CALIFORNIA ENERGY CODES & STANDARDS
A STATEWIDE UTILITY PROGRAM

COMMENTS ON THE DEFINITIONS PERTAINING TO THE 2028 DATA CENTER EFFICIENCY IMPROVEMENTS MEASURES

July 17, 2026

California Energy Commission

Docket No. 25-BSTD-03

The California Statewide Codes and Standards Enhancement (CASE) initiative presents recommendations to support the California Energy Commission's (CEC's) efforts to update California's Building Energy Efficiency Standards (Title 24, Part 6), including revisions to simplify and clarify existing code requirements. Three California Investor-Owned Utilities (IOUs)—Pacific Gas & Electric Company, San Diego Gas & Electric, and Southern California Edison—sponsored this effort as a group.

This letter recommends reconsideration of the proposed definitions presented by CEC staff at the 2028 Energy Code Staff Pre-Rulemaking Workshop on June 24, 2026. More specifically, the following definitions were proposed on slide 40 of CEC's presentation:

- Revised "Computer Room" and "Data Center" definitions that fully align with the California Building Code (CBC) definitions. See Table 5 for the definitions.
- Additional types of data centers based on ITE load thresholds such as "Small Data Center," "Large Data Center," and "Hyperscale Data Center."
- A new definition for "Server Aisle."

Rather than adopting these proposed definitions, the IOUs recommend either retaining or expanding the current computer room definition as proposed in Section 3 of this letter.

However, assuming CEC proceeds with the above definitional revisions based on the CBC, the IOUs suggest that CEC also revise the accompanying provisions within the mandatory and prescriptive sections of the Building Energy Efficiency Standards to ensure continued stringency of the current provisions and the measures being considered during the 2028 rulemaking cycle.

Pacific Gas and Electric Company
SOUTHERN CALIFORNIA EDISON Energy for What's Ahead
SDGE

1. Measure Description and Justification

1.1 Proposal Description

The IOUs' opinion is that a revision in definitions without revisions to the mandatory and prescriptive provisions in Section 910 would result in data centers >10 kW to no longer be subject to the Building Energy Efficiency Standards.

The IOUs recommend that CEC consider the following:

1. Maintain the current "Computer Room" and "Data Center" definitions in the Building Energy Efficiency Standards set forth in Title 24, Part 6.
2. Consider the provisions set forth in section 1.1.7 of the CBC to justify maintaining the current "Computer Room" and "Data Center" definitions in California's Building Energy Efficiency Standards.
3. If a change to the definitions is necessary to clarify that a standalone building housing information technology equipment (ITE) (e.g., a data center) is covered under the Building Energy Efficiency Standards, then adding clarifying language to the "Computer Room" definition is preferred by the IOUs. The proposed revisions to the "Computer Room" definition are summarized in section 3 of this letter.
4. Continue to preserve the stringency of mandatory and prescriptive provisions in the Building Energy Efficiency Standards if CEC chooses to implement the definitions proposed at the 2028 Energy Code Staff Pre-Rulemaking Workshop on June 24, 2026. The CASE team recommends revisions to Section 910, so that the current requirements continue to be applicable to computer rooms with a power density greater than 20 W/ft^2 including data centers.
5. The newly proposed measures in the Data Centers Efficiency Improvements CASE Report be applied to computer rooms with a power density greater than 20 W/ft^2 and to data centers as determined in the analytical findings in the CASE report.

1.2 Benefits of Preserving the "Computer Room" and "Data Center" Definitions in the Current Building Energy Efficiency Standards

This letter demonstrates the following:

1. How CEC's proposed definitions will make the current code less stringent; and
2. How CEC's proposed definitions will impact what the CASE team has proposed for 2028.

Section 1.3 of this letter cites specific parts of the current Building Energy Efficiency Standards, explains how CEC's proposed definitional revisions makes the Building Energy Efficiency Standards less stringent, and provides scenarios that makes it easier to understand the benefits of preserving the current "Computer Room" and "Data Center" definitions.

