EPA Docket Center
Attention: Docket OAR-2010—0560
Mail Code 2822T
1200Pennsylvania Ave NW
Washington, DC 20460

RE: Docket ID No. EPA-HQ-OAR-2010-0560

Dear Administrator Jackson:

Environmental Defense Fund appreciates the opportunity to submit the following comments on the Environmental Protection Agency's Call for Information: Information on Greenhouse Gas Emissions Associated with Bioenergy and Other Biogenic Sources. EPA has correctly determined that biogenic emissions should be considered when evaluating whether facilities are subject to the Prevention of Significant Deterioration and Title V Programs of the Clean Air Act. We applaud EPA for recognizing the importance of accurately accounting for GHG emissions from biogenic sources in order to implement the PSD and Best Available Control Technology requirements of the Clean Air Act.

Bioenergy can play an important role in meeting America's energy and climate needs under a robust policy and accounting framework that recognizes not all biomass feedstocks are created equal. Some forms of bioenergy can reduce pollutant emissions when compared with fossil fuels and be a part of the solution to the climate crisis. Other forms will not. The net climate impacts of bioenergy vary greatly depending on the feedstock source, type, and production practices of the biomass, as well as other factors. For example, using waste biomass materials that will decompose rapidly in the absence of utilization, i.e. mill residue, logging debris, etc, will create energy with little or no net climate impacts relative to not burning these materials. On the other hand, harvesting biomass from mature forests, where it would have otherwise remained stored for a significant time period, and then combusting this material to generate energy will reduce average carbon stocking on the landscape and produce a net increase in atmospheric GHG levels compared to not burning this carbon. The amount and composition of available biomass and the corresponding net emissions impact from its use for bioenergy vary greatly by region.

Unlike fossil fuels, bioenergy has the potential to dramatically alter the cycle of carbon sequestration and emissions that naturally occurs in a landscape. Harvest of biomass removes carbon that has been stored in the landscape, but growth of materials may recapture carbon to varying degrees over some period of time. A more complete accounting of this cycle is essential to ensure that reliance on biomass resources for energy generation is anchored in facts.

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Establishing the right policy framework for addressing biogenic emissions is centrally important for efforts to reduce U.S. greenhouse gas emissions over the coming decades. While bioenergy currently represents a modest share of the U.S. energy supply and associated combustion emissions, bioenergy is projected to be the fastest growing segment of gross combustion emissions in the US energy sector.[1] The U.S. Energy Information Administration (EIA) reports that in 2009 gross CO_2 emissions from biomass combustion (solid, liquid, and gaseous) accounted for 4% of total gross US energy sector CO_2 emissions from both fossil and biomass sources, and this share is projected to grow to 10% by 2035 under their reference case. EIA projects these gross bioenergy combustion emissions will grow by 160% from 310 million tons of CO_2 in 2009 to 813 million tons in 2010. This is in contrast to projected increases of 23% for combustion emissions from coal and 10% for petroleum as well as for natural gas. Based on these projections, bioenergy will contribute the largest wedge of the projected growth in gross annual US energy combustion emissions by 2035, with an estimated increase of 503 million tons per year compared to 449, 239, and 126 million tons from coal, petroleum, and natural gas, respectively.

The EIA's estimates of gross emissions from bioenergy combustion only reflect the emissions from the smokestack or tailpipe and do not account for the change in landscape carbon stocks due to shifts in land-use and land management. Accounting for these landscape effects is vital, as described below, and could decrease or increase the net effect of the use of bioenergy on US emissions of greenhouse gases. It is critical for EPA to establish and consistently use sound GHG accounting practices. Failure to account for the landscape effects could also unintentionally harm farm and forest landowners and reduce the potential of bioenergy markets by perpetuating skepticism that climate benefits will be achieved, even in situations where net emissions reductions are legitimately possible. EIA's projections indicate the critical importance of the bioenergy sector to determining the future trajectory of net US emissions and the need for a policy framework that ensures that any expansion of bioenergy furthers the goal of reducing the net total national greenhouse gas emissions .

Biomass under PSD/BACT. *What criteria might be used to consider biomass fuels and the emissions resulting from their combustion differently with regard to applicability under PSD and with regard to the Best Available Control Technology (BACT) review process under PSD?*

The effects of greenhouse gases released into the atmosphere are completely independent of their source. In other words, the greenhouse effect of one ton of CO2 from combustion of biomass is identical to that of one ton of CO2 from the combustion of fossil fuel. Nevertheless, there is strong justification for EPA to go beyond a consideration of the combustion emissions themselves and to evaluate the overall emissions impacts of bioenergy use and production under the Best Available Control Technology (BACT) review process under PSD.

Measuring the net total flux of GHG's associated with bioenergy is much more complicated than simply measuring smokestack emissions. Several recent studies have confirmed that the effect

[1] U.S. Energy Information Administration. 2010. *Annual Energy Outlook 2010 with Projection to 2035.* DOE/EIA-0383. Office of Integrated Analysis and Forecasting, U.S. Department of Energy. Washington, DC. In particular, see http://www.eia.doe.gov/oiaf/aeo/carbon_dioxide.html

of biogenic emissions on net changes in atmospheric GHG levels varies according to the particular source of biomass that is used.[2,3] Bioenergy production results in both GHG emissions and carbon sequestration associated with the production, harvest, processing, and combustion of biomass for bioenergy use, and from the storage and release of carbon in the biomass in the area where it is harvested. The following are all part of the net emissions from the production and use of biogenic fuels:

- Emissions from combustion of biomass
- Net sequestration from primary productivity of biomass (e.g. changes in productivity as a result of biomass harvesting)
- Net change in emissions from decomposition of vegetation and wood left on site
- Net change in emissions from soil carbon resulting from land-use activity
- Net change in emissions from fertilizer production and utilization
- Net change in emissions from processing and transport
- Net change in emissions from carbon stored in wood products
- Emissions leakage (i.e. indirect emissions associated with displaced production of goods and services)

While all of these factors contribute to the flux in GHG emissions that occurs when biomass is harvested and converted into energy, the primary potential GHG advantage from the use of biogenic energy sources is the flux in emissions that results from changes to carbon stocks in the working landscape of forest and farmland where these materials are drawn from. This is the factor that clearly distinguishes these emissions from those from combustion of fossil fuels, Bioenergy can result in net reductions in GHG emissions when the harvest of biomass spurs increased sequestration associated with biomass production on the land, or from utilization of biomass waste material (which produces energy from materials that would have otherwise quickly decomposed and released GHG emissions in the short term anyway).

The changes in carbon stocks should be accounted for on working lands (those lands that are already being managed) and aggregated at the landscape level (e.g. for a common supply region or "wood basket"), rather than on a site-specific basis. The changes associated with biomass regrowth, planting, management and harvest can then be compared to a pre-determined business as usual baseline to reflect the net total flux of GHG emissions to the atmosphere from the production of goods and services, including bioenergy. Such an approach can allow net emissions that result from biomass use for bioenergy production to be accurately determined using an average set of factors for a common supply region, as described in "Alternative Accounting Approaches" below, taking into account both positive and negative changes, as well as any associated leakage. Time is also an essential factor in this evaluation of the net flux of

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[2] For example, Searchinger, T., Hamburg, S., Melillo, J., Chameides, W., Havlik, P., Kammen, D., Likens, G., Lubowski, R., Obersteiner, M., Oppenheimer, W., Robertson, G.P., Schlesinger, W., Tilman, G.D. 2009. Fixing a critical climate accounting error. *Science* 326: 527-528.

[3] Manomet Center for Conservation Sciences. 2010. Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources. Walker, T. (Ed.). Contributors: Cardellichio, P., Colnes, A., Gunn, J., Kittler, B., Recchia, C., Saah, D., and Walker, T. Natural Capital Initiative Report NCI-2010-03. Brunswick, Maine.

GHG emissions across the landscape. The time frame used in evaluating the net flux of GHG emissions from bioenergy must be clearly specified, and will in part effect the determination of whether bioenergy production results in a net increase or decrease in emissions from the landscape. The appropriate treatment of this factor will be discussed in more detail later in these comments.

At least five options have been suggested for consideration of biogenic emissions:

- Measure the GHG emissions at the smokestack and ignore landscape implications of biomass utilization. This option fails to account for the potentially lower emissions profile of some biomass sources compared to fossil fuels, while also ignoring the very real potential for higher total net emissions from biomass relative to fossil fuels depending on the source and production practices and time frame of analysis.
- Ignore all GHG emissions associated with bioenergy in a carbon accounting framework. This option requires an assumption that emissions from bioenergy always equal the carbon sequestration occurring on the landscape. Numerous research studies have shown this assumption to untrue.[1],[2],[3]
- Conduct full lifecycle analysis of the greenhouse gas impacts of biomass feedstocks. In most cases, such analyses will be too aggregate to reflect and incentivize the production practices that differentiate the net emission impacts of different feedstock sources and production practices.
- Undertake a full supply-chain analysis. Create a system in which smokestack emissions are accounted for and facilities are also credited for emission reductions occurring on the land based on documenting the specific sources and associated production practices of their feedstocks. The advantage of this approach would be that accounting would be tied to directly observable bioenergy production activities occurring at particular locations. The disadvantage is that the accounting precision gained through this approach in theory may not warrant the additional administrative burden and transaction cost of having to maintain a chain of custody.
- Account for shifts in carbon stocks across a regional landscape. Measure changes in landscape carbon stocks on working lands (excluding lands not available to management though legal or practical considerations e.g. slope or very small parcel size) and utilization of waste materials at the regional level associated with bioenergy production compared with a business as usual baseline and adjust smokestack emissions accordingly. See a full discussion below under “Alternative Accounting Approaches.”

We recommend EPA consider this last approach as one that is preferable to the other options, and when combined with the option for facilities to petition for adjustments based on finer-scale accounting, provides an accurate and low cost regulatory approach. The challenge is to design a system that is consistent with CAA legal authorities while balancing the needs for accounting accuracy and not imposing undue transaction costs. We urge EPA to consider a comprehensive

[1] Searchinger et al 2009.
[2] Manomet, 2010.
[3] Abt, Robert C., Christopher S. Galik, Jesse D. Henderson. “The Near-Term Market and Greenhouse Gas Implications of Forest Biomass Utilization in the Southeastern United States” Duke University, 2010.

landscape scale accounting of biomass that calculates a performance measure representing both the combustion emissions and landscape carbon effects associated with waste utilization and biomass production and harvest.

National-scale carbon neutrality in the IPCC Guidelines. *In the IPCC accounting approach described in Section I.B, at the national scale emissions from combustion for bioenergy are included in the LUCF Sector rather than the Energy Sector. To what extent does this approach suggest that biomass consumption for energy is "neutral" with respect to net fluxes of CO2?*

The IPCC convention of ascribing bioenergy combustion emissions to the LUCF Sector has no bearing on the question of whether biomass consumption for energy is effectively "neutral" with respect to CO2 fluxes. The IPCC guidelines explain that the assessment of carbon stocks in LUCF should reflect any decline in carbon stocks that occur over time as a result of bioenergy production. As noted in EPA's discussion of the IPCC guideline in the call for comments, the IPCC has determined that emissions from combustion of bioenergy should be counted in the LUCF sector in order to avoid double counting emissions from biomass. This does not imply that emissions from bioenergy are carbon neutral – only those emissions that are tracked in the LUCF sector should not be redundantly counted in the energy sector. The IPCC convention is, however, an indication that comprehensive accounting of the GHG implications of bioenergy needs to count the emissions from the combustion of the biomass as well as the net changes in emissions or sequestration from producing the biomass on the land.

National-scale trends in overall emissions and sequestration from land use and land-use changes are not the best indicator for tracking and evaluating the emissions effects of bioenergy for three reasons:

1. *Multiple drivers that vary locally:* Land-use induced emissions and sequestration are driven by many local, tract or landscape specific factors. Landscape carbon stock changes have many different drivers, i.e. urban development, ecosystem health (insect, disease, fire), management history, etc. In some regions, land use may not be affected by the production of bioenergy, while in other regions bioenergy may be the primary driver of land-based carbon emissions. As a result, aggregate trends in net land-use emissions and sequestration will obscure the effects due specifically to bioenergy production and use. National scale GHG accounting can easily provide spurious indications of net impacts of bioenergy utilization on carbon stocks (e.g. if carbon stocks on lands unavailable to management are included it influences average trends and can mask stable or declining stocks on managed lands). Any national accounting should be a summation of many regional landscape-scale accounting efforts in order to ensure that incentives align with GHG impacts of particular bioenergy systems.
2. *Local or regional baselines:* National trends alone do not indicate whether a particular activity (e.g. harvesting biomass for bioenergy) has caused a net increase or decrease in emissions over a set time period. The baseline and current landscape trajectory are important local factors to determine if bioenergy is causing increasing, decreasing or stable land-based carbon emissions. Regardless of whether national emissions and sequestration are increasing, decreasing, or staying flat, the net change due to the production of biogenic feedstocks may still be positive or negative, depending on what

emissions would otherwise have been under a baseline without the production and use of that bioenergy source. As an example, even if national sequestration is increasing with the production and use of the bioenergy feedstock, accounting of the sum of regional sequestration rates may indicate a reduction from business-as-usual. Conversely, even if net emissions are decreasing, they could potentially have been even lower without bioenergy use. Accounting solely for trends in carbon stocks at the national scale obscures regional differences and ignores baseline carbon trends.

3. *Global shifts*: Even if total land emissions and sequestration at the national scale in the US has not changed due to bioenergy production and use, this does not mean that bioenergy production may not have increased elsewhere in the world due to leakage, such as shifts in agricultural or timber production due to the displacement of US production.

As a result of these factors, creating a national landscape GHG emission measurement is in itself an uninformative metric for assessing either the local or aggregated net impacts of bioenergy production and use across local tracts and regional landscapes. We are conscious of the need to balance the desire for geographic specificity with the desire to ensure transaction costs are manageable. We have no doubt that this balance can be accomplished at the regional level, due in part to the existing data collection systems managed by USDA.

Smaller-scale accounting approaches. *The Clear Air Act (CAA) provisions typically apply at the unit, process, or facility scale, whereas the IPCC Guidance on accounting for GHG emissions from bioenergy sources was written to be applicable at the national scale. EPA is interested in understanding the strengths and limitations of applying the national-scale IPCC approach to assess the net impact (i.e. accounting for both emissions and sequestration) on the atmosphere of GHG emissions from specific biogenic sources, facilities, fuels, or practices. To what extent is the accounting procedure in the IPCC Guidelines applicable or sufficient for such specific assessments?*

National and facility scale accounting serve different purposes, with the former providing a description of the impact of national policies and the latter useful for regulation of individual smokestack emissions. National scale accounting has little direct application to assessing the net impact of specific biogenic emission sources, facilities, fuels, or practices. As discussed above, national scale accounting is too coarse a scale to account fully for biogenic carbon emissions or provide differential incentives for low carbon biomass feedstocks. On the other hand, detailed assessment of biogenic emissions from specific facilities is relatively straight-forward for smokestack emissions but may be a finer scale than necessary when considering landscape emissions implications of biomass utilization.

As described above, creating the proper carbon credit or debit requires first understanding the net change in carbon stores and sequestration and then assigning responsibility to those changes. Did landscape carbon increase because of bioenergy production or traditional farm and forest markets? Did landscape carbon decrease because of urban sprawl or insect and disease outbreaks? These are metrics that can be developed for a region or landscape using existing databases and government surveys such as the USDA's Forest Inventory and Analysis. Some bioenergy facilities will be the only biomass user in their region while others will be competing in a robust market. Differentiating the impact of one facility versus another facility when both are sourcing from a portion of the same region will be more complicated for facilities that do not own the land that they source biomass from. For these reasons, we suggest below an alternative accounting approach.

Alternative accounting approaches. *Both a default assumption of carbon neutrality and a default assumption that the greenhouse gas impact of bioenergy is equivalent to that of fossil fuels may be insufficient because they oversimplify a complex issue. If this is the case, what alternative approaches or additional analytical tools are available for determining the net impact on the atmosphere of CO2 emissions associated with bioenergy? Please comment specifically on how these approaches address:*
– The time interval required for production and consumption of biological feedstocks and bioenergy products. For example, the concept of "carbon debt" has been proposed as the length of time required for a regrowing forest to "pay back" the carbon emitted to the atmosphere when biomass is burned for energy.

We recommend that EPA consider an approach that adjusts a facility's total emissions score for its smokestack emissions derived from bioenergy based on an average adjustment factor for a common woodshed or agricultural supply region. This adjustment factor would be calculated based on the incremental change in carbon stocks due to bioenergy production over the relevant land base (working lands, excluding lands not available to management) in this region over a reasonably short contemporaneous time frame for which sufficient data can be collected. The adjustment factor could be positive or negative and will depend on the direction and magnitude of the observed change. Accounting should be at a scale that provides sufficiently differentiated incentives to encourage best practices for producing and using biogenic feedstocks with lower net greenhouse gas emissions. Changes in carbon stocks should be tracked over the relevant lands (focusing only on those lands that are plausibly subject to management) in a specific supply area compared against a baseline trend. To the extent possible, estimates of net changes in emissions and sequestration in the baseline should be based on historic trends and observed data for regions that are defined based on economically and biologically similar conditions. The baseline should reflect the current management conditions of the land and other demands for biomass that may be influencing changes in carbon stocks during the evaluation period. This is to ensure that bioenergy production is not rewarded for reducing supply of timber or, conversely, blamed for increases in emissions from the landscape that result from other demands for forest biomass, such as the pulpwood market.

A targeted landscape-scale accounting approach would consist of the following three steps:

Step 1: Use an Appropriate Short-Term Time Period: The evaluation of the net flux of GHG emissions should clearly account for the time frame that is being considered for the evaluation. When comparing activities over long time periods, accounting for differences in the time profile of emissions and sequestration is vital to accurately determining the differences in the climate impacts of biogenic energy sources. For example, even if the regrowth of a forest eventually "pays back" the carbon lost during harvesting and combusting biomass at an initial point in time, the associated emissions will still have a climatic effect (e.g. radiative forcing) during the time the emissions remained in the atmosphere as a net increase in GHG concentrations, which in many regions could be decades to centuries depending on average management rotations.

To the extent possible, we recommend that EPA avoid these complications and account for combustion emissions and any changes in emissions/sequestration on the land base within the time period they occur, rather than projecting and comparing the effects of future trajectories of emissions or sequestration. For regulatory analysis and data collection, a five to ten year time period is most appropriate.

Step 2: Determine a Baseline: Emissions from facilities using biogenic sources should be evaluated based on the observed changes in carbon stocks (either positive or negative) compared with a predetermined baseline across the relevant regional landscape. [See discussion of appropriate spatial scale below.] The baseline should be established using available government data sources including USDA's Forest Inventory and Analysis (FIA) for forested landscapes. The baseline should take into account the current management condition of the landscape and whether it is currently unmanaged or currently being used for forestry or agricultural production, including bioenergy.

We urge EPA to focus on accounting for the impacts of bioenergy production within the landscape that represents the "wood shed" or agricultural supply region for one or more bioenergy facilities. The accounting for changes in carbon stocks should specifically focus on those particular lands that are likely to be influenced by management for the purpose of bioenergy feedstock production. In particular, public lands and other lands that are not engaged in feedstock production should be separated from the analysis. Measuring changes in carbon stocks across all lands in a region, without making such distinctions, runs the risk of attributing changes in emissions or sequestration on one set of lands to the influence of bioenergy production when it could be due to a completely different set of factors, such as continuation of trend line growth of forests on unmanaged public or private lands or increasing fragmentation that renders much of the land in ownership patterns unsupportive of harvesting (e.g. northeastern US where a increasing proportion of the forest is in parcels so small empirical evidence suggests there is an infinitesimal chance that the stand will ever be harvested).

Step 3: Compute a Biomass Coefficient: The biogenic carbon emissions from a facility should be adjusted based on the change in carbon stocks across the relevant region. In some regions where biomass utilization creates increased rates of sequestration, the biogenic emissions coefficient could be considerably less than 1 ton for each ton emitted from the smokestack of non-wood waste. This accounts for the increased carbon sequestration on the landscape. On landscapes where sequestration is not increased or even decreased, the landscape experiences net carbon emissions, the biomass emissions coefficient will be at least 1 ton of CO_2 for each ton emitted from the smokestack. Because the accounting is based on relatively short time periods, in some cases, it will be appropriate to increase the coefficient in one period when carbon stocks are being drawn down but then to reduce the coefficient in later periods if there is regrowth of the biomass on the same land (this instance is most likely to occur in regions where there is little ongoing land management and new harvesting will reduce standing stocks of carbon relative to the base case trends previously observed on available lands). It is important to note that utilization of waste wood will reduce the emissions factor, as it will not influence the standing stock, the material would be decomposed in the time frame of the analysis thus any combustion is offset one to one by reduction in carbon emissions from decomposition. A facility that fully relies on waste biomass, the byproduct of the production of other products, could have an emissions factor of zero (none of its emissions would be counted; see more details below).

Step 4: Calculate Leakage: In addition to making adjustments based on changes in carbon stocks in the relevant region, the evaluation should also account for any changes in emissions due to changes in the supply of land-based commodities, including changes in carbon storage in long-lived wood products, shifts to other construction materials such as cement, leakage of emissions that may occur when land use changes in other regions as a result of activities that occur in the primary region being evaluated (such as the displacement of pulpwood production).

While using a set of average regional factors that are repeatedly adjusted could strike the right balance between accuracy and administrative burden, we also recommend consideration of a hybrid approach that provides sufficient flexibility to reward special cases with superior, above-average performance. Particular facilities (or landowners) should be allowed to petition for their own unique adjustment factors (or credits) if they can provide the documentation that this is merited by the production practices for their particular bioenergy feedstocks. Nevertheless, if one facility (or landowner) is granted credit for increasing sequestration or reducing land-based emissions by more than the average, then EPA should readjust the emission factors for the remainder of the facilities in common region to the extent needed to preserve the overall integrity of the accounting in the aggregate for that particular region.

Comparison among bioenergy sources. *EPA is also interested in comments on accounting methods that might be appropriate for different types of biological feedstocks and bioenergy sources. What bases or metrics are appropriate for such a comparison among sources? In other words, are all biological feedstocks (e.g. corn stover, logging residues, whole trees) the same, and how do we know?*

The environmental benefit of a bioenergy source ultimately depends not only on intrinsic properties of the biomass, but also on the specific conditions under which it is produced and used. Two types of biogenic feedstock that should merit special consideration are waste and residue products. If these products would have decomposed naturally over a relatively short time frame under the business as usual scenario, the combustion of these feedstocks is likely to produce negligible warming effects (after the emissions from transporting and processing are considered) compared to business as usual. As a result, if biogenic feedstocks can be identified and documented as waste and/or residue products, then a default emissions factor taking this into account could be accorded to these feedstocks.

While efficiency of energy conversion of biomass will be critically important to the economic success of specific facilities it does not affect the accounting of carbon emissions, as there is not basis for regulating on an intensity basis. Any regulatory system should account for net GHG emissions and other incentives should be used to ensure that intensity of net energy benefits are maximized.

Renewable or sustainable feedstocks. *Specifically with respect to bioenergy sources (especially forest feedstocks), if it is appropriate to make a distinction between biomass* *feedstocks that are and are not classified as "renewable" or "sustainable," what specific indicators would be useful in making such a determination?*

The EPA should focus its accounting on differences in the net greenhouse gas emissions associated with different fuels and energy processes, whether from biomass or fossil sources. In the case of biogenic fuels, accounting for the net emissions is a distinct issue from the question of whether a feedstock can be classified as renewable or sustainable. The harvest of biomass from forest lands and from agricultural lands can have major implications for ecosystem health, including but not limited to impacts on water quality and quantity, wildlife habitat, soil health, and rare and threatened species and ecosystems.

Proper accounting for GHG emissions from biomass production may have some influence on where and how biomass is harvested, but it does not in any way ensure that materials will be harvested in a manner that does not degrade ecosystems. To the extent possible, EPA should use the classifications of "renewable" or "sustainable" as it reflects best practices to ensure that biomass feedstocks are being harvested in a manner that minimizes the damage that the harvest may cause for natural ecosystems. The definition of renewable biomass in the RFS is intended to prevent some of the more severe damage to ecosystems that may occur as a result of biomass harvest, and this definition may be one useful way for EPA to distinguish between biomass sources. The use of the definition of renewable biomass would also create consistency for landowners and biomass suppliers who already need to comply with the definition for materials used to produce biofuels under the RFS.

There are also several third-party audited certification systems for forestry that can serve as an indicator of whether biomass has been sourced sustainably, including Forest Stewardship Council, Sustainable Forestry Initiative, and American Tree Farm. The Council for Sustainable Biomass is also developing a third-party audited standard for sustainability of agricultural and woody biomass production that may be appropriate for EPA to consider once it is finalized and in use. EPA may wish to consider whether these and perhaps other third-party audited standards may be an appropriate tool for verifying that biomass used for compliance with the CAA was produced in a sustainable manner. Any standard that is considered should address a diversity of natural resource issues that may be impacted by biomass production and harvest, including water, wildlife, air quality as it relates to other factors, and threatened or endangered species.

Environmental Defense Fund appreciates the opportunity to provide input on this critical issue, and looks forward to continued dialogue with EPA as it determines how biogenic emissions should be counted for the purposes of the Prevention of Significant Deterioration and Title V Programs of the Clean Air Act. Please do not hesitate to contact me with any questions.

Sincerely,

Steven Hamburg
Chief Scientist
Environmental Defense Fund