International Energy Conservation Code
Consensus Committee-Residential

Draft Meeting Agenda (2/24 posting)

Webex Meeting Link

March 3, 2022
2:00 PM EST to 5 PM EST (3 hours)

Committee Chair: JC Hudgison, CBO, Assoc. AIA
Committee Vice Chair: Bridget Herring & Robin Yochum, LEED Green Associate

1. Call to order.

2. Meeting Conduct.
   a. Identification of Representation/Conflict of Interest
   b. ICC Council Policy 7 Committees: Section 5.1.10 Representation of Interests
   c. ICC Code of Ethics: ICC advocates commitment to a standard of professional behavior that exemplifies the highest ideals and principles of ethical conduct which include integrity, honesty, and fairness. As part of this commitment it is expected that participants shall act with courtesy, competence and respect for others.

3. Roll Call.

4. Approve Agenda

5. Approval of Minutes

6. Administrative issues-staff

7. Action Items
   a. Code Change Proposals

CEPI-12-21 Part II (Biomass definition)	(Elec. Pwr/Light as modified 10-2)
REPI-112 21 Part I (Light Cntrl Large Home)	(Elec. Pwr/Light as modified)
REPI-112 21 Part II (Light Cntrl Large Home)	(Elec. Pwr/Light as modified)
REPI-102-21 Part I (Lighting Efficacy)	(Elec. Pwr/Light approve 11-0-1)
REPI-102-21 Part II (Lighting Efficacy)	(Elec. Pwr/Light approve 11-0-1)
REPI-100-21 (High Efficacy lighting)	(Elec. Pwr/Light deny 11-0-1)
REPI-103-21 (High Efficacy Light sources)	(Elec. Pwr/Light deny 11-0-1)
REPI-24-21 (Certificate)	(Econ/Admin deny 6-2)
REPI-69-21 (Multifamily alignment)	(Econ/Admin approve 6-0)
REPI-118-21 (Performance Path Backstop)	(Econ/Admin as modified 13-3)
REPI-129-21 (ERI on-site renew backstop)	(Econ/Modeling approve 11-7)

REPI-128-21 (ERI envelope backstop)	(Econ/Modeling deny 11-7)
REPI-13-21 (Radiant Barrier)	(Envelope as modified 9-5)
REPI-42-21 (Radiant Barrier)	(Envelope approve 11-5)
REPI-32-21 (Low Slope Roof R U Table)	(Envelope deny 15-1)
REPI-67-21 (Air Barrier Boxes)	(Envelope deny 15-1)
REPI-146-21 (Roof Replacement)	(Existing Bldg deny unanimous)

8. Subcommittee Reports
    Subcommittee guidance
    a. Economics, Modeling, and Whole-Building Metrics
        1. Cost Effectiveness

9. Other business.

10. Upcoming meetings. March 17 at 2 PM EST

11. Adjourn.

FOR FURTHER IECC Residential INFORMATION BE SURE TO VISIT THE ICC WEBSITE:
IECC Residential Website

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Kristopher Stenger, AIA, CBO
Director of Energy Programs
International Code Council
kstenger@iccsafe.org

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	CEPI-012-21 Part II Biomass definition
CDP ID #	249
Code	IECC RE
Code Section(s)	R202 New Section n
Location	base
Proponent	Diana Burk diana@newbuildings.org
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	Follow approval from commercial committee. Modification to remove comma between biofuel and feedstock
Vote	As modified 10-2
Recommendation Date	2.14.22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-112-21 Part I Lighting control system large home
CDP ID #	487
Code	IECC RE
Code Section(s)	R404.4 New Section y
Location	base
Proponent	Michael Jouaneh mjouaneh@lutron.com
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	
Vote	As modified
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-112-21 Part II Lighting control system large home
CDP ID #	581
Code	IRC
Code Section(s)	N1104.4 New Section y
Location	base
Proponent	Michael Jouaneh mjouaneh@lutron.com
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	
Vote	As modified
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

Topic: (for internal use)

Lighting control system for large homes

Summary Purpose/Reason/Background (for internal use)

Require large homes to install lighting control system.

ICC Code or Standard: (list the code the change applies to, ex. IECC, IRC, IEBC)

IECC

Affected Code Section: (list code sections to be revised or added)

R404.4

Proposed Change: (paste in code text, underline new text, ~~strikethrough deleted text~~. Use one of the following at the beginning of each proposed section of code text as appropriate)

1. Add new definition as follows:
2. Revise as follows:
3. Add new text as follows:

Add new text as follows:

Dwelling units with greater than 5000 ft^2 (460 m^2) of conditioned floor area shall have a lighting control system that has the capability to turn off all permanently installed interior luminaires from a control located at an exit door or have a lighting control system that has the capability to turn off all permanently installed interior lighting from remote locations.

