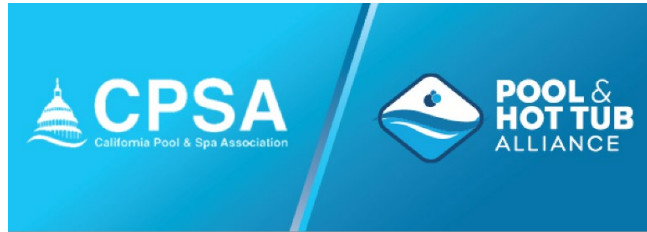


<b>DOCKETED</b>	
<b>Docket Number:</b>	24-BSTD-01
<b>Project Title:</b>	2025 Energy Code Rulemaking
<b>TN #:</b>	256307
<b>Document Title:</b>	Pool and Hot Tub Alliance Comments - PHTA CPSA Pool spa heating comments on 45-day language for 2025 Building Energy Efficiency Standards
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Pool and Hot Tub Alliance
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	5/13/2024 11:14:30 AM
<b>Docketed Date:</b>	5/13/2024

*Comment Received From: Pool and Hot Tub Alliance  
Submitted On: 5/13/2024  
Docket Number: 24-BSTD-01*

**PHTA CPSA Pool spa heating comments on 45-day language for  
2025 Building Energy Efficiency Standards**

*Additional submitted attachment is included below.*



May 13, 2024

Submitted via: [Docket Log 24-BSTD-01](#)

Re: Pool/spa heating comments on 45-day language for 2025 Building Energy Efficiency Standards

California Energy Commission Staff:

The Pool & Hot Tub Alliance (PHTA) represents more than 3,650 company members and over 11,000 individual members nationwide, including companies that manufacture pool and spa heating equipment. PHTA has a long history of working with the California Energy Commission (Commission or CEC) and appreciates the opportunity to provide feedback on the current proposed language.

The California Pool & Spa Association (CPSA) is the statewide trade association that represents more than 230 company members in the state of California, including pool and spa builders, service companies, manufacturers, and distributors.

PHTA and CPSA are grateful for the opportunity to participate in this rulemaking and the serious consideration and positive response that the Commission has given the comments that PHTA and CSPA have previously submitted.

PHTA and CSPA have one additional comment on the March 28, 2024, proposed changes to 2025 Building Energy Efficiency Standards, Title 24 Parts 1 and 6, Express Terms, 45-day Language. The comments appear in their entirety on the attached pages that follow. Additionally, we are reiterating previous comments on the need to retain the exceptions provided in the 45-day Language, along with specifically responding to other comments that have recently been submitted.

We welcome your careful consideration of the comments below in response to the pool and spa-related proposals for the 2025 California Energy Code. If you have any questions on these comments, please contact me at [gceton@phta.org](mailto:gceton@phta.org) on behalf of PHTA.

Sincerely,

A handwritten signature in black ink, appearing to read 'GCeton', written over a light blue circular stamp.

Gregory Ceton  
Director, Codes and External Standards  
Pool & Hot Tub Alliance

cc: Justin Wiley, PHTA VP of GR, Standards and Codes, [jwiley@phta.org](mailto:jwiley@phta.org)  
Tyler Jones, PHTA Director, Government Relations, [tjones@phta.org](mailto:tjones@phta.org)  
Jennifer Hatfield, Government Affairs Consultant, PHTA, [jen@jhatfieldandassociates.com](mailto:jen@jhatfieldandassociates.com)

## Referential Language in 45-Day Express Terms

PHTA and CSPA have a concern with some language and internal references found in the 45-day Express Terms, that start from section 110.4 (c) Heat Source Sizing.

(Sections below taken from 2025 Building Energy Efficiency Standards, Title 24 Parts 1 and 6, Express Terms, 45-day Language. **Highlights** added by PHTA for emphasis.)

p. 203:

### **SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT**

...

p. 204:

(c) **Heating Source Sizing.** Heating systems or equipment for pool and/or spa shall meet the sizing requirements of 1, 2, or 3 below:

...

