ENERGY-EFFICIENT CODES COALITION

IECC RE PROPOSALS

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

This summary has been prepared by the EECC to provide a brief outline of the RE code proposals to be heard by the IECC - Residential Energy Code Development Committee in April/May 2019 and EECC's current recommendations on those proposals. The summaries and recommendations below reflect careful consideration by the EECC Technical Committee and, as such, represent the EECC's views at this time. 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 as published by ICC, and we encourage a full review. Comments are primarily provided to explain EECC's views on proposals where D is recommended; for proposals where AS or AM is recommended, see also the proponent's reason statement. EECC makes no representations or warranties as to this document or its use. See also EECC's separate summaries for certain CE proposals that will also be addressed by the Residential Energy Code Development Committee.

Version 1 Dated April 23, 2019

RECOMMENDATIONS KEY
AS - Approval As Submitted
AM - Approval As Modified
D - Disapproval
NR - No Recommendation at this time

Prop Num.	Proponent	Representing	Summary	Recommended Action	Comments
RE1	Craig Conner	Self	Deletes requirement that above-code programs meet mandatory requirements; deems buildings documented to meet or exceed ICC-700 silver to comply with the IECC.	**D**	Proposal removes important safeguard of mandatory requirements for all above-code programs; compliance with ICC-700 is no guarantee that building is as efficient as one built to IECC.
RE2	Robby Schwarz	EnergyLogic	Requires construction documents to include vapor management strategy.	**NR**	
RE3					Combined with RE226; RE3 is removed from hearing order.
RE4	John Woestman	Extruded Polystyrene Foam Assc	Adds definition of *cavity insulation* to residential code that coordinates with definition in commercial code.	**NR**	
RE5	Amanda Hickman	Reflective Insulation Manf Assc	Adds new definition of *emittance.*	**NR**	
RE6	Jennifer Hatfield	AAMA	Adds unit skylights, tubular daylighting devices, and other glazing materials in definition of *fenestration* , consistent with definition in commercial chapter.	**NR**	
RE7	Eric Makela	NBI	Improves lighting efficacy requirements to 65 lumens/watt for lamps and 45 lumens/watt for luminaires; renames *high-efficacy lamps* as *high-efficacy light sources.*	**AS**	See also RE145 and RE226
RE8	Sharon Bonesteel	Salt River Project	Requires thermostats to be capable of communicating with sources external to the HVAC system and to provide remote access; adds new definition of *programmable communicating thermostat* .	**NR**	
RE9 Part I	Don Sivigny	MN/MN Bldg Officials	Revises definition of *Roof Recover* as "installing an additional roof covering over ~~a prepared~~ an existing roof covering without removing the existing roof covering.	**NR**	
RE9 Part II	Don Sivigny	MN/MN Bldg Officials	Revises definition of *Roof Recover* as "installing an additional roof covering over ~~a prepared~~ an existing roof covering without removing the existing roof covering.	**NR**	
RE10	Hope Medina	Self	Adds new definition of *sampling* , a process where <100% of units are randomly inspected and/or tested to code requirements.	**D**	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance.
RE11	Amanda Hickman	Reflective Insulation Manf Assc	Adds new definitions of *enclosed reflective air space* and *reflective insulation* ; adds requirements for listing information about reflective insulation on certificate.	**D**	The proposed definition is inconsistent with the IECC commercial provisions, ASHRAE 90.1, and the ASHRAE Handbook of Fundamentals. It does not provide adequate constraints to prevent misapplication of airspace R-values.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE12	Amanda Hickman	Reflective Insulation Manf Assc	Adds new definition of *radiant barrier* ; requires radiant barriers to comply with ASTM standard and have an emittance ≤ 0.1.	**D**	The definition is unnecessary if there are no requirements for radiant barriers in the code.
RE13	Shaunna Mozingo	CO ICC	Modifies fenestration default tables; for unlabeled fenestration products in new buildings, the maximum U-factor /SHGC in Section R402.5 will be assigned instead of the default U-factor/SHGC in Tables R303.1.3 (1) and (3); existing buildings and doors will continue to be assigned default U-factors/SHGCs in Tables R303.1.3(1-3).	**D**	This change would: (i) allow the user to claim relatively efficient values for far less efficient unlabeled fenestration to meet code requirements; (ii) likely increase the use of poorly-performing non-labeled fenestration products; and (iii) is not necessary to solve a problem in the code (section 402.5 does not require all products to meet the maximum values, only the weighted average value of products must meet the maximums -- this would permits default-value fenestration to be used).
RE14	Eric Makela	NBI	Requires insulation to be installed as Grade 1 per RESNET/ICC 301.	**AM**	Should be improved with modification to clarify application of standard only to insulation installation.
RE15	David Collins	SEHPCAC/AIA	Revises R401.2 compliance options structure and adds labels to compliance paths; moves tropical zone compliance option to R407.2.	**NR**	Prefer RE16.
RE16	Fay, Bresette, Guttman & Misuriello	EECC et al	Revises R401.2 compliance options to clarify that mandatory provisions and Chapter 3 provisions apply to all compliance paths.	**AS**	
RE17	Stephen Kanipe, Nick Thompson & Mike Suhrbier	CO ICC & Self	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.	**D**	There are already numerous code compliance options; another compliance path is unnecessary and will be confusing and complicate code enforcement. New alternative fails to: (i) require that building meet code mandatory minimums or (ii) establish minimum performance for various envelope measures as a backstop. Unclear whether this option will achieve equivalent performance, comfort, and energy efficiency as compared to current code requirements in all cases. Approach to compliance and verification is also unclear.
RE18	Robby Schwarz	EnergyLogic	Requires certificate to include details of onsite renewable energy systems.	**NR**	Should indicate whether system is owned by property owner.
