CALIFORNIA HYDROGEN BUSINESS COUNCIL

Hydrogen Means Business in California!

Main Office: 18847 Via Sereno
Yorba Linda, CA 92886

DC Office: 1211 Connecticut Ave NW, Ste 650
Washington, DC 20036

Phone: (310) 455-6095 | Fax: (202) 223-5537
info@californiahydrogen.org | www.californiahydrogen.org

April 18, 2018

The Honorable Nancy Skinner
California Senator
State Capitol, Room 2059
Sacramento, California 95814

RE: SB 1369 (Skinner): Green Hydrogen – SUPPORT IF AMENDED

Dear Senator Skinner:

The California Hydrogen Business Council (CHBC) would like to express our strong support for SB 1369, with the changes described below.

Notwithstanding your outstanding support for technology-neutral energy storage project development in California via AB 2514, the California Public Utilities Commission has decided to exclude hydrogen from the discussion of energy storage options, despite its massive potential to support renewables integration, production of baseload zero-emission transportation fuel, and grid services.

The CHBC sees SB 1369 as a very positive sign to allow hydrogen to show case its potential as an important energy carrier for electricity, specifically for seasonal and long-term energy management and optimizing higher levels of wind and solar resources. California, because of the great strides made in transforming the electric grid to renewable energy, is well poised to now develop new electrolytic hydrogen ("e-hydrogen") projects. This technology has great potential to optimize California's expansion of renewable electricity generation, while also providing grid services and new opportunities to replace fossil natural gas. E-hydrogen can also be used in industrial processes that currently use fossil fuels, in fuel cell electric vehicles (FCEVs), and also in newer hydrogen electric generation turbines to replace fossil natural gas powered turbines.

Supporting a statewide effort to demonstrate the viability of e-hydrogen projects is timely and important, especially now that hydrogen supply needs to become more resilient to support large scale FCEV adoption and rollout as required by Governor Brown's Executive Order B-48-18.

California can contribute to the fight against climate change by developing effective policies and technologies that can be exported to other parts of the world, while creating jobs at home. To that end, your bill to create five electrolytic hydrogen pilot projects is a significant step to futureproof our economy and displace the use of conventional fossil fuels.

The CHBC requests that the terminology used in SB 1369 regarding "green hydrogen" be changed to "**electrolytic hydrogen**" or **"e-hydrogen"** as outlined in the Appendix to avoid confusion about alternative pathways to produce green and renewable hydrogen, e.g. using renewable methane pathways, as defined in SB 1383 last year, or direct solar-to-hydrogen conversion.

The CHBC is a California industry trade association with a mission to advance the commercialization of hydrogen in the energy sector, including transportation, goods movement, and stationary power systems to reduce emissions and dependence on oil.[1]

We look forward to working with your office on the passage of SB 1369 with the below changes implemented.

Sincerely,

Emanuel Wagner
Assistant Director
California Hydrogen Business Council

[1] 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. Members of the CHBC include Advanced Emission Control Solutions, Air Liquide Advanced Technologies U.S., Airthium, Alameda-Contra Costa Transit District (AC Transit), American Honda Motor Company, Anaerobe Systems, Arriba Energy, Ballard Power Systems, Bay Area Air Quality Management District, Beijing SinoHytec, Black & Veatch, BMW of North America, California Performance Engineering, Cambridge LCF Group, Center for Transportation and the Environment (CTE), CNG Cylinders International, Community Environmental Services, CP Industries, DasH2energy, Eco Energy International, ElDorado National – California, Energy Independence Now (EIN), EPC - Engineering, Procurement & Construction, Ergostech Renewal Energy Solution, EWII Fuel Cells, First Element Fuel, FuelCell Energy, GenCell, General Motors, Geoffrey Budd G&SB Consulting Ltd, Giner ELX, Gladstein, Neandross & Associates, Greenlight Innovation, GTA, H2B2, H2Safe, H2SG Energy Pte, H2Tech Systems, Hitachi Zosen Inova ETOGAS GmbH, HODPros, Hydrogenics, Hydrogenious Technologies, Hydrogen Law, HydrogenXT, HyET - Hydrogen Efficiency Technologies, Hyundai Motor Company, ITM Power, Ivys, Johnson Matthey Fuel Cells, Kontak, KORE Infrastructure, Life Cycle Associates, Linde North America, Longitude 122 West, Loop Energy, Luxfer/GTM Technologies, McPhy Energy, Millennium Reign Energy, Montreux Energy, National Renewable Energy Laboratory (NREL), Natural Gas Fueling Solutions – NGFS, Natural Hydrogen Energy, Nel Hydrogen, New Flyer of America, Next Hydrogen, Noyes Law Corporation, Nuvera Fuel Cells, Pacific Gas and Electric Company - PG&E, PDC Machines, Planet Hydrogen, Plug Power, Port of Long Beach, PowerHouse Energy, Powertech Labs, Primidea Building Solutions, Proton OnSite, RG Associates, Rio Hondo College, Rix Industries, Sacramento Municipal Utility District (SMUD), SAFCell, Schatz Energy Research Center (SERC), Sheldon Research and Consulting, Solar Wind Storage, South Coast Air Quality Management District, Southern California Gas Company, Sumitomo Corporation of Americas, Sunline Transit Agency, T2M Global, Tatsuno North America, The Leighty Foundation, TLM Petro Labor Force, Toyota Motor Sales, True Zero, United Hydrogen Group, US Hybrid, Verde, Vinjamuri Innovations, Volute, WireTough Cylinders, Zero Carbon Energy Solutions.

