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Joint POU Comments on the 2019 Building Energy Efficiency Standards ZNE Strategy

Additional submitted attachment is included below.

BEFORE THE CALIFORNIA ENERGY COMMISSION

In the Matter of:

2019 Building Energy Efficiency Standards

Docket No. 17-BSTD-01

RE: 2019 Zero Net Energy Residential Standards

**JOINT POU COMMENTS ON THE
2019 BUILDING ENERGY EFFICIENCY STANDARDS
ZERO NET ENERGY STRATEGY**

The Northern California Power Agency¹ (“NCPA”), the Southern California Public Power Authority² (“SCPPA”), and the California Municipal Utilities Association³ (“CMUA”) (collectively “Joint POU”) appreciate the opportunity to provide these comments to the California Energy Commission (“Commission”) on the *2019 Building Energy Efficiency Standards* (“2019 BEES”) and, in particular, the Commission staff proposals for addressing California’s residential Zero Net Energy (“ZNE”) goals, as presented during the staff workshop on April 20, 2017.

The Joint POU have long supported California’s energy efficiency, renewable energy, and climate change policies. Since the inception of the Renewables Portfolio Standard (“RPS”) program 15 years ago, the goals and priorities of state policymakers have evolved. In the 2005-

¹ NCPA is a nonprofit California joint powers agency established in 1968 to construct and operate renewable and low-emitting generating facilities and assist in meeting the wholesale energy needs of its 15 members: the Cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara, and Ukiah, Plumas-Sierra Rural Electric Cooperative, Port of Oakland, San Francisco Bay Area Rapid Transit (BART), and Truckee Donner Public Utility District—collectively serving nearly 700,000 electric consumers in Central and Northern California.

² SCPPA is a joint powers authority whose members include the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, and Vernon, and the Imperial Irrigation District. Each Member owns and operates a publicly-owned electric utility governed by a board of local officials. SCPPA’s Members collectively serve nearly five million people in Southern California.

³ CMUA is a statewide organization of local public agencies in California that provide electricity and water service to California consumers. CMUA membership includes publicly-owned electric utilities that operate electric distribution and transmission systems. In total, CMUA members provide approximately 25 percent of the electricity load in California

2006 Legislative Session, California adopted a suite of energy policies intended to reduce greenhouse gas (“GHG”) emissions from the energy sector and across the economy. Most recently, Governor Brown set California on the path to reduce GHG emissions by 40 percent below 1990 levels by 2030. The Legislature codified Governor Brown’s vision with the passage of SB 32 (Pavley, Chapter 249, Statutes of 2015). The Governor and Legislature further refined the state’s vision for a lower carbon future with the adoption of SB 350 (De León, Chapter 547, Statutes of 2015), which advances the RPS requirement to 50 percent by 2030 and establishes the objective to double the energy savings in electricity and natural gas final end through energy efficiency and conservation.

Whereas many state policies and programs are aligning with the SB 32/SB 350 goals, the Joint POU’s are concerned that the Commission’s proposed 2019 BEES and ZNE strategy (1) fails to adequately support current climate change policy objectives, (2) potentially exacerbates adverse grid conditions, and (3) does not consider more cost-competitive alternatives. The Joint POU’s respectfully submit these comments in support of further aligning the building standards program with broader efforts to implement the state’s climate change policies.

I. ZNE IS A VESTIGE OF 2005-2006 POLICIES

California Public Utilities Commission (“CPUC”) Decision 08-09-040, which included the original version of the *Long Term Energy Efficiency Strategic Plan* (“Plan”),⁴ and the *2007 Integrated Energy Policy Report* (“2007 IEPR”)⁵ first espoused the ZNE goals for new construction. These goals were established in conjunction with a series of landmark climate change policies and statutes adopted by the state more than a decade ago, including:

⁴ California Public Utilities Commission, September 2008, *Long Term Energy Efficiency Strategic Plan*.

⁵ California Energy Commission, 2007, *2007 Integrated Energy Policy Report*, CEC-100-2007-008-CMF.

- AB 32 (Núñez, Chapter 488, Statutes of 2006) established the goal of reducing GHG emissions to 1990 levels by 2020.
- AB 2021 (Levine, Chapter 734, Statutes of 2006) directed the Commission to establish annual statewide targets for energy efficiency and demand reduction over 10 years.
- SB 1 (Murray, Chapter 132, Statutes of 2006) increased the net energy metering cap and required utility incentives to support the statewide installation of 3,000 megawatts of solar.
- SB 107 (Simitian, Chapter 464, Statutes of 2006) moved up the RPS to 20 percent by 2010.
- SB 1037 (Kehoe, Chapter 366, Statutes of 2005) directed utilities, in procuring energy, to first acquire all cost-effective, feasible, and reliable energy efficiency and demand reduction resources.
- SB 1368 (Perata, Chapter 598, Statutes of 2006) established a power plant emissions performance standard that effectively prohibited new utility investments in coal.

