



May 29, 2026

Sydney Vergis, Ph.D.
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Blue Planet Comments on the SB 253 Public Workshop: California Corporate Greenhouse Gas Reporting Program

Dear Dr. Vergis:

On behalf of Blue Planet Systems, we appreciate the opportunity to comment on the March 23, 2026, SB 253 Public Workshop: California Corporate Greenhouse Gas Reporting Program (SB 253 Workshop). Blue Planet strongly supports a robust and transparent corporate GHG disclosure framework. To that end, Blue Planet urges CARB to:

- Explicitly address embodied carbon in construction materials across Scope 3 Categories 1, 2, and 11, recognizing it as one of the most significant and underreported sources of Scope 3 emissions,
- Adopt supplier-specific accounting as the preferred method for construction materials under Categories 1 and 2,
- Prioritize Categories 1 and 2 in the initial phase-in under Blue Planet's preferred Option 3, and
- Recognize ASTM International measurement methods, NSF's Concrete PCR, Environmental Product Declarations and CarbonStar (CSA/ANSI R118:2024) as acceptable bases for supplier-specific accounting and third-party assurance in Scope 3 reporting.

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. As validated in peer-reviewed research,¹ our carbon mineralization process permanently stores carbon in rock, which can then be used in concrete and stored in the built environment. Blue Planet's technology solution can be deployed across a wide array of difficult-to-decarbonize

¹ Xi, F., Davis, S. J., Ciais, P., Crawford-Brown, D., Guan, D., Pade, C., & Shi, C. (2016). Substantial global carbon uptake by cement carbonation. *Nature Geoscience*, 9, 880–883.
<https://doi.org/10.1038/ngeo2840>

industries – including power plants, refineries, cement production and others – and in connection with direct air capture (DAC) projects, biomass facilities, or other CO₂ 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 the San Francisco International Airport, where carbon-sequestered concrete is specified.

Prioritize Embodied Carbon in Scope 3 Reporting

Embodied carbon in building materials is an important source of Scope 3 emissions for CARB to prioritize in its rulemaking. For certain sectors subject to SB 253 regulations – specifically construction, manufacturing, real estate, and heavy industry sectors – embodied carbon represents a significant source of Scope 3 emissions. CARB is currently developing embodied carbon regulations pursuant to AB 2446 and AB 43 that will tentatively require mandatory reporting among covered projects and building materials beginning in 2027.² Explicitly addressing embodied carbon in Scope 3 emissions and prioritizing it for Scope 3 reporting in 2027 would align with CARB’s embodied carbon regulatory process and support procurement of lower-carbon materials to help this important carbon abatement strategy materialize and meaningfully scale, in line with the state’s statutory embodied carbon goals.

Adopt a Supplier-Specific Accounting Method for Embodied Carbon Reporting

For Blue Planet, and the wider aggregate and building materials industries, supplier-level accounting offers more accurate Scope 3 data than spend-based or activity-based proxies. It also directly reflects – and therefore, incentivizes – investments in low carbon building materials, which can accelerate project development, use of low carbon building materials and GHG reductions, and progress towards California’s embodied carbon targets. Spend-based and activity-based reporting frameworks mute the market signal for utilizing emerging technologies and strategies, hindering progress towards reducing embodied carbon in building materials.

CARB should explicitly prefer supplier-level accounting for construction materials under Categories 1 and 2, rather than defaulting to spend-based or activity-based proxies. Both approaches fall short for construction materials in ways that systematically undervalue the climate benefit of low-carbon alternatives.

Spend-based accounting calculates Scope 3 emissions by multiplying the dollar value of purchased materials by an average industry emission factor. This is a particularly poor proxy for carbon intensity of construction materials because a ton of Blue Planet’s carbon-sequestering aggregate and a ton of conventional aggregate may cost nearly the same, despite dramatically different embodied carbon profiles. Under a spend-based approach, a company has no clear incentive to procure carbon-negative aggregate, as they would report essentially the same Scope 3 emissions as a company that procures conventional aggregate. In short, spend-based proxies

² CARB (2025) Building Embodied Carbon Reporting Technical Meeting, October 30.
<https://ww2.arb.ca.gov/our-work/programs/building-decarbonization/embodied-carbon/embodied-carbon-meetings-and-workshops>

eliminate any procurement incentive for lower-carbon alternatives and undermine the overarching goals of SB 253.

