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Docket Number: 22-BSTD-01

Re Request for comment and Pre-Rulemaking Title 24 2025, Solar Swimming Pool and Spa Heating, Docket # 22-BSTD-01, UPDATED May

Additional submitted attachment is included below.

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June 9th, 2023

California Energy Commission / California Energy Codes & Standards
Docket # 22-BSTD-01, Title 24 2025 Energy Code Pre-Rulemaking
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Re: Request for comment and Pre-Rulemaking Title 24 2025, Solar Swimming Pool and Spa Heating, Docket # 22-BSTD-01, **UPDATED May 16, 2023**

Esteemed California Energy Commission and California Energy Codes & Standards,

Fluidra appreciates the opportunity to participate in the rule making process for the 2025 Title 24 California Energy Code. As a pool equipment manufacturer with U.S. Headquarters in California, Fluidra recognizes the importance and demand for energy efficient and environmentally sustainable swimming pool operation. Accordingly, continual efforts are made in the development of products that can meet the competitive goals of a sustainable future.

As a member of the Pool & Hot Tub Alliance and AHRI Fluidra fully supports and endorses the comments jointly submitted by the Pool & Hot Tub Alliance (PHTA) and AHRI. In addition, we submit the following comments to the Title 24 2025 updates.

General Comments

Fluidra agrees with the intent to conserve energy and improve the sustainability of pool operation, maintenance, and heating. However, there are concerns over the practicality and substantial incremental increase in the cost of building a pool, making pool ownership increasingly unattainable, particularly in low-income areas; as well as the negative impact to an industry that supports thousands of California jobs.

Additionally, there are concerns over the practicality of roof space for Solar PV + Solar Collectors, particularly in single home residential buildings. And the lack of options for heating of permanent inground spas.

Draft Code Language UPDATED May 16, 2023

With regards to the proposed code updates, Fluidra respectfully submits the following suggested edits and additions to improve clarity of the approved heating options, and to provide pool owners with additional efficient options where effective and practical.

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SECTION 100.1 - DEFINITIONS

Propose to add a definition for a "Permanent Residential Spa" and "Spa Mode". The following definition for "Permanent Residential Spa" is harmonized with the International Swimming Pool and Spa Code (ISPSC)

> **PERMANENT RESIDENTIAL SPA** – A spa, intended for use that is accessory to a residential setting and available to the household and its guests and where the water heating and water-circulating equipment is not an integral part of the product. The spa is intended as a permanent plumbing fixture and not intended to be moved.
>
> **SPA MODE** – A pool control setting where water is circulated only to and from the spa.

SECTION 100.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT

(b) 2. Piping.

> The 36 inch length of piping required for provisions of solar heating is more than is necessary. Propose update to harmonize with ANSI/APSP/ICC-15
>
> **Piping.** At least 18 inches of horizontal or vertical pipe shall be installed between the filter and the heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition of solar heating equipment.

(c) 1. Solar Collector Surface Area

> This sizing for solar collectors is inapplicable when heating only a **Permanent residential spa.**
>
> Additionally, appears to have a typographical error in (c) 1. as *italicized* below:
>
> > 1. Solar swimming *pool* or spa heating system with a solar collector surface area that is equivalent to the following:

3. On-site renewable or site recovered energy.

> We would like to see further guidance on how the percentage of annual heating energy derived from on-site or site recovered energy is verified, confirmed, and enforced.

Additionally, none of the 3 options provide an effective solution for solely heating Permanent Residential Spas. The typical user behavior and expectation for permanent

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residential spas is a rapid heat pump time for evening use (when solar is not available), and an average annual spa usage of approximately 50 - 70 hours (average annual gas heater run times of 150 – 200 hours). We recommend the following exceptions to these requirements for permanent residential spas.

> **Exception 3 to Section 110.4(c):** Heating systems used exclusively for Permanent Residential Spa applications.
>
> **Exception 4 to Section 110.4(c):** Heating systems for pool and spa combinations where heating is only provided to the spa, and the heating system is activated through Pool controls in "Spa Mode" only.

Stakeholder Information Requests:

3) What is an appropriate assumption for the compressor lockout temperature for HPPHs? The Statewide CASE Team has observed that product specifications for models sold into California indicate an operating range for the vapor-compression cycle down to 45°F. Some models allow lockout temperatures to be adjusted down to 30°F.

> 45°F is typical for operation. Going below this temperature begins to freeze up the coils, reducing heating potential.

1) How is a heat pump pool heater (HPPH) applied in nonresidential pool and spa applications, i.e., what auxiliary heating equipment is typically used with such systems? How would a HPPH handle a cold start and pick-up?

> Gas Heater is used to quickly heat the water to temperature, HPPH and Solar collectors used to maintain heat at temperature, Pool cover used to reduce heat loss and water evaporation.

3) What are the possible approaches for heating an Olympic-sized pool year-round somewhere cold like Arcata if gas is not available?

> Many heat pumps working together for several hours, and a lot of electricity use.

Market Readiness

1) What are the market segments in pool heating for HPPH/Gas Heating and Solar Heating equipment and installations?

> Depends on size (gallonage) of pool, presence of spa, user preferences, availability of utilities, cost.

2) Is it by market residential, multifamily or commercial or by size or capacity of the system?

> Size and capacity of system.

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4) What information describes the current pool and spa heating practices in California? How often are pools and spas heated seasonally vs. year-round? How does the choice of heating equipment influence heating behavior?

May – September typical pool season, an unknown percentage of pool owners may heat their pool.

Spas are heated year-round. Gas is preferred due to the speed to heat the spa on demand and use in colder seasons.

7) What supplemental pool heating systems are typically used in the field with solar collectors? Clean Renewable Natural Gas and Propane Heaters

Non-energy Benefits

1. The Statewide CASE recognizes potential reduced water use, GHG emission reductions, and reduced fossil fuel consumption as a result of this measure. We would appreciate further input on potential non-energy benefits.

We don't understand how the proposed measures reduce water usage. Unless enforcing the use of a motorized safety pool cover?

Refrigerants have a very high GWP that may cause issues with appliance leaks and end of life. Production of electricity from utilities may also use gas combustion, further adding to the carbon footprint.

2. Sizing considerations – are pool heaters for commercial pools sized only for seasonal use or year-round use?

Both, depending on the aquatic venue.

Respectfully,

Philip Escobedo
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