RE19	Don Sivigny	MN/MN Bldg Officials	Requires certificate to include more details, including address, date, names, efficiencies of equipment, ventilation systems, etc.	**NR**	
RE20	Jason Vandever	Self	Requires certificate to include name of builder, code edition, and compliance path selected.	**AS**	
RE21	Fay, Bresette, Guttman & Misuriello	EECC et al	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).	**AS**	
RE22	Fay, Bresette, Guttman & Misuriello	EECC et al	Clarifies that exception from prescriptive path for log homes applies only where walls are constructed of logs ≥7 inches in diameter and the homes are designed in accordance with ICC-400.	**AS**	
RE23	Jay Crandell	Foam Sheathing Cmtee of ACC	Adds prescriptive alternative for basement and crawl space walls to comply with 13+5ci in climate zones 5-8; clarifies existing R-value requirements in Table R402.1.2 and footnotes.	**NR**	
RE24	Lauren Urbanek	NRDC	Lowers fenestration U-factors from 0.50 to 0.40 in cz1, from 0.32 to 0.30 in cz 3-4, and from 0.30 to 0.27 in cz 5-8; replaces "NR" in cz 1 of Table R402.1.2 with 0.40 U-factor.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE25	Garrett Tuck	Dehlsen Associates	Adds new exception for skylights to be excluded from SHGC requirements if one of its primary functions is solar thermal collection.	**D**	"Solar thermal collection" is not defined. As a result, exception is too broad and may exempt too many skylights from SHGC requirements. This type of product should be addressed through performance path or ERI.
RE26	Craig Conner	Self	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.	**NR**	
RE27	Jay Crandell	Foam Sheathing Cmtee of ACC	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.	**NR**	
RE28	John Woestman	Extruded Polystyrene Foam Assc	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.	**NR**	
RE29	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE30	Ben Edwards	Mathis Consulting	Revises fenestration SHGC requirement in climate zone 4 from 0.40 to 0.35.	**AS**	
RE31	Matthew Brown & Loren Ross	Engineered Wood Assc & American Wood Council	Creates prescriptive alternative to wall insulation requirements in cz 6-8, where walls are insulated to R-23, ceiling is insulated to R-60, and fenestration U-factor is ≤ 0.28; 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.	**D**	Similar to RE39. Component-specific trade-offs in the simple prescriptive table add unnecessary complexity and do not guarantee equivalent energy savings. Trade-offs should be pursued on a building specific basis through the UA trade-off, performance path or ERI.
RE32	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE33	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE34	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE35	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE36	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE37	Fay, Bresette, Guttman & Misuriello	EECC et al	Adds fenestration SHGC requirement of 0.40 in climate zone 5.	**AS**	
RE38	David Collins, Jay Crandell & Maureen Guttman	AIA, Foam Sheathing Cmtee of ACC & BCAP-IBTS	Reorders and renames prescriptive R-value and U-factor prescriptive tables to make U-factor table first; replaces U-factor alternative with R-value alternative; adds glazed fenestration SHGC column to U-factor table.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE39	Greg Johnson	Coalition for Fair Energy Codes	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 ≤ 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.	**D**	Similar to RE31. Component-specific trade-offs in the simple prescriptive table add unnecessary complexity and do not guarantee equivalent energy savings. Trade-offs should be pursued on a building specific basis through the UA trade-off, performance path or ERI.
RE40	Joel Martell	NAHB	Permits R-18 wall insulation in place of R-20 in cz 3-8 where framing factor is ≤ 20%.	**D**	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 ≤ 20%.
RE41	Jeff Inks & Jennifer Hatfield	WDMA & AAMA	Allows fenestration U-factor in cz 5-8 to be increased from 0.32 to 0.30 where wind-borne debris protection is required or fenestration is installed over 4,000 ft.	**NR**	Prefer RE35, which also offers energy savings along with adding this exception.
RE42	Darren Meyers	Nat'l Roofing Contractors Assoc	Revises terminology related to ceiling and attics in Sections R402.2.1 and R402.2.2 to add clarity.	**NR**	
RE43	Robby Schwarz	EnergyLogic	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 *batch sampling; expands sampling to cover units "other than stacked multiple-family dwelling unit projects"* where sampling plan is approved.	**D**	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance.
RE44	Robby Schwarz	EnergyLogic	Clarifies the installation of attic eave baffles to provide maximum space for attic insulation coverage over top plate.	**NR**	
RE45	Shaunna Mozingo	CO ICC	Adds "mandatory" designation to eave baffle requirement.	**AS**	
RE46	David Collins	SEHPCAC/AIA	Divides the requirements that apply to access hatches and doors into mandatory and prescriptive measures; adds "mandatory" designation to access hatch and door installation requirements.	**AS**	
RE47	Stephen Skalko	Marwin Company	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.	**D**	The proposed new exception will reduce efficiency.
RE48	Shaunna Mozingo	CO ICC	Adds "mandatory" designation to access hatch and door requirements.	**AS**	
RE49	Robby Schwarz	EnergyLogic	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.	**NR**	
RE50	Felix Zemel & Peter Zvingilas	ICC Region 6	Adds mass timber to the list of components that qualify as "mass walls;" adds new definition of *mass timber* .	**NR**	
RE51	Jonathan Humble	AISI	Adds steel-frame equivalent R-values to Table R402.2.6 for wood-frame wall requirements of R-13+5 and R-13+10.	**NR**	
RE52	Fay, Bresette, Guttman & Misuriello	EECC et al	Eliminates loophole that allows walls with partial structural sheathing to reduce wall R-values without accounting for efficiency losses through a trade-off.	**AS**	
RE53	Robby Schwarz	EnergyLogic	Revises and expands the options for insulating floors.	**NR**	
RE54	Robby Schwarz	EnergyLogic	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.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE55	Darren Meyers	Self	Clarifies what conditions must be met in order for walls associated with unconditioned basements to be exempt from basement wall insulation requirements.	**NR**	
RE56	Don Sivigny	MN/MN Bldg Officials	Clarifies that basement wall insulation must extend down 10 feet below grade or to the top of the footing, whichever is less; requires foundation insulation to be installed per manufacturer's instructions.	**NR**	
RE57	Aaron Gary	Self	Requires components of the building thermal envelope to be installed in accordance with Grade 1 as defined by RESNET/ICC 301 Appendix A.	**NR**	Prefer RE14 and addressing issue in Chapter 3. Requirement should be mandatory.