2. A heat pump pool heater as the primary heating system that meets the sizing requirements of Reference Joint Appendix JA16.3. **The control for the heat pump pool heater shall meet the requirements specified in section 110.2(b).** The backup heater can be of any energy source; or

...

p. 154:

### **SECTION 110.2 – MANDATORY REQUIREMENTS FOR SPACE-CONDITIONING EQUIPMENT**

...

p. 155

(b) **Controls for heat pumps with supplementary electric resistance heaters, for non-residential and multifamily buildings..**

**Controls for heat pumps with supplementary heaters for single family residential buildings are provided in Section 150.0(h)7.** For non-residential and multi-family buildings #heat pumps with

supplementary electric resistance heaters shall have controls:

1. That prevent supplementary heater operation when the heating load can be met by the heat pump alone; and
2. In which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.

...

p. 437:

## **SUBCHAPTER 7 SINGLE-FAMILY RESIDENTIAL BUILDINGS – MANDATORY FEATURES AND DEVICES**

### **SECTION 150.0 – MANDATORY FEATURES AND DEVICES**

...

p. 439:

(h) **Space-conditioning equipment.**

...

p.441:

- 7. Supplementary heating control configuration.** Heat pumps with supplementary heat, including, but not limited to, electric resistance heaters or gas furnace supplementary heating, shall comply with the following requirements:
- A. Lock out supplementary heating above an outdoor air temperature of no greater than 35°F. There are additional thermostat requirements in section 150.0(i)2.
  - B. The installer shall certify on the Certificate of Installation that the control configuration has been tested in accordance with the testing procedure found in the CF2R.
  - C. The controls may allow supplementary heater operation above 35°F only during defrost; or when the user selects emergency operation.

**Exception 1 to Section 150.0(h)7:** Room air-conditioner heat pumps.

**Exception 2 to Section 150.0(h)7:** Buildings in Climate Zones 7 and 15.

PHTA and CSPA believe that the above references are simply in error. Following the chain of references that starts in *SECTION 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT* we are taken to Section 110.2 (b) for mandatory control requirements for heat pump pool heaters. This section then references Section 150.0(h)7 for controls for heat pumps with supplementary heaters. Primary and supplementary heating includes most residential pool heaters considered by this proposed change.

If one follows the chain of references, one arrives at the concluding requirement that supplementary heating be locked out “above an outdoor air temperature of no greater than 35°F.” This is well below the range where pool and spa heat pump heaters best perform and would force no use of supplementary heating until well below the temperature where most bathers would use their swimming pool or spa.

This chain of references would also contradict at least two of the exceptions provided in 110.4(c) in the last round of comments.

Since the referenced sections appear by their location and language to be intended to regulate residential space heating and *not* pool and spa heating, we think the first reference to 110.2(b) is in error.

Considering the above reasoning, PHTA and CSPA request that the Commission revise the language in 110.4 (c)2. so that the reference to 110.2(b) is struck.

2. A heat pump pool heater as the primary heating system that meets the sizing requirements of Reference Joint Appendix JA16.3. ~~The control for the heat pump pool heater shall meet the requirements specified in section 110.2(b).~~ The backup heater can be of any energy source; or  
*(Highlight provided for emphasis by PHTA and CSPA)*

If that strikeout is not a preferred solution for the Commission, know that PHTA and CSPA are happy to discuss this further and assist with any additional changes or alternate language that the Commission believes may need to be made.

## Response to CASE and CI Team comments and NRDC et al comments

In comments related to CEC actions contained in the Title 24 45-Day Express Terms, both CASE and CI<sup>1</sup>, and NRDC et al<sup>2</sup> comments raised concerns in a few areas that PHTA and CSPA would like to respond to.

- 1) **Expansion of exceptions to all building types.** Both CASE/CI and NRDC et al have responded negatively to the expansion of Exception 2 to Section 110.4(c) because of its revised breadth. The basis for this negative comment is the “lost opportunity for savings available to the state and denies building owners and their residents the energy, cost and environmental benefits”<sup>3</sup> that would result from such a mandate. PHTA and CSPA question the amount of putative savings put forth by CASE, but our concern is more with CASE’s support of such a broad mandate. Forced compliance to meet the state’s goals would inevitably result in numerous challenges for multifamily communities and nonresidential businesses seeking to replace in kind their existing heating system. PHTA and CSPA stand by their earlier comments that the draft express terms not incorporating multifamily and nonresidential with the single-family exception would have resulted in space capacity and funding issues.

