



National Alliance of Forest Owners  
*Investing in the Future of America's Forests*

December 21, 2011

Submitted via email

EPA Science Advisory Board Biogenic Emissions Panel  
c/o Holly Stallworth, Ph.D.  
Designated Federal Officer  
EPA Science Advisory Board  
United States Environmental Protection Agency  
1300 Pennsylvania Avenue, NW  
Washington D.C. 20004  
[stallworth.holly@epa.gov](mailto:stallworth.holly@epa.gov)

**Re: National Alliance of Forest Owners' Comments to the Science Advisory Board  
Biogenic Carbon Emissions Panel**

Dear Dr. Stallworth and Panel Members:

The National Alliance of Forest Owners (NAFO) respectfully is writing to follow up regarding the Environmental Protection Agency's (EPA's) Science Advisory Board Carbon Emissions Panel's (Panel's) October 25-27, 2011 meeting to review EPA's draft *Accounting Framework for Biogenic CO<sub>2</sub> Emissions from Stationary Sources* (Sept. 2011) (*Accounting Framework*). NAFO representatives appreciated the opportunity to attend the Panel's October 2011 meeting as part of our ongoing interest in utilizing our expertise as the leading organization representing private forest owners in helping respond to questions and contribute to solutions moving forward. In furtherance of that ongoing goal, we offer these comments in response to the Panel's discussions and the concerns raised by Panelists throughout the meetings. NAFO and its members are key stakeholders who contribute to the solutions that private forests and forest biomass bring to lowering greenhouse gas (GHG) emissions and, in turn, are keenly impacted by any controls or regulations on biogenic GHG emissions. These comments are intended to supplement comments already provided to the Panel, but below we address specific questions that arose during the meeting.

During the discussion at the panel meeting there appeared to be little dispute among the panelists that biomass energy provides important climate benefits and that EPA should adopt GHG emissions regulations that recognize biomass energy's role in mitigating climate change in an efficient and cost-effective manner. We believe the Panel can help ensure EPA achieves this goal by recommending that the agency pursue a policy that is based on sound science, reflects the realities of the forestry, forestry products, and biomass energy sectors, and is not needlessly complex. Specifically, the Panel should maintain its focus on the ultimate objective of EPA's regulation of certain GHG emissions – overall mitigation of atmospheric GHG concentrations. As described below, we strongly believe this objective can be best achieved through an approach that encourages carbon beneficial energy from forests by applying a categorical exclusion to biogenic CO<sub>2</sub> emissions at a national scale based on a determination that forests in the U.S. under the management of Federal, non-federal and tribal entities are not contributing net carbon to the atmosphere.

## **A. The Recommendations of the Panel Should Reflect the Net Effect of Biogenic CO<sub>2</sub> Emissions on Atmospheric CO<sub>2</sub> Concentrations.**

During the October 2011 meetings, Dr. Rose's subgroup correctly recognized in their presentation that the overarching goal of the accounting methodology is to estimate the net change in atmospheric CO<sub>2</sub> concentrations attributable to stationary biogenic CO<sub>2</sub> emissions. The starting point for this inquiry must be the carbon cycle. The Panel has recognized that, unlike fossil fuels, biomass is part of the natural carbon cycle, carbon combusted during energy production was only recently removed from the atmosphere, and carbon is sequestered on an ongoing basis as harvested stands regenerate and young stands grow rapidly. So long as forest carbon stocks are stable or increasing – as they are in the United States – biogenic CO<sub>2</sub> emissions are fully offset by CO<sub>2</sub> sequestration in regenerating forests and do not result in a net increase in atmospheric CO<sub>2</sub> concentrations.<sup>1</sup> Biomass energy is only one aspect of the many uses of our forests that provide public benefits. As described in materials submitted previously by NAFO, these uses, over time, have produced more overall forest carbon rather than less. In fact, there is a demonstrated positive correlation between the markets for forest products, including biomass energy, and the continuous annual increase in forest carbon stocks.<sup>2</sup> Because of this positive correlation, all uses of forests, including energy production, presently have no net adverse impact on atmospheric CO<sub>2</sub> concentrations.

Despite the fact that biomass energy does not increase overall atmospheric carbon, some commenters and Panelists suggested that the EPA should consider the “opportunity cost” of increased forest carbon stocks that could occur in the absence of harvesting. NAFO urges the Panel to remember that the objective of the science review is not to determine pathways for increased overall carbon sequestration in our forests over time, but rather to advise EPA on science-based methods for determining whether the use of biomass will increase overall carbon in the atmosphere.

If the Panel recommends the consideration of opportunity costs, we urge the Panel to include *all* opportunity costs by focusing on their long-term impacts. While foregoing harvest may increase forest carbon stocks to a greater degree in the near term, the long-term benefits will be minimal. Increased carbon sequestration will not occur indefinitely as growth rates in maturing forests slow and ultimately reach a point of equilibrium or decline.<sup>3</sup> Additionally, unmanaged forests with historically high carbon stocks are often at greater risk of fire and disease, which will release the stored carbon without providing an energy benefit.

Conversely, biomass energy displaces fossil fuels and their associated fossil carbon emissions.<sup>4</sup> Because biomass is a renewable and sustainable energy supply, fossil fuel

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<sup>1</sup> Francesco Cherubini, GHG balances of bioenergy systems – Overview of key steps in the production chain and methodological concerns, *Renewable Energy* 35:1565-73 (2010); Stith Gower, Patterns and mechanisms of the forest carbon cycle, *Annual Review of Environment and Resources* 28:169-204 (2003).

<sup>2</sup>Peter J. Ince, Global Sustainable Timber Supply and Demand, *in Sustainable Development in the Forest Products Industry*, Chapter 2, 29-41 (2010), *available at* [http://www.fpl.fs.fed.us/documents/pdf2010/fpl\\_2010\\_ince001.pdf](http://www.fpl.fs.fed.us/documents/pdf2010/fpl_2010_ince001.pdf).

<sup>3</sup> Robert W. Malmshimer, *et al.* Managing Forests Because Carbon Matters: Integrating Energy, Products, and Land Management Policy, *forthcoming in Journal of Forestry* 109(7S) (2011); Bruce Lippke, *et al.*, Life cycle impacts of forest management & wood utilization on carbon mitigation: knowns and unknowns, *Carbon Management* 2(3) 303-333 (2011), *available at* <http://www.future-science.com/doi/pdf/10.4155/cmt.11.24>.

<sup>4</sup> *Id.*

displacement can occur indefinitely, long after fully mature forests reach equilibrium. Biomass energy also contributes to a robust market for forest products, creating incentives for forest owners to invest in forests rather than alternative land uses with more limited carbon storage potential.<sup>5</sup> Forest products are much less energy intensive to manufacture than alternative materials such as concrete or steel, which further reduce carbon in the atmosphere relative to not having a healthy market for forest products.<sup>6</sup> Thus, if all of the opportunity costs are considered on an appropriate time scale, biomass energy has a greater potential to mitigate atmospheric CO<sub>2</sub> than continued sequestration through foregone harvests.<sup>7</sup>

Finally, because biomass energy displaces fossil fuel energy, it is critical that the Panel encourage a direct comparison between biomass and fossil fuel sources. Certain CO<sub>2</sub> emissions that may be relevant in a life cycle analysis are inappropriate or unnecessary in this context, because they are not included in the accounting methodology for fossil fuel emissions. Specifically, emissions associated with the processing and transportation of biomass fuel and the emissions of co-products including paper and durable wood products should not be included in an accounting methodology. While some differences between biomass and fossil fuels certainly exist, an “apples to apples” comparison of CO<sub>2</sub> emissions is necessary so that the EPA, energy producers and consumers can determine which energy sources provide greater climate benefits.

## **B. Net Forest Carbon Emissions Should be Considered the Broadest Practical Scale**

While EPA has announced a preference for a regionally-based accounting methodology, NAFO agrees with Dr. Olander that there is no scientific justification for selecting regions. A source-based approach is equally inappropriate, because it both ignores the realities of the forestry and biomass energy sectors and skews the measurement of carbon impacts. Biomass energy producers obtain feedstocks from many suppliers and forest owners within a large wood basket and do not exercise control over stand-level forest management decisions. Nor do they maintain long-term supply contracts covering multiple harvest rotations. Due to the sheer number of biomass suppliers and the lack of control over subsequent management decisions, it is neither economically or practically feasible for biomass energy sources to maintain source-based records. Despite any theoretical appeal, it is simply not capable of implementation.

The carbon measurement flaws of a source-based approach are already well-recognized. Recent studies with overly prescriptive spatial and temporal scales have produced irrational outcomes when comparing biomass emissions and fossil fuel emissions notwithstanding the application of otherwise sound scientific principles.<sup>8</sup> International bodies recognize that appropriately large spatial and temporal scales are fundamental to an accurate

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<sup>5</sup> Ince (2010), *supra* note 2; see also Roger Sedjo, Carbon Neutrality and Bioenergy: A Zero-Sum Game?, Resources for the Future Discussion Paper 1-9 (April 2011), available at <http://www.rff.org/documents/RFF-DP-11-15.pdf>.

<sup>6</sup> Lippke (2011), *supra* note 3.

<sup>7</sup> B. Metz, *et al.*, Intergovernmental Panel on Climate Change, Climate Change 2007: Mitigation of climate change 543 (2007) (“In the long-term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.”).

<sup>8</sup> William Strauss, How Manomet got it Backwards: Challenging the “debt-then-dividend” axiom 1-11 (May 2011), available at <http://www.futuremetrics.net/papers/Manomet%20Got%20it%20Backwards.pdf>; Sedjo (2011), *supra* note 5.

understanding of forest carbon flux.<sup>9</sup> Even a regional scale, as suggested by the EPA, is riddled with impracticalities that resemble the problems associated with a source-based approach.

In contrast, a national scale is cost-effective and capable of implementation because it can use existing data sources such as EPA's GHG Inventory to monitor changes in forest carbon stocks and ensure that net forest carbon emissions are not contributing to increased overall atmospheric carbon on an aggregate level. In addition, a national scale mitigates many of the concerns voiced by Panelists during the October 2011 meetings. First, a national scale would apply equally to all biomass energy producers, mitigating any concern over picking winners or losers. It avoids the risks of arbitrarily selecting boundaries or worse, the risk that boundaries would be "gerrymandered" to achieve a particular policy objective. Second, the use of a scale that is more granular than the harmful effect of the pollutant is needlessly complex. Climate change and GHG emissions are a global issue and a national scale represents the best domestic approximation of that scale. While no domestic policy can fully avoid the possibility of international leakage, a national scale recognizes that the U.S. forestry sector operates as an integrated whole and avoids the potential for domestic leakage between different regulatory regions. Finally, a national scale will protect individual biomass energy sources from the negative effects of localized natural disturbances, such as fire, storms and insect infestations, and rapid changes in land use, which are outside of their control, but can have a significant impact on forest carbon stocks at local or regional scales.

### **C. A Categorical Exclusion is Preferable to an Accounting Framework**

At the close of the October 2011 meeting, the Panel considered whether an accounting framework would be preferable to a categorical exclusion. Although this is strictly a policy rather than a scientific question, NAFO anticipates that this is a threshold question the Panel must confront. Should the Panel decide to make a determination, we urge the it to consider the specific context in which any accounting framework would be applied and not as an abstract concept. U.S. forest carbon stocks are currently stable and increasing and are expected to remain so for the foreseeable future, notwithstanding anticipated increases in the production of forest products, including renewable energy.<sup>10</sup> A complex accounting framework cannot represent an improvement over a categorical exclusion unless it produces a better greenhouse gas reduction outcome and more accurate results in a cost-effective manner. As long as overall forest carbon stocks remain stable or increasing, it is neither necessary from a scientific perspective nor efficient from a cost-benefit perspective to go beyond a categorical exclusion for biomass.

First, a complex accounting framework cannot be superior to a categorical exclusion unless it can produce greater greenhouse gas reductions or more accurate results. It is not sufficient that a framework includes all of the necessary components from a theoretical perspective. Unless those components can be measured accurately and with small (and known) degrees of uncertainty, a framework will be of little value from a practical perspective. Some of the variables in EPA's proposed model, such a leakage, simply cannot be measured

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<sup>9</sup> IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Institute for Global Strategies, Hayama, Kanagawa, Japan: IPCC National Greenhouse Gas Inventories Programme (2006); EU guidelines for the monitoring and reporting of greenhouse gas emissions, Annex I, 4.2.2.1.6 (2004), *available at* [http://inni.pacinst.org/inni/climate\\_change/EUGuidelinesGHGJan2004.pdf](http://inni.pacinst.org/inni/climate_change/EUGuidelinesGHGJan2004.pdf).

<sup>10</sup> See Yude Pan *et al.*, A Large Persistent Carbon Sink in the World's Forests, *Science* 333(6054) 998-999 (Aug. 19, 2011) and Linda S. Heath, *et al.*, Managed Forest Carbon Estimates for the US Greenhouse Gas Inventory, 1990-2008, *Journal of Forestry* 109(3) 167-173 (April/May 2011).

with a sufficient degree of accuracy to support their inclusion in a framework. Similarly, other source- or feedstock-specific variables are economically or practically infeasible to measure and cannot be relied upon to produce accurate results. A proposed framework must withstand scientific scrutiny in practice as well as on a theoretical level. Because EPA's *Accounting Framework* includes variables that cannot be measured or cannot be measured accurately, it is not an improvement over a categorical exclusion.

Second, because the data collection requirements of complex frameworks would make them prohibitively costly to implement, in many cases to the point of discouraging investment in biomass energy, they should not be used unless they produce significantly better results than a categorical exclusion. As NAFO has previously noted, an accounting framework that is anticipated to always result in a BAF of zero is inferior to a categorical exclusion from a cost-benefit perspective because it adds considerable compliance, monitoring, and recordkeeping costs and uncertainties without altering the final regulatory outcome, thus removing significant incentives for industry to invest in carbon beneficial biomass over traditional fossil fuels. For example, accounting for differences in tree species, harvest methods, types of biomass, or biomass uses may theoretically improve accuracy, but they will also impose significant costs on regulated entities, particularly when considering that nearly every part of the value chain produces byproducts that can be used for energy. Yet, as some Panelists have noted, comprehensive accounting frameworks will produce a BAF of zero as long as forest carbon stocks remain stable. If these frameworks do nothing more than confirm that biomass energy produces no net CO<sub>2</sub> emissions – as they must as long as forest carbon stocks remain stable – the end results is simply a more costly version of a categorical exclusion posing significant hurdles for a decision to employ biomass energy. At the present time, there is simply no reason to suggest that the added compliance costs of complex accounting frameworks can be justified when cost effective alternatives such as a categorical exclusion remain available.

### **Conclusion**

NAFO strongly supports the Panel's independent peer review of EPA's proposed accounting methodology for biogenic CO<sub>2</sub> emissions and hopes you find the materials referenced and submitted within this letter and in previous comments helpful in answering EPA's Charge Questions on its draft *Accounting Framework*. We look forward to continuing to work closely with the Panel to contribute ideas and solutions to questions that emerge. In the meantime, NAFO is prepared provide further information or answer any questions that the Panel may have.

Respectfully Submitted,

David P. Tenny

President and CEO

National Alliance of Forest Owners