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AHRI Comments on 2028 Energy Code Pre-Rulemaking

Additional submitted attachment is included below.

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November 5, 2026

Michael Sokol
Director for Efficiency Division
California Energy Commission
Docket Unit, MS-4
715 P Street
Sacramento, CA 95814

Re: AHRI Comments on Pre-Rulemaking Draft Regulatory Text for the 2028 Energy Code, Docket No. 25-BSTD-03

Dear Director Sokol:

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) appreciates the opportunity to provide comments on Pre-Rulemaking Draft Regulatory Text for the 2028 California Energy Code, Docket No. 25-BSTD-03.

AHRI represents more than 330 manufacturers of air conditioning, heating, and refrigeration equipment. It is an internationally recognized advocate for the heating, ventilation, air conditioning, commercial refrigeration (HVACR), and water heating industry and certifies the performance of many of the products manufactured by its members. In North America, the annual economic activity resulting from the HVACR and water heating industry is more than $211 billion. In the United States alone, AHRI member companies, along with distributors, contractors, and technicians employ more than 704,000 people.

AHRI appreciates efforts to reorganize the California Energy Code, especially the new numbering system. The new numbering system is easier to follow than the previous editions of the code and should improve the experience of navigating the code for all stakeholders. Despite these improvements to the California Energy Code, AHRI has several concerns with the proposed changes to the 2028 Energy Code and provide comments below.

Section 401.2.2.10 HVAC Fault Detection and Diagnostics (FDD)

CEC's proposed changes to Items 2.1 and 2.6 contain confusing requirements that are not necessary. For 2.1, if an HVAC system is identified as operating outside of scheduled hours, the problem would already be fixed. AHRI does not understand why this

requirement is necessary. Similarly, 2.6 highlights "building HVAC control fan motor command at 100% or placed in manual override." These are not necessarily faults. AHRI recommends CEC provide more clarity on what the HVAC Fault Detection and Diagnostics system is intended to achieve. Some of the items listed, including those in Table 401.2 would be part of a building management system (BMS). AHRI recommends deleting items 2.1 and 2.6.

Additionally, it is unclear how this section aligns with **Appendix JA 6.3 Economizer Fault Detection and Diagnostics (FDD) Certification**. Many of the items listed in 401.2.2.10 do not appear in the appendix, which is required to state the submittal requirements or FDD certification. AHRI recommends CEC provide additional clarity to these sections.

Section 500.3.3.7.3 *[Section 110.3(c)7B]* **Ventilation – Nonresidential Excluding Group R Occupancies**

Section 500.3.3.7.3.1 provides a pathway for complying with installation per the manufacturer's instructions, but it prescriptively requires the installation meet or exceed the requirements of the other installation pathways in 500.3.3.7.3.2 and 500.3.3.7.3.3. The allowance for unducted installations is calculated using the compressor capacity of the heat pump water heater (HPWH) as determined by *AHRI Standard 540*, Table 4, which is not published information or available for a contractor to determine.

Since 2025, AHRI has been developing AHRI Guideline U, *Guideline for Residential (Consumer) Heat Pump Water Heater Installation*. AHRI Guideline U will provide installation guidance for residential HPWHs to improve field installation practices and provide consistency across manufacturer instructions. The recommendations contained in AHRI Guideline U will include clearances and space recommendations, ducting recommendations, location and ambient air conditions, additional component installation, and guidance on louvered doors, grills, and net free area.

AHRI is concerned that these provisions in the California Energy Code will undermine the work in Guideline U. Section 500.3.3.7.3 requirements are overly prescriptive, mandating the direction of airflow out of the HPWH exhaust, which has no noted impact on the efficiency of the water heater and does not align with the scope of the California Energy Code. AHRI requests that CEC not pursue the proposed changes in Section 500.3.3.7.3.

JA 14.6 Requirements for Unitary Commercial Heat Pump Water Heaters with Electric Resistance (HP/ER)

In Section JA 14.6.1, issues are apparent with the conditions for sizing unitary commercial HP/ER water heaters. For item number 1, defrost cycles, no method of testing exists. For item number 3, "ambient temperature of 47°F, or an ambient temperature that

the designer determines to be appropriate," an ambient temperature of 47°F is not part of the test procedure for these products, while "an ambient temperature that the designer determines to be appropriate" is too open ended. Item number 4, "the average hourly maximum power output given the water heater's control algorithm for the heat pump and the ER elements," is difficult to calculate and could require sharing proprietary information.

Additionally, the penalty for not meeting these conditions is significant. "In the absence of data necessary to meet these requirements, the designer shall size the unitary HP/ER water heater system by assigning the delivery capacity of a unitary HP/ER water heater to be 20% less than that value reported by the manufacturer." A 20% efficiency penalty is overly burdensome and the conditions in this section are inappropriate. AHRI recommends deleting this section from the 2028 Energy Code.

Section 501.3.5 Split heat pump water heating systems with recirculation

The requirements in 501.3.5 can only be met by using single-pass HPWHs. Multi-pass HPWHs should also be allowed to ensure consumer choice. AHRI recommends amending this section to allow both types of products or delete the section in the 2028 Energy Code.

Section 901.1.8 *[Section 120.6(a)8]* **Transcritical CO2 gas coolers**

AHRI supports the exception language added to Section 901.1.8.1, which provides much needed clarity to the section. "In non-residential buildings, except buildings with Group R occupancies, air-cooled gas coolers on systems with a total heat rejection of 20 tons (240,000 Btu/h) or less for systems serving freezers, or 40 tons (480,000 Btu/h) or less for systems serving coolers." AHRI recommends adding the exception language to the 2028 Energy Code.

Section 908.1.6 *[Section 120.6(h)6]* **Indoor growing space-conditioning systems**

AHRI questions why CEC reintroduced decoupled applications into the 2028 Energy Code. The integrated path is entirely technology-neutral, and the studies used to support the CASE proposal show significant efficiency improvements of integrated versus decoupled systems while cost remains largely unaffected.[1]

Furthermore, integrated systems require modulating sensible heat ratio (SHR), supply fan, recovered reheat/rejected waste heat from dehumidification. Decoupled systems only require staging. If modulation is required for integrated systems, decoupled

[1] California Energy Codes & Standards, *Controlled Environment Horticulture*, Final CASE Report, June 2026

systems should have the same requirements to match benefits of integrated systems more closely.

Additionally, it appears CEC proposes in section 908.1.6.2.6 that standalone commercial dehumidifiers (required for decoupled systems) that reject heat to the space may only be operated during times when space conditions require additional heat. AHRI members question whether standalone commercial dehumidifiers are allowed to operate when the indoor growing space-conditioning system, integrated or decoupled, is satisfying 100% of the cooling or heating load, but not 100% of the dehumidification load? AHRI recommends CEC clarify the requirements for the operation of commercial dehumidifiers.

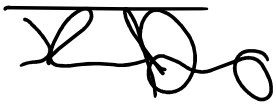
Section 910.1.4 Data Center Heat Recovery

AHRI recognizes the potential energy saving benefits of heat recovery. However, AHRI recommends CEC delete section 910.1.4 because it is overly burdensome, not achievable, and unlikely to apply to many data centers. A significant concern centers on the potential for the heat recovery system, which likely will only be utilized for portions of the year, to negatively impact data center uptime.

Conclusion

AHRI appreciates the work of the California Energy Commission and the opportunity to provide comments. If we can provide any additional information, please let me know.

Sincerely,



Thomas J. Deary

Senior Director of Codes

AHRI