CCMEC

CALIFORNIA CEMENT MANUFACTURERS ENVIRONMENTAL COALITION
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October 25, 2007

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

California Cement Manufacturers Environmental Coalition
Comments On Proposed AB 32 Cement Industry Early Actions

Dear Chairman Nichols:

The California Cement Manufacturers Environmental Coalition (CCMEC) is 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.

The Cement industry has been participating in a constructive dialogue with CARB, Cal EPA, Cal Trans, and others relative to the implementation of AB 32. Representatives of several companies have provided oral comments at the October 25, 2007 ARB Hearing and this letter provides a compilation of those.

Some initial comments are in order followed by specific comments on the proposed Early Action measures identified in the document "**Expanded List Of Early Action Measures To Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration", October 2007.**

The Cement Industry is participating in the development of proposed Early Actions with the understanding that this development will follow all of the traditional rule-making procedures, for example, stakeholder involvement, public notice, and public comment.

In addition, the industry maintains that AB 32 must not diminish California production and encourage further imports as this will cause "Leakage" of Greenhouse Gas (GHG) emissions out of the State's regulatory authority and exacerbate this global issue. California is the largest producer and consumer of cement and the deficit between consumption and production is growing driven by population increase and the infrastructure rebuilding encouraged by the Governor. Cement is a globally traded commodity and the viability of producing companies is very susceptible to market perturbations. A significant increase in cost caused by AB 32 implementation is the type of market perturbation that could make California cement less competitive and encourage Leakage. California must maintain its ability to supply the majority of its own demand of this basic building block of the state's homes, businesses, and infrastructure.

ORIGINAL: Board Clerk
Copies: Executive Officer
Chair

Legal Framework For Evaluating Early Action Measures

Presented by: Anne McQueen for National Cement and Mitsubishi Cement

The purpose of our comments is to present the legal framework for evaluating the cement early action measures. The EAM report assigns two cement measures to the early action measures list: cement energy efficiency, and blended cements. These measures, as currently described in the report, are not consistent with AB 32 statutory requirements.

Our primary concern with the cement early action measures is the problem of leakage.

- The California legislature recognized leakage as unacceptable and included a requirement in AB 32 directing ARB to minimize leakage.
- The unique features of the cement industry that make it susceptible to leakage are described in a detailed report that was submitted to ARB today.
- Business interests often express concern that increases in compliance cost will adversely affect their competitiveness. However, in this case, these concerns are well documented and it is critical that ARB not ignore these concerns.
- In the case that AB 32 imposes a cost burden on domestic cement manufacturers without imposing an equivalent burden on cement imports, leakage will occur, and overall GHG emissions will increase rather than decrease as a result of AB 32 provisions for the cement industry.

Before discussing other AB 32 statutory requirements that apply to the cement measures, I would like to briefly address process.

- Originally, we intended to ask that the two cement measures be removed from the early actions list and reassigned to the scoping plan.
- We have recently been assured by ARB counsel that the early action measures are subject to the same legal standards as scoping plan measures and will be accorded the same regulatory and legal protections that are afforded all measures.
- With that assurance we have refocused our comments on our evaluation of the cement measures as they relate to the AB 32 substantive requirements, which apply regardless of whether ARB schedules the cement measures in the scoping plan or as early action measures.
- For further detail on these arguments, I direct you to the separate letter, which was submitted for the record earlier today.

The remainder of these comments will address concerns that we have about the energy efficiency and blended cements measures as ARB moves into its regulatory development process. ARB's evaluation of the cement measures has yet to meet a number of AB 32 statutory requirements, and significant work is still required by ARB to meet these standards. The following is a summary of where the current ARB analysis is lacking:

- First, ARB is required under AB 32 to select measures that achieve maximum technological feasibility and cost effectiveness. The cement energy efficiency measure as currently envisioned does not meet the technological feasibility standard, as other speakers will show.

- Second, ARB is required under AB 32 to adopt measures (here I quote) in a "manner that is equitable, seeks to minimize costs and maximize the total benefits to California". We are concerned that the cement energy efficiency measure as currently envisioned does not meet the cost minimization standard, when compared with other potential GHG reduction measures, as other speakers will discuss.

- Third, ARB is required under AB 32 to conduct its evaluation of measures by using (here I quote) the "best available economic models, emission estimation techniques, and other scientific methods." Clearly, the work on the cement energy efficiency measure thus far has not met this standard, given that earlier publications by independent experts that suggest that the ARB measure selection does not meet the AB 32 statutory criteria are readily available, as discussed in the letter submitted earlier today.

We understand that ARB's work on the cement GHG measures has just begun and has yet to meet the standards in the AB 32 statutory requirements. In moving forward, ARB must perform the additional work necessary to select and develop cement GHG measures that meet the AB 32 statutory requirements. We recognize that this will not be an easy task, and we in the cement industry look forward to working with ARB staff to complete it.

Energy Efficiency Measures

Presented By: Tom Gibson, Lehigh Southwest Cement

The purpose of my comments is to discuss our concerns about the cement energy efficiency measure, which we would like ARB to address in the future regulatory development process.

The industry, because of the nature of their manufacturing process, has strong incentives to control energy and fuel costs. The industry has made significant investments to improve energy efficiency in recent years and continues a continuous process of upgrading. Fuel consumption per ton of cement was reduced 14% between 1990 and 2005. And power consumption per ton of product was reduced 5% between 1990 and 2005.

California cement plants are among the efficiency leaders in the US using only 84% of the US average fuel per ton of cement. This has been acknowledged by senior ARB Staff and is documented in a study by Lawrence Berkley. The low hanging fruit has been picked for fuel efficiency. Any further reductions would be plant and equipment specific and will require long term planning (engineering to determine feasibility and benefits; capital allocation; and construction).