1.3 Background Information

California's current Building Energy Efficiency Standards only include requirements for "computer rooms." While "data center" is included in the code definitions section, the term "computer room" is the only phrase that is used to describe mandatory and prescriptive requirements for spaces with ITE load under Section 910 [covering *Sections 120.6, 140.9, and 141.1*]. The term "data center" only appears in the mandatory and prescriptive code language once, in an exception to a mandatory building envelope requirement (301.2 [*Section 120.7*]) for a dedicated building solely used as a data center with a total covered process load greater than 750 kW. However, the current Building Energy Efficiency Standards definition of "data center" includes "computer rooms" such that all computer rooms in "data centers" are subject to Title 24, Part 6, effectively making the spaces in "data centers" that house ITE covered by the Building Energy Efficiency Standards.

The current "computer room" definition in the Building Energy Efficiency Standards includes a requirement that the IT equipment load density be greater than 20 W/ft^2 with no minimum IT load (kW) threshold requirement. The 20 W/ft^2 minimum ITE load density is reinforced in the prescriptive Building Energy Efficiency Standards language which says it applies to "Computer rooms with a power density greater than 20 W/ft^2." The 20 W/ft^2 load threshold has been used as the basis for all Building Energy Efficiency Standards requirements affecting computer rooms since computer room requirements were first added into the Building Energy Efficiency Standards in 2013. The past cost-effectiveness analyses and intent of the existing code requirements assume the computer room IT load is above >20 W/ft^2.

The new "computer room" definition proposed during the CEC pre-rulemaking workshop on June 24, 2026, is the opposite of the current definition by limiting ITE power density to ≤20 W/ft^2, and would result in Building Energy Efficiency Standards requirements for computer rooms covering an entirely different segment of the market than the original intent of the current requirements. Currently, spaces with ITE power density to ≤20 W/ft^2 are conditioned using the building's space conditioning equipment subject to Sections 400 and 401.

The IOUs' understanding is that CEC's newly proposed definitions are intended to harmonize varying definitional approaches within the Building Energy Efficiency

Standards and CBC. However, this means all existing mandatory and prescriptive language in the Building Energy Efficiency Standards would need to be updated from using the term "computer room" to "data center." Absent wholesale revisions to the mandatory and prescriptive code language, only ITE spaces ≤10 kW or ≤20 W/ft^2 would be subject to the Building Energy Efficiency Standards based on the CEC's new "computer room" definition. It is also important to understand the reason the CBC has distinct thresholds for computer rooms and data centers as it seems to not be based on energy efficiency but rather used to distinguish between occupancy categories B, F, S and H (see Table 4), all of which are within scope of Building Energy Efficiency Standards.

How CEC's proposed definitions could make the current code less stringent

Scenario 1: CEC only changes definitions but keeps prescriptive and mandatory code language terminology.

If the Building Energy Efficiency Standards definitional revisions were to set an ITE load threshold of ≤10 kW or ITE power density threshold of ≤20 W/ft^2 for "computer rooms," all prescriptive and mandatory requirements would achieve significantly less statewide savings because they would no longer apply to computer rooms with >10 kW of ITE and >20 W/ft^2. Additionally, the current requirements would be misapplied to spaces that were never intended to be covered under Section 910.

- For example, without changing the prescriptive code language, a space with an ITE load density of 1,000 kW and 100 W/ft^2 would not be subject to Section 910 requirements because the space no longer qualifies as a computer room under the revised definition, effectively making it exempt from the Building Energy Efficiency Standards.

Scenario 2: CEC changes the definition of computer room and data center and updates all code language references from "computer room" to "data center," which would set a starting minimum ITE load threshold of >10 kW for prescriptive and mandatory requirements.

If the Building Energy Efficiency Standards definitional revisions were to set a minimum ITE load threshold of 10 kW, the following existing code requirements, as summarized in Table 1,[1] would achieve less savings because they would no longer apply to data centers with less than 10 kW of ITE but >20 W/ft^2:

[1] Source: Table 16 of Code Readiness Data Center Energy Efficiency: Market Assessment Report, https://www.etcc-ca.com/reports/data-center-energy-efficiency-market-assessment-report

- Mandatory requirements:
  - Controls to prevent reheating, recooling and simultaneous heating and cooling,
  - Any humidification be adiabatic
  - Chilled water fan coil fans be variable speed
- Prescriptive requirements:
  - Economizer requirements
  - Design fan power limit
  - Minimum UPS efficiency.

