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Comments on the Workshop on Title 24 2019 ZNE

Additional submitted attachment is included below.

Comments on the Workshop on Title 24 2019 ZNE

I. Including the results of the staff analysis of GHG reductions with different sets of measures would have been a helpful metric.

Overall I greatly appreciate the evaluation and consideration for PV plus energy storage as an excellent way to reduce energy use in an otherwise almost zero net energy home, and the cost-effectiveness analysis from staff at the CEC. Recognizing the role of plug loads, and the inability to reach true ZNE with energy efficiency measures alone, provides an excellent starting point to increasing the value in terms of EDR credits for PV plus storage in new and in retrofit and renovation construction. Given our goal of 50 % reduction in GHG's or more by 2030, it would have been helpful to look at the relative GHG reduction of the different groups of measures in the different climate zones as another metric for evaluating the options available to the builder and home-owner.

II. The analysis was not complete and did not include long-term mitigation of home-owner costs for energy over the life of the system

However, making PV prescriptive in 2019 Title 24 regulations without adding the storage component does not provide the greatest benefit for the homeowner in terms of their economic payback. It is my understanding that the modeling provided did not include the impact of TOU peak demand periods changing from the afternoon to 6 or 7 pm (the older PGE tariffs of E-6 and E-7, for residential) and the new TOU peak demand times that may be from 3 pm -8 pm or 4 pm -9 pm which will commence on a statewide basis in January 2019. While the impact of these rate and peak demand periods is acknowledged, the increase in cost to the home-owner, and the mitigation of the impact on the grid and on the home-owner's utility bills using PV and storage, was not presented. Evaluating the cost to put in the PV and storage but not calculating the overall value over 10-25 years is not a complete evaluation of the true cost versus benefit to the home-owner. The complaint by one participant that increasing the cost of the new construction by $5,000 - $10,000 or more by adding PV and storage, does not take into account the mitigating effects of paying for this over the 30-year life of the mortgage at relatively low rates, and reducing the overall cost of energy that the home-owner would otherwise have paid, by implementing solar plus storage at the outset with this relatively small initial investment, as well as the overall decrease in fossil fuel utilization represented by this shift in our energy source from dependence on fossil fuels to increasing the use of renewables and storage.

III. The state agencies should work together to provide incentives to meet our GHG reduction goals

Even though the topic of the meeting was Title 24 2019 building energy efficiency standards, it is imperative that the state harmonize its activities towards meeting our GHG reduction goals. To do this effectively, the state as a whole has to reduce GHG-emissions from fossil-fuel burning vehicles. Taking into account the need to increase the use of EV powered vehicles by the years 2019 - 2020, Title 24 should incorporate additional values and credits for EV's and EV charging. The overall benefit to the grid can include additional load-off-taking in mid-day, helping to control the over-production depicted in the famous "duck-curve", as well as battery storage providing power during peak demand periods as a demand response measure. By 2021, when the 2019 standards are implemented, PV plus storage plus EVs, with the assistance of "smart inverters" and advanced software systems, should be widely encouraged, even incentivized. Rather than considering the addition of PV and storage as "too costly"

using today's costs, we can incentivize them to reduce their overall cost, and provide value in terms of incentives for providing grid services and demand response. The additional benefits to the grid by then may be a potential source of income to the home-owner and EV-owner, particularly when tied together as a localized unit as some developers have envisioned. By the time the 2019 Title 24 regs are implemented EV's should have increased in number, and the ability to use EV's to draw down excess solar power ("increase load during peak production") may be valued by the grid. It makes a great deal of sense especially for those who own and run fleets of EV's , and could contribute to their value proposition as well as reduce GHG production. As a state, we will also benefit economically from cleaner air and reduced effects on health due to air pollution effects.

Respectfully submitted this 8th day of September, 2017

_s/s_____

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