Comments submitted electronically and via email

November 7, 2024

Adam Berry
Senior Program Manager, Building Codes
Colorado Energy Office
1600 Broadway, Suite 1960, Denver, CO 80202
adam.berry@state.co.us

RE: Insulation Industry Comments Regarding Colorado's Proposed Model Green Code

Dear Mr. Berry,

Thank you for this opportunity to comment on the proposed Model Green Code. This stretch code promises to be a valuable addition to your State's policy tool kit for building decarbonization. We have three suggestions for improving the Code's effectiveness in driving energy efficiency and improving the provisions on embodied carbon:

- Require additional efficiency points for improved envelope UA;
- Remove the National Green Building Standard certification option or strengthen it to the "Emerald" level; and
- Incentivize the use of whole building life cycle assessments for commercial buildings and limit the use of material specific thresholds to the structural materials listed in the proposal.

I. Improved Envelope Efficiency

The thermal envelope can last the entire life of a building and is difficult to improve after initial construction. Although many code requirements and certification programs place the envelope and equipment on equal footing in terms of energy efficiency impacts, the envelope has a comparably longer service life. Equipment is often replaced during the building's useful life. This can create uncertainty about whether the replacement equipment will be as efficient as the original equipment. As a result, the Model Green Code should adopt more stringent building thermal envelope targets. This ensures that long-term building performance is not traded off for equipment at the time of initial construction. The best, most cost-effective time to install a well-insulated and

sealed building envelope is during original construction. An efficient building envelope allows for the installation of smaller, more efficient HVAC equipment. A strong envelope also enables alternative energy sources such as distributed solar to offset a larger percentage of building energy demand by reducing the power required to heat, cool and operate buildings.

To ensure a better envelope and to improve efficiency over the long term, we suggest that a minimum of 20% of the additional points required under Sections R408 and C406 of the 2024 IECC come from additional improvements related to the thermal envelope. This requirement would improve envelope performance by 10%.

II. Remove or Modify National Green Building Standard Compliance Path

The lower certification levels (i.e., bronze, silver, and gold) under the National Green Building Standard can result in worse energy performance compared to the State's base code. **Therefore, this compliance option should be eliminated or modified to recognize "Emerald" as the only acceptable compliance level when using the National Green Building Standard certification option.** An August 2024 ICF study concludes that a home certified to the gold level would consume 6% more energy than a home built to the 2021 IECC. Using the lower, less stringent certification levels would create a loophole and burden the homeowner with higher energy costs. The Model Green Code should guarantee lower energy use when compared to the State's base code.

III. Embodied Carbon

We support the Model Green Code's recognition of whole building life cycle assessments (WBLCA) and encourage the State to make WBLCA the exclusive compliance option for commercial buildings. WBLCA allows design professionals to consider environmental impacts as one of many factors when evaluating a wide range of building materials for a specific project. The goal of the Model Green Code should be to incentivize the adoption of industry best practices. WBLCA is the most accurate and complete assessment of a building's carbon footprint and, importantly, includes a wide range of building materials and all stages of the building's life cycle.

We understand that the Model Green Code is proposing to use specific GWP thresholds for certain materials as an alternative compliance path for commercial buildings and the singular compliance option for residential buildings. The scope of these compliance paths does not include insulation materials, and we strongly urge the State to resist any proposals to add insulation or other additional materials. Material specific GWP thresholds are inappropriate for material categories like insulation where a multitude of performance factors will determine whether an insulation product is appropriate for a particular project or application. Moreover, all insulation products "pay back" or offset their embodied carbon impacts many times over when considering the energy saved and reduced emissions.

Additionally, insulation products are used as part of assemblies that include a multitude of products and design options. The selection of an insulation product can influence the use of other products within an assembly. Therefore, a singular focus on insulation does not guarantee a lower carbon outcome. This can only be accomplished through more wholistic approaches such as WBLCA.

IV. Conclusion and Contact Information

In summary, we commended Colorado's leadership and innovation in developing the Model Green Code. Building energy codes are the most cost-effective policy tool for addressing the building sector's impact on climate change. Stretch codes provide an effective means for jurisdictions to promote "above code" construction and help to implement provisions that can be included in future base code versions resulting in even greater energy savings.

If the undersigned associations can be of further assistance in the review and publication of the Model Green Code, please contact Justin Koscher (jkoscher@pima.org) and Jason Vandever (jvandever@naima.org).

Sincerely,

American Chemistry Council (ACC)
Extruded Polystyrene Foam Association (XPSA)
Insulation Contractors Association of America (ICAA)
National Insulation Association (NIA)
North American Insulation Manufacturers Association (NAIMA)
Polyisocyanurate Insulation Manufacturers Association (PIMA)