US Composting Council



June 7, 2010

To: The Climate Action Reserve
From: The US Composting Council

Re: **Comments on CAR Organic Waste Composting Protocol Public Review**

The US Composting Council (USCC) is pleased to comment on the Public Review Draft of the Climate Action Reserve's Organic Waste Composting Project Protocol. We offer strong support to the reserve in its efforts to produce practical protocols that provide incentives for composting and other organic waste management projects that reduce greenhouse gas emissions.

The US Composting Council is a 501(c)(6) professional and trade organization dedicated to the development, expansion and promotion of the composting industry based upon science, principles of sustainability, and economic viability. We provide a unified voice for the growing composting industry.

Comments:

1. **Include yard waste and industrial food waste as eligible waste streams (Sections 2.2, 3.4.1)**

The protocol currently includes only "MSW food waste" as an eligible waste stream. However, we strongly urge CAR to consider other organic waste streams, such as industrial food waste and (green) yard waste, for eligibility in this protocol.
While we support a standardized, performance standard approach, this protocol already requires project- and waste stream-specific information for determination of additionality. It would add very little extra burden to require the same performance standard and legal requirements tests that are required for MSW food waste to also determine the eligibility of yard waste and industrial food waste. If it can be verifiably determined that industrial food waste or yard waste streams were landfilled for a period of at least 36 months prior to the project, and that there are no state or local diversion mandates for these waste streams (as is currently required for grocery store food waste), then eliminating these streams from eligibility for offset incentives based on a higher-tier "common practice" argument would be illogical.
We agree with the statement in Appendix B regarding potential inclusion of specific "niche" industrial food waste streams into food waste offset methodologies, but feel that it would be entirely appropriate to do so in this current protocol. However, we

disagree with the conclusion reached in Appendix B that a performance standard for yard waste "cannot be established", since the project-specific eligibility tests required for grocery store food waste could just as easily be applied to yard waste, thereby ensuring additionality of any credits issued.

**2. Community based projects resulting from local food waste diversion mandates should be eligible for carbon credits (Section 3.4.2.1)**

In CAR's recently approved Organic Waste Digestion Project Protocol (Oct 2009), a food waste stream subject to a local food waste diversion mandate passes the legal requirement eligibility test if the project start date is six months before or after the passage or enactment of the mandate. However, for reasons that are unclear, the same waste stream would not be eligible under the proposed Composting Project Protocol. Inconsistent application of eligibility requirements across organic waste management project types could create an unnecessary and arbitrary 'technology bias' by providing carbon incentives for anaerobic digestion projects but not for composting projects, even though they would be avoiding the same landfill methane emissions.

CAR's treatment of local food waste diversion mandates coupled with OWD projects was a step in the right direction, the lack of similar treatment for composting projects is not only unjustified but a big step backwards. Community-based projects that lead to either organic waste composting or anaerobic digestion should be eligible to receive carbon credits as long as the other eligibility, monitoring and verification requirements of the protocol are met.
The idea that community-level decisions enabled through legal mandates, which lead to reductions in GHG emissions, can be considered part of a valid carbon offset 'project' is an interpretation of additionality that is consistent with the Kyoto Protocol and has been has been accepted, at least in theory, by the CDM executive board[1]. Community-level mandates and additionality are not necessarily mutually exclusive. It would also be both highly unfortunate and counterproductive for the CAR program to create perverse incentives for local communities to *not* pass laws that would create GHG benefits.

We strongly believe that local communities and community-based public-private partnerships should have the same access to carbon incentives as the private sector, and should not be discouraged from passing laws that would contribute to additional GHG benefits. We urge CAR

[1] The CDM Executive Board refers to 'Type E-' policies that are national and/or sectoral policies or regulations that give comparative advantages to less emissions-intensive technologies. The Executive Board has provided guidance to the effect that, where Type E- policies have been implemented after 11 November 2001, the impact of those policies is not to be taken into account when developing a baseline scenario, i.e., the baseline scenario should refer to a hypothetical situation without the national and/or sectoral policies or regulations being in place (EB 22, Annex 3). At EB 39, the Executive Board has also stated that its E+/E- guidance is to be taken into account in the investment analysis of a project activity. At EB 54 draft "Guidelines on the treatment of national and sectoral policies in the demonstration and assessment of additionality" were considered and further revisions were requested. Also see CDM Rulebook FAQ (http://cdmrulebook.org/1628).

to maintain cross-protocol consistency and continue to set thoughtful and important precedents regarding additionality and community action.

**3. The baseline and project emissions quantification approach is overly conservative (Section 5)**

Although we support the general approach taken to quantifying baseline emissions for organic materials diverted from landfills, we feel that the use of highly conservative default estimates for several individual parameters, compounded with a model correction factor 'to account for model and waste composition uncertainties', leads to overly conservative estimates of project related emission reductions, which undervalue the actual greenhouse gas reduction benefits of composting projects.