RE58	Shaunna Mozingo	CO ICC	Deletes redundant requirement in air barrier table regarding a continuous air barrier.	**NR**	
RE59	David Collins	SEHPCAC/AIA	Divides the requirements that apply to basement walls and insulation into prescriptive and mandatory sections; designates basement wall insulation installation as "mandatory."	**AS**	
RE60	David Collins	SEHPCAC/AIA	Divides the requirements that apply to slab-on-grade floors into prescriptive and mandatory sections; designates as "mandatory" the insulation installation requirements.	**AS**	
RE61	Robby Schwarz	EnergyLogic	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.	**D**	This proposal does not provide enough information about how to treat a rim or band joist, a crawl space wall that is completely above-grade, or a conditioned crawl space.
RE62	David Collins	SEHPCAC/AIA	Divides the requirements that apply to crawl space walls into prescriptive and mandatory sections; designates as "mandatory" the crawl space wall insulation installation provisions.	**AS**	
RE63	John Woestman	Extruded Polystyrene Foam Assc	Adds details for the use of airspaces in code compliance, consistent with provisions in commercial chapter.	**NR**	
RE64	Jay Crandell	Foam Sheathing Cmtee of ACC	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.	**NR**	
RE65	Amanda Hickman	Reflective Insulation Manf Assc	Requires radiant barriers to be installed in accordance with ASTM C1743; adds new definition of *radiant barrier* .	**D**	Although radiant barriers can help save energy, performance depends on many factors not addressed in this proposal, such as the amount of ventilation, whether equipment/ductwork are located in the airspace, how much insulation is located between building and airspace, etc. Without these details, there is no guarantee of equivalent performance.
RE66	Robby Schwarz	EnergyLogic	Clarifies insulation installation criteria for raised vertical or diagonal surfaces in ventilated attics; adds reference to eave baffle requirements.	**NR**	
RE67	Robby Schwarz	EnergyLogic	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.	**NR**	
RE68	Robby Schwarz	EnergyLogic	Adds details to requirements for air sealing and insulating around plumbing or other obstructions.	**NR**	
RE69	Aaron Gary	Self	Adds a new table with requirements for Grade 1 insulation installation.	**D**	New table appears to be incomplete; better to reference RESNET Standard. Prefer RE14.
RE70	Robby Schwarz	EnergyLogic	Requires recessed light fixtures to be air sealed and buried or surrounded in insulation.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE71	Robby Schwarz	EnergyLogic	Requires insulated portions of garage separation assembly to be installed in accordance with R303 and floor insulation requirements.	**NR**	
RE72	Robby Schwarz	EnergyLogic	Requires narrow cavities ≤ 1 inch, not able to be insulated, to be sealed.	**NR**	
RE73	Robby Schwarz	EnergyLogic	Requires shafts and penetrations to be air sealed and specifies that what is passed through the penetration shall not damage or compress insulation.	**NR**	
RE74	Robby Schwarz	EnergyLogic	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.	**NR**	
RE75	Robby Schwarz	EnergyLogic	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.	**NR**	
RE76	Robby Schwarz	EnergyLogic	Adds requirements and section references for rooms containing a fuel burning appliance to the air barrier and insulation installation table.	**NR**	
RE77	Robby Schwarz	EnergyLogic	Adds requirements for area separation walls to the air barrier and insulation installation table.	**NR**	
RE78	Robby Schwarz	EnergyLogic	Adds requirements for insulating and sealing concealed sprinklers to the air barrier and insulation installation table.	**NR**	
RE79	Robby Schwarz	EnergyLogic	Adds requirement that HVAC supply and return register boots shall not damage or compress insulation surrounding them.	**NR**	
RE80	Robby Schwarz	EnergyLogic	Adds sealing and insulation details for electrical, phone, fan, or utility boxes on exterior walls.	**NR**	
RE81	Robby Schwarz	EnergyLogic	Adds sealing and insulation details for shower/tub and fireplaces on exterior walls in air barrier and insulation installation table.	**NR**	
RE82	Robby Schwarz	EnergyLogic	Requires rim joists to be air sealed and insulated so that the insulation maintains permanent contact with the exterior rim board.	**NR**	
RE83	Robby Schwarz	EnergyLogic	Requires insulation around windows, skylights, and doors to be cut to fit the cavity or requires cavity to be filled with insulation that conforms to the cavity space.	**NR**	
RE84	Robby Schwarz	EnergyLogic	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 ≥ R3/inch.	**NR**	
RE85	Robby Schwarz	EnergyLogic	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.	**NR**	
RE86	Howard Ahern	Self	Requires utility penetrations to be caulked, gasketed, or sealed, and to allow for expansion/contraction of materials.	**NR**	
RE87	Kevin Rose	Mass Save	Adds requirement to insulation installation table that all insulation be installed to Grade 1 quality in accordance with RESNET/ICC 301.	**NR**	See RE14, which places this requirement in Chapter 3. It may also be useful to reiterate the requirement here.
RE88	Robby Schwarz, Joseph Lstiburek & Mike Moore	EnergyLogic, self & Broan-NuTone	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 *dwelling unit enclosure area* ; clarifies that the building and each dwelling unit shall be provided with mechanical ventilation.	**D**	Testing to a cfm/sq.ft. standard cannot guarantee equivalent energy savings as compared to current requirements. However, if such a standard is to be allowed, this proposal is preferable to others. If proposal moves forward, should be further limited to smaller homes (<1200 sq. ft.) and the lower target value from other proposals would be preferable.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE89	Roger Papineau	Self	Deletes provision that allows a code official to require air leakage testing to be conducted by an approved third party; requires air barrier and insulation to be inspected per Table R402.4.1.1 instead of being air leakage tested.	**D**	Code officials should be able to require third-party testing; exemption for all alterations and additions is too broad.