In the NRDC et al comments, they also express concern with the new exceptions for permanent spas, but do not provide any basis for their request to remove these new exceptions. PHTA and CSPA stand by their earlier comments, recognizing the challenges that can exist to properly heat a permanent spa.

PHTA and CSPA agree with the exceptions as presented in the 45-Day language and appreciate the CASE/CI comments that provide suggestions on how to address this in the 2028 code cycle. We look forward to that discussion in the next code cycle.

- 2) **Negative impacts on other sectors.** CASE relates the negative impacts that would be experienced by affected market sectors “such as those from the solar industry, heat pump industry, environmental sector, and local communities with decarbonization goals.”<sup>4</sup>

PHTA and CSPA find it concerning that CASE prefers to shift the burden of change and compliance and the costs involved from a profit to these sectors to a cost to pool owners and users. The “negative impacts” to those who provide the alternative energy sources and goals that CASE is advocating for are more like lost benefits from a mandate than a direct negative impact that would be experienced without the mandate. The position of those sectors is unchanged from what it is today.

Rather than mandating the disruptive immediate adoption, PHTA and CSPA applaud the decision to provide these much-needed exceptions that allow for manageable movement towards CEC’s stated goals.

As for any deprivation experienced by local communities and the environmental sector, there is nothing in the 45-Day Express Terms that prevents these “local communities with decarbonization goals” from implementing local solutions to help meet those goals as may be appropriate for their constituents’ desires.

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<sup>1</sup> *CA Utility California Statewide Utility Codes and Standards Enhancement (CASE) Team and Compliance Improvement (CI) Team Comments on 45-Day Express Terms* [TN-256172] May 3, 2024, p.4, Appendix A Table 1: Substantive Recommendations, rows 32-33, p. 10, Table 2: Non-Substantive Recommendations, rows 49-54, p. 17.

<sup>2</sup> *Natural Resources Defense Council (NRDC) et al Comments on 45-Day Language* [TN-256269], May 9, 2024, pp. 10-11, Comment 4.

<sup>3</sup> CASE Comments. Appendix A, p. 15.

<sup>4</sup> *Ibid.* Appendix A p. 15.

- 3) Alternative calculation method for indoor pools.** The CASE/CI comments suggested that in JA16.3 an alternative calculation method based on the ASHRAE applications Handbook for indoor pools be added<sup>5</sup>. PHTA and CPSA are concerned with this suggestion for several reasons. First, it is our understanding this is for sizing HVAC systems for indoor pools and is therefore not appropriate for a heat pump pool heater. Second, the language presented in the Table does not appear to be an alternative calculation method from the manufacturer's specifications. Rather, it appears to be adding the Handbook method, as an additional sizing method that is required for indoor pools. Even if the Handbook were appropriate, the wording could result in a conflict between what the manufacturer requires and what the Handbook requires.

In all cases, the manufacturer's sizing specifications should prevail over any other method. If the Commission seeks to provide an alternative sizing method, it needs to be appropriate for heat pump pool heaters and only be applied if the manufacturer does not provide specifications.

PHTA and CPSA appreciate the work of the CASE and CI Teams and have been pleased with their receptive and engaged attention to our needs and discussion. We look forward to working with them in the future to arrive at satisfactory conclusions to any regulatory proposals that work equally well for all parties concerned.

