

Coalition for Sustainable Cement Manufacturing & Environment

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Subject: The California Cement Industry's Comments on California's Carbon Capture, Removal, Utilization, and Storage Program (SB 905)

The Coalition for Sustainable Cement Manufacturing and Environment ("CSCME") offers these comments on the California Air Resources Board's ("CARB") August 25, 2025 Solicitation for Information regarding the Carbon Capture, Removal, Utilization, and Storage Program, as implemented under SB 905.

CSCME is a coalition of all five cement manufacturers in California.¹ The California cement industry has a long history of working cooperatively and constructively with legislators and regulators to develop policies that advance the state's climate goals and promote the technologically feasible and cost-effective reduction of greenhouse gas ("GHG") emissions, while minimizing the risk of economic and emissions leakage. Those efforts include working with CARB on the design and implementation of the Cap-and-Invest ("C&I") Program, the passage of AB 398 to extend the program to 2030, the passage of SB 596 to develop a net zero emissions strategy for the cement industry, and the passage of AB 1207 to extend the program to 2045.

The California cement industry is committed to achieving net carbon neutrality by 2045. As noted in prior comments, it will be difficult if not impossible to achieve that goal without the widespread deployment of carbon capture, utilization, and storage ("CCUS") over the next two decades. At the same time, it is difficult if not impossible to envision the widespread deployment of CCUS throughout the cement industry without a supportive policy environment that includes:

- (1) A politically durable C&I program that places a relatively predictable price on GHG emissions.
- (2) An industrial allowance allocation system that minimizes the risk of leakage while providing consistent incentives to reduce GHG emissions.

¹ The Coalition includes CalPortland Company, Cemex, Inc., Mitsubishi Cement Corporation, National Cement Company of California Inc., and Tehachapi Cement, LLC. There are seven cement plants currently in operation in California.

- (3) A border carbon adjustment mechanism (“BCA”) that holds imported cement to similar standards and prevents importers from undermining investments in deep decarbonization.

All three of these conditions must exist to make the widespread deployment of CCUS in the cement industry a realistic possibility. The passage of AB 1207 was a critical first step, as it ensured the continuation of a C&I program that places a relatively predictable price on GHG emissions. CSCME looks forward to working with CARB in the coming months to update the allowance allocation system and implement an incremental BCA in a manner that creates the conditions necessary to support the widespread deployment of CCUS throughout the industry.

Provided that all three of the above conditions are satisfied, CCUS will be an indispensable mechanism for achieving net carbon neutrality in the California cement industry. Roughly two-thirds of the California cement industry’s direct GHG emissions are due to the chemical process required to convert limestone into cement clinker (i.e., process emissions).² Even if it were able to eliminate fossil fuel combustion entirely, the cement industry would only reduce its emissions footprint by one-third.³ As a result, it is difficult if not impossible for the cement industry to achieve net carbon neutrality by 2045 without the widespread deployment of CCUS.

With that context in mind, the California cement industry offers these comments on the design and implementation of a CCUS program under SB 905. Our comments assume that CARB eventually satisfies the three conditions of success identified above, as even the most well-designed CCUS program will not be able to overcome the economic and policy realities that hinder deep decarbonization investments in the California cement industry. On the other hand, if CARB is able to put a supportive policy environment in place, a well-designed CCUS program could make the difference between success and failure.

Key Considerations in the Design & Implementation of a CCUS Program

There is widespread consensus among stakeholders that CARB should create the enabling conditions for the deployment of CCUS within the cement sector. For instance, in response to CARB’s SB 596 strategy, a wide range of stakeholders expressed support for measures that would fund, finance, de-risk, facilitate, and incentivize investment in CCUS. Stakeholders also noted the importance of investing in the entire CCUS ecosystem before it can become a feasible pathway for the cement sector.⁴

Key considerations in the design and implementation of a CCUS program as it relates to the California cement industry include:

- Leveling the playing field with imported cement.

² See, for example, the 2022 California Air Resources Board GHG Inventory.

³ It should be noted that there are potential interactions and synergies between CCUS and energy-related measures. For instance, a cement facility that uses biomass as a primary fuel and captures the vast majority of carbon emissions from its production has the potential to be carbon-neutral or even carbon-negative depending on the type of biomass.

⁴ CSCME review of stakeholder comments on CARB’s SB596 draft strategy. Accessed on 9/30/25. (https://ww2.arb.ca.gov/approved-comments?entity_id=42561).