RE90	Robby Schwarz, Joseph Lstiburek & Mike Moore	EnergyLogic, self & Broan-NuTone	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 *dwelling unit enclosure area* ; clarifies that buildings and each dwelling unit shall be provided with mechanical ventilation.	**D**	Testing to a cfm/sq.ft. standard cannot guarantee equivalent energy savings. If allowed at all, this approach should be limited to smaller homes or just multi-family dwelling units.
RE91	Gayathri Vijayakumar, Joseph Lstiburek, Joel Martell, Robby Schwarz & Mike Moore	Steven Winter Assc, Self, NAHB, EnergyLogic & Broan-NuTone	Creates an alternative to air leakage test requirement for dwelling units other than detached one-family dwellings, allowing dwelling units to be tested to 0.30 cfm/sq.ft.; adds new definition of dwelling unit enclosure area; clarifies that buildings and each dwelling unit must have mechanical ventilation.	**D**	Testing to a cfm/sq.ft. standard cannot guarantee equivalent energy savings as compared to current requirements. On the positive side, this proposal is reasonably limited to multi-family dwelling units. Should consider size limit and lower values contained in other proposals.
RE92	Robby Schwarz	EnergyLogic	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 *dwelling unit enclosure area* ; clarifies that each dwelling unit shall be provided with mechanical ventilation.	**D**	Testing to a cfm/sq.ft. standard cannot guarantee equivalent energy savings.
RE93	Aaron Gary	Self	Creates an alternative to air leakage test requirement, allowing building or dwelling unit ≤ 1,600 sq.ft. to be tested to 0.32 cfm/sq.ft. in cz 1-2 and to 0.23 cfm/sq.ft. in cz 3-8.	**D**	Testing to a cfm/sq.ft. standard cannot guarantee equivalent energy savings as compared to current requirements.
RE94	Robby Schwarz	EnergyLogic	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.	**NR**	
RE95	Aaron Gary	Self	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.	**D**	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance.
RE96	Fay, Bresette, Guttman & Misuriello	EECC et al	Maintains prescriptive air tightness requirement at 5 ACH50 in cz 1-2 and 3 ACH50 in cz 3-8, but allows performance path and ERI trade-offs up to a mandatory backstop of 5 ACH50 for all climate zones.	**AS**	
RE97	Aaron Gary	Self	Requires air leakage testing to be performed by an approved third party certified to perform the test by a national or state organization; specifies that third party may not be employed by or have a financial interest in the company that constructs the building.	**AS**	
RE98	Fay, Bresette, Guttman & Misuriello	EECC et al	Adds ".0" to air leakage test requirements to eliminate any confusion about the maximum air leakage rates.	**AS**	
RE99	Joel Martell	NAHB	Maintains prescriptive air tightness requirement at 5 ACH50 in cz 1-2 and 3 ACH50 in cz 3-8, but allows performance path and ERI trade-offs up to a mandatory backstop of 6 ACH50 for cz 1-2 and 5 ACH50 for cz 3-8.	**D**	RE96 provides a better trade-off maximum, because it sets the backstop at 5 ACH50 for all climate zones.
RE100	Darren Meyers	Self	Clarifies that heated garages are exempt from air leakage test, but requires field verification of air barrier and insulation installation measures in heated garages; requires thermal isolation for heated attached private garage spaces.	**NR**	
RE101	Darren Meyers	Self	Creates an exemption from air leakage test for additions, alterations, renovations, and repairs to existing buildings, but requires field verification of compliance with air barrier and insulation inspection measures; where required by the code official, an approved third party shall do the verification.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE102	Joel Martell	NAHB	Adds options to test multifamily buildings for air leakage as a single zone, multiple zones, or individual dwelling units per ASTM E779.	**D**	This proposal could promote gaming; it is also unclear how this proposal fits into the broader context of air leakage testing.
RE103	Marilyn Williams	NEMA	Requires electrical and communication outlet boxes to be sealed, tested, and installed per manufacturer's instructions.	**AS**	
RE104	Don Sivigny	MN/MN Bldg Officials	Requires replacement fenestration units to meet the requirements of the prescriptive table.	**NR**	The content of the proposal is generally consistent with the IECC, but it is not clear why this is located in the air leakage section. We also note that replacement fenestration requirements are already set out in section R503.1.1.1, so this proposal may be unnecessary.
RE105	Fay, Bresette, Guttman & Misuriello	EECC et al	Lowers fenestration trade-off backstops from 0.48 to 0.40 U-factor in cz 4-5 and from 0.40 to 0.35 U-factor in cz 6-8; lowers SHGC backstop from 0.50 to 0.40 in cz 1-3.	**AS**	
RE106	David Collins	SEHPCAC/AIA	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.	**NR**	
RE107	Nicholas O'Neil	NW Energy Codes Group	Specifies natural gas systems and equipment that are not permitted to have continuously burning pilot lights.	**NR**	
RE108	Roger Mitchell	Self	Requires manufacturers of hot water boilers to equip units with automatic means of adjusting water temperature, including outdoor or indoor reset or water temperature sensing.	**NR**	
RE109	Robby Schwarz & Shaunna Mozingo	EnergyLogic & Self	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.	**NR**	
RE110	David Bixby	ACCA	Creates a new exception from sealing requirements for ducts or portions located completely inside the building thermal envelope.	**D**	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.
RE111	David Collins	SEHPCAC/AIA	Relocates duct insulation requirements into a single location; divides duct insulation requirements into mandatory and prescriptive requirements.	**AS**	
RE112	Fay, Bresette, Guttman & Misuriello	EECC et al	Requires ducts located within building thermal envelope to be tested for total leakage to ≤ 8.0 cfm/sq.ft.	**AS**	
RE113	Aaron Gary	Self	Clarifies that third parties approved to conduct duct test shall be certified to perform the test by a national or state organization and shall not have a financial interest in the company constructing the building.	**AS**	
RE114	Ryan Meres	RESNET	Requires duct pressure testing to be in accordance with ANSI/RESNET/ICC 380 or ASTM E1554.	**AS**	
RE115	Fay, Bresette, Guttman & Misuriello	EECC et al	Establishes maximum trade-off backstop for duct air leakage at 8.0 cfm/sq.ft.	**AS**	
RE116	Robby Schwarz	EnergyLogic	Requires ducts to be tested to ≤ 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..	**D**	The test for leakage to outdoors is unnecessary; also, concern regarding exception for duct systems for smaller dwelling units.