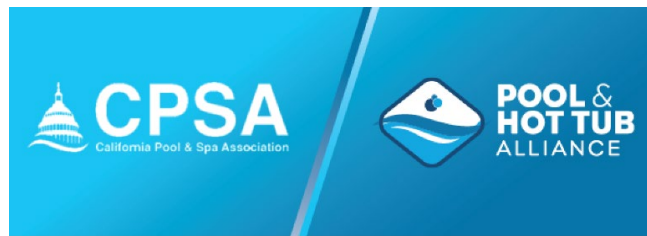
### Reiterating the need for Exceptions

In partial response to the above CASE/CI and NRDC et al comments regarding PHTA and CPSA and concerning the references in the 45-Day Express Terms, PHTA and CPSA wish to emphasize the importance of our previously submitted comments on the exceptions being added to Section 110.4(c). We thank the Commission for consideration of those suggestions and their appearance in the 45-Day Express Terms. We refer to our January 19, 2024, and November 17, 2023, comments that substantiate the need for those exceptions. The relevant sections of those comments are included on the following pages for the Commission's ease of reference.

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<sup>5</sup> Ibid. Appendix A, Table 2: Non-Substantive Recommendations, Remark #52, p17.

**November 17, 2023 PHTA/CPSA comments:**



November 17, 2023

Submitted via: [Docket Log 22-BSTD-01](#)

Re: Title 24 Pre-rulemaking Express Terms related to pool and spa heating

California Energy Commission Staff:

The Pool & Hot Tub Alliance (PHTA) represents more than 3,650 company members and over 11,000 individual members nationwide, including companies that manufacture pool and spa heating equipment. PHTA has a long history of working with the California Energy Commission (Commission or CEC) and appreciates the opportunity to provide feedback on the initial proposed language.

The California Pool & Spa Association (CPSA) is the statewide trade association that represents more than 230 company members in the state of California, including pool and spa builders, service companies, manufacturers and distributors.

PHTA and CPSA welcomes your careful consideration of these comments in response to the pool and spa-related proposals for the 2025 California Energy Code. If you have any questions on these comments, please contact me at [jen@jhatfieldandassociates.com](mailto:jen@jhatfieldandassociates.com) on behalf of PHTA.

Sincerely,

A handwritten signature in black ink that reads 'Jennifer Hatfield'.

Jennifer Hatfield  
Government Affairs Consultant  
Pool & Hot Tub Alliance

cc: Justin Wiley, PHTA VP of GR, Standards and Codes, [jwiley@phta.org](mailto:jwiley@phta.org)

PHTA and CPSA first would like to acknowledge the changes that have been made from the original CASE study language. Updating definitions and aligning requirements to reflect national codes and standards is something we support and appreciate those changes were made. However, a few concerns remain, as laid out below.



**Section 110.4 (a)3. Instructions**

3. **Instructions.** A permanent, easily readable and weatherproof plate or card that gives instruction for the energy efficient operation of the pool and/or spa heater, and for the proper care of pool and/or spa water, and to cover the pool and/or spa when a cover is not in used; and

PHTA and CPSA recommend the following the changes:

- (a)3. **Instructions.** A permanent, easily readable, and weatherproof plate or card that gives instruction for the energy efficient operation of the pool and/or spa heater, including providing the energy efficiency rating and for the proper care of pool and/or spa water, and to cover the pool and/or spa when a cover is not in used; and

**Reasoning:** These instructions apply to heater manufacturers and their pool heating products and therefore, instructions should be limited to what applies to that product. Heater manufacturers currently do not include instructions on pool/spa water care or on covering the pool when not in use. When it comes to pool/spa water care, it implies that a heater manufacturer is an expert on such care, which is not the case. Further, what standard or guidance is to be used and considered as “proper water care”. Requiring instructions to include covering the pool/spa when not in use is problematic as the heater manufacturer does not know what type of cover, if any, the pool/spa owner has and what life safety aspects need to be also be considered. For example, if it is a bubble cover, the homeowner needs to understand this is not a safety cover and the risks posed if a child were to get trapped underneath the cover. If it is a safety cover, those manufacturers are required to provide certification to the ASTM F1346 standard. And all cover manufacturers should be the ones providing instructions on the proper use of the product, which includes critical safety information. Consumers should be directed to the cover manufacturer instructions and not heater instructions when it comes to pool/spa covers.