Exceptions:
1. Up to 5% of the total lighting power may remain uncontrolled.
2. Spaces where lighting is controlled by a count-down timer or *occupant sensor control*.

Reason: (provide substantiation reason statements for the proposal)

This proposal is similar to what in ASHRAE 90.2. The intent to require lighting in large homes to have a control system or smart light fixtures such that the lighting can be shutoff from the exit or remote locations (e.g., using a phone app). This control strategy will save energy by allowing occupants to shutoff the lighting as they leave (or while they are away) so that unneeded lighting is not left on when no one is home. Note that the intent is for lighting to have the capability to be shutoff, not mandate lighting be shutoff.

Bibliography: (cite sources, studies, reports and supporting information)

ASHRAE 90.2 section 7.5.3.

https://www.bpa.gov/EE/Technology/EE-emerging-technologies/Projects-Reports-Archives/Documents/FutureResLightingPaper%20FINAL%20DRAFT%20docx%20-%202018-08-15.pdf [11% lighting savings from energy management system, cost is $150 at high end. See page 37]

The median size of a completed single-family house was 2,261 square feet.
https://www.census.gov/construction/chars/highlights.html

CEE_LightingMarketCharacterization.pdf (cee1.org)

Cost Impact: (select one of the following statements. Where desired, add supporting information)

1. The code change proposal will not increase or decrease the cost of construction
2. The code change proposal will decrease the cost of construction
3. The code change proposal will increase the cost of construction

The code change proposal will increase the cost of construction (but many of these homes will install a lighting control system or smart light fixtures anyway so may not be an increase in real world application). Cost effective based on ASRHAE 90.1 scalar ratio method. See separate cost effectiveness analysis file.

Assumptions

1	Dimmers installed in living spaces		
2	occupancy sensor in non-living spaces		
3	Occ sensor cost	**$28.10**	CEE report
4	Dimmer cost	**$21.99**	CEE report
5	Using LED lighting only		
6	LED wattage/lamp	**15**	Ave. from all rooms in CEE report
7	Installation costs same for switch vs. dimmer or occ (Using CFL/LED dimmers are used)		
8	Toggle light switch cost	$7	https://www.thumbtack.com/p/switch-and-outlet-installation-cost
9	No maintance costs or salvage value		
10	energy cost per kwh	0.13	
11	Test home is 3 bed, 2 bathroom home		
12	percent of luminaires controlled	50%	
13	Cost of control-based HEMS	$150	https://www.bpa.gov/EE/Technology/EE-emerging-technologies/Projects-Reports-Archives/Documents/FutureResLightingPaper%20FINAL%20DRAFT%20docx%20-%202018-08-15.pdf
14	Cost of smart bulbs	$15	https://www.cnet.com/home/energy-and-utilities/best-led-smart-bulbs/
15	Cost of average LED bulb	$5	https://learn.eartheasy.com/guides/led-light-bulbs-comparison-charts/
16	Savings from connected lighting controls	11%	https://www.bpa.gov/EE/Technology/EE-emerging-technologies/Projects-Reports-Archives/Documents/FutureResLightingPaper%20FINAL%20DRAFT%20docx%20-%202018-08-15.pdf

	Occ or Dimmer or Switch	Assumed num. of rooms for test case home	Ave. number of lamps per control (CEE Report)	Number of lamps (CEE report)	Ave. LED wattage (CEE report)	Wattage per room (calc.)	Wattage for all rooms (calc.)	Ave. hours ON per day (CEE report)	Energy Savings for Connected Lighting	Annual Energy Cost Savings for connected lighting	Incremental first cost connected lighting
Bathroom	O	4	4.6	8.9	14	124.6	498.4	1.6	11.0%	$4.16	
Bedroom	D	5	3	8.2	15	123	615	1.6	11.0%	$5.14	
Closet	O	6	1.4	1.4	16	22.4	134.4	1.4	11.0%	$0.98	
Dining room	D	1	3.4	3.4	12	40.8	40.8	1.9	11.0%	$0.40	
Garage	O	1	2.9	2.9	18	52.2	52.2	1.5	11.0%	$0.41	
Hall	S	2	4.5	4.5	14	63	126	1.5	11.0%	$0.99	
Kitchen	D	1	6.4	6.4	15	96	96	2.3	11.0%	$1.15	
Laudry room	O	1	1.1	1.1	16	17.6	17.6	1.5	11.0%	$0.14	
Utility room	O	1	1.1	1.1	16	17.6	17.6	1.5	11.0%	$0.14	
Living room	S	1	6.5	6.5	15	97.5	97.5	2	11.0%	$1.02	
Family room	D	1	6.5	6.5	15	97.5	97.5	2	11.0%	$1.02	
Office	S	1	1.3	1.3	16	20.8	20.8	1.8	11.0%	$0.20	
Total		**25**	**42.7**	**52.2**		**773**	**1813.8**	**1.716667**		$15.74	$150.00

