

DOCKETED	
Docket Number:	24-BSTD-03
Project Title:	2025 Energy Code Compliance Software, Manuals and Forms
TN #:	272234
Document Title:	Updates to Peak Cooling Performance Modeling Approach in the 2025 Energy Code Single-family ACM Reference Manual
Description:	Updates to Peak Cooling Performance Modeling Approach in the 2025 Energy Code Single-family Alternative Calculation Method Reference Manual to be discussed at September 9, 2026 CEC business meeting
Filer:	Danny Tam
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/28/2026 11:03:52 AM
Docketed Date:	8/28/2026



MEMORANDUM

TO: 2025 Energy Code Compliance Software, Manuals and Forms (24-BSTD-03)

FROM: California Energy Commission

SUBJECT: Updates to Peak Cooling Performance Modeling Approach in the 2025 Energy Code Single-family Alternative Calculation Method Reference Manual

DATE: August 28, 2026

Executive Summary

Newly constructed single-family homes complying with the 2025 Energy Code (California Code of Regulations, Title 24, Part 6) using the performance modeling approach must meet or exceed the budgets for two metrics: Long-term System Cost (LSC) and Source Energy. The 2025 Energy Code Accounting Methodology Report¹ describes the development of these metrics in detail. However, projects meeting or exceeding the budgets for these two Energy Code metrics may still experience unintended peak period cooling energy between 4 pm and 9 pm from July to November that is higher than the standard design. These designs may result in exacerbated peak loads on California's electric grid during summer heat waves. This issue was described in a memorandum published to California Energy Commission (CEC) Docket Number 24-BSTD-03² on April 25, 2025, referred to as the "2025 Peak Cooling Memo."³

The 2025 Energy Code metrics encourage single-family homes to reduce demand during the winter peak and overnight periods. The CEC also finds it critically important for buildings to reduce demand during summer peak period cooling expected to occur in California's near- and medium-term future. To help resolve this issue, the CEC developed a peak cooling performance modeling approach in Section 1.6 of the 2025 Energy Code Single-Family Alternate Calculation Method (ACM) Reference Manual.⁴ The ACM Reference Manuals specify the CEC-approved methods for demonstrating compliance with California's Energy Code using the performance modeling approach and are periodically updated to align with Energy Code implementation. The method currently allows up to a 20% increase in peak period cooling energy for a proposed design compared to the standard design and is applicable in climate zones 4 and 8 through 15. The analysis supporting the peak cooling energy performance modeling approach was detailed in the 2025 Peak Cooling Memo.

¹ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=255318-1&DocumentContentId=91004>

² <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-BSTD-03>

³ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=262800&DocumentContentId=99416>

⁴ <https://www.energy.ca.gov/publications/2025/2025-single-family-residential-alternative-calculation-method-reference-manual>

Comments to Docket Number 24-BSTD-03⁵ raised an issue with the 20% threshold in the California Building Energy Code Compliance (CBECC) software, CBECC 2025 v2.0. Commenters noticed that newly constructed single-family homes expected to comply with the 2025 Energy Code were exceeding the peak cooling energy threshold for a proposed design. Staff investigated the issue and discovered that an adjustment in threshold is warranted to better align with CBECC 2025 v2.0. In response to these comments, and based on independent analysis performed by the CEC, the CEC proposed revising the limit to a 30% increase in peak cooling energy for climate zones (CZ) 4, 8, 9, 11, 12, 13, and 15, and up to a 25% increase in climate zones 10 and 14. Staff also considered additional measure packages for custom homes and accessory dwelling units (ADUs) to demonstrate compliance with the proposed peak cooling performance modeling approach. The analysis supporting a revision to the peak cooling energy performance modeling approach was published to Docket Number 24-BSTD-03 on May 14, 2026, and referred to as the May 2026 Peak Cooling Update Memo⁶.

Comments to Docket Number 24-BSTD-03⁷ were generally supportive of the revision proposed in the May 2026 Peak Cooling Update Memo, but continued to request additional options to reduce energy use during the summer peak period. Specifically, commenters requested that contributions from photovoltaic and battery energy storage systems be considered in the peak cooling energy calculation. In response to these comments, staff investigated applying battery energy storage system (BESS) contributions to the peak cooling energy. Based on independent analysis performed by the CEC, the CEC proposes to allow users to choose to apply contribution of a JA12-compliant battery energy storage system (BESS) to the proposed design peak cooling energy (up to a maximum of 20% of the standard design peak cooling energy) or to use the existing self-utilization credit that offsets efficiency LSC energy.

