

Coalition for Sustainable Cement Manufacturing & Environment

1107 9th Street, Suite 930 | Sacramento, CA 95814 | (916) 447-9884

November 4, 2016

Ms. Mary Nichols
Chairman
California Air Resources Board
1001 "I" Street
Post Office Box 2815
Sacramento, California 95812

Subject: **Comments on October 21, 2016 Public Workshop on Amendments to the Cap-and-Trade Regulation and the Post-2020 Industry Assistance Factor Informal Proposal**

Dear Ms. Nichols:

The Coalition for Sustainable Cement Manufacturing and Environment ("CSCME"), a coalition of all five cement manufacturers in California,¹ provides these comments on the California Air Resources Board's ("CARB's") October 21, 2016 public workshop on amendments to the Cap-and-Trade Regulation and the Post-2020 Industry Assistance Factor Informal Proposal that were released in conjunction with the workshop.

I. THE CURRENT ALLOWANCE ALLOCATION FRAMEWORK HAS EFFECTIVELY ADDRESSED THE RISK OF LEAKAGE TO THE CALIFORNIA CEMENT INDUSTRY

CARB's current approach to allocating allowances to the industrial sector has been successful, at least to date, at achieving its intended objective, which is to minimize emissions leakage.

1.1 The Current Framework Is Based On Sound Fundamental Principles

The current allowance allocation framework is constructed on a foundation that has several key strengths that are based on sound fundamental principles.

First, the current approach is based on verifiable data. CARB's current methodology for determining leakage risk relies on publically available, verifiable, and regularly updated data from California's MRR database, the Census Bureau's Annual Survey of Manufacturers, and the Census Bureau's Economic Census.

Second, based on this verifiable data, CARB developed an allowance allocation framework through transparent analysis. Specifically, in Appendix K, CARB clearly lays out the component factors that determine industries' leakage classification and assistance factor – emissions intensity and trade intensity – and the formulas for calculating those factors. Not only is CARB's current framework

¹ The Coalition includes CalPortland Company, Cemex, Inc., Lehigh Southwest Cement Company, Mitsubishi Cement Corporation, and National Cement Company of California Inc. There are ten cement plants located in California, eight of which are currently operating.

transparent and well-documented, it represents the most straightforward solution to the complex challenge of determining leakage risk.

Third, the framework utilizes accepted measures of leakage risk that are broadly understood and in use across other jurisdictions and cap-and-trade schemes, including the EU ETS, Australia's CPRS, and the cap-and-trade proposal from the American Community and Energy Security Act of 2010 (Waxman-Markey).

1.2 Under The Current Framework, the Industry Survived Its Most Vulnerable Period in History

The California cement industry is a prime example of how the current allowance allocation framework has supported the survival of the California cement industry, while also achieving the overall objectives of the Cap-and-Trade program. A summary of the recent history of the California cement industry is necessary to understand this key point.

When AB 32 was adopted in 2006, the California cement industry consisted of 10 cement plants operating at high utilization rates and producing over 11 million tons of cement clinker per year. As a result of the unprecedented recession, production declined by almost 40 percent by 2011, and two cement plants closed their doors. Since this unprecedented trough in demand, the cement industry has begun to heal, but cement production and associated GHG emissions still remain roughly 20 percent below pre-recession levels.

As the California economy and the cement industry were turning around from the Great Recession, CARB developed and implemented its Cap-and-Trade program. The program included an allowance allocation framework that recognized the severe vulnerability of the California cement industry and its unique characteristics by providing sufficient allowances to prevent leakage to imports while also incentivizing GHG reductions. CARB's approach was effective in preserving the continued but modest recovery of the cement industry and in reducing the cement industry's GHG intensity.

In short, since the adoption of AB 32 and the implementation of CARB's Cap-and-Trade program, the California cement industry has experienced the most severe economic downturn in modern history, weathered a slow recovery, and regained its footing without experiencing leakage to imports and while reducing its GHG intensity.

1.3 The Industry's Survival Under the Current Framework is Good News For All Stakeholders

The survival of the California cement industry under an allocation framework that is based on sound fundamental principles is good news for all stakeholders.

First, it is good news for the California economy. Cement is critical for economic growth in California. It is the key material needed to construct buildings, roads, bridges, and other infrastructure and is essential to support California's transition to a sustainable green economy. A growing California economy with modernized and sustainable infrastructure leads to more and higher paying jobs and provides the necessary foundation for post-2020 sustainable development.

