

IECC-C Modeling Subcommittee Meeting – Notes

Wednesday January 4, 2023 –2:00-4:00 PM EDT

Attendance:

#	Voting Members, Effective 11/19/22	Present	Guests	Present
1	Eades, Greg - EPA (Chair)	X	Laura Petrillo-Groh, AHRI	X
2	Eley, Charles - Architecture 2030 (VC)	X	Kim Cheslak (Alt), NBI	X
3	Anderson, Courtney - City and Co. Denver	X	Greg Johnson, National Multifamily Housing Council	X
4	Bomer, Bryan - Montgomery Co., MD	X	Martha VanGeem, Alliance for Concrete Codes and Standards	X
5	Burk, Diana - NBI	X	Steve Rosenstock, Edison Electric Institute	X
6	Dalzell, John - Boston Planning and Dev.		Doug Powell, University of Texas	X
7	Edwards, Ben - NORESKO	X	Andrea Papageorge, Southern Company Gas	X
8	Giunta, Frank – Trane Technologies		Aaron Phillips, Asphalt Roofing Assn.	X
9	Goldstein, David - NRDC		Michael Tillou, PNNL	X
10	Gowri, Krishnan - Intertek Inc		Shannon Corcoran, AGA	X
11	Grew, Greg – Architect/Code Consultant		Alex Smith, NAHB	X
12	Harris, Stephen - University of Texas	X	Eric Lacey, RECA	X
13	Hernandez, Alfonso - Gensler	X	Hany, HGS Ltd.	X
14	Hoffman, Emily - NYC	X	Emily Lorenz, IIBEC	X
15	Jakobs, Diane - Rheem		Amanda Hickman, The Hickman Group	X
16	Koban, Mary - AHRI	X	Jay Crandell	X
17	Lessans, Mark - Johnson Controls		Jim Earley, Edison Electric Institute	X
18	McCullough, Anna - Group 14 Eng.		Kyle Bergeron, AHRI	X
19	Mock, Don - Howard County	X	Theresa Weston, ABBA	X
20	Panigrahi, Amiya - TTUHSC	X	Jack Bailey, IALD	X
21	Port, Darren - NEEP	X	Bryan Ahee, Bradford White	X

22	Rosenberg, Mike – PNNL (Consultant)	X	Ty Jennings, CNGC	X
23	Waite, Mike - ACEEE	X	Vladimir Kochkin, NAHB	X
			Matt, Brown, APA	X

Chair –Called meeting to order at 2:05pm

Approval of Meeting notes from December 9

- Motion to Approve: 1st Don Mock, 2nd Charles Eley – no discussion

Two tabled motions – CED1-190-22, CED1-189-22

CED1-190 – C406 Credit Carryover Allowance – Mike Tillou (Reid Hart)

- Summary of Proposal by Mike Tillou, PNNL, presenting in lieu of Reid Hart: Addresses the concern that AHRI expressed with their proposal discussed at previous meeting – with potential that the cost-effective packages expressed concern. The public comment from DOE was to offer a solution to allow a certain number of load management credits to meet the energy efficiency credits, eliminate the need to have to use the improved equipment efficiency credits. The current draft includes carryover for CED1-189. Need to be prepared to align the credit requirements for all moving parts of other proposals.
- Discussion
 - Laura Petrillo-Groh, AHRI: AHRI is satisfied with this approach. The initial concern for preempted equipment was not for cost effectiveness but for the levels that were approved. Minimum credits in the public comment draft doesn't allow for minimum equipment for some occupancy types. This proposal adds the offset for load management credits to offer flexibility.
 - Mike Waite, ACEEE: 8-9 vote to see modifications on the CED1-190 to reevaluate it. Originally voted against it, made a lot of progress in comparing energy cost to site energy credits. In the end, the packages used to set these allowances are one person's opinion (proponent). Looking at the available credits, there are more measures that can be done in these buildings without HVAC equipment efficiency. The allowances are not necessary when you look into it. But, agree that there is benefit to allowing flexibility for unique situations. My suggestion is for this subcommittee to combine these two proposals instead of having it hashed out at the full committee.
 - Greg Johnson, Nat'l Multifamily Housing Council: issue with opportunity to use the 'worst available equipment' it can also be looked at the 'most affordable equipment'
 - Eric Lacey, Responsible Energy Codes Alliance: this seems like a weird way of solving the issue of preemption – going to renewable and load management credits. This seems like a game of mousetrap. If there's concern with certain cells creating preemption issues, I'd be interested in seeing those specific areas of concern. Energy efficiency should remain energy efficiency, but renewable and load management should not be used to offset efficiency.

