March 16, 2015

Holly Stallworth
Designated Federal Officer
Science Advisory Board—Biogenic Carbon Emissions Panel
US Environmental Protection Agency
Via email

> Re: EPA's Accounting Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources (November 2014)

Dear Dr. Stallworth and Members of the Biogenic Carbon Emissions Panel:

The Clean Air Task Force ("CATF") appreciates the opportunity to provide the following comments through the Environmental Protection Agency Science Advisory Board ("EPA SAB") concerning EPA's *Framework for the Assessing Biogenic CO_2 Emissions from Stationary Sources (November 2014)*. CATF is a non-profit environmental organization that works to protect the earth's atmosphere by improving air quality and reducing global climate change through scientific research, public advocacy, technological innovation, and private sector collaboration.

CATF believes it is important that the SAB Biogenic Carbon Emissions Panel ("the Panel") understands the context in which it has been reconvened. Accordingly, the purpose of these comments is to inform the Panel of the status of EPA's effort to regulate biogenic CO_2 emissions from stationary sources, and to suggest how the Panel can help redirect that effort toward a more scientifically- and legally-defensible path.

EPA has taken several actions over the past year that have led to confusion about what the Agency is attempting to accomplish in conjunction with the Panel, and how the Agency has incorporated the Panel's previous recommendations. In light of this confusion and the uncertainty it has generated in a key regulatory development process, we welcome the Panel's renewed involvement. We respectfully urge the Panel to return the focus back to the issue it was originally charged with analyzing—*i.e.*, how to best account for biogenic CO_2 emissions from individual facilities. Moreover, because we are concerned that several of EPA's recent actions ignore or contradict some of the Panel's most critical recommendations, we also urge the Panel to request EPA's plans for utilizing the Panel's contributions and ensure that the Agency will do so in an effective manner.

Background: EPA's Charge to the SAB

In September 2011, EPA published a draft *Accounting Framework for Biogenic Emissions from Stationary Sources*. Soon afterward, EPA asked the SAB to review and comment on

> (1) EPA's characterization of the science and technical issues relevant to accounting for biogenic CO2 emissions from stationary sources; (2) EPA's framework, overall approach, and methodological choices for accounting for these emissions; and (3)

options for improving upon the framework for accounting for biogenic CO_2 emissions.[1]

EPA elaborated on these issues in the "Peer Review Charge" that it transmitted to the SAB. With respect to the "Evaluation of biogenic CO_2 accounting approaches," EPA wrote that it "considered existing accounting approaches in terms of their ability to reflect the underlying science of the carbon cycle and also evaluated these approaches on whether or not they could be readily and rigorously applied *in a stationary source context in which onsite emissions are the primary focus*."[2] In particular, EPA asked, "Does the SAB agree with EPA's concerns about applying the IPCC national approach to biogenic CO_2 emissions *at individual stationary sources*."[3]

SAB convened a panel of experts that analyzed and answered the charges put to it by EPA. Consistent with comments submitted by CATF and other environmental organizations in October 2011,[4] the Panel determined that EPA's proposed method for assessing the net GHG impact of different biomass types was riddled with "conceptual and scientific deficiencies" and urged the Agency to pursue a significantly different accounting approach.[5]

In a final report sent to EPA in September 2012, the Panel found that EPA's draft Accounting Framework did not adequately address "several important scientific issues," including:

- The importance of not assuming that biomass feedstocks are universally carbon neutral. "There are circumstances in which biomass is grown, harvested and combusted in a carbon neutral fashion but *carbon neutrality is not an appropriate a priori assumption*," wrote the Panel. "[I]t is a conclusion that should be reached only after considering a particular feedstock's production and consumption cycle."[6]

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[1] EPA, *Accounting Framework for Biogenic Carbon Dioxide (CO_2) Emissions from Stationary Sources: Peer Review Charge* at 2 ("Peer Review Charge") (http://yosemite.epa.gov/sab/sabproduct.nsf/0/2F9B572C712AC52E8525783100704886/$File/Charge+9-15.pdf).

