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**BWC - Comments on Requirements for Central Heat Pump Water Heaters, 2022 Pre-Rulemaking for Building Energy Efficiency Standards**

*Additional submitted attachment is included below.*



December 23, 2020

Danny Tam  
Mechanical Engineer  
California Energy Commission (CEC)  
1516 Ninth Street  
Sacramento, California 95814-5512

RE: Docket No. 19-BSTD-03, 2022 Pre-Rulemaking for Building Energy Efficiency Standards

Dear Mr. Tam:

On behalf of Bradford White Corporation (BWC), thank you for providing an opportunity to comment on docket 19-BSTD-03, 2022 Pre-Rulemaking for Building Energy Efficiency Standards, specifically Title 24, Part 6 SECTION 150.1 and Joint Appendix 14 (JA14) Qualification Requirements for Central Heat Pump Water Heater (HPWH) Systems.

BWC is an American-owned, full-line manufacturer of residential, commercial, and industrial products for water heating, space heating, combination heating, and water storage. In California, a significant number of individuals, families, and job providers rely on our products for their hot water and space heating needs.

We have some concerns with the Codes and Standards Enhancement (CASE) report, specifically the requirements for Central HPWHs which are subject to federal preemption under the Energy Policy and Conservation Act of 1975 (EPCA). Ultimately, we believe the proposed requirements are overly prescriptive; limit technology options for manufacturers and end-users; and do not necessarily ensure equitable solutions are available to all Californians. BWC's comments specifically focus on Section 150.1 and JA14 Qualification Requirements for Central HPWHs.

Through EPCA, Congress has granted authority to the Department of Energy (DOE) to establish federal appliance and equipment standards. Federal energy conservation standards preempt state laws or regulation concerning energy conservation testing, labeling, and standards. CEC proposes to establish a standardized testing procedure JA14 to include testing and design documentation requirements for Central HPWH systems. Manufacturers would be required to submit self-certified performance data specific to CEC.

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In the Final CASE Report, All-Electric Multifamily Compliance Pathway, CEC states the following:

*“Minimum efficiency for heat pump water heaters with rated storage volume less than 120 gallons are specified in the Code of Federal Regulations at 10 CFR 430.32(d), see Table 5. While some of the heat pump water heaters falling into the regulated category (less than 120 gallons) can be used for central water heater design, the proposed measure does not require HPWHs that fall into this category, thus the proposal does not trigger preemption.”*

BWC notes that these statements are incorrect, as these products are federally regulated which includes a prescribed test procedure. Therefore, it is our assertion that this does in fact trigger preemption.

DOE establishes 10 CFR 431 Subpart G of Appendix E – uniform test method for the measurement of energy efficiency of commercial heat pump water heaters, which would encapsulate products that CEC considers Central HPWHs. The uniform test methods are for Type IV and Type V equipment, defined in sections 4.4 and 4.5 of ANSI/ASHRAE 118.1-2012. The CASE team should defer to federal metrics and test procedures, because they are plainly preempted by EPCA. Federal preemption applies not only to test procedures, but also labeling requirements, effective dates, and installation penalties.

In truth, there are several requirements which CEC must change because they are preempted under EPCA. CEC’s JA14.3 Test Procedure and Reporting states that the Central HPWHs shall be tested at the following conditions:

- *Inlet ambient air temperature: Maximum, minimum, and two midpoint temperatures of the manufacturer specified operating range. Minimum shall be equal to or lower than 40°F;*
- *Inlet water temperature: Maximum, minimum, and two midpoint temperatures of the manufacturer specified operating range; and*
- *Outlet water temperature: Maximum, midpoint, and minimum of outlet water (setpoint) temperatures of the manufacturer specified operating range. Maximum shall be equal to or greater than 140 °F.*

JA14 imposes verification requirements beyond federal requirements for these products. JA14 test requirements are unnecessary, as CFR 431 Subpart G of Appendix E establishes a uniform test method for the measurement of energy efficiency of commercial heat pump water heaters, which would include the Central HPWHs that the CASE report is referring to.

BWC is concerned that Section 150.1 and the JA14 requirements are overly prescriptive and limit technology options for manufacturers and end-users. The CASE report’s prescriptive option for Central HPWHs requires not only the JA14 qualifications, but in addition a recirculation loop tank; a loop tank heater capable of multi-pass operation; a setpoint of at least 140 °F for the primary storage tank; piping requirements to ensure efficient operation; and a minimum heat pump compressor cut-off less than or equal to 40 °F. JA14 also requires the manufacturer to document the algorithm used for defrosting. The documentation of an algorithm, which may be proprietary, could lead to misappropriation of trade knowledge.

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Section 150.1 and the CASE JA14 requirements are based on a very limited number of manufacturers and field test demonstrations, as noted in CASE's report. The CASE team's approach to requirements for Central HPWHs is based on the current knowledge and understanding, as well as a limited number of all water heater manufacturers. By being overly prescriptive in the requirements, it discourages or disallows improvements in known and unknown technologies that might benefit from further innovation, including from water heater manufacturers that currently do not offer a product. For this reason, the CEC and CASE team should follow a technology agnostic approach and push manufacturers to compete in the open marketplace.

Building electrification for reducing emissions, if not carefully executed, place an undue burden on low-income housing. Cost impacts from this proposal would likely disproportionately affect low-income households. As noted in the Final CASE Report, All-Electric Multifamily Compliance Pathway, CEC states the following:

*"However, the all-electric buildings use more time dependent valuation (TDV) energy than mixed fuel because of the way TDV values electricity use higher than natural gas/propane during peak periods. Thus, the goals of cost effectiveness (using TDV) and overall carbon reductions are currently in conflict even with the improvements in the 2019 Title 24, Part 6."*

CEC must take into account consumer choice, technological neutrality, and ultimate affordability in terms of both upfront and operating costs. CASE should ensure that any recommendations are equitable to all its residents.

Given these concerns, BWC recommends the CEC to revise Section 150.1 and JA14 prior to adoption of the 2022 California Energy Code. BWC recognizes California's efforts to increase building energy efficiency and the state's Greenhouse Gas reduction goals, but we respectfully request that improvements in energy efficiency are done with the requirements currently in place by the Department of Energy, including the prescribed uniform test methods required.

Thank you for continuing to include BWC and other stakeholders in the 2022 California Energy Code discussions. Bradford White Corporation thanks you for the opportunity to comment on Docket 19-BSTD-03. Please let me know if you have any questions.

Respectfully Submitted,

Bradford White Corporation

Eric Truskoski  
Senior Director of Government and Regulatory Affairs

Cc: B. Wolfer; B. Ahee; M. Corbett; T. Gervais

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