June 15, 2018

Honorable Ben Hueso
Chair, Senate Energy, Utilities and Communications Committee
State Capitol, Room 4035
Sacramento, CA 95814

RE: SB 1440 (HUESO), BIOMETHANE PROCUREMENT MANDATE – OPPOSE

Dear Honorable Ben Hueso:

Earthjustice, the Natural Resources Defense Council, the Center for Biological Diversity, Sierra Club California, the Center on Race, Poverty & the Environment, Center for Food Safety, the Leadership Council for Justice and Accountability, Physicians for Social Responsibility-Los Angeles, and the California Environmental Justice Alliance write to express our opposition to SB 1440, which would establish biomethane procurement requirements that could include the conversion of biomass to methane. Our organizations support efforts to reduce emissions of short-lived climate pollutants like methane that would otherwise enter the atmosphere. However, in focusing on mandatory procurement requirements and prioritizing biomethane generation, SB 1440 would limit meaningful consideration of strategies that can reduce methane at a lower cost and with fewer environmental impacts. Indeed, a set of ever-expanding incentives for biomethane production may result in perverse incentives to generate more methane than would otherwise occur and facilitate the consolidation of dairy operations with a corresponding increase in the severity of associated local air, water, and odor impacts. Until the feasibility and cost of biomethane procurement is better understood through pilot programs initiated through SB 1383, we encourage the Legislature to focus on incentives to reduce methane generation in the first instance.

Our key concerns with SB 1440 are as follows:

Procurement Mandates Should Not Be Considered Until the Cost and Feasibility of Biomethane Production is Better Understood

SB 1440's biomethane procurement requirement is premature. Biomethane production from dairies has an unproven track-record, with many digesters installed since 1989 having ceased operation "because of financial distress, high operational cost, and/or complexity of their operation."[1] In addition, California's existing Bioenergy Market Adjusting Tariff ("BioMat"), whereby energy is generated from sources such as biogas from dairies and biomass, has had limited success, even once price caps were reached. An assessment of the BioMat program by the California Public Utilities Commission ("CPUC") concluded that there was not sufficient market depth to promote program competition so that prices would decrease; that there was no indication of market transformation such that the program could continue absent heavy subsidies; and that the cost of energy generated by biomass and dairies was disproportionately high compared to other renewable options.[2] Given the challenges and cost of treating biogas to meet standards for injection into common carrier pipelines, it is reasonable to expect similar results from biomethane procurement.

Accordingly, cost and feasibility should be better understood before setting procurement mandates. Notably, the feasibility of dairy biomethane projects is currently being studied through SB 1383, which requires each gas corporation to "implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system."[3] Late last year, the CPUC established a framework for implementation that will evaluate proposed projects on criteria that include scalability, greenhouse gas reduction and cost-effectiveness, environmental benefits, and disadvantaged community outreach and that will require data reporting to enable pilot project evaluation.[4] Rather than rush to a procurement mandate that would require significant public investment and may not ultimately deliver desired emissions reductions, the Legislature should await the results of pilot projects before considering a requirement for additional biomethane procurement.

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[1] *See* CalCAN, *Diversified Strategies for Reducing Methane Emissions from Dairy Operations*, p. 4 (Oct. 2015), http://calclimateag.org/wp-content/uploads/2015/11/Diversified-Strategies-for-Methane-in-Dairies-Oct.-2015.pdf.

[2] CPUC, *Status of Bioenergy Market Adjusting Tariff*, Slide 4 (Oct. 11, 2017), http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Test_Calendar/Status%20of%20BioMAT%20Program%20FINAL.pdf.

[3] SB 1383, adding Sec. 39730.7(d)(2).

[4] CPUC, D.17-12-004, *Decision Establishing Implementation and Selection Framework to Implement the Dairy Biomethane Pilots Required by Senate Bill 1383* (Dec. 18, 2017), http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352373.PDF.

Implementation of SB 1383's Methane Reduction Requirements Should Prioritize Practices That Reduce Methane Generation

On top of Low Carbon Fuel Standard and Renewable Identification Number credits already available for biomethane, SB 1440 would stack more subsidies on biomethane production, including ratepayer subsidization of interconnection costs and an added $15 MMbtu purchase price for biomethane, over five times the current purchase price of fossil gas.[5] Commodifying methane through substantial stacked subsidies will preclude meaningful consideration of practices that reduce the generation of methane and can offer superior co-benefits. For example, conversion from wet to dry manure handling systems can dramatically reduce methane emissions. As noted in the California Climate and Agricultural Network's *Diversified Strategies for Reducing Methane Operations from Dairy Operations,* "many dairies in Glenn and Tulare counties already handle a portion of their manure through dry management practices," suggesting "that dry management systems can be economically viable, and that broader adoption of dry practices may be feasible with the right incentives and research in place."[6] As this report also observes, a bias toward biomethane capture, a strategy with high equipment cost but low farm-level labor requirements, rather than methane reduction practices such as dry handling, which have low capital costs and support permanent employment opportunities, can be considered at odds with state objectives to further job and economic growth in the most disadvantaged parts of the state.[7]

In addition, SB 1440's focus on substantial additional subsidy for methane generation rather than methane avoidance will likely lead to significant localized environmental impacts by incentivizing larger herd sizes that can better capitalize on revenue from the sale of methane. Notably, the dairies in the southern San Joaquin Valley are the region's largest source of ozone-forming volatile organic compounds. Expanded dairy operations and increased herd size will lead to increased emissions from silage, manure, and enteric emissions, specifically increased emissions of VOCs, ammonia, NOx, hydrogen sulfides, reactive organic gases and will, in turn result in increased particulate matter and ozone. Increased particulate matter and ozone exacerbates respiratory conditions such as asthma and can cause premature death. The operation of digesters also increases local emissions of hydrogen sulfide and ammonia.[8] An

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[5] The spot price of natural gas in early June was approximately $2.85 MMtbu. https://www.eia.gov/naturalgas/weekly. Given the BioMat program has reached cost caps and has very limited participation, it is reasonable to conclude that under a mandatory biomethane procurement program, the full $15 MMbtu purchase subsidy in SB 1440 would also be reached.