The revised peak cooling energy recommendations described in this memo have been incorporated into the California Building Energy Code Compliance (CBECC) 3.0 Research Version 7 (RV7), which is for research only and cannot be used for compliance. CBECC 3.0 RV7 can be downloaded from the California Energy Commission CBECC GitHub project website, <https://github.com/california-energy-commission/CBECC/releases>.

Analysis

To investigate applying BESS contributions to the peak cooling energy, staff developed an internal version of California Building Energy Code Compliance (CBECC) software, based on CBECC 2025.3.0 Peak Cooling Research Version (RV), which included the changes proposed in the May 2026 Peak Cooling Update Memo. CBECC is a free open-source software tool developed and

⁵ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=267721&DocumentContentId=104745>,
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=267726&DocumentContentId=104750>,
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=267728&DocumentContentId=104752>

⁶ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=269979&DocumentContentId=107129>

⁷ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=270408&DocumentContentId=107676>,
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=270430&DocumentContentId=107682>,
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=270535&DocumentContentId=107834>

approved by the CEC to demonstrate compliance with the California Energy Code. Within CBECC, a prototype for a 2,700 ft² single-family home was used; the same prototype that was used to support the original 2025 Peak Cooling Memo. The prototype included window and wall area distributions typical of California production homes. The analysis also included custom home and accessory dwelling unit (ADU) designs.

Results in the following peak cooling energy analysis are presented in terms of the percentage differences between the proposed design and standard design (compliance margin %). A negative percentage represents a design that uses more peak cooling energy than the baseline building. For building designs with compliant LSC margins, the associated peak cooling margins were evaluated to highlight potential compliance software solutions to the peak cooling energy issue. All scenarios analyzed met or outperformed the Energy Code's Source Energy metric.

The 2025 Peak Cooling Memo analyzed seven packages of measures (documented in Tables 3 through 9 in the 2025 Peak Cooling Memo). The packages included some measures below prescriptive code requirements, and some measures above prescriptive code requirements. The goal of this analysis was to identify peak cooling performance thresholds that would provide designers with sufficient flexibility.

The packages were designed to reflect a wide range of builder-friendly and realistic construction packages for production homes. The base case was the standard design. In addition to the measures listed, all packages included a minimally code-compliant solar photovoltaic (PV) system and no battery.

The May 2026 Peak Cooling Update Memo (Table 2) listed the compliance results for the same packages as the 2025 Peak Cooling Memo. In some climate zones, Packages 1, 4, 5, 6 and 7 (Tables 1a and 1d through 1g in the May 2026 Peak Cooling Update Memo) were close to the peak cooling energy threshold.

For those packages, this memorandum evaluated including a 5kWh JA12- compliant BESS, with 20% of the battery discharge during the peak cooling energy period applied to the peak cooling energy.

For each measure package, the resulting total LSC and peak period cooling energy margins, with and without the BESS contribution, are shown in Table 2.

Table 1a – Package 1 (Peak Cooling Compliant Case with 2x6 Walls) Evaluated in 2025 Peak Cooling Memo for 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	14.3 SEER2, 11.7 EER2, 9 HSPF2 (CZ 4, 8-12, 14) 14.3 SEER2, 11.7 EER2, 10 HSPF2 (CZ 13, 15)	No Whole House Fan (CZ 8-14)
DHW	NEEA Tier 3 HPWH (CZ 4, 12, 14) NEEA Tier 3 HPWH w/ CDHW (CZ 8-11, 13, 15)	N/A
Envelope	N/A	No QII Roof Solar Reflectance: 0.1 Ceiling Insulation: R-38 Roof Insulation: R-4 (below deck)
Overhangs	N/A	N/A

