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SB 350 Disadvantaged Communities Advisory Group (DACAG) Comment on Draft Gas R&D Program FY 2023-2024 Budget Plan

**********THIS REPLACES TN 248606**********

Additional submitted attachment is included below.

February 17, 2023

California Energy Commission
715 P Street
Sacramento CA 95814

CC:
California Public Utilities Commission
Energy Division
505 Van Ness Avenue
San Francisco CA 94102

VIA EMAIL

Re: SB 350 Disadvantaged Communities Advisory Group (DACAG) Comment on Draft Gas R&D Program FY 2023-2024 Budget Plan, and Initial Comments on the Preliminary Research Concepts for FY 2024-2025 Budget Plan

To the California Energy Commission,

The SB 350 Disadvantaged Communities Advisory Group (DACAG) provides the following comments on the Draft Gas R&D Program FY 2023-2024 Budget Plan, and its initiative themes of hydrogen leak mitigation, building decarbonization, and others.

1. **Hydrogen Leak Mitigation and Regional Clean Hydrogen Hub (ARCH$_2$ES)**

The DACAG supports research to improve hydrogen leak mitigation to address safety and indirect climate change impacts from hydrogen infrastructure. We further support this research where it can be co-located with methane leakage monitoring and detection improvements (see also #4 below). This includes studying leakage of blended fuel streams, behavior under the increased pressure required to blend hydrogen into existing gas infrastructure. We request this research be prioritized for systems adjacent to and within disadvantaged communities (DACs). We further suggest studying how leakage might vary as infrastructure ages, including from the direct impact of hydrogen use (e.g., pipeline embrittlement), and the materials and monitoring needed to mitigate aging-related risks. We also recommend that this research, and the ARCH$_2$ES include an economic component, i.e., how does leakage detection and monitoring equipment and activities impact the economics of hydrogen as a fuel as compared to other fuel and generation options with less risk, and to rapidly increase our understanding of the feasibility and details of potential future markets and use cases for hydrogen. The significant

international excitement regarding hydrogen production should be cautiously analyzed with respect to likely / feasible applications so we avoid wasted investment and time. In recent analyses of pathways to the goals and requirements of SB 100, many scenarios do not rely on hydrogen at all, an indicator of the questions still to be answered regarding its viability, applications, costs, and market. As one example, please see recent analysis by Energy Innovation at: https://www.youtube.com/watch?v=xNqEh6wCWOc (accessed 2.17.2023).

2. Building Decarbonization

The DACAG strongly supports research into accelerated building decarbonization, including the proposed research on public health implications of cooking. We encourage this research to include indoor air quality concentrations and health outcomes in the context of building quality including kitchens with and without hoods and before and after weatherization and ventilation upgrades. Moreover, we encourage this research to include homes in disadvantaged communities and an assessment of the demographics of exposed populations. For example, are there certain population subgroups that are particularly vulnerable to cooking-related exposures, building and appliance upgrades that might be able to mitigate these exposures, and additional concerns (e.g. ventilation, mold) that need to be addressed to enable the mitigation measures to be effective?

Above and beyond the public health aspects of building decarbonization, we support a broader focus on this area, including recommendations to conduct a comprehensive array of commercial, industrial, and residential building decarbonization site pilots at representational scale(s), neighborhood- and community-scale zonal electrification pilots, and/or full gas decommissioning scenarios. Research should consider in-depth study of distribution grid capacity, at-building electrical service capacities and upgrades (including upgrades to the distribution grid), electrification of larger electrical loads within buildings (e.g., HVAC), inclusion of distributed energy resources (solar PV, energy storage, bi-directional electric vehicle charging infrastructure), and grid services provided by coordination between distribution grid and building energy management systems. Particularly in rural and Tribal areas, building electrification and decarbonization is not yet supported by the contractor ecosystem. Research should be done to improve understanding of the deployment gaps (e.g., skills, product knowledge, access to incentives) that are barriers to contractors and end users conducting building decarbonization projects. Further building decarbonization research should always include an economic impact component to better understand tolerances for disadvantaged communities, particularly low-income participants in home decarbonization (adopter and non-adopters of home decarbonization solutions).

3. Cross Cutting Innovations

To effect emission controls and reductions, and natural gas decommissioning, the DACAG supports the cross-cutting efforts of industrial decarbonization and environmental reduction demonstrations. We recommend these demonstrations be prioritized for DACs, particularly where pollution loads can be reduced in real terms by these demonstration projects. We further recommend these projects have dedicated workforce development and contractor training components. We also recommend including economic and social science research that includes a social cost of carbon metric and other non-energy benefit metrics.

4. **Gas System and Safety: Methane Leaks**

Due to the catastrophic climate impacts and dangerous indoor and outdoor pollution profiles of methane emissions, we recommend moving this priority from the 2024-25 research slate up to the 23-24 research slate. We recommend accelerated deployment of methane sensors and increasing the use of satellite technologies to detect methane leaks. We further recommend that the 24-25 research slate include accelerated gas decommissioning prioritizing gas systems with high rates of leakage and further prioritizing the decommissioning of these leaky systems within DACs. In cases where there are proposals to mix hydrogen into existing gas supplies, we recommend analyzing leaks in the context of the operational requirements of these systems and reflecting leakage of all constituents.

Sincerely,

The California Senate Bill 350 Disadvantaged Communities Advisory Group (DACAG)