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Dr. Holly Stallworth, Ph.D.
Economist and Designated Federal Officer
Clean Air Scientific Advisory Committee (CASAC)
Environmental Protection Agency
Mail Code 1400R
1300 Pennsylvania Ave., NW
Washington, D.C. 20004

Re: May 9, 2012 SAB Review of EPA's Draft Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources

Dear Dr. Stallworth:

Covanta Energy Corporation ("Covanta") is pleased to offer comments in response to the Scientific Advisory Board's May 9, 2012 deliberative draft review of the U.S. EPA's *Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources.* Covanta is a national leader in developing, owning and operating facilities that convert municipal solid waste ("MSW") into renewable energy (energy from waste or "EfW" facilities). EfW or waste to energy ("WTE") facilities provide important waste management services to municipalities seeking to avoid or minimize use of landfills, while using MSW as a fuel source for generating renewable energy. Covanta owns and/or operates over 40 EfW facilities in the U.S. and also owns and/or operates other renewable energy facilities, including six biomass to energy facilities as well as landfill gas to energy facilities.

Our core business of using MSW to generate electricity is widely recognized internationally as a GHG mitigation technology, including by the U.S. EPA[1], U.S. EPA scientists,[2] the Intergovernmental Panel on Climate Change ("IPCC"),[3] the World Economic Forum,[4] the European Union,[5,6] and other researchers.[7,8] EfW facilities in developing countries have been approved to generate carbon offset credits under the Kyoto Protocol's Clean Development Mechanism.[9] Here in the U.S., the Lee County facility in Florida has been selling offset credits for over two years under the Verified Carbon Standard ("VCS").[10] The Hillsborough County facility in Florida has also been recently validated as a carbon offset project. EfW's GHG mitigation is attributable to the avoidance of landfill methane emissions, the displacement of fossil fuel fired grid electricity, and the recovery of ferrous and non-ferrous metals from MSW for recycling.

Biomass, particularly from waste or residual sources, can make a major contribution to the U.S. renewable energy supply, thereby reducing GHG emissions associated with our fossil fuel dominated electrical generation system. However, proper accounting is critical to ensure that

we do not inadvertently promote an indiscriminate use of our biomass resources. To this end, we offer the following specific comments.

The Biogenic Accounting Factor ("BAF") for CO_2 emissions associated with the biogenic portion of MSW should be set to zero.

We support the concept of default BAFs for each feedstock categories introduced by the SAB and believe that this can be an effective tool to recognize the unique properties of MSW and waste and residual biomass. Biogenic emissions from the combustion with energy recovery of the biogenic portion of MSW, waste biomass, and residuals from sustainably managed forestry operations with energy recovery are widely recognized as having significant climate benefits. In the *Science* article "Beneficial Biofuels – The Food, Energy, and Environment Trilemma," the authors succinctly observe that "the search for beneficial biofuels should focus on sustainable biomass feedstocks that neither complete with food crops nor directly or indirectly cause land-clearing and that offer advantages in reducing greenhouse-gas emissions."[11] The authors identify five feedstocks, including municipal and industrial wastes and sustainably harvested wood and forestry residues that meet this definition. In the influential article "Fixing a Critical Climate Accounting Error," the authors specifically distinguish between residues or biowastes and other sources of biomass.[12]

The GHG benefits of these feedstocks are directly related to the fact that they do not lead to land use change, either directly, or indirectly. As described in the preamble to the final revisions to the U.S. EPA's Renewable Fuel Standard ("RFS2"), the EPA agreed with this assessment, stating that "renewable fuel produced from feedstocks consisting of wastes that would normally be discarded or put to a secondary use, and which have not been intentionally rendered unfit for productive use, should be assumed to have little or no land use emissions of GHGs."[13]

The environmental and economic benefits of using waste biomass and residuals are well recognized, including by prominent environmental NGOs. A statement coauthored by a diverse set of environmental NGOs including Earthjustice, Environment Northeast, National Audubon Society, the Natural Resources Defense Council, the Sierra Club, The Wilderness Society, and the Union of Concerned Scientists states "renewable biomass resources, such as agricultural, forestry, and urban residues, as well as some dedicated energy crops, can be used to produce transportation fuels, electricity, and heat. These types of bioenergy can create jobs in rural communities, cut carbon pollution, and reduce our dependence on imported oil."[14] A recent paper co-authored by researchers from The Nature Conservancy and the University of Minnesota found that the use of waste biomass, including slash and thinning from sustainable forestry and crop residues "incur[s] little or no carbon debt and can offer immediate and sustained GHG advantages."[15] The World Wildlife Federation (WWF) recommends that the use of waste and by-products be promoted to reduce emissions associated with food crop displacement.[16]

Furthermore, the authors of the recent Manomet study, which properly recognized that certain sources of standing timber used for bioenergy in Massachusetts are not carbon neutral over the short term, recognized the benefit of waste wood and residues used for energy. In a clarification issued on June 21, 2010, the authors stated "when the wood used to fuel an energy facility is all, or nearly all, logging debris that would have decomposed in the forest anyway, the [carbon] debt period can be relatively short." Similar statements were made by other authors of the study, including the Pinchot Institute for Conservation, which stated the study did "not reflect

that electric power generation from forest residuals and waste wood results in minimal if any net carbon emissions" in a press release dated June 10, 2010. The Biomass Energy Resource Center ("BERC") observed "the study also only looked at green woody biomass from forests. It did not look at 'other biomass' as suggested by [the Associated Press], much of which may add no new carbon to the equation (example: forest residues or other wood that would decompose quickly anyway)."