Table 2d – Package 4 (2x4 Walls, 16 SEER2, 13 EER2) Evaluated in 2025 Peak Cooling Memo for 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	16 SEER2, 13 EER2, 9 HSPF2 Low-Leakage AHU Reduced Fan Power: 0.4 W/cfm	No Whole House Fan (CZ 8, 10, 11, 13, 14)
DHW	NEEA Tier 3 HPWH	N/A
Envelope	Roof Solar Reflectance: 0.25 Window Performance: U=0.27, SHGC=0.20 (CZ 4, 11-14) U=0.30, SHGC=0.20 (CZ 8-10)	Wall Cavity Insulation: R-15 Wall Exterior Insulation: R-5 Ceiling Insulation: R-49 Roof Insulation: R-4 (below deck)
Overhangs	N/A	N/A

Table 3e – Package 5 (2x4 Walls with R-6 Exterior Insulation, 16 SEER2, 13 EER2) Evaluated in 2025 Peak Cooling Memo for 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	16 SEER2, 13 EER2, 9 HSPF2 Low-Leakage AHU Reduced Fan Power: 0.4 W/cfm	No Whole House Fan (CZ 8, 10, 11, 13, 14)
DHW	NEEA Tier 3 HPWH	N/A
Envelope	Roof Solar Reflectance: 0.25 Window Performance: U=0.27, SHGC=0.20 (CZ 4, 11-14) U=0.30, SHGC=0.20 (CZ 8-10)	Wall Cavity Insulation: R-15 Wall Exterior Insulation: R-6 Ceiling Insulation: R-49 Roof Insulation: R-4 (below deck)
Overhangs	N/A	N/A

Table 4f – Package 6 (2x4 Walls, 16 SEER2, 11.7 EER2) Evaluated in 2025 Peak Cooling Memo for 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	16 SEER2, 11.7 EER2, 9 HSPF2 Low-Leakage AHU Reduced Fan Power: 0.4 W/cfm	No Whole House Fan (CZ 8, 10, 11, 13, 14)
DHW	NEEA Tier 3 HPWH	N/A
Envelope	Roof Solar Reflectance: 0.25 Window Performance: U=0.27, SHGC=0.20 (CZ 4, 11-14) U=0.30, SHGC=0.20 (CZ 8-10)	Wall Cavity Insulation: R-15 Wall Exterior Insulation: R-5 Ceiling Insulation: R-49 Roof Insulation: R-4 (below deck)
Overhangs	N/A	N/A

Table 5g – Package 7 (2x6 Walls, 14.3 SEER2, 11.7 EER2) Evaluated in 2025 Peak Cooling Memo for 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	Low-Leakage AHU	N/A
DHW	N/A	N/A
Envelope	Blower Door: 3 ACH50	N/A
Overhangs	N/A	N/A

Acronyms for Tables 1a through g:

- ACH50 – air changes per hour at 50 Pascals
- AHU – air handler unit
- CDHW – compact hot water distribution
- cfm – cubic feet per minute
- CZ – climate zone
- DHW – domestic hot water
- EER – energy efficiency ratio
- HSPF – heating seasonal performance factor
- HPWH – heat pump water heater
- HVAC – heating, ventilation, and air conditioning
- NEEA – Northwest Energy Efficiency Alliance
- QII – quality insulation installation
- SEER – seasonal energy efficiency ratio
- SHGC – solar heat gain coefficient

Table 6 - Compliance Results: 2,700 ft² Single-Family Prototype with Builder-provided Design Specifications

		Package 1			Package 4			Package 5			Package 6			Package 7		
CZ	Proposed Peak Cooling Margin Allowance (%)	Total LSC Margin – no BESS (%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin (%) – no BESS	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin (%)– no BESS	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin (%)– no BESS	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)
4	-30%	6%	-11%	15%	6%	-19%	7%	7%	-17%	9%	6%	-30%	-4%	2%	-30%	-4%
8	-30%	7%	-32% *	-6%	5%	-32% *	-6%	6%	-31% *	-5%	5%	-32% *	-6%	0%	-7%	19%
9	-30%	7%	-21%	5%	4%	-10%	16%	4%	-9%	17%	3%	-14%	12%	0%	-9%	17%
10	-25%	7%	-16%	9%	5%	-17%	8%	6%	-16%	9%	4%	-23%	2%	1%	-8%	17%
11	-30%	7%	-11%	15%	6%	-12%	14%	7%	-11%	15%	5%	-25%	1%	1%	-12%	14%
12	-30%	7%	-54%*	-28%	7%	-17%	9%	8%	-15%	11%	7%	-28%	-2%	2%	-12%	14%
13	-30%	9%	-9%	17%	5%	-10%	16%	6%	-9%	17%	3%	-22%	4%	1%	-9%	17%
14	-25%	7%	-5%	20%	8%	-5%	19%	8%	-4%	21%	7%	-14%	11%	3%	-9%	16%
15	-30%	3%	-5%	21%	1%	-7%	19%	2%	-5%	21%	-4%	-22%	4%	0%	-4%	22%