These requirements are simply outside the scope of what a heater manufacturer is required to know and provide to the consumer. With all the other labeling heater manufacturers are required to do and then adding information outside of their expertise, heaters will be overloaded with information, diminishing effectiveness and the likelihood that a consumer will even read this information. Further, adding this information poses a risk of it not aligning with the instructions that do come with pool covers or water care items.

We suggest leave instruction requirements to what a pool heater manufacturer should know about and tell the consumer, which can and should include what the energy efficient rating of the product is. If this is the intent of what “instructions for proper energy efficient operation” is requiring, we suggest the verbiage be updated accordingly. PHTA also understands much of this instruction language was in the current Title 24 language, which we did not catch in past rulemaking cycles, but it is imperative the instructions be updated to be clear on what a pool heater manufacturer is required and with what makes sense based on the scope of their product.

**Section 110.4(c) Heat Source Sizing**

PHTA and CPSA recommend the Commission consider adding in additional exceptions under 110.4(c) as follows:

Exception 4 to Section 110.4(c): Gas heating systems used exclusively for permanent spa applications or where gas utilities already exist on the property.

Exception 5 to Section 110.4(c): Gas heating systems used exclusively for permanent spa applications when there is not adequate solar access for a solar swimming pool or spa heating system to be installed.

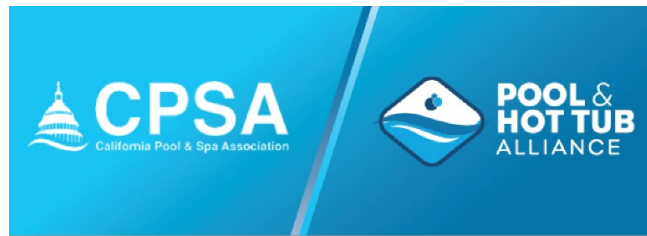
**Reasoning:** Gas pool heaters are federally regulated by the Department of Energy; thus, requiring such heaters to have minimum energy efficiency requirements to be sold. Although the current proposal allows for gas pool heaters as a back-up or to be replaced when already being used by a consumer for their pool or spa, it does not provide allowance in additional situations that should be considered.

By adding an exception for consumers who already have gas utilities or who are simply looking to heat a permanent spa, it provides a practical heating solution. Consumers want choice. The fact the federal government allows for gas pool heaters that meet energy conservation standards, but then a citizen of California would not be allowed to utilize this option (in cases where it makes sense), limits practical and energy efficient options for consumers.

By adding an exception for allowing gas heating systems used exclusively for permanent spa applications, when there is not adequate solar access to install a solar heating system, this provides another way for a consumer to utilize a practical heating solution.

PHTA and CSPA welcome the opportunity to discuss these remaining suggestions and happy to answer any questions.

**January 19, 2024 PHTA/CPSA comments:**



January 19, 2024

Submitted via: [Docket Log 22-BSTD-01](#)

Re: Additional pool/spa heating comment on Title 24 Pre-rulemaking Express Terms

California Energy Commission Staff:

The Pool & Hot Tub Alliance (PHTA) represents more than 3,650 company members and over 11,000 individual members nationwide, including companies that manufacture pool and spa heating equipment. PHTA has a long history of working with the California Energy Commission (Commission or CEC) and appreciates the opportunity to provide feedback on the initial proposed language.

The California Pool & Spa Association (CPSA) is the statewide trade association that represents more than 230 company members in the state of California, including pool and spa builders, service companies, manufacturers and distributors.

PHTA and CPSA welcomes your careful consideration of this additional comment to our previous comments submitted on November 17, 2023, in response to the pool and spa-related proposals for the 2025 California Energy Code. If you have any questions on these comments, please contact me at [jen@jhatfieldandassociates.com](mailto:jen@jhatfieldandassociates.com) on behalf of PHTA.

Sincerely,

A handwritten signature in black ink that reads 'Jennifer Hatfield'.

Jennifer Hatfield  
Government Affairs Consultant  
Pool & Hot Tub Alliance

cc: Justin Wiley, PHTA VP of GR, Standards and Codes, [jwiley@phta.org](mailto:jwiley@phta.org)

PHTA and CPSA previous comments were remiss in addressing one additional concern found in the pre-rulemaking expressed terms, that of exception 2 only applying to single family homes with existing heating systems or equipment for pools and/or spas.

