



## **Comments of Biotechnology Industry Organization on Biogenic Carbon Dioxide Emissions from Stationary Sources – Assessment Framework**

**March 20, 2015**

The Biotechnology Industry Organization (BIO) appreciates the opportunity to submit comments to the U.S. Environmental Protection Agency (EPA) Science Advisory Board's (SAB) Biogenic Carbon Emissions Panel on EPA's revised "Framework for Assessing Biogenic CO<sub>2</sub> Emissions from Stationary Sources" ("the Framework").

### **I. Introduction**

BIO is the world's largest biotechnology organization, with over 1,000 member companies worldwide. Among its membership, BIO represents over 85 leading technology companies in the production of conventional and advanced biofuels, renewable chemical intermediates, bioplastics, and other bioproducts, bioprocesses, biocatalysts among other sustainable solutions to energy and climate change challenges. BIO also represents the leaders in developing new crop technologies for food, feed, fiber, and fuel.

### **II. Overview**

BIO commends EPA for recognizing that biomass can play an important role in avoiding and reducing overall greenhouse gas emissions (GHGs). Given the significance of biomass to reducing GHGs, the final Framework issued by EPA should encourage and promote the use of biomass for the production of biofuels, renewable chemicals and products, and other forms of bioenergy. Consistent with historic practice and international standards, the Framework should treat biogenic carbon emissions—emissions from the combustion of all renewable biomass, including forest products and waste as opposed to fossil fuel sources like coal—as carbon neutral.

#### *A. Accompanying Memo from Administrator McCabe*

BIO appreciates EPA Administrator McCabe's statement that she intends "to propose revisions to the PSD rules to include an exemption from the Best Available Control Technology (BACT) requirement for GHGs from waste-derived feedstocks and from non-waste biogenic feedstocks derived from sustainable forest or agricultural practices."<sup>1</sup>

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<sup>1</sup> U.S. Environmental Protection Agency, Memorandum from U.S. EPA Administrator Janet McCabe to EPA Air Division Directors, Units 1-10, November 19, 2014, at 3 [Hereinafter "McCabe Memo"].



However, we believe that all renewable biomass is sustainable and should be exempt from carbon accounting. We are encouraged by Administrator McCabe's view that many states can and should rely on biomass to meet carbon reduction targets under the Power Plant Rule (111(d)). BIO and its members view these statements as positive signals of EPA's intent to recognize the carbon benefits of biomass to the overall reduction of GHGs. This recognition and message should be made even more explicit in the final version of the Framework.

BIO has closely monitored and contributed to the work of the Science Advisory Board (SAB) as it has worked to help finalize a biogenic carbon accounting framework. As our comments to the Agency have demonstrated, we believe that the final Framework should reflect the conclusion that biomass used for the production of biofuels and renewable chemicals and products, including renewable biomass feedstocks, do not result in lasting increases in CO<sub>2</sub> concentrations in the atmosphere, and therefore emissions associated with their utilization should not be treated as pollutants subject to regulation. Furthermore, as stated above, the technical assessment included in the Framework should explicitly recognize and encourage the carbon benefits of renewable biomass as a feedstock for bioenergy production and should not set up renewable biomass to be subject to further regulations. Other notable regulatory bodies have made similar conclusions, and BIO believes that EPA should follow suit. For instance, according to the carbon accounting system of the Intergovernmental Panel on Climate Change (IPCC), biomass feedstocks should be accounted as carbon neutral in emissions – to avoid double counting of carbon emissions and loss of carbon sinks.<sup>2</sup>

### III. Temporal Scale and Future Baseline Approach Considerations

#### A. Temporal Scale Considerations

The SAB has requested comment on what criteria could be used when considering different temporal scales and the tradeoffs in choosing between them in the context of assessing the net atmospheric contribution of biogenic CO<sub>2</sub> emissions from the production, processing, and use of biogenic material at stationary sources using a future anticipated baseline.

With respect to renewable biomass, including energy crops, BIO suggests that the final Framework should include shorter temporal scales to most accurately reflect the time from harvest to replenishment of the biomass. This type of scale would most closely

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<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC). 1996. Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme. Published: IGES, Japan. 3 Volumes.



represent the carbon lifecycle reflecting minimal, if any, net carbon contribution to the atmosphere from the combustion of biomass.

Criteria to be used in selecting the proper temporal and special scales for assessment should include future yield improvement, improvement of land management techniques, and adoption of new or more efficient technology. EPA can help further incentivize these improvements by ensuring the final Framework encourages, and does not burden, the widespread use of biomass for the production of biofuels and renewable chemicals and products.

#### *B. Biomass Feedstock Scale and Future Baseline Approach Considerations*

The SAB has also requested comment on (1) the appropriate scale of biogenic feedstock demand changes for evaluation of the extent to which the production, processing, and use of biogenic material at stationary sources results in a net atmospheric contribution of biogenic CO<sub>2</sub> emissions using a future anticipated baseline approach, and (2) any general recommendations for what a representative scale of demand shock could be.

