

CLEAN AIR TASK FORCE
NATURAL RESOURCES DEFENSE COUNCIL
PARTNERSHIP FOR POLICY INTEGRITY
GREENPEACE

**Comments to the Environmental Protection Agency on
“Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources”
(September 2011)**

Comments Submitted: October 18, 2011

I. Introduction

Clean Air Task Force, Natural Resources Defense Council, Partnership for Policy Integrity, and Greenpeace submit these comments on EPA’s proposed “Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources” (September 2011). We appreciate that EPA has started the process of redressing the widespread accounting errors that have previously led the agency and others to treat the carbon dioxide released from burning biomass as though it did not exist.

The approach described in the proposed “Accounting Framework,” however, cannot achieve EPA’s stated objective of “accurately reflect[ing] the carbon outcome”¹ of biomass use by stationary sources. It fails to observe accepted carbon accounting principles described in materials that our organizations and other have provided to EPA on numerous occasions, and, if implemented, it would undermine our forests’ existing capacity to absorb CO₂ emissions. Rather than catalog the full range of problems that plague the “Accounting Framework,” these comments highlight a few of the most egregious. In our view, the “Accounting Framework” does not merit an exhaustive analysis of its defects – not by external stakeholders like our groups, nor by the recently assembled Biogenic Carbon Emissions Panel. Instead, we feel strongly that EPA should abandon this approach in favor of a workable accounting approach that can accurately assess the climate impact of biomass-burning stationary sources, or allow the Panel to develop an approach that is capable of accurately reflecting the carbon outcome of biomass use.

In a report that was released on September 15, 2011, the same day as the “Accounting Framework,” the European Environment Agency Scientific Committee (EEA-SC) observed that in the interest of promoting bioenergy, “many domestic regulations treat biomass combustion as

¹ EPA, “Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources” (September 2011) at 3 (listing the criteria “the framework is designed to meet”).

carbon-neutral vis-à-vis the atmosphere, regardless of the specific source of the biomass.”² Under this approach, all burning of biomass is viewed as “carbon-free.” Replacing fossil fuels by cutting down and burning forests for energy use, or the diversion of much of the world’s crops or cropland to accommodate the production of energy crops, is treated as a complete reduction in carbon emissions. But burning biomass in place of fossil fuels does not reduce carbon dioxide released from smokestacks or exhaust pipes – in fact, it increases it. Only to the extent that bioenergy results in additional carbon being sequestered (*e.g.* through intensified biomass growth that results in *additional* carbon sinks) or the productive use of biomass when compared to what would have happened otherwise (*e.g.* through the use of some waste and residue materials that would have gone to landfills or decomposed *in situ*) can there be a justification for ignoring some or all of carbon emitted from burning biomass for energy.

Policies that perpetuate the bioenergy accounting error can have “immense” negative consequences, the EEA-SC found:

Based on the assumption that all burning of biomass would not add carbon to the air, several reports have suggested that bioenergy could or should provide 20% to 50% of the world’s energy needs in coming decades. Doing so would require doubling or tripling the total amount of plant material currently harvested from the planet’s land. Such an increase in harvested material would compete with other needs, such as providing food for a growing population, and would place enormous pressures on the Earth’s land-based ecosystems. Indeed, current harvests, while immensely valuable for human well-being, have already caused enormous loss of habitat by affecting perhaps 75% of the world’s ice- and desert-free land, depleting water supplies, and releasing large quantities of carbon into the air.³

EPA indicates it understands that an “accounting approach for stationary sources must recognize that emissions of biogenic CO₂ to the atmosphere and removals may occur in different places and different times,” and, consequently, that policies cannot legitimately assume that bioenergy is inherently carbon neutral.⁴ Nonetheless, the approach laid out in the “Accounting Framework” incorporates the same accounting error that has plagued other bioenergy policies – only this time the error is ensconced in a longer and more convoluted text.