* Indicates that the package does not comply with the peak cooling allowance proposed in the May 2026 Peak Cooling Update Memo.

The analysis demonstrates that the battery energy storage system is highly effective at reducing peak cooling energy use within the proposed margin.

Custom Homes Analysis

In addition to the single-family home prototype model analysis, analysis was performed on custom home designs, following the approach in the 2025 Peak Cooling Memo. The models were analyzed at the worst-case orientation relative to peak cooling energy. The homes had four to five bedrooms and varied in terms of size, and percentage fenestration relative to conditioned floor area. In the 2025 Peak Cooling Memo, the homes were assumed to have air leakage of 5 ACH50 (meets prescriptive requirement), to not include a whole house fan (below prescriptive requirements), and to use two split system heat pumps with 15.2 SEER2, 12.5 EER2, and 8.9 HSPF2 (above prescriptive requirements).

Other building features, such as envelope, equipment efficiencies, and presence of PV and/or batteries, are described in Tables 3a through 3c. Packages 1, 2, and 3 represent three different custom home designs analyzed in climate zone 12 with inputs matching those used in the 2025 Peak Cooling Memo. Climate zone 12 was chosen because it represents a median California climate with both cooling and heating loads. The base case was the standard design.

For this memorandum, staff evaluated similar packages as in the 2025 Peak Cooling Memo with changes described below. For package 1, the efficiency of the two split system heat pumps was increased to 16 SEER2, 13 EER2, and 9 HSPF2 to ensure that the model passes LSC requirements. Additionally, all packages included a 5 kWh JA12- compliant BESS, with 20% of the battery discharge during the peak cooling energy period applied to the peak cooling energy.

Analysis results for the custom home packages 1, 2, and 3 with and without the BESS contribution are summarized in Table 4.

Table 7a – Package 1 Evaluated in 2025 Peak Cooling Memo for Custom Homes

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	16 SEER2, 13 EER2, 9 HSPF2 (prev. 15.2 SEER2, 12.5 EER2, 8.9 HSPF2) ERV Ducts: In Conditioned Space Except <12 ft, 5%	No Whole House Fan (CZ 12)
DHW	NEEA Tier 4, 80-gallon HPWH, DR	N/A
Envelope	Roof Solar Reflectance: 0.63 (prev. 0.5) Roof IR Emittance: 0.85 (new) Roof Deck Insulation: R 38 Cathedral Ceiling cavity plus R-10 continuous above deck	No QII Total Glazing: 38%

Package 1 detail: 2 stories, 5,686 ft², 5 bedrooms, zero slope roof, cathedral ceiling, standard design 4.89 kW rooftop PV. (prev. 6 kW rooftop PV, 10kWh BESS self-utilization credit)

Table 8b – Package 2 Evaluated in 2025 Peak Cooling Memo for Custom Homes

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	15.2 SEER2, 12.5 EER2, 8.9 HSPF2 Ducts: R-8, 5%, Crawlspace Low-Leakage AHU Reduced Fan Power: 0.4 W/cfm	Whole House Fan (CZ 12) (prev. No Whole House Fan (CZ 12))
DHW	NEEA Tier 4, 80-gallon HPWH, DR, Recirculation	N/A
Envelope	Floor Insulation: R-30 Over Crawlspace Ceiling Insulation: R-38 Roof Insulation: R-21 (below deck)	Wall Cavity Insulation: R-21 Window Performance: U=0.32, SHGC=0.23 Roof Solar Reflectance: 0.1 Total Glazing: 22%

Package 2 detail: 1 story, 4,546 ft², 4 bedrooms, standard design 4.2 kW rooftop PV (prev. 4.5 kW rooftop PV)