Activity-based accounting improves on this by using physical quantities of materials (rather than dollar values), multiplied by an average industry emission factor. While this is an improvement on spend-based accounting, it still falls short for construction materials. Average industry emission factors for concrete and aggregate reflect the carbon intensity of the market writ large, which, in the case of construction materials, is dominated by conventional materials. This would significantly overstate the actual carbon footprint of Blue Planet's aggregate and still fails to capture the carbon sequestration benefits, since average emission factors are not designed to account for carbon-negative products. A company purchasing Blue Planet's aggregate would then report higher Scope 3 emissions than its procurement would warrant, working in opposition to the goals of SB 253.

By contrast, supplier-specific accounting uses verified primary data from the actual supplier and product being procured. For a company purchasing Blue Planet's aggregate, this means that Scope 3 reporting would reflect the improved carbon intensity and CO₂ stored in their building materials. This accounting method would accurately capture the carbon difference between conventional and low carbon or carbon-negative construction materials. Supplier-specific accounting, therefore, rewards companies that choose materials with verified lower embodied carbon and creates the necessary demand signals to accelerate decarbonization of the construction supply chain.

Support Category Phase-In (Option 3) for Scope 3 Reporting

Of the three proposed regulatory options presented in the workshop for Scope 3 reporting and Scope 1 and 2 assurances, Blue Planet supports Option 3 as the most pragmatic and effective approach. Option 3 creates a clear and implementable roadmap for companies that would align where reporting capacity already exists.

Among categories to prioritize under Option 3, CARB should prioritize those categories that both reflect significant sources of emissions and where reporting methods already exist. Embodied carbon scores high on both of those tests, reflecting a significant source of addressable GHG emissions with a wide array of reporting methods already in use, such as environmental product declarations (EPDs), standards like CarbonStar, and CARB's forthcoming embodied carbon regulations.

CARB Request for Feedback: Are these the appropriate categories to prioritize for initial reporting based on data availability and relevance across sectors? (Slide 27)

Blue Planet strongly supports CARB's proposed inclusion of Category 1 (Purchased Goods and Services) for initial Scope 3 reporting. We also encourage CARB to include Category 2 (Capital Goods) for initial reporting – or at least a subset of Capital Goods related to buildings and building materials – as this category is key to capturing building embodied carbon emissions in corporate climate reporting.

Many of the largest Scope 3 emissions in a company's supply chain reside in its built environment, and omitting this category from early Scope 3 reporting creates a significant and consequential gap in the framework that will delay action to address this source of emissions and meet California's embodied carbon goals. Prioritizing both Categories 1 and 2 for reporting would directly align with SB 253 goals and ensure that the corporate climate disclosure framework reinforces, rather than lags, CARB's embodied carbon ambitions.

Clarify Reporting Requirements for Utilized Carbon Under Category 11

Blue Planet also would recommend CARB recognize the positive downstream impacts of mineralization in their embodied carbon accounting, as well. Under Category 11 (Use of Sold Products), an industrial emitter that supplies CO₂ to a carbon mineralization process should be able to credit the resulting sequestration against its Scope 3 inventory. Permanent storage of CO₂ should be accounted for as a net negative emissions outcome in any future GHG framework.

The current GHG Protocol guidance does not clearly address how downstream carbon sequestration is credited in Category 11, which is a significant and consequential gap that CARB could fill in its drafting of this regulation. Blue Planet recommends CARB clarify that downstream carbon sequestration embodied in sold products should be credited in GHG reporting, which would ensure that industrial facilities investing in carbon capture and mineralization can accurately represent the climate benefit of that investment in their own Scope 3 inventories, creating a direct financial and reputational incentive to pursue carbon capture and utilization strategies. Standards like CarbonStar and ASTM-validated measurement methods provide the verified, third-party basis for making such claims credibly and consistently.