Second, the California cement industry's survival under the current framework is good news in terms of climate change. Cement produced in California has a lower GHG footprint than cement produced overseas and shipped across the ocean to California. An allowance allocation framework that is effective at minimizing leakage ensures that California's local consumption is met by local production. In the case of cement, this means consumption of lower GHG intensive cement that is readily available in California's local markets with minimum transportation emissions. Failure to minimize leakage will shift California consumption to imports, increase global GHG emissions, and undermine the fundamental objectives of California's Cap-and-Trade program.

Finally, an allowance allocation framework that effectively minimizes leakage is good news in terms of environmental justice. California will still require cement, and cement demand may increase to support a growing California economy and transition to a sustainable green economy. An allowance allocation approach that causes leakage will result in a shift of California consumption to imported cement. Cement imports must be off-loaded in the ports, loaded on heavy trucks, and transported through California's most disadvantaged and densely populated communities. By contrast, as explained in more detail below, the vast majority of cement production in California is in very sparsely populated areas. Accordingly, an allowance allocation framework, such as the current approach, that effectively minimizes leakage also minimizes the environmental justice impacts of California's cement consumption.

II. THE CALIFORNIA CEMENT INDUSTRY STRONGLY OPPOSES CARB'S PROPOSED CHANGES TO THE ALLOWANCE ALLOCATION FRAMEWORK

On September 19, 2016, CSCME submitted extensive comments regarding CARB's August 2, 2016 Draft Regulation and Initial Statement of Reasons ("ISOR"). These comments provided detailed analysis regarding the policy and technical flaws in CARB's proposed approach to revising the assistance factors applicable to the cement industry. On October 14, 2016, CARB released an initial Informal Staff Proposal on Industry Assistance Factor Calculation ("AF Proposal"), which was updated on October 21, 2016.

Despite the scope and detail of CSCME's comments, CARB's AF Proposal does not reflect any changes to the methodology proposed in the ISOR. Rather, CARB reaffirmed its reliance of this methodology and released the specific assistance factor that it proposes to apply to the cement industry. If confirmed, CARB's assistance factor combined with the cap adjustment factor and potential changes to applicable benchmarks will cause severe leakage in the California cement industry.

2.1 CARB's Proposed Changes to the Post-2020 Allowance Allocation Framework Has Severe and Fundamental Flaws

In these comments, CSCME will not reiterate all of the fundamental flaws associated with CARB's application of the leakage studies that were discussed in its September 16, 2016 comments. Rather, CSCME will simply highlight several key cross-cutting concerns that are systemic in CARB's proposed approach.

First, CARB's approach lacks transparency. Although CARB has now released the data on the International Market Transfer Rate, the underlying data, assumptions, and calculations remain undisclosed for both the international and domestic leakage studies. As a result, CARB is revising its allowance allocation approach based on studies that are effectively a "black box", with stakeholders being forced to accept the results and the significant adverse consequences of how they are applied without any peer review of the studies and without any means to verify the models, methodologies, and calculations.

Second, CARB's approach lacks accountability. CARB is proposing to apply the specific metrics from the studies directly to the cement industry. Yet, the underlying data on which the studies are based is inaccessible to stakeholders and to CARB's own staff. This results in CARB abdicating its regulatory role to a few academics without any meaningful ability for them or for CARB to be accountable for the consequences.

Third, CARB's approach lacks applicability to the California cement industry. The studies assess potential leakage in the future based on past changes in electricity and natural gas prices. The cement industry relies almost exclusively on coal for its combustion, and thus, even if past responses to energy prices could be used as a surrogate for future leakage risk, the studies cannot estimate leakage risk for an industry that uses an entirely different source of energy. Moreover, the studies do not take into account process emissions, which compose over half of the emissions from the cement industry. Finally, the studies do not consider the key characteristics of the cement industry, including the fungible nature of the product and the requirement to maintain high capacity utilization. These characteristics limit the ability to pass through higher compliance costs and require cement companies to absorb costs until the point at which doing so is unsustainable, forcing plants to close down. Thus, rather than recognizing the extensive limitations of the studies, CARB either is ignoring them or is making arbitrary adjustments to the detriment of sound policy-making for the California cement industry.