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-102-21 Part I Lighting efficacy
CDP ID #	460
Code	IECC RE
Code Section(s)	R404.1 New Section n
Location	base
Proponent	Michael Jouaneh mjouaneh@lutron.com
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	
Vote	Approve 11-0-1
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-102-21 Part II Lighting efficacy
CDP ID #	579
Code	IRC
Code Section(s)	N1104.1 New Section n
Location	base
Proponent	Michael Jouaneh mjouaneh@lutron.com
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	
Vote	Approve 11-0-1
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-100-21 High Efficacy light definition and equipment
CDP ID #	314
Code	IECC RE
Code Section(s)	R404.1 New Section n
Location	base
Proponent	Steven Rosenstock srosenstock@eei.org
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	Disapprove In favor of language in REPI-102 Part I
Vote	Disapproval 11-0-1
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-103-21 Lighting high efficacy light sources
CDP ID #	140
Code	IECC RE
Code Section(s)	R404.1 New Section n
Location	base
Proponent	Megan Hayes Megan.Hayes@nema.org
Proposal Status	SC rev
Subcommittee	RE Elec, Light
Subcommittee Notes	
Recommendation	Disapprove In favor of language in REPI-102 Part I
Vote	Disapprove 11-0-1
Recommendation Date	2/14/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code

Code Change Proposal Tracking Sheet

Proposal #	REPI-024-21 Certificate
CDP ID #	502
Code	IECC RE
Code Section(s)	R401.3 New Section n
Location	base
Proponent	Joe Cain JoeCainPE@gmail.com
Proposal Status	SC rev
Subcommittee	RE Admin
Subcommittee Notes	It's important on this certificate, if the ERI was the compliance path chosen, that the information be noted so owners of the building are aware of how the building was approved and how modifications should be accounted for in the future.
Recommendation	Disapproval
Vote	6-0
Recommendation Date	4/15/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-069-21 Multi-family alignment
CDP ID #	290
Code	IECC RE
Code Section(s)	R403.1 (New), R403.1, R403.6.1, R403.8, R404.2 (New), R404.2, R404.3 (New), R404.3, R404.4 (New) New Section y
Location	base
Proponent	Kim Cheslak kim@newbuildings.org
Proposal Status	SC rev
Subcommittee	RE Admin
Subcommittee Notes	
Recommendation	
Vote	Approve 6-0
Recommendation Date	2/15/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	**REPI-118-21 Performance Path backstop**
CDP ID #	315
Code	IECC RE
Code Section(s)	R405.2 New Section n
Location	base
Proponent	Amy Boyce amy.boyce@imt.org
Proposal Status	SC rev
Subcommittee	RE Econ, Model, Metric
Subcommittee Notes	The only modification is to adjust the equals sign to a less than or equals sign to align with REPI-004-21 previously approved by the full committee.
Recommendation	Motion to approve as modified to add a less that or equals sign by Gayathri Vijaykumar, 2nd by Ben Edwards
Vote	**13-3 for approve as modified (3 not present)**
Recommendation Date	2-9-22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____ Motion to approve as modified
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code