Consider Including Natural Concrete Carbonation in Category 12

Over its lifetime, concrete naturally removes CO₂ from the atmosphere via mineralization. Research suggests that the impact of natural carbonation is significant, with up to 33 percent of embodied carbon associated with traditional concrete being reabsorbed from the atmosphere over the material's lifetime.³ The current GHG Protocol Corporate Standard does not currently provide guidance on how to account for this ongoing sequestration, as most lifecycle assessments and EPDs do not credit natural carbonation because it occurs over decades and falls outside typical reporting boundaries.

This is a significant and underappreciated gap. This omission undervalues the true climate benefit of utilizing concrete, especially opportunities to achieve net-negative carbon emissions. For companies that build with Blue Planet's aggregate, they are reducing embodied carbon footprint at the point of procurement, but they are also investing in a material that continues to remove carbon from the atmosphere over decades.

Blue Planet urges CARB to lead the way and fill this gap by directing that Scope 3 frameworks account for the permanent carbon storage in building materials, including through the ongoing

³ Qiao, Y., et al. "Whole-life carbon emissions of concrete mixtures considering maximum CO₂ sequestration via carbonation." *Cement and Concrete Composites*, Vol. 150, 2024, Article 105freeze. ScienceDirect, <https://www.sciencedirect.com/science/article/pii/S092134492400199X>

natural carbonation of concrete structures under Category 12 (End-of-Life Treatment of Sold Products). We recommend CARB commit to working with relevant standard bodies, including ASTM International to develop credible, verifiable guidance for doing so. Establishing California as the first jurisdiction to formally recognize concrete carbonation in corporate GHG accounting would be a meaningful and technically defensible step forward for the state's carbon neutrality goals, and would create a powerful market incentive for the adoption of carbon-negative materials across California's construction supply chain.

CARB Request for Feedback: Should CARB consider allowing other accounting methods? If so, which ones and why? (Slide 15)

Blue Planet supports CARB's proposed list of acceptable assurance standards, including ISSA 5000, ISO 14064-3, AICPA, and agrees that flexibility across standards will be essential, given the diversity of sectors and supply chains subject to the regulation. However, accurate Scope 3 reporting for construction materials requires more than verifying what a company purchases, it requires measuring the actual carbon impact of the specific materials used.

For most Scope 3 categories, existing assurance standards are sufficient because the underlying emissions data exists in some form (e.g. energy bills, travel records, invoices). For embodied carbon in concrete and aggregate, however, the question is not how much material was purchased, but how much carbon is physically stored or emitted by that specific product. This is a technical measurement question rather than an accounting one, and therefore cannot be answered with the current assurance standards. As such, Blue Planet recommends allowing the ASTM International Standards⁴ as another accounting method to accurately calculate the climate impacts of building materials.

ASTM International is a consensus-based technical testing and measurements standards body that defines how to physically test and measure material properties, including carbon content in specific substances. Without ASTM-validated measurements, a company reporting embodied carbon under Categories 1 or 2 has no standardized basis for determining the actual carbon intensity of the concrete it purchased, and would be forced to rely on industry-average emission factors that treat carbon-negative aggregate identically to conventional aggregate.

For example, consider a construction contractor that used Blue Planet's carbon-sequestering aggregate to build San Francisco International Airport (SFO). In the contractor's SB 253 reporting, a financial assurance standard would verify that the company's reported emissions are consistent with internal financial records. An ASTM standard, by contrast, would specify the precise laboratory method used to determine how much CO₂ is permanently stored in each ton of Blue Planet's aggregate used at SFO. Without that ASTM-validated measurement, an auditor has

⁴ "ASTM International, founded as the American Society for Testing and Materials, is a nonprofit organization that develops and publishes approximately 12,000 technical standards, covering the procedures for testing and classification of materials of every sort. Headquartered in West Conshohocken, United States, ASTM standards are used worldwide, with its membership consisting of over 30,000 members representing 135 countries. ASTM also serves as the administrator for the U.S. TAGs (United States Technical Advisory Group) to an enormous amount of ISO/TCs (International Organization for Standardization/Technical Committee) and to their subcommittees." [Website here](#)

no standardized basis on which to verify the contractor's carbon sequestration claim so the climate benefit cannot be accounted for.

