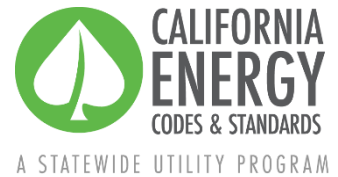


Proposal Summary



Solar Heating for an Existing Pool and Spa

Updated September 23, 2025

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Measure Description

Title 24 Part 6 sets requirements for pool heating systems. The current requirements are triggered when a new pool is built with a heating system or when an existing pool adds a heating system for the first time. The code requires the use of one of the following compliance options:

- solar thermal systems for pool and spa heating (excluding portable electric spas)
- heat pump pool heaters (HPPH) meeting specified coefficient of performance (COP), sizing, and controls criteria
- on-site renewable energy or site-recovered energy systems
- a combination of a solar pool heating system and heat pump pool heater without any additional supplementary heater
- or a pool heating system determined by the California Energy Commission (CEC) Executive Director to use no more energy than the previous system.

The proposed code change would expand the scope of the swimming pool and spa heating requirements to include existing nonresidential pools that are replacing an existing pool heating system. Single-family residential pools, multifamily pools, and hotel/motel pools with an existing pool heater, however, would remain exempt from these requirements and may replace their heating system with the same technology.

The proposal would add pools to Exception 5, which currently applies only to permanent spas with inadequate solar access roof area (SARA). The proposal would not require specific pool heating requirements for pools where there is inadequate solar area roof access to accommodate solar heating.

The proposal would leave the remaining exceptions unchanged.

Table 1 summarizes the scope of the proposed code change.

Table 1: Scope of Proposed Code Change

An “X” indicates the proposed code change is relevant.

Building Type(s)		single family	Construction Type(s)		new construction
		multifamily		X	additions
	X	nonresidential		X	alterations
Type of Change	X	mandatory	Updates to Compliance Software	X	no updates
		prescriptive			update existing feature
		performance			add new feature
Third Party Verification	X	no changes to third party verification			
		update existing verification requirements			
		add new verification requirements			

Justification for Proposed Change

California is home to one of the largest pool markets in the nation, and pool heating represents a major energy use—especially in nonresidential and multifamily settings where pools are often heated year-round. Expanding heating source system requirements to include alterations where the pool heater must be replaced at existing commercial pools would save pool owners significant costs and support California’s long-term decarbonization goals.

The existing code provides flexibility through compliance pathways that include solar thermal systems, heat pump pool heaters and on-site renewable energy or energy recovery. Solar thermal systems are a commercially available and reliable technology. The installation of solar thermal collectors in existing buildings with pools or spas can become the primary source of heating while enabling existing heating systems to serve as backup sources only when necessary. The proposed measure would build on the foundational work from the 2025 code cycle and would take a strategic step toward transforming the market. Prior analysis by the Statewide CASE Team found the measure to be cost-effective.

Data Needs / Information Requests

The Statewide CASE Team is seeking the following information to inform the code change proposal. Data may be provided anonymously. To participate or provide information, please email Melissa Schellinger Gutiérrez, mgutierrez@energy-solution.com directly and copy info@title24stakeholders.com.

Energy Savings

- Estimated number of nonresidential and multifamily pools without sufficient solar access (e.g., due to shading or orientation).
- Data on space requirements for natural gas pool heaters, heat pump pool heaters (HPPHs), and typical equipment area dimensions at existing pools.

First Costs

- Detailed installation and maintenance cost data for:
 - Solar thermal pool heating systems
 - HPPH units
- Data to support or refine 2025 incremental costs assumptions for solar pool heating systems, including:
 - \$5,250 for pools with a 20,000-gallon capacity
 - \$139,214 for Olympic-sized pools (660,000 gallons)
- Costs associated with retrofitting existing gas pool heaters to solar thermal heating systems or HPPHs.

Technical Feasibility

- Information on space constraints when retrofitting from gas to solar thermal systems or HPPHs.
- Minimum space requirements for installing solar thermal heating systems and HPPHs at existing pools.
- Description performance, cost, and other considerations for built systems for heat pump pool heating of large commercial pools.

Market Readiness

- The CASE Team already has sufficient data on market readiness, but stakeholders are encouraged to share any emerging market trends or relevant experience.

Non-energy Benefits

N/A

Expected Useful Life and Maintenance Costs

- Manufacturer-verified or industry-sourced data on the expected useful life of both solar thermal collectors and HPPHs
- Validation of assumed 25-year life for solar thermal heating system, consistent with assumptions reported in National Renewable Energy Laboratory's report: <https://www.nrel.gov/docs/fy16osti/66215.pdf>

Draft Code Language

1.1 Guide to Marked Up Language

The proposed changes to the Standards and Reference Appendices are provided below. Changes to the 2025 documents are marked with blue underlining (new language) and ~~strikethroughs~~ (deletions).

1.2 Title 24, Part 1

There are no proposed changes to Title 24, Part 1

1.3 Title 24, Part 6

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

...

(c) **Heating Source Sizing.** Heating systems or equipment for pool and/or spa shall meet one of the sizing requirements of 1 through 5 below:

1. A solar pool heating system with a solar collector surface area that is equivalent to the following:
 - A. For nonresidential and multifamily buildings, 65 percent or greater of the pool and/or spa surface area.
 - B. For single family buildings, 60 percent or greater of the pool and/or spa surface area.
2. A heat pump pool heater as the primary heating system that meets the sizing requirements of Reference Joint Appendix JA16.3. The supplementary heater can be of any energy source; or
3. A heating system that derives at least 60 percent of the annual heating energy from onsite renewable energy or on-site recovered energy.
4. A combination of a solar pool heating system and heat pump pool heater without

any additional supplementary heater; or

5. A pool heating system determined by the Executive Director to use no more energy than the systems specified in Items 1, 2, 3, or 4 above.

Exception 1 to Section 110.4(c): Portable electric spas compliant with 20 CCR § 1605.3(g)(7) of the Appliance Efficiency Regulations.

Exception 2 to Section 110.4(c): Alterations to existing pools and/or spas [at single family and multifamily buildings, and hotel/motels](#) with existing heating systems or equipment.

Exception 3 to Section 110.4(c): A pool and/or spa that is heated solely by a solar pool heating system without any backup heater.

Exception 4 to Section 110.4(c): Heating systems which are used exclusively for permanent spa applications in existing buildings with gas availability.

Exception 5 to Section 110.4(c): Heating systems which are used exclusively for [pool](#) or permanent spa applications where there is inadequate Solar Access Roof Area (SARA) as specified in Section 150.1(c)14 for a solar pool heating system to be installed.

1.4 Reference Appendices

There are no proposed changes to the reference appendices.