Code Change Proposal Tracking Sheet

Proposal #	REPI-129-21 ERI On-site renewable backstop
CDP ID #	313
Code	IECC RE
Code Section(s)	R406.3, R406.3.1, R406.3.2 New Section n
Location	base
Proponent	William Fay bill@energyefficientcodes.org
Proposal Status	SC rev
Subcommittee	RE Econ, Model, Metric
Subcommittee Notes	Considered alongside REPI-128-21 – competing backstop approaches for R406. Straw poll support from 10 (higher support than 128)
Recommendation	Approve
Vote	Approve 11-7
Recommendation Date	2/9/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-128-21 ERI envelope backstop
CDP ID #	490
Code	IECC RE
Code Section(s)	R406.3, R406.3.1, R406.3.2 New Section n
Location	base
Proponent	Joe Cain JoeCainPE@gmail.com
Proposal Status	SC rev
Subcommittee	RE Econ, Model, Metric
Subcommittee Notes	Considered alongside REPI-129-21 – competing backstop approaches for R406. Straw poll – support from 7 members
Recommendation	Motion to disapprove Jay Crandell, 2nd Jerry Phelan consistent with sub-committee action on REPI-129-21 and removal of on-site renewable backstop is not appropriate.
Vote	**Disapproved 11-7 (1 not present)**
Recommendation Date	2/9/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-013-21 Radiant Barrier
CDP ID #	103
Code	IECC RE
Code Section(s)	R303.1.1.2 New Section y
Location	base
Proponent	Amanda Hickman amanda@thehickmangroup.com
Proposal Status	SC rev
Subcommittee	RE Envelope
Subcommittee Notes	Similar proposal to 42 and 141. Similar points made clarifying this is not insulation, since the proponent claims would reduce heat transfer; Suggestion made for a more logical section number; proponent amenable.
Recommendation	Motion to approve with intent to modify (with section number revised to be R303.2.2 and the corresponding N section number) G. Johnson, Drumheller seconded Reason: radiant barriers help reduce heat transfer and installation standard is needed
Vote	9 yes 5 no
Recommendation Date	2/16/22
Next Step	To Subcommittee_X_____ To Advisory Group_____ To Consensus Committee_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-042-21 Radiant Barrier
CDP ID #	105
Code	IECC RE
Code Section(s)	R402.3 (N1102.3) (New), ASTM Chapter 06 (New) New Section y
Location	base
Proponent	Wesley Hall wes.hall@reflectixinc.com
Proposal Status	SC rev
Subcommittee	RE Envelope
Subcommittee Notes	Sets requirements for reflective insulation and emittance; overdue good information; clarification that radiant barriers do not have insulation value they have reflective value; no insulation claims were made by proponent; guidance consistent with DOE; concerns about product integrity under environmental conditions; opinion that a definition was needed.
Recommendation	Motion to approve as submitted by Craig Drumheller and Greg Johnson seconded Reason: provides useful definition on reflective insulation and emittance
Vote	11 yes 5 no
Recommendation Date	2/16/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee: _____X_____
Consensus Committee	
Committee Response	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-032-21 Low Slope Roof in R U Tables
CDP ID #	393
Code	IECC RE
Code Section(s)	R402.1.2 table, TABLE R402.1.3, R402.2.1, R402.2.2 New Section n
Location	base
Proponent	Darren Meyers dmeyers@ieccode.com
Proposal Status	SC rev
Subcommittee	RE Envelope
Subcommittee Notes	Unintended erratum in table to be corrected. Lessening insulation higher U factors/lower R-values for some roofs sourced from commercial code; point made that the typical configuration of residential buildings is different from large commercial buildings.
Recommendation	Motion to approve with intent to modify (modification adapted based on comments), Amy Schmitt; Charlie Allen seconded (1-14 motion fails) Motion to disapprove by Chris Mathis; Alison Lindberg seconded. Reason: residential and commercial roof provisions are different for a good reason; roofs have greater effect on overall envelope performance on residential buildings. no reason to relax residential to match commercial provision.
Vote	15 yes 1 no motion carries
Recommendation Date	2/16/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____XX_____
Consensus Committee	
Committee Response	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-067-21 air barrier boxes
CDP ID #	20
Code	IECC RE
Code Section(s)	R402.4.6 New Section n
Location	base
Proponent	Robert DeVries rdevries@nuwool.com
Proposal Status	SC rev
Subcommittee	RE Envelope
Subcommittee Notes	
Recommendation	
Vote	Disapproval 15-1
Recommendation Date	2/16/22
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee_____X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	

International Energy Conservation Code
Code Change Proposal Tracking Sheet

Proposal #	REPI-146-21 Roof replacement
CDP ID #	356
Code	IECC RE
Code Section(s)	R503.1 New Section n
Location	base
Proponent	Darren Meyers dmeyers@ieccode.com
Proposal Status	SC rev
Subcommittee	RE Existing Building
Subcommittee Notes	Reason; the accompany code change for commercial was disapproved and the proponent asked the sub-committee to disapproved
Recommendation	Paul Demers – Made the motion to disapprove Jim Zengal - Second
Vote	Unanimous, motion passes
Recommendation Date	
Next Step	To Subcommittee_____ To Advisory Group_____ To Consensus Committee___X_____
Consensus Committee	
Committee Response	
Vote	Affirmative_____ Negative_____ Table_____ To Subcommittee_____
Date	