[2] *Id*. (emphsis added).

[3] *Id*. (emphsis added).

[4] The overarching concern expressed in our comments to EPA was that "[t]he approach described in the proposed 'Accounting Framework' … cannot achieve EPA's stated objective of 'accurately reflect[ing] the carbon outcome' of biomass use by stationary sources." CATF-NRDC-PFPI-Greenpeace, *Comments to the Environmental Protection Agency on "Accounting Framework for Biogenic CO2 Emissions from Stationary Sources"* at 1 (submitted October 18, 2011) (http://www.catf.us/resources/filings/biomass/CATF-NRDC-PFPI-Greenpeace%20Comments%20on%20EPA%20Accounting%20Framework%20for%20Biogenic%20CO2_101811.pdf).

[5] In the *Technical Support Document: GHG Abatement Measures* ("Abatement TSD") that EPA released in conjunction with its proposed GHG emissions standards for existing fossil fuel-fired power plants, EPA relates that "the SAB recommended revisions to the EPA's proposed accounting approach, and also noted that biomass cannot be considered carbon neutral *a priori*, without an evaluation of the carbon cycle effects related to the use of the type of biomass being considered." Abatement TSD 6-12, footnote 274 (http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-ghg-abatement-measures).

[6] SAB Review of EPA's Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources (transmitted September 28, 2012) at 3 (emphasis added) ("SAB 2012 Review").

- The necessity of using an anticipated future baseline. According to the scientists that chair the SAB and the Biogenic Carbon Emissions Panel, "Estimating additionality, i.e., the extent to which forest stocks would have been growing or declining over time in the absence of harvest for bioenergy, is essential, as it is the crux of the question at hand. To do so requires an anticipated baseline approach."[7]
- The relative timing of CO_2 emissions and carbon sequestration. According to the Panel, the draft Framework failed to account for "the different ways in which use of bioenergy impacts the carbon cycle and global temperature over different time scales."[8]
- The extent to which decisions about spatial scale affect emissions calculations. Because the draft Framework focused on "landscape wide changes rather than facility-specific emissions associated with the actual fuelshed," the Panel pointed out that emission rates would be inappropriately "sensitive to the choice of spatial regions."[9]

In addition, the Panel informed EPA that an analytic focus on individual facilities is necessary to establish "a link between the stationary source that is using biomass feedstocks and the emissions that are being measured." Such linkages are "critical in order to be able to regulate emissions at a stationary source level," reported the Panel, "which is the way that greenhouse gas emissions are mandated to be regulated under the Clean Air Act."[10]

Since the Panel issued its final report, EPA has taken several actions that have created significant confusion among stakeholders as to whether and how the Agency plans to utilize the Panel's recommendations. These actions and their consequences are discussed below.

Proposed GHG Standards for Existing Fossil Fuel-Fired Power Plants—June 2014

In June 2014, EPA released a landmark proposal for regulating GHG emissions from existing fossil fuel-fired power plants (referred to herein as the Existing Source Performance Standard, or ESPS).[11] The preamble to EPA's proposal signaled that the Agency plans to rely on the Accounting Framework when determining how to regulate emissions from facilities that burn biomass, but offered little in the way of concrete details on the status of that process:

> The EPA is in the process of revising the draft framework and considering next steps, taking into account both the comments provided by the SAB and feedback from stakeholders. The EPA's biogenic CO_2 accounting framework is expected to provide important information regarding the scientific basis for assessing these biomass derived fuels and their net atmospheric contribution of CO_2 related to the growth, harvest and use of these fuels. This information should assist both states and the EPA in assessing the impact of the use of biomass fuels in reaching emission reduction goals in the energy sector under state plans to comply with the