Blue Planet's aggregate already meets ASTM specifications for physical performance. Extending ASTM alignment to carbon content measurements would give auditors conducting Scope 3 assurance a validated, standardized method to verify sequestered CO₂ claims in building materials. Blue Planet recommends CARB explicitly recognize ASTM International Standards as an acceptable basis for third-party verification of product-level carbon claims, and allow verification to serve as supporting technical evidence for Scope 3 Categories 1, 2, 11, and 12.

Blue Planet also encourages CARB to recognize CarbonStar⁵ (CSA/ANSI R118:2024) as an accepted methodology for embodied carbon quantification and verification in Scope 3 reporting frameworks. As referenced in previous comment letters to CARB⁶ and CEC,⁷ CarbonStar focuses solely on global warming potential (GWP) information and provides an easy to compare quantification of embodied carbon among concrete mixes. Compared to EPDs, which account for many other impacts than embodied carbon and GWP, CarbonStar offers an easy protocol for concrete manufacturers to calculate lifecycle GWP associated with their process and product.

Critically, CarbonStar accounts for both emitted and sequestered carbon, producing a net carbon intensity rating. This is precisely the kind of methodological rigor that CARB's Scope 3 supply chain reporting will need to require if it aims to accurately reflect emissions reductions and meaningfully drive decarbonization.

Allowing these and other emerging standards to be incorporated into the corporate climate disclosure framework will provide the greatest flexibility for reporting entities, maximize participation and opportunities to reduce embodied carbon emissions, and minimize potential compliance costs and burdens.

Conclusion

Thank you for your leadership in implementing California's first corporate GHG disclosure framework. CARB has a unique opportunity with SB 253 to go further than the existing GHG Protocol guidance by ensuring that embodied carbon and sequestered carbon in building materials are fully and accurately accounted for across both upstream and downstream Scope 3 reporting frameworks. Upstream, companies purchasing concrete and aggregate should report verified supplier-specific, product-level carbon data under Categories 1 and 2. Downstream, industrial facilities supplying CO₂ for permanent mineralization should be able to credit that

⁵ "Complementing EPDs and PCRs related to concrete, CarbonStar provides a simple and easy-to-compare quantification of GWP for concrete in commercial applications. As the success of EnergyStar demonstrates, a simple technically-based approach focused on a single important performance metric can enable and accelerate a broader, more rapid adoption of lower carbon products." [Website here](#)

⁶ For example, see:

https://ww2.arb.ca.gov/system/files/webform/public_comments/23186/Blue%20Planet_Embodied%20Carbon%20Workshop%20Comments.pdf

⁷ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=268714&DocumentContentId=105869>

sequestration under Category 11. Finally, Category 12 should account for the ongoing carbon storage that occurs naturally in concrete structures over their lifecycle.

To do so, Blue Planet encourages CARB to prioritize Categories 1 and 2 in the initial phase-in period under Option 3, establish a clear and near-term timeline for Categories 11 and 12, adopt supplier-specific accounting as the preferred method for construction materials, and recognize ASTM International Standards and CarbonStar as accepted standards for verified carbon claims in building materials. These steps would each materially improve the quality of Scope 3 disclosure data and align SB 253 with California's broader goals related to embodied carbon, carbon sequestration and carbon neutrality.

Blue Planet looks forward to continued engagement as the rulemaking develops and is available to provide additional technical input on any of the recommendations outlined above.

Sincerely,

Kevin Davis
Vice President of Market Development
Blue Planet Systems Corporation