

**Summary Minutes of the
U.S. Environmental Protection Agency
Science Advisory Board
Biogenic Carbon Emissions Panel
Teleconference
March 20, 2012**

Biogenic Carbon Emissions

Panel Members:

Dr. Madhu Khanna, Chair
Dr. Robert Abt
Dr. Morton Barlaz
Dr. Marilyn Buford
Dr. Mark Harmon
Dr. Jason Hill
Dr. Madhu Khanna
Dr. Charles Rice
Dr. Lydia Olander
Dr. John Reilly
Dr. Daniel Schrag
Dr. Roger Sedjo
Dr. Ken Skog
Dr. Tristram West
Dr. Peter Woodbury

Purpose: The Science Advisory Board (SAB) Biogenic Carbon Emissions Panel discussed its draft SAB report, dated 3-13-12, on EPA's *Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources (Sept. 2011)*.

Designated Federal Officer: Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff: Jennifer Jenkins, Sara Ohrel, Andrew Dickens

Public: Joel Visser (Sidley Austin), Andrew Childers (Bloomberg Bureau of National Affairs), Mike Jostrum (Plum Creek Timber Company), Linda Wilson (New York Attorney General's Office), Dawn Reeves (Inside EPA), Sascha Lyutse (Natural Resources Defense Council), Jeff Morris (Sound Resource Management), Patrick Griffith (Los Angeles County Sanitation District), Gregg Morris (Green Power Institute), Mark Flugge (ICF International), Rubab Bhangu (ICF International), Sarah Biggar (ICF International), Steve Prisley (Virginia Tech), Neil Sampson (The Sampson Group), Charlie Canham (Cary Institute of Ecosystem Studies), Chase Crawford (Southern Company), Paul Noe (American Forest & Paper Association), Mary S. Booth (Partnership for Policy Integrity), Timothy Searchinger (Princeton University), Reid Miner (National Council for Air and Stream Improvement), Steve Hamburg (Environmental Defense Fund), Ruben Lubowski (Environmental Defense Fund), David

Carr (Southern Environmental Law Center), Dave Tenny (National Alliance of Forest Owners), Sasha Lyutse (Natural Resources Defense Council), William Space (Massachusetts Department of Environmental Protection), Steve Wallander (U.S. Department of Agriculture), Chris Farley (U.S. Department of Agriculture), David Tarnus (Merica International), John Lewis (Clean Air Task Force), Helen Silver (Clean Air Task Force), Bob Perschel (Forest Guild), Lisa Moerner (Dominion Resources, Inc.), Ann Claassen (ReCommunity, Inc.), Gregg Morris (Green Power Institute), Jeff Rathbun (Michigan Department of Environmental Quality), Gail Sandlin (State of Washington)

Meeting Materials and Meeting Webpage:

The materials listed below may be found on the meeting webpage at:
<http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/0ad0eecfd3d5c38c8525793b0065fe96!OpenDocument&Date=2012-03-20>

- Agenda
- Federal Register Notice
- Charge Questions
- Draft Report of 3-13-12
- Panel Roster
- List of public speakers
- Public Comments (written):
 - American Forest and Paper Association
 - Dominion Resources Services
 - Edison Electric Institute
 - Georgia-Pacific
 - Green Power Institute
 - Mary Booth, Partnership for Policy Integrity
 - National Alliance of Forest Owners
 - National Council for Air and Stream Improvement
 - Peter Becker, Eastern Ozarks Forestry Council et al.
 - ReCommunity, Inc.
 - Society of American Foresters
 - Timothy Searchinger
 - Wilderness Society
 - William Moomaw et al.

Meeting Summary

The discussion followed the plan presented in the meeting agenda.

TUESDAY, MARCH 20, 2012

Dr. Stallworth convened the meeting and explained that the Science Advisory Board operates under the Federal Advisory Committee Act. Dr. Madhu Khanna reviewed the agenda. Dr. Jennifer Jenkins (OAQPS) thanked the Panel for their efforts.

Public Comments:

Paul Noe of the American Forests and Paper Association described the use of mill residues and byproducts to produce energy for paper mills and emphasized that the use of spent pulping liquor avoided less environmentally friendly outcomes. Logging residues also displace the use of fossil fuels and should not be discounted by decay rates. The decay rates of logging residues are on time scales that do not match the Panel's suggestion for long time horizons. In the southern U.S., decay generally takes place over 3 years.

