To: **CARB Staff**
From: **Diane Bailey, Avinash Kar, Miriam Rotkin-Ellman, Tom Singer, NRDC (dbailey@nrdc.org)**
Re: **Comments on Industry in Draft Scoping Plan**
Date: **August 11, 2008**
Via: **Electronic submission at** http://www.arb.ca.gov/cc/scopingplan/spcomment.htm

I. General Comments on the Industrial Sector

We are pleased to see CARB considering regulatory measures for the industrial sector. We strongly urge CARB to include the measures currently under evaluation in the final Scoping Plan. Real and measurable plant-specific reductions from the industrial sector are critical to meeting AB 32's goal of maximizing social benefits and achieving co-pollutant reductions. CARB calculations show that the measures under evaluation have the potential to significantly reduce greenhouse gas emissions, up to 20 MMT CO2e. We believe that even greater reductions are possible from the industrial sector. Consequently, these measures currently under evaluation should be adopted as recommendations in the final Proposed Scoping Plan and should be included in the accounting of "sector responsibilities" as summarized in the appendices in Table 1 (p. C-17). The industrial sector is the only one of the large sector groupings in Table 1 that has virtually no current recommended regulatory measures; the only recommended regulatory measure, an audit, currently does not account for any estimated emission *reductions* from regulatory measures partly because it does not explicitly call for the implementation of feasible efficiency measures identified by the audit.

We are also pleased to see CARB reiterate that "[p]articipating in a cap and trade program will not excuse facilities from obligations imposed on them by other measures adopted under AB 32." (p. C-15). We continue to believe that *if* a cap and trade program is implemented, it should layer on top of self-contained regulatory programs, as CARB has proposed.

However, we strongly oppose the use of offsets for compliance with non-cap and trade regulations (see also our General Comments, submitted Aug 11). Allowing facilities to meet regulatory requirements through the purchase of offsets (p.44) is an

unacceptable proposition. It would allow facilities to avoid achievable on-site reductions in both GHGs and toxic and criteria co-pollutants here in California, undermining many of AB 32's expressly stated goals. In fact, the Draft Plan acknowledges that: "Allowing offset projects from outside California to count for compliance under AB 32 could reduce the amount of reductions occurring within the state, and which would reduce the local economic, environmental and public health co-benefits from GHG emission reduction." (p.44) We agree. In order to maximize air quality improvements and public health benefits, as required by AB 32, compliance with regulatory measures should be achieved without the use of offsets. Moreover, as NRDC comments have repeatedly emphasized, it is very difficult to ensure that offsets achieve real, additional, verifiable, permanent, and enforceable GHG reductions and thus should be treated with great skepticism even in the context of a cap and trade program, and should not be allowed for compliance with other regulations.

II. Recommended Measures

A. Energy Efficiency and Co-Benefits Audit for Large Industrial Sources

While we are glad to see CARB recommending an energy efficiency and co-benefits audit for large industrial sources because of the significant promise of emission reductions, we encourage CARB to require *all* facilities in each industry under consideration (e.g. refineries, cement plants, etc.) to conduct an audit in order to ensure consistency in each industry. For refineries, in particular, plant-specific energy audits should include identification of opportunities for waste heat recovery and cogeneration potentials. The results of any audit carried out under this proposed rule also should be made publicly available to assure accountability, establish the integrity of the audits, and sustain confidence in the program, and facilities should be required to implement all feasible measures. To allow for speedy implementation and to minimize costs, facilities that have conducted an audit in the recent past that would meet the criteria promulgated by CARB should be allowed to use the previous audit instead of being required to carry out a new audit, as long as the facility makes the audit and its contents public. Furthermore, CARB should start developing this promising rule as soon as possible, instead of waiting until 2010 to begin rule development. (p. C-103). The projected date

of 2012 for implementation of the rule is simply too long to wait for easily avoidable emissions given the reductions we need to make as soon as possible to avert the worst impacts of global warming. Finally, that process should not hold up reductions that we already know can be made such as the cement and refinery measures discussed below.

We are also dismayed by CARB's statement that "[i]t is unlikely that refinery production will decrease in California over the next 12 years because of GHG reduction requirements." In our Comments on Transportation submitted August 1, we outline many opportunities to reduce California's fuel use, and we urge CARB to move forward on these measures to meet AB 32's goals.

