

May 18, 2016

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Senator Ricardo Lara  
 Chair, Senate Appropriations Committee  
 State Capitol  
 Sacramento, CA 95240

**RE: SB 1043 (Allen) SUPPORT, if amended**

Dear Senator Lara:

The California Hydrogen Business Council (CHBC) recognizes the author’s proposed amendments to Senate Bill 1043 (Allen) and expresses its support for this bill, if amended as proposed (see Attachment A).

This proposed amendment to SB 1043 directs the California Air Resources Board to study and develop recommendations to promote the expanded use of *biogas and renewable gases*, thereby being inclusive of other sources of renewable natural gases, including those using renewable feedstock and potential future pathways employing direct conversion of solar energy to gaseous fuel.

The California Hydrogen Business Council is an industry association comprised of organizations and individuals involved in the business of hydrogen. Its mission is to advance the commercialization of hydrogen in transportation and stationary sources to reduce greenhouse gas, criteria pollutant emissions and dependence on oil.<sup>i</sup>

For the past several years, the CHBC and its members have been working with various government agencies and other renewable gas market participants to expand market opportunities for existing and developing technologies for renewable gas, including renewable hydrogen. Much of the work in California is supported by existing statewide greenhouse gas emission reduction and short lived climate pollutant statutes and regulations.

California is one of the largest energy markets world-wide and an international green technology leader. The suite of renewable energy and climate change policies in the state attract renewable energy investments and promote new technology developments.

SB 1043 (Allen), once amended as proposed, directs the California Air Resources Board to consider policies to support the expansion of renewable gas, including biological-based renewable gases and other forms of renewable gases, as appropriate. By including other qualifying renewable gases in the amendments, renewable hydrogen and gases derived from renewable feedstock other than biogas can be considered for programmatic support under this bill. Renewable hydrogen technology exists today, and more renewable gas technologies are under development and will be commercial in the coming years. A new statewide renewable gas policy and statutory renewable gas definitions must include all verifiable renewable gases.

If California is to meet its goals under AB 32 for 2030 and 2050, it must transition to new sources of renewable gas for our cars, homes and businesses. Including all verifiable renewable gas sends a positive signal to the market, regulators, researchers and all those working toward developing renewable gas alternatives that will reduce greenhouse gas emissions. If California tackles the next big renewable market – gas – it should do so in a thoughtful and holistic manner including all relevant current technologies and those that are under development.

For example, renewable hydrogen can be produced using small amounts of water and renewable electricity from the grid. Similar to an electric battery, this renewable fuel source can be used as an alternative vehicle fuel or to help balance the grid during periods of excess wind and solar generation. Additionally, the renewable hydrogen can be utilized in a fuel cell, as a dedicated fuel source for electric power plants, or blended back into the gas system to replace fossil-based natural gas consumed at the burn tip (gas stoves, heaters, water heaters). The utilization of renewable hydrogen occurs today across the United States, and in Germany -- a leader in renewable electricity integration. In Germany, renewable hydrogen is viewed as a high value transportation fuel source, and a valuable solution for wind and solar integration, including grid storage.

The Senate Environmental Quality Analysis references renewable gases and concerns raised by:

**“...various agricultural interests that argue synthetic gas creates additional methane in the environment and, for this reason, should not be given status equal to biogas.”**

This assertion lacks technical foundation. Renewable hydrogen produced through electrolysis creates no incremental emission of methane to the atmosphere. Even if the produced hydrogen is further processed to methane as renewable fuel (as is the case with biogas) there is

no basis to assert or assume that the fugitive emissions associated with that pathway are higher than for directed biogas and they may very well be lower on a full-cycle basis.

The CHBC supports SB 1043, with the inclusion of the proposed amendments in Senate Appropriations. All energy market participants, including transportation fuel purchasers, electricity purchasers, natural gas wholesale purchases, and California's regulators, should consider all viable renewable gas products. If the state chooses to embark on the next large renewable market – the gas market, it must be done with a high likelihood of success to meet the aggressive statewide climate goals. Many eligible renewable gas technologies are available and will become available as the market matures. As with the renewable electric market in its infancy, stronger well-planned policies will spur investments and innovation, and result in a successful climate A Long-term, a holistic approach to a renewable gas with a market depth and liquidity will benefit consumers and set the stage for a more successful statewide greenhouse gas reduction program.

