

August 17, 2020

International Code Council (ICC) Appeals Board,

RE: Group B Code Changes – RE126, RE147, and CE217 Parts I and II

I am writing on behalf of the American Council for an Energy-Efficient Economy (ACEEE) to provide comments to the Code Council Appeals Board. ACEEE is a non-profit energy-efficiency research organization. We are based in Washington DC and have been working on energy-efficient buildings for 40 years, participating in equipment and appliance standards negotiations, building energy code development and adoption, and other energy efficiency programs and initiatives.

Our overarching response to the issues raised by the appellants is that they fall outside the scope of the appeals process and should not even be considered. The issues raised in the appeals are all related to the validity of technical proposals. Since the Appeals Board is tasked with considering “process and procedure,” we do not believe discussing the technical merits of these proposals are appropriate for this setting. However, if the Appeals Board wishes to move forward to discuss the technical merits of the appeals, ACEEE is happy to respond to those.

ACEEE strongly supports proposals RE126, RE147, and CE217 Parts I and II. Additionally, governmental member voting representatives (GMVRs) voted overwhelmingly to support these proposals: RE126 (68% in favor), RE147 (74% in favor), and CE217 Parts I (82% in favor) and II (71% in favor). These proposals – on residential water heating, electrification readiness, and electric vehicle charging infrastructure – help keep the IECC relevant to meet today’s energy challenges. We thought it was important for us to respond to appeals challenging that RE126 violates federal preemption and that all the proposals are outside the scope and intent of the IECC.

Federal Preemption

RE126 does not violate federal preemption laws outlined in the Energy Policy and Conservation Act (EPCA), and existing IECC provisions help reinforce this perspective. RE126 does not set efficiency requirements for a singular product, but instead, provides a list of efficient and flexible water heaters the builder may select from. There is already precedent for this type of requirement in the IECC: *C404.2.1 High input-rated service water-heating systems*, which requires water heating systems of one million Btu/h or greater to meet a (capacity-weighted) higher energy efficiency threshold of 90% thermal efficiency, which is higher than the federal requirement of 80% thermal efficiency. Requiring a combined system efficiency higher than DOE’s federal minimum efficiency does not violate federal preemption because it is not setting an efficiency level for one product, but for an entire system. Similarly, RE126 does not set efficiency requirements for one product, but for setting different requirements for a list of options if the user decides to use this compliance path. Both RE126 and C404.2.1 provide flexibility to the user in achieving a more efficient method of providing hot water.

Scope and Intent

RE126, RE147, and CE217 Parts I and II help reflect the new realities of a building’s role in our energy system, and they all clearly fall within the scope and intent of the IECC. Buildings can no longer be viewed as standalone energy consumers, but instead, must be considered a node on a connected flexible network of energy consumers and generators. The ability to manage electrical load using distributed energy resources (DERs)¹ is becoming increasingly important for building occupants to assist utilities manage grid strain and prevent power outages. As utilities increasingly design and adopt new rates and incentives to encourage homeowners and

¹ Distributed energy resources (DERs) are small-scale energy storage or generation technologies, such as batteries, solar photovoltaic systems, grid-connected water heating/HVAC/lighting systems, and electric vehicle charging stations.

building owners to adopt technologies to help them manage energy demand, these products become increasingly important to help them manage their energy bills too. The residential and commercial scope is as stated here (bold added for emphasis):

*This code shall regulate the design and construction of buildings for the **effective use and conservation of energy** over the useful life of each building. This code is intended to provide flexibility to permit the use of **innovative approaches and techniques** to achieve this objective.*

The “effective use” of energy means not just reducing overall energy use, but empowering buildings to install technologies that can help determine when they use energy, which could range from electric vehicle charging stations to grid-connected water heaters to energy storage systems.² In addition, these technologies can be considered innovative approaches to achieving the objective of effectively using energy. As an added bonus, these proposals collectively also enable technologies which contribute to “conservation of energy,” such as by promoting air source heat pumps, heat pump water heaters, and electric vehicles, which are among the most energy-efficient method to condition air, heat water, and transport people, respectively.

As a voting member of another building codes body, the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) 90.1 committee, ACEEE has participated in hours of debate around the topic of demand management and building energy codes. In February 2020 at the ASHRAE Winter Conference, the ASHRAE 90.1 committee voted in favor of considering time-of-day energy measurements³ in the cost-effectiveness test for new proposals, and in turn, recognized the importance of demand management as a component of building energy codes.

The ICC would greatly benefit from affirming the importance of proposals to enable a better energy demand management of buildings, as an integral part of “effective use and conservation of energy.”

ACEEE urges the Appeals Board to not even consider the appeals of RE126, RE147, and CE217 Parts I and II since they are outside the scope of “process and procedure.” However, if the committee does decide to consider these appeals anyway, we believe these proposals not only fall well within the scope and intent of the IECC (and do not violate federal preemption), but that they make the IECC a stronger and more relevant standard to meet today’s energy needs of home and building owners.

Sincerely,



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² Note that energy storage proposal CE262, was also approved in the online vote, however the appellants did not appeal this proposal, even though it potentially would have triggered similar concerns around intent and scope. It is unclear why this proposal was not also appealed.

³ Time-of-day measurements mean that energy will have different values at different times of day. As an example, this could help justify the cost of technologies like a cold water thermal energy storage systems, which can operate its chillers at night when energy prices are low and then distribute cooling during the day when energy prices are high.