



NATIONAL COUNCIL FOR AIR AND STREAM IMPROVEMENT, INC.

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Dr. Holly Stallworth

EPA Designated Federal Officer

EPA SAB Panel - Carbon Dioxide Accounting for Emissions from Biogenic Sources

Sent via email: Stallworth.Holly@epa.gov

Dear Dr. Stallworth,

We would like to reiterate and clarify some comments we previously made on the draft report of the SAB Panel regarding its review of EPA's 2014 draft Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources.

First, while almost all woody mill residues in the US are used for energy, fibrous feedstock (for pulp or panels) and various by-products, the small amounts that remain are mostly landfilled. If a significant emissions liability was attached to combustion-related biogenic CO₂, it is reasonable to assume that disposal by landfilling would be among the alternative management scenarios for materials now burned for energy within the forest products industry. In contrast to, for instance, nitrous oxide releases from fertilizer application, methane is directly released from the decomposition of the carbon in the biomass in anaerobic landfills. The last version of the SAB report still indicated (page B-10 lines 14 and 15) that "...wood waste carbon is generally not subject to loss via methane...". We want to reiterate that this is incorrect and should be modified. The literature is clear that while the amounts of methane are small compared to the amounts generated by municipal solid waste, woody materials decomposing under anaerobic conditions do release methane (e.g. see Wang et al. 2007¹). We also want to observe again that in addition to "wood waste", there are a range of manufacturing residuals from pulp, paper and wood product manufacturing (e.g. waste

¹ Wang, X., Padgett, J.M., De la Cruz, F.B. and Barlaz, M.A. 2011. Wood biodegradation in laboratory-scale landfills. *Environmental Science & Technology* 45(16):6864-6871. <http://dx.doi.org/10.1021/es201241g>

water treatment residuals and recycling residuals, bark) that may be landfilled and which have been demonstrated to generate methane when contained under anaerobic conditions.

Second, while the stock-based formula proposed by the panel to determine the Biogenic Assessment Factors (BAF) accounts for the carbon mass balance, it does not differentiate between the different greenhouse gases in which carbon can be released (i.e., carbon dioxide and methane). Methane is a greenhouse gas significantly more potent than carbon dioxide and, for some feedstocks, the reference case may involve releases of methane (e.g., decay in landfills) with important implications for climate change, which do not occur in the policy case. Therefore, to understand the impacts of methane releases when applying the SAB stock-based formula, it would be necessary to apply other methods or, in other words, use an hybrid of the stock-based based formula and flow information.

Finally, in addition to a formula based on the difference in carbon stocks at the end of the temporal horizon (endpoint method, BAF_T), the panel offered an alternative based on the accumulation of annual differences in carbon stocks on the land (tonne-year or weighted average impact of carbon storage method, $BAF_{\Sigma T}$). The objective of this second method is to account for “residence time” of CO_2 emissions, i.e. the length of time emissions are resident in the atmosphere during the selected time horizon. This method provides an indicator of the contribution of biogenic CO_2 emissions to radiative forcing. However, this method proposed by the SAB provides no information on the contribution of non- CO_2 emission such as methane, on radiative forcing. To do so, it would be necessary to apply a dynamic calculation of cumulative radiative forcing as a function of time. This can be done by using the same formula used by IPCC to develop the global warming potentials at different time horizon but by integrating this formula continuously over time.

We appreciate the opportunity to provide these comments.

Sincerely,

Caroline Gaudreault and Reid Miner