



November 12, 2025

The Honorable Dr. Steven Cliff
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA

Re: Blue Planet Comments on Cap-and-Invest Program Workshop

Dear Dr. Cliff:

Thank you for the opportunity to comment on the October 29, 2025, Cap-and-Invest Program Workshop. The Cap-and-Invest Program underpins California's climate change goals and framework, and is critical to achieving the State's priorities. We strongly support incorporating carbon capture, utilization and storage (CCUS) into the program, in order to support implementation of AB 1207 and the 2022 Scoping Plan. We encourage CARB to develop a Manufacturing Decarbonization Incentive program, which is broadly applicable to industrial facilities and power plants covered under the cap, and which includes and priorities emerging, scalable CCRUS strategies such as carbon mineralization to achieve deep decarbonization in hard to abate sectors.

About Blue Planet

Blue Planet is a California-based company pioneering technology and products for economically sustainable carbon management by converting captured CO₂ into high-value building materials. Our carbon mineralization process can be deployed across a wide array of difficult-to-decarbonize industries – including power plants, refineries, cement production and others – and in connection with direct air capture (DAC) projects, biomass facilities, or other carbon dioxide removal (CDR) strategies. Importantly, our technology captures not only CO₂, but also particulate matter, NO_x, SO_x and other pollutants hazardous to surrounding communities. We currently have operations at a plant in Pittsburg, California on the Sacramento Delta, and our carbon-sequestered aggregate has been utilized at San Francisco International Airport, where carbon-sequestered concrete is specified.

Blue Planet's technology produces coarse and fine limestone aggregate made from sequestered CO₂ utilizing the carbon mineralization process. It allows lower-cost carbon capture, including from direct air capture or other carbon removal pathways, by avoiding the need to purify and enrich captured CO₂ before use, reducing the cost and energy needs associated with carbon capture. It also can be deployed at scale anywhere; sources of captured or removed CO₂ do not

need to be proximate to a CO₂ pipeline or geologic sequestration site to successfully manage carbon.

Carbonate mineralization offers a significant and permanent CCRUS solution

As we have described previously,¹ and as validated in peer-reviewed research,² the mineralization process permanently stores carbon in rock, which can then be used in concrete and stored in our built environment. While several technical, legal, and economic questions remain related to geologic sequestration, many of which CARB and other agencies will address through implementation of SB 905 (Caballero, Chapter 359, Statutes of 2022), carbonate mineralization offers a fully scalable, permanent carbon storage solution, ready for deployment today. We appreciate the State recognizing this opportunity, including:

- In the Final 2022 Scoping Plan Update, CARB discusses the role of carbon capture and carbonate mineralization in the context of decarbonizing cement and other sector transitions, stating “Direct air capture and carbon mineralization have high potential capacity for removing carbon...”³
- The CEC identifies carbonate mineralization, including carbon storage in aggregates, as one of the most promising strategies for decarbonizing the cement sector:⁴

Capturing carbon from industrial processes and then utilizing it in a product is considered one of the essential components for mitigating CO₂ emissions since it can achieve net negative emissions, especially for sectors that are unable to achieve zero emissions. For example, carbon capture and utilization appear to be a pathway to achieve significant decarbonization of the cement industry where 60 percent of the carbon dioxide is from process emissions... For instance, carbon capture and utilization in the cement industry has recently emerged with sustainable techniques to use carbon emissions in concrete production. Some emerging utilization techniques, such as mineral carbonation, includes adding carbon into cement to enhance the concrete’s compressive strength. With almost 4 billion tons of construction aggregate produced in North America, mineral carbonation could be the most efficient route to CO₂ utilization.

