

## DOCKETED

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*Comment Received From: Kelly Murphy*

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**Steffes Additional Comment - 2019 ZNE Res Standards Apr 20 Workshop**

*Additional submitted attachment is included below.*



Commissioner Andrew McAllister and Energy Commission Staff  
California Energy Commission  
Dockets Office MS-4  
Re: Docket No. 17-BSTD-01  
1516 Ninth Street  
Sacramento, CA 95814-5512  
[docket@energy.ca.gov](mailto:docket@energy.ca.gov)

RE: April 20, 2017 Staff Workshop 2019 Zero Net Energy Residential Standards

Dear Commissioner McAllister and Energy Commission Staff:

It has come to my attention that I may need to clarify or at least better define an abbreviation that I used within the Steffes comments we made on May 24<sup>th</sup> in response to the 2019 Zero Net Energy (ZNE) residential standards workshop that took place on April 20, 2017. That acronym, GIWH, or Grid-Interactive Water Heaters refers to the generic category of connected electric resistance water heaters (ERWH) – which should not be confused with Grid-Connected Heat Pump Water Heaters (GI-HPWH).

At the time of our earlier remarks, we should have cited the May 5<sup>th</sup> Tesla submittal which included this:  
*“While we support NRDC’s framework, we also recommend that the CEC evaluate the potential for grid interactive electric resistance water heaters (ERWHs) paired with PV. DNV GL recently conducted an economic assessment of various efficient gas and electric water heater technologies and found that “electric water heaters with grid interaction have the potential to be a cost-effective resource based on theoretical scenarios (See Figure 1-1 from report).”*

Electric resistance water heaters (ERWHs) in the form of Grid-Interactive Water Heaters (GIWH) have already been commercially deployed in Hawaii (please follow this link for further information):  
<https://customers.microsoft.com/zh-cn/story/solving-renewable-energy-challenges-with-the-internet>

Although we are aware of several laboratory and limited field trials on connected Heat Pump Water Heaters, to our knowledge, study and evaluation of that separate technology is still ongoing.

Thank you once again for the opportunity to provide this additional submittal. We again ask that you strongly consider inclusion of ERWH based GIWH technology in your ZNE residential standard. I welcome further dialog with you. My direct line number is 701-690-7428.

Very truly yours,

/s/

Kelly Murphy