Appendix: CHBC's Proposed Changes to SB 1369:

SECTION 1.

The Legislature finds and declares all of the following:

(a) Electrolytic hydrogen, or e-hydrogen, is hydrogen gas produced through electrolysis has become more available and cost effective due to the successful development of new low-cost renewable energy resources, like solar and wind.

(b) E-hydrogen production optimizes valuable eligible renewable energy resources, particularly intermittently generated electricity by converting electricity to zero carbon hydrogen.

(c) E-hydrogen will be an important resource to assist the state to maximize intermittent electricity generation and energy storage for short-term, long-term, and seasonal storage applications in the future, as the electrical systems integrates higher levels of intermittent low-cost electricity from eligible renewable energy resources.

(d) California's goals for reducing emissions of greenhouse gases can be served by utilizing, to the maximum extent possible, eligible renewable energy resources either directly to serve consumers of electricity or indirectly through hydrogen production to replace existing natural gas applications, including displacing natural gas, gasoline, or other fossil fuel-derived gases for electric generation, heating sources, transportation fuels, and other industrial practices.

(e) E-hydrogen can assist with reducing emissions of greenhouse gases by leveraging the success of the California Renewables Portfolio Standard Program to further reduce emissions of greenhouse gases and criteria air pollutants from other sectors, including the gas and transportation sectors, as an important next step for deeper decarbonization across all economic sectors to meet the state's overall goals for reducing emissions of greenhouse gases.

(f) Utilizing existing energy infrastructure to produce e-hydrogen will benefit consumers by avoiding new, redundant, and excess energy infrastructure and optimizing the use of current system investments.

SEC. 2.

Chapter 8.5 (commencing with Section 2847) is added to Part 2 of Division 1 of the Public Utilities Code, to read:

CHAPTER 8.5. Electrolytic Hydrogen

Article 1. Definitions

2847.

For purposes of this chapter, the following terms have the following meanings:

(a) "Eligible renewable energy resource" means a source of electrical generation that is an eligible renewable energy resource pursuant to the California Renewables Portfolio Standard Program (Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1).

(b) "Electrolytic hydrogen" means hydrogen gas produced through electrolysis.

Deleted: Green

Deleted: which

Deleted: electrolysis,

Deleted: Green

Deleted: green

Deleted: Green

Deleted: green

Deleted: Green

Deleted: green

Deleted: Green

Deleted: and does not include hydrogen gas *manufactured* using steam reforming or some other conversion technology that produces hydrogen from a fossil fuel feedstock

(c) “Integrated resource plan” means an integrated resource plan filed by a load-serving entity for approval by the commission pursuant to Section 454.52 or an integrated resource plan adopted by a local publicly owned electric utility and filed with the Energy Commission pursuant to Section 9622.

(d) “ISO” means the Independent System Operator or a successor multistate independent system operator.

(e) “Load-serving entity” has the same meaning as defined in Section 380.

(f) “State board” means the State Air Resources Board.

Article 2. Electrolytic Hydrogen Pilot Program

2848.

(a) The commission, in consultation with the Energy Commission and the state board, shall develop five electrolytic hydrogen pilot projects to produce hydrogen via electrolysis that do all of the following:

(1) Utilize electricity transmitted over the electrical grid if the energy optimizes renewable energy resources on the electrical grid or provides overall electrical system balancing benefits, including short-term, multi-day, and seasonal energy storage, reduces demand for peak electrical generation, defers or substitutes for an investment in generation, transmission, or distribution assets, or improves the reliable operation of the electrical transmission or distribution grid.

(2) Optimize electricity from zero-carbon electricity resources as determined by the commission.

(3) Reduce emissions of greenhouse gases.

(b) The pilot projects shall meet the following criteria:

(1) Each shall use no more than five megawatts, unless the commission determines that higher usage is appropriate.

(2) Together, they shall achieve reasonable geographic diversity.

(3) They shall be distributed among various load-serving entities.

(4) They shall facilitate reductions in emissions of greenhouse gases and criteria air pollutants.

(5) They shall produce electrical system benefits and reduce fossil fuel derived natural gas usage.

Article 3. Integrated Resource Planning

2849.

The commission and the Energy Commission shall consider existing and potential uses for electrolytic hydrogen when evaluating an integrated resource plan.

Deleted: Green

Deleted: green

Deleted: green

Deleted: Utilize

Deleted: green