



JOINT STATE OFFICE

August 11, 2008

Edie Chang, Chief
Program Planning & Management Branch
Office of Climate Change
California Air Resources Board
1001 I Street • P.O. Box 2815
Sacramento, California 95812

**Re: Climate Change Draft Scoping Plan
Comment on the Recycling and Composting Sector**

Dear Ms. Chang:

The California Refuse Removal Council (CRRC) is a statewide non-profit trade association comprised of over 120 companies involved in the collection and processing of organic materials that also operate approximately 20 composting facilities, 50 material recovery facilities (MRFs), 25 construction and demolition debris processing facilities, and over 12 landfills statewide. Our industry, in partnership with local government, has been instrumental in our state's efforts to attain the recycling mandate of 50% waste diversion from landfills, required by the California Integrated Waste Management Act of 1989 (AB 939), and will remain critical to the attainment of future green house gas (GHG) reduction goals.

CRRC has the following overarching comments further explained below:

- 1. Remove "recycling" from the waste sector emission reportable amounts.**
- 2. Include the adopted Early Action Items into the Scoping Plan to development GHG reduction tools and guidance for Local Government and Businesses in the near term.**
- 3. Include the Recommendations of the Economic and Technology Advancement Advisory Committee (ETAAC) Report into the Scoping Plan which include the following: Develop a Suite of Emission Reduction Protocols for Recycling; Increase commercial-sector recycling; Remove barriers to composting; and Reduce agricultural emissions through composting.**

4. Utilize the U.S. Environmental Protection Agency's Waste Reduction Model (WARM) as the existing GHG emission assessment tool to quantify the benefits of recycling in the interim, which can be modified and standardized for California use.
5. GHG Reduction Benefits due to Recycling have, in fact, been quantified, and the Scoping Plan Appendices could profile case studies and include those examples.

Comment No. 1: The "Recycling and Waste Sector" should only include landfilling and should be renamed the "Landfill Sector." Please remove recycling from the charts and tables since the emissions listed are only from Landfills.

CRRC with the California Integrated Waste Management Board and the Climate Action Team have been active at separating "Recycling" from the "Recycling and Waste" Sector at all CARB Workshops, since recycling and composting are industrial activities upstream from landfill activities, following the hierarchy that waste should be reduced, reused and recycled prior to landfilling. Waste should be a sector that only includes landfilling. Recycling is ubiquitous in all of the other sectors and need not be linked to landfilling. For example, recycling is part of the transportation with the collection of materials, industry with the processing of materials, commercial and residential activity with the generation of materials, electricity with the conversion of wood chips, and even the agricultural sector with composting.

Figure No. 1 and Table No. 1 only include emissions from landfills and should not include recycling. Recycling activity shows tremendous greenhouse gas reduction benefits and is an alternative to landfilling. By commingling these activities into one sector, the report provides an erroneous perception of recycling because the actual numbers are only emissions from landfills, and not recycling.

Comment No. 2: Include the adopted Early Action Items into the Scoping Plan to development GHG reduction tools and guidance for Local Government and Businesses in the near term.

CRRC has been engaged with the AB 32 process from the beginning and supported the CARB Expanded List of Early Action Measures. Action No. 2-6 and 2-7 both proposed that guidance and protocols be developed for business and local governments to facilitate greenhouse gas emission reductions. The Guidance and Protocols for Local Governments included stronger recycling programs with a proposed CARB hearing date of July 2008. The Guidance and Protocols for Businesses also include recycling. These guidance documents could update and verify current models that are being used to quantify GHG reduction benefits.

The California Climate Action Registry (CCAR) has deferred developing Recycling Protocols for many reasons, choosing to allocate limited staff resources to developing reporting protocols for direct and indirect emissions for a mandatory compliance programs, rather than developing Protocols for the avoided indirect emissions

associated with recycling. The level of rigor and precision required for a protocol that could potentially result in verified emissions reductions capable of being traded in a "cap and trade" could be pursued after the development of GHG Assessment Tools and guidance documents in the near term.

Comment No. 3: Include the Recommendations of the Economic and Technology Advancement Advisory Committee (ETAAC) Report into the Scoping Plan which include the following: Develop a Suite of Emission Reduction Protocols for Recycling; Increase commercial-sector recycling; Remove barriers to composting; and reduce agricultural emissions through composting.

The Scoping Plan did not recognize a series of recommendations that the ETAAC Report recommended to remove barriers to composting and reduce agricultural emission through composting. The Appendices did recognize commercial-sector recycling, but without supportive data.