B. Other Industrial Measures Under Evaluation

We strongly urge CARB to adopt the measures discussed in the Proposed Scoping Plan for cement plants, concrete batch plants, concrete use, refineries, oil and gas extraction and transmission, industrial boilers, stationary engines, glass plants and off-road equipment. These are feasible, achievable emission reductions that would also ensure reductions in other criteria and toxic air pollutants and meet AB 32's objective to ensure maximum societal benefits. *See* Health & Safety Code §§ 38501, 38562. As we discuss in greater detail elsewhere, CARB's estimates of emission reductions and costs for each of the measures should also take these co-benefits into account. Furthermore, CARB's cost estimates for these measures currently do not count energy savings (*compare* p. C-106 to Table 27 and p. C-110 to Table 28), and we urge CARB to incorporate these savings into the final cost estimates. More detailed comments on several of the industrial sectors follow.

1. Cement and Concrete

We are pleased that CARB is considering a low carbon intensity standard for cement plants and concrete batch plants as well as the reduction of waste in concrete use. Applying the carbon-intensity standards to all cement production as well as use in California is appealing because it will prevent leakage in addition to ensuring significant reductions in mercury pollution. We strongly encourage CARB to adopt these measures in the Proposed Scoping Plan. We also encourage CARB to be as aggressive as possible in setting the intensity standards to ensure maximum emission reductions. In establishing

the intensity standards, CARB should look to the most efficient plants (including those outside California) as models.[1]

While we strongly support the flexibility of a low carbon cement standard, safeguards must be added to ensure that there are no unintended pollution side-effects and to prevent impacts downstream and in communities near cement facilities. For instance, blending of cement and/or concrete with waste materials such as fly ash and slag should be approached with caution. Fly ash and slag are by-products of coal power plants and steel production respectively, which often contain toxic heavy metals like mercury and chromium. There are still outstanding questions about the safety of these materials when used in cement and concrete, and the potential for toxic substances in these blended materials to leach into water bodies. In addition, rules would have to be developed to ensure that any such materials are properly stored and handled in order to avoid incidents such as the recent exposure to toxic hexavalent chromium for communities living near a cement plant in Riverside.[2] Given California's experience with MTBE, careful multi-media environmental review is also warranted.

We are also very concerned that any potential use of offsets with direct regulations, particularly in this sector, will undermine mercury and co-pollutant reductions in California. As we address elsewhere in our comments, compliance offsets to meet regulations should not be permitted.

2. Refineries

While we are pleased to see CARB considering regulatory measures for the refinery sectors, we are disappointed to see the proposal scaled back so significantly from what CARB discussed previously. The April 11 workshop on this sector laid out possible GHG reductions up to 9 MMT CO2e, while the Draft Scoping Plan outlines reductions of only up to 5 MMT CO2e.[3] (p.40). Measures discussed at the April 11th workshop and

[1] For example, under an energy efficiency program implemented in the Netherlands, that country's cement manufacturing facilities have already increased energy efficiency by 20 percent and, we understand, are now pursuing an even more aggressive goal. Lynn Price, Lawrence Berkeley National Laboratory, "Near-Term Solutions for Mitigation of Industrial Sector Carbon Dioxide Emissions in California" (March 5, 2007) (presentation for California Air Resources Bd. Int'l Symposium on Near-Term Solutions For Climate Change Mitigation in California).

[2] *See* http://aqmd.gov/RiversideCement/RiversideCement.html.

[3] The 9 MMT CO2e figure accounts for potentially duplicative measures, based on our discussion with staff. In addition, emissions reductions from the industrial boiler efficiency measure are drastically

described in the scoping plan materials to improve energy efficiency, control fugitive methane emissions, and reduce flaring at refineries represent an opportunity to significantly reduce GHGs, toxic, and criteria pollutants. These measures should be packaged together as direct refinery standards and included in the Proposed Scoping Plan.

These standards should include the following:

1) Requiring all refineries to optimize the efficiency of energy intensive equipment and processes such as, boilers, heaters, distillation units, hydrogen units, and FCC units to achieve a performance equivalent to the best available technology.

2) Requiring plant-specific evaluations to optimize heating and cooling processes. An LBNL analysis found that employment of process integration (pinch analysis) resulted in site-wide energy savings of 20-30%.[4]

3) Requiring all refineries to implement the best available technology for increasing gas recovery and minimizing flaring.

