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Additional submitted attachment is included below.

STEFFES
CUSTOMER FOCUSED. SOLUTION DRIVEN. FIELD PROVEN.

Commissioner Andrew McAllister and Energy Commission Staff
Californian Energy Commission
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

August 2, 2018

Re: Docket # 18-BSTD-02 2019 Energy Code Compliance Manuals
docket@energy.ca.gov
Filed electronically at:
https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=18-BSTD-02

Dear Commissioner Andrew McAllister and Energy Commission Staff;

Thank you for this opportunity to comment on the draft 2019 Energy Code Compliance Manuals and Documents (Title 24, Parts 1 and 6).

The 2019 Energy Code Compliance Manuals help plans examiners, inspectors, owners, designers, builders, and energy consultants comply with and enforce California's 2019 Energy Code. As you know, in addition, there are associated documents which act to provide further layers of detail to these reference and instructional guides and provide specific language and deliverables for final compliance. The draft Residential Manual contains both Chapters and Appendices (A – H) and associated with that Manual is the draft Residential Reference Appendix RA and Certificate of Compliance Worksheets.

Our company, Steffes, has developed a new type of PV driven Solar Water Heating System (SWH) which is undergoing final ICC-SRCC Certification in order to comply with existing and 2019 Title 24 Code. In early June we were able to introduce this new approach to Regulators at the NARUC Western Conference in Boise which later led to an initial meeting at the CPUC on June 18th to discuss our design and ideas. At that meeting we explained that, in our case, at the very core of our framework is to use this SWH System as a foundation to support the Advanced Inverter Functionality of the CEC's highest rated inverter in order to help stabilize the circuits at the ultra-grid-edge (neighborhood node) while simultaneously reducing PV curtailment.

As you would expect, language, particulars, and details focused on traditional Solar Thermal WH exist to a degree in the Manuals but more often occur further downstream in the Worksheets. We have identified Worksheets with explicit bearing on our system (CF1R-STH-01-E (OG-300); CF1R-STH-02-E (OG-100); and CF2R-STH-01-E (Solar Water Heating Systems)) plus several other Worksheets that may be required. The documents indicate that the first two were updated in January 2016 and the last one in April 2017.

Also, in the Residential Reference Appendix, RA RA4.4.20 is language that pertains to Solar Water Heating Systems and within it is this language:

> *To use a solar water-heating system with the SRCC OG-300 certification and rating, the installed system shall meet the following eligibility criteria:*

(a) The collectors shall face within 35 degrees of south and be tilted at a slope of at least 3:12.
(b) The system shall be installed in the exact configuration for which it was rated. The system shall have the same collectors, pumps, controls, storage tank and backup water heater fuel type as the rated condition.

For context, on the solar "List of Eligible Equipment" (which is reviewed but not continuously monitored by the CEC), the GoSolarCalifornia database contains > 3500 inverters, >21,000 PV Modules, plus an extensive installer database which is co-maintained by the CEC's News Solar Homes Partnership Program in conjunction with the CPUC's CSI. This variety of components greatly dwarfs those associated with traditional SWH and illustrates one aspect of how the two SWH segments differ.

Although we are one of the pioneers in this PV driven approach to SWH, due to the values it represents: immediate value to the end-user (ITC credits), localized (neighborhood node) grid stability, and diminished curtailment, we strongly expect that those high value characteristics will drive other developers to innovate and drive PV-SHW to a significant scale in the coming years in California.

Our ask to the Commission is to continue your efforts to harmonize the flow of common language, particulars, and requirements throughout the stream of documents leading from the Manuals to associated documentation in order to accommodate new SWH innovations which will likely also include creative adaptive compliance for Heat Pump WH. In addition we specifically ask for RA4.4.20 to read:

(b) The system shall be installed as Certified. See the ICC-SRCC OG-300 certification document regarding both the collector (OG-100) and complete system (OG-300) for complete information on the certification of performance parameters and other metrics.

As we have in other submittals during the pre-rulemaking and rulemaking process, we thank you once again for the opportunity to provide this additional submittal. We are greatly encouraged by the forward looking inclusion of water heater technologies in the Code & Standards. We believe that the as yet undiscovered optionality of electric water heaters will provide a further tool for California and the Nation to meet our goals to mitigate GHGs by greater utilization of renewable energy.

I also welcome further dialog with you and your team. My direct line number is 701-690-7428.

Very truly yours,

/s/

Kelly Murphy