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**COMMENTS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT ON  
LEAD COMMISSIONER WORKSHOP RE 2022 ENERGY CODE  
COMPLIANCE METRICS**

COMMENTS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT ON LEAD  
COMMISSIONER WORKSHOP RE: 2022 ENERGY CODE COMPLIANCE METRICS

*Additional submitted attachment is included below.*

**STATE OF CALIFORNIA  
BEFORE THE CALIFORNIA ENERGY COMMISSION**

<b>In the matter of:</b>	)	Docket No. 19-BSTD-03
	)	
<b><i>2022 Energy Code Pre-Rulemaking</i></b>	)	SMUD Comments on STAFF
	)	WORKSHOP RE: 2022 Energy
	)	Code Compliance Metrics
	)	
	)	April 10, 2020
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**COMMENTS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT  
ON LEAD COMMISSIONER WORKSHOP RE: 2022 ENERGY CODE  
COMPLIANCE METRICS**

The Sacramento Municipal Utility District (“SMUD”) respectfully submits the following comments to the California Energy Commission (“CEC”) regarding the March 26, 2020 Staff Workshop on 2022 Energy Code Compliance Metrics (“2022 Energy Code”).

SMUD would like to express our appreciation of the CEC’s staff and leadership in prioritizing decarbonization in the 2022 Energy Code. There is a climate change crisis, and we encourage the swift implementation of known strategies that reduce climate changing pollution from fossil fuels and refrigerants. Electrification of most end uses of energy is the only known way for California to achieve its landmark 2030 and 2045 climate change goals.

We offer the following comments on how the 2022 Energy Code may reflect its commitment to decarbonization by:

- 1) Creating a single, all-electric baseline for all energy sources and using energy valuation metrics that appropriately reflect the lower greenhouse gas (GHG) emissions of all-electric buildings, as opposed to separate standards for natural gas and electric construction.
- 2) Revising the retail rate adder to more accurately reflect the *true* (low) value of electricity during the midday period.
- 3) Adopting a 20-year global warming potential (GWP) of methane.
- 4) Updating the TDV’s underlying assumptions to reflect the carbon neutrality by 2045 mandate, an accelerated rate of building electrification, and a more realistic supply of bio- and synthetic gas.

SMUD expands on these points in the sections below.

- 1. Create a single, all-electric baseline for all energy sources using energy valuation metrics that appropriately reflect the lower GHG emissions of all-electric buildings, as opposed to separate standards for natural gas and electric construction.**

California’s buildings are responsible for 25% of the state’s emissions that are detrimental to society,<sup>1</sup> more than half of which come from gas or propane furnaces, gas water heaters, and other gas appliances with the remaining coming from the generation of electricity.<sup>2</sup> Electricity is already on an immediate path to decarbonization thanks to SB 100. The 2019 Energy Code created dual baselines for electric equipment and gas equipment—a step toward decarbonizing our buildings. Now we urge the CEC to take the next logical step in the 2022 Energy Code to create a single, all-electric baseline for low-rise residential construction. This would not preclude builders from using gas in their homes, still allowing customer choice, but would bring mixed-fuel buildings to an equivalent level of carbon emissions as all-electric buildings.

Encouraging all-electric development makes good sense from an economic policy perspective as well. It is less expensive to build all-electric, low-rise residential homes, thus lowering the cost to developers and prospective homeowners.<sup>3</sup> In SMUD’s service territory, like much of California, all-electric buildings are also cheaper for homeowners to operate. Gas-heated buildings leave Californians vulnerable to higher energy bills and steeper housing prices at a time when many residents are reeling from the economic impacts of the COVID-19 crisis. A recent study correlates air pollution with higher Coronavirus death rates,<sup>4</sup> and another study anticipates that by 2030, “35 million people may die from air pollution-related health effects resulting from fossil fuel combustion.”<sup>5</sup> It will ultimately cost the state even more to retrofit gas-heated buildings in the long-term.<sup>6</sup> Continuing to expand the pipeline infrastructure to new communities when it is well understood that gas infrastructure will see, at most, a 25-year useful life is not in the best interest of the citizens of California. We must set a clean energy standard in new construction today—as 33 California cities have already done.