Table 1: Tabulated Summary of Current Mandatory and Prescriptive Computer Room Requirements in California's Building Energy Efficiency Standards

Requirement Type	Code Section	Requirement Summary	Minimum Applicable ITE Load
Mandatory	120.6(j)1	Controls to prevent reheating, recooling, and simultaneous heating and cooling	None (applies to all ITE loads)
Mandatory	120.6(j)2	All humidification must be adiabatic	None (applies to all ITE loads)
Mandatory	120.6(j)3	Variable speed fan controls for unitary air conditioners	18 kW (5 ton)
Mandatory	120.6(j)3	Variable speed fan control for chilled water fan systems	None (applies to all ITE loads)
Prescriptive	140.9(a)1	Economizer temperature thresholds	None (exception for ITE loads <18 kW in buildings without economizers)
Prescriptive	140.9(a)2	Maximum design fan power	None (applies to all ITE loads)
Prescriptive	140.9(a)3	Air containment	10 kW (2.8 ton)
Prescriptive	140.9(a)4	Minimum UPS Efficiency (tiered by capacity)	None (10 kW is low threshold for largest tier)

Scenario 3: CEC retains the code's current stringency and applicability via changes to the definitions and revisions to section 910, so the current level of stringency continues to apply to computer rooms >20 W/ft^2 *and data centers.*

How CEC's proposed definitions could impact what the CASE team has proposed for 2028

Scenario 1: CEC only changes definitions but keeps prescriptive and mandatory code language terminology.

Table 2 summarizes how the three sub measures proposed in the 2028 CASE Report would be impacted by the code language only applying to computer rooms with an ITE power density ≤10 kW or ≤20 W/ft^2.

Table 2: Statewide Savings Impact of Definitional Revisions on the Proposed 2028 CASE Measures (Scenario 1)

Proposed Sub measure	Impact from New Definitions
Computer Room Economizers (all other ITE)	Savings significantly reduced; measure would no longer be applicable to computer rooms >10 kW served by water-side economizers
Computer Room Economizers (liquid-cooled ITE >2 MW)	Savings goes to zero; measure would no longer apply to any computer rooms
Fan Control Requirements	Reduced savings (CASE Report savings includes computer rooms 8.8 kW – 17.6 kW)
Computer Room Heat Recovery (applies to computer rooms >100 kW)	Savings goes to zero; measure would no longer apply to any computer rooms

Scenario 2: CEC changes the definition of computer room and data center and updates all code language references of "computer room" to "data center," which would set a starting minimum ITE load threshold of >10 kW for prescriptive and mandatory requirements.

Table 3 summarizes how the three sub measures proposed in the 2028 CASE Report would be impacted by adopting a 10 kW ITE threshold in California's Building Energy Efficiency Standards.

Table 3: Statewide Savings Impact of Definitional Revisions on the Proposed 2028 CASE Measures (Scenario 2)

Proposed Sub measure	Impact from New Definitions
Computer Room Economizers (all other ITE)	Reduced savings for computer rooms ≤10 kW served by water-side economizers

Computer Room Economizers (liquid-cooled ITE >2 MW)	No impact
Fan Control Requirements	Reduced savings for computer rooms 8.8-10 kW (CASE Report savings includes computer rooms 8.8 kW – 17.6 kW)
Computer Room Heat Recovery (applies to computer rooms >100 kW)	No impact

Scenario 3: CEC changes definitions and revises section 910 to preserve the stringency of the current Building Energy Efficiency Standards, and that newly proposed measures in the Data Centers Efficiency Improvements CASE Report be applied to computer rooms with a power density greater than 20 W/ft^2 and to data centers as determined in the analytical findings in the CASE report. This would maintain the code change proposal's stringency, applicability, and savings potential. However, there will be a newly defined space "computer room" that will not be mentioned in any mandatory or prescriptive sections, other than section 910, as there are no current requirements for spaces with power density less than 20 W/ft^2. This could cause more confusion than clarity, which is the assumed intent of adopting the CBC definitions.