Finally, CARB's approach lacks durability. CARB's process will create legal and political vulnerabilities, threatening the long-term viability of the program. For example, CARB is unable to update or revise the studies to account for developments in a particular industry or in the California economy as a whole. In addition, as explained below, CARB's proposed framework effectively predicts a severe recession in California and the elimination of the cement industry absent sufficient allowance allocation, but CARB fails to recognize this enormous vulnerability when actually developing proposed assistance factors.

2.2 CARB Continues to Apply the Leakage Studies in a Manner That Ignores the Authors' Explicit Warnings

CARB proposes to use the results of the leakage studies to calculate specific assistance factors for specific industries, as opposed to using them to assess the general reasonableness of the current risk classifications. CARB's proposal to use the results to calculate specific metrics ignores the authors' explicit warnings that their results cannot be used for this purpose.

The warnings are particularly stark for the application of the International Market Transfer Rate, which takes the results of the International Leakage Study beyond those of the Domestic Leakage Study by

attempting to translate estimated output drop into a speculative surrogate for market transfer and associated emissions leakage. The authors of the International Leakage Study could not have been more clear when making this leap in their analysis:

The natural next step is to translate these responsiveness measures to corresponding measures of market transfer and associated emission leakage. However, pushing on to this next step amounts to pushing up against the limits of the data. Given the noisiness of these estimates, **we cannot estimate the transfer rate for any given industry with any degree of confidence.**

Even the authors of the Domestic Leakage Study have warned against applying the results in more than a general way to assess the impact on a “typical” industry. At a recent conference, one of the authors of the Domestic Leakage Study noted repeatedly that the results of the study are not “useful” when it comes to assigning specific impacts to specific industries.

This obviously begs the question of why CARB staff is attempting to apply these results to specific industries, especially when the researchers themselves have indicated that this is an improper application of their results? At the workshop, CARB staff indicated that they had discussed these reservations with the authors and did not have concerns. However, such conversations just further highlight the lack of transparency of the process. Given the absence of any record of these informal discussions, stakeholders have no opportunity to comment on whether the authors are or are not standing by the explicit statements in their studies and on what basis CARB may be relying on these conversations to develop the assistance factor applicable to the cement industry.

These informal and non-public conversations and the duration and tax-payer expense of developing these studies cannot justify CARB ignoring the extensive limitations of the studies, particularly given the inevitable real-world costs associated with CARB’s approach in terms of both job losses and emissions leakage.

2.3 CARB’s Application of the Results of the Leakage Studies is Arbitrary and Inconsistent

Not only does CARB’s proposed framework apply the results of the leakage studies in direct contravention of the authors’ explicit warnings, it applies the studies in an inconsistent and arbitrary manner.

First, CARB’s application and integration of the domestic and international leakage studies into a single assistance factor is the equivalent of combining “apples and oranges”, and can only be achieved by the application of arbitrary and inconsistent methods and ad hoc adjustments to the studies’ key results. Specifically, unlike the International Leakage Study’s market transfer rate (which, it should be noted, is not the result of the study’s core modeling exercise but rather back-of-the-envelope calculations by the studies’ authors after the modeling component was complete), the Domestic Leakage Study does not calculate or assume a “transfer rate” on top of its estimated output response. As a result, CARB cannot

add together the output measures from the two studies to estimate a “complete” leakage estimate for each industry without making an adjustment to one measure or the other.

CARB’s solution to the problem posed by the mismatched study results is to apply an arbitrary 7 percent “cutoff” rate to the Domestic Leakage Study’s domestic drop measure. Unfortunately, CARB’s informal staff proposal does not explain or justify its selection of 7 percent as an appropriate threshold for cutting off domestic drop. Moreover, the application of an arbitrary cutoff rate to the domestic drop measure is inconsistent with CARB’s acceptance of the International Leakage Study’s international market transfer rate estimates, ultimately contributing to the “apples and oranges” nature of the assistance factors that result from the domestic and international leakage studies

Second, CARB’s alternate regression-based estimates of the international market transfer rate are conceptually flawed and arbitrary as they compare to CARB’s application of the Domestic Leakage Study’s assistance factors. Specifically, CARB’s regression approach uses the study’s international market transfer estimates as the left-hand variables, which means that this so-called “alternate” approach is really just a slight variant of a problematic metric. CARB’s decision to average the alternate regression measure with the “raw” international market transfer measure in order to arrive at the international “share” of the assistance factor represents a conceptually flawed and inconsistent approach to setting assistance factors.