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<sup>1</sup> Brook, M. California Energy Commission. “Building Decarbonization.” June 14, 2018 IEPR Workshop on Achieving Zero Emission Buildings.

<sup>2</sup> <https://www.nrdc.org/experts/joe-vukovich/real-climate-impact-californias-buildings>

<sup>3</sup> Rocky Mountain Institute. <https://rmi.org/insight/the-economics-of-electrifying-buildings/>;  
<https://www.greenbiz.com/article/yes-clean-electric-buildings-can-reduce-emissions-and-save-money-new-construction>

<sup>4</sup> <https://www.nytimes.com/2020/04/07/climate/air-pollution-coronavirus-covid.html>

<sup>5</sup> <https://www.forbes.com/sites/rogerpielke/2020/03/10/every-day-10000-people-die-due-to-air-pollution-from-fossil-fuels/#1a33fe3c2b6a>

<sup>6</sup> E3 “Future of Natural Gas”: <https://www.ethree.com/at-cec-e3-highlights-need-for-gas-transition-strategy-in-california/>

Adopting an all-electric baseline building code for the 2022 cycle for residential and commercial buildings (including mid- and high-rise residential) makes economic and environmental sense. This would decrease building costs overall and potentially reduce GHG emissions by 2 million metric tonnes per year by 2030.<sup>7</sup> While there may be some occupancy types that--at the present time--need a dual fuel baseline, with updated baseline equipment standards used in commercial buildings, an all-electric baseline will suffice in the vast majority of situations. At a minimum, any time gas equipment is installed, these buildings should be all-electric ready, including panel capacity, transformer sizing, and pre-wiring for electric appliances.

**2. *Revise the retail rate adder to reflect the true (low) value of electricity during the midday period.***

SMUD appreciates the inclusion of a retail adjustment adder to more appropriately reflect the value of midday electricity reduction. While a 15% retail adder is a good start in terms of both cost and carbon emissions, this falls short of reflecting the *true* (low) value during the midday period and thus, incorrectly values energy use (and therefore energy savings and load shifting). Flexible, electric technologies allow for demand response, pre-cooling, and energy storage, and are critical to a decarbonized future and can be properly rewarded for their benefits to the grid with a true representation of the value of midday electricity. Improved representation of this retail adder would more quickly advance nascent load shifting technologies.

A retail adjustment adder that more accurately reflects customer cost recovery and suitably recognizes the benefits of load flexibility technologies is vital to support California's carbon neutrality goals.

**3. *Adopt a 20-year GWP of methane.***

SMUD recommends using a 20-year GWP of methane in place of the current 100-year GWP, to more accurately portray the damaging effects of methane leakage into our atmosphere. The state's climate goals focus on the next 10 to 25 years and so should the GWP of methane.

Methane (CH<sub>4</sub>), the primary component of natural gas, is 84 times more damaging to the environment than CO<sub>2</sub>, and although "CH<sub>4</sub> emitted today lasts about a decade on average, which is much less time than CO<sub>2</sub>...methane also absorbs much more energy than CO<sub>2</sub>"—as is reflected in its GWP and emphasized in its 20-year GWP value.<sup>8</sup> Methane is also a precursor to ozone, which is a prime contributor to smog and acts as a GHG by trapping harmful ultraviolet rays. Because the effects of methane are "front-loaded," reducing methane emissions now could noticeably slow global warming.

<sup>7</sup> International Energy Outlook 2017. [https://www.eia.gov/outlooks/ieo/pdf/0484\(2017\).pdf](https://www.eia.gov/outlooks/ieo/pdf/0484(2017).pdf)

<sup>8</sup> US EPA "Understanding Global Warming Potentials." <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#Learn%20why>

In addition, the CEC should align itself with the California Air Resources Board (CARB) in its use of the 20-year GWP of methane. CARB exclusively relies on a 20-year GWP to evaluate the environmental impacts of short-lived climate pollutants (SLCP) and to determine the most effective ways to reduce the negative effects of SLCPs such as methane.<sup>9</sup> The only time CARB utilizes the 100-year GWP is for accounting purposes. Since the reason the leakage factor is being introduced in the 2022 Energy Code is to reduce the detrimental environmental consequences of methane, the CEC should adopt the same 20-year GWP as currently used by CARB.