RE117	Robby Schwarz	EnergyLogic	Requires ducts to be tested to ≤ 4 cfm/sq.ft. regardless of duct location; adds exception for systems serving < 1500 sq.ft. to test to ≤60 cfm/sq.ft.	**NR**	Concern regarding exception for smaller dwelling units.
RE118	Mike Moore	Broan-NuTone	Clarifies that all ventilation systems are outside scope of duct testing requirement.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE119	Joel Martell	NAHB	Adds an alternative to test duct leakage to outside conditioned space.	**D**	Total duct leakage is a better measurement, 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.
RE120	Fay, Bresette, Guttman & Misuriello	EECC et al	Adds ".0" to duct test requirements to eliminate any confusion about the maximum leakage rates.	**AS**	
RE121	Aaron Gary	Self	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.	**D**	By definition, sampling does not guarantee that every home complies with the IECC and should not be allowed to demonstrate code compliance.
RE122	David Collins	SEHPCAC/AIA	Adds "mandatory" distinction to buried duct installation details.	**AS**	
RE123	Howard Ahern	Self	Adds "mandatory" distinction to requirements for protection of piping insulation.	**AS**	
RE124	Ron Clements	Chesterfield County	Deletes prohibition on using building cavities as ducts or plenums.	**D**	If there is a conflict between the IRC and IECC on using building cavities as ducts, the resolution from an energy efficiency standpoint should be to maintain or improve efficiency.
RE125	David Collins	SEHPCAC/AIA	Adds "mandatory" distinction to demand recirculation water system requirements, where installed.	**AS**	
RE126	Lauren Urbanek	NRDC	Requires homes built to prescriptive path to use one of 6 types of water heating equipment with improved efficiencies.	**NR**	We would prefer to see this improvement be mandatory and applied across all compliance paths.
RE127	David Collins	SEHPCAC/AIA	Clarifies hot water pipe insulation requirements.	**NR**	
RE128	David Collins	SEHPCAC/AIA	Adds "mandatory" distinction to hot water pipe insulation requirements.	**AS**	
RE129	David Collins	SEHPCAC/AIA	Adds "mandatory" distinction to drain water heat recovery unit requirements.	**AS**	
RE130	Robby Schwarz	EnergyLogic	Requires mechanical ventilation systems to be tested; allows code official to require test to be conducted by approved third party.	**AS**	
RE131	Robby Schwarz & Shaunna Mozingo	EnergyLogic & Self	Requires mechanical ventilation per IRC/IMC requirements; also requires buildings in cz 7-8 to install heat recovery or energy recovery ventilation system.	**NR**	HRV/ERV requirements should not apply only to the prescriptive path.
RE132 Part I	Mike Moore	Broan-NuTone	Clarifies that buildings and dwelling units shall be provided with mechanical ventilation per IRC/IMC requirements.	**NR**	
RE132 Part II	Mike Moore	Broan-NuTone	Specifies that dwelling units that comply with air leakage section shall be provided with whole-house mechanical ventilation, irrespective of tested air infiltration rate.	**NR**	
RE133	Eric Makela & Mike Moore	NBI & Broan-NuTone	Improves minimum efficacy of whole-house mechanical ventilation system fans.	**AS**	
RE134	Aaron Gary	Self	Adds minimum efficacy requirement where whole-dwelling mechanical ventilation is provided by air handler.	**NR**	
RE135	Aaron Gary	Self	Modifies section and table titles for "whole house" mechanical ventilation system fan efficacy to "whole-dwelling."	**NR**	
RE136	Mike Moore	Broan-NuTone	Adds minimum static pressure required for testing fan efficacy for HRV, ERV, balanced, and in-line mechanical ventilation system fans.	**NR**	
RE137	Mike Moore	Broan-NuTone	Revises whole-house mechanical ventilation system fan efficacy table to be based on type of fan, rather than location of fan being installed.	**NR**	
RE138	Mike Moore	Broan-NuTone	Clarifies that space heating or cooling air handlers shall not supply whole-house ventilation unless the fan is powered by an electronically commutated motor.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE139	Mike Moore	Broan-NuTone	Requires dwelling units in cz 7-8 to be provided with balanced HRV or ERV.	**NR**	HRV/ERV requirements should not apply only to the prescriptive path.
RE140	Mike Moore	Broan-NuTone	Requires whole-house mechanical ventilation systems to be tested; allows code official to require third party testing.	**AS**	
RE141	Aaron Gary	Self	Requires fans used to provide whole-dwelling mechanical ventilation to be tested according to manufacturer's instructions or RESNET/ICC 380; requires testing by third party.	**AS**	
RE142	Darren Meyers	Self	Requires testing of ventilation system airflow; allows code official to require testing by approved third party.	**NR**	
RE143	David Bixby	ACCA	Specifies that design, equipment selection, installation, and commissioning of HVAC systems shall comply with ACCA 5 QI.	**AS**	
RE144	David Collins	SEHPCAC/AIA	Adds "mandatory" distinction to residential pool and permanent spa requirements.	**AS**	
RE145	Lauren Urbanek	NRDC	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 *high-efficacy lamps* to an efficacy ≥ 70 lumens/watt; adds new definitions for *dimmer* and *occupant sensor control.*	**AS**	See also RE7 and RE226.
