



Edison Electric
INSTITUTE

Customer Solutions

August 17, 2020

International Code Council
2019 Group B Appeals Board
500 New Jersey Avenue, NW
6th Floor
Washington, DC 20001

Re: RE126-19 Appeal

Members of the ICC 2019 Group B Appeals Board,

The Edison Electric Institute (EEI) appreciates the opportunity to submit comments on the appeal of RE126-19, which includes efficiency requirements for service water heaters in residential buildings.

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for about 220 million Americans and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than 7 million jobs in communities across the United States.

EEI recognizes the importance of establishing modern, up-to-date energy conservation codes and the associated responsibility facing the International Code Council's Appeals Board as it conducts hearings on the 2021 International Energy Conservation Code (IECC), Group B Code Changes. As a model code, the forthcoming 2021 IECC is intended to be adopted by states and jurisdictions in accordance with the established laws and procedures of governmental jurisdiction.

EEI is an active participant in several stakeholder processes related to development and amendment of building energy codes and appliance and equipment standards including those developed by the ICC, ASHRAE, and U.S. Department of Energy. EEI and its members support the establishment of codes and standards that are technically feasible and economically justified which enhance the safety and efficiency of products and buildings. Specific to ICC, EEI has developed code proposals, participated at code action committees, and participated in committee action hearings and public comment hearings for many code cycles.

RE126-19, if not appealed or revised, will negatively impact the market by unduly restricting consumer and residential builder access to water heating products and technologies that meet the updated minimum efficiency standards as established by DOE and are a best-fit, least-cost product for a given climate, home size, and geographic areas.

A related concern to the market impacts is imposing additional significant costs to consumers and builders that elect to install storage electric water heaters by requiring onsite renewable energy systems. To be clear, EEI's primary contention with this provision in RE126-19 is a matter of affordability and preserving consumer access to water heating products and technology that are legal, meet updated minimum efficiency requirements, and are affordable. Collectively, EEI's member companies are on a path to reduce carbon emissions at least 80 percent by 2050 and renewable energy will be a key resource to achieving these goals.

RE126 Would Not Allow Certain Water Heaters to be Used

As written, it appears that RE126 would not enable the following types of water heaters to be used at residential buildings:

- Tabletop Water Heater (electric)
- Oil-Fired Storage Water Heater
- Gas-Fired Storage Residential Duty Commercial Water Heater
- Oil-Fired Storage Residential Duty Commercial Water Heater

Additionally, it is not clear whether an electric or gas instantaneous water heater that has a small storage tank would be allowed, as RE126-19 only allows "tankless" water heaters to be installed. Currently, water heaters are regulated by the U.S. Department of Energy (DOE), regulation which includes current efficiency requirements that explicitly include these types of water heaters—notably, tabletop electric and small instantaneous electric water heaters.¹ As a result, RE126 likely creates conflict between local and/or state building energy codes and manufacturers/distributors of these products. The council should resolve this conflict and clarify that electric tabletop water heaters and small storage tank electric water heaters should be eligible under RE126-19.

RE126-19 Will Prevent the Use of High-Efficiency Electric Water Heaters

Storage electric water heaters have significantly higher energy efficiency (Uniform Energy Factors, or UEFs) when compared with other storage water heaters (gas or oil). However, to meet RE126, storage electric water heaters are required to utilize not less than 1.0 kW of on-site renewable energy. Currently, there is no federal requirement or law that storage electric water heaters be installed with on-site renewable energy systems—indeed, no other type of water heater, even those with lower UEFs, has a requirement to use on-site renewable energy in RE126. This requirement is also not consonant with the power sector's

¹ Available at

https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=32, and https://www.ecfr.gov/cgi-bin/text-idx?SID=80dfa785ea350ebeee184bb0ac03e7f0&mc=true&node=se10.3.430_132&rgn=d iv8

continued energy transformation to deliver increasing amounts of renewable generation through the deployment of universal and utility-scale renewable power. With universal and utility-scale renewable solar PV, for example, the cost per kW is usually 3 times less (1/3) than the cost of installing the same capacity at a home.²

EEI member companies are investing more than \$100 billion dollars annually to make the energy grid smarter, cleaner, more dynamic, more flexible, and more secure in order to provide affordable and reliable electricity to customers³ as well as to integrate and deliver a balanced and diverse mix of resources from both centralized generation sources and distributed energy resources to customers.