[7] SAB 2012 Review—cover letter at 2.
[8] SAB 2012 Review at 2.
[9] SAB 2012 Review at 2.
[10] SAB 2012 Review at 3.
[11] Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014) (http://www.gpo.gov/fdsys/pkg/FR-2014-06-18/pdf/2014-13726.pdf).

requirements in the emission guidelines.[12]

EPA's proposal did not address any of the key accounting issues that EPA needs to resolve (*e.g.*, whether the baseline should be static or dynamic; how long the accounting period, or lifecycle, should last; etc). In a technical support document, however, EPA indicated that "the overall net atmospheric contribution of CO_2 resulting from the use of a biogenic feedstock by a stationary source, such as an EGU, will ultimately depend on the stationary source process and the type of feedstock used, as well as the conditions under which that feedstock is grown and harvested."[13]

Elsewhere, EPA notes that "*certain* biomass-derived fuels" have "positive attributes."[14] The proposal says nothing about how it plans to distinguish biomass with "positive attributes" from other types, other than that EPA plans to consider "CO_2 related to the growth, harvest, and use" of biomass. The process that EPA uses to determine each state's renewable energy baseline (from which a portion of the state's emissions target is extrapolated) makes no distinctions whatsoever: all forms of biomass are treated as a source of zero-carbon energy.[15] As CATF and other environmental groups explained in our December 2014 comments to the Agency, EPA's unsupported assumption that all of the biomass-based energy currently being generated is carbon-free means that the ESPS reduction targets are predicated on the use of zero-carbon biomass:

> EPA establishes each state's RE [renewable energy] baseline level using a dataset that includes electricity generated from biomass combustion. The Agency then extrapolates each state's renewable generation target—*i.e.*, the amount of nominally zero-carbon RE that EPA estimates the state can produce on an annual basis by 2030—from those baselines. The renewable generation targets are used to determine each state's overall CO_2 reduction targets. EPA's proposed approach sets targets based on renewable portfolio standards averaged across regions and assumes that the use of all RE technologies will grow at the same rate. Importantly, EPA's proposed calculation includes biomass-burning EGUs [electric generating units] and assumes—without justification—that biomass-burning EGUs do not emit CO_2.[16]

EPA's assumption that biomass-burning power plants do not emit CO_2 contradicts a fundamental finding in the Panel's 2012 report: "Carbon neutrality cannot be assumed for all biomass energy a priori."

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[12] 79 Fed. Reg. at 34925.

[13] Abatement TSD at 6-12, footnote 274.

[14] 79 Fed. Reg. at 34925. (emphasis added).

[15] *See, e.g.*, Abatement TSD 4-1 – 4-6. In contrast, EPA has proposed to fully count the biogenic CO_2 emissions from regulated power plants that co-fire biomass and fossil fuel. EPA, *Technical Support Document: Goal Computation* at 8 (June 2014) ("Goal Computation TSD") (http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-goal-computation).

[16] CATF *et al.*, *Joint Comments on Carbon Pollution Emission Standards for Existing Stationary Sources* at 2-3 (submitted December 1, 2014) ("CATF *et al*. 2014 ESPS Biomass Comments")(citing Abatement TSD, at 4-5; 79 Fed. Reg. at 34927; and Goal Computation TSD at 14-18.

Draft Accounting Framework—November 2014

In the preamble to the June 2014 proposal, EPA committed to providing states with "a clear path" for "meet[ing] the emission reduction requirements of [the ESPS]" through the use of biomass.[17] As detailed above, the Agency wrote that, "The EPA's biogenic CO_2 accounting framework is expected to provide important information regarding the scientific basis for assessing these biomass derived fuels and their net atmospheric contribution of CO_2 related to the growth, harvest and use of these fuels." When EPA released a revised version of the Accounting Framework in November 2014, however, it did little to clarify how stakeholders should account for biomass emissions from facilities that are subject to the ESPS.