RE146	Fay, Bresette, Guttman & Misuriello	EECC et al	Requires Electric-Vehicle ready parking spaces and an EVSE-ready circuit; adds new definitions of *electric vehicle* and *electric vehicle supply equipment.*	**AS**	
RE147	Lauren Urbanek	NRDC	Requires electric circuits and receptacles to be installed near gas or propane water heater, dryer, or cooking equipment.	**AS**	
RE148	Eric Makela	NBI	Requires multifamily residential buildings to comply with exterior lighting requirements of commercial chapter.	**AS**	
RE149	Marilyn Williams	NEMA	Requires exterior lighting to be controlled by automated controls.	**AS**	
RE150	Joel Martell	NAHB	Modifies ERI thermal envelope backstop by replacing 2009 IECC with a Total UA of current IECC prescriptive table multiplied by 1.15; does not include SHGC requirements.	**D**	This backstop is a rollback from the current backstop and could allow assemblies to be traded to unacceptably low levels of efficiency; it also does not address SHGC.
RE151	Fay, Bresette, Guttman & Misuriello	EECC et al	Requires homes built to performance path to meet or exceed 2009 IECC envelope requirements.	**AS**	
RE152	Craig Conner, Maston Stafford, Joseph Lstiburek & Aaron Gary	Self	Expands scope of performance path to include on-site renewables and the efficiency of lighting, refrigerator, clothes washer, dishwasher, drain water heat recovery, ventilation, and heat recovery.	**D**	This proposal would be a substantial rollback in energy efficiency. The proposal allows a laundry list of "credits" to trade-off against existing energy efficiency measures. As a result, this proposal does not save energy, it only allows a method to avoid existing energy efficiency requirements. Many of these measures are far less durable than measures that would be replaced. A number of these items have already previously been rejected for the performance path. The unlimited trade-off of on-site renewables for energy efficiency is not a good policy and would reduce long-term energy savings, comfort and sustainability. The proposal also does not explain the mechanics of how such trade-offs would be calculated. Any trade-off of these items is best left to the ERI compliance path, which contains appropriate back-stops, it set at a higher efficiency level in recognition of free ridership, and has been much better designed to properly incorporate these items.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE153	Ted Williams	AGA	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.	**NR**	
RE154	Steven Rosenstock & Keith Dennis	EEI & NRECA	Adds new table of source energy multipliers to performance path.	**NR**	
RE155	Charles Foster	Self	Deletes exception that allows performance calculation to be based on source energy.	**NR**	There are two RE155s in the monograph. NEMA proposal is now RE226.
RE156	Joseph Cain	SEIA	Adds new section to performance path recognizing on-site renewable energy as a reduction in energy use of the building.	**D**	The addition of on-site renewables to the scope of the performance path could lead to substantial decreases in energy efficiency; any renewable energy requirements should be separate and not serve to reduce energy efficiency. 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 reduce long-term energy savings, comfort and sustainability.
RE157	Fay, Bresette, Guttman & Misuriello	EECC et al	Deletes incomplete language regarding batch sampling of buildings from performance path compliance report.	**AS**	
RE158	Robby Schwarz	EnergyLogic	Reorganizes and modifies compliance report requirements for homes built to performance path.	**NR**	
RE159	Kirk Nagle	Self	Requires compliance report for permit application to indicate when the performance path has been selected.	**AS**	
RE160	Darren Meyers	Self	Divides fenestration U-factor and SHGC maximum backstop into two sections: one section that applies to prescriptive and Total UA paths, and one that applies to performance path.	**NR**	
RE161	Jennifer Hatfield	AAMA	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.	**D**	This proposal adds unnecessary complexity to the performance path glazing area assumptions, and it results in weaker overall efficiency.
RE162	Gary Klein	Self	Revises performance path assumptions for service water heating to include consideration of compactness of hot water distribution system.	**NR**	We are concerned about creating a trade-off and whether the system compactness reference baseline for trade-offs reflects typical construction.
RE163	Ed Osann	NRDC	Reduces assumed daily volume of hot water use in standard reference and proposed design by 15%.	**AS**	
RE164	Gary Klein	Self	Adds reference to federal regulations covering minimum efficiency and draw patterns for service water heating in performance path.	**D**	Does not appear necessary and may cause confusion in application of performance path.
RE165	Robby Schwarz	EnergyLogic	Adds a default duct system efficiency to performance path for systems located inside conditioned space and verified pre-drywall.	**D**	This new default value awards too much efficiency credit for an untested system. We would prefer to see the system actually tested.
RE166	Gary Klein	Self	Adds details to standard reference assumption for service water heating efficiency and draw based on federal regulations; deletes reference to irrelevant footnotes.	**D**	Does not appear necessary and may cause confusion in application of performance path.
RE167	Marilyn Williams	NEMA	Adds performance path standard reference assumptions for air leakage rates for spaces with non-ducted heating and cooling systems; sets assumed air leakage rate at 4 ACH50 in cz 1-2 and 2 ACH50 in cz 3-8 for spaces with non-ducted systems.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE168	Marilyn Williams	NEMA	Adds an exception to performance path assumption for heating system efficiency where proposed design is grid-interactive electric thermal storage, in which case the standard reference shall be "as proposed;" adds new definition of *grid-interactive electrical thermal storage (GETS)* .	**D**	This proposal reduces efficiency for certain homes using electric resistance heating systems.
RE169	Mike Moore	Broan-NuTone	Revises standard reference assumption for mechanical ventilation flow rate and the air exchange rate.	**D**	Concern that increased ventilation rate assumption in the reference design may unncessarily reduce energy efficiency under this compliance path.
RE170	Marilyn Williams	NEMA	Where proposed design uses "non-forced-air electric heating," the standard reference efficiency shall be "as proposed."	**D**	This proposal could reduce efficiency by creating a reduced efficiency requirement for non-forced-air electric heating.
RE171	Joel Martell	NAHB	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.	**D**	This change could result in reduced energy efficiency due to inaccurate trade-off credit for tested duct systems.
RE172	Robby Schwarz, Chris McTaggart & Shaunna Mozingo	EnergyLogic, Building Efficiency Resources & Self	Adds duct location to performance path inputs for thermal distribution systems; sets duct location in standard reference as "same as proposed design."	**NR**	
RE173	Mike Moore	Broan-NuTone	Adds new performance path inputs for dehumidistats.	**D**	It is unclear why this new specification for the standard reference design is necessary and why the standard reference design and proposed design are not simply "as proposed." This proposal may cause confusion in the application of the perfomance path.
