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Comments on the AB 3232 Draft Assessment

Additional submitted attachment is included below.

Commissioner Andrew McAllister
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

June 11, 2021

Re: Comments on the AB 3232 Draft Assessment (released May 7, 2021)

On behalf of Natural Resources Defense Council and Sierra Club California, we thank you for the opportunity to provide comments on the California Energy Commission's (CEC) AB 3232 Draft Assessment (Assessment) released May 7, 2021. We greatly appreciate the CEC's thorough and rigorous analysis presented in this Assessment on what will be required to reduce greenhouse gases (GHG) emissions in residential and commercial building stock. The Assessment makes clear that California must urgently implement a plan to cut pollution from homes and buildings through aggressive electrification of new and existing buildings to achieve the state's 2030 and most important 2045 decarbonization targets.

We strongly support the CEC's continued efforts to shift the market toward clean, efficient all-electric new construction through adjustments to the building code; however, the Assessment also underscores the critical role of rapid and large-scale electrification of existing buildings to achieve our decarbonization targets in the most affordable manner. This transition will require massive investments into retrofitting existing buildings to be more efficient and powered by clean electricity. Not only will the retrofitting of existing infrastructure provide critical reductions in GHGs, it will also improve indoor and outdoor air quality, create clean energy jobs, and reduce health risks such as asthma and other respiratory diseases.

The Assessment analyzes the viability of biogas as an alternative pathway to decarbonize buildings. Despite claims made by the gas industry that biogas presents a cost-effective decarbonization alternative to electrification, the findings of the Assessment clearly show that even a small amount of biogas (i.e. the 20 percent renewable gas scenario) would cost at least 2.5 times more than electrification and would not put California on a track to achieve either the AB 3232 40-percent emission reduction target or the state's 2045 carbon neutrality target. The

Assessment demonstrates that biogas availability is too limited and too expensive for the gas system to offer a viable and scalable pathway for building decarbonization.

The Assessment distinguishes two methods to assess the goals outlined by AB 3232 in order for buildings to reduce their emissions by 40 percent: the direct emissions method that counts only emissions related to fossil fuel use in buildings, and the systemwide method that also includes emissions to generate the electricity used to power buildings. The direct emissions baseline is the most relevant and accurate metric if the state is serious about reaching its 2045 carbon neutrality target and reducing greenhouse gas emissions from buildings. The Assessment shows that the goal of reducing direct emissions 40-percent by 2030 is aligned with a 100-percent decarbonization by 2045 target. The direct emissions method is also the best way to ensure Californians reap the public health benefits of reducing emissions. If we want to reduce NOx, formaldehyde from buildings, we must approach building decarbonization from a perspective of direct emissions.

A systemwide baseline also helps us reduce emissions, and it ensures that we have efficient, grid flexible, and fully decarbonized buildings that are supplied by 100% percent electricity. However, the Assessment clearly shows that the only way to reach our 2045 targets is by targeting direct emissions, which accurately demonstrate aggressive and immediate electrification is necessary. Using only systemwide scenarios to guide emissions reductions would not only miss the secondary and tertiary benefits of providing pollution free buildings, it also prevents us from putting the state on track with meeting its greenhouse gas reduction goals.

While this Assessment is a critical first step, decarbonizing the building sector will require California to implement a long-term, multi-pronged strategy. As part of this strategy, we urge the Administration and Legislature to consider the following, particularly as the CEC develops its Integrated Energy Policy Report:

1. **Shift to all-electric new construction as quickly as possible, otherwise, the state risks locking in emissions that will threaten climate goals**: The urgency of the climate crisis requires that we stop all new construction that uses fossil fuels as soon as possible. The AB 3232 Assessment confirms that newly constructed buildings have the lowest decarbonization costs; therefore, the state must shift the market toward clean and efficient all-electric new construction through both its Title 24 Building Code authority and complementary incentives.

2. **Invest in large-scale incentive programs to shift the market towards clean energy appliances in new and existing buildings**: Building decarbonization technology is currently available in the California market and is already cost-effective in many situations even without incentives, but its market share is very low because the lack of

market volume and contractor familiarity result in high costs and low availability. Developing the market and bringing this technology down the cost curve by investing in incentive programs – such as the Public Utility Commission's Technology and Equipment for Clean Heating Program (TECH program) and Self-Generation Incentive Program (SGIP) incentives for heat pump water heaters – will unleash a lower-cost, lower-pollution, zero-carbon, grid-flexible technology, and well-paying local jobs to install it. The AB 3232 Assessment shows that any delay in investments would increase the cost of building decarbonization for Californians. The state should scale these programs as soon as possible to unleash a cheaper and cleaner way to heat our buildings, as it successfully did for rooftop solar with the California Solar Initiative.

