

## **Residential Working Group - Energy Modeling, Prescriptive Path, and Renewables**

### **Meeting #3**

June 16, 2022

3 p.m. – 4 p.m.

#### **Introductions:**

1. CPD: Antonio Navarra, Mike Walton
2. CASR: Katrina Managan, Courtney Anderson, Tom Gleason
3. Attendees: Sean Denniston (NBI), Robby Schwarz (BuildTank/Noresco), (Thrive), Jonathan Fertig (Davis Partnership Architect), Shawn LeMons (Mitsubishi Electric Trane), Nathan Skdrla (Brookfield Residential), Christine Brinker (SWEEP)

#### **Review Updated Proposals:**

1. #31 ERI Path & #19 Compliance Path Options – combined into one proposal
  - a. Summary of Proposal: Energy Rating Index (ERI) alternative compliance pathway and additional energy efficiency options. Removed tropical climate zone and struck additional energy efficiency option #3 for energy rating index. Struck most of compliance pathway for R406, so that there's less confusion amongst builders, energy raters, code officials, and it's it will hopefully streamline this process in section R 406.5.
2. #67 IECC R404.4 - Minimum Renewable Energy System
  - a. Updates Made: removed offsite renewables and added option to get more energy efficiency credit from section R408 which gives mixed fuel projects a path. Brought over definitions from the IBC and Fire Code for emergency power and standby power systems. We have explicitly stated in the definition of all electric property that doesn't include any of this, the combustion equipment or any piping for combustion equipment that is used for emergency power systems or standby power systems. Moved away from off-site renewable requirement and simplified exemptions. Small dwelling units/ADUs/tiny houses – the City of Denver uses 1000 square feet as the threshold used for zoning regulations
  - b. Summary of Proposal: minimum requirement for about 20% of annual energy consumption for onsite renewables. Exceptions for all-electric buildings or buildings that achieve 17 energy efficiency credits from R408 table. Path for ERI exceptions. An all-electric building automatically complies.
3. #47 R408 Additional Efficiency Options
  - a. Updates Made: Added a credit option for Passive House but aren't sure what the credit value should be. We are allowing passive house levels of envelope to be used so buildings can use electric resistance and still get the credits for space heating electrification
  - b. Summary: New all-electric properties where no less than 75% of the space and water

heating loads are served by equipment with a rated COP greater than 1.0 shall achieve a total of 3 credits from Table R408.1. All other buildings shall achieve a total of 18 credits from Table R408.1. Credit calculations shall be as specified in relevant subsections of Section R408

**Summary of Topics Discussed:**

- a. ERI Path and Compliance Path Options
- b. R408 and Passive House Level of Insulation
- c. Renewables and Tiny Homes and ADUs

**Detailed Notes:**

#31 ERI Path & #19 Compliance Path Options

1. Katrina: does the ERI Path and Compliance Path Options proposal look good to everyone? Any additional edits needed or other feedback?
2. Shawn L: Robbie's a master!
  - No feedback from the rest of the working group
3. Christine: is this the main proposal for ERI or other proposals related to ERI?
  - Robby: Yes, this is the only one
4. Christine: follow-up question, is there anything in the ERI pathway here that could be considered that would favor electrification? Or is that being handled before someone picks the ERI pathway?
  - Katrina: the minimum renewable proposal applies to both buildings that follow the ERI path or buildings that follow the prescriptive path. This committee is reviewing three proposals. This proposal applies to both of the other two paths where all-electric is one of the ways to be exempt from doing renewables or efficiency.
5. Cost Considerations
  - Nathan: how does this proposal not have a cost impact on design or construction?
    - Robby: one compliance pathway isn't increasing the cost more than any other compliance pathway. One objective of the entire 2021 code development process is to create equity between all compliance pathways, so there shouldn't be a cost difference regardless of what compliance pathway you're using.
    - Nathan: there are going to be significant cost increases that are going to impact the buyers, that's why I bring it up every time.
    - Mike W: I would just want to echo what I think Chuck communicated to you and myself about costs for the credits. I think that breakdown would be valuable not only for this group, but certainly when we move into the committee, I think those questions are going to be coming.

#47 R408 Additional Efficiency Options

Passive House Level of Insulation

- Sean: Do we have a set a credit value that we think we can adjust the Passive house

level insulation?

- Jonathan: This came up from a comment I had made about adding a passive house level point system it at the time my specific comment was on the airtightness because there there's an actual number that's required which is .6. But I'm not sure what the credit value should be for achieving this – seems like Robby's wheelhouse
- Robby: in the Denver Green Code there's an allowance for utilize passive house standards, so I think it would be cleaner right now to keep it in the DGC. It's still going to be a significant stretch for most builders to achieve, so I think it's something to keep in mind for the next code cycle. Would recommend not adding a passive house level air tightness to this table
- Jonathan: I'm okay with it based on Robby's explanation
- Sean D: We could estimate a credit value for this and wouldn't be based on modeling.
- Shawn L: What's the outcome? What's the gain? Is it about giving extra credit for the passive house efforts? Someone not going to just go build a passive house because it gives them a little bit more in the Denver code, they're going to build past house because that's what they want. They have other motivations for that.
  - Sean D: I think your point is very valid about passive house is the type of thing that people do because it's passive house. It does add some flexibility to how those sorts of homes would comply with the code. I think it there is also a market transformation element to it because it would at least bring awareness. Maybe start the beginning of that market transformation when it comes to envelope performance, but those are the sorts of impacts that we're talking about. It's not increasing stringency it's only increasing flexibility, so there's really not a downside to it.

#### #67 IECC R404.4 - Minimum Renewable Energy System

##### Tiny Homes and ADUs

- Courtney: Rob Buchanan from Xcel couldn't make it but recommended a threshold of 600-750 square feet
  - Mike W: we based the 1000 square feet threshold on the last code cycle and the intent was to offer some relief for air changes per hour for ADUs. ADU sizes are regulated by the zoning not the size. The smallest ADU footprint that people can have is 650 square feet then it goes to 864 from there, and then 1000. Would be more comfortable with 1000 square feet for consistency with other regulations
  - Antonio: agree
- Shawn L: Is there a consideration on any other thresholds for plumbing, sewer, water parking, or any other kind of codified thresholds that relate to square footages that we need to consider in here?
  - Katrina/Mike W: just the air changes provision

##### Exception for Performance Path

- Mike W: there's no work around for performance? If someone doesn't want renewables and wants gas appliances and they want to do the performance path, is that off the table?
  - Sean: I don't think it should be. Sean added a performance path exception to the renewables proposal

Other Topics Discussed

6. Katrina: I'd love feedback just in terms of process and I think we could use the next meeting for that. We also can just follow up offline with the folks who were checking this and check in with them. But any final thoughts on process?

**Next steps/upcoming meeting topics:**

- June 30<sup>th</sup> – Final Meeting/Wrap-up Proposals

**\*Meeting adjourned\***