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NRDC comments on CALGreen for the 2019 Building Energy Standards

Additional submitted attachment is included below.

NRDC

NATURAL RESOURCES DEFENSE COUNCIL

Staff Workshop on the CALGreen Voluntary Energy Efficiency Standards for the 2019 Building Energy Efficiency Standards

September 15, 2017

The Natural Resources Defense Council (NRDC) appreciates the opportunity to comment on the California Energy Commission (CEC)'s Staff Workshop on the 2019 CALGreen Voluntary Energy Efficiency Standards on August 30th, 2017.

NRDC commends the commission for making CALGreen an integral part of its code development process; we see CALGreen as a key component of Title 24 and California's policies to reduce energy use and emissions from the built environment. We support CEC's proposed 2-tier approach based on energy design ratings (EDR) for 2019 CALGreen – it has the merits of both simplicity and flexibility.

However, NRDC believes it is incumbent on CEC to add a feature to CALGreen that allows local jurisdictions to include a societal cost of carbon to their reach codes, to facilitate deep reductions in carbon pollution from California's new homes. As municipalities and others look to minimize the climate impact of their homes, they will look to CALGreen for guidance on doing so.

We offer the following comments to assist CEC as it further develops its proposal:

Greenhouse Gas-Focused Reach Codes

At the workshop, CEC did not address ways to help California reach codes reduce greenhouse gas emissions directly. The purpose of many of California's climate and energy policies is ultimately to achieve ambitious and challenging carbon pollution reduction goals. As such, the Commission has a unique opportunity – and, indeed, a de facto obligation – to facilitate greenhouse gas reductions through its reach building codes. Leadership cities and counties across California are examining ways to cut their climate impacts and they will look to 2019 CALGreen as they develop their plans.

While the Commission has proposed a tier of CALGreen that would achieve full ZNE, achieving that metric is distinct from reaching carbon neutrality. In fact, natural gas use and the use of the grid as 'virtual energy storage' make it very likely that most ZNE homes are not carbon neutral homes. At its heart, the issue stems from the use of California's time dependent valuation (TDV) in measuring

reach code compliance – TDV is an energy *cost* metric, not simply an energy or emissions metric. As such, qualifying for ZNE under TDV is distinct from achieving true carbon neutral residences. Local jurisdictions will look to CEC for guidance on moving past TDV's limitations and working towards true carbon neutral homes. In addition, proper CEC guidance on reducing residential carbon emissions will provide a pathway for future code cycle revisions.

CEC mentioned at the April 20th ZNE workshop that it was considering offering an option in CBECC-Res to account for a societal cost of carbon (SCC). SCC aims to quantify the external cost of climate-damaging emissions and can differ based on different analyses of the cost to mitigate and adapt to climate change. In CALGreen, the value used for SCC could be set by each local jurisdiction, offering flexibility as individual governments pursue aggressive climate action. We strongly encourage CEC to finalize its proposal on the inclusion of SCC in CALGreen, and to share its proposal with stakeholders for review and discussion.

We encourage CEC to implement the SCC feature in a way that immediately allows local jurisdictions using reach codes based on a societal cost of carbon to comply with both Parts 6 and 11 of the building code. This should be feasible with only a single run of the compliance software. While this is not a problem when a reach code uses a percent-better-than-approach, or a lower EDR target, this is not necessarily the case for a reach code based on SCC. But single compliance modeling is important nevertheless to avoid undue burden on building professionals and extra costs to homeowners.

Further, NRDC respectfully requests that CEC share the hourly greenhouse gas schedule that the commission is planning to use to integrate SCC into CBECC-Res. We believe stakeholders will be able to help CEC assess how SCC will affect various measures based on their load shapes, such as to determine the climate benefits of grid flexibility measures such as batteries, pre-cooling, and electric water heaters.

Envelope Measures

NRDC strongly supports CEC's "efficiency-first" approach, such as in CEC's proposed update to Part 6 in which buildings must first meet the energy efficiency EDR, without credit for additional photovoltaic (PV) beyond code requirement. Efficiency saves energy even at grid peak times, such as in summer evenings after sunset, when solar arrays are no longer generating, but air conditioning demand is still high and served by high-carbon fossil energy power plants.

Similarly, NRDC supports CEC's proposal to upgrade high performance walls, high performance attics, quality insulation installation, compact hot water distribution systems, and drain water heat recovery to mandatory prerequisites in CALGreen. Such prerequisites will set a strong foundation on which additional measures are layered to approach ZNE and, subsequently, zero net carbon homes.

Photovoltaic Array Oversizing

CEC proposes to give compliance credit for oversizing the PV array by a factor of up to 1.6x if coupled with a 6-kWh battery. We support this proposal because the battery provides grid flexibility and self-utilization benefits. However, this approach should also apply to other grid harmonization measures, such as pre-cooling and grid-connected water heaters, which offer similar grid flexibility and self-utilization benefits. In those additional cases, the numeric value of the multiplication factor (e.g. the 1.6x factor for battery storage) may need to vary to better represent the grid harmonization potential of each measure.

We appreciate the opportunity to provide this input, and thank CEC for its careful consideration of our comments.

Respectfully submitted,

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