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Comments on CEC Draft Research Concept, Docket No 19-ERDD-01

Additional submitted attachment is included below.

February 12, 2021

California Energy Commission
Docket Unit, MS-4
Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, California 95814-5512

Re: Comments on CEC Draft Research Concept, Docket No. 19-ERDD-01

Dear California Energy Commission:

The undersigned organizations respectfully submit the following comments in response to the workshop held on January 21, 2021, to discuss clean energy alternatives to diesel backup generators ("BUGs"). We therefore appreciate the Commission's efforts to develop alternative solutions to diesel BUGs, which exacerbate California's health, air quality, and climate crises and have a disproportionate impact on already overburdened environmental justice communities. In funding research, development, and commercialization of alternatives through the Electric Program Investment Charge ("EPIC") program, the Commission should direct investment only to those projects that further California's decarbonization objectives. This means zero-emission technologies such as solar paired with storage or on-site generation of electrolytic hydrogen that do not rely on the gas system to deliver energy. Baseload resources such as gas-powered fuel cells have significant greenhouse gas ("GHG") impacts, have already received hundreds of millions in public subsidies through the Self-Generation Incentive Program ("SGIP"), and are not appropriate candidates for EPIC funding. Similarly, projects that rely on directed biogas to claim carbon neutrality are fraught with verification issues and depend on continued use of the

gas system. As California seeks to accelerate the transition from fossil fuels, it is even more important that the Commission's investments reflect the State's priorities.

I. EPIC funding should be directed to the research and development of zero-emission, distributed energy solutions.

The Commission should direct all available EPIC funding to the research and development of zero-emission, distributed energy solutions, and none of this limited funding should be invested in projects that rely on fossil fuels or the gas distribution system. EPIC funding is meant to be invested in budding, innovative technologies, rather than those that have been on the market for years and do not meet the State's needs. This funding should support technologies consistent with the State's decarbonization goals, provide for on-site generation, and use renewable, zero-emissions energy. Specifically, we encourage the Commission to prioritize identifying and investing in proposals powered entirely by renewable resources, such as on-demand combination of solar and battery storage and distributed electrolytic hydrogen solutions for backup power. For example, Pacific Gas & Electric Company ("PG&E") proposed a remote grid standalone power system in Advice Letter 6017-E before the California Public Utilities Commission that is a remote grid model worth looking into.[1] While PG&E's proposal relies in part on some amount of fuel-powered generation, which our organizations believe should be excluded from the proposal, a zero-emission version of this type of remote grid is prime for EPIC investment. The distributed electrolytic hydrogen proposal raised during the January 21, 2021 workshop could offer a longer duration, seasonal solution for sites that do not allow for significant on-site renewable generation. Both of these solutions seem promising and worthy of EPIC funding.

II. Baseload gas resources and projects and directed biogas should not be eligible for EPIC funding.

EPIC funding should not be squandered on baseload gas generation technologies such as fuel cells. Gas-powered baseload generation increases reliance on fossil fuels and results in significant GHG pollution. Diesel backup generation only operates in the event of a power outage. In contrast, fuel cells are baseload generation that supply power on a continuous 24/7 basis regardless of whether there is a power outage. Because California's grid is increasingly decarbonized, reliance on on-site, gas-powered baseload generation in lieu of the grid substantially increases GHGs. The 2018 average GHG emissions for the grid in PG&E's service territory was 93 kg CO_2e/MWh.[2] In contrast, Bloom Energy fuel cells powered by natural gas advertise a CO_2 efficiency ranging from 308 to 378 kg CO_2e/MWh, or an average of 343 kg

[1] PG&E, *Advice Letter 6017-E: Remote Grid Standalone Power System Supplemental Provisions Agreement*, California Public Utilities Commission (Dec. 15, 2020), https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_6017-E.pdf.

[2] PG&E, Fighting Climate Change, https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/fighting-climate-change/fighting-climate-change.page (converting from lbs/kgs) (last visited Feb. 12, 2021).

CO_2e/MWh, over three times this amount.[3] Subsidizing these projects undermines California's climate objectives and would be a gross misuse of EPIC funding.