The accounting approach should be limited to addressing emissions of biogenic CO_2. We are concerned with the inclusion of fossil CO_2, methane, nitrous oxide, and other emissions in the SAB's recommendations. While many of these gases are in fact inter-related, their inclusion is more appropriate in life cycle accounting for specific processes, products, and technologies as opposed to a biogenic CO_2 accounting standard. Not covered by the biogenic deferral, these other emissions are already captured in the U.S. EPA's Mandatory Reporting Rule ("MRR") and are already subject to the Title V and Prevention of Significant Deterioration ("PSD") programs. The inclusion of these other emissions in biogenic CO_2 accounting would significantly complicate existing regulatory mechanisms and result in potential double counting.

For example, EfW facilities are already required to report their fossil CO_2, nitrous oxide, and methane emissions as part of the MRR. Every quarter, EfW facility operators collect samples of their stack gas to determine the biogenic fraction of the total CO_2 through radiocarbon dating via ASTM D6866-08. The consideration of fossil CO_2 emissions from MSW combustion in the accounting for the biogenic portion of the emissions would result in double counting. To avoid these types of complications, the accounting methodology should focus strictly on the emissions of biogenic CO_2. Maintaining this division will also allow the EPA and the SAB from completing life cycle GHG inventories for each conceivable use of biomass.

The U.S. EPA should specifically incorporate life cycle and off-site emissions accounting implications in its implementation of the PSD and Title V programs for GHG emissions. The more appropriate place for a complete accounting of all of the emissions and potential emissions avoidance is at the permitting level. In addition to addressing potential emissions from a site, the permitting programs should be amended to account for significant changes in off-site emissions. For example, the ability of EfW facilities to reduce GHG emissions is based on a life cycle accounting of four major greenhouse gas related processes, three of which occur off-site:

1. Anthropogenic, or fossil CO_2, GHG emissions from combustion of waste components (plastics, textiles, etc.) made from fossil fuels such as oil and natural gas;
2. Avoidance of CO_2 from fossil fuel fired power plants on the local grid occurs due to the EfW facility generating renewable electrical power or steam;
3. Avoidance of landfill methane emissions from waste, including factoring-in methane capture, that would have been landfilled in the absence of the EfW facility; and
4. Avoidance of extraction and manufacturing GHG emissions due to ferrous metal recovery and recycling at EfW facilities.

Without a mechanism to account for avoided GHG emissions, EfW facilities are incorrectly identified as major greenhouse gas sources while in fact, they should be considered Best Available Control Technology (BACT) for the management of post-recycled MSW.

Thank you for the opportunity to submit comments on the proposed regulatory approach and we look forward to continued dialogue on biomass carbon dioxide emissions accounting. Please do not hesitate the undersigned at mvanbrunt@covantaenergy.com or (862) 345-5279 if you have any questions.

Sincerely,

Michael E. Van Brunt, P.E.
Director, Sustainability

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[1] USEPA, Air Emissions from MSW Combustion Facilities webpage, accessed July 26, 2011 http://www.epa.gov/epawaste/nonhaz/municipal/EfW/airem.htm#6

[2] Kaplan, P.O, J. DeCarolis, and S. Thorneloe, 2009, Is it better to burn or bury waste for clean electricity generation? *Environ. Sci. Technology* 43 (6) pp1711-1717. Available at: http://pubs.acs.org/doi/abs/10.1021/es802395e

[3] EfW identified as a "key mitigation measure" in IPCC, "Climate Change 2007: Synthesis Report. Contribution of Work Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp. Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

[4] EfW identified as a key technology for a future low carbon energy system in World Economic Forum. *Green Investing: Towards a Clean Energy Infrastructure.* January 2009. Available at: http://www.weforum.org/pdf/climate/Green.pdf

[5] EU policies promoting EfW as part of an integrated waste management strategy have been an overwhelming success, reducing GHG emissions over 72 million metric tonnes per year, see European Environment Agency, *Greenhouse gas emission trends and projections in Europe 2009: Tracking progress towards Kyoto targets http://www.eea.europa.eu/publications/eea_report_2009_9*

[6] European Environmental Agency (2008) Better management of municipal waste will reduce greenhouse gas emissions. Available at: http://www.eea.europa.eu/publications/briefing_2008_1/EN_Briefing_01-2008.pdf

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[9] Clean Development Mechanism Executive Board: "Approved baseline and monitoring methodology AM0025: Avoided emissions from organic waste through alternative waste treatment processes." Available at: http://www.cdm.unfcc.int/methodologies/DB/3STKBX3UY84WXOQWIO9W7J1B40FMD

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[11] Tilman *et al.* Beneficial Biofuels – "The Food, Energy, and Environment Trilemma" *Science* 325: 270-271

[12] Searchinger *et al.* "Fixing a Critical Climate Accounting Error" *Science* 326: 527-528.

[13] "Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule." *Federal Register* **75**, 58 (March 26, 2010): 14670-14904.

[14] "Establishing a Sound Framework for Bioenergy in Clean Energy and Climate Protection Legislation" http://docs.nrdc.org/energy/files/ene_10042101a.pdf

[15] Fargione, J., J. Hill, D. Tillman, S. Polasky, P. Hawthorne. "Land Clearing and the Biofuel Carbon Debt" *Science* Published online February 7, 2008; 10.1126/science.1152747.

[16] WWF. "WWF Position Paper on Bioenergy – June 2008." http://assets.panda.org/downloads/wwf_position_paper_on_bioenergy_291107.pdf