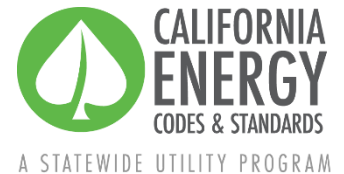# Proposal Summary

2022 California Energy Code (Title 24, Part 6)

<u>Single Family Residential Grid Integration</u> – Load Shifting HPWH

Date last updated: Tuesday, February 11, 2020

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Introduction

The document summarizes proposed revisions to the California Energy Code (Title 24, Part 6) that will be discussed during a utility-sponsored stakeholder meeting on March 19, 2020. The Statewide Utility Codes and Standards Enhancement (CASE) Team is seeking input and feedback. To provide your comments, email info@title24stakeholders.com by April 2, 2020.

Measure Description

The heat pump water heater (HPWH) load shifting measure for 2022 will build on work that is currently underway by the California Energy Commission in support of an initial credit for load shifting heat pump water heaters (LSHPWHs) under the 2019 Title 24, Part 6 code. This work includes integration of load shifting algorithms within the CBECC-Res compliance software and adoption of eligibility requirements for LSHPWHs. Since this work in support of the 2019 code is not expected to be completed until mid-2020, there is currently not complete clarity on some details, especially related to potential HERS verifications.

The current work scope for the 2022 effort includes:

- Review and modifications to the current draft JA13 Appendix (dated August 9, 2019) entitled Qualification Requirements for Heat Pump Water Heater Demand Management Systems. The draft JA13 is expected to be adopted by the Energy Commission in mid-2020.
- Evaluation of the Advanced Load Up operating mode for LSHPWHs to determine the magnitude of the compliance credit. The Advanced Load Up mode overheats storage (by 10-15° above normal tank setpoint) on a daily basis to both maximize utilization of mid-day renewable photovoltaic generation and also minimize or eliminate on-peak water heating operation.
- Potential addition (or modification) of HERS inspection requirements to the Residential Appendices. This step is dependent upon where the Energy Commission ends up with their current effort.

Draft Code Language

The proposed changes to the Standards and Reference Appendices are provided below. Changes to the 2019 documents are marked with red <u>underlining</u> (new language) and ~~strikethroughs~~ (deletions).

Standards

New definitions in Section 110.1(b).

ANSI/CTA-2045 is a modular communications interface to facilitate communications with residential devices for applications such as energy management.

HEAT PUMP WATER HEATER (ADVANCED LOAD UP) is a residential heat pump water heater controlled to store extra thermal energy in the storage tank by exceeding the user setpoint temperature. It will avoid use of electric resistance elements unless user needs cannot be met.

HEAT PUMP WATER HEATER (BASIC LOAD UP) is a residential heat pump water heater controlled to store extra thermal energy in the storage tank without exceeding the user setpoint temperature. It will avoid use of electric resistance elements unless user needs cannot be met.

Proposed addition to August 9, 2019 draft version of JA13

Appendix JA13 – Qualification Requirements for Heat Pump Water Heater Demand Management Systems (August 9, 2019 draft version)

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JA13.3.2 Minimum Performance Requirements

(c) Grid Connectivity: the installed System shall have a modular demand response communications port compliant with the March 2018 version of the ANSI/CTA-2045-A communication interface standard.

Reference Appendices

Pending any HERS verification requirements that may occur from the Energy Commission's current activities, the Statewide CASE Team is proposing the following inspection requirements for LSHPWHs eligible for the Advanced Load Up credit:

1. Verify that the installed HPWH is on the Energy Commission's list of JA13-compliant products
2. Verify that the installed HPWH is properly configured to operate in the Advanced Load Up mode
3. Verify that the correct time-of-use electric schedule is loaded on the HPWH