3. **Stop gas system infrastructure subsidies**: Gas infrastructure subsidies, such as line extension allowances that subsidize the cost of extending the gas system to new buildings make other customers bear the cost of these investments that we now know will lead to unaffordable future gas costs. These subsidies worsen the future costs of "stranded" investments that will no longer be needed before the end of their expected life and make mitigating the climate crisis even more challenging and costly. These incentives needlessly increase energy costs for Californians and work against the state's decarbonization and clean air goals. The state should urgently reform these incentives and stop subsidizing fossil fuel infrastructure that other programs are working to move away from.

4. **Pursue an effective solution to heating and cooling (HVAC) replacement code compliance (SB 1414):** Many single and multi-family homes in California use forced air systems that have an estimated average duct leakage rate upward of 30 percent. This means heating systems are heating unconditioned spaces nearly as much as conditioned spaces, wasting a huge amount of energy and producing massive amounts of avoidable greenhouse gas (GHG) emissions. While the energy code requires duct testing and sealing for every HVAC system replacement, the compliance rate is currently less than 10 percent. The perpetuation of this situation is one of the biggest obstacles to cost-effective electrification of residential HVAC. Enforcing existing regulations by ensuring that all HVAC replacements on burnout comply with code would close the price gap between gas and heat pump HVAC systems, and make the transition to efficient heat pumps much more affordable. The Assessment should include SB 1414 implementation as a key priority building decarbonization, and make it a priority in the IEPR 2021, and propose solutions and actions that can really put the state on track to solving the issue.

5. **Include out-of-state methane emissions associated with gas use in California in building energy policies**: 90 percent of the gas used in California is imported from other states, and the majority of methane leakage occurs at the production stage, but

California's policies and the AB 3232 Assessment currently ignore these emissions when accounting for methane emissions reduction policies. This is contrary to the electricity sector where out-of-state emissions are included in the Air Resources Board's GHG inventory. State agencies should account for the fact that transitioning California's buildings off gas will necessarily reduce the number of gas wells drilled and fracked, and therefore out-of-state methane emissions, in the same manner that they account for out-of-state power plant emissions from electrification in the AB 3232 Assessment.

6. **The Assessment, and other related proceedings, find that concerns on the potential impacts of emission reduction strategies on ratepayers, construction costs, and grid reliability can be managed and result in net benefits to Californians.** The Industry Coalition comments dated 6/9/2021 express concerns about the potential impacts of emission reduction strategies on ratepayers, construction costs, and grid reliability. These important considerations have been addressed in the Assessment, other proceedings, or will be addressed in relevant proceedings as part of building decarbonization policy implementation as follows:
    a. **Impact on ratepayers**: A CPUC analysis presented at its 2/24/2021 En Banc on rates found that "a well-managed effort to move customers to all-electric homes and electric vehicles could result in over $100 per month reduction in overall energy bills."[1]
    b. **Impact on construction costs**: Construction costs depend on each policy driving electric construction. Energy building codes (Title 24) are cost-effective over their life, and in the case of new construction, ample evidence was submitted to the 2022 docket showing that all-electric new construction also reduces construction costs. For existing buildings, incentive policies such as those being developed under BUILD, TECH, and SGIP, are being designed to make electrification cost-competitive or lower cost than gas alternatives. The incentives will step down as equipment and installation costs come down until they are no longer needed as happened with the California Solar Initiative for rooftop solar.
    c. **Grid reliability**: The Assessment shows very little added peak load in summer, because HVAC electrification is exclusively a winter/shoulder season load and the new, more efficient heat pumps help to reduce the summer peak. Only water heating electrification adds summer load and most of that can be shifted off-peak with appropriate load shifting standards. HVAC electrification does add significant winter peak load, but the Assessment finds that winter peak loads would remain lower than summer peak load in most utility territories, and would just match summer peak load in the worst case scenario in PG&E's territory. CEC's in-depth analysis confirms previous work, such as by Synapse Energy Economics for NRDC, that with appropriate standards for load shifting for water

[1] https://www.cpuc.ca.gov/General.aspx?id=6442467418

and scape heating, California's grid will be able to serve building electrification load without needing a massive expansion of the electric grid.[2] And by increasing utilization of the existing grid infrastructure, building electrification will put downward pressure on electric rates, making the electric system more affordable for Californians.

We thank the CEC for its diligent efforts on this Assessment and for the opportunity to comment. We look forward to continued engagement with the CEC as the state looks to decarbonize its building stock to achieve its climate goals.

Sincerely,

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2 https://www.synapse-energy.com/about-us/blog/decarbonization-heating-energy-use-california-buildings-new-report