RE174	Maston Stafford	Self	Adds the use of mechanical ventilation to proposed design in performance path.	**D**	This proposal could reduce efficiency by creating new trade-offs for mechanical ventilation fan use and efficiency.
RE175	Joel Martell	NAHB	Adds efficiency trade-offs for heating, cooling, and water heating equipment in the performance path, based on federal minimum efficiencies; adds a thermal envelope backstop based on Total UA X 1.15 but no SHGC backstop.	**D**	Will rollback the code, create an enormous loophole and substantially reduce energy efficiency. Proposal would allow HVAC equipment trade-offs, which take advantage of free-ridership created by the difference between the efficiencies of commonly-installed HVAC 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 longer-life envelope components for shorter-life equipment components. Equipment trade-offs have been rejected for the IECC during every code cycle since 2009.
RE176	Craig Conner	Self	Adds efficiency trade-offs for heating, cooling, and water heating equipment in the performance path, based on federal minimum efficiencies.	**D**	Huge energy efficiency rollback; has same problems as RE175, and does not include any backstops.
RE177	Joseph Hill & John Addario	NYDOS	Increases maximum mechanical ventilation rate assumptions in standard reference design.	**D**	Concern that increased ventilation rate assumption in the reference design may unncessarily reduce energy efficiency under this compliance path.
RE178	Mike Moore	Broan-NuTone	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.	**NR**	
RE179	Neil Leslie	Self	Specifies electric heating, cooling, and water heating equipment as standard reference assumptions in performance path.	**D**	Energy efficiency rollback. This change suffers from similar problems to RE175 and 176 and would result in unwarranted free-ridership credit for homes with commonly-installed HVAC equipment.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE180	Chris McTaggart	Building Efficiency Resources	Eliminates energy cost as the basis for performance path calculation.	**D**	Energy cost should remain the primary basis for performance path compliance calculations.
RE181	Terry Kozlowski, Amanda Moss, Cassidy Wilson & Valarie Evans	Southern NV Chptr & SN-ICC Member	Modifies ERI thermal envelope backstop by adding a new table with the 2009 IECC prescriptive requirements and adding a new option to comply via the Total UA alternative in R402.1.5.	**D**	This change to the ERI thermal envelope backstop (offering a total UA option) would allow individual assemblies to be traded to unacceptably low levels of efficiency resulting in negative impacts on energy savings, comfort, and duration of energy savings. In addition, maintaining the link to the IECC prescriptive path and updating the IECC version as necessary is superior to adding a table with the requirements fixed at the 2009 level.
RE182	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE183	Ryan Meres	RESNET	Deletes exception that specifies a different ventilation rate in the ERI than is contained in RESNET/ICC 301.	**D**	Increasing assumed ventilation rate in ERI path will reduce the stringency of code.
RE184	Fay, Bresette, Guttman & Misuriello	EECC et al	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.	**AS**	
RE185	Craig Conner	Self	Specifies that ERI calculation shall be computed using energy cost.	**D**	Changing the underlying methodology for calculating ERI from the RESNET method would result in confusion and inconsistent application and would lose the benefits of the correlation with commonly-used HERS ratings.
RE186	Craig Conner & Joseph Lstiburek	Self	Replaces current exception that specifies a different ventilation rate in the ERI than is contained in RESNET/ICC 301.	**D**	The proposed change does not appear necessary and may create further confusion. It is unclear whether proposed change will decrease the stringency of the ERI path.
RE187	Amanda Hickman	LBA	Replaces current exception that specifies a different ventilation rate in the ERI than is contained in RESNET/ICC 301; permits the infiltration and ventilation rate to be less than allowed in RESNET/ICC 301 if it complies with IRC/IMC mechanical ventilation requirements.	**D**	Increasing assumed ventilation rate in ERI path will reduce the stringency of code.
RE188	Craig Conner	Self	Deletes thermal envelope backstop that applies to ERI path where on-site renewable energy is incorporated into ERI calculation.	**D**	Renewables should not be encouraged at the expense of substantially reduced energy efficiency in an energy conservation code. 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.
RE189	Ted Williams	AGA	Deletes exception that excludes energy used to refuel an electric vehicle from the ERI calculation.	**NR**	
RE190	Joseph Cain	SEIA	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.	**D**	Similar to RE188, the primary purpose of the energy conservation code is to conserve energy, not produce energy and 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.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE191	Lauren Urbanek	NRDC	Lowers ERI scores in cz 1 and 4-8 by 1-7 points to reflect typical ERI scores in climate zones.	**AS, Prefer 192**	This proposal is an improvement in efficiency over the current IECC and it demonstrates the need for continuous improvement in the ERI target values as housing improves. However, RE192 is a substantially greater improvement, was already vetted and approved through the IECC process in 2015 and should also be adopted.
RE192	Fay, Bresette, Guttman & Misuriello	EECC et al	Lowers ERI scores by 5-8 points to reflect 2015 IECC ERI values.	**AS**	
RE193	Fay, Bresette, Guttman & Misuriello	EECC et al	Updates minimum thermal envelope backstop for ERI compliance from 2009 to 2012 IECC.	**AS**	
RE194	Steven Rosenstock	EEI	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 *renewable portfolio standard* .	**NR**	
RE195	Steven Rosenstock	EEI	Specifies that where on-site renewable energy is required by code, reneweable energy will only be credited in the ERI for the amount installed above minimum requirement.	**NR**	
RE196	Joel Martell	NAHB	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.	**D**	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. Moreover, "within 15%" is likely to lead to confusion in compliance and enforcement as compared with the current backstop.
