International Energy Conservation Code

Economics, Modeling, and Whole-Building Metrics Subcommittee

Meeting Agenda

March 9, 2022
11:00 AM EST to 1:00 PM EST (2 hours)
Webex Link

Committee Chair: Ian Finlayson
Committee Vice Chair: Brian Shanks
Secretary: Alamelu Brooks

1. Call to order.

2. Meeting Conduct. Staff
   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. Vice Chair

4. Review of Agenda. Chair

5. Approval of Meeting Minutes – February 9th and February 23rd meetings

6. Action Items.

   A 1. Update on cost-effectiveness screening tools by PNNL and CA representatives; Jamie Howland and Rob Salcido and new ICC memorandum on discount rates link

   B 1. Hearing and vote on code proposals assigned to this sub-committee from code proposal proponents as follows:

March 9th meeting proposals

Panel 1: Remove the "5 percent less" Additional Efficiency reqt for R406 path			
REPI-21-21	Vladimir Kochkin	R401	Remove additional efficiency reqt for ERI
REPI-22-21	Amanda Hickman	R401 R406	Remove additional efficiency reqt for ERI, Remove the Env Backstop (same as REPI-126)
Panel 2: Ventilation Rate in R406 (Discuss all 4 proposals prior to voting)			
REPI-131-21	Vladimir Kochkin	R406	edit vent rate
REPI-132-21	Mike Moore	R406	edit vent rate (same as REPI-23 & 126)
REPI-23-21	Ryan Meres	R406	Remove additional efficiency reqt for ERI (same as REPI-21), edit Env Backstop & edit vent rate (same as REPI-132)
REPI-124-21	Mike Moore	R405	Assigned to HVAC, but based on discussion here, provide recommendation
Panel 3: Determining the maximum ERI in R406 (Discuss all 3 proposals for future voting)			
REPI-135-21	Seth Wiley	R406	Update R406 max ERI values based on Appendix RC values from 2021 IECC
REPI-126-21	Robby Schwarz	R406	Remove the Env Backstop & edit vent rate (same as REPI-132 & 23); split the max ERI table similar to Appendix RC
REPI-127-21	Gayathri Vijayakumar	R406	Update R406 max ERI values based on R405 Standard Reference Design

7. Discussion/proposal for upcoming March 23rd meeting Agenda and ordering of proposals

R408 and R406 together

8. Other business.

9. Adjourn.

FOR FURTHER INFORMATION BE SURE TO VISIT THE ICC WEBSITE:
ICC Energy webpage
Code Change Monograph

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:
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REPI-21-21

IECC®: R401.2.5

Proponents: Vladimir Kochkin, representing NAHB (vkochkin@nahb.org)

2021 International Energy Conservation Code

Revise as follows:

R401.2.5 (N1101.13.5) Additional energy efficiency.

This section establishes additional requirements applicable to all compliance approaches to achieve additional energy efficiency.

1. For buildings complying with Section R401.2.1, one of the additional efficiency package options shall be installed according to Section R408.2.
2. For buildings complying under with Section R401.2.2, the building shall meet one of the following:
   2.1 One of the additional efficiency package Options in Section R408.2 shall be installed without including such measures in the proposed design under Section R405; or
   2.2 The proposed design of the building under Section R405.3 shall have an annual energy cost that is less than or equal to 95 percent of the annual energy cost of the standard reference design.
3. ~~For buildings complying with the Energy Rating Index alternative Section R401.2.3, the Energy Rating Index value shall be at least 5 percent less than the Energy Rating Index target specified in Table R406.5.~~

The option selected for compliance shall be identified in the certificate required by Section R401.3.

