



IECC/DGC Energy Committee Hearing Agenda # 5

March 17, 2022

2 p.m. – 5 p.m.

City and County of Denver

1. Roll Call = 29/32- Quorum achieved, 24/32 at 5pm

Committee Member		In Attendance?
Aaron Esselink		X
Carol Pafford		X
Chris Parr		
Chris Spelke	ONE VOTE	
Ashleigh Wheeler		X
Christy Collins		X
Chuck Bartel		X
Allen Yanong		X
Courtney Anderson		X
Elizabeth Gillmor		X
Eric Browning		X
Jamy Bacchus		X
John Burns		
Ken Urbanek		X
Adam Lyons		X
Nate Huyler		X
Curtis Underwood		X
John Dutch		X
Jeff Crowe		✗
Linda Morrison		X
Mike Walton		X
Nathan Kahre		✗
Paul Kriescher		✗
Paul Schaffer	One vote	
Robert Pruett		X
Antonio Navarra		X
Shanti Pless		
Chuck Kutscher		✗
Mark Rodriguez		X
Bill Rectanus		

Bryan Kazin		X
Paul Kancir	One vote	
Curtis Werner		X
Stephen Sanderson	NON-VOTING	X
Alex Martin	One vote	X
Kevin Eronymous		X
Laura London		X
Katrina Managan	NON-VOTING	X
Jan Keleher	NON-VOTING	X
Christine Brinker	NON-VOTING	X

2. Introduction of key proposals for **IECC/DBC-Commercial (non-voting)**

- a. [#P40](#) C403.2 Partial Space Heating Electrification
- b. [#P38](#) C404.10 Partial SWH Electrification
- c. Public comments:
 - Jolon Clark: Council has been very involved with the climate action task force and energize Denver. Existing building standard is also set. New buildings should be leading the way because the existing building standard does not address them. New building will lead the way.
 - Aaron Martinez: In support of these proposals, it is time to get fossil fuels out of our homes. Studies show asthma is impacted by gas homes. Supports electrification and heat pumps.
 - Taylor Roberts: Space heating, how would electric reheat be handled since it is not a backup heat? Unclear how it would impact C407 and the modeling pathways, would it require heat pumps since it is mandatory? Support this but in a more prescriptive option to allow for modelling flexibility and innovation for design teams.
 - Mark Jelinske: In support of the concepts, but better addressed in section C406 because it defines all electric. VAV reheat is a major

problem when the requirement is placed in the current proposed section. If a piece of equipment is greater than 20 tons, it is not required.

- Lauren Swain: Denver's new building code recognizes the greenhouse gasses impact. Respiratory illness is impacted by GHG. Prioritize human health. Methane Gas is increasingly cost with health risks.
- Ramesh Bhatt: Sierra club strongly supports the proposals by SWEEP. Every day we continue to use fossil fuels exacerbates this issues. Electrification alternatives are available. They will go a long way in climate resiliency and economic goals.
- Hillary Stempel: Pediatrician, supports health harming fossil fuels being removed from the code. Fossil fuels impacts air quality and methane contributes to pre term birth.
- Lori Pace: Res and Com Real Estate- Commercial tenants cannot change the fuel source once the building is set for occupancy. Restricted income communities need to be able to afford the utility bills. Protect our communities.

d. Committee Questions:

- Jamy Bacchus: How does this get around the federal requirements?
 - Sean: Does not require an efficiency, but requires an equipment type. This is being done in Seattle as well. Court determined this approach does work.
- John Arent: Exempt equipment with capacities greater than 20 tons. CA has been more cautious with a perscrive requirement and allows a performance trade off.
- Ken Urbanek: Heat pump space heating, should just say space heating since it applies to all heating sources. Reheat is not allowed but it is in a lot of cases used as a primary heat (VAV system), should think about this system. For SHW, more commonly 40 degrees rather than 20. Exception

4- most will cut off at 140 or 160 deg, there may be a gap when calling out 190 degrees.

- Sean: Size is flipped for tons, it does need to be flipped. Would be curious about the application of 160 deg. For C407, would need to include something in the mandatory requirement.
- Elizabeth: Sort on equipment to implement these requirements. This would prohibit the use of PTAC and VTAC, was that the intent? There is not one PTAC that could operate at 20 deg. Where does the 8.5 BTU/h come from? Would it make sense to align with ASHRAE at 12 BTU/h? What is the intent when the equipment is just not available and is that what the open-ended exception 6 tries to include?
 - Sean: Would need to do market research. 8.5 BTU/h is based on the Washington state code and moving more towards passive haus. If it makes the code easier to use, then it would be something to consider. That is what exception 6 tries to achieve. Need a specific scenario of where equipment availability is an issue.
 - Jan: NEEP working on 2 more PTAC cold climate rated
- Chuck: Language is very broad or can we set some guardrails? What other space heating systems would be considered? For the heat pump supplementary, why was this expanded to include fossil fuels.
 - Sean: It was added based on the conversation in the energize Denver task force. Equipment replacements would also need to be considered in this proposal.
- John Arent: High rise building and hotels could be a challenge with the duct work required. Maybe consider exemptions for higher rise buildings
- Ken: Can always go to AA or WW to get around the difficulty implementing in the Multifamily building type. Realistically we can meet these requirements, but the cost intensive aspect is what the tricky portion is.

- Elizabeth: The cost a major challenge with the heat pump water heaters. Show mechanical and plumbing with the heat pump application. 90 unit application with electric SWH, and a comparable 2 gas boiler- It took 15 water heaters to meet the same load, the cost of the additional square feet is a huge impact. There are going to unintended consequences.