Finally, CARB proposes to account for process emission when calculating its “alternative” measures via regression analysis, as opposed to the far more logical, simple, and transparent approach of directly adjusting the studies’ results based on the share of process emissions in any given industry. For instance, the Domestic Leakage Study suggests that the cement industry’s output would decline by 20.5% if it fully passed through a carbon price of \$24.88, though this result only accounts for combustion-related emissions. Adjusting this result to account for process emissions would result in a 66.1% decline in output and an “output domestic assistance factor component” of 0.90, as opposed to the 0.60 assistance factor calculated under CARB’s current approach.² Simply put, CARB’s approach to account for process emissions is not only ill-conceived and unnecessarily complex, but it results in a dramatic and systematic downward bias in the cement industry’s assistance factor.

2.4 The Result of CARB’s Misapplication of the Leakage Studies is an Illogical Result that Runs Counter to CARB’s Mandate to Minimize Leakage Risk.

When applied cumulatively, as CARB has done, the modeled results from the international and domestic leakage studies indicate that, in the absence of leakage assistance, a carbon price of just \$22.62 (a price that is consistent with the expected price floor in 2020) would result in a 29 percent output decline in

² As described in CSCME’s previous comment letter, the study’s results can be adjusted to account for process emissions by dividing the output or value added response associated with combustion-related emissions for a given industry (e.g., 20.5% for the cement industry) by the share of combustion-related emissions for that industry (e.g., 0.31 for the cement industry, according to 2014 CARB emissions data). This adjustment assumes that the response function between output (or value added) and carbon costs is linear, which is consistent with the approaches used in both studies and CARB’s application of the studies. It also recognizes that there is no material distinction between the carbon costs associated with combustion-related emissions and process-related emissions.

the average California industry.³ To put this into perspective, U.S. industrial production tends to fall by roughly 5 percent per year during a “typical” recession and fell 18 percent per year in the Great Recession. Accordingly, the results of the leakage studies effectively predict that, absent high levels of leakage assistance, the cap-and-trade program would push California into a severe industrial recession.

Moreover, the results of the leakage studies – and the International Leakage Study in particular – are even more alarming in the case of the California cement industry. Specifically, the International Leakage Study estimates that, under a carbon price of just \$10, cement industry output would fall by 72 percent, accounting for both combustion and process emissions. Assuming an inverse linear relationship between the allowance price and the output effect, it would take a carbon price of only \$13.90 (a conservative price assumption that is below the \$17 strategic price floor in 2022) to produce a 100 percent decline in California cement industry output. However, the International Leakage Study’s back-of-the-envelope estimate of the international market transfer rate for cement implies that only 4 percent of this output decline would be displaced by international production. Although unaddressed and unexplained by CARB or by the study’s authors, the study’s results imply that the 96 percent “residual” decline in California cement production is due to a massive drop in demand for cement. However, a demand response of this magnitude would require a demand elasticity for cement of roughly -8.0, which is exponentially greater than the most conservative estimates of cement’s demand elasticity.

Despite these unexplained implications, CARB has proposed an assistance factor of only 0.71 for the cement industry, which represent a 29 percentage points decline from an assistance factor of 1 in the third compliance period. Given the output decline projected by the International Leakage Study alone, an assistance factor of 0.71 implies that the California cement industry could sustain an output decline of well beyond 30 percent without a significant increase in economic or emissions leakage. Such a conclusion is clearly nonsensical, and serves to highlight the illogical implications of both the international study’s key conclusions and the manner in which CARB has chosen to apply them.

III. CARB’S PROPOSED CAP ADJUSTMENT FACTOR SHOULD BE REFINED TO REFLECT AVAILABLE DATA

During the workshop, CARB presented its “Proposed 2021-2030 Cap Adjustment Factors.”⁴ This proposal provides that sectors, such as cement, that have greater than 50 percent process emissions and high leakage risk will be subject to a nonstandard decline in the cap adjustment factor. The proposed nonstandard decline is simply one-half the standard decline applicable to other industries. Given that CARB now has data to calculate the actual amount of process emissions applicable to the cement industry and given that the cement industry’s process emissions are well-above 50 percent, CSCME requests that CARB undertake a more precise calculation of the nonstandard reduction to the cap adjustment factor based on the actual share of process emissions in the total GHG emissions of the California cement industry.

³ This output decline is even larger when accounting for the impact of process emissions.