Definitional Alignment Between the Building Energy Efficiency Standards CEC and CBC is Not Straightforward or Necessary

Section 1.1.7.1 (Differences) of the CBC states that in the event of any differences between the CBC and the standard reference documents (i.e., Title 24, Part 6, in Chapter 13 of the CBC), the text of the CBC shall govern. However, section 1.1.7.3 (Conflicts) further states that when the requirements of the CBC conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail. The Data Centers CASE team's interpretation is that the current definition of "Computer Room" in Title 24, Part 6, is more restrictive than the definition set forth in Chapter 2 of the CBC. Further, Section 1.1.7.2 (Specific Provisions) of the CBC states that where a specific provision varies from a general provision, the specific provision shall apply. Chapter 13 of the CBC incorporates by reference California's Building Energy Efficiency Standards set forth in Title 24, Part 6. The Data Centers CASE team's interpretation is that California's Building Energy Efficiency Standards requirements (and by extension, its definitions) may be interpreted as being specific to building level energy efficiency criteria.

Table 4 suggests that the motivations for the data centers definition in the CBC pertain to occupancy categories that set fire and structural provisions, and the same distinctions/thresholds are not necessary for the Building Energy Efficiency Standards.

Table 4 – Fire and Structural Provisions in the CBC for Data Centers

Architectural & Code Feature	Small Data Center (Computer Room / Edge)	Large Data Center (Enterprise / Colocation)	Hyperscale Data Center (Cloud / AI Super-Hub)
Typical Physical Footprint	500 to 5,000 sq. ft.	10,000 to 100,000+ sq. ft.	100,000 to 500,000+ sq. ft. (Campus scale)
Design ITE Power Load	>10 kW up to ~100 kW	1 Megawatt (MW) to 20 MW	20 MW to hundreds of Megawatts
Primary CBC Occupancy	Group B (Business accessory space)	Group F-1 / S-1 (Industrial / Storage)	Group F-1 / S-1 with Group H sub-spaces
Mandatory Fire Separation	0 to 1-Hour fire barrier (drywall)	2-Hour structural fire barrier	3 to 4-Hour concrete blast/fire walls
Footprint Area Constraints	Fits easily within standard building caps	Restricted by the removal of the S_a = 4 area multiplier	Requires distinct structural separation breaks into separate "buildings"
Seismic Risk Category	Risk Category II (Standard Office)	Risk Category III (High structural impact)	Risk Category IV (Designated Essential Infrastructure)
Seismic Component Factor (I_p)	I_p = 1.0 (Standard rack anchoring)	I_p = 1.5 (Rigorous dynamic pre-approvals)	I_p = 1.5 (Heavy slab and ceiling grid testing)

Fire Protection Systems	Ordinary wet sprinklers or small clean-agent gas	Dual-interlock pre-action sprinklers	High-volume chemical deluge and gas suppression
Battery & UPS Hazards	Distributed rack-mounted UPS blocks	Centralized, dedicated interior UPS rooms	Separate, outdoor Battery Energy Storage System utility yards with blast paths
Smoke & Gas Management	Standard building comfort ventilation	Dedicated emergency smoke exhaust loops	Automated thermal runaway toxic gas purge systems

2. Review of Other Codes to Inform Proposal to Maintain Current Definitions in the Building Energy Efficiency Standards

When developing this comment letter, the Statewide CASE Team reviewed definitions across other codes and compared them to the current definitions in the Building Energy Efficiency Standards. Table 5 summarizes the differences in the definitions.

The definition for "Computer Room" was first incorporated into the IP edition of ANSI/ASHRAE/IES Standard 90.1-2010, and incorporated the 20 W/ft^2 criterion in the definition.[2] The 2013 Codes and Standards Enhancement (CASE) Report on Data Centers led to the incorporation of the "Computer Room" definition in the 2013 edition of Title 24, Part 6.[3] The definition has since remained unchanged in subsequent editions of Title 24, Part 6, from the standpoint of the power density criterion exceeding 20 W/ft^2 (215 watts/m^2) of conditioned floor area.

