factors for unheated and heated slabs in Table R402.1.4; replaces Total UA alternative with component thermal performance alternative and new equation.	PC1 (Connor): Revises heated slab F-factor values to be consistent with ASHRAE Standard 90.1 addendum BX.	
RE27	AS	NR	Adds a continuous insulation-only option to prescriptive wall insulation requirements in all climate zones - 0+10 in cz 1-2, 0+15 in cz 3-5, and 0+20 in cz 6-8; adds cavity-only option of R-30 in cz 6-8.		
RE28	AS	NR	Revises prescriptive wall R-values to clarify application of continuous insulation by replacing "+" with "&" and adding "ci" where continuous insulation is indicated; revises footnotes to clarify continuous insulation requirements.	PC1 (Woestman): Revises other tables in residential and commercial chapters to change "+" to "&", consistent with changes to Table R402.1.2 recommended for approval in RE28.	
RE29	D	AS	Increases wall insulation in climate zones 4-5 from R-20 or 13+5 to R-20+5 or 13+10; adjusts equivalent U-factor requirements accordingly.	PC1 (Crandell): Revises RE29 to be consistent with changes recommended for approval in RE27 and RE28.	Reasonably improves the efficiency of wall insulation.
RE32	D	AS	Adds slab R-value requirement of R-10 at 2 ft in cz 3; increases slab insulation depth from 2 to 4 ft in cz 4 and 5.		Reasonably improves the efficiency of slab insulation.
RE33	D	AS	Increases ceiling insulation requirement in cz 2 and 3 from R-38 to R-49; makes corresponding changes to equivalent U-factors in Table R402.1.4.		Reasonably improves the efficiency of ceiling insulation.
RE34	AMC	AMC	Eliminates loophole that allows floor insulation to be reduced to R-19 in cz 5-8 in the prescriptive path where space is insufficient for full insulation depth. Modification clarifies that footnote "g" should be deleted.	PC1 (Medina): Adds back loophole permitting reduction in floor insulation where obstructions will not allow full insulation or in existing buildings.	Reasonably improves the efficiency of floor insulation by eliminating inefficient loophole.

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RE35	AS	AS, fallback PC1 or PC2	Revises fenestration U-factor from 0.40 to 0.35 in cz 2 and from 0.32 to 0.30 in cz 3-4; adds new footnote in cz 3-8 that permits fenestration U-factor of 0.32 where wind-borne debris protection is required or windows are installed above 4,000 ft.	PC1 (Culp): Increases U-factor in cz 2 from 0.35 to 0.40. PC2 (Inks): Increases U-factor in cz 2 from 0.35 to 0.40.	Reasonably improves the efficiency of windows (U-factor). Note that the Committee recommended approval and no public commenters recommended disapproval.
RE36	D	AS	Revises ceiling insulation requirement in cz 4-8 from R-49 to R-60; makes corresponding changes to equivalent U-factors in Table R402.1.4.		Reasonably improves the efficiency of ceiling insulation.
RE37	D	AS	Adds fenestration SHGC requirement of 0.40 in climate zone 5.		Reasonably improves efficiency by establishing a max fenestration SHGC.
RE39	D	NR	Creates "option 2" for prescriptive compliance in cz 6-8, which allows wall insulation to be reduced to R-23 if fenestration U-factor is \leq 0.28 and ceiling is insulated to R-60; allows ceilings without attic spaces to be reduced from R-49 or greater to R-38 where space is insufficient; allows ceilings with attic spaces to be reduced from R-60 to R-49 where uncompressed R-49 extends over top plate at eaves.		
RE40	AS	D	Permits R-18 wall insulation in place of R-20 in cz 3-8 where framing factor is \leq 20%.		Component-specific trade-offs in the simple prescriptive table add unnecessary complexity and do not guarantee equivalent energy savings. In this case, the proposal rolls back efficiency for all homes with a framing factor \leq 20%. See also PC1 – PC3 for a more detailed discussion of why this is a rollback and should be disapproved.

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RE43	D	D	Adds new provisions for batch sampling and outlines process under which one dwelling out of five is required to demonstrate compliance through testing and inspection after showing compliance with first five units; adds new definition of <i>batch sampling</i> ; expands <i>sampling to cover units "other than stacked multiple-family dwelling unit projects"</i> where sampling plan is approved.	PC1 (Schwarz): Allows batch sampling for Group R2 buildings or other buildings where a sampling plan is approved; limits sampling to air leakage or duct testing; adds reporting requirements.	By definition, testing a few sample homes does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance. While PC1 is an improvement over the original proposal because it is more limited, it still does not correct the underlying problem with sampling as proposed. See also PC2 for RE10 for a more detailed discussion of why sampling should not be approved for code compliance.
RE47	AMC	D	Creates new exception from access hatch and door insulation requirements that allows reduced R-value and U-factor requirements for pull-down stair-type access hatches in cz 1-4; clarifies that reductions from exceptions do not apply to U-factor alternative or Total UA approaches. Modification makes editorial changes.		The proposed new exception will reduce efficiency.
RE49	AS	NR	Deletes exception that allows vertical attic access doors to comply with prescriptive fenestration requirements instead of wall or ceiling insulation requirements of surrounding surface; adds language to clarify construction of baffles, retainers, or dams to prevent movement of loose-fill insulation in attics.	PC1 (Inks): Adds back an exception that allows vertical doors providing access from conditioned to unconditioned spaces to comply with the prescriptive fenestration requirements.	
RE50	D	NR	Adds mass timber to the list of components that qualify as "mass walls;" adds new definition of <i>mass timber</i> .	PC1 (Ross): Deletes definition of <i>mass timber</i> so that IBC definition will be used.	
RE51	AS	NR	Adds steel-frame equivalent R-values to Table R402.2.6 for wood-frame wall requirements of R-13+5 and R-13+10.	PC1 (Humble): Deletes R-13+3 equivalents from steel-frame table.	

