

November 12, 2025

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Comments for the October 29, 2025 [Cap-and-Invest Workshop](#)¹

Zero-C Cement: How Cap-and-Invest can support SB 596

Our comments pertain to industrial emissions, allowance allocation, leakage, and a border carbon adjustment, specifically in the context of cement regulation, although the points might also be broadly applicable to other industries.

Free, output-based allocation of allowances is generally employed primarily to protect the regulated industry's competitiveness and to mitigate leakage. But free allocation can also provide a powerful mechanism for subsidizing zero-carbon technologies.

As a case in point, Cap-and-Invest could support the cement decarbonization goals of SB 596 by broadening the [regulatory definition of "cement"](#)² to include zero-C cement technologies so that such technologies fully qualify for output-based allocation. CARB will probably do this as part of SB 596 implementation, but CARB has not evaluated the potential subsidization level from Cap-and-Invest.³ We estimate that zero-C cement could be receiving a subsidy of \$56/ton-cement in 2030, based on (1) a [\\$100/ton-CO₂ allowance price in 2030](#)⁴, (2) a [Cap Adjustment Factor \(CAF\) of 0.756](#)⁵, (3) a [cement Benchmark of 0.742 ton-CO₂e per ton-cement](#)⁶, and (4) [2019 market data](#)⁷ from NRDC's November 30, 2022 SB-596 comment letter.

However, zero-C technology subsidization could impede the ability of free allocation to protect industry competitiveness and mitigate leakage. Even if free allocation is maintained via a high cap adjustment factor, the allocation to incumbent conventional

¹ <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/cap-and-trade-meetings-workshops>

² https://ww2.arb.ca.gov/sites/default/files/2021-02/ct_reg_unofficial.pdf#page=14

³ Economic estimation of projected zero-carbon cement subsidies from Cap-and-Invest is "outside the scope of CARB's current work" according to David Garcia, CARB Legislative director (10/14/2025 email to Ken Johnson).

⁴ https://ww2.arb.ca.gov/sites/default/files/2023-11/nc-combinedSlides_Nov162023.pdf#page=34

⁵ https://ww2.arb.ca.gov/sites/default/files/2021-02/ct_reg_unofficial.pdf#page=204

⁶ https://ww2.arb.ca.gov/sites/default/files/2021-02/ct_reg_unofficial.pdf#page=183

⁷ <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/13-SB596-wkshp-Oct20-ws-WjQCdgNmUWEGXwNx.pdf#page=2>

cement would be expected to decline over time as an increasing percentage of the allocation is diverted to a growing zero-C cement market. The cross-subsidy from conventional to zero-C cement would impose costs on incumbents that out-of-state competitors do not incur. The subsidy could make zero-C cement competitive against regulated conventional cement, but not necessarily against unregulated imports. On the other hand, unsubsidized zero-C cement produced outside of California would not be competitive against California's subsidized zero-C cement, so Cap-and-Invest could perversely impede, rather than facilitate, widespread adoption of zero-C cement technology.

These issues could be resolved with a border carbon adjustment, which expands the regulatory scope to include imports but exempts exports. The purpose of a border carbon adjustment should not be to obviate the need for free allocation, but rather to enable a high level of zero-C cement subsidization, via output-based allocation, without adversely impacting the regulated industry's competitiveness or inducing leakage.

Output-based allocation can help subsidize production of zero-C cement, but a more immediate challenge will be capitalization of zero-C cement production facilities. Allowance auctioning could provide capital financing more effectively than free allocation if auction revenue from the cement industry is applied to cement decarbonization.

Under CARB's current [allocation formula](#)⁸ cement would be getting free allocation of 75% of its allowances in 2030 and would be buying 25% at auction. The auction revenue could amount to about \$150 million annually in 2030 (based on the above-noted assumptions: a \$100/ton-CO₂ allowance price in 2030, and 2019 market data). The revenue could be held in reserve to help capitalize adoption of zero-C cement technology by first-mover incumbents once the technology is ready for commercialization. Auction revenue might only cover a fraction of zero-C cement capitalization costs, but the availability of non-dilutive state financing, plus production subsidization via free allocation, could help attract commercial financing sufficient to advance economy-wide deployment of the technology.

Currently, there is no allocation of auction revenue to cement, so legislation would be required to either continuously appropriate cement-derived revenue to cement, or to allocate a share of the GGRF budget to cement. (Under current market conditions, the allocation would amount to about 2.3% of the total GGRF budget, which would probably be imperceptible in comparison to [allowance price volatility](#)⁹.) The allocation would be justified by the following policy rationale:

⁸ <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/allowance-allocation/allowance-allocation-industrial>

⁹ <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/program-data/cap-and-trade-program-data-dashboard#Figure2>

The cement industry is currently regulated under Cap-and-Invest and has been complying fully by relying on offsets and allowance trading. But SB 596 requires that the industry achieve specific emission reduction targets by reducing its own emissions, without relying on offsets or trading with other industries. This will impose additional costs on the cement industry, while lowering costs for other industries by reducing the demand for offsets and allowances. In recognition of the additional burden placed on the cement industry by SB 596, and to ensure that the industry has adequate resources to achieve its SB 596 targets, the cement industry should be allowed to invest its own financial resources on reducing its own emissions.

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Legislation and Public Policy Committee

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