*a. Landfill gas collection efficiency*

In particular, the default values provided for landfill gas collection efficiency ($LCE_x$) of 25%, 50% and 75% in years 3, 4 and 5-10 (respectively) following waste disposal are not well supported by scientific literature: no references are cited for the 25% and 50% values (presumably these represent CAR's judgment following technical workgroup discussions) and the citation for the 75% value appears to be inaccurate (see below).

Rather than simply assuming that all landfills have active gas collection and combustion systems with presumptive collection efficiencies, a more accurate standardized approach might be to assume average collection efficiencies for *all* active US landfills, both with and without gas collection systems, based on national landfill methane emission and recovery data as reported in the National Inventory of US Greenhouse Gas Emissions and Sinks. Given that the total national landfill methane recovery rate is currently under 50%[2], it is difficult to justify a standardized baseline that assumes 50% collection efficiency only 3 years after waste disposal and 75% thereafter for all diverted food waste (even when assuming a trend toward increased landfill gas collection on non-NSPS regulated landfills).

*b. Degradable organic carbon*

The selection of default values for degradable organic carbon of food waste (0.137 for $DOC_{FW,S}$ and 0.83 for $DOCf_{FW,S}$) derived from a bench-top study, although an improvement on IPCC Tier 1 default values, would yield baseline emissions ($BE_{FW,S}$) that are about 12% less than if using food waste-specific factors from the most recent EPA National Inventory (0.26 for $DOC_{FW,S}$ and 0.5 for $DOCf_{FW,S}$)[3]. The use of such factors would be consistent with EPA National GHG accounting methodologies, and might be more appropriate as a Tier 2 approach under IPCC guidelines.

[2] EPA Inventory of US Greenhouse Gas Emissions and Sinks, 1990-2008 (2010), Table 8.3.
[3] EPA Inventory of US Greenhouse Gas Emissions and Sinks, 1990-2008 (2010), Annex 3, p. A-295.

*c. Composting process emissions*

The default composting process emission factors in the protocol are largely consistent with EPA National Inventory factors and even add welcome refinements based on composting process types. However, there is a wide variety of in-vessel and synthetic covered systems that are not included or well anticipated by the categories in Table 5.2. For example, some forced-aeration systems with synthetic covers may perform as well as, or better than, systems with compost covers. We recommend that project developers should have the opportunity to utilize site- or technology-specific emission factors for $CH_4$ or $NO_2$ if sufficient evidence is available. Incentives for composters to optimize their process to further reduce GHG emissions should be enhanced, not removed, by the protocol.

**4. Confirmation of the reference for the use of 75% landfill gas collection efficiency (Box 5.1)**

We were unable to confirm that the 75% LFG collection efficiency default value was taken from the *EPA Inventory of US Greenhouse Gas Emissions and Sinks, 1990-2007 (2009)*, as cited in footnote 23 (p. 18). Perhaps this was either a derived value, or the authors meant to cite *EPA Climate Leaders GHG Inventory Protocol for direct emissions from landfills (Oct 2004)* (p. 13), or EPA's *U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reductions (September 1999)*. However, neither of these references cites support for the 75% value other than "waste management industry assumption."

The most commonly cited reference for the use of 75% as default LFG collection efficiency appears to be an unpublished EPA internal draft memo from 2002[4]. However, a recent MSW (industry sponsored) review also proposes 75% as a default for landfills with an intermediate soil cover and active LFG collection system, but only 60% for landfills or portions of landfills with daily soil cover and active LFG collection systems[5].

**5. Flexible monitoring requirements should allow oxygen monitoring, in addition to time and temperature requirements, as a BMP (Section 6.3)**

We agree that time, temperature and turning frequency BMP monitoring is an appropriate and practical method for ensuring aerobic composting. However, in cases where batch oxygen concentrations are directly monitored on a daily basis, documenting that oxygen concentrations remain above 8% should be sufficient to demonstrate aerobic status, regardless of temperature.

Additionally, the temperature measurement requirements in the Draft Protocol are highly prescriptive with regard to location and depth, and may not be appropriate for all situations. They should probably be indicated as general guidance rather than absolute requirements. Furthermore, the draft calls for daily temperature monitoring until below 50° C, which may be

[4] Leatherwood, C. 2002. Review of Available Data and Industry Contacts Regarding Landfill Gas Collection Efficiency, Draft Memorandum to Brian Guzzone, Meg Victor, U.S. EPA, October 24, 2002.

[5] Current MSW Industry Position and State-of-the-Practice on LFG Collection Efficiency, Methane Oxidation, and Carbon Sequestration in Landfills, prepared for Solid Waste Industry for Climate Solutions by SCS Engineers, Version 2.2, Revised January, 2009

unnecessarily onerous for many operations. Instead, after a batch has reached its 55° C time and turning requirements, weekly monitoring until the temperature drops below 50° C should be sufficient to ensure an aerobic process.

Sincerely,

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