3. Discussion and voting on **IECC/DBC-Commercial and DGC Ch.4**

a. [#18](#) Calibrate Appendix G

- Public Support
 - Taylor Roberts: Confused about the appendix G impact on gas, different metric than energize Denver, why would we use a different metric?
 - Mark Jelinski: Please specify occupancy clearer, especially dealing with healthcare. Why not other high process? Specifically data centers.
- Public opposition: N/A
- Committee questions:
 - Elizabeth: Are we as the committee not allowed to modify ASHRAE 90.1? We hashed this out last time. Boulder refers to the intent but uses C407. All of ASHRAE mandatory requirements would override the proposed requirement.
 - Sean: You cannot modify the text of ASHRAE 90.1 which is why C407 instructs how to use 90.1.
 - Courtney: How to move forward given Elizabeth's comments?
 - Would need to add proposed mandatory requirements that pass to the C407 table.
 - Chuck: For occupancies less than 25,000 sqft or would they be required to comply? Process loads are not defined in IECC, unregulated and regulated loads are not defined- should they be more defined?

- Sean: We can add clarity for smaller buildings. It is treated in the reference to appendix G for what clarifies is regulated and unregulated loads.
 - This proposals is still energy cost but there is a parallel proposal that allows to site energy which works with electric buildings.
- Jamy: The IECC defines energy code as purchased annual energy. Why are the process loads in this section?
 - Sean: Depending on how you read it, this makes it clear how to deal with those loads in modeling. We want to clear about how process loads are handled even if it is redundant
- Committee discussion
 - Elizabeth: This whole methodology has a gas baseline, it'll be so hard to promote a electrification. Looking forward to seeing the site energy proposal. Why not make the metric align with the energize Denver requirement? I have never used ASHRAE 90.1. Don't ask community to design to a different set of mandatory requirements. If trying to encourage modeling, then use the IECC requirements. Would like to table until we can see Taylor's proposal and the energy metric proposal.
- Motion to table proposal to be heard with corresponding proposals.
 - Tabled: 26 yes, 1 no, 0 abstentions
 - Subcommittee:
 - Linda Morrison
 - Courtney Anderson
 - Elizabeth Gillmor
 - Jamy Bacchus

b. [#4](#) Min Renewable Energy

- Public Support: N/A
- Public Opposition: N/A
- Committee Questions: N/A
- Committee Discussion:
 - Courtney motioned to approve as written
 - Elizabeth: Suggest modifications in C103.2, want to clarify what is required for construction documents. Going to be extremely difficult to get the contracts in place for CDs. Can there be flexibility in the timing for that? Or does this go into a Denver policy?
 - Eric: The term construction documents is a standard within the industry. What are you thinking in terms of the timing?
 - Elizabeth: Think about the power purchase agreements and the time to get that all sorted, so the better place for this might be in a policy.
 - Sean: A simple solution is to move it to C106.3.1
 - Elizabeth: C405.15- remove references to any of the other credits. What is our minimum renewable energy required per building? Strike GBO as the GBO will react to the code. We also do not want to include renewables in the baseline- strike C405.13.1.
 - Jamy: I'm not seeing any changes to the on-site per the prior draft. My concern is that this end up coming a cap because they need to provide certain amount of on-site solar. Is there a quick and easy way to get the off-site approved for high-rise and MF?
 - Jonathan: Offsite renewables options would be wind source and renewable connect, but it's not get clean enough to hit the targets.

- Jamy: Are you adding capacity that you wouldn't otherwise be required to?
 - Jonathan: Xcel has guidelines on the amount of renewable power to comply to with the state statutory requirements.
- Carol: If the PV system is a part of the energy model, then it should be considered a part of the construction documents?
- Elizabeth: On-site and Off-site were correlated to Denver requirements, but is there some way to meet what cannot be met with on-site?
 - Sean: It does not have a mechanism to have both on-site and off-site.
 - Elizabeth: Do we really want to approve these numbers of on-site renewables required with consideration of available roof area?
 - Sean: This is based off of energy use not roof area to meet Denver's targets.
- Chuck: Table does not account for all occupancy groups, why?
 - Sean: These are the occupancy types in the implementation plan. Comes down to a data availability limitation.
 - Chuck: Is this then penalizing the lack of data available for those other occupancies?
 - Sean: Once you take the other occupancy types and average them, it is very close to the medium office types.
- Kevin and Elizabeth: Can we modify this proposal to 10%?
 - Christy: As long as we have the ability to go hybrid, then it meets the requirement of the target and also

being considering the roof area.

- Mark: This is 2x times the DOE proposal for IECC 2024.
- Elizabeth: The cost would potentially push buildings to not be built in the Denver region.
- Johnny: The intent is optionality and we are seeing payback within 10-12 years.
- Elizabeth suggestions:
 - Remove any references to C404, C406, and GBO
 - Delete C405.13.1
 - Change the requirement to 10%
- Motion to approve with the intent to modify and include both on-site and off-site.
 - Yes (4), No (14), abstaining (5)
 - Motion does not pass
- Motion to modify and intent to bring back to the committee
 - Yes (17), No (0), abstaining (5)
 - Approved motion to table with intent to modify
 - Subcommittee:
 - Courtney Anderson
 - Kevin Eronymous
 - Christy Collins
 - Carol Pafford

Meeting Adorned at 5:15pm