The ETAAC Report recommended that CARB develop a suite of Emission Reduction Protocols for Recycling. It is essential that CARB, in consultation with CCAR, the California Integrated Waste Management Board (CIWMB) and other interested agencies and stakeholders, ensure that the AB 32 Scoping Plan include a process for developing and adopting a suite of recycling assessment tools.

The U.S. Environmental Protection Agency's Waste Reduction Model (WARM) is by far the most widely used and cited tool for evaluating the greenhouse gas impacts of recycling and should be used as a basis to develop a suite of consistent and standardized assessment tools early in the Scoping Plan process, not as regulations, but as guidance documents under the purview of the CIWMB.

Comment No. 4: Utilize the U.S. Environmental Protection Agency's Waste Reduction Model (WARM) as an existing GHG emission assessment tool to quantify the benefits of recycling in the interim, which can be modified and standardized for California use.

The EPA WARM is currently being used as the Recycling Assessment Tool and should be further refined for California use, including updating the methodology for organic materials. WARM was developed to help solid waste managers evaluate management options with respect to their GHG emissions impact. WARM calculates the emissions impacts of several waste management options (landfilling, recycling, composting, and combustion with energy recovery) for 34 separate categories of waste material. The WARM emission factors are based on an EPA study entitled "Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks", originally published in 2002 and now in its 3rd edition (September 2006, EPA530-R-06-004).

The WARM model is widely acknowledged to correctly document the important connection between recycling and reduced greenhouse gas emissions for most material types (notwithstanding controversy over the WARM model's treatment of organic

materials). CRRC has been active at CARB Workshops and the California Climate Action Registry (CCAR), promoting the interim use of a modified WARM model to fit California current policies. The WARM model could be modified in certain applications to discount carbon storage in landfills and has been utilized using site specific numbers for haul distance of recycled products. CCAR members are using the WARM model for reporting the benefits of recycling as "optional reporting".

Comment No. 5: GHG Reduction Benefits due to Recycling has, in fact, been quantified, and the Scoping Plan profile case studies should include those examples.

The GHG reductions benefits of recycling have been promoted by many agencies and programs and have been quantified for many case studies. The Scoping Plan should publish these case studies to demonstrate the potential benefits of recycling. A sample of case studies is presented below:

CARB: The AB 32 Fact Sheet from the CARB Home Page has conversion factors that equate 1 million metric tons of CO₂ equivalents to 556,000 tons of waste being recycled instead of going to a landfill in California. If 4.2 million tons of the 42 million tons of waste being landfilled today were to be recycled (just 10% further waste reduction), almost 7.5 million metric tons of CO₂ equivalent would count as avoided emissions with increased recycling, placing recycling in the top 7 GHG reduction strategies.

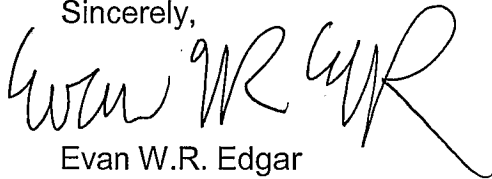
California Department Conservation: The Department's recent report entitled, *Six Month Report of Beverage Container Recycling and Significant Carbon Reductions* is an excellent example of the application of the WARM model, estimating that in the first six months of 2007, California beverage container recycling efforts saved energy equivalent to over 2.5 million barrels of oil, while reducing greenhouse gas emissions by 293,000 metric tons carbon equivalent (MTCE).

Recycling Collection Routes: Adding a collection route to retrieve commingled recyclables from residential accounts has a net benefit of 2.7 MTCO₂-E for each ton of recyclables collected (Edgar and Associates) with biogenic landfill carbon storage factored out, and 2.0 MTCO₂-E if biogenic landfill carbon storage is included. The benefit of GHG reductions due to recycling the materials collected; outweigh the fuel use to collect the materials and the electricity to process the material by a factor to 50 to 100 times based on local haul distance and fuel type used.

We believe that the GHG benefits from recycling can be quantified, and that the Scoping Plan and the Appendices should be revised to recognize the current WARM model as an interim tool, until a standardized WARM model for California can be developed by the Climate Action Team with the California Integrated Waste Management Board.

Should you have any questions, please call us at (916)739-1200 or (916) 965-6700.

Sincerely,



Evan W.R. Edgar
CRRC



George Eowan
CRRC

cc: James Goldstene, Executive Officer, CARB
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