**Exception 2 to Section 110.4(c): A pool and/or spa serving single family buildings with existing heating systems or equipment for pools and/or spas.**

Our understanding is the CASE team intended this exception to only apply to single family, requiring nonresidential and multifamily to meet the proposed new code pool/spa heating requirements when replacing an existing heating system. However, industry believes the impact to multifamily and nonresidential pools and spas currently utilizing gas heating and no longer being able to simply replace in kind, was not properly considered and justified. We encourage the CEC and CASE team to evaluate and consider the complications and cost associated with multifamily and nonresidential pools/spas, when a replacement is needed, to have to utilize the heat source systems and sizing requirements in Section 110.4(c).

Specifically, the Commission needs to consider space capacity limitations for these larger high capacity heat pump pool heaters or solar heating systems that would be needed in many nonresidential and multifamily pools and spas. In most cases, there simply is not enough space without major changes to the equipment pad or building to accommodate new heating systems. Even if enough space could be made with major modifications, the cost associated with doing so, including the electrical work that likely would be required to adjust for the new heating systems, is not being considered. Another aspect is the noise associated with multiple heat pumps that can be another constraint on where to locate the heating systems.

Public pools, condominiums, homeowner associations and the like will have funding and/or space constraint challenges that simply cannot be overcome. Not to mention the amount of electrical power associated with these larger heating systems that may be needed; resulting in a higher electricity bill. If an existing multifamily or nonresidential pool/spa is currently using a gas heater, they should be able to continue doing so by being afforded the same exception single family homes are provided within the pre-rulemaking express terms. In fact, in most cases, the challenges to change the type of heating system is much greater for nonresidential and multifamily applications due to the typically larger size of the pool/spa.

The largest capacity single-phase<sup>6</sup> heat pumps are rated at 135 Kbtu<sup>7</sup> at the DOE test condition<sup>8</sup>. The average size gas heater used to heat a pool or spa would be 400 Kbtu. Therefore, it would take a minimum of three, if not four, heat pumps to replace that gas heater. Each heat pump requires a 50 amp electrical service, so a facility would also need to increase the electrical service by 150 to 200 amps. This one example would cost \$15,000 to \$20,000 if the local utility could provide that service and does not account for the space constraints that likely also exist. Ultimately, this would be a huge undertaking for any multifamily or nonresidential pool currently using gas heating.

There is also the example of an Olympic size pool that requires millions of btus, but there are only so many hours in the day to heat it. Additionally, heat pumps generally lose 10 Kbtus for every 10 degree drop in ambient temperature. In certain climate zones and/or size of the pool this will make for a most difficult scenario for the facility to continue to heat the pool properly.

Further, in the cases of existing gas heating being utilized for any type of pool/spa, the gas resource is already there and the product is being regulated by federal energy efficiency standards. In this case, no

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<sup>6</sup> The maximum capacity for 3-phase heat pump pool heaters in the AHRI directory is 180 kbtu/h.

<sup>7</sup> One single-phase heat pump pool heater is certified in the AHRI directory at 166 kbtu/h.

<sup>8</sup> The DOE test condition is the High Air Temperature—Mid Humidity (63% RH) level specified in section 6 of AHRI 1160 (80.6 °F [27.0 °C] Dry-Bulb, 71.2 °F [21.8 °C]). See Appendix P to 10 CFR 430.

matter if single family, multifamily or nonresidential, a requirement to change heating systems when a replacement of the current system is needed, should not be required. Depending on how old the existing gas heater is, it is also likely the new one installed will be more efficient based on ever increasing efficiency requirements. Existing pools/spas utilizing gas heaters may also be doing so specifically for their ability to heat quickly, especially in the case of vacation homes and rentals.

For all of the above reasoning, we request the Commission consider applying exception 2 to multifamily and nonresidential, along with single family. This critical change will provide the ability for all types of pools and spas to replace existing gas heaters, if one already is being utilized.