Instead of providing a "clear path" with respect to ESPS compliance, the revised Accounting Framework takes a generalized, non-prescriptive approach. As explained in our December 2014 comments to EPA,

> the revised Framework catalogs the various options for analyzing biogenic emissions according to a set of relevant criteria but fails to signal a preference for one approach or another. Moreover, it is unclear how—or even if—the revised Framework will relate to the ESPS, given that EPA "has not yet determined how the framework might be applied in any particular regulatory or policy contexts."[18]

EPA's approach, referred to as "policy agnosticism" in comments being submitted to the SAB by the Natural Resources Defense Council, makes it difficult for stakeholders to understand how the emissions from biomass-burning facilities will be regulated under any specific set of regulations, including the ESPS.[19] Second, to the extent it reflects an attempt by EPA to extend the Panel's work to regulatory programs that are *not* focused on "individual stationary sources" (such as national emissions inventory reporting requirements), the policy agnosticism in EPA's revised Accounting Framework is inconsistent with the Agency's charge to SAB, which sought SAB's input on accounting measures to be used in "a stationary source context in which onsite emissions are the primary focus."[20] Third, EPA's approach represents an implicit rejection of the Panel's request that EPA provide more specificity about the regulatory context in which the Accounting Framework would be applied. In 2012, the Panel wrote:

> The SAB was asked whether we supported EPA's distinction between policy and technical considerations. We do not. In fact, the lack of information in the Framework on EPA's policy context and the menu of options made it more difficult to fully evaluate the Framework. Because the reasonableness of any accounting

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[17] *Id*.

[18] CATF *et al*. 2014 ESPS Biomass Comments at 4 (citing EPA Revised Accounting Framework at 2).

[19] As explained in the December 2014 comments that CATF submitted individually as well as those we submitted in conjunction with other organizations, the combustion of biomass from sources that are subject to the ESPS does not reduce emissions and therefore cannot be consider a "system of emissions reduction" under Section 111(d) of the Clean Air Act. CATF, *Comments on the Clean Power Plan ("CPP")—Carbon Pollution Emission Guidelines for Existing Stationary Sources* at 79, 87 (submitted on December 1, 2014) ("CATF CPP Comments") (http://www.catf.us/resources/filings/EGU_GHG_NSPS_Rule/CATF%20CPP%20Comments.pdf); CATF *et al*. 2014 ESPS Biomass Comments at 6.

[20] Peer Review Charge at 2.

> system depends on the regulatory context to which it is applied, the Framework should describe the Clean Air Act motivation for this proposed accounting system, including how the agency regulates point sources for greenhouse gases and other pollutants.[21]

It appears that the Panel wants to know which specific policy is at issue so that it can develop an accounting framework that is best suited to that regulatory context, while EPA wants a framework that is relevant to the broadest possible range of policies. In CATF's view, both approaches are problematic. Attempting to tailor an accounting framework to a particular program within the Clean Air Act (*e.g.*, the ESPS or the Best Available Control Technology requirement of the Prevention of Significant Deterioration program) would arguably require the Panel to exercise expertise in regulatory and legal analysis (in addition to its expertise in scientific analysis). On the other hand, if the Panel attempts to develop a framework that has near-universal applicability—per EPA's interest—there is a real risk that the result will not be useful in any specific context. Instead, we urge the Panel to work on the development of a framework that addresses the key issues that apply to regulations where the emissions of an *individual facility* are at issue. That would allow the Panel to set aside any aspects of EPA's revised Accounting Frameworks that are intended to accommodate policy programs that have a wider scope, and refocus the analysis on emissions from "individual stationary sources."