Enable CCRUS, including carbonate mineralization, as a decarbonization strategy by incorporating it into the Cap-and-Invest Program and Mandatory Reporting Regulation

¹ <https://www.arb.ca.gov/lists/com-attach/73-sp22-kickoff-ws-UTMGbFEIVGJQCQd3.pdf>

² For example, see: Xi, F., Davis, S., Ciais, P. et al. Substantial global carbon uptake by cement carbonation. *Nature Geosci* 9, 880–883 (2016). <https://doi.org/10.1038/ngeo2840>

³ CARB (2022) 2022 Scoping Plan for Achieving Carbon Neutrality, California Air Resources Board, November 16, pg. 221. <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp.pdf>

⁴ See pg. 10 at: https://esd.dof.ca.gov/Documents/bcp/2223/FY2223_ORG3360_BCP5441.pdf

We encourage CARB to formally recognize mineralization, including its promising application across a number of sectors – including refining, cement production, power generation, and others – in Cap-and-Invest and related programs. Specifically, we encourage CARB to:

- Formally incorporate carbonate mineralization into the CCS Protocol through implementation of SB 905.
- Incorporate the CCS Protocol into the Cap-and-Invest Program, and allow new protocols to be automatically included in Cap-and-Invest as they are finalized in the CCS Protocol.
- Account for CCRUS, including mineralization strategies, in the Mandatory Reporting Regulation.
- Per AB 1207, develop new offset protocols for CDR strategies, including carbon mineralization and utilization as aggregates in concrete.

We look forward to working with CARB staff regarding any technical or accounting questions that would support these efforts.

Develop a Manufacturing Decarbonization Incentive that includes CCUS and mineralization

We strongly support the proposed Manufacturing Decarbonization Incentive, and urge CARB to apply the program broadly to facilities covered under the cap and prioritize investment in CCUS strategies and others that can quickly deliver deep greenhouse gas reductions in hard to abate sectors at scale. We offer the following specific responses to related questions posed at the workshop:

Given the loss of federal funding, should CARB use the Cap-and-Invest Program to increase support for industrial decarbonization projects that reduce GHG emissions and protect against leakage in California?

Yes, we strongly support new allowance allocation schemes that would support deep decarbonization for industrial decarbonization projects and help protect against leakage in California.

If so, what sectors and facility investments should be eligible for this support under Cap-and-Invest?

We encourage CARB to apply the program broadly to the industrial and power sectors, including but not limited to, cement, refining and existing power plants. Facility investments that deliver deep decarbonization but may not be economic under prevailing carbon prices, such as CCUS and carbonate mineralization, should be prioritized under the program. Investments that support incremental emissions reductions or would otherwise be supported through the prevailing structure of the program should not be eligible.

What approach should CARB take to designing and implementing such an approach?

CARB should prioritize near-term investments in the most scalable solutions, including carbonate mineralization, and award allowances necessary to overcome initial cost premiums when accounting for available federal incentives and other value available under the program.

State and further incentivize industrial decarbonization through public procurement of carbon sequestered concrete

We appreciate CARB's interest in accelerating industrial decarbonization through the Cap-and-Invest program. As discussed above, we believe CARB can accelerate industrial decarbonization through allowance allocation frameworks that incentivize CCRUS and accelerated industrial decarbonization, including of the cement and concrete sectors and in-line with SB 596.

We also encourage CARB to consider opportunities to leverage public procurement of concrete to support industrial decarbonization. The state uses enough concrete every year to store all industrial sector greenhouse gas emissions – if captured CO₂ were permanently stored as rock and utilized as aggregate in concrete. (We also note that there are other, additional strategies to sequester carbon in concrete that could be additive to this approach.)

As the biggest user of concrete in California, state agencies – especially Caltrans – can provide a significant incentive for capturing industrial CO₂ emissions or for carbon removal and sequestering emissions in concrete, simply by specifying the use of sequestered carbon in concrete in state projects. This would have minimal costs on state projects, but provide a powerful incentive for supporting industrial decarbonization and CDR that would be additive to federal tax credits and value under the Cap-and-Invest Program. We encourage CARB to think holistically about Cap-and-Invest and other programs, including the SB 596 framework, and advance a wide array of supportive policies to achieve the State's climate goals and accelerate industrial sector decarbonization.

Thank you for your consideration of these comments, and we look forward to working with you as you consider amendments to the Cap-and-Invest program in the coming months.

Sincerely,

Kevin Davis
Vice President of Market Development
Blue Planet Systems