4) Controlling fugitive methane emissions by removing the methane exemption from existing refinery fugitive emissions regulations. This would also include regulatory requirements for methane detection, leak detection and repair, fugitive emissions monitoring and reporting at all refineries. Furthermore, there is no reason to limit these regulatory changes to refineries alone. The same rationale that supports removal of these exemptions for refineries supports the expansion of these changes to all methane exemptions so that methane control is included in all of the smog control regulations.[5]

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underestimated in the scoping plan proposal. Estimated savings due to the replacement of old boilers in refineries alone was almost 3 MMT (April 11 CARB presentation) as compared to 0.5-1.5 MMT presented in the Draft Scoping Plan for the rest of the industrial sector. CARB's April 11 presentation is available at http://www.arb.ca.gov/cc/venting-leaks/meetings/Workshop_Presentation_Refineries_4-11.pdf.

[4] Ernst Worrell, Christina Galitsky, Lawrence Berkeley National Laboratory, *Energy Efficiency Improvement and Cost Saving Opportunities for Petroleum Refineries*, LBNL-56183, at 45 (2005).

[5] A recent study from researchers at Princeton University and the National Oceanic and Atmospheric Administration demonstrates that controlling methane emissions would result in health benefits due to reductions in the formation of background levels of smog. J.Jason West et al., *Global Health Benefits of*

Finally, recent trends towards processing heavier crude oil could lead to increased energy use and pollution emissions in California. We therefore support the development of separate emission factors for heavy crude feedstocks to discourage use of the most carbon-intensive types of crude oil.

3. Oil and Gas Production

We are pleased that CARB is considering regulations to reduce emissions from oil and gas production. (pp.39-40; C-112-114) There are three things that the Proposed Scoping Plan should address in this area: The need to develop reporting protocols through The Climate Registry; California support for mandatory national requirements, possibly based on the currently voluntary EPA Natural Gas STAR program; and the interplay between cap and trade and other regulations.

California should advocate for developing methane emissions reporting protocols as soon as possible through The Climate Registry. Current approaches to reporting methane emissions from various sources lack consensus. The Climate Registry, in partnership with the California Climate Action Registry, is in the process of developing protocols for natural gas transmission and distribution development workshops that are scheduled to begin soon.[6] It is critical to have a thorough public process in order to have broad buy-in to the final protocols, and we would like to see a strong commitment in the Proposed Scoping Plan to the development of protocols. Once these protocols are in place, it should be mandatory for these sources to report their emissions so that GHG reductions can be measured and verified. This is an important issue throughout the West, where GHG emissions from oil and gas production account for nearly a quarter of all state-wide emissions in some western states. If California plans to link with WCI, it must start with strong reporting protocols in important sectors such as this one.

California should also support mandatory emissions reductions for measures already proven to be cost-effective through the EPA Natural Gas STAR program and/or leading industry practice. We appreciate the discussion in the Appendix of potential savings from this program (p.C-113-114), but urge CARB to make these measures

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Mitigating Ozone Pollution With Methane Emission Controls, 103 PNAS No. 11, at 3988-93 (March 14, 2006).

[6] http://www.climateregistry.org/tools/protocols/protocols-in-progress/natural-gas-t-d.html

mandatory. If these emissions sources are not covered under the cap, the estimated reductions in the line items Oil & Gas Extraction GHG Emission Reduction and GHG Leak Reduction from Oil & Gas Transmission (Table 22, p.40; Table 29, p.C-114) need to be mandatory based on best practices already well-known in the industry.

The interplay between any cap and trade program and other mandatory regulations will be important. Even if GHG emissions from oil and gas production are included under a cap and trade program, it will be important to have complementary regulations to ensure reductions are achieved from all sources, even those that are too small to be regulated under the cap-and-trade program.

4. Other Industries

We are also pleased to see that CARB is considering direct regulations for the industrial sector in addition to measures aimed at cement and concrete emissions and refinery emissions, such as industrial boiler efficiency and glass manufacturing improvements. We believe these measures can provide important local pollution reduction benefits in addition to the GHG reductions. We are also strongly supportive of the off-road equipment measure including reflective coatings and glass, reduced idling, electrification, and low friction lube oil.

5. Industrial Coal Use

The Coal Emission Reduction Standard is a promising measure. However, more can be done. Despite the bulk of GHG emissions from coal in California coming from electricity production, coal is also used as an energy source in the industrial sector resulting in the release of approximately 4.6 MMT of CO2e in 2004 (CARB inventory). The combustion of coal in manufacturing processes, such as cement production, is also responsible for significant emissions of toxic pollutants such as mercury and criteria pollutants in and around California communities. We recommend expansion of the currently proposed coal emission reduction standard for electricity providers to include other industrial uses of coal. This could achieve almost 2 MMT CO2e reductions and would also result in significant improvements to air quality and public health in California.