- Reducing project capital costs and uncertainties.
- Streamlining permitting requirements and shortening timelines.
- Developing supportive infrastructure for CO₂ transportation and storage.
- Managing long-term project risk and liability.

The following sections elaborate on each of these critical topics.

Leveling the Playing Field with Imported Cement

California cement manufacturers are required to surrender C&I allowances for the GHG emissions associated with their products — a requirement that does not apply to cement importers. This regulatory asymmetry creates a “carbon loophole” that gives a competitive advantage to cement sourced from outside California and undermines the state’s climate objectives by:

- Amplifying the risk of economic and emissions leakage.
- Preventing long-term investments in deep decarbonization within the California industry.

This carbon loophole has contributed to a dramatic shift in market dynamics: over the past decade, imports have grown from negligible levels to roughly a quarter of all cement consumed in California. Implementing an incremental BCA is the most effective way to level the regulatory playing field between California and imported cement, while also minimizing the impacts on affordability for California customers.

An incremental BCA would add a modest carbon cost to imported cement equal to the net cost that the product would incur if it were produced in California. Specifically, an incremental BCA requires importers to pay the *difference* between the GHG intensity of their product and the per-unit annual allocation rate of free allowances provided to California producers.

An incremental BCA will provide a wide range of important benefits, including:

- Continuing to provide cement manufacturers with a clear, consistent incentive to reduce their GHG intensity.
- Ensuring that imported cement is held to similar standards and reducing the risk that deep decarbonization investments are not simply undermined by imports that do not play by the same rules.
- Allowing domestic cement manufacturers to recover a portion of the costs associated with deep decarbonization investments via the market while minimizing the negative impact on affordability (due to its incremental nature).

But time is of the essence. Each year that California fails to close the carbon loophole is another year in which local cement manufacturers absorb mounting compliance costs due to combination of increasing allowance prices and decreasing allowance allocation rates. Meanwhile, unregulated imports will continue to bear zero GHG compliance costs. This dynamic will rapidly

increase the risk of irreversible plant closures and undermine the state's ability to achieve its climate objectives. Simply put, in the absence of an incremental BCA, the key question is not whether the industry can achieve net carbon neutrality by 2045, but whether it can survive that long.

With that in mind, CSCME urges CARB to act swiftly and adopt a two-phase approach to implementing an incremental BCA:

- Phase 1: Immediately establish an interim framework that applies to the vast majority of cement imports and captures the vast majority of associated GHG emissions.
- Phase 2: Expand and refine the framework over time to cover all GHG emissions and all import scenarios, ensuring full alignment with California's long-term decarbonization goals.

The implementation of an incremental BCA need not be an all-or-nothing endeavor. A well-designed interim framework can substantially level the playing field, address the most relevant and urgent leakage risks, and send a strong signal that California is committed to supporting long-term investments in deep decarbonization in the cement industry, such as CCUS.

Addressing Project Capital Costs & Risks

CCUS projects are large, complex, long-term, and high-risk investments that are unlikely to occur without targeted and thoughtful government cooperation.

For instance, the most recent U.S. Department of Energy technical analysis of the cost of installing and operating a CCUS retrofit at a cement plant suggests that, in California, the total cost of a CCUS project is likely to exceed \$1 billion.⁵ The study, which used a generic midwestern U.S. plant to model costs, estimates that the "total overnight costs" (i.e., the base capital costs of construction, which does not factor in ongoing operating costs)⁶ of a carbon capture retrofit is roughly \$100 per MT of CO₂ captured, which corresponds to roughly \$600-\$800 million per average-capacity cement kiln.⁷ A variety of factors (e.g., escalation and interest costs during construction; costs associated with transporting and storing the captured carbon; higher costs of labor and materials in California; and the financial impact of permitting or litigation-related delays) suggest that the true cost of retrofitting a California cement plant with CCUS will be much higher than generic U.S. estimates and will likely be closer to \$150 per MT of CO₂ captured.

⁵ To put this figure into perspective, consider that it is similar in magnitude to what it would likely cost to build a greenfield cement plant in California without CCUS.

⁶ "Total overnight costs" does not include the operating expenses that companies will incur over time. Operating expenses will vary from plant-to-plant depending on many factors, such as technology, capture rate, and CO₂ transport and/or storage. A CCUS retrofit will also significantly increase a plant's annual water and energy demand.

⁷ U.S. Department of Energy, National Energy Technology Laboratory (2023). Analysis of Carbon Capture Retrofits for Cement Plants.

Furthermore, retrofitting a cement plant with CCUS will substantially increase a plant's annual energy demand which, given higher relative costs in the state, will further escalate the cost of operating a CCUS project in California. The process of capturing and preparing CO₂ for transportation requires a substantial amount of energy, which will require a cement manufacturer to make significant investments in on-site energy infrastructure to meet the increased demands.

Simply put, CCUS remains prohibitively costly without substantial government cooperation. The federal government's recent rollback of financial incentives and grant opportunities for CCUS in recent months has only hastened and heightened those concerns. California has an opportunity to step into the vacuum left by the federal government to facilitate the funding and financing of CCUS projects within the state.

At a minimum, CARB should ensure that cement manufacturers can generate a return on CCUS investments under the C&I program. That entails:

- Adopting a CCUS protocol specific to the cement industry, which would enable cement manufacturers to offset their compliance obligations with CO₂ that is securely captured, stored, and/or utilized, consistent with CARB requirements.
- Continuing to provide output-based allowance allocation consistent with cement's status as both a high leakage risk and difficult-to-decarbonize industry — thereby providing cement manufacturers with a clear pathway to monetize their output-based allowance allocation as a mechanism to partially fund and finance deep decarbonization investments, such as CCUS.

In addition, CARB should consider filling the vacuum recently left by the federal government in terms of directly funding and financing CCUS projects within the state. Such measures could include delivering on the “invest” portion of the “Cap-and-Invest” program by using a portion of GGRF proceeds to invest in CCUS projects via grants. It could also include capitalizing a program to issue low-cost loans for deep decarbonization projects. Regardless of the specific mechanism, CARB will need to step up and fill a void left by the federal government with respect to reducing the cost and risk associated with CCUS deployment in the California cement industry.

Streamlining Permitting Requirements & Shortening Timelines

The permitting process presents another major challenge to CCUS projects, which are often subject to overlapping reviews under NEPA and CEQA, along with numerous additional federal, state, and local approvals. As illustrated in Figure 1, these reviews can take years to complete and are frequently delayed by litigation.⁸

SB 905's unified permit application offers a promising tool to improve clarity, but its value will depend on how it is designed and executed. To be effective, the application should be voluntary,

⁸ Major projects are often accompanied by process improvement projects that generate additional permitting and federal review requirements, further complicating the approval process for cement plant CCUS projects.

streamlined, and genuinely shorten timelines compared to existing processes. It should not add complexity or impose additional requirements on top of existing permitting processes.

At the same time, CARB should explore ways to reduce litigation risk, including exemptions from CEQA for CCUS projects and related infrastructure or the establishment of alternative review processes that preserve environmental safeguards while enabling timely deployment.

It is important to note that inefficient permitting processes do not just result in delays. At best, such delays can dramatically drive up the cost of financing a project. At worst, they can undermine the viability of the project all together, as the unpredictability sowed by the permitting process undermines investor confidence and makes it difficult to secure capital.

Developing Supportive Infrastructure for CO₂ Transport & Storage

Capturing CO₂ at the facility level is only part of the solution. Deployment also requires infrastructure to economically transport and store captured CO₂ safely and permanently. At present, this infrastructure is largely absent in California, and the moratorium on CO₂ pipeline development has further delayed progress. Without viable transportation and storage options, cement producers cannot justify investments in capture technology.

The absence of infrastructure increases the risk profile for CCUS projects, as investors are unwilling to fund capture systems without confidence that the CO₂ can be delivered to storage. To overcome this barrier, CARB and state policymakers should:

- Prioritize lifting the pipeline moratorium.
- Accelerate the permitting of storage wells and hubs.
- Encourage public–private partnerships to share costs and risks.

A clear roadmap to creating a robust infrastructure network will reduce uncertainty, lower costs, and make financing capture projects far more feasible.

Managing Long-Term Project Risk & Liability

CCUS involves multiple parties, from capture operators to transport providers to storage site managers. Responsibility and liability must be allocated fairly across this value chain. Cement producers are prepared to assume responsibility for capturing CO₂ at their facilities and ensuring its secure handoff to reputable off-takers. However, they cannot be held liable for the long-term storage of CO₂ once it leaves their control.