⁴ CARB Workshop Presentation, Additional Proposals Related to Allowance Allocation (October 21, 2016) at 47.

IV. THE ADOPTION OF MORE COMMAND-AND-CONTROL MEASURES WILL UNDERMINE CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE OBJECTIVES

In September 2016, a number of academics released an advocacy paper entitled “A Preliminary Environmental Equity Assessment of California’s Cap-and-Trade Program.”⁵ This advocacy paper has been widely cited as a basis to impose additional command-and-control measures on California industries. The paper “suggests” conclusions by drawing inferences from disclosed data, while ignoring and failing to report complete data or placing disclosed data in context. The paper’s conclusions are thus technically flawed from a research perspective and are highly misleading, particularly when used to support policy recommendations applicable to the cement industry.

4.1 The Cement Industry’s Absolute GHG Emissions Increased as the Natural Economic Consequence of its Slow Recovery from the Great Recession

The paper asserts that the Cap-and-Trade program is failing in terms of environmental equity because absolute GHG emissions in certain industries, highlighting cement as an example, were higher after the implementation of the program. The authors reach this conclusion by simply comparing the cement industry’s absolute GHG emissions for two years prior to the implementation of the Cap-and-Trade program with the industry’s absolute GHG emissions for two years after the implementation date. However, the paper fails to disclose the necessary context for this simplistic point-to-point comparison.

As discussed above, the output of California’s cement industry declined by almost 40 percent in the aftermath of the Great Recession, bottoming out in 2011. California cement production has been recovering ever since. As a result, according to CARB data, absolute GHG emissions for the California cement industry remain 20 percent lower than prior to the recession. In other words, after demand plummeted during the Great Recession, California cement production and associated combustion and process GHG emissions similarly declined. As demand reversed course, California cement production began a slow recovery and its absolute GHG emissions followed the same trend.

Notably, the authors make no attempt to assess whether the trend in absolute GHG emissions for the California cement industry is comparable to the increase in GHG emissions in other states, in the United States, or globally. Absence such a comparison, the paper fails to control for other factors that may be causing the relevant effect, such as recovery from the Great Recession, and thus reaches highly misleading conclusions.

Accordingly, rather than any failure of the Cap-and-Trade program, the increase in the cement industry’s absolute GHG emissions were a direct result of the natural economic consequences of a slow economic recovery in California. Importantly, the Cap-and-Trade program actually achieved its intended effect. During this same period of slow recovery and since the passage of AB 32, CARB data demonstrates that the California cement industry’s emissions intensity has declined.

4.2 California Cement Plants Are Located in Remote and Sparsely Populated Areas

⁵ Lara J. Cushing, et al., A Preliminary Environmental Equity Assessment of California’s Cap-and-Trade Program, Research Brief, September 2016.

The paper asserts that disadvantaged communities are located close to large emitters, including the cement industry. However, despite clearly having collected the relevant data, the paper does not disclose that cement plants tend to be located in exceptionally remote and sparsely populated areas, especially relative to other major emitters.

California's cement plants are located in the most remote areas of California. CSCME examined the population density within 2.5 miles of the 86 highest GHG emitting facilities in California based on CARB data. Based on similar methodology used in the paper, CSCME calculated that the average population living within 2.5 miles of the eight cement plants is 4,467, as compared to an average population of nearly 50,000 across the other large emitting industries. In fact, excluding the single cement plant located near a high-population and non-disadvantaged community, the population surrounding the average cement plant falls to 506, with a range from 69 to 1,638.

In addition, California's cement plants tend not to be located within or immediately around disadvantaged communities. Slightly more than 3,000 people living below 200 percent of the federal poverty line live within 2.5 miles of a cement plant, compared to more than 1.3 million people for the other large emitters. In other words, the number of impoverished people living in close proximity to a cement plant represents only 0.2 percent of the total impoverished population living around all large emitting facilities in California. Moreover, the number of people living in poverty within 2.5 miles of the average cement plant is just 410, compared to 17,000 for the average facility across the other large emitting industries.

Finally, cement plants are located far from "disadvantaged communities" (SB 535 defines "Disadvantaged Communities" as those falling in the bottom 25 percent by CalEnviroScreen score). On average, the nearest disadvantaged community to a cement plant is 22.5 miles away, compared to only 10.1 miles for the large emitters in other industries.

