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California Air Resources Board
1001 I Street
Sacramento, California 95814

March 20, 2017

Re: Comments of California Hydrogen Business Council Regarding the Final Proposed SLCP Reduction Strategy (posted March 14, 2017)

Dear Mr. Mehl,

The California Hydrogen Business Council (CHBC) would like to commend the California Air Resources Board for the comprehensive Final Proposed SLCP Reduction Strategy, which was released on March 14, 2017. The plan contains a wealth of recommendations and approaches of which the CHBC is supportive. Our members and the CHBC look forward to providing its expertise and guidance to ARB, where appropriate. In addition, the CHBC would like to recommend minor edits and clarifications to the plan to provide consistency with the implementation of SB 1383 (Lara).

In review of the SLCP, the CHBC has identified inconsistencies, which ARB should address. Most importantly, **SB 1383 does not mention or use the term renewable natural gas**. However, the SLCP uses the term several times while referring to SB 1383, despite SB 1383 providing no justification for such terminology. This occurs on pages 4, 8, 15, 22, 28 and 64. This letter includes specific examples of the usage of this terminology in **Appendix A**. On pages 14, 15, 31 and 124 of the document, the term used for SB 1383's requirement is stated correctly as renewable gas.

By using the term "renewable natural gas," the SLCP risks limiting the scope, despite SB 1383 language specifically using the broader term "renewable gas" that includes a range of gaseous fuels, including hydrogen produced from renewable energy resources. The CHBC recommends removing the word natural in these instances.

On pages 15 and 31, the SLCP includes RNG when referencing carbon intensity and reductions in SLCP emissions, despite SB 1383 not making any such reference in the actual bill language. Appendix B provides the specific example and the actual bill language for reference. Removing the term RNG would address this issue.

Another section that CHBC recommends clarifying is on page 56. In this section it report seems to suggest that additional renewable hydrogen facilities exacerbate the risk of methane leakage.

That is factually incorrect, as hydrogen actually can help minimize potential methane leaks by replacing at least some methane (e.g. when it is injected into the existing gas grid) with a greenhouse gas-free alternative. The CHBC recommends correcting this language by replacing it with the language featured in Appendix C.

In conclusion, the CHBC, for the reasons discussed above, respectfully requests ARB to amend the SLCP Reduction Strategy document on the pages identified above with the recommendations provided in the appendices to provide consistent and clear guidance.

Thank you for your consideration!

Sincerely,



Emanuel Wagner
Assistant Director | California Hydrogen Business Council

The CHBC is a California industry trade association with a mission to advance the commercialization of hydrogen in transportation and stationary sources to reduce greenhouse gas, criteria pollutant emissions and dependence on oil. 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 AC Transit, Air Liquide Advanced Technologies U.S. LLC., American Honda Motor Co., Inc., Ballard Power Systems, Bay Area Air Quality Management District, Beijing SinoHytec, Bethlehem Hydrogen Inc, BMW of North America LLC, California Air Resources Board, California Fuel Cell Partnership, California Performance Engineering Inc., CALSTART, Cambridge LCF Group, Center for Transportation and the Environment, China Hydrogen Fuel Cell Corporation, Coalition for Clean Air, Community Environmental Services, E4 Strategic Solutions, Eldorado National – California, Energy Independence Now, Engineering, Procurement and Construction, LLC, Ergostech Renewal Energy Solution, First Element Fuel Inc, FuelCell Energy, Inc., General Motors Corporation, Giner, Inc., Gladstein, Neandross & Associates, Greenlight Innovation, GTA, Inc., GTM Technologies Inc., H2B2, H2Safe, LLC, H2SG Energy Pte Ltd, H2Tech Systems, Horizon Fuel Cells Americas, Inc., Hydrogen in Motion, Hydrogenics Corporation, Hydrogenious Technologies, HydrogenXT, Hyundai Motor Company & Kia Motors Corp, i-2-m, Idaho National Laboratory, Intelligent Energy, IRD Fuel Cells LLC, ITM Power Inc, Ivys Inc., Johnson Matthey Fuel Cells, Linde North America Inc, Loop Energy Inc, McPhy Energy, MPL Consulting, Inc., National Renewable Energy Laboratory, Nel Hydrogen, New Flyer of America Inc, Next Hydrogen Corporation, Noyes Law Corporation, Nuvera Fuel Cells LLC, Pacific Gas and Electric Company, Paramount Energy West LLC, PDC Machines, Inc., Plug Power, Inc., Port of Long Beach, PowerHouse Energy Americas, Powertech Labs, Inc., Proton OnSite, Ramco Consulting Company Inc, Rio Hondo College, RIX Industries, Sacramento Municipal Utility District, SAFCell Inc, Schatz Energy Research Center, Solar Hydrogen System, South Coast Air Quality Management District, Southern California Gas Company, Sumitomo Corporation of Americas, SunLine Transit Agency, Tatsuno North America Inc, Terrella Energy Systems Ltd, Toyota Motor North America Inc., Advanced Power and Energy Program - UC Irvine, United Hydrogen Group Inc, US Hybrid Corporation, WireTough Cylinders, LLC, Zero Carbon Energy Solutions, Ztek Corporation.