An appropriate model can be found in hazardous waste regulations under the Resource Conservation and Recovery Act, which allocate responsibility across producers, transporters, and disposers. In the same way, CCUS regulations should assign liability to storage operators for sequestration performance, backed by appropriate financial and insurance instruments, while limiting capture operators' liability to their direct role. CARB should also avoid layering duplicative

monitoring requirements on cement plants, which already operate under stringent Title V permits. Finally, regulations should remain technology-neutral, giving facilities the flexibility to select the most effective and cost-efficient CCUS technologies for their unique circumstances.

The Importance of Timing & Coordination

The timeline for CCUS deployment is unforgiving. Federal tax credits under 45Q require projects to begin construction before 2033. The long lead times for permitting, financing, and construction mean that decisions must be made now. CARB's leadership in coordinating SB 905 implementation with federal incentives, the C&I program, and California's broader climate policies will determine whether CCUS in the cement sector succeeds or fails. Timely action and interagency coordination are essential to ensuring that cement producers can pursue projects on the schedule required to achieve carbon neutrality by 2045.

Conclusion

CCUS is indispensable to decarbonizing California's cement industry and enabling the state to achieve its ambitious climate goals. The industry is committed to investing in CCUS, but success depends on the policy and regulatory framework that CARB establishes under SB 905. By leveling the playing field with imports, addressing project costs and risks, streamlining permitting, developing transportation and storage infrastructure, and allocating responsibilities appropriately, CARB can design a program that makes widespread CCUS deployment achievable.

The stakes could not be higher. If California and the cement industry are going to reach net carbon neutrality by 2045, retrofitting California's cement plants with CCUS is not optional.

CSCME appreciates the opportunity to provide these comments and looks forward to continuing to work with CARB to ensure that SB 905 implementation creates the conditions necessary to achieve this critical goal.

Sincerely,



Steve Coppinger

Chair, Executive Committee

Coalition for Sustainable Cement Manufacturing & Environment

CC:

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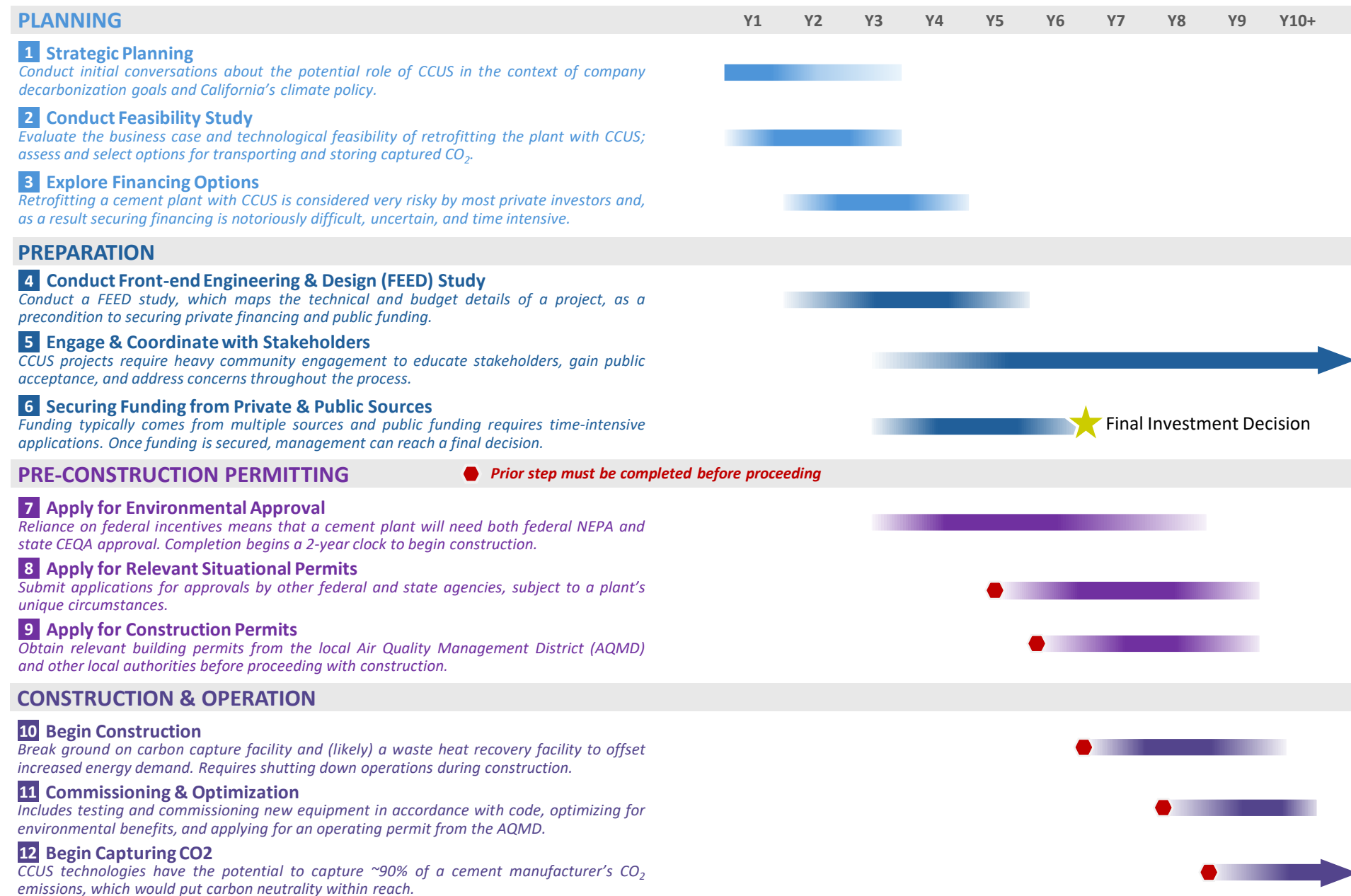
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Figure 1. CCUS Deployment — An Illustrative Example*

