AQUAHYDREX

June 30, 2023

Mark Sippola, Ph.D
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Renewable Gas and Green Electrolytic Hydrogen Needed to Decarbonize Cement

Dear Dr. Sippola:

Thank you for the opportunity to comment on the May 31, 2023, SB 596 Cement Sector Net-Zero Emissions workshop. AquaHydrex supports SB 596 and the California Air Resources Board's (CARB's) efforts to decarbonize the industrial sector, including cement, and broader efforts to achieve carbon neutrality. We urge you, through the SB 596 framework and related rulemakings such as Cap-and-Trade, to develop mechanisms that support the expanded use of green electrolytic hydrogen in the cement and other industrial sectors, in order to achieve the objectives of SB 596 and the 2022 Climate Change Scoping Plan.

About AquaHydrex

AquaHydrex is an American company commercializing a purpose-driven, clean-sheet redesign of electrolysis for producing low-cost green electrolytic hydrogen from intermittent renewables at scale. We see green electrolytic hydrogen, aided by the dramatic reduction in the cost of renewable energy, practical at scale and a key component of achieving deep decarbonization, including of the cement and other industrial sectors.

Our own proprietary insights, based on our clean-sheet redesign of electrolysis to create the ideal platform for green hydrogen at scale, show an incredible roadmap for reducing the cost of electrolysis and green hydrogen production, especially when directly tied to inexpensive variable renewable energy. The recent addition of production tax credits under the Inflation Reduction Act will support additional cost reductions and help make green hydrogen a more affordable and widely available clean energy solution than many currently anticipate.

Green Electrolytic Hydrogen Key to Decarbonizing Cement and Achieving SB 596 Goals

Cement is a hard-to-abate industrial sector due to two unique challenges: (1) The need for carbon capture and sequestration (CCS) to mitigate process emissions, which comprise about 60% of cement emissions, and (2) The need for renewable fuels to decarbonize high-temperature heat processes that cannot be easily electrified. CCS poses a long-term challenge associated with further technology and infrastructure development, and may not be able to be

deployed at sufficient scale in order to meet the SB 596's requirement to reduce cement sector emissions by 40% by 2035.

Therefore, while the CARB continues to work on CCS, including through implementation of SB 905, we encourage you to prioritize policies and actions to develop renewable gas supplies capable of decarbonizing California's cement industry at scale within the next ~10 years. Coupled with improved efficiency and other measures identified in SB 596, deploying renewable gas at California's cement facilities will enable them to achieve the interim greenhouse gas intensity reduction requirements while CCS is further developed and deployed in order to get the sector ultimately to net-zero greenhouse gas emissions.

CARB Should Incentivize Use of Green Electrolytic Hydrogen in the Cement Sector

Green electrolytic hydrogen offers the most scalable renewable gas solution, and we encourage CARB to identify and pursue specific measures to support near-term deployment of green hydrogen in the cement sector in order to achieve the goals of SB 596. These measures could build off of the successful model provided by the Low Carbon Fuel Standard, which could be expanded to include low carbon fuels supplying the cement sector and other stationary sources. Other options include direct grants and incentives, a low carbon fuel standard or renewable gas standard specific to industrial sources or non-core utility customers, incentives through the Cap-and-Trade program, or other measures.

Thank you again for the chance to provide feedback on this workshop. We appreciate CARB's diligent efforts to decarbonize industry, fuels, and California's economy. Aquahdyrex wholly supports CARB's implementation of SB 596 and development of a robust net-zero cement strategy that will serve as a catalyst for innovation and greenhouse gas reductions. We look forward to working with you and helping achieve the State's climate goals, including those established under SB 596.

Sincerely,

Sam Morton

Sam Morton
Senior Director of Strategy and Development
AquaHydrex