While these measures provide the foundation for today’s climate program, the policy goals and issues facing California today have evolved considerably, a point acknowledged by the Commission staff in their presentation at the workshop on April 20, 2017.⁶ The proposed *2017 Climate Change Scoping Plan Update* developed by the California Air Resources Board identifies fuel substitution (replacing natural gas with electricity in end uses) and transportation electrification as key strategies to achieving California’s 2030 GHG target. To this end, SB 350

⁶ California Energy Commission, April 2017, *2019 Building Energy Efficiency Standards ZNE Strategy – presentation*, slide 4.

provisions related to POU integrated resource plans required POUs to report on their efforts to support and incorporate fuel substitution and transportation electrification into their resource plans. In contrast, the proposed 2019 BEES do not address transportation electrification or fuel substitution issues.

The bigger issue is that the proposed 2019 BEES do not account for GHG emission reductions, period. The current compliance software, CBECC-Res, shows energy metrics for each end use, but does not include a GHG/carbon scoring metric. Furthermore, the current BEES – specifically, the Time Dependent Valuation (“TDV”) methodology – hinder efforts to reduce the carbon footprint of buildings, at least in POU communities, and the proposed 2019 BEES does not include a remedy. For example, under the 2019 TDV, it is more difficult for an all-electric single family home with efficient heat pump water heating and space heating equipment to pass the Title 24 standards than a dual-fuel single family home, despite the fact that the all-electric home has a lower carbon footprint than a dual-fuel home. The 2019 BEES could provide a prescriptive pathway for building owners to construct all-electric buildings, or incentivize the installation of efficient electric systems that displace fossil fuel-based energy (e.g. natural gas water heating, natural gas space heating, gasoline vehicles). In previous Title 24 code cycles, the reference home is a dual-fuel home that assumes gas space heating and gas water heating. In the absence of an all-electric reference home option, or electric heat pump water heating/space heating options, California’s building standards actively prevent the installation of provide GHG emission reduction measures.

Codes and standards has and will continue to be an indispensable foundation on which California’s clean energy future is built. As such, it is inconceivable that the Commission would adopt 2019 BEES that fail to formally account for GHG emission reduction impacts given the

challenge of reaching a 40 percent reduction of 1990 levels by 2030. The Joint POUs firmly believe that the proposed 2019 BEES necessarily has to evolve to address broader GHG issues; as proposed, they do not.

II. ZNE EXACERBATES ADVERSE GRID CONDITIONS

The Joint POUs very much appreciate the recognition by Commission staff in their presentation during April 20, 2017 workshop that the value of midday solar PV generated kilowatt-hours decreases as the state approaches a 50 percent RPS by 2030 and increasing customer-owned renewables.⁷ More precisely, solar is currently creating negative pricing in the wholesale electric market. For example, 7% of all 5-minute real-time pricing intervals have experienced negative prices during the first quarter of 2016, reaching 14% of all pricing intervals in March 2016 due to high solar generation and relatively low loads.⁸

The Joint POUs also strongly support the Commission staff perspective that as the electric grid becomes more reliant on both utility-scale and customer-owned renewable energy in the future, rooftop PVs will have diminished carbon reduction benefits.⁹ For this reason, the Joint POUs disagree with the underlying premise of ZNE that there is an inherent GHG benefit derived from mandating new construction have onsite solar PV. Onsite solar PV is certainly an option, but there could be building measures that more effectively reduce GHG emissions that the proposed 2019 BEES do not consider.

⁷ California Energy Commission, April 2017, *2019 Building Energy Efficiency Standards ZNE Strategy – presentation*.

⁸ The Brattle Group *et al.*, July 2016, *Senate Bill 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, pg. I-34, prepared for the California Independent System Operator.

⁹ California Energy Commission, April 2017, *2019 Building Energy Efficiency Standards ZNE Strategy – presentation*, slide 4.

III. ONSITE SOLAR PV PLUS ENERGY STORAGE IS NOT COST-EFFECTIVE

The Commission staff presentation states that appropriately sized PVs that displace the site kilowatt-hours are found to be cost-effective in all climate zones, even if the net energy metering rules are changed to compensate hourly exported kilowatt-hours at avoided cost, and assuming no Federal Investment Tax Credit.¹⁰ The determination that onsite solar is cost-effective does not mean that it is the most cost-effective alternative. In addition, the TDV cost-effectiveness model relies on IOU rates, which in most cases are greater than POU rates. As such utility-scale installations and community solar projects, especially for POU customers, may provide a more cost-competitive alternative to onsite solar PV.

Onsite solar PV cannot be sized to displace onsite kilowatt-hours without some manner of “grid harmonization strategy,” such as energy storage. Energy storage, while the costs have declined significantly in recent years, is not a cost-effective resource today. For example, *Lazard’s Levelized Cost of Storage – Version 2.0* (“Lazard”) included an examination of the cost of energy storage in the context of its specific applications on the grid and behind the meter.¹¹ For residential applications, Lazard found the levelized cost to range between \$890-\$2,186 per megawatt-hour.¹² Until such a time that energy storage is a cost-effective resource, the Joint POUs urge the Commission to abstain from requiring solar PV in new residential construction. Instead, the Commission can encourage onsite solar PV plus energy storage by providing performance credits for packaged systems.

¹⁰ *Ibid*, slide 11.

¹¹ Lazard, December 2016, *Lazard’s Levelized Cost of Storage – Version 2.0*.

¹² *Ibid*, pg. 12.

IV. CONCLUSION

The Joint POU's appreciate the opportunity to provide these comments to the Commission, and looks forward to continue working with Commission staff ahead of the release of draft 2019 BEES express terms this summer.

Respectfully submitted,

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