Retrofitting existing cement plants with CCUS technologies is an exceptionally complicated, costly, long, and uncertain undertaking that requires navigating at least a dozen critical steps, any one of which can make the difference between success and failure.



Appendix: CSCME Responses to Specific RFI Questions

Definitions

The statute already includes several key definitions, including definitions for:

- *“Carbon dioxide capture, removal, or sequestration project”*
 - *“CCUS technology”*
 - *“CDR technology”*
 - *“Program”*
 - *“Carbon dioxide capture, removal, or sequestration project operator”*
 - *“Carbon dioxide capture project”*
 - *“Carbon dioxide removal project”*
 - *“Concentrated carbon dioxide fluid”*
 - *“Geologic storage complex”*
 - *“Geologic storage reservoir”*
1. *In addition to the terms defined in statute, are there other key terms that should be defined? Please provide any proposed definitions with applicable citations.*
 2. *Are there any definitions in the statute that may require further expansion or clarification?*

CSCME Response: The definitions included in the statute broadly capture the key terms relevant to CCUS rulemaking and the cement industry does not have any additional terms that require definition.

The definition for “Carbon dioxide capture, removal, or sequestration project operator,” although defined in the statute as referring to any individual project within the CCUS ecosystem, does not clearly communicate the distinct responsibilities and considerations for each type of project. The cement industry recommends clarifying the role of the specific types of project operators defined in this term to better delineate the boundaries of responsibility for each type of project.

Applicability

General project categories may include:

- *Nature-based solutions*
- *Carbon capture and sequestration or storage from large emitters*
- *Carbon capture from large emitters and ambient air for “permanent” sequestration through utilization*

- *Direct capture from ambient air for “permanent” sequestration*
- *Passive air capture from ambient air for “permanent” sequestration*
- *Bioenergy with carbon capture and storage*
- *Biomass-based carbon removal with storage*

3. *Are there any project categories missing from this list?*

4. *Are there suggestions for further description of these categories, or ways to group categories?*

CSCME Response: The list of project categories included in the solicitation describes most potential cement industry CCUS project types.

CSCME recommends further defining the project categories covering CCUS by large emitters to recognize industries for which the technology will be essential to achieving carbon neutrality on a mid-century timeline. Large emitters in difficult to decarbonize industries, particularly those with limited electrification options or unavoidable process emissions, should be clearly identified as priority projects that generate the greatest potential benefit due to a lack of viable alternatives for deep decarbonization.

Furthermore, in the context of implementing SB 905, it is important to note that the cement in concrete gradually absorbs CO₂ from ambient air over time through a chemical reaction known as “carbonation.” Although precisely quantifying the carbon uptake potential of concrete in the built environment requires additional research, broad scientific consensus recognizes that carbonation offsets a substantial share of the GHGs emitted to produce cement.⁹ CARB should account for carbonation as a carbon sink in the state’s GHG inventory, scoping plan, and long-term decarbonization strategy for the cement industry.