Table 9c – Package 3 Evaluated in 2025 Peak Cooling Memo for Custom Homes

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	15.2 SEER2, 12.5 EER2, 8.9 HSPF2 Ducts: R-6, 5%, Attic and Crawlspace ERV (new) Low-Leakage AHU Reduced Fan Power: 0.4 W/cfm	No Whole House Fan (CZ 12)
DHW	NEEA T4 80 gallons HPWH, DR, Recirculation	N/A
Envelope	Floor Insulation: R-30 Over Crawlspace	Wall Cavity Insulation: R-21 Window Performance: U=0.32, SHGC=0.24 Ceiling Insulation: R-38 Roof Insulation: R-13 (below deck) Total Glazing: 22.24% (prev. 17%)

Package 3 detail: 2 stories, 5,402 ft², 5 bedrooms, standard design 4.7 kW rooftop PV, 5 kWh BESS self-utilization credit (prev. 4.8 kW rooftop PV)

Acronyms for Tables 3a through 3c:

- AHU – air handler unit
- BESS – battery energy storage system
- cfm – cubic feet per minute
- CZ – climate zone
- DHW – domestic hot water
- DR – demand response
- EER – energy efficiency ratio
- ERV – energy recovery ventilator
- HSPF – heating seasonal performance factor
- HPWH – heat pump water heater
- HVAC – heating, ventilation, and air conditioning
- IR - infrared
- NEEA – Northwest Energy Efficiency Alliance
- QII – quality insulation installation
- PV - photovoltaic
- SEER – seasonal energy efficiency ratio
- SHGC – solar heat gain coefficient

Table 10 – Compliance Results: Custom Homes

		Package 1			Package 2			Package 3		
CZ	Proposed Peak Cooling Margin Allowance (%)	Total LSC Margin – no BESS (%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin – no BESS (%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)
12	-30%	8.8%	-17%	2.8%	3.1%	-11%	8.5%	2.7%	3.9%	24%

Analysis of the custom homes indicates that the proposed contribution from BESS allows these custom home packages to comply with the proposed peak cooling energy allowance.

Accessory Dwelling Units Analysis

In the 2025 Peak Cooling Memo, performance of an accessory dwelling unit (ADU) in four climates zones was analyzed. The analysis used a 623 ft², one-bedroom ADU with 33% total glazing with the largest window exposure facing East. The ADU assumes quality insulation installation (QII), walls with R-21 cavity insulation and R-5 exterior insulation, R-38 ceiling insulation, R-19 below roof deck insulation, no PV system, no battery energy storage system, and floors that are slab on grade exposed which outperforms 2025 Energy Code prescriptive requirements.

For this memorandum, ADU packages 1, 2, and 3 match the inputs used in the 2025 Peak Cooling Memo (see Tables 5a through 5c), with the changes described below. The base case was the standard design.

The changes evaluated include:

- Vented attic with insulation at the roof deck and at the ceiling as evaluated in the 2025 Peak Cooling Memo, as well as the option of an unvented attic with R-30 insulation levels at the roof deck and R-0 at the ceiling.
- Including a 5kWh JA12- compliant BESS, with 20% of the battery discharge during the peak cooling energy period applied to the peak cooling energy.

Analysis results are shown in Table 6.

Table 11a – Package 1 Evaluated in 2025 Peak Cooling Memo for ADUs

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	Split HP: 17 SEER2, 13 EER2, 7.5 HSPF	No Whole House Fan (CZ 10, 12, 15)
DHW	NEEA Tier 4, 50-gallon HPWH with Point of Use (POU) distribution	N/A
Envelope	N/A	Roof Solar Reflectance: 0.1 (CZ 10, 12, 15) Windows Performance: U=0.3 (CZ4, 12)

For this memo, Package 1a has a vented attic, Package 1b has an unvented attic.

Table 12b – Package 2 Evaluated in 2025 Peak Cooling Memo for ADUs

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	Split HP: 17 SEER2, 13 EER2, 7.5 HSPF	No Whole House Fan (CZ 10, 12, 15)
DHW	NEEA Tier 4, 50-gallon HPWH with POU	N/A
Envelope	Roof Solar Reflectance: 0.25 Window Performance: SHGC=0.20	Windows Performance: U=0.3 (CZ4, 12)

For this memo, Package 2a has a vented attic, Package 2b has an unvented attic.