In conclusion, the CHBC supports the expansion of all eligible renewable gas, including renewable hydrogen and biogas. Therefore, we support SB 1043 as proposed to be amended, as it directs the state agencies to create an equal playing field for qualifying technologies and recognizes the progress made to-date to develop renewable hydrogen in California.

Thank you for taking the time to consider our comments. Please feel free to contact me at 310-455-6095 to discuss further.

Sincerely,



Emanuel Wagner, Assistant Director  
California Hydrogen Business Council

Cc: Honorable Jerry Brown  
Honorable Kevin De Leon  
Members, Senate Appropriations Committee  
Honorable Ben Allen

## Attachment A

(e) (1) If it deems appropriate, the state board may, in consultation with the California Energy Commission and the Public Utilities Commission and in compliance with paragraph (b), include renewable gas generated by an eligible renewable energy resource meeting the requirements of the California Renewables Portfolio Standard Program (Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code), or direct solar energy, in the policies adopted pursuant to section (b) provided the renewable gas does one or more of the following:

(A) Furthers the greenhouse gas emission reduction goals pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code,

(B) Enables or accelerates the adoption of the California Renewables Portfolio Standard Program (Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code),

(C) Supports or furthers the Low Carbon Fuel Standard regulation (Executive Order S-01-07 (January 19, 2007), Sections 95480 to 95490, inclusive, of Title 17 of the California Code of Regulations),

(D) Promotes the energy storage portfolio requirement (Chapter 469 of the Statutes of 2010), or

(E) Supports emission reduction goals for 2030 and 2050 (Executive Order B-30-15), or furthers the state's comprehensive strategy to reduce emissions of short-lived climate pollutants (Section 39730 of the Health and Safety Code).

(2) If the gas is generated using grid power, offsite renewable power, RPS credits, or eligible renewable feedstocks, then only that portion of gas attributable to RPS eligible energy may be considered renewable for purposes of any policy adopted pursuant to paragraph (b).

(3) For the purposes of this section "renewable gas" means synthetic gas generated by an eligible renewable energy resource, excluding organic waste as described in paragraph (l) of section 25420, meeting the requirements of the California Renewables Portfolio Standard Program (Article (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code) or direct solar energy.

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<sup>i</sup> The views expressed in these comments are those of the CHBC, and do not necessarily reflect the views of all of the individual CHBC member companies. Organizational members of the CHBC include AC Transit, ACE Cogeneration Company, Air Liquide Advanced Technologies U.S. LLC., American Honda Motor Co., Inc., Ballard Power Systems, Bay Area Air Quality Management District, Bethlehem Hydrogen, BMW North America, California Air Resources Board, Cambridge LCF Group, Center for Transportation and the Environment (CTE), Clean Energy Fuels, Community Environmental Services, E4 Strategic Solutions, El Dorado National – California, Electro Power Systems, FuelCell Energy, General Motors, Giner, Gladstein, Neandross & Associates (GNA), Golden State EPC, GTA ,GTM Technologies Inc., H2 Logic, H2Safe, LLC, Hydrogen in Motion, Hydrogenics Corporation, Hydrogenious Technologies, HySa Systems, Hyundai Amercia Technical Center, Idaho National Laboratory, Intelligent Energy, IRD

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Fuel Cells LLC, ITM Power, Ivys Inc., Johnson Matthey Fuel Cells, Keyes, Fox & Wiedman LLP, Linde Group, Longitude 122 West, Inc., Loop Energy, McPhy North America, National Renewable Energy Laboratory (NREL), Next Hydrogen Corporation, Nuvera Fuel Cells, Pacific Gas & Electric, Paramount Energy West LLC, PDC Machines, Plug Power, Inc., Port of Long Beach, PowerHouse Energy Americas, Powertech Labs, Inc., Proton Onsite, Rio Hondo College, Rose Communications, Sacramento Municipal Utility District, SAFCell Inc, Schatz Energy Research Center - Humboldt State, Solar Hydrogen, South Coast Air Quality Management District, Southern California Gas Company, SunLine Transit, Swagelok Los Angeles, Terrella Energy Systems, Total Transportation Services, Inc. (TTSI), Toyota Motor Sales, USA, Inc., United Hydrogen Group LLC, US Hybrid, Zero Carbon Energy Solutions, Ztek Corporation.