The electric power industry is in the middle of a profound, long-term transformation in how electricity is generated, transmitted, and used. This transformation is being driven by a wide range of factors, including low and declining costs for natural gas and renewable energy resources, technological improvements, changing customer expectations, federal and state regulations and policies, and the increasing use of distributed energy resources (DERs). As a result, the mix of resources used to generate electricity has changed dramatically over the last decade and is increasingly clean.

Power sector carbon dioxide (CO₂) emissions in 2019 were 33 percent below 2005 levels—a figure that exceeds the reduction targets under the Clean Power Plan’s aim to reduce sector wide emissions by 32 percent by 2030. Power sector emissions fell 143 million metric tons from 2018 to 2019, and this reduction was responsible for the entire decline in total U.S. CO₂ emissions, offsetting a net increase by all other sectors combined. Power sector CO₂ emissions are at their lowest level in more than thirty years and have been lower than the transportation sector’s emissions since 2016. EEI’s member companies have achieved these impressive results through aggressively increasing their deployment and use of renewables and carbon-free generation sources. Today, nearly 40 percent of all U.S. power generation comes from carbon-free sources, including nuclear energy, hydropower, wind and solar.

And the industry is committed to achieve even more. Collectively, EEI’s member companies are on a path to reduce carbon emissions 50 percent by 2030 using a combination of replacing coal with natural gas-based generation, energy efficiency, and deployment of new renewable energy, especially wind and solar. The industry also is helping other sectors transition to clean, efficient electric energy. Across the U.S., electric companies are building the infrastructure needed to support increased electrification of other industrial sectors. As a result, the requirement to have on-site renewable generation represents a significant missed opportunity to take advantage of the industry’s clean energy

² See NREL “Q42019/Q1 2020 Solar Industry Update”,
<https://www.nrel.gov/docs/fy20osti/77010.pdf>

³ See EEI, Industry Data, Statistical Highlights: Capacity and Generation (2018),
<http://www.eei.org/resourcesandmedia/industrydataanalysis/industrydata/Pages/default.aspx>.

transformation, possibly instituting onerous new requirements that could be leveraged instead by accessing the industry's broader progress.

Further, RE126-19 requires heat pump water heaters installed at residential buildings have a Uniform Energy Factor of at least 2.0. This portion of RE126-19 will *require* heat pump water heaters to have efficiency levels above or significantly above current minimum federal standards. At the same time, under RE126-19, other water heaters with much lower UEF's and/or meeting federal minimum efficiency standards are still allowed to be used.

As discussed *supra*, the following high-efficiency heat pump water heaters would not be allowed in residential buildings under RE126-19:

- All 56 to 120-gallon heat pump water heaters with Very Small draw patterns and UEFs between 1.7916 and 2.0;
- All 56 to 120-gallon heat pump water heaters with Low draw patterns and UEFs between 1.912 and 2.0;
- All 107 to 120-gallon heat pump water heaters with Medium draw patterns and UEF's between 1.9851 and 2.0;
- All 55 gallon and below heat pump water heaters, with any draw pattern where the UEF is 2.0 or less would not be allowed.

The result of RE126-19 would be to reduce the number of high-efficiency heat pump water heaters used in residential buildings, which would be counter to the trend of the use of higher efficiency water heating technologies. Again, the result would tend to incent the installation of water heaters with lower UEFs.

Conclusion

For all of the reasons shown, EEI respectfully requests that the Appeals Board take action to either:

- Revise RE126-19 so that it does not limit the use of high-efficiency electric water heaters, or
- Reject it due to its negative impacts on the use of high-efficiency electric technologies.

Thank you for your review and consideration of our comments. Please contact Steve Rosenstock (202-508-5465, srosenstock@eei.org) if you have any questions about EEI's comments.

Respectfully submitted,

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cc: Adam Cooper, EEI