BIO and its members believe that biomass used for the production of biofuels and renewable chemicals and products does not result in a net atmospheric contribution of biogenic CO<sub>2</sub> emissions, and we believe the final Framework should reflect this conclusion.

Should EPA continue to move forward with an accounting approach that examines and attempts to determine the extent to which the production, processing, and use of biogenic material at stationary sources results in a net atmospheric contribution of biogenic CO<sub>2</sub> emissions using a future anticipated baseline approach, EPA must ensure that the scale used and the resulting carbon emissions presumptions are the most accurate ones available to reflect actual biomass use and effects. A recent study by Bruce Babcock and Zabid Iqbal highlights the significance of utilizing scale and corresponding carbon emissions assumptions for a future baseline approach that most accurately reflects the market.<sup>3</sup> In sum, the authors found that contrary to assumptions that land extensification would be the primary strategy for developing sufficient energy crops to meet increased demand for biofuels production, in fact land intensification has been the main preference to accomplish this end due to resource availability and opportunity costs.

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<sup>3</sup> Babcock, Bruce A., and Iqbal, Zabid, "Using Recent Land Use Changes to Validate Land Use Change Models," Center for Agricultural and Rural Development, Iowa State University, November 2014 [Hereinafter "The Babcock Study"].



It is crucial that the final Framework reflect the distinction between fuels and other forms of energy made from traditional fossil fuels, which make permanent, irreversible carbon emissions contributions to the atmosphere, and those made from biomass, including renewable biomass, which do not. For instance, through the natural process of plant respiration, new growth of renewable biomass absorbs and recycles CO<sub>2</sub>. In short, the combustion of biomass for the production of biofuels and other bioenergy sources does not permanently increase atmospheric CO<sub>2</sub> concentrations, especially when renewable biomass is used as the feedstock and is replenished. For this reason, the IPCC has concluded that so long as there is not "a long-term decline in the total carbon embodied in standing biomass," combustion of biogenic materials for the production of biofuels and renewable chemicals and products does not appreciably add to atmospheric carbon concentrations and is, therefore, carbon neutral. [CITE] It is for this reason that under IPCC guidelines national level inventories of GHGs exclude CO<sub>2</sub> emissions from combustion of biogenic materials for the production of fuels and that biogenic carbon is instead accounted for based on long-term changes in biomass stocks and land use.

### *C. Lifecycle Methodologies and Considerations*

BIO believes that while there is no one-size-fits-all approach to GHG accounting, any standardized life-cycle analyses should be based on internationally accepted and recognized standards, such as those prescribed by the International Standards Organization (ISO). Where international standards have not been adopted for particular purposes, fuels, or end-uses, EPA should take special care to consider the widest possible peer review of methodologies and assumptions and to adopt only methodologies that enjoy widespread international consensus. This would help facilitate the ability of U.S. companies using biomass for biofuels and renewable chemicals and products production to participate in U.S. and world markets.

BIO does not support the concept of a so-called carbon debt for biogenic carbon sources. Under ISO methodology lifecycle accounting for biogenic carbon begins with the uptake of carbon by the feedstock biomass and concludes with its combustion or alternate end use. The concept of carbon debt erroneously initiates carbon accounting with combustion and assumes a necessary payback period of carbon uptake by subsequent biomass growth. This methodology is inconsistent with ISO standards and should be rejected.

BIO cautions EPA to ensure that any methodology adopted may encompass specific situations and realities. For example, while there may be achievable consensus on methodologies to use for measuring direct emission impacts in each stage of the biofuel production lifecycle, there is no similar consensus on methodologies to use to take account of so-called indirect effects, such as land use change and opportunity costs. Accordingly, absent a statutory directive to EPA to adopt indirect lifecycle measurements



of carbon emissions, EPA should abstain from prescribing particular methodologies to measure or take account of indirect land-use change or opportunity costs. Instead, EPA should study and describe the numerous, complex considerations and assumptions that would need to be considered in accounting for indirect lifecycle emissions impacts, such as indirect land use change from the use of biomass from agricultural or forestry products.

There is currently insufficient scientific evidence on which to reach consensus on appropriate assumptions on certain land use and land use change factors, including the type of land used to increase biomass feedstocks and certain agricultural practices. BIO believes such considerations and factors fall outside the special expertise of EPA and would require EPA's engagement of experts from other agencies, such as the Department of Agriculture and the Department of Interior. EPA should thus move forward very carefully and deliberately if it attempts to adopt lifecycle methodologies that will require it to consider and to measure lifecycle carbon impacts of fuels and activities attributable to land use and land use change.

#### IV. Conclusion

BIO appreciates the opportunity to comment to the SAB on EPA's Framework. As explained in detail above, BIO believes that the final version of the Framework should encourage the use of biomass as a feedstock for the production of biofuels, renewable chemicals and products, and other forms of bioenergy. As such, the Framework should ensure that biogenic carbon emissions are treated as carbon neutral for accounting purposes under the Framework.