Appendix A

The SLCP uses the term renewable natural gas several times while referring to SB 1383, despite SB 1383 never mentioning renewable natural gas or similar terminology. This occurs on pages 4, 8, 15, 22, 28 and 64:

On page 4:

*"State agencies, utilities, and other stakeholders need to work immediately to identify and resolve remaining obstacles to connecting distributed electricity with the grid and injecting renewable **natural** gas into the pipeline, as called for in SB 1383."*

On page 8:

*"Before ARB regulates dairy and livestock manure emissions, as required by SB 1383, California agencies will encourage and support near-term actions by dairies to reduce manure emissions through financial incentives, collaboration to overcome barriers, development of policies to encourage renewable **natural** gas production, and other market support."*

On page 15:

*"Implementing the SLCP Strategy will also require continued efforts to overcome barriers to connecting distributed electricity, generated from renewable **natural** gas (RNG), to the grid and injecting renewable **natural** gas into the pipeline. To address these obstacles, SB 1383 calls for ARB to establish energy infrastructure development and procurement policies needed to encourage dairy biomethane projects and calls on the CPUC to direct gas companies to implement no fewer than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system."*

On Page 22:

*"Senate Bill 1383 (Appendix B) requires ARB to approve and begin implementing the SLCP Strategy by 2018, codifies the statewide SLCP emission reduction targets that were in earlier versions of the SLCP Strategy, provides specific direction for reductions from dairy and livestock operations and from landfills by diverting organic materials, requires actions to support in-State production and use of renewable **natural** gas, and stipulates guidelines and analyses that will shape the implementation of this SLCP Strategy."*

On page 28:

*"Adopting state policies to promote biogas from organic waste would provide a strong durable market signal to industry, agencies, and investors. In addition, this biogas can help the State meet its 33 percent renewable mandate for hydrogen transportation fuel. The State's new 50 percent renewable portfolio standard may drive renewable hydrogen production even higher. SB 1383 requires CEC, CPUC, and ARB to develop policies to support the development and use of in-state renewable **natural** gas to support dairy and other biomethane project developments."*

On page 64:

*"SB 1383 requires ARB, CPUC, and CEC to institute measures to increase the economic certainty associated with environmental credit generation and to encourage development of dairy **RNG** projects and associated infrastructure."*

Emphasis on "natural" and RNG (Renewable Natural Gas) above added.

CHBC recommends striking the word natural or using the term Renewable Gas instead of RNG in the cases referenced above.

Appendix B

The SLCP restricts SB 1383's language incorrectly to RNG on pages 15 and 31, where it states:

*"These policies shall prioritize fuels with the greatest GHG emission benefits, taking into account **RNG** carbon intensity and reductions in SLCP emissions."*

SB 1383, SEC. 5 - Section 39730.8 (5)(e), actually stipulates a broader approach that does not specify any one type of low-greenhouse gas fuel:

"In implementing this section, priority shall be given to fuels with the greatest greenhouse gas emissions benefits, including the consideration of carbon intensity and reduction in short-lived climate pollutants, as appropriate."

The CHBC recommends deleting the term RNG in these two sections.

Appendix C

The SLCP on page 56 seem to suggest that increased renewable hydrogen facilities exacerbate the risk of methane leakage.

*"In California, where natural gas may increasingly fuel trucks and heavy-duty vehicles, we must ensure that **the use of natural gas provides a climate benefit compared to the diesel fuel it displaces. As we increase the number of facilities producing and using renewable supplies of natural gas, hydrogen, or other fuels in a cleaner energy economy, we must also take steps to minimize potential methane leaks from those facilities.**"*

That is factually incorrect, as hydrogen actually can help minimize potential methane leaks by replacing at least some methane (e.g. when it is injected into the existing gas grid) with a greenhouse gas-free alternative. The CHBC recommends correcting this language by replacing it with the following:

*"In California, where methane, including renewable methane, may increasingly fuel trucks and heavy-duty vehicles, we must ensure that **all fuels are assessed on a full-cycle basis including any potential incremental increase in methane emissions that could result from the increased use any renewable gaseous fuel.** As we increase the number of facilities producing and using **renewable methane** in a cleaner energy economy, we must also take steps to minimize potential methane leaks from those facilities."*