The subsequent publication of ANSI/ASHRAE 90.4-2016 led to two distinct definitions for "Computer Room" and "Data Center" based on an added ITE load criterion of 10 kW,

[2] ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings I-P Edition, 6, https://www.ashrae.org/technical-resources/standards-and-guidelines/read-only-versions-of-ashrae-standards

[3] Taylor Engineering, *Data Centers*, 69, https://title24stakeholders.com/wp-content/uploads/2020/08/2013-Data-Center-Final-CASE-Report-1.pdf

with the less than or equal to value assigned to the “Computer Room” definition, and the greater than 10 kW value assigned to the “Data Center” definition.[4] ASHRAE’s online terminology has also incorporated the “Data Center” definition consistent with the approach in the 2025 CBC, the 2024 International Building Code (IBC), and ANSI/ASHRAE 90.4-2025.[5] It is important to note that ANSI/ASHRAE/IES 90.1 has requirements for computer rooms >20 W/ft^2 and refers users to ANSI/ASHRAE Standard 90.4 for data center energy efficiency requirements. However, the Building Energy Efficiency Standards covers all computer rooms including data centers with secondary ITE load triggers for some measures.

Table 5: Differences in Definitions Across Codes

Term	Title 24, Part 6, and ANSI/ASHRAE/IES 90.1-2025	CBC, 2024 IBC, ANSI/ASHRAE 90.4-2025
Computer Room	is a room within a building whose primary function is to house electronic equipment that has a designed information technology equipment (ITE) equipment power density exceeding 20 watt/ft^2 (215 watts/m^2) of conditioned floor area.	is a room or portions of a building used primarily to house information technology equipment (ITE) and serving an ITE load less than or equal to 10 kW or 20 W/ft^2 (215 W/m^2) of conditioned floor area. *Informative note:* The above definition aligns closely with the “Computer Room” definition proposed by CEC at the pre-rulemaking workshop on June 24, 2026.
Data Center	is a building whose primary function is to house computer room(s).	is a room or building, or portions thereof, used primarily to house information technology equipment (ITE) and serving a total ITE load greater than 10 kW and 20 W/ft^2 (215 W/m^2) of conditioned floor area. *Informative note 1:* The above definition aligns closely with the “Data Center” definition proposed by CEC at the pre-rulemaking workshop on June 24, 2026.

[4] ANSI/ASHRAE Standard 90.4-2016, Energy Standard for Data Centers, 3, https://www.ashrae.org/technical-resources/standards-and-guidelines/read-only-versions-of-ashrae-standards

[5] https://terminology.ashrae.org/?searchType=contains&term=computer+room

		Informative note 2: The following terms were also proposed at CEC's pre-rulemaking workshop on June 24, 2026: **Small Data Center:** Space with ITE load > 10 kW & ≤ 2,000 kW **Large Data Center:** Space with ITE load > 2,000 & ≤ 25,000 kW **Hyperscale Data Center:** Space with ITE power density >25,000 kW **Server Aisle** is an aisle of racks of Information Technology (IT) server equipment in any Computer Room or in a Small, Large, or Hyperscale Data Center. While networking equipment may also be housed on these racks, it is largely a group of one or more racks to manage server or networking equipment.

3. Proposed Code Language

The CEC could consider the following revised definition for "Computer Room" if some level of definitional alignment is desired without reducing the stringency of the Building Energy Efficiency Standards.

SECTION 200 [*Section 100.1*] – DEFINITIONS AND RULES OF CONSTRUCTION

Section 201 [*Section 100.1(b)*] – Definitions: The IOUs recommend a revised definition for the following term:

COMPUTER ROOM is a room or building, or portions thereof, ~~within a building~~ whose primary function is to house electronic equipment and that has a design information technology equipment (ITE) ~~equipment~~ power density exceeding 20 watts/ft^2 (215 watts/m^2) of conditioned floor area.

4. Closing Remarks

The IOUs appreciate the opportunity to provide these comments on the June 24, 2026, 2028 Energy Code Staff Pre-Rulemaking Workshop. The IOUs look forward to continuing a collaborative dialog with CEC on the definitions pertaining to the proposed data center efficiency improvements measures.