- Kim Cheslak, NBI: (filling in for Diana Burke) agree with Mike, it's difficult to parse with CED1-189. Subcommittee needs to get these together with one proposal. Take specific issue that the federal minimum equipment is most affordable, sure maybe with only first cost, but not with operating cost. If we are going to spend time on federal preemption, I'd like to get an expert in federal preemption and get them to come and discuss. I don't think we should speculate on this. We need to look at this comprehensively with CED1-189
- Laura Petrillo-Groh, AHRI:
 - Responding to Eric: This proposal shows exactly where the problem is. In the new table, there are series of levels, it shows how many credits are needed to use the federal minimum equipment. The work done at 90.1 had a very specific EPCA pathway. Every building type in every climate zone that does not have a "5" in the cell, is the issue.
 - Responding to Kim: we discussed CED1-189 and CED1-190, but instead there was not comfort doing that at the working group, because CED1-190 provides multiple pathways for compliance. DOE does detail cost effectiveness on certain prototypes – the charge of DOE is to move to the most cost effective equipment. We had a lawyer attend the committee and making sure that this new proposal won't create a legal concern.
- Vladimir Kochkin, NAHB: the analysis DOE does to determine the minimum efficiency levels is detailed and looks at the most cost effectiveness. Violating preemption is a significant issue. The work group looked at the levels that exceed federal preemption. Reid did extensive analysis on various packages. This is a good middle ground.
- Kim Cheslak, NBI:
 - Responding to Laura: My understanding is this was an AHRI lawyer and was thinking having a lawyer that is neutral on the analysis. Laura said that every cell that is "5" on this table could not use federal minimum efficiency equipment. This was not my understanding. AHRI has a reasonable cost analysis that is not the legal requirement for federal preemption – and it's cheaper to use renewable and load management to achieve that effectiveness analysis.
- Mike Tillou, PNNL – Reid did the analysis and his goal was to strike a good balance to keep the cost effectiveness. He would say that you could do this without using increased equipment efficiency, but you're very limited in the credits that you can pursue – so cost effectiveness becomes a consideration at that point and trying not to create packages that aren't cost effective.
- Charles Eley, Architecture 2030: speaking in favor of revised proposal. Fundamental prescriptive requirements in 402, 403, 404, 405 are not eroded with these trade-offs.
- Laura Petrillo-Groh, AHRI: The packages that were developed for minimum efficiency equipment were not cost effective. We looked here at what credits are available with federal minimum equipment. Reid created a spreadsheet of the available measures for the different building occupancy categories – many of these measures are expense and not cost effective.

Vote: 7 as modified – 1 disapprove – 2 modify further – 1 abstain (motion passes)

CED1-189 – C406 Energy Credits, Mike Waite

- Summary of proposal by Mike Waite, ACEEE: CED1-190 used a certain cost effectiveness criteria that was in a higher range. We voted to set these credit levels back to where they were. Some of these building types, particularly R-1, the changes were based on revisiting the credit impact of the packages as well as cost effectiveness. Suggest amending CED1-190 to reflect these changes.

Discussion

- Vladimir Kochkin, NAHB – PNNL did their initial analysis – are you saying the analysis they did was incorrect?
 - Mike Waite – no PNNL changed the cost effectiveness assumption on the most extreme discount rate. The changes for storage and R-1, the changes were not just from the discount rate, but the packages changed due to the changes in CEPI-193.
- Laura – the entirety of CEPI-193 analysis was done under different numbers.
- Mike Waite – discussion getting muddled. This proposal is to align the highlighted yellow with the final package of energy efficiency credit levels that were used for all of the rest of the energy credits appendix. This doesn't have to do with discount rates or cost effectiveness criteria.
- Kim Cheslak, NBI – plus 1 what Mike said – we're aligning the methodology of what is already approved

Vote: 10 As modified, 1 Disapprove, 1 abstain (motion passes)

New business -

CED1-191 - Add. Energy Credits for Non-Heat Pump Bldgs, Mike Waite

Summary of proposal by Mike Waite, ACEEE – proposing that the energy efficiency credits recognize the difference in site energy for heat pump buildings vs non heat pump buildings. There's a lot of language changes but the substantive change – fossil fuel buildings or electric resistance, you need to get 50% more credits than heat pump buildings. Other changes to text that are not as substantive.