In addition to carbonation occurring in the built environment, the cement industry is evaluating opportunities to accelerate the carbonation process. For instance, one possibility is to carbonate demolished concrete using concentrated CO₂ from flue gas emitted during cement production. CARB should ensure that its definitions for project categories under SB 905 are inclusive of eventual applications that rely on the carbonation process.

Financial Responsibility

SB 905 requires CARB to develop financial responsibility requirements that are “no less stringent than Section 146.85 of Title 40 of the Code of Federal Regulations, as that section read on January 1, 2022

5. *In addition to the instruments listed in §146.85 of Title 40, are there other existing financial responsibility instruments CARB staff should consider?*

⁹ United Nations Intergovernmental Panel on Climate Change (2021). Assessment Report 6 Climate Change 2021: The Physical Science Basis.

6. *What other additions or changes to the existing requirements for financial responsibility should CARB consider and why?*
7. *How should the requirements account for scenarios such as ownership transfer, bankruptcy, change of ownership structure, change in insurance carrier, etc.?*
8. *Are there other ways to address investment uncertainty through insurance, or other mechanisms?*

CSCME Response: The California cement industry recognizes the importance of assigning appropriate responsibility and financial liability requirements when it comes to CCUS. As potential CO₂ capture project operators, the industry assumes that services offered by approved vendors for CO₂ transportation and storage will incorporate financial or insurance instruments that fulfill their obligations as an operator, as well as to fund monitoring requirements. These activities occur outside the control of the cement industry and imposing regulatory requirements on capture project operators outside of their scope or area of expertise may further increase the cost and uncertainty associated with CCUS investment.

CARB's efforts to design a regulatory framework for CCUS in California should explicitly recognize the boundaries and differing operational realities and expertise at each unique entity within the ecosystem. Regulating CCUS and assigning responsibility is not a "one-size-fits-all" proposition for all stakeholders, and an effective regulatory framework will apply appropriate requirements to entities that capture, transport, store, and use captured CO₂ individually and in line with their expertise and influence.

The industry envisions a similar relationship for CO₂ storage under SB 905 as it currently has in place for hazardous waste disposal. Federal Resource Conservation and Recovery Act (RCRA) regulations assign responsibility to hazardous waste producers for their waste from "cradle-to-grave," but these producers rarely treat, handle, and dispose of this waste themselves.¹⁰ Instead, hazardous waste is sent to vendors that guarantee safe handling, monitoring, and disposal — and that incorporate liability protections that shift a portion of the financial responsibility onto producers. In cases where hazardous waste is mishandled, producers incur a portion of the bill and are ultimately responsible in situations where a vendor may no longer be in business.

Criteria & Toxics Monitoring

SB 905 requires that all projects include monitoring of "criteria pollutants and potential toxic air contaminants at the one or more sites within the geologic storage complex and at mobile or fixed sites within the facility, and monitoring of ambient carbon dioxide concentrations over the geologic storage complex to facilitate leak detection."

¹⁰ United States Environmental Protection Agency (2025). Resource Conservation and Recovery Act: Hazardous Waste Compliance Monitoring

9. *What project-specific air monitoring activities are CCUS/CDR developers currently conducting or intending to conduct, if any?*
10. *What specific criteria pollutants or toxics emissions should be prioritized for monitoring and where along the CCUS/CDR project components (i.e. capture, transport, injection/utilization) should monitoring be prioritized?*
11. *How long should criteria or toxics monitoring be conducted for?*
12. *Are there examples of existing regulatory monitoring efforts being conducted in other sectors/sources that may be instructive for SB 905?*
13. *What frequency of monitoring and reporting should CARB consider, and should this differ by project type? Do you have estimates on costs for monitoring and reporting?*
14. *Should CARB consider different monitoring requirements at carbon capture sites versus carbon removals utilizing natural systems?*

CSCME Response: All cement plants in California are required to hold operating permits under Title V of the Clean Air Act (“CAA”). Obtaining permits entails demonstrating compliance with federal pollution control requirements that address criteria and toxic pollutants emitted by large emitters – including compliance with strict limits outlined in National Emissions Standards for Hazardous Air Pollutants (“NESHAP”) rules. Regardless of the regulatory framework developed for CCUS in the state, California cement plants will continue to monitor and control levels of criteria and toxic pollutants at risk of severe criminal penalty. CARB should design a regulatory framework that recognizes existing requirements and does not add duplicative requirements that may further complicate and increase the cost of cement industry CCUS investments.