Turning to power consumption, the California cement industry estimates that conversion of all older, large horsepower motors to high efficiency motors would cost $1,200 per tonne CO_2e reduction.

To better evaluate the relative cost effectiveness of the cement energy efficiency measure compared to other measures, consider the Climate Action Team (CAT) updated macroeconomic report. This report identifies 134 million metric tons per year of GHG emission reductions from measures with costs below $60 per metric ton (MT) CO_2. In contrast, ARB estimates the power reduction portion of the cement energy efficiency measure will achieve a reduction of only 0.3 million metric tons CO_2 per year at a cost of $1,100 to $1,300 per MT CO_2. ARB's selection of the cement energy efficiency measure over other, less expensive measures highlights a substantial inequity between treatment of different sectors of the economy, as well as a failure to maximize benefits and minimize costs.

Cement industry investments must have long-term security and need a climate providing assurance that production can be increased. Regulations that make the industry less competitive will induce leakage and, due to the global nature of the cement industry, will result in decisions to make investments to improve energy efficiency at plants outside of California.

The cement industry has other alternatives to coal to provide low cost greenhouse gas reductions. These are the use of alternative and renewable fuels.

Biomass is used in some California cement kilns. This includes waste wood, sewage sludge, and agricultural waste. Non-biomass wastes used include tires and petroleum coke.

The cement industry has other potential alternative fuels whose heat could be recovered in the kiln, but their use is hindered by public misperceptions regarding alternative fuels.
Over 30% of cement manufacturing fuels in Western Europe currently met with alternate fuels. Many plants in Europe operate without burning any fossil fuels.

While the technology to burn alternative fuels is proven and safe, regulatory entities have failed to promote or endorse the use of alternative fuels because of the misplaced public opposition to their use. The permitting process at the local level has proven difficult, time consuming and too costly to pursue.

This is clearly an area that the state could assist in allowing plants to voluntarily switch to the most appropriate fuels for their facilities. High level support is needed for this to succeed.

Additional benefits beyond greenhouse gas reductions include diversion of solid waste from landfills and incinerators, potential emissions reductions and lower dependence on fossil fuels.

Blended Cements and Concretes Including Limestone Addition

Presented By: Scott Isaacson, California Portland Cement Company

1) The California cement producers support the practice of blending supplementary cementitous materials or SCMs (e.g. fly ash, steel slag, other pozzolans) with cement in the production of concrete and other cement products, however, this industry has significant concerns regarding the feasibility of implementing this measure as an early action
2) Important to note that blending already is extensively occurring at ready mixed concrete batch plants at the point where concrete is produced (recall that cement is the powder or glue that is added to aggregates, water, other materials to produce concrete)
3) Cement producers in CA as is typical in the United States, provide an unblended product to concrete producers who blend to the extent that projects specify, building codes allow, and supplementary materials are available
4) Data is not available nor is reporting required regarding blending with SCMs that is already occurring nor can a definitive projection be made of how much additional blending is possible or how much reduction in the amount of cement required if blending were increased
5) The expanded use of blended cements has the potential of providing cement into the market with a lower GHG intensity, i.e., less cement will be used for a given project to the extent it can be replaced by other cementitous materials
6) However, the supply and quality of available SCMs, such as coal power plant fly ash and natural materials are not dependable – shortages have occurred in the past and future shortages are inevitable – current sourcing is stretched and indications are that less will be available in future – supply in part depends on amount of coal used for power production
7) Cement blends (mix designs) are dictated by state and local building codes as well as the needs of the project and these codes would have to change to allow expanded use of blended cements and this cannot happen quickly.
8) It is not technically feasible to implement this proposal regarding blended cements in the time frame for an Early Action; but we are committed to continue to work with CalTrans and others to expand the use of blending cement with SCMs
9) A voluntary measure that allowed the reporting of blended cement use at current and expanded levels would account for this potentially significant GHG benefit – further, assistance by ARB in revising codes would accelerate the process

A Viable Alternative Early Action – Limestone addition to cement

1) An early action to reduce GHG emissions that can be quickly implemented in lieu of the blended cement proposal is the addition of limestone to cement during the production process (referred to inter-grinding) without a loss in quality or loss of usability of the product
2) The California cement industry has sought for a considerable period of time to increase in the amount of limestone in cement – this measure can provide a potential GHG benefit of up to 300,000 additional metric tons in the time frame anticipated for early actions (before 2012)
3) Forty-nine other states have approved this level of limestone addition – ASTM and AASHTO have established national standards at 5% – Canada has allowed 5% for over 15 years – European countries similar levels for many years

4) It is important to emphasize that cement is not diluted with limestone – research by all of these different parties has shown that strength is not reduced with this level of limestone addition and limestone can add favorable performance aspects to the cement products

5) Even though CalTrans consumes only 6 to 7% of California cement, their position dictates the cement held in inventory by over 400 concrete plants in California – these plants, many of them small businesses, cannot afford multiple storage silos for different cements

6) Cement producers have worked closely with CalTrans who after a lengthy process recently approved the addition of 2.5% – we strongly believe that limestone addition to cement should be allowed up to 5% and we will continue to cooperatively work with CalTrans to bring about this result

7) If CalTrans allowed up to 5% limestone in all of its purchased cements, it would become the statewide standard construction cement and this significant GHG benefit could be realized

8) The California Cement Industry strongly urges the adoption of this Early Action in lieu of Energy Efficiency and Blended Cements

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.

Please contact me at (909) 635-1826 or fsheets@txi.com or Greg Knapp at (760) 245-5321 ext 319 or gknapp@txi.com to address any questions.

Sincerely

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