[6] CalCAN, *Diversified Strategies for Reducing Methane Emissions from Dairy Operations*, p. 9 (Oct. 2015).

[7] *Id.*at p. 11.

[8] Central Valley Dairy Digester and Co-digester Facilities Program EIR. March, 2010. California Regional Water Quality Control Board, Central Valley Region. https://calepa.ca.gov/wp-content/uploads/sites/62/2016/10/Digester-Documents-CVDigestEIR.pdf; Michigan State University Extension. *The impact of ammonia and hydrogen sulfide emissions from animal agriculture.* 2011. http://msue.anr.msu.edu/news/the_impact_of_ammonia_and_hydrogen_sulfide_emissions_from_animal_agricultur.

increase in the number of cows in a particular location will also increase the amount of manure produced and threaten greater impacts to groundwater. Large scale dairies already cause substantial nitrate pollution of groundwater. Digestate – a byproduct of dairy digestion – contains the same quantity of nitrate as wet manure but in a more concentrated state. More information is needed to understand the effect of this highly concentrated nitration from digestate on groundwater resources. By incentivizing larger-scale dairy operations through state and ratepayer subsidies, SB 1440 will contribute to, rather than remedy, localized pollution.

SB 1440's Inclusion of Biomass Gasification Could Result in Increased Greenhouse Gas Emissions at High Ratepayer Cost

Unlike methane generated from dairies and landfills from the anaerobic decomposition of organic matter, biomass – defined in SB 1440 as including wood, garden clippings, and agricultural crop residues – does not decompose anaerobically and therefore do not produce methane. Processes that create methane where none would ordinarily occur, such as biomass gasification, should not be part of California's methane reduction efforts. Biomass-derived fuels cannot be considered "carbon neutral" or "climate neutral." Multiple studies have shown that it can take a very long time for new biomass growth to recapture the carbon emitted by combustion, even where fossil fuel displacement is assumed, and even where "waste" materials like timber harvest residuals are used for fuel.[9] This is known as the "carbon debt" of bioenergy. Similarly, using forest-sourced woody biomass as feedstock for energy production is not an effective tool for managing the greenhouse gas emissions from forest fire. Numerous studies show that forest thinning for fuels reduction is a net carbon emission from the forest.[10]

In addition, the collection of biomass for energy is extremely costly. In the BioMat program, the CPUC anticipates that energy derived from biomass will reach its cap of

[9] *See, e.g.*, Stephen R. Mitchell *et al.*, *Carbon debt and carbon sequestration parity in forest bioenergy production*, Global Change Biology Bioenergy (2012); Ernst-Detlef Schulze *et al.*, *Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral*, Global Change Biology Bioenergy (2012); Giuliana Zanchi *et al.*, *Is woody bioenergy carbon neutral? A comparative assessment of emissions from consumption of woody bioenergy and fossil fuel*, Global Change Biology Bioenergy (2012); Jon McKechnie *et al.*, *Forest Bioenergy or Forest Carbon? Assessing Trade-Offs in Greenhouse Gas Mitigation with Wood-Based Fuels*, 45 Environ. Sci. Technol. 789 (2011); Anna Repo *et al.*, *Indirect Carbon Dioxide Emissions from Producing Bioenergy from Forest Harvest Residues*, Global Change Biology Bioenergy (2010); Manomet Center for Conservation Sciences, *Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts, Department of Energy Resources* (2010) https://www.manomet.org/wp-content/uploads/old-files/Manomet_Biomass_Report_Full_June2010.pdf.

[10] *See, e.g.*, Mary S Booth, *Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy 2018 Environ. Res. Lett.;* Dellasala, D.A. *et al. , Accommodating mixed-severity fire to restore and maintain ecosystemintegrity with a focus on the Sierra Nevada of California, USA. Fire Ecology 13: 148-171*(2017); Campbell, J.L., et al., 2011, *Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?, Front Ecol Environ* (2011).

$212/MWh and would cost ratepayers $1.4 billion for just 50 MW of procurement.[11] In contrast, contracts for solar resources are now under $25/MWh.[12] To the extent biomethane derived from gasification of biomass is intended to displace the use of gas, far more savings could be realized through investment in measures that reduce gas demand such as building electrification.

For the reasons set forth above, we believe the Legislature should focus on measures that reduce methane generation and await results of pilot projects before considering substantial additional investment in biomethane capture.

Sincerely,

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Executive Director
Physicians for Social Responsibility - Los Angeles

Cc: Senator Lara
Assembly Member Quirk
Assembly Member Grayson
Honorable Chris Holden, Chair, Assembly Utilities and Energy Committee
Members, Assembly Utilities and Energy Committee
Honorable Al Muratsuchi, Chair, Assembly Natural Resources Committee
Members, Assembly Natural Resources Committee

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[11] CPUC, *Status of Bioenergy Market Adjusting Tariff*, Slide 4 (Oct. 11, 2017).

[12] *See, e.g.*, Julian Spector, Nevada's 2.3-Cent Bid Beats Arizona's Record-Low Solar PPA Price, Greentech Media (June 12, 2018), https://www.greentechmedia.com/articles/read/nevada-beat-arizona-record-low-solar-ppa-price#gs.z5Bm8gU.