McCabe Memorandum—November 2014

EPA released a memorandum from Assistant Administrator Janet McCabe on the same day that it published the revised Accounting Framework.[22] In the McCabe Memo, EPA states that the "use of waste-derived feedstocks and certain forest-derived industrial byproducts are likely to have minimal or no net atmospheric contributions of biogenic CO_2 emissions, or even reduce such impacts, when compared with an alternate fate of disposal."[23] Based on this finding, EPA "expects to recognize the biogenic CO_2 emissions and climate policy benefits of waste-derived and certain forest-derived industrial byproduts" when implementing the ESPS.[24] Specifically, EPA says it "expects that states' reliance specifically on sustainably-derived agricultural- and forest-derived feedstocks may also be an approvable element of their [ESPS] compliance plans."[25]

While the McCabe Memo has the virtue of being more forthcoming about the EPA's intended regulatory approach than any of the Agency's other recent statements concerning biogenic emissions, the approach it describes would violate the Clean Air Act and contravene analyses produced by the Panel and by the authors of EPA's revised Accounting Framework. In our December 2014 comments on the treatment of biogenic emissions in EPA's proposed ESPS, CATF and other organizations wrote:

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[21] SAB 2012 Review at 2-3.

[22] Janet G. McCabe, Acting Assistant Administrator, EPA Office of Air and Radiation, "Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources" (November 19, 2014) ("McCabe Memo") (http://www.epa.gov/climatechange/downloads/Biogenic-CO2-Emissions-Memo-111914.pdf).

[23] *Id*. at 2.

[24] *Id*.

[25] *Id*.

> The McCabe memo contravenes the findings of the revised Framework in several ways. First, the memo would broadly exempt "waste-derived feedstocks and certain forest-derived industrial byproducts," even though Appendix D of the revised Framework makes it clear that in many circumstances, combusting these materials for energy can result in substantial and long-lasting net CO_2 emissions. Second, the term "sustainable land management" covers an enormous variety of practices, as do the terms "sustainable forestry" and "sustainable agriculture."[26] The McCabe Memo does not provide any definition of these terms. Most importantly, the fact that a regulated EGU burns only "sustainably-derived feedstocks" says very little, if anything, about the amount of biogenic CO_2 emitted by the source or the net effect of those emissions on atmospheric carbon loading. EPA's plan to effectively exempt from ESPS scrutiny those emissions that occur when EGUs combust "sustainably-derived feedstocks" could result in a net increase of CO_2 emissions for decades. Consequently, EPA cannot meet its obligations under CAA §111(d) by requiring affected sources to show that they rely on "sustainably-derived feedstocks."

The approach described in the McCabe Memo, with its focus on whether biomass has been "sustainably-derived," differs dramatically from the approach recommended by the Panel in 2012. "In general," wrote the Panel's chairperson, "the *Framework* should provide a means to estimate the effect of stationary source biogenic feedstock demand, on the atmosphere, over time, as comparing a scenario with the use of biogenic feedstocks with a counterfactual scenario without the use of biogenic feedstocks."[27] Given the likelihood that many states and biomass harvesting operations will interpret "sustainably-derived" as broadly as possible, the McCabe Memo would exempt the vast majority of biomass used by facilities regulated under the ESPS from the multi-criteria analysis recommended by the Panel.

EPA's plan to approve the use of "sustainably-derived" biomass as an ESPS compliance method even though there is no commonly accepted definition of the term "sustainable" also runs contrary to one of the Panel's critiques of the 2011 draft Accounting Framework—*i.e.*, that it found "a number of important limitations in the *Framework*, including the lack of definition of several key features, such that the *Framework's* implementation remains ambiguous."[28]

Accounting Recommendations—Moving Forward

In our December 2014 comments on the ESPS proposal, CATF and other organizations provided EPA with the following recommendations to guide its development of "biogenic accounting factors" (BAFs):

- Rely on an anticipated future baseline to model changes in stored carbon. Regulators must compare emissions from increased biomass harvesting added to a "business as usual" baseline