In addition, deploying carbon capture equipment at cement plants significantly reduces the amount of sulfur oxides, nitrogen oxides, and particulate matter released into the atmosphere and offers advantages over current emissions control technology used throughout the industry. These benefits suggest that CCUS is potentially the “best available control technology” available to the industry and rulemaking should avoid requiring installation of additional control technologies that offer no additional benefit when deployed in conjunction with carbon capture technology.

The cement industry recommends aligning any additional reporting requirements implemented with SB 905 rulemaking to the reporting frequency of existing programs. For example, holding a Title V operating permit requires cement plants and other large emitters to verify their compliance with relevant authorities (which, in California, this is typically the plant’s local Air District) “no less often than every 6 months.”¹¹ Although new monitoring and reporting requirements will likely need to be created to fulfill a similar role for entities that are not covered by Title V requirements, CCUS rulemaking should recognize that most large emitters deploying

¹¹ United States Code, 40 CFR Part 70

capture projects will monitor, report, and control criteria and toxic pollutants regardless of new regulations. CARB should design a regulatory framework that does not impose additional or duplicative monitoring and reporting obligations for criteria and toxic pollutants on potential capture project operators subject to existing regulatory requirements. Doing so may increase the regulatory burden on potential cement industry capture project operators to the point where it acts as a disincentive to CCUS deployment.

Minimizing Local Water & Air Quality Impacts

SB 905 calls for strategies to ensure that carbon dioxide capture, removal, or storage projects minimize, to the maximum extent technologically feasible, local water pollution or air pollution from construction- and transportation-related impacts from the projects in communities adjacent to carbon dioxide capture removal, or storage projects, including a geologic storage complex.

- 15. What types of strategies are in use in other regulatory or voluntary programs that could be adapted to meet the statutory requirements?*
- 16. Are there other guardrails that should be considered beyond existing local, state, and federal regulations to minimize impacts? For example, many projects will have to meet the requirements of the California Environmental Quality Act (CEQA), what other requirements should be included and why? If proposing other requirements, please also provide any cost and time estimates for implementation.*
- 17. Is there any information from existing studies or projects to inform a CEQA analysis for the rulemaking?*

CSCME Response: We have no input to share on these questions at this time.

Permit & Project Portal

SB 905 requires that CARB adopt regulations for a unified permit application for the construction and operation of carbon dioxide capture, removal, or sequestration projects to expedite the issuance of permits or other authorizations for the construction and operation of those projects. Project developers and non-state agency use of a streamlined permit application is voluntary. CARB is also developing a data and information portal to assist project developers through the permitting process. This portal will also support the implementation of the unified permit application. NOTE: SB 905 does not call for CARB to issue permits for the construction or operation of CCUS or CDR projects

- 18. What key issues should CARB address when developing the unified permit application?*
- 19. Considering the data and information portal will be voluntary to use, what features of the permit portal would increase the likelihood the portal is used by both project developers and permitting agencies?*

20. *Are there examples of existing similar systems (e.g. CEQAnet) that CARB should look to when developing the permit portal?*

21. *Are there examples of existing public CCUS project databases that we should look to and/or emulate for public reporting on project deployment?*

CSCME Response: The cement industry feels strongly that the unified permit application and associated information portal should be voluntary and designed to offer truly expedited permitting for CCUS projects relative to the legacy process. Offering project developers a voluntary and streamlined path to project approval will encourage uptake of the unified application, result in more timely deployment of CCUS technology, and preserve flexibility for project developers if they feel that the legacy process is a better fit for their needs. In any case, using the unified permit application as a vehicle to impose more stringent requirements or additional administrative effort for CCUS projects would undermine the potential benefits of centralizing the process. CARB should also consider additional reforms to the permitting process writ large that can be implemented to align the administrative requirements with the urgency of deploying CCUS in difficult to decarbonize industries to achieve the state's GHG targets and timeline.

Integration with Existing State Programs & Potential New Policy Support

Projects developed under SB 905 have the potential to be used for compliance or reporting under several state climate efforts and programs. Those programs include the following:

- *Reducing the Cap-and-Trade compliance obligation for capturing and storing carbon from the state's largest greenhouse gas facilities such as power plants and manufacturing and offsets for ambient air carbon dioxide removal.*
- *The Low Carbon Fuel Standard to reduce transportation fuel carbon intensity or generate direct air capture credits.*
- *Reporting under the Corporate Greenhouse Gas Reporting and Climate Risk Financial Disclosure Programs.*
- *Reducing the carbon intensity of products included in the program for Embodied Carbon in Buildings.*
- *The Net Zero Emissions Strategy for the Cement Sector.*