Discussion:

- Diana Burke, NBI: co-proponent, there are many individuals that work for other organizations, - most from local/state governments believe we need to incentivize heat pumps. If you don't use heat pumps, then you need to do more on energy credits.
- Greg Johnson, Nat'l Multifamily Housing Council: confused about exception #2 – what do heat pumps have to do with unconditioned garages
- Laura Petrillo-Groh, AHRI: reason statement does not provide any math on why 50% more was selected. The cost justification does not follow the LCCC developed by this committee.
- Steve Rosenstock, Edison Electric Institute: Exception 1.2 – buildings without heat pumps – what if the building is using a very high COP system that is not a heat pump, because it's not a heat pump it wouldn't comply, but they'd be using a high efficiency electric system. There are so many technology choices that aren't reflected.

- Martha Van Geem, self: when Reid presents, each quarter of a point represents energy savings, but this isn't shown that way. Heat pumps don't save a lot of energy in really cold climates in smaller buildings, you have to have supplemental energy supply to backup. I think you need to be specific about the climate zone and it doesn't show how much energy is saved with each point.
- Vladimir Kochkin, NAHB: when PNNL does the package analysis, they analyze each of the packages to maximize the points. To add 50% more without any analysis, I would not support this for a vote at the main committee.
- Mike Waite, ACEEE:
 - Responding to Martha's case – this specifically allows the flexibility for supplemental heating.
 - Commenting to not following cost effectiveness criteria: if your design team chooses not to use electric heat pumps, then you can do more. You can follow the cost-effective path or you can choose not to by using fossil fuels. This is a way to recognize the difference in energy usage by fuel selection.
- Greg Johnson, National Multifamily Housing Council:
 - Exception 3 – factory buildings have some portion devoted to conference rooms, assembly spaces – when you start talking about building categories without specifying the occupancy group, it gets confusing.
 - Exception #2 – what do heat pumps have to do with unconditioned garages
 - Exception 1 – many sentences are incomplete
 - Changing language – revise some of the words for clarity
- Diana Burke, NBI:
 - Working with quite a few jurisdictions that are requiring or incentivizing electrification – it is where country needs to be going to meet climate goals. Federal government is incentivizing heat pumps.

Vote: Approve 0, Disapproved 2, Revise 9, Abstain 1

- Anyone that has specific recommendations or interested in working on this proposal, please send to Mike Waite
- Goal is to have this proposal revised and back on the agenda for February 6th meeting

Many hands raised – people on the call that are not on the subcommittee do not understand the voting process.

Kris clarified Robert's rules of order is not required for subcommittee. Subcommittee members have been following the same procedure for over a year.

CED1-193 – Renewable and Load Management Requirements, Alex Smith

Summary of proposal by Alex Smith/Greg Johnson, National Multifamily Housing Council: Trying to understand the discrepancies between some of the R-occupancies and the R-1 occupancy. We'd like to see this passed or have the discrepancy explained.

Alex Smith: Some examples of the discrepancies. If you look at the R-2, R-4, I-1 and you see in the 60s, but in R-1 and you see in the 40s. But, I-2 is much lower in the 30s.

Vote: 2 Approve, 10 Disapprove, 1 Abstain

Mike Tillou explained how PNNL modeled different prototypes to determine different credit points for different occupancies.

Reason Statement: The proponent provided no clear justification for why renewable and load management credits should be lower for R-2, R-4, and I-1 occupancy types.

CED1-195 – Vertical Fenestration Efficiency Credits, Tom Culp

Summary of Proposal by Tom Culp, National Glass Association and Glazing Industry: under main prescriptive path, you're allowed to comply separately with SHGC and U-factor. Proposal adds in a footnote so that you can take credit for projection factors, as in the prescriptive path.

Discussion

- Greg Johnson: concerned about the "shall" in the footnote. Requirements shouldn't be in footnotes. Can you point to the prescriptive table?
- Tom Culp:
 - Responding to Greg Johnson: no, the values are different, you'd need a new table
- Eric Lacey, Responsible Energy Codes Alliance: concerns. We don't need to add all of the prescriptive exceptions to the points table. The additional efficiency options should be more restrictive, and not allow 20% more lenient SHGC. The prescriptive path gives requirements and allows flexibility, but C406 should be an improvement in efficiency.
- Tom Culp:
 - Responding to Eric: Preserving more daylight by allowing more sunlight into windows with overhangs

No vote - will continue discussion at next meeting.

Meeting Adjourned 4pm