[26] CATF *et al*. 2014 ESPS Biomass Comments at 5 (citing USDA, Sustainable Agriculture-Definitions and Terms (definition of "sustainable agriculture" makes no reference to the net GHG emissions associated with the use of "sustainable agriculture" as an energy feedstock (http://www.nal.usda.gov/afsic/pubs/terms/srb9902.shtml#toc2); *and* CATF CPP Comments at Section III.c.ii (pages 96-97) (survey of definitions of "sustainable forestry" and "sustainable agriculture").
[27] SAB 2012 Review—cover letter at 2.
[28] SAB 2012 Review at 3.

against a scenario absent increased biomass demand for bioenergy. This approach will help ensure biomass carbon accounting results reflect what the atmosphere "sees" in terms of emissions from increased biomass harvesting.

- Utilize compact timeframes when analyzing the net emissions associated with the use of biomass. A timeframe of 10-20 years would analyze the net emissions impact of biomass during a period in which we must avoid locking in long-lived emissions, as we try not to exceed the nation's total allowable emissions consistent with a 2° C threshold, while demand reduction and other mitigation measures have time to take hold more fully. It would also align biogenic emissions accounting under the ESPS with other regulatory efforts designed to avoid the worst consequences of climate change; it would reduce modeling uncertainty, which can increase dramatically over longer time horizons; and it would model BAFs on approximately the same timeframe as industry planning horizons for long term-contracts and operations.
- Calculate biogenic emissions and reductions consistently, regardless of the spatial scale or region in which they occur. BAFs should be modeled in a way that is independent of the physical fuelshed area. Instead, data to inform BAFs—on fuel type, size class for woody biomass feedstocks, land use history, current harvest regime and alternate biomass uses in existing wood products markets—should be collected at the appropriate scale for each class of data. This is necessary also so that biogenic emissions modeling can accommodate facility-specific analyses necessitate by the need to model carbon emissions under New Source Review and the Prevention of Significant Deterioration permitting programs.
- Address leakage by incorporating the following counterbalancing assumptions into the BAF analysis: First, that new biomass harvest displaces demand associated with other industries on a full one-to-one basis to a new, similar forest stand. And second, that leakage is additive and "new" standing trees are cut in forests that are biologically and climatically identical to the original wood source to meet the original non-biomass needs.
- Categorize biomass feedstocks according to key physical and methodological characteristics. This process includes differentiating between different fuel types (*e.g.*, boles versus branches/limbs); different size classes (*e.g.*, large diameter versus small diameter); different land use histories (*e.g.*, planted versus naturally regenerating); different harvest regimes (*e.g.*, complete removal versus partial cuts); and different alternative fates (*e.g.*, short-term uses versus long-term structural objects for merchantable wood and *in situ* burning versus decay for harvest residues).[29]

We believe that these principles should guide the Panel's review of EPA's revised Accounting Framework as well, and we would look forward to discussing each of them further with the Panel.

Conclusion

Several actions taken by EPA over the past year—specifically, the June 2014 ESPS proposal, the November 2014 revised Accounting Framework, and the November 2014 McCabe Memo—have created confusion about whether and how the Agency plans to utilize the Panel's recommendations. Furthermore, the McCabe Memo suggests a course of action that deviates sharply from the Panel's previous recommendations about how to best account for biogenic emissions from stationary sources.

[29] CATF *et al*. 2014 ESPS Biomass Comments at 6-7.

We therefore welcome the Panel's renewed involvement in this process and we ask that the Panel take steps to refocus EPA's effort on the "stationary source context in which onsite emissions are the primary focus," as per the Agency's original charge to the SAB.

As the Panel has previously reported to EPA, accurate and effective biogenic emissions accounting requires an anticipated future baseline and spatial scales that facilitate meaningful distinctions between biomass types. CATF and other organizations have also pointed out the importance of compact analytic timeframes and leakage analysis. We respectfully urge the Panel to work with EPA to ensure that these principles are used to analyze and regulate biogenic CO_2 emissions from individual stationary sources.

Respectfully submitted,

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