DOCKETED	
Docket Number:	22-DECARB-03
Project Title:	Equitable Building Decarbonization Program
TN #:	250667
Document Title:	North American Insulation Manufacturers Association Comments - North American Insulation Manufacturers Association Comments
Description:	N/A
Filer:	System
Organization:	North American Insulation Manufacturers Association
Submitter Role:	Public
Submission Date:	6/19/2023 12:03:32 PM
Docketed Date:	6/19/2023

Comment Received From: North American Insulation Manufacturers Association
Submitted On: 6/19/2023
Docket Number: 22-DECARB-03

North American Insulation Manufacturers Association Comments

Additional submitted attachment is included below.

June 18, 2021

California Energy Commission Docket Unit,
1516 Ninth Street Sacramento, California 95814-5512
docket@energy.ca.gov
Docket No. 21-BSTD-01

Re: 21-BSTD-01 2022 Energy Code Update 45 Day Language, Comments of the North American Insulation Manufacturers Association

The North American Insulation Manufacturers Association (NAIMA) is the trade association for manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation, and to encourage the safe production and use of these materials. Several of our members own and operate fiber glass manufacturing facilities in California.

HVAC equipment, whole house fans, lighting, hot water heaters, windows, doors, appliances, solar photovoltaics and battery storage are all measures that are reasonably expected to be replaced and upgraded over the long life of a building. In contrast, a building's thermal envelope lasts a lifetime and the one chance to get it right is at time of construction. The thermal envelope delivers low-cost energy savings, enhanced building decarbonization and is the single best energy efficiency investment that can be made in a building. Building energy codes provide the best mechanism to capture the lifetime energy savings that only an energy efficient building thermal envelope can deliver. It is NAIMA's position that energy codes should give highest priority to those measures that deliver lifetime energy efficiency at the time of construction.

NAIMA appreciates the transparent nature and many opportunities for stakeholder input during the course of both the informal and formal Title 24 rulemaking process. The CASE teams and Energy Commission staff are to be commended for their excellent work product describing and supporting proposed code modifications. NAIMA broadly supports the 45-day language for the 2022 single family, multi-family and non-residential building code. NAIMA has the following comments for consideration:

1. NAIMAs supports mandatory minimum requirements for thermal insulation.

Title 24 sets robust prescriptive thermal envelope requirements for all building types. Unfortunately, Title 24's prescriptive envelope requirements, while determined to be cost effective by the Commission when codified, are frequently traded off by the builder for other measures, which leaves energy savings on the table. Establishing a mandatory minimum insulation for roof deck insulation in new residential buildings won't compel builders to actually build homes with high performance attic insulation systems (a prescriptive requirement introduced in the 2016 Title 24 residential code), but it will ensure that California homes are

increasingly insulated with minimum levels of both ceiling and roof deck insulation. This change is welcomed as it is a step in the right direction but increased mandatory requirements in this space are recommended.

2. Limit trade-offs against envelope efficiency.

The 2016 Title 24 residential energy code introduced prescriptive high-performance wall and attic insulation requirements. The 2019 code update made modest changes to these standards and eliminated the ability of builders to use rooftop solar photovoltaics (but not other mechanical equipment) as a trade-off against these requirements. Still, the market penetration of high-performance walls and attics as an actual construction practice is virtually non-existent in California.

Since 2011, TRC has administered the residential new construction California Advanced Homes Program (CAHP) on behalf of Pacific Gas and Electric Company (PG&E). TRC examined 68,000 homes built in California between January 2017 and December 2019. Of those 68,000 homes, 2 percent (1,281) incorporated high performance attics while 1 percent (691) included high performance walls. In contrast, 97.6 percent (64,809) of homes had high efficiency space heating equipment installed, 96.6 percent (64,213) of homes had high efficiency space cooling equipment installed, and 55 percent (36,511) of homes had high efficiency water heaters installed. The logical inference from this data is that builders are universally trading off HVAC equipment that exceed minimum federal efficiency standards against high performance insulation requirements set by Title 24. Additionally, based on these results, 90%+ market penetration of HVAC space heating and cooling equipment indicates that market has been largely transformed and the next place to capture savings is in the envelope.

The Commission can correct this and enact a code that results in better performing buildings by establishing three separate energy design ratings (EDR) – Building Envelope Efficiency, Building Heating and Cooling Systems, and Solar Electric Generation and Demand Flexibility – combined to arrive at Total EDR. Trade-offs should be prohibited between these three separate EDR categories. This approach avoids mandatory thermal envelope or R-value or U-factor requirements and provides builders with flexibility while still delivering an advanced thermal envelope.

The CASE Team's *Single Family Grid Integration Report (October 2020)* highlights the increasing importance of demand flexibility measures to better integrate buildings with a changing electric grid and more renewable electric generation. The first step toward that goal is a focus on envelope energy efficiency. The Department of *Energy's National Roadmap for Grid-Interactive Efficient Buildings (May 2021)* highlights that envelope energy efficiency is one of the best available measures to realize both aggregate and peak demand building energy savings. That report concluded that energy envelope measures have higher peak demand energy savings than measures like water heating, refrigeration, electronics, appliances, and lighting measures. The energy saved by envelope efficiency is highly valuable to the power system on a per-MWh basis and should be prioritized accordingly.

The urgency of our climate challenge argues in favor of taking this action in the 2022 energy code update to lock in prescriptive requirements for a high-performance building envelope and protect them against non-envelope trade-offs.