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TO: Holly Stallworth
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FROM: Emily McGlynn
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RE: The Earth Partners' comments on the Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources

Dear Science Advisory Board Panel,

Thank you for the opportunity to comment on EPA's Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources ("Framework") and contribute to the Science Advisory Panel's review process. I would like to provide a short introduction to The Earth Partners in order to provide context for our comments below:

The Earth Partners is private company founded with a mission to design and implement scalable business models to drive land restoration. While a number of emerging markets around ecosystem services may eventually support these efforts, to date the largest, mature market for driving land restoration centers on renewable energy. The Earth Partners has designed and is implementing three business models that pair biomass recovery with land restoration and ecosystem service benefits, including (1) utilizing invasive woody brush from southwest grasslands, (2) restoration of perennial native grasses in coastal prairie regions of the Gulf Coast, and (3) utilization of mountain pine beetle-infested trees in South Dakota. We call this approach to bioenergy "conservation biomass." Our team has extensive experience designing, building, and operating biomass pellet and liquid fuel plants in the U.S. and financing such projects. We utilize rigorous sustainability frameworks and work extensively with ecologists and other experts in the development of these conservation biomass projects to ensure land restoration objectives are achieved.

Our overall objective for engaging in the biogenic accounting discussion is twofold: (1) to ensure that the Framework utilizes a spatial scale and integrates counterfactual scenarios for the fate of utilized biomass material that allows for understanding net land carbon impacts at at least a "regional" scale, and (2) to ensure that the Framework is implemented in such a way that the biomass industry can operate under long term policy certainty, while still being incentivized to use the most sustainable sources of biomass.

1. **Accounting for regional and counterfactual dynamics, vis a vis baselines**

Let's use the example of removing invasive woody brush from southwest grasslands in interrogate these issues. Over the past century, brush species including honey mesquite (*Prosopis glandulosa*), redberry juniper (*Juniperus pinchotti*), ashe juniper (*Juniperus ashei*), and sweet acacia or huisache (*Acacia farnesiana*), while native to the southwest U.S., have extended far beyond their historical presence limited to waterways, lowlands, and sporadic motts, creating an ecological and agricultural nuisance in Texas, New Mexico, Arizona, Colorado, Utah, and Nevada. The state of Texas and USDA's Natural Resources Conservation Service (NRCS) has devoted over $100 million public dollars over the past decade to brush removal, treating about 350,000 acres per year, in an effort to promote healthier rangeland, improved soil quality and reduced erosion, and natural vegetation communities. The Earth Partners estimates up to 1 million acres of brush are removed annually in Texas alone, including privately funded activities and wildfires. This is down from a historical high of over 2 million acres treated annually in 1940, and an average of 1.4 million over 1940-1984. Even with these historically high rates of brush removal, brush presence expanded significantly, today encroaching on an estimated 100 million acres in Texas alone.

In many instances, landowners will windrow or pile the uprooted brush and burn them in the field. Otherwise the piles are left to decompose. There is no available data on rates of burning vs. decomposition. There are occasional instances where brush can be utilized for juniper oil, fence posts, or firewood, but the vast majority of removed brush has no other economical use than as a waste product of working rangeland management.

The Framework should incorporate considerations around business as usual and/or historical rates of biomass removal activities within a given region when calculating any anticipated baselines. The model should also be able to incorporate assumptions around how much biomass demand can be supported through existing biomass removal rates (especially for currently untapped waste/residue streams like invasive brush). Incorporating the counterfactual of some (significant) amount of infield burning in the anticipated baseline is also important for accurately reflecting emissions dynamics.

Finally, a related point on the issue of baselines that warrants its own section due to its importance.

Land carbon stock levels: a modeling question or a desired outcome?

Many stakeholders have debated whether the "baseline" land carbon stock level should be reflected via "reference point" or "anticipated baseline." Many stakeholders have argued for the anticipated baseline approach because they believe this will create a higher bar for proving carbon neutrality of bioenergy (although this depends on how the anticipated baseline is calculated). Some stakeholders have also argued that it is arbitrary for the Framework to indicate that any amount of biomass removal that maintains a >1 growth:drain ratio within a given region would be considered carbon neutral.

These points would be more usefully debated not as modeling questions but as a policy question: What is the desired or appropriate level of land carbon stock in a given region? The answer to this question would become the most appropriate "baseline" against which to measure bioenergy-related impacts and would need to balance a number of economic, ecological, and social issues.

While many have argued that the Science Advisory Board is not the appropriate venue for discussing broader land-based policies (or any policies at all, for that matter), it is nevertheless important to acknowledge that an "anticipated baseline" approach, while perhaps more theoretically rigorous than a reference point baseline, may nevertheless be a flawed approach for understanding whether or not biomass removal is having a negative impact on landscapes or regions. Agreeing on an "optimal land carbon level" for a given region would likely be even more challenging than generating an accurate anticipated baseline, but it is the more relevant mental framework and likely less arbitrary than a number of modeling choices.

This point becomes especially important when considering use of invasive species or diseased trees for biomass, or when addressing wildfire risk. In these instances a reduction in land carbon stock may occur as a result of land restoration or mitigation activities, which are highly desirable from social, environmental, and economic standpoints. These tradeoffs need to be taken into account when understanding optimal land carbon levels, and not create disincentives for utilizing the feedstocks coming from these landscapes.

EPA might usefully work with USDA, US Forest Service, Natural Resources Conservation Service, and others to initiate a conversation around these issues. It would be unfortunate for the Framework to be finalized in a way that might not reflect longer term U.S. land use and land carbon stock policies.

2. Ensuring a rigorous yet manageable framework for the biomass industry

Based on the conversations to date and EPA's current Framework, it appears that large amounts of biomass could qualify for a *de minimis* emissions category – an estimated 400 million bone dry metric tons of waste, industrial residue, and forest residues would be available annually for use in the energy sector under business as usual activities.[1] Even if only a fraction of this were available to the power sector, say 100 million tons of biomass, accounting for competing uses and sustainability constraints, this would be sufficient to offset 16 percent of current coal use in the power sector.[2] Given the emissions reduction benefits of tapping a fraction of this potential, it would be a shame for the Framework to be implemented in such a way that prevents investment and development of the biomass industry.

The single most powerful way EPA could freeze biomass development is to create an unpredictable policy environment in which BAFs or other metrics change in real time for an individual facility or region. Biomass producers will be able to navigate a rigorous emissions accounting framework, but investors will not tolerate unpredictable emissions factors year on

[1] NREL, 2005: A Geographic Perspective on the Current Biomass Resource Availability in the U.S.
[2] EIA, 2012: U.S. coal consumption by end use sector, census division, and state, 2012 and 2011

year. It is critical that whatever system is put in place it allows for understanding emissions factors throughout the life of an individual project at the time of project initiation. This should be a firm principle of the final Framework.

I hope these comments prove useful as the Science Advisory Board panel finalizes its deliberations on the Framework. I am happy to answer any questions and can be reached at Emily.Mcglynn@teplp.com

Sincerely,

Emily McGlynn

The Earth Partners, LP