TABLE R406.2
REQUIREMENTS FOR ENERGY RATING INDEX

SECTION[a]	TITLE
General	
~~R401.2.5~~	~~Additional efficiency packages~~
R401.3	Certificate

Reason Statement:

This proposal removes the unjustified penalty on the ERI compliance path. The 2018 ERI threshold values in Table R406.5 were developed based on energy modeling that included above-federal minimum equipment efficiencies. Therefore, the ERI path complies with the additional requirements of Sections R401.2.5 and R408 by default via meeting the minimum thresholds. The 2021 IECC further reduced the ERI targets through a separate proposal. Approval of both proposals was due to lack of coordination during the 2021 IECC development process. This change will not impact the DOE determination because DOE analysis does not include the ERI compliance path.

The 5% penalty in combination with the 2021 IECC revised ERI thresholds results in ERI values close to the zero-energy ready levels listed in Appendix RC ZERO ENERGY RESIDENTIAL BUILDING PROVISIONS in the IECC. This level of performance has not been justified for minimum code provisions. According to RESNET, less than 7% of all rated dwelling units reached an ERI/HERS below 50 and only 1% of rated dwelling received an ERI/HERS below 45 in year 2020. Less than 25 percent of dwelling units constructed in the US obtain an ERI/HERS rating.

Cost Impact:

The code change proposal will decrease the cost of construction.

This proposal removes an unjustified penalty on the ERI path.

REPI-131-21 – MOD1

IECC®: R406.4

Proponents:
Vladimir Kochkin, NAHB, representing NAHB (vkochkin@nahb.org)

2021 International Energy Conservation Code

Revise as follows:
R406.4 (N1106.4) Energy Rating Index.
The Energy Rating Index (ERI) shall be determined in accordance with RESNET/ICC 301 ~~except the air exchange rate in RESNET/ICC 301 shall be in accordance with items (1) and (2) as follows:~~

1. ~~Air exchange rate for the Energy Rating Reference Home in RESNET/ICC 301 Table 4.2.2(1) shall be replaced by the air exchange rate for the Standard Reference Design as defined in Table R405.4.2(1) of this code.~~
2. ~~Air exchange rate for the Rated House in RESNET/ICC 301 Table 4.2.2(1) and Table 4.3.1(1) shall be replaced by the air exchange rate for the Proposed Design as defined in Table R405.4.2(1) of this code.~~

~~Buildings designed in accordance with this code shall not be required to meet the RESNET/ICC 301 air exchange rates or mechanical ventilation rates used for the purpose of determining the ERI.~~

The mechanical ventilation rates used for the purpose of determining the ERI shall not be construed to establish minimum ventilation requirements for compliance with this code.

~~for buildings covered by the International Residential Code , the ERI reference design ventilation rate shall be in accordance with Equation 4-2.~~
~~Ventilation rate, CFM = (0.01 × total square foot area of house) + [7.5 × (number of bedrooms + 1)] (Equation 4-2)~~

Reason Statement:
The purpose of this proposal is to fix an inadvertent error that was introduced in the 2018 IECC during an effort to coordinate the ERI calculation procedure with the residential ventilation rates. The change in 2018 IECC resulted in a significant increase in the ERI scores. That was never the intent of the change as was confirmed by the original proponent, and it was the result of using terms that were not fully coordinated with the specific terms in Standard 301. Proposals and public comments attempted to fix this issue in 2021 IECC, but in the end none of them were approved. The proposed amendment resolves the issues in accordance with the original intent by requiring the calculation of air exchange rate in Standard 301 be aligned with IECC Table R405.4.2(1) used in the performance path calculations. This amendment will coordinate the ERI procedure with the residential mechanical code provisions on this subject. The proposed amendment also makes it clear that IECC buildings rated using the ERI are not required to meet the Standard 301 air exchange and ventilation rates -- this is added because Standard 301 uses the terms "required dwelling unit total exchange rate" and "total required ventilation rate." It's noted that the coordination between Standard 301 and this code should be done such that there is a single ERI index for buildings complying with the IECC.

Cost Impact:
The code change proposal will neither increase nor decrease the cost of construction.

This proposal fixes an error. There is no impact on construction practices. The change will allow designers to calculate correct ERI scores.