At its foundation, EPA’s proposal is premised on the logical error that the carbon emissions from bioenergy can be ignored – not because certain sources of bioenergy can reduce emissions, but because bioenergy harvests do not completely overwhelm the forest growth (and associated carbon accumulation) that is already occurring throughout the world. In essence, the proposal would permit biomass-powered stationary sources to use up existing sequestration capacity, and by doing so significantly increase atmospheric greenhouse gas (GHG) levels. The gross forest carbon sink is mitigating climate change today by absorbing roughly one third of human emissions of carbon

² Opinion of the EEA Scientific Committee on Greenhouse Gas Accounting in Relation to Bioenergy (2011), at 2. (*See* <http://www.eea.europa.eu/about-us/governance/scientific-committee/sc-opinions/opinions-on-scientific-issues/sc-opinion-on-greenhouse-gas>)

³ *Id.* at 1.

⁴ EPA Accounting Framework at 11.

dioxide.⁵ Cutting down forests to a level that sacrifices this sink would have catastrophic implications for the world's climate, as well as its biodiversity and other forest services.

Proper forest management can reduce climate change by increasing the forests' ability to sequester carbon. It can also increase forests' production of aerosols that contribute to the formation and lifetime of clouds (thereby reducing tropospheric ozone formation and the CO₂ emissions associated with energy demand) and provide wood products that can be used to replace other building materials with substantially higher lifecycle GHG emissions. Rather than capitalize on this opportunity and offer a regulatory structure that would encourage sourcing of low-carbon biomass and, by extension, improvements in forest management, the proposed "Accounting Framework" lays the groundwork for exacerbating climate change. This is unacceptable and irrational.

II. A Sampling of Problems That Should Disqualify the "Accounting Framework" From Further Consideration

As mentioned above, we do not believe the proposed "Accounting Framework" deserves a detailed analysis, either in these comments or by the Panel, as it contravenes fundamental and well-established principles of carbon accounting, regulation, and even arithmetic. The following defects demonstrate that EPA's current approach is technically invalid and practically unworkable.

A. EPA's "Accounting Framework" Credits Stationary Sources With Carbon Sequestration That Would Have Occurred Anyway

The proposed document proceeds from an assumption that bioenergy use should be able to count the pre-existing gross forest carbon sink as a carbon credit to offset the emissions from burning biomass (the gross forest carbon sink represents all the carbon absorbed by growing forests, while the net sink, which is also substantial, represents that growth minus carbon lost from forest harvests and land clearing). Although estimates of carbon emissions from land use change focus on those areas of tropical forests that are being cleared for other uses, overall the world's forest are accumulating carbon and would continue to do so in the absence of increased bioenergy use. Rather than focusing on the carbon consequences of bioenergy itself – whether it increases or decreases carbon in the atmosphere – the framework essentially asks whether and to what extent the adverse consequences of bioenergy (carbon emissions) exceed the positive consequences of this ongoing forest growth (carbon sequestration). Only net adverse consequences count as emissions. As a result, EPA's approach does not analyze the consequences of bioenergy itself, but rather acts as a mechanism for erroneously crediting bioenergy with forest growth – and resulting carbon sequestration – that is ongoing and happens entirely independent of bioenergy.

Although some parts of the proposed "Accounting Framework" are vague or contradictory, the proposal ultimately sets forth its approach in case studies, which indicate that separate accounting methods are acceptable for harvesting trees for energy, each of which is comparably

⁵ Yude Pan, *et al.*, "A Large and Persistent Carbon Sink in the World's Forests," *Science* (2011) 10.1126/science.1201609.

flawed. According to “Case Study 1,”⁶ bioenergy produced from trees harvested in the Northeast will be considered carbon-free, up to the point that total tree harvest within the region does not exceed annual forest growth. That quite literally means that even if a region’s forest carbon sink is all but eliminated for bioenergy production, that bioenergy nevertheless will be considered completely carbon free. The elimination of a carbon sink has the same impact on carbon in the atmosphere as the creation of an equivalent-sized smokestack or any other carbon source.

Under the second accounting approach (“Case Study 2”),⁷ bioenergy production is allowed to claim credit for a portion of the gross forest growth. Stated simply, the rule set forth in the proposal is that bioenergy can claim credit for gross forest growth in proportion to the share of total harvests in a region that result from bioenergy. For example, if gross forest growth within a region absorbs 80 tons of carbon each year, and traditional forestry removes 90 tons, the region’s forests are already losing 10 tons of carbon each year. Even so, if bioenergy removes another 10 tons, those 10 tons will still be considered 80% carbon free under EPA’s approach. Why? Because bioenergy would then remove 10% of the overall forest products (10 of 100 tons), and, according to the framework, would be entitled to claim credit for 10% of the 80 tons of carbon accumulated by gross forest growth each year. Ten percent of 80 tons equals 8 tons, so 8 of the 10 tons of carbon used and emitted by bioenergy would be considered carbon-free, making the biomass 80% carbon-free.

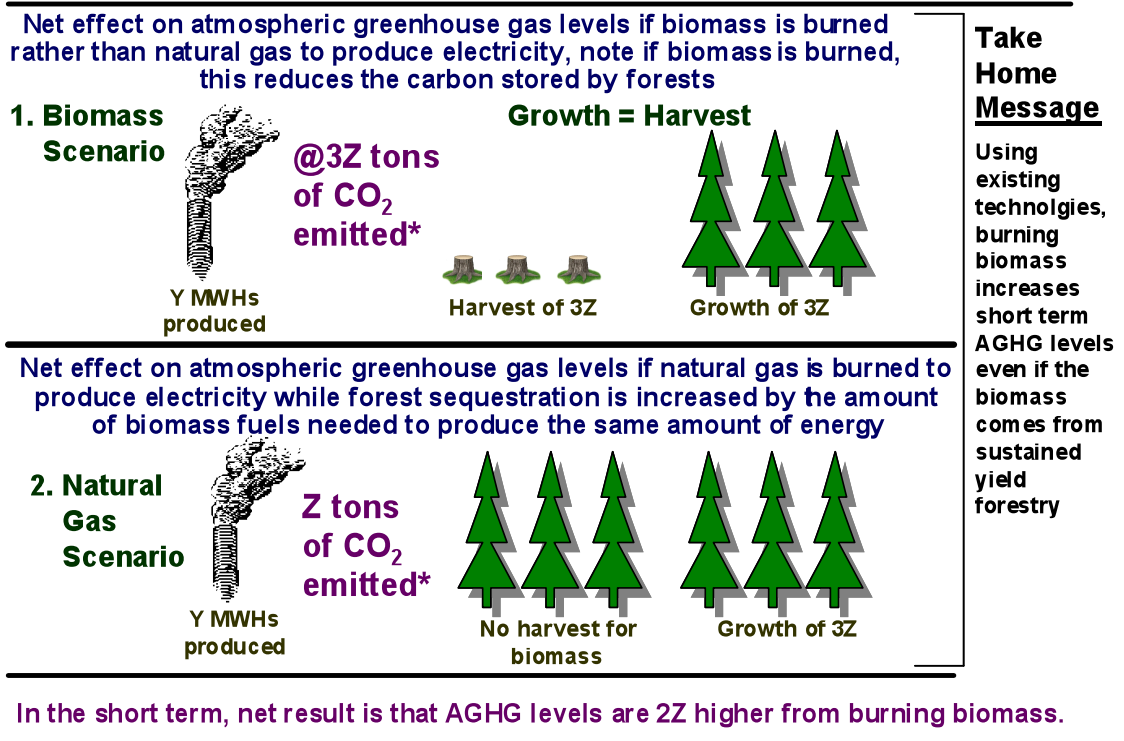
It is worth noting that neither of the approaches described by EPA in Case Studies 1 and 2 requires that the harvested forest be allowed to re-grow. Under either approach, bioenergy would still be considered completely or nearly carbon free even if the trees were harvested while converting the forest to a parking lot.

More to the point, the fundamental flaw in both cases is that the forest growth on which EPA relies to conclude that bioenergy production is completely or largely carbon-free would occur anyway. A basic rule of logic and science is that the effect of an action must be judged against the baseline, and that baseline must reflect what would occur without that action. Since in each of these examples the forest carbon accumulation would be occurring anyway, bioenergy cannot take credit for it. The following graphic illustrates this basic problem by showing how the use of biomass to displace natural gas for electricity production can result in higher atmospheric GHG levels, even when the biomass comes from a forest where harvest does not exceed growth. As shown in the graphic, biomass-based power production emits approximately three times as much CO₂ as natural gas-based power production on a tons-of-CO₂-per-MW basis. A tripling in the amount of CO₂ emitted per megawatt generated will unavoidably increase atmospheric CO₂ levels, *unless* the forest’s sequestration capacity also triples. EPA’s “Accounting Framework” does not require any increase in sequestration capacity, however. Under EPA’s proposed approach, a source can fully discount its CO₂ emissions as long as harvest does not exceed growth in the given region.

⁶ EPA Accounting Framework, “Case Study 1: Calculating State versus Regional Net Biogenic Emissions from Electricity Generation using Harvested Roundwood in the Northeast United States,” at 75.

⁷ EPA Accounting Framework, “Case Study 2: Calculating Net Biogenic Emissions from Electricity Generation Using Roundwood Harvested in the Northeast United States, Comparing the Average versus Marginal Method for Level of Atmospheric Reduction,” at 85.

A comparison of burning sustainably produced biomass versus natural gas to produce electricity



B. The Regional Approach in EPA’s “Accounting Framework” Produces Arbitrary Results and Invites Abuse

The proposed “Accounting Framework” endorses an approach which evaluates the carbon emissions impacts of bioenergy on a regional or area-wide basis. This regional approach treats bioenergy producers differently depending on where they are located, while ignoring factors such as the biomass feedstocks they use and their method of converting that biomass to energy.

As above, the Case Studies help illustrate this problem. In Case Study 1, a hypothetical 30MW power plant in New Hampshire burns “low-grade roundwood” only; according to EPA’s scenario, “there are no other forest-derived woody sources (e.g., mill byproducts, urban tree removals, logging residues) used as feedstocks for the hypothetical plant.”⁸ EPA makes it clear, however, that the particular feedstocks being used are beside the point. The fate of the power plant under the “Accounting Framework” — that is, whether the power plant “will have greater than zero NBE,” or Net Biogenic Emissions—depends on the size and location of the region in which it is lumped, and not on whether it utilizes more waste feedstocks or sources wood from carefully

⁸ EPA Accounting Framework at 75.

conducted harvests that allow forest growth rates to recover quickly. Rather, as EPA frankly acknowledges at the conclusion of Case Study 1:

Delineation of source regions for forest-based feedstocks will be a critical step in developing a full accounting framework, and will ultimately reflect both policy and technical considerations. One or more large new facilities (PGE > 500,000 tCO₂e/yr) could exceed the current sequestration rates of available forestland in many states, and some states are currently experiencing declines in carbon stocks. *Accounting at the regional level could thus mask smaller-scale changes in carbon stocks, especially if some states are experiencing large increases or decreases in carbon stocks.*⁹

With the right combination of feedstocks and conversion practices, it is possible to produce electricity from biomass in a manner that does not exacerbate climate change. Unfortunately, by determining a source's climate impact based on the region in which it is located—meaning the same facility, picked up and placed in two different regions, could be credited with completely different Net Biogenic Emissions—EPA's "Accounting Framework" both fails to meet basic standards of scientific rigor and fails to encourage the adoption of these best practices.

III. Recommendations

We feel strongly that EPA should abandon the approach described in the proposed "Accounting Framework" in favor of a workable accounting framework that can accurately assess the climate impact of biomass-burning stationary sources. Such an approach would, for example:

- Assess biogenic emissions using a baseline that reflects what would have happened in the absence of biomass consumption and combustion for bioenergy production (the "business as usual" case).
- Ensure that all claims concerning GHG emissions reductions are real, verifiable, and additional.
- Assess biogenic emissions and reductions consistently, regardless of the region in which they occur.
- Account for leakage emissions, including those attributable to indirect land use change.

⁹ EPA Accounting Framework at 81 (emphasis added).

IV. Conclusion

Many other problematic details of the proposal would merit comment if the overall document were a more serious attempt to address the fundamental accounting error of treating biomass as carbon neutral. We look forward to working with EPA and the SAB in any way we can to develop a legitimate accounting framework.

Respectfully submitted,

Jonathan Lewis
Clean Air Task Force

Nathanael Greene
Sasha Lyutse
Natural Resources Defense Council

Mary Booth
Partnership for Policy Integrity

Larry Edwards
Greenpeace

October 18, 2011