DOCKETED

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CEC Proposed Solar PV Ordinance and Renewable Water Heating

Additional submitted attachment is included below.

STEFFES
CUSTOMER FOCUSED. SOLUTION DRIVEN. FIELD PROVEN.

The Honorable Commissioner Andrew McAllister
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512
Re: Docket No. 17-BSTD-01 July 26, 2017

RE: 2019 Building Energy Efficiency Standards PreRulemaking – Residential – Docket No. 17-BSTD-01

Dear Commissioner McAllister and Energy Commission Staff:

On May 5th, NRDC *et. al.* submitted TN# 217460 containing comments regarding the CEC Proposed Model Solar PV Ordinance suggesting a new "Renewable Water Heating" model detailed in Appendix A.

Steffes would like to point out that Title 24 already provides a specification for solar water heating that is based on standards developed by the International Code Council and the Solar Rating & Certification Corporation ("SRCC"). In addition to California, the United States Environmental Protection Agency recognizes compliance with the SRCC standards (OG-100, OG-300) as the sole means for solar water heating systems to qualify for the Energy Star® designation.

Title 24 already addresses renewable energy water heating

The California Building Code (Title 24) contains a number of references to SRCC and or OG 100 / OG 300. Section 150.0 (n) (3) states that "Solar water-heating systems shall be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director." This does not mean that solar water heating systems are mandated. But if one is to be installed in new construction then it must comply with SRCC.

Section 5.9 of California's 2016 Residential Compliance Manual (published January 2017) states:

> The water heating calculation method allows water heating credits for solar water heaters. Solar thermal systems save energy by using renewable resources to offset the use of conventional energy sources.
>
> For single-dwelling solar thermal systems, systems must be Solar Rating and Certification Corporation (SRCC) approved. Accepted testing procedures include either a fully approved system with OG-300 test results or a built up system that uses the collector (OG-100) rating. For multifamily buildings, only systems with OG-100 collectors can be installed. For more detailed instructions on installation of solar water heaters, refer to Reference Appendix RA4.4.21.

As Solar Rating & Certification Corporation (ICC-SRCC) noted in their May 26th TN# 217749 submittal:

> The compliance options specified in the proposed ordinance omit an emerging renewable water heating technology that is already available on the market and accepted by the CSI Thermal Incentive Program – photovoltaic (PV) water heaters. These renewable water heaters utilize one or more photovoltaic modules directly connected to an electric water heater with resistive elements. SRCC has incorporated these systems into the OG-300 Solar Thermal System Certification Program. As a result system performance metrics, compatible with those of solar thermal systems, are available. SRCC currently certifies 11 different models of PV water heaters.

Requiring the use of an electric heat pump as backup for a renewable energy water heating system is not good policy. As noted above, EPA requires compliance with SRCC standards for a system to gain the Energy Star® designation. Neither EPA nor SRCC require the use of a heat pump as a backup resource.

Separate from this Docket, on April 24 the National Rural Electric Cooperative Association (NRECA) and the Natural Resources Defense Council (NRDC) jointly submitted ENERGY STAR® Residential Water Heaters comments to encourage EPA to promptly explore, and as appropriate develop, connected criteria for electric water heaters, including both electric resistance (ERWH) and heat pump (HPWH) models. https://www.energystar.gov/sites/default/files/NRDC_NRECA_Res%20Water%20Heater%20Draft%201%20Version%203.1%20Joint%20Comments_4%2024%2017.pdf

In that letter they stated:

> We believe that prompt consideration of adding connected criteria, including for ERWH, is appropriate for several reasons: (including)
>
> - Grid-connected ERWH and HPWH both appear to offer consumer and environmental merit under different grid and consumer conditions.
> - Achieving market transformation in advanced, controlled electric water heating will facilitate environmentally beneficial electrification as an economic approach to achieving environmental goals.

NRECA and NRDC go on to state:

> We recognize that adding an advanced electric water heater that does not make use of heat pump technology to the Energy Star® program may be counterintuitive as the program is currently supporting only heat pump technology. While the Joint Stakeholders applaud efforts to transform the market for heat pump water heaters, we note that somewhere in the ballpark of 95-99 out of every 100 electric water heaters that are sold do not include heat pump technology despite years of exclusive specification of the technology by ENERGY STAR®.

That lack of uptake for Heat Pump Water Heaters stands in contrast to results from the Consortium for Energy Efficiency (CEE) 16th Annual fall 2016 survey of consumer awareness of ENERGY STAR®. https://library.cee1.org/content/national-awareness-energy-star%c2%ae-2016

That survey showed amazing results:

- Ninety-one percent of households in 2016 compared with 88 percent in 2015 recognized the ENERGY STAR® label when shown the label.
- Of households that recognized the ENERGY STAR® label, the proportion that either strongly or somewhat agree with the statement "If I see the ENERGY STAR® label, I know I'm getting a more energy-efficient product" was largest this year (65 percent) compared to agreement of other attitudinal statements.

With respect to the May 5th NRDC *et. al.* submittal, our suggestion is to continue to expand upon the existing Title 24 structure by adding PV driven Solar Water Heating adhering to the ICC-SRCC protocols.

Very truly yours,

/s/

Kelly Murphy