Table 5c. Package 3 Evaluated in 2025 Peak Cooling Memo for ADUs

System	Above Prescriptive Requirements	Below Prescriptive Requirements
HVAC	Ductless minisplit VCHP (prev. split): 17 SEER2, 13 EER2, 7.5 HSPF (prev. Verified Low Leakage Ducts in Conditioned Space) HRV Reduced Fan Power: 0.4 W/cfm)	No Whole House Fan (CZ 10, 12, 15)
DHW	NEEA Tier 4, 40-gallon HPWH, POU (prev. N/A)	N/A
Envelope	Blower Door: 3 ACH50	N/A

For this memo, Package 3a has a vented attic, Package 3b has an unvented attic.

Acronyms for Tables 5a through 5c:

- ACH50 – air changes per hour at 50 Pascals
- ADU – accessory dwelling unit
- DHW – domestic hot water
- EER – energy efficiency ratio
- HP – heat pump
- HRV – heat recovery ventilator
- HSPF – heating seasonal performance factor
- HPWH – heat pump water heater
- HVAC – heating, ventilation, and air conditioning
- NEEA – Northwest Energy Efficiency Alliance
- POU – point of use
- SEER – seasonal energy efficiency ratio
- SHGC – solar heat gain coefficient

Table 13-1 - Compliance Results: ADUs with vented attic

		Package 1a			Package 2a			Package 3a		
CZ	Proposed Peak Cooling Margin Allowance (%)	Total LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	Total LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)
4	-30%	2.7%	-1.8%	18.6%	2.2%	17%	36%	2.3%	15%	36%
10	-25%	3.7%	-8.4%	11.6%	4.4%	4%	24%	2.1%	11%	31%
12	-30%	2%	-37.6% *	-17.7%	2.2%	-11%	8.5%	1.7%	-15%	9.3%
15	-30%	-0.2%	-1%	20.9%	1.6%	6.3%	26%	4.0%	21%	41%

* Indicates that the package does not comply with the peak cooling allowance proposed in the May 2026 Peak Cooling Update Memo.

Table 14-2 - Compliance Results: ADUs with unvented attic

		Package 1b			Package 2b			Package 3b		
CZ	Proposed Peak Cooling Margin Allowance (%)	LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)	LSC Margin – no BESS(%)	Peak Cooling Margin – no BESS (%)	Peak Cooling Margin – with BESS (%)
4	-30%	1.9%	-7%	13%	1.5%	12%	32%	0.3%	6.7%	27%
10	-25%	3.6%	-2.1%	18%	4.3%	10%	30%	1.3%	13%	33%
12	-30%	1.6%	-12.3%	7.3%	1.9%	9%	29%	0.2%	5.6%	26%
15	-30%	-0.7%	0%	20%	1.2%	5.6%	26%	2.1%	16%	36%

Analysis of the ADUs indicates that the proposed contribution from BESS allows these ADU packages to comply with the proposed peak cooling energy allowance.

Proposed Adjustment to Peak Cooling Performance Modeling Approach

This updated analysis shows that applying a contribution from a BESS, in addition to revising the peak cooling performance modeling threshold up to 25%-30% (depending on climate zone), facilitates designs minimizing peak cooling energy for newly constructed single family homes.

Therefore, the CEC proposes to update the Single-Family ACM Reference Manual, and corresponding Energy Code compliance software (CBECC), to allow users to choose to apply contribution of a JA12-compliant battery energy storage system (BESS) to the proposed design peak cooling energy (up to a maximum of 20% of the standard design peak cooling energy) or to use the existing self-utilization credit that offsets efficiency LSC energy. In addition, the CEC also proposes to update the Single-Family ACM Reference Manual, and corresponding Energy Code compliance software (CBECC), to revise the peak cooling performance modeling threshold up from 20% to 30% for climate zones 4, 8, 9, 11, 12, 13, 15 and up from 20% to 25% for climate zones 10 and 14. These modifications will provide added flexibility to single-family homebuilders and designers when using the performance modeling approach to comply with the 2025 Energy Code.