IgCC/Stretch Code Committee Meeting Agenda
August 26th 2019, 2pm-
5pm City and County of
Denver

1. Roll Call and Introductions
2. Finish outstanding homework items.
3. Begin to discuss commercial building energy efficiency
4. Finish Chapter 8

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Acoustical Homework – Paul Hutton
Confirmed that this is the correct standard.
Discuss residential amendments that are to be discussed in the IECC committee.

Multi family Energy Codes – 2 energy code.

Definitions of Residential
Boulder has moved R3 and R4 in to commercial.

Discussion about different types changes. If it falls under ResCon it should be Residential if it falls under ComCon it should be Commercial. Consensus in committee is that it should stay the same as it is now so as not to be confusing to the community.

All Electric Code Considerations.
(NBI Slides)
26% Renewable (Current)
56% Renewable Goal 2026
100% Renewable Xcel Goal 80% 2030

At the 80% goal what do we do for back up?
Storage would have to be part of it. Back up battery and different storage options.

Is it better for carbon over the life of the home?
Key issue in new construction is the length of new equipment being put in to these projects. Yes, it is better over the life of the home.

When do we get rid of natural gas is part of the question we need to answer. Going all electric brings a concern of affordability.
We are seeing all electric homes on the smaller side and in custom homes. Technology is there, affordability is there if someone is incorporating solar in to their property. Operating costs can then become very low and potentially even $0.
Designers are still recommending gas back up unless you have solar connected.

Cold Climate Heat Pumps are available, but the cost difference is significant.
Production home builders’ input should be considered.

Discussion in regard to power outages. With electric heat there were concerns that people would lose heat, even now with outage the heat is still down.

Concerning the envelope there are concerns with existing buildings, if you aren’t able to touch envelope based on historical it would be really difficult to do.

120% of the electrical load is the rule with renewable energy currently.

Options
1. Flex Points
   a. NBI – Overview of 2021 IECC Proposals. (Slide in NBI Deck) Each point is equal to 1% increase in efficiency.
   b. Need to pick a number of flex points for builders to strive for in order to receive the
expedited review process benefit.

2. ERI Booster
3. Net Zero
4. Passive House
   a. Passive House certifications

Questions about what is currently being used in California for Passive House, since they are dealing with a large number of utilities compared to her.

How can renewables be incorporated into passive house?
   These projects tend towards all electric because they tend to be smaller load projects.

Discussion on Options (that can become base code to be used by 20% of home builders)

Prefer simple approach to this. Staff we are trying to attain for review is on residential team, less is more to start this out. Big training for the teams involved. Some concerns with staffing piece of this. With split systems and the amount of sun we get here, it’s not that hard to design to Net Zero.

Having energy raters involved on residential side is a benefit from City’s perspective?
   Not partial to that, not a bad thing but potentially not the best option. Would like to push Net Zero sooner.

Need some education within the community with going to Net Zero.

Not fully in agreement with NBI on Net Zero. It should be base code and then Net Zero. Solar or Net Zero both get us where we want to be.

Mechanical systems needing 50 or 60,000 BTUs for heating. If you don’t think about how much smaller systems get because of better envelope we are going to run into problems.

Passive House with Net Zero would be beneficial to get people thinking about options.

Flex Points is complicated and can make things more complicated with staffing.

If Flex Points are already incorporated in IECC it shouldn’t be so hard to get it on board. It’s being proposed in 2021 National level as well as Denver, has not been heard in Denver yet.

For major developers they can submit a 12 month project and with Net Zero ready buildings they could be done in 8 months with the expedited review process.

Concerns there will be some push back from HOAs and different organizations with adding solar.

Big education component.

Questions about solar companies being ready for this, seems to be tough in the community to get panels serviced, replaced, installed.
   Hope is this would lead to more capacity. Will happen with any technology. Mature industry and should be able to take steps forward.

Would need to be Zero Energy not Net Zero ready. If you aren’t able to have on site you would need to look at off site and if not possible they would have to choose something different.

Passive House – Can use any brand materials but requirements are very stringent.
   To get certification: Annual demand limit, based on occupancies, Peak Heating and Cooling
Demand, Heating and Cooling Loads. .06 CFM per square foot.

Pay close attention to the education between PHIUS and PHI. Need to be very clear in criteria and have provisions written to be clear between the two. Not a huge difference in criteria between the two. Should include both, gives more opportunities to work through the certifications.

If we go down this path, would the city have to hire or develop someone with expertise in the Passive House field.

Keep Passive House as an option if City can deal with implications.

Zero Energy or ERI Boulder has been using approach for years now, there’s a benefit when people start doing things similarly.

Do we know what ERI it takes to be in line with our goal?
   Very rough correlation between ERI and energy consumption levels.

If we choose ERI Booster path, is there information to help us determine the right number to require?
   NBI can share what Boulder is currently using.

Does the 45 proposed number put us on target for Net Zero?
   Yes, we believe that is the right path to drive down the ERI scores.

No more natural gas for residential projects should be part of the Stretch Code.
Since stretch code will be optional why not push for what we actually want which is all electric no natural gas.
Ok with exception for Cooking, Ranges. If that would turn them off from Stretch Code and they are willing to do everything else, we should focus on higher pay back options.
   Goal is to affect the air quality as well as carbon footprint. Net Zero is all electric.
Committee on board with excluding natural gas in Stretch Code Projects.

ERI minimum –
Boulder has 40 for small new home (1500 sq ft or less) and sliding scale depending on the size of the home.
Smaller homes – Net Zero Larger Homes – Have to put on Renewables.

If we are giving incentives wouldn’t we want to make it meaningful goal. Trying to entice more people to go to Net Zero.
   Assumed that Net Zero means using renewables, Xcel is pushing towards Renewables if we are putting solar panels will they be obsolete by the time we get to Net Zero. Most people are not using batteries, they are tied in to the grid.

Should we require solar panels?
   Some committee members think that however you get to Net Zero on the site. Others think require Solar Panels.

Looking at Net Zero and Passive House being the path we take.
Discussion on ERI Minimum
Some think it would just be however they can get to Net Zero.
Some think there should be a minimum they are designing to instead of cheating the
system and building a 5,000 sq ft home and plastering it in solar panels.

Suggestion: 2 ACH and 40 ERI Minimum

Suggestion for New or Major Renovation Buildings: Passive House, All Electric, more air tight – 2
ACH, ERI 0 after renewables.
Suggestion for Existing Buildings: Opening up 75% or more of the interior side of the exterior walls
ERI minimum of 50.
Boulder using 50 ERI for alterations (75% of wall area)
Currently in Denver if you remove more than 40% of the building its considered a full demolition. If
you take off the sheathing and the studs.
Boulder is doing this but they say if you open up the walls 75% interior side of the exterior walls.

If someone is going to choose the stretch code path, they should have to do something more
difficult to get the benefits we are talking about (expedited review and permitting)

If you do use the stretch code on residential could there be financial compensation with permitting
fees.
Not sure. For larger projects this could cut 4-5 months which is a huge savings based on the
carrying cost for a shorter period of time.

What to expect next code cycle:
40 ERI – All electric
2 ACH standard
ERV requirement for whole house ventilation