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RE54	D	NR	Adds details to requirements for insulating basement walls, including requirements for basement walls that define the building thermal envelope, as well as for finished and unfinished basement walls.	PC1 (Schwarz): Deletes references to "basement walls that define the building thermal envelope;" clarifies that exterior insulation must extend to the footing; interior insulation must extend to the finished floor; deletes other details related to insulating basement walls.	
RE57	D	NR	Requires components of the building thermal envelope to be installed in accordance with Grade 1 as defined by RESNET/ICC 301 Appendix A.		Prefer RE14 AM PC1. Requirement, if approved, should be mandatory (section 402.4.1.1 is part of 402.4, which is labeled mandatory).
RE59	AMC	AM PC1 or AMC	Divides the requirements that apply to basement walls and insulation into prescriptive and mandatory sections; designates basement wall insulation installation as "mandatory." Modification deletes "mandatory" designation.	PC1 (Crandell): Divides basement wall insulation requirements into prescriptive and mandatory sections; adds requirements for depth and placement of insulation.	
RE60	D	AM PC2	Divides the requirements that apply to slab-on-grade floors into prescriptive and mandatory sections; designates as "mandatory" the insulation installation requirements.	PC1 (Collins): Deletes "mandatory" distinction from slab-on-grade insulation installation section. PC2 (Crandell): Divides slab-on-grade insulation requirements (prescriptive) from insulation installation requirements (mandatory); clarifies that insulation below grade shall be extended to the distance specified in Table R402.1.2 or the proposed design (where used as a trade-off).	
RE61	D	D	Deletes requirement for crawl space insulation to extend vertically or horizontally from the finished grade for 24 inches; adds requirement that insulation extend down from the sill plate on top of the crawlspace wall to the floor of the crawlspace; requires vapor retarder to be sealed to the stem walls.	PC1 (Schwarz): Revises crawl space wall insulation requirements to clarify that exterior insulation shall extend downward to the footing and interior insulation shall extend to interior floor of the crawl space; clarifies that crawl spaces vented to outdoors shall comply with R402.2.8.	

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RE63	D	NR	Adds details for the use of airspaces in code compliance, consistent with provisions in commercial chapter.	<p>PC1 (Crandell): Deletes exception allowing alternative means of determining thermal resistance of airspaces.</p> <p>PC2 (Hickman): Specifies that exception applies to ventilated and enclosed air space.</p> <p>PC3 (Yarbrough): Deletes exception allowing alternative means of determining thermal resistance of airspaces.</p>	
RE64	D	NR	Adds details for the use of airspaces in code compliance, consistent with provisions in commercial chapter; also permits alternative airspace conditions and means of determining R-value.	PC1 (Hickman): Clarifies that where an R-value of an airspace is used for compliance, the airspace shall be in an unventilated cavity bounded on all sides; deletes exception allowing alternative airspace conditions per C402.2.7.	
RE66	D	NR	Clarifies insulation installation criteria for raised vertical or diagonal surfaces in ventilated attics; adds reference to eave baffle requirements.	PC1 (Schwarz): Revises ceiling/attic air barrier and insulation installation requirements to add clarity.	
RE67	D	NR	Requires building thermal envelope to contain a continuous air barrier and for air permeable insulation to be enclosed inside the air barrier assembly; adds an exception to air barrier and insulation full enclosure for unconditioned attic spaces at rim joists; requires verification of insulation installation per Section R303.	PC1 (Schwarz): Clarifies that continuous air barrier shall be installed in the building envelope assembly; adds requirement that air-permeable insulation in wall or floor cavities must be enclosed on all sides with air impermeable materials.	
RE68	D	NR	Adds details to requirements for air sealing and insulating around plumbing or other obstructions.	PC1 (Schwarz): Clarifies that where required insulation cannot be installed in a cavity due to plumbing, wiring, or other obstructions, the required R-value shall be installed to the exterior side of the obstruction and the remaining cavity shall be filled with insulation, or an air barrier shall separate the two.	
RE71	AS	NR	Requires insulated portions of garage separation assembly to be installed in accordance with R303 and floor insulation requirements.		
RE73	D	NR	Requires shafts and penetrations to be air sealed and specifies that what is passed through the penetration shall not damage or compress insulation.	PC1 (Schwarz): Revises insulation installation criteria for shafts and penetrations.	