The Commission should also not fund projects that claim carbon neutrality based on purchase of the environmental attributes of faraway biomethane sources, otherwise referred to as directed biogas. As an initial matter, the possibility that biogas will result in greenhouse gas reductions relies on the assumption that it is generated from methane that would otherwise have been released into the atmosphere or diverted to a flare.[4] The biomethane supply that has the potential to satisfy this greenhouse gas reduction is extremely limited—between 1 and 3 percent of total gas demand in California.[5] This small fraction of the biomethane supply with emission reduction potential should be directed to electrify difficult to electrify sectors rather than on-site generation that would otherwise be supplied by an increasingly decarbonized grid. Indeed, the benefits of using biomethane for a behind-the-meter use case are substantially less than if biomethane displaced more carbon-intensive applications like industrial or heavy-duty transportation use that would otherwise be entirely powered by fossil fuels. Any benefit will only further diminish as the grid continues to decarbonize. Limited EPIC funding is best utilized elsewhere.

In addition, "directed biogas is not literally delivered, but notionally delivered, as the biogas may actually be utilized at any other location along the pipeline route."[6] Reviews of directed biogas projects under SGIP have determined that directed biogas projects only contract for biomethane produced elsewhere for as long as necessary to receive incentive funding.[7] Not only does EPIC not appear to have any mechanism to ensure delivery and use of directed biogas, but projects will revert to fossil gas at the earliest opportunity. Moreover, because biomethane is virtually indistinguishable from fossil gas upon pipeline injection, the California Air Resources Board has recognized this source as "high-risk" with a "high potential for misreporting."[8] Absent rigorous verification protocols and Commission enforcement, there is no assurance that directed biogas projects funded under EPIC rely on real, additional, and verifiable reductions that are not double-counted. EPIC's focus should be on advancing innovative technologies, not existing technologies that claim carbon neutrality through dubious crediting mechanisms. Project proponent assurances of reliance on directed biogas are not a basis to award limited EPIC funds.

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[3] Bloom Energy, Energy Server 5, https://www.bloomenergy.com/datasheets/energy-server-es5-300kw (converting from lbs/MWh) (last visited Feb. 12, 2021).
[4] Emily Grubert, *At scale, renewable natural gas systems could be climate intensive: the influence of methane feedstock and leakage rates*, Environmental Research Letters, Volume 15, Number 8, at 5 (Aug. 11, 2020), https://doi.org/10.1088/1748-9326/ab9335.
[5] *Id.*; Union of Concerned Scientists, *The Promises and Limits of Biomethane as a Transportation Fuel*, at 2 (May 2017), https://www.ucsusa.org/sites/default/files/attach/2017/05/Promises-and-limits-of-Biomethane-factsheet.pdf.
[6] *See* Itron, *Self-Generation Incentive Program: Renewable Fuel Use Report No. 27*, at 2-1 (Aug. 31, 2018), https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/Customer_Gen_and_Storage/SGIP-RenewableFuel-Rpt27.pdf.
[7] *Id.* at 1-6 ("During this reporting period we find that most directed biogas projects have fulfilled their five-year terms and will likely continue operating on 100% natural gas.").
[8] California Air Resources Board, *Biomass-Derived Fuels Guidance for California's Mandatory GHG Reporting Program*, at 7 (Jan. 11, 2019), https://ww3.arb.ca.gov/cc/reporting/ghg-rep/guidance/biomass.pdf.

III. Environmental justice and community groups should be represented at any future workshops.

While it was helpful to hear from market participants on potential alternatives to diesel BUGs, the workshop did not include a single panelist representing environmental justice perspectives. This oversight left decisionmakers with an unduly narrow perspective and what at times felt like a series of unquestioned sales pitches by market participants. Environmental justice communities are most impacted by health inequities from diesel BUGs and should be included in any discussion on alternative solutions. Yet Bloom Energy, an entity whose efforts to force communities to accept gas-powered fuel cells has been extremely controversial,[9] was afforded speaking opportunities on two separate panels with no such opportunity given to a community voice. We urge the Commission to ensure environmental justice and community perspectives are represented in future panels on this topic.

IV. Conclusion

Our organizations appreciate the Commission's continued efforts to adopt clean energy solutions that address the environment and equity challenges faced by communities across California. Please let us know how we can assist with supporting the transition to clean backup energy generation.

Sincerely,

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[9] *See, e.g.*, Kevin Stark, *San Jose Primed to Ban Natural Gas in Most New Buildings*, KQED (Dec. 1, 2020), https://www.kqed.org/science/1971311/san-jose-primed-to-ban-natural-gas-in-most-new-buildings; Thy Vo, Bloom Energy sues Santa Clara for undermining its technology, The Mercury News (June 13, 2019), https://www.mercurynews.com/2019/06/13/bloom-energy-sues-santa-clara-for-undermining-its-technology/.

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