22. *What role could projects developed under SB 905 play in these programs and are there other programs or policies in which carbon capture removal, storage, and utilization could play a role for compliance?*

23. *Are there other things the state could be doing to scale up deployment of projects under SB 905?*

24. Is there a potential role for carbon removal using climate-smart agriculture practices under the SB 905 framework?

CSCME Response: Designing and implementing an effective state-level regulatory program for CCUS-related issues will require careful consideration of how it interacts with several existing federal and state programs. Cement industry CCUS activities overlap with both California’s C&I program and the Net Zero Emissions Strategy for Cement Sector. Deconflicting SB 905 implementation with the standards, regulations, and expectations included in these other programs will be key to the program’s success.

Cement producers are subject to strict annual monitoring and reporting regulations under the state’s C&I program. Any reporting requirements implemented due to SB 905 should align with the cadence and complexity of the C&I Mandatory Reporting Requirement (“MRR”) to avoid placing additional regulatory burden — and costs — on the industry. CARB should also consider aligning the basis of reporting to metrics reported to CARB in MRR submissions — for example, limiting reporting to metric tons of direct CO₂ emissions captured rather than incorporating a more complex “net” measure of emissions reductions. Furthermore, regardless of the specific program used to report and monitor GHG reductions due to CCUS, CARB should incorporate a protocol to reduce the cement industry’s C&I compliance obligation by the amount of CO₂ a covered entity captures and safely sequesters or utilizes.

SB 596 emphasizes the necessity of CCUS in achieving carbon neutral cement production in California and assigns interim targets for cement industry emissions that are more stringent than the current C&I glidepath. Notably, SB 596 sets a 2035 target for industry emissions intensity that cannot be achieved without successfully deploying CCUS technology on at least some cement plants in the state within this timeframe. Although the statute includes a provision for CARB to adjust this target based on feasibility considerations, immediate and aggressive efforts to clear the barriers stymying cement industry CCUS deployment can open a feasible pathway to meet the goals put in place by SB 596. Doing so will require quickly implementing an incremental BCA to level the playing field with imports, providing public grant and financing opportunities to address the high cost of CCUS deployment, expediting the permitting process and mitigating litigation risk, rapidly developing transportation and storage infrastructure, and developing a C&I protocol to provide a financial and compliance incentive for CCUS investment.

The limited eligibility window of federal 45Q tax credits only increases the urgency of expediting CCUS deployment. Under current conditions, cement industry CCUS projects would rely on these tax credits to bridge the gap between state incentives and the high cost of CCUS technology. Accordingly, CARB should tailor CCUS regulations to increase the likelihood that multiple cement industry CCUS projects can break ground before the January 1, 2033 construction deadline to access the credits and to account for all CO₂ storage and utilization pathways outlined in 45Q guidance. Failure to account for the full range of state and federal incentives in CCUS regulation

will limit the flexibility of project developers to efficiently deploy the most cost-effective CCUS option at their disposal.

Protocols

SB 905 authorizes CARB to adopt protocols to support additional methods of utilization or storage of captured carbon dioxide.

25. Are there certain carbon capture, removal, utilization, and storage project type methodologies that should be prioritized based on existing science, existing methodologies, or implementation experience?

26. Should CARB consider adopting project type specific protocols or defining more widely applicable standards, or a combination of both? If CARB were to define key standards applicable to all methodologies as opposed to individual methodologies based on specific technology or storage, what could those look like (i.e. recommendations on existing standards), and would that approach help to scale and innovate in this space faster than development of individual protocols?

CSCME Response: The California cement industry maintains a technology-neutral stance regarding specific CCUS solutions. The best CCUS technology is the one that can be deployed as quickly and cost-effectively and can provide the biggest GHG reduction given a cement plant's unique characteristics and operational realities. In a regulatory context, the benefits of imposing unique requirements for specific technologies or project types are unclear and structuring a regulatory framework with different rules for different projects increases the risk of imposing additional barriers to timely CCUS deployment. CARB should consider this risk when implementing SB 905 and avoid regulations that single out or encourage deployment based on the type of project or technology proposed by a project developer or, at the very least, encourage deploying mature technologies rather than newer and unproven options.

Public Project Database

27. Are there examples of existing public CCUS project databases that we should look to and/or emulate for public reporting on project deployment?

CSCME Response: We have no input to share on these questions at this time.