4.3 More Command-and-Control Measures Would Have Severe Unintended Consequences

The authors of the paper rely upon a general observation that large emitters are located close to disadvantaged communities and a specific observation that absolute GHG emissions in the cement industry have increased (without the context provided above) to assert that the imposition of additional command-and-control measures will have a positive impact on disadvantaged communities. This assertion is inapplicable to the California cement industry.

In addition to being wholly unjustified based on demographics, the imposition of additional command-and-control measures on the California cement industry will have disastrous consequences for the industry, given it has limited access to additional cost-effective GHG reduction options that are not already mandated under existing state and federal command-and-control requirements. Additional measures will ensure that California production is replaced with imports.

Such displacement of California production with imports could result in less environmental equity, because it will substantially increase port, trucking, and rail activity in some of California's most disadvantaged and densely populated communities. For example, each 1 million metric tons of cement that is displaced by imports will generate roughly 40,000 more heavy truck trips per year through

communities that are more densely populated and more disadvantaged than those that surround cement plants.

Apart from this localized impact, cement imports will have a much higher GHG footprint than California-produced cement. The California industry is already one of the least GHG intensive in the world, due to the measures already effective in California's energy sector and due to the impact of the Cap-and-Trade program. Imported cement would have a much higher GHG footprint from direct and indirect emissions, including emissions from transporting cement across the ocean.

Finally, the imposition of additional command-and-control measures would be inconsistent with AB 197. This new law requires CARB to continue complying with the requirements in AB 32, including that any regulations must be equitable, minimize costs and maximize total benefits to California, ensure that activities to comply do not disproportionately impact low-income communities, consider cost-effectiveness, consider overall societal benefits, and minimize leakage. In the context of these requirements, AB 197 then specifies that CARB must also consider the social costs of the emissions of greenhouse gases and prioritize direct emissions reductions. Importantly, the California cement industry, its employees, and the communities that it serves are a critical part of California and the benefits or harm to these California interests must be considered together with the interests of disadvantaged communities. As demonstrated in these comments, any new command-and-control measures (as well as CARB's proposed allocation framework) would be inconsistent with applicable requirements under AB 197 because all of these California interests would be harmed.

In sum, the imposition of additional command-and-control regulations on the cement industry is likely to exacerbate GHG emissions leakage without delivering any real environmental equity benefits.

V. RECOMMENDATIONS

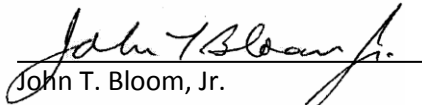
Given the numerous concerns with the leakage studies, as demonstrated extensively in CSCME's comments and by the authors of the studies, CSCME recommends that CARB use the results of the studies to confirm CARB's current leakage risk categories and determine which industries may be misclassified and/or deserve additional scrutiny.

Alternatively, if CARB uses the studies to develop industry-specific leakage estimates (despite widespread concerns), it should only do so in a manner that prevents arbitrarily adjusting different metrics across the two studies, which would exacerbate the impact of the concerns in developing revised assistance factors. Rather than cumulating the results on an "apples-to-oranges" basis and then attempting to arbitrarily align the results with additional unsubstantiated adjustments, CARB should align the methodologies on an "apples-to-apples" basis (e.g., output drop) using the same factors calculated for the international and domestic components so that any metrics are internally consistent, logical, and compatible with CARB's mandate to minimize the risk of leakage.

CSCME strongly urges CARB to reject efforts to apply additional command-and-control regulations to the cement industry. Such a draconian approach would have severe and irreversible consequences, including greater emissions leakage without delivering any real environmental equity benefits.

CSCME appreciates the opportunity to provide these comments and recommendations, which are intended to provide constructive and detailed input on CARB's Draft Regulation and ISOR. As in the past, CSCME welcomes the opportunity to work with CARB toward successful implementation of AB 32.

Sincerely yours,

A handwritten signature in black ink, appearing to read "John T. Bloom, Jr.", is written over a horizontal line.

John T. Bloom, Jr.

Chairman, Executive Committee, Coalition for Sustainable Cement Manufacturing & Environment
Cemex

CC:

Richard Corey, California Air Resources Board
Rajinder Sahota, California Air Resources Board
Jason Gray, California Air Resources Board
Mary Jane Coombs, California Air Resources Board
Mihoyo Fuji, California Air Resources Board
Derek Nixon, California Air Resources Board