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RE74	D	NR	Adds section references to air barrier and insulation installation criteria for crawl space walls, basement walls, and slabs; clarifies where class 1 vapor retarder should and should not be installed.	PC1 (Schwarz): Clarifies that class 1 vapor retarders shall not be used as an air barrier on below-grade walls and shall be installed per IRC requirements.	
RE75	D	NR	Adds details to air barrier and insulation installation criteria for floors separating conditioned from unconditioned space; replaces description of floor insulation installation criteria with section reference to floor insulation requirements.	PC1 (Schwarz): Clarifies that air barrier shall be installed and air sealed at any exposed edge of insulated cavity adjacent to unconditioned space.	
RE79	D	NR	Adds requirement that HVAC supply and return register boots shall not damage or compress insulation surrounding them.	PC1 (Schwarz): Clarifies that insulation shall be fitted tightly around HVAC supply and return register boots in building envelope to maintain required R-value.	
RE80	D	NR	Adds sealing and insulation details for electrical, phone, fan, or utility boxes on exterior walls.	PC1 (Schwarz): Adds details to air barrier and insulation installation criteria applicable to utility boxes.	
RE81	D	NR	Adds sealing and insulation details for shower/tub and fireplaces on exterior walls in air barrier and insulation installation table.	PC1 (Schwarz): Clarifies that sealing and insulation details apply to framed exterior walls.	
RE84	D	NR	Requires top plate and drywall to be gasketed or sealed; requires wall and knee wall air permeable insulation to be enclosed inside the air barrier assembly; requires corners, headers, and other cavities to be filled with insulating material $\geq R3/\text{inch}$.	PC1 (Schwarz): Adds details to air barrier and insulation installation criteria for walls.	
RE85	D	NR	Adds new footnote to air barrier and insulation installation table that reiterates that requirements are mandatory; clarifies that building elements not specifically addressed in table shall be sealed and made consistent with the requirements of the table.		

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RE88	AMC	AM PC1 or D	Adds an exception that allows attached single and multifamily dwelling units and buildings/dwelling units ≤ 1500 sq. ft to be tested to an air leakage rate of ≤0.30 cfm/sq.ft. of enclosure area; adds new definition of <i>dwelling unit enclosure area</i> ; clarifies that the building and each dwelling unit shall be provided with mechanical ventilation. Modification adds reference to testing standards and specifies that mechanical ventilation shall be provided for the building, but not each dwelling unit.	<p>PC1 (Fay): Revises air leakage rate for individual dwelling units from 0.30 to 0.28 cfm for cz 1&2 and 0.17 cfm for cz 3-8.</p> <p>PC2 (Hammer): Revises definition of <i>dwelling unit enclosure area</i>; deletes language regarding measurement of wall height.</p>	The requirements for maximum envelope air leakage should not be weaker for smaller dwelling units and attached single and multifamily dwelling units. RE96, which is on the consent agenda for approval, already creates substantial flexibility for homes to meet reasonable air tightness without sacrificing overall energy efficiency.
RE92	AMC	D	Creates an alternative to air leakage test requirement, allowing building or dwelling unit to be tested to 0.28 cfm/sq.ft. in cz 1-2 and to 0.17 cfm/sq.ft. in cz 3-8; adds new definition of <i>dwelling unit enclosure area</i> ; clarifies that each dwelling unit shall be provided with mechanical ventilation. Modification adds a trigger for mechanical ventilation at ≤0.28 cfm for dwelling units; specifies that each building shall be provided with IRC/IMC ventilation requirements, but not each dwelling unit.	<p>PC1 (Hammer): Revises definition of <i>dwelling unit enclosure area</i>; deletes language regarding measurement of wall height.</p>	We are concerned because this proposal would result in a weaker prescriptive requirement option for envelope air leakage. Moreover, the need for an alternative air leakage requirement for larger homes has not been established and could lead to gaming.
RE94	D	NR	Adds new requirement to test garage separation air leakage by a two-part test that includes testing the house while the garage door is open and while it is closed, with ≤6% difference in test results.		

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RE95	D	D	Establishes air leakage test sampling options for R2 multifamily dwelling units; requires at least 15% to be tested and outlines details for process and sample group identification, as well as process after any failed tests.	PC1 (Gary): Revises sampling language to clarify that building air leakage is the weighted average of all unit test results; requires testing each unit in buildings with <8 units; for buildings with ≥8 units, the greater of 7 units or 20% shall be tested.	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance. See also PC2 for RE10 for a more detailed discussion of why sampling should not be approved for code compliance. PC1 could compound the problem by allowing compliance by weighted average results instead of requiring each unit to comply.
RE102	AS	D	Adds options to test multifamily buildings for air leakage as a single zone, multiple zones, or individual dwelling units per ASTM E779.	PC 1 (Vijayakumar): Clarifies that buildings other than detached single family dwellings shall be tested as a single zone without inducing equal pressures in adjacent zones, or tested as individual dwelling units.	This proposal could promote gaming; it could also allow too much air leakage between individual units of a multifamily dwelling.
RE106	D	NR	Requires programmable thermostats to provide 5:2 weekday:weekend schedule and at least 2 programmable schedules per day; removes requirement for manufacturer to pre-program thermostat.	PC1 (Floyd): Clarifies that thermostat must be capable of being programmed for different set points at different times of day and week; sets temperature setpoints for manufacturer initial programming.	
RE107	D	AM PC1	Specifies natural gas systems and equipment that are not permitted to have continuously burning pilot lights.	PC1 (O'Neil): Adds new definition for <i>continuously burning pilot light</i> .	By limiting continuously burning pilot lights, this proposal will save energy.
RE109	D	NR	Requires that all ducts outside conditioned space be insulated to R-8, ductwork in floor cavities and exterior walls have a continuous air barrier, and ducts in exterior walls be separated from outside sheathing by ≥R-10 insulation.	PC1 (Schwarz): Establishes prescriptive duct insulation requirements at R-8 for supply and return ducts ≥ 3 inches located outside conditioned space and R-6 for ducts < 3 inches; requires minimum of R-19 insulation in cavity separating duct from unconditioned space.	
RE110	D	D	Creates a new exception from sealing requirements for ducts or portions located completely inside the building thermal envelope.		Duct systems must be sealed in order for the conditioned air to reach the intended space; proponent acknowledges that this proposal could lead to occupant discomfort.

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RE112	AS	AS	Requires ducts located within building thermal envelope to be tested for total leakage to \leq 8.0 cfm/sq.ft.		It is appropriate that all ducts (regardless of location) be tested for and achieve reasonable levels of tightness. Excessively leaky ducts will fail to properly deliver conditioned air, resulting in discomfort and potentially additional energy use as occupants offset discomfort by adjusting the thermostat.
RE115	AS	AS	Establishes maximum trade-off backstop for duct air leakage at 8.0 cfm/sq.ft.	PC1 (Schwarz): Modifies maximum trade-off backstop for duct air leakage from 8 to 6 cfm where air handler is installed or 3 cfm where air handler is not installed at time of test.	Although we are not opposed to a tighter backstop for duct leakage as proposed in PC1, it is more important to establish the backstop concept in this code cycle and we are concerned that the proposed language relating to testing without an air handler installed may be confusing.
RE116	D	D	Requires ducts to be tested to \leq 4 cfm/sq.ft. for both total leakage and leakage to the outdoors; adds exception that allows systems serving < 1500 sq.ft. to be tested to 60 cfm/sq.ft.	PC1 (Schwarz): Adds exception that allows HVAC duct systems serving <1200 sq. ft. to be tested to 72 CFM or less.	The test for leakage to outdoors is unnecessary and may result in confusion; also, concern regarding exception for duct systems for smaller dwelling units.
RE117	D	D	Requires ducts to be tested to \leq 4 cfm/sq.ft. regardless of duct location; adds exception for systems serving < 1500 sq.ft. to test to \leq 60 cfm/sq.ft.	PC1 (Schwarz): Incorporates other changes to other proposals by committee for approval, including weakening amendments such as permitting testing ducts for leakage to outdoors.	Very concerned regarding exception for smaller dwelling units and the option to test ducts for leakage to outdoors. The IECC has consistently and correctly required testing total duct leakage and rejected proposals to allow testing duct leakage to the outdoors for the last three cycles. This would be a rollback in efficiency.

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RE119	AS	D	Adds an alternative to test duct leakage to outside conditioned space.		Total duct leakage is a much better measurement than leakage to the outdoors, since ducts with lower overall leakage are more likely to accomplish intended purpose of properly distributing conditioned air and improving comfort. The proposed alternative is not equivalent to the current standard. Moreover, using the alternative would reduce efficiency in many cases. The IECC has consistently and correctly required testing total duct leakage and rejected proposals to allow testing duct leakage to the outdoors for the last three cycles. See also PC1 for a more detailed discussion of this issue.
RE121	D	D	Establishes duct leakage test sampling options for R2 multifamily dwelling units; requires at least 15% to be tested and outlines details for process and sample group identification, as well as process after any failed tests.	PC1 (Gary): Replaces detailed requirements for air leakage test sampling options with less-detailed section; removes language relating to failures to meet code requirements, sample group identification, and other details; increases minimum number of tested units from 15% to the greater of 7 units or 20%.	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance. See PC2 for RE10 for a more detailed discussion of why sampling should not be approved for code compliance.
RE126	D	NR	Requires homes built to prescriptive path to use one of 6 types of water heating equipment with improved efficiencies.	PC1 (Urbaneck): Moves 3 of the 6 options for water heater types into a new exception to the rule; creates exceptions for replacement water heating equipment and any other type of water heating equipment where ≥ 1.0 kW of on-site renewable energy is installed.	We support saving water heating energy but would prefer to see this improvement be mandatory and applied across all compliance paths.
RE130	AS	AS	Requires mechanical ventilation systems to be tested; allows code official to require test to be conducted by approved third party.	PC1 (Moore): Creates new exception to testing requirement for verified ventilation systems with programmable self-modulating flow rate, ability to achieve programmed flow rate within 10% or 5 CFM, and user interface that communicates when flow rate is achieved.	PC1 weakens the original proposal because it does not require the system to be tested as installed, including ductwork.

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RE132 Part I	AMC	NR	Clarifies that buildings and dwelling units shall be provided with mechanical ventilation per IRC/IMC requirements. Modification adds pointers to air leakage requirements and mechanical ventilation requirements.		
RE132 Part II	AMC	NR	Specifies that dwelling units that comply with air leakage section shall be provided with whole-house mechanical ventilation, irrespective of tested air infiltration rate. Modification adds pointers to air leakage requirements and mechanical ventilation requirements.		
RE136	D	NR	Adds minimum static pressure required for testing fan efficacy for HRV, ERV, balanced, and in-line mechanical ventilation system fans.	PC1 (Moore): Adds requirement that fans be tested in accordance with specified standards and listed; specifies static pressure level for determining efficacy of certain fans.	
RE139	AS	NR	Requires dwelling units in cz 7-8 to be provided with balanced HRV or ERV.		HRV/ERV requirements should not apply only to the prescriptive path, but should be considered mandatory for all compliance paths.
RE145	D	AM PC1	Requires all permanently-installed lighting fixtures to contain only high-efficacy lamps and to be controlled with a dimmer, occupant sensor, or other control (with some exceptions); revises definition of <i>high-efficacy lamps</i> to an efficacy ≥ 70 lumens/watt; adds new definitions for <i>dimmer</i> and <i>occupant sensor control</i> .	PC1 (Urbanek): Requires at least one permanently installed fixture in bathrooms, garages, laundry rooms, and utility rooms to be controlled by an occupant sensor.	See published errata for correct version of proposal. See also RE7. This proposal as modified by PC1 will enhance lighting efficiency by requiring certain fixtures be controlled by occupant sensors.
RE146	D	AS	Requires Electric-Vehicle ready parking spaces and an EVSE-ready circuit; adds new definitions of <i>electric vehicle</i> and <i>electric vehicle supply equipment</i> .	PC1 (Conner): Replaces proposal with new appendix requiring new single-family units to have a dedicated 40-amp branch circuit marked "EV-Ready." PC2 (Rosenstock): Reduces requirement for EV-ready parking spaces from 2% to 1%; increases amperage of EV-ready circuit from 40-amp to 50-ampere.	

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RE147	D	AM PC1	Requires electric circuits and receptacles to be installed near gas or propane water heater, dryer, or cooking equipment.	PC1 (Urbanek): Revises voltage/amperage details of branch circuit outlets required to be installed near cooking appliances, clothes dryers, and water heaters; clarifies water heater space provisions.	
RE148	D	AM PC1 or AM PC2	Requires multifamily residential buildings to comply with exterior lighting requirements of commercial chapter.	PC1 (Makela): Requires all residential buildings other than 1- and 2-family residential buildings to comply with commercial exterior lighting requirements; creates exception for lamps/luminaires that comply with Section R404.1; applies changes only to IECC. PC2 (Medina): Exempts detached 1- and 2-family dwellings and townhouses from requirement to comply with commercial exterior lighting requirements; applies changes to both IECC and IRC.	
RE151	D	AS or AM PC1	Requires homes built to performance path to meet or exceed 2009 IECC envelope requirements.	PC1 (Fay): Revises thermal envelope backstop to be 1.15 X building envelope UA consistent with the ERI thermal backstop.	A reasonable thermal envelope backstop on trade-offs under the performance compliance path should be established.
RE153	D	NR	Adds an option in performance path calculation to use source energy multipliers for national or regional annual average energy consumption from nationally-recognized and validated data sources.	PC1 (Williams): Modifies source multiplier for grid-supplied electricity from 3.16 to 2.95, sets natural gas multiplier at 1.09, and sets fuel oil multiplier at 1.19; allows jurisdiction to use other multipliers published in other governmental sources.	
RE154	D	NR	Adds new table of source energy multipliers to performance path.	PC1 (Foster): Modifies source energy multipliers for renewable resources. PC2 (Rosenstock): Adds an option to use source energy multipliers from an approved local or regional source energy estimate multiplier; revises table of source multipliers.	
RE155	D	NR	Deletes exception that allows performance calculation to be based on source energy.		

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RE156	D	D	Adds new section to performance path recognizing on-site renewable energy as a reduction in energy use of the building.		Renewable energy is important and should be added to buildings where appropriate, but should not replace long-term energy efficiency measures. The addition of on-site renewables to the scope of the performance compliance path would likely roll back the efficiency of the code; any renewable energy requirements should be separate and not be used as a trade-off to reduce energy efficiency. Moreover, the proposal also does not explain the mechanics of how such a trade-off would be calculated. The unlimited trade-off of on-site renewables for energy efficiency is simply not a good policy and would substantially reduce long-term energy savings, comfort and sustainability. See also PC2 for a more detailed discussion of reasons for disapproval.
RE157	D	AS	Deletes incomplete language regarding batch sampling of buildings from performance path compliance report.		By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance.
RE161	AS	D	Revises vertical fenestration and skylight area assumptions in performance path such that homes with skylights will be permitted to consume more energy as compared to current performance path.		This proposal adds unnecessary complexity to the performance path glazing area assumptions, and it results in weaker overall efficiency.

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RE165	AMC	D	Adds a default duct system efficiency to performance path for systems located inside conditioned space and verified pre-drywall. Modification specifies that new default value applies to untested and verified distribution systems entirely located in conditioned space and requires that the air distribution system be verified to be located inside conditioned space.		This new default value awards too much efficiency credit for an untested system. We would prefer to see the system actually tested. See also PC1 for more discussion in support of disapproval.
RE166	AS	D	Adds details to standard reference assumption for service water heating efficiency and draw based on federal regulations; deletes reference to irrelevant footnotes.		Does not appear necessary and may cause confusion in application of performance path. See also PC1 for more discussion in support of disapproval
RE171	D	D	Sets the standard reference assumption for thermal distribution system efficiency at 0.88, irrespective of whether system is tested or whether it is a non-ducted system.	PC1 (Drumheller): Sets standard reference design duct leakage rate at 4 cfm, whether tested or not tested.	This change would be a rollback and result in reduced energy efficiency by setting a lower standard than the current standard for many thermal distribution systems.

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE176	D	D	Adds efficiency trade-offs for heating, cooling, and water heating equipment in the performance path, based on federal minimum efficiencies.		This proposal will roll back the code, create an enormous loophole and substantially reduce energy efficiency. Proposal would allow HVAC and water heating equipment trade-offs, which take advantage of free-ridership created by the difference between the efficiencies of commonly-installed HVAC and water heating equipment and the outdated federal minimum efficiencies that are proposed to be included in the standard reference baseline. Such trade-offs also trade away efficiency of much longer-life thermal envelope components for shorter-life equipment components. Equipment trade-offs have been consistently rejected by the ICC for the IECC during every code development cycle since 2009 (previous four code cycles) and by almost all states. See also PC2 for a detailed discussion of reasons for disapproval due to the problems with equipment trade-offs created by this proposal.
RE178	D	NR	Revises standard reference assumption for air exchange rate and mechanical ventilation to include the mechanical ventilation system type, which will be the same as specified in the proposed design; revises whole-house mechanical ventilation system fan efficacy table to focus on fan type, rather than location.		
RE182	D	AM PC1 or AS	Moves current thermal envelope backstop for ERI compliance with on-site power production from footnote to main text; updates backstop from 2015 to 2018 edition of IECC.	PC1 (Fay): Revises thermal envelope backstops to be based on a Total UA calculation, rather than previous editions of the IECC.	This proposal (AS or AM PC1) is a reasonable improvement to the current thermal envelope backstop applicable to the ERI with onsite power production.

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE184	D	AS	Specifies that for ERI compliance purposes, any reduction in energy use associated with on-site renewable energy shall not exceed 5% of total energy use.		This proposal does not affect the installation or amount of on-site renewable energy; it simply limits the amount of compliance credit that can be claimed under the ERI compliance approach for such energy to ensure that a reasonable level of efficiency is also installed and not traded off.
RE186	AS	D	Replaces current exception that specifies a different ventilation rate in the ERI than is contained in RESNET/ICC 301.	PC1 (Kilbourn): Adds requirement that any adjustments required by or allowed by RESNET/ICC 301 that change the code-required ventilation rates shall be prohibited.	While we support the objective espoused by proponents (that ERI be based on ventilation rates specified in the code and not by RESNET), we believe that the current code language already accomplishes this objective and that a change may be more confusing than the current language. It is unclear whether the proposed change may be construed by some to decrease the stringency of the ERI path, but this outcome can certainly be avoided by disapproving the proposed code change.

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE190	D	D	Deletes thermal envelope backstop that applies to ERI path where on-site renewable energy is incorporated into ERI calculation; adds renewable energy to the scope of ERI; reduces ERI scores to 2015 IECC values.	PC1 (Cain): Establishes two sets of ERI numbers, applying the current ERI numbers to homes without renewable energy and numbers based on the 2015 IECC values for homes incorporating renewable energy; retains deletion of thermal envelope footnote.	This proposal will roll back energy efficiency. The primary purpose of the energy conservation code is to conserve energy, not produce energy. Eliminating this backstop and allowing unlimited trade-offs between on-site generation and the permanent building envelope could wipe out all the efficiency gains made in the IECC over the past decade for those that comply under the ERI path with on-site generation. Reducing the ERI scores is a positive step, but can be achieved without the rollback of current IECC efficiency requirements by adopting RE192.
RE192	D	AS	Lowers ERI scores by 5-8 points to reflect 2015 IECC ERI values		It is important to maintain and increase efficiency under the ERI compliance path over time. This proposal improves efficiency by improving target ERI scores by replacing the 2018 IECC levels with the more efficient levels from the 2015 IECC.
RE194	D	NR	Specifies that in state, region, or county with ≥ 50% renewable portfolio standard, limits credit for on-site renewable energy in the ERI to systems that include an on-site energy storage system ≥ 3.5 kWh; adds new definition of <i>renewable portfolio standard</i>	PC1 (Rosenstock): Lowers threshold for credit for on-site renewable energy in the ERI from systems with ≥ 3.5 kWh to systems with ≥ 2.0 kWh of on-site storage.	
RE195	D	NR	Specifies that where on-site renewable energy is required by code, renewable energy will only be credited in the ERI for the amount installed above minimum requirement	PC1 (Foster): Clarifies that on-site renewable energy shall receive credit for 100% of installed electrical or thermal capacity above the minimum mandatory requirement.	

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE196	D	D	Weakens the thermal envelope backstop for ERI-compliant homes with on-site renewable energy, replacing the 2015 IECC reference with a requirement that the envelope be "within 15%" of the current prescriptive table	PC1 (Martell): Revises thermal envelope backstop for ERI-compliant homes with on-site renewable energy to be 1.05 X UA of current code instead of the current requirement to comply with 2015 IECC prescriptive table	This proposal will substantially weaken the backstop that applies to homes with on-site generation, allowing major trade-offs between on-site generation and the permanent building envelope that will lead to significantly less-efficient homes. While PC1 is an improvement over the original proposal, it is still a rollback of the current code requirements. This issue is best addressed by approval of RE182.
RE202	D	AS or AM PC1	Requires compliance report generated by ERI software to indicate that the ERI path has been selected	PC1 (Nagle): Adds requirement that ERI be declared on building plans, in addition to title page of compliance documents.	
RE204	D	AS or AM PC1	Adds a requirement for homes where on-site renewable energy is used in ERI calculation to substantiate that renewable energy credits associated with on-site renewable energy are owned by or retired by the homeowner, or that an equivalent quantity of renewable energy certificates are conveyed to the homeowner; adds new definition of <i>renewable energy certificate (REC)</i>	PC1 (Edelson): Requires that property owner or agent demonstrate that any RECs or EACs associated with onsite renewable energy are retained or retired on behalf of property owner.	

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE206	D	AS	Improves overall efficiency of IECC by 5% by requiring code user to select 5 Flex Points from table of additional efficiency measures; provides alternatives to comply via performance or ERI path by incorporating a 5% efficiency improvement		EECC proposals RE206 and RE209 both provide reasonable, robust alternative approaches to significantly improve residential energy efficiency under all compliance paths in this code cycle. Such an improvement is a very important goal for this code cycle, as the last major comprehensive improvement was almost a decade ago in the 2012 cycle. RE206 is a refined version of the Flex Points proposal offered by EECC in previous code cycles and offers the most flexibility through mix and match compliance options, along with a reasonable efficiency improvement.
RE207	D	AS	Improves overall efficiency of IECC by 10% by requiring code user to select 10 Flex Points from table of additional efficiency measures; provides alternatives to comply via performance or ERI path by incorporating a 10% efficiency improvement	PC1 (Makela): Reduces Flex Point requirement from 10 to 5 points (and makes corresponding changes to other compliance paths); adds 1-point credit for ≥ 1 kW of photovoltaic or wind power, up to a maximum of 2 points.	RE207, as submitted, is basically RE206, but requires 10 efficiency points (10%) rather than 5 efficiency points (5%). We support RE207, as submitted, since it provides the same benefits as RE206 (see RE206). We do not support PC1, however, because it reduces the savings to 5 points, and then allows 2 points to be satisfied by solar or wind power. We believe solar or wind should not be used to reduce efficiency measures.

RE208	D	D	<p>Adds a requirement to select 3 points from new table of energy efficiency measures; adds efficiency trade-offs for heating, cooling, and water heating equipment efficiency based on federal minimum efficiency baselines</p>	<p>PC1 (Hickman): Removes proposal in original summary to add equipment trade-offs to the performance path; revises point table; clarifies that point requirements do not apply to townhouses and 1- and 2-family homes complying under the ERI.</p>	<p>The original proposal would be an enormous efficiency rollback. By adding heating, cooling and water heating equipment trade-offs to performance path compliance, this proposal suffers from the same problems as RE176. Specifically, such trade-offs take advantage of enormous free-ridership created by the difference between the efficiencies of commonly-installed equipment and the outdated federal minimum efficiencies that would be included in the standard reference baseline; among other problems, such trade-offs also trade away efficiency of longer-life envelope components for shorter-life equipment components. These trade-offs would lose far more energy than any energy gained from adding 3% of additional energy efficiency measures. As for the modification offered by PC1, on the positive side, this modified proposal is an improvement over the original (by dropping the equipment trade-off). However, it still has significant issues that make it far less appealing than either RE206 or RE209. For example, the proposal: (1) only claims to offer 3% improvement instead of 5% or 10%; (2) it does not recognize the life cycle cost or durability of the measure; (3) it does not recognize and/or limit free ridership; (4) it contains a laundry list of far too many limited measures, some of which are likely to be found in the IECC prescriptive path in the 2021 code and result in double-counting; (5) it does not improve all compliance paths by 3%</p>
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Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
					(ERI is explicitly excluded); and (6) it includes practices that defy common sense (such as negative points). RE206 and 209 are superior to this proposal. See also PC2 for a more detailed discussion of the reasons for disapproval of this proposal.
RE209	D	AS	Improves overall efficiency of IECC by roughly 5% by requiring code user to select from 5 Additional Efficiency Package Options; provides alternatives to comply via performance or ERI path by incorporating a 5% efficiency improvement		EECC proposals RE206 and RE209 both provide reasonable, robust alternative approaches to significantly improve residential energy efficiency under all compliance paths in this code cycle. Such an improvement is a very important goal for this code cycle, as the last major comprehensive improvement was almost a decade ago in the 2012 cycle. RE209 is an “additional energy efficiency package options” approach – offering a choice of five package options to achieve a substantial energy efficiency improvement. While this proposal is new to the IECC development process, a similar approach has been in the IECC Commercial Provisions for a number of cycles and can also be found in state energy codes. This approach is more simplified and straightforward than other efficiency option proposals and compliance should be easy for builders to achieve and code officials to enforce.

Prop. #	Standing Motion	EECC Recommended Action	Original Proposal Summary	EECC Evaluation & Summary of Public Comments with Modifications	EECC Analysis, Support for Recommendation and Notes
RE210	D	D	Adds new Pathway to Zero Energy Rating Index Compliance Alternative, based on ERI scores that are reduced to zero by 2042; requires code user to demonstrate ERI score with and without on-site renewables; includes additional compliance and documentation requirements	PC1 (Schwarz): Moves Pathway to Zero Energy to new appendix; clarifies that appendix only applies to new buildings; removes amendment to ERI Reference Design ventilation rate; clarifies that implementation dates are only examples.	We conceptually support increased efficiency over time. However, without a minimum thermal envelope trade-off backstop such as used for ERI compliance with on-site generation, this proposal could permit excessive reductions in efficiency for individual building components. Moreover, the proposal increases the ERI target over the current code for 2021 for some climate zones for buildings without on-site renewables, making it less efficient. Finally, if included in the code, this should be in an appendix. We think RE223 is the best approach to these issues in this code cycle. (PC1 is an improvement, but is not sufficient to support adoption of this proposal.)
RE212	D	NR	Reorganizes and revises requirements that apply to existing buildings; adds performance and ERI compliance options for additions that require additions + original building to use no more energy than the building pre-addition	PC1 (Schwarz): Clarifies that additions may comply via prescriptive, performance, or ERI paths, as long as existing building plus addition does not use more energy than the pre-addition existing building; adds reporting requirements.	
RE217	AMC	D	Creates an exception from roof replacement insulation requirements where required R-value cannot be installed due to thickness limitations or other situations; requires maximum approved thickness of insulation "compatible with available space and existing uses. Modification adds exception to thermal envelope requirements: "roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.		Roof replacement is one of few opportunities to improve the efficiency of existing buildings; this proposal creates an exception could lead to less efficiency than under the current code.

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RE223	D	AM PC1, and/or PC2; Fallback AS	Adds new appendix with provisions for Zero Energy Residential Buildings; requires low ERI score without on-site power production and zero ERI where on-site power production is included; requires compliance with mandatory requirements and thermal envelope requirements of 2015 IECC	<p>PC1 (Fay): Modifies thermal envelope backstop to be based on total UA and SHGC of current code rather than referencing 2015 IECC.</p> <p>PC2 (Makela): Revises proposal to include community renewable energy facility power production and renewable energy purchase contract power production as options for onsite renewable energy.</p> <p>PC3 (VanGeem): Deletes thermal envelope backstop based on 2015 IECC.</p>	This proposal would establish a reasonable net zero option in an appendix for those jurisdictions interested in such an approach. It incorporates a substantial improvement in efficiency over the base code along with sufficient renewable energy to reach net zero. There are also requirements to meet mandatory measures and a reasonable thermal envelope backstop. See also PC1 for a more detailed discussion.
RE224 Part I	D	D	Adds new Stretch Energy Code appendix that requires compliance with ASHRAE/IES Standard 90.2.	<p>PC1 (Barbaree): Requires compliance with mandatory provisions.</p> <p>PC2 (Weston): Requires compliance with mandatory provisions.</p>	For a stretch energy code, we would prefer that buildings also be required to meet IECC mandatory requirements and a strong envelope backstop such as the prescriptive requirements of the 2015 or 2018 IECC. Would also prefer requirements be set out in IECC rather than referencing another code. We prefer RE223.
RE224 Part II	D	D	Adds new Stretch Energy Code appendix that requires compliance with ASHRAE/IES Standard 90.2	<p>PC1 (Weston): Requires compliance with mandatory provisions.</p>	For a stretch energy code, we would prefer that buildings also be required to meet IECC mandatory requirements and a strong envelope backstop such as the prescriptive requirements of the 2015 or 2018 IECC. Would also prefer requirements be set out in IECC rather than referencing another code. We prefer RE223.