RE197	Ryan Meres	RESNET	Requires verification of ERI by an approved third party working under the auspices of an energy rater approved per ANSI/RESNET/ICC 301.	**AS**	
RE198	Aaron Gary	Self	Requires verification of ERI by an approved third party accredited to ISO/IEC 17065.	**NR**	
RE199	Robby Schwarz	EnergyLogic,	Requires third-party verification of ERI scores and documentation; requires verification of ERI mandatory requirements by an authority having jurisdiction or an approved third party inspection agency.	**AS**	
RE200	Ryan Meres	RESNET	Requires approved third party verifiers and residential buildings demonstrating compliance with ERI to comply with quality assurance requirements of ANSI/RESNET/ICC 301.	**AS**	
RE201	Ryan Meres	RESNET	Adds a list of documents that must be provided by third parties who are approved to verify compliance with ERI, including documentation of rater certification, compliance report, compliance with mandatory measures, and results of air leakage and duct tests.	**AS**	
RE202	Kirk Nagle	Self	Requires compliance report generated by ERI software to indicate that the ERI path has been selected.	**AS**	
RE203	Fay, Bresette, Guttman & Misuriello	EECC et al	Adds compliance with mandatory measures to the list of ERI requirements that must be documented in ERI compliance report.	**AS**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE204	Jim Edelson	NBI	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 *renewable energy certificate (REC)*.	**AS**	
RE205	Robby Schwarz	EnergyLogic	Adds new requirements to ERI path for a proposed compliance report for permit application and a confirmed compliance report for certificate of occupancy.	**NR**	Proposal should also include fenestration U-factors and SHGCs in the proposed and confirmed compliance reports.
RE206	Bill Fay & Maureen Guttman	EECC & BCAP-IBTS	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.	**AS**	
RE207	Eric Makela	NW Energy Codes Group	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.	**AS**	
RE208	Amanda Hickman	LBA	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.	**D**	Enormous efficiency rollback. By adding heating, cooling and water heating equipment trade-offs to perfomance path compliance, this proposal suffers from the same problems as RE175, RE176, and RE179. 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. Unfortunately, this proposal would be a major net loss and rollback for energy efficiency.
RE209	Dan Bresette & Harry Misuriello	ASE & ACEEE	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.	**AS**	
RE210	Robby Schwarz	EnergyLogic	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.	**D**	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.
RE211	David Collins	SEHPCAC/AIA	Reorganizes and revises requirements that apply to existing buildings; requires changes from unconditioned space to conditioned space to comply as additions; removes requirement for air leakage testing in additions and duct leakage testing in duct extensions.	**NR**	

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions

RE212	Robby Schwarz	EnergyLogic	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.	**NR**	
RE213	Robby Schwarz & Shaunna Mozingo	EnergyLogic & Self	Requires pre- and post-addition blower door test; where alteration results in airflow less than set forth in R402.4.1.2, then combustion safety testing shall be performed and mechanical ventilation shall be recommended.	**NR**	
RE214	Shaunna Mozingo	CO ICC	Deletes language regarding changing unconditioned space to conditioned space from the requirements for additions.	**NR**	
RE215	Shaunna Mozingo	CO ICC	Deletes duplicative language regarding requirement for alterations to meet the code requirements for new construction.	**AS**	
RE216	Shaunna Mozingo	Self	Specifies that where fenestration was used as a trade-off, replacement fenestration shall have U-factor and SHGC ≤ original fenestration.	**NR**	Difficult to determine whether fenestration was previously used as a trade-off.
RE217	Darren Meyers	Nat'l Roofing Contractors Assoc	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."	**D**	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.
RE218	Marilyn Williams	NEMA	Revises lighting requirements that apply to alterations; exempts alterations that replace less than 50% of luminaires (instead of 10%), provided the alteration does not increase installed interior lighting power.	**AM**	The code proposal appears to be a misprint. The current IECC creates an exception for those alterations that replace less than 50% of luminaires. It appears that the proposal is intended to replace 50% with 10%. With such a correction, this proposal would save energy and should be approved.
RE219	Darren Meyers	Nat'l Roofing Contractors Assoc	Revises exception for roof insulation requirements in alterations; replaces current exception that applies to roofs without insulation in the cavity to roofs "without insulation entirely above the roof deck."	**D**	This proposal does not improve the section and could create confusion.
RE220	Robby Schwarz & Shaunna Mozingo	EnergyLogic & Self	Modifies requirements for changes in space conditioning and changes in occupancy or use; creates an alternative that allows compliance via the additions requirements; deletes performance compliance option from alterations and change of occupancy sections.	**NR**	
RE221	Shaunna Mozingo	Self	Requires spaces undergoing change in occupancy or space converted to dwelling unit from another use or occupancy to comply with R501.1.1 requirements for additions, alterations, or repairs.	**NR**	
RE222	Shaunna Mozingo	CO ICC	Revises IECC solar-ready appendix to be consistent with IRC appendix changes; adds details to exception that applies to shaded roofs; adds requirement for capped roof penetration sleeve.	**NR**	
RE223	Eric Makela & Lauren Urbanek	NBI & NRDC	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.	**AS**	
RE224 Part I	Theresa Weston	DuPont	Adds new Stretch Energy Code appendix that requires compliance with ASHRAE/IES Standard 90.2.	**Prefer RE223; NR**	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.

EECC Summary of ICC RE (Residential) Code Change Proposals (IECC and IRC) & EECC Recommended Actions					
RE224 Part II	Theresa Weston	DuPont	Adds new Stretch Energy Code appendix that requires compliance with ASHRAE/IES Standard 90.2.	**Prefer RE223; NR**	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.
RE225	Don Sivigny	MN/MN Bldg Officials	Creates new exception from hot water boiler temperature setback requirement for boiler systems used for domestic water heating.	**NR**	
RE226	Marilyn Williams	NEMA	Adds lighting efficacy requirements to section R404.1; increases efficacy requirements to 65 lumens/watt for lamps in permanently installed luminaires and 45 lumens/watt for other luminaires; revises final inspection provisions to include efficacy of luminaires and lamps rather than the number of high-efficacy lamps and fixtures.	**AM**	This proposal should also update or eliminate the requirements found in the definition of *high-efficacy lamps* .