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Kelly Murphy Comments re. Post August 8th Joint-Staff Workshop

Additional submitted attachment is included below.

Public comments by Kelly Murphy – as an individual
Joint Agency Workshop on Building Decarbonization held July 30, 2019
Docket #: 19-IEPR-06
Project Title: Energy Efficiency and Building Decarbonization
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by

Kelly Murphy
bouldernatural@gmail.com

Kelly is also
Business Development Specialist
Steffes – Boulder Office
Boulder, Colorado 80303-4206
701 690 7428 kmurphy@steffes.com

SUBJECT:
Comments following the July 30th, 2019 Joint Agency Workshop on Building Decarbonization
Docket #: 19-IEPR-06

Commissioners and Staffs:

I appreciate the opportunity to again comment on the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) joint agency Building Decarbonization Workshop held on July 30, 2019 conducted jointly as part of the CEC's 2019 Integrated Energy Policy Report (IEPR) and the CPUC's Building Decarbonization Order Instituting Rulemaking (OIR) (R. 19-01-011) proceedings.

Currently, I am not a Party to these CEC or CPUC dockets, therefore my submittal is a public comment not associated with ALJ Colon Rizzo's July 16th ruling requesting comments from Docket Parties. I am, however, a party (as an individual) to CPUC Rulemaking 12-11-005 (CSI, SGIP, and other DG issues). I draw my thoughts and comments not only from that Docket but also from the Hawaiian PUC Docket No. 2014-0192 - Instituting a Proceeding to Investigate Distributed Energy Resource Policies.

Public Post-Workshop Comment on storage versatility of water heaters

On May 31st, in Rulemaking 12-11-005 CPUC Commissioner Clifford Rechtschaffen made a Proposed Decision "Approving Greenhouse Gas Emission Reduction Requirements for the Self-Generation Incentive Program Storage Budget", and within the body of that decision was a discussion on SGIP energy storage during the period from 2014 through 2016 (see document pages 4 and 5 and footnotes 6 and 7). The surprise was that over those several years energy storage *increased* GHG emissions.

Similarly, on July 19th, the Hawaiian Electric Companies' submitted comments to Docket 2014-0192 regarding a July 3rd Technical Conference. That submittal also devoted a portion of those comments to Customer Self Supply ("CSS") systems as well as an alternative program – known as Smart Export. Search - https://dms.puc.hawaii.gov/dms/ - "Documents tab" - July 19th Companies' Comments.

> *"As noted during the Companies' presentation at the Technical Conference, the Companies conducted a program compliance analysis of system performance for 333 Smart Export customers on O'ahu. Because O'ahu has the most installed Smart Export systems with data from*

advanced meters, this program compliance analysis was able to factor in and consider 15-minute interval data from advanced meters from 206 of these Smart Export systems. In addition, the Companies analyzed energy billing data for all 333 Smart Export customers.
Of the total Smart Export systems analyzed, only 5% of customers stated in their application that they would not have controls in place to prevent exports during the daytime hours from 9:00 a.m. to 4:00 p.m. {during which time no energy credit is applied to the customer's monthly bill under Tariff Rule No. 25). The other 95% of customers stated in their application that their Smart Export system would have these controls in place to prevent exports during these daytime hours. By doing so, the technical review conducted by the Companies for these Smart Export systems was expedited. However, the Companies' program compliance analysis of these customers' billing data showed that all Smart Export program customers have varying degrees of daytime exports.
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It is unclear, based on the analysis of the limited billing data, how many Smart Export systems exceed the Inadvertent Export threshold, which is a reliability consideration for the Companies.
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In general, the Companies' technical review is intended to provide site-specific assurances of any potential impact to circuit-level and system-level hosting capacity.

Battery storage in both California and Hawaii will be refined to synchronize to the key time of use and export parameters. Yet the essence of my comment is that various configurations of electric water heaters can already precisely charge - optimally to store the maximum amount of GHG-free energy and, of course, water heaters do not have the capability to re-export since they store that energy thermally.

In addition, certain Title 24 compliant combined technologies such as PV-driven Solar Water Heating Systems with Electric Backup can not only provide that precision timing today, but in doing so can also be designed to greatly mitigate disruptions / reductions to local (edge) system-level hosting capacity known as ICA in California. An August 1st, SDG&E filed comment in CPUC's Rulemaking 12-11-005 (SGIP) provides a glimpse of the challenge: *"The process of calculating and displaying ICA data is intensive, requiring the development and implementation of a well thought out and rigorous data validation processes. SDG&E's ICA data is derived from over 90 million data points that must correlate with the correct circuit models and data inputs."*

PV-driven Solar Water Heating Systems with Electric Backup will act to self-heal edge issues by working in concert with the Advanced Inverter Functionalities (AIF) and will do so not only benefiting the premise but to all the stakeholders on that circuit by providing greater stability to the Distribution System.

Additionally, although unsupported AIF results in reduced real power and / or curtailment at the premise, this combination will also provide a "home" for that otherwise curtailed energy, spurring greater self-consumption usage of GHG-free generation on that locally stabilized node.

Thank you once again for this opportunity to provide comments,

Kelly