Bob Perschel of the Forest Guild described a recently released report *Biomass Supply and Carbon Accounting for Southeastern Forests (Feb. 2012)* which used a landscape fuelshed approach to answer questions about the atmospheric carbon consequences of generating electricity from woody biomass. The *Biomass Supply and Carbon Accounting* report used actual source areas and found there was an initial period of carbon debt on the order of 35 – 50 years before the debt changes to atmospheric carbon benefit.

David Carr of the Southern Environmental Law Center said the *Biomass Supply and Carbon Accounting* report shows that biomass is still not carbon neutral compared to coal for 35 years, even assuming all trees cut for biomass would be regrown. Mr. Carr clarified that the report did not look at a larger demand level of biomass needed to meet a 15% renewable fuel standard. In response to a question, Mr. Carr stated that the Forest Guild's interviews with landowners had not uncovered any evidence of anticipatory planting in response to bioenergy markets.

Dave Tenny of the National Alliance of Forest Owners referenced the President's commitment to an "all of the above" energy strategy. Toward that end, Mr. Tenny asked the Panel to consider the practicality and feasibility of how forestry and forest markets really work and to avoid unrealistic and complicated regulatory schemes. In response to a question, Mr. Tenny said that his NAFO members were planting trees in anticipation of a rebound in housing markets, not in response to bioenergy markets because biomass was a low value product.

Lisa Moerner of Dominion Resources urged EPA to apply a categorical exclusion to all biogenic CO₂ emissions at a national scale given that Dominion was proposing to convert coal burning facilities to biomass, primarily wastewood and forest residues.

Alan Lucier of the National Council for Air and Stream Improvement (NCASI) commended the Panel for addressing temporal scale in its report. Mr. Lucier criticized the Panel's recommendation for considering the decay rates for forest residues, saying that it was not in line with cost and feasibility considerations. Mr. Lucier said the Panel's recommendation to use an anticipated future baseline approach was inconsistent with the Panel's own comments about the uncertainties associated with projecting the future. In response to a question from Dr. Khanna, Mr. Lucier said that models based on individual stands are not appropriate because they only capture the pulse of emissions attributable to a single stand whereas larger spatial scales capture average carbon stocks throughout a

landscape, a metric that is more relevant to the carbon footprint of biomass energy. Mr. Lucier said logging residues were only a small percentage of the feedstock for many facilities and that a decay calculation based on chain-of-custody would be an onerous burden. A large portion of feedstocks consist of tree tops, a 3 – 4” diameter material that decays quickly, over 10 years or so.

Steve Hamburg of the Environmental Defense Fund criticized the use of a national scale because of the heterogeneity in carbon balances across the country. In view of this heterogeneity in sequestration, Dr. Hamburg criticized the Panel’s statement that it was a “nonsensical conclusion that a ton of carbon emitted in one part of the country may be treated differently from a ton of carbon emitted elsewhere.”

Ruben Lubowski of the Environmental Defense Fund reminded the Panel that EPA should be trying to influence the marginal actor or new facilities so that they use biomass when it’s appropriate. He acknowledged that the Panel’s recommendation for different BAF factors across various feedstocks would help generate appropriate incentives however, for non-waste products, he expressed the concern that a generic default BAF would not provide appropriate incentives for new actors entering the market with innovative feedstocks. Dr. Lubowski said that monitoring carbon changes through time made more sense than predictive modeling. In response to a question, Dr. Lubowski said that FIA data could be used to construct regions based on the minimum size needed to get a confidence interval appropriate to detecting carbon changes. Dr. Khanna pointed out that a counterfactual would be needed in order for leakage to be calculated.

Mary Booth of the Partnership for Policy Integrity said the 3/13/12 report contained key improvements, particularly in the call for modeling the decay of residues but she expressed a concern about the 100 year time scale in that it disregarded the need for immediate CO₂ reductions in order to avoid tipping points. Dr. Booth was also critical of the Panel’s discussion of potential certification approaches based on her concerns about additionality. A panelist said that if tipping points exist, changing emissions over the next 20 years would not avoid them.

Ann Claassen of Lathan and Watkins, representing ReCommunity Inc., spoke about their engineered biogenic feedstock whose source material is drawn from municipal and industrial waste, urging the Panel to give EPA guidance on how it should be treated in a regulatory context. Reengineered feedstock is unique in that it is not woody biomass, agricultural biomass or municipal waste but it could replace coal at coal-fired power plants. Ms. Claassen asked that reengineered feedstock be treated separately in the *Accounting Framework*.

Jeffrey Morris of the Green Power Institute said the *Accounting Framework* did not capture the intrinsