October 5, 2007

Ms. Mary Nichols, Chairman
California Air Resources Board
1001 I St.
P.O. Box 2815
Sacramento, CA 95812

California Cement Manufacturers
AB 32 Key Implementation Issues

Dear Chairman Nichols:

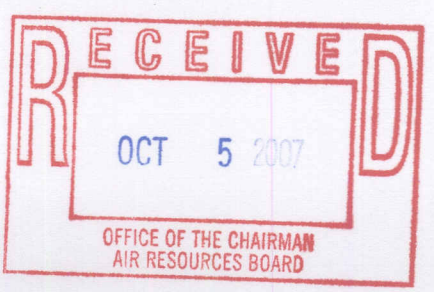
We are writing you on behalf of the manufacturers of Portland cement in California. Six companies operate 11 cement plants that produce more than 12 million tons of cement annually. California consumes and produces more cement than any other state in the country and annual state production supplies only sixty to seventy percent of the state's demand.

Portland cement manufacturing is an energy intensive process, requiring the combustion of large amounts of fossil and some alternative fuels. A fundamental part of the process is the calcination of limestone (a required chemical reaction) that generates carbon dioxide. Approximately one ton of carbon dioxide is emitted for every ton of cement produced. The emissions are evenly divided between those resulting from fuel combustion and those resulting from the calcination process.

Accordingly, the industry has been closely monitoring implementation of AB 32, The Global Warming Solutions Act, which could have a profound impact on the future viability of the California cement industry.

We are writing today regarding our consensus on perspectives of early actions that have been suggested by the Air Resources Board (ARB) in a recent publication titled, "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California, Recommended for Board Consideration," dated September 2007. We believe that the actions suggested for the cement sector should not be part of the early action process. Below we share our reasoning for this conclusion, suggest an alternative action for ARB consideration, and also take the opportunity to convey the views of the industry on other matters related to AB 32 implementation.

ORIGINAL: Board Clerk
Copies: Executive Officer
Chair



Proposed Early Action Measures – Suggested Early Actions Should Be Part of the Scoping Plan

Energy Efficiency

California cement manufacturers have reduced their energy consumption over 50 percent in the last two decades. However, if you look at the last five to ten years, that reduction curve begins to flatten since most of the major reduction projects have been completed. These efficiency projects were large, one hundred million dollar plus capital investments. Any further reductions would only be plant specific, result in minimal energy savings, and would require a longer term payback on capital investment. The cost per ton of Greenhouse Gas (GHG) reduced would be very high. The statutory language in AB 32 not only requires Early Actions to be cost-effective but also technically feasible and implemented by 2012. Any projects providing potential GHG benefits from this measure will require long-term, extensive engineering investigation just to determine their feasibility. Consequently, the *Energy Efficiency* measure clearly does not meet the criteria of an Early Action and we strongly urge you to move this item into the AB 32 Scoping Plan to allow its careful consideration.

Blended Cements

The current practice of blending supplementary cementitious materials into Portland cement or concrete delivers more cement into the market for the same amount of clinker produced. Clinker is the material produced in the kiln which generates the vast majority of GHG at a cement plant. To date in California, blending has mainly been achieved at concrete (ready mix) plants which are currently not part of AB 32 implementation activities. The expanded use of blended cements has a great potential benefit to the global climate change concern but has several barriers that will take time to overcome. Most notably these include acquiring adequate supplies of the supplementary materials, changing the mindset of engineers who dictate the concrete blend for specific applications, and changing the standards and codes of a wide range of state and local jurisdictions to allow their expanded use. The California cement industry is currently working with CalTrans to modify one of its standards towards this end, and while the effort is close to completion, it has taken a significant amount of time. Further, considering the supply issue alone, if expanded use of blended cements was mandated, it may not be feasible to procure adequate supplies during times of higher cement demand. The resulting increases in transportation expenditures (and associated GHG emissions) for these materials would, again, bring cost effectiveness into question. Consequently, the complex *Blended Cement* measure also does not meet the criteria of an Early Action and we strongly urge you to move this item into the AB 32 Scoping Plan to allow its careful consideration.

Newly Identified Early Action Measure – A Potential GHG Benefit

Implement ASTM Standard Raising Limestone in Cement From 2.5% to 5.0%

This Early Action could be implemented in lieu of the two previously mentioned. Current national standards allow Portland cement to include up to five percent limestone (a non-clinker cementitious material). If California cement manufacturers could include five percent limestone in all its standard construction cement, a potential GHG benefit up to 300,000 tons could be realized. CalTrans allows up to two and one half percent limestone for specific applications. While CalTrans only consumes six to seven percent of California cement production, its specification dictates the supply because it is difficult for cement plants to produce and concrete plants to store different cements. A change in the CalTrans specification to allow five percent limestone in all the cement it procures would eliminate a major barrier to achieving this GHG benefit. This measure is cost-effective, technically feasible, and could be implemented by 2012, thus meeting the criteria for an Early Action.

The California Cement manufacturers also have great concern with other issues that, while not proposed Early Actions, are still important AB 32 implementation topics.

Leakage – Exacerbating Global GHG Emissions

As mentioned in the original California Climate Action Team Report, leakage continues to be the overriding concern for the cement industry and unfortunately, no policy options to resolve this issue have been identified. California needs cement – approximately a half ton per person is now used annually. The state's anticipated population growth will significantly increase this total demand and, as the use of concrete expands due to its GHG benefits as a building material, the per capita demand will also rise. According to the California Department of Finance, California's statewide population is projected to reach 59.5 million by the year 2050. The state's cement manufacturers already supply approximately sixty to seventy percent of current demand from plants that are among the world's leaders in energy efficiency. Since cement is a globally traded commodity, the remainder is supplied by imports which are likely produced by less efficient plants and transported thousands of miles thus exacerbating the global GHG impact. Any AB 32 measure that reduces California cement production and encourages leakage will be counterproductive to solving this global issue.

Fuel Switch from Coal to Natural Gas – Not Feasible - Not Viable

Coal is the operational fuel of choice for cement production in California as it provides more effective heat transfer and lower NOx emissions than natural gas. Any increase in NOx emissions would violate AB 32's mandate that no GHG reduction is allowed if it causes an increase in any criteria pollutant. Further, use of natural gas as the primary kiln fuel reduces the overall fuel efficiency and negatively affects the GHG intensity of cement production (see below). In addition, serious questions would be raised concerning the feasibility to supply and deliver the large volumes that would be required to fuel cement kilns, especially in periods of high statewide demand. Finally, given its volatile pricing, fuel costs for cement production could skyrocket, thus encouraging leakage. Based on these points alone it can be seen that this is not a viable GHG reduction measure and should be removed from any further consideration.

Alternative Fuels – A GHG Solution with Barriers

Cement kilns operate at high temperatures (>2500 F) and can achieve low emission levels using a variety of supplementary fuels including tire derived fuel, regional biomass fuels such as wood products, and biosolids. These are generally lower carbon-intensive fuels than primary fuels and thus their use can provide a GHG benefit. In the case of waste biomass fuels that would otherwise be sent to landfills or other waste disposal units, the use of this waste in kilns results in a GHG benefit due to the avoidance of methane and N_2O emissions that would otherwise have occurred at the waste disposal facility. It is important to note that regulatory and social barriers frequently preclude or greatly impede the permitting required to allow these fuels. Assistance from the ARB and other agencies in educating the public and eliminating these barriers can benefit the GHG issue.

The 1990 GHG Inventory & 2020 Target – Must Reconcile With Reporting Regulations

ARB is calculating the statewide GHG inventory for 1990 which will become the 2020 target of Early Action measures and the Scoping Plan. It is being calculated with a Top-Down methodology using macro economic data to estimate emissions. ARB Mandatory Reporting Regulations will be using a Bottom-Up methodology using plant specific data at least for the cement industry. Early indications are that these two methods will not reconcile due to methodology differences. We feel strongly that both the target and the annually reported emissions must use the same methodology and metric so a meaningful comparison of where we are and where we need to go can be made. In addition, the mandatory reporting regulations need to be revised to anticipate future GHG reduction measures, such as blended cements, so that the effects of these measures will be accurately quantified. To evaluate the projected growth in GHG emissions for the cement industry, ARB must take into account historical data on all cements produced or supplied to the California market. Otherwise, the state's inventory will underestimate current growth levels and future production needs.

Intensity – The Appropriate GHG Metric for Cement

GHG Intensity is the ratio of GHG emitted per ton of cementitious material produced (e.g. ton CO_2 divided by the total tons of cement plus cement substitutes). To achieve an accurate and equitable comparison of all cement blends, the efficiency metric needs to take into account blending that occurs at the ready-mix facilities as well as at the cement plant. Hence, there may be a need for multiple efficiency metrics to account for blending at various locations. It is the most appropriate metric and preferred policy approach to quantify the cement industry's GHG footprint since it allows numerical measurements of progress while enabling the industry to grow and meet the state's demand. The complexities of the issues discussed previously demonstrate that the reduction of actual tons of GHG by the cement industry will be impossible if the increasing demand is to be met. However, the *rate, or intensity,* at which GHGs are emitted, will decrease with continued progress. Intensity apparently will be the AB 32 regulatory metric for other growth industries which represent a vastly larger portion of the statewide GHG inventory than the cement industry. The use of the intensity metric encourages GHG benefits, discourages leakage, and allows GHG-efficient California cement production to meet the state's increasing needs.

We appreciate your consideration of our perspectives on these matters. We remain committed to working constructively with the California Environmental Protection Agency and the California Air Resources Board on AB 32 implementation, and to that end, would be delighted to address any questions you may have on the views conveyed herein.

If you have any questions, please contact Don Unmacht, President, National Cement Company at (818) 728-5229 or dunmacht@natcem.com. If Mr. Unmacht is unavailable, please contact Greg Knapp at (760) 245-5321 ext 319, gknapp@txi.com or Andy O'Hare at (202) 408-9494, aohare@cement.org.

Sincerely,

James G. Brown
President & Chief Operating Officer
Lehigh Pacific

D. Randall Jones
Vice President of Communications
& Governmental Affairs
Texas Industries, Inc. (TXI)

Kimball P. McCloud
President & CEO
Mitsubishi Cement Company

James Repman
President & CEO
California Portland Cement Company

Vice President – Manufacturing
U.S. Operations
Cemex, Inc.

Don Unmacht
President
National Cement Company

cc: Mr. Dan Dunmoyer, Office of Governor Arnold Schwarzenegger
Mr. David Crane, Office of Governor Arnold Schwarzenegger
Mr. Brian Prusnek, Office of Governor Arnold Schwarzenegger
Ms. Linda Adams, California Environmental Protection Agency
Ms. Cindy Tuck, California Environmental Protection Agency
Mr. Dan Pellissier, California Environmental Protection Agency
Ms. Dana Papke, California Environmental Protection Agency
Mr. Michael Scheible, California Air Resources Board
Ms. Edie Change, California Air Resources Board
Mr. Chuck Shulock, California Air Resources Board
Mr. Douglas Thompson, California Air Resources Board