**4. Update the TDV's underlying assumptions to reflect: the carbon neutrality by 2045 mandate, an accelerated rate of building electrification, and a more realistic supply of bio- and synthetic gas.**

The proposed TDV for the 2022 Energy Code rests on several assumptions that do not factor in the climate imperative and financial advantages of zero emission buildings, such as: 1) an 80% emission reduction in 2050; 2) a slower rate of building electrification; 3) a 10% biogas pipeline blend by 2030; 4) the absence of gas connection fee to the building; and 5) a 100-year GWP of methane.

Assuming an 80% reduction by 2050, instead of the more recent mandate of carbon neutrality by 2045, disregards widely accepted climate science and recommendations by the Intergovernmental Panel on Climate Change (IPCC). Although a strategy for achieving carbon neutrality is still in flux, California must plan for success and reflect the state's emission reduction edicts by using the Net Zero by 2045 model, including accelerated building decarbonization assumptions, accounting for the price of a gas hookup in the cost effectiveness study, and a 20-year GWP of methane.

Moreover, the Future of Natural Gas study found that achieving 80% GHG reductions by decarbonizing the gas grid would cost the state between \$5-\$20 billion dollars more than achieving similar reductions through the clean energy electrification of buildings.<sup>10</sup> To capitalize on these cost savings, the 2022 Energy Code must encourage a faster rate of building electrification, while assuming a realistic supply of bio- and synthetic gas. Currently, the 2022 Energy Code assumes that by 2030, 10% of natural gas demand will be supplied by biogas; this is unrealistic given that biogas currently only fulfills less than 1% of the state's demand. The 10% estimate fails to acknowledge the extremely high price of bio- and synthetic gas<sup>11</sup> and California has no policy in place to achieve 10% biogas supply by 2030. Therefore, the TDV should be updated to reflect a more realistic supply of bio- and synthetic gas.

Moreover, assumptions concerning allocation and prevalence of renewable natural gas (RNG) have resulted in overestimates of the future availability of RNG in California. It is

<sup>9</sup> CARB Short-Lived Climate Pollutants. <https://ww2.arb.ca.gov/our-work/programs/short-lived-climate-pollutants/about>

<sup>10</sup> E3 "Future of Natural Gas": <https://www.ethree.com/at-cec-e3-highlights-need-for-gas-transition-strategy-in-california/>

<sup>11</sup> E3 "Future of Natural Gas": <https://www.ethree.com/at-cec-e3-highlights-need-for-gas-transition-strategy-in-california/>

our understanding that the source of the RNG blended in the pipeline (e.g., 19% biomethane by 2050) assumes that 100% of the biomethane estimated to be available within California by 2050 is allocated for California's use, and that a population-weighted proportion of the biomethane estimated to be available nationally by 2050 is also allocated to California--and specifically utilized to reduce GHGs from buildings with gas appliances. It is likely that this population-weighting methodology would allocate *more* RNG to California than would be our "fair share" if every state looked to use RNG as a pathway to decarbonization over the next 30 years. Taking into account the likely per capita need for gas (considering the success of Title 24 Efficiency requirements over time and California's mild winters compared to the rest of the country), implies that a population-weighted availability of RNG would overestimate the share of RNG that should equitably be allocated to California. This is especially significant if RNG projections exclude RNG from within California that are assumed to be 100% allocated to California buildings.

**Conclusion**

SMUD strongly supports advancing the 2022 Energy Code by further prioritizing metrics that support building decarbonization. Recognizing the urgency of climate change, we hope the CEC moves swiftly to head off the worst impacts of this climate crisis. With the extensive data on climate, gas prices, electricity prices, and state policies in support of building decarbonization, the updates to the 2022 Energy Code presents a prime opportunity to keep pace with other statewide policies and climate goals.

As always, SMUD appreciates the opportunity to provide comments on the 2022 Energy Code. We look forward to continuing collaboration with CEC Staff to further California's Net Zero by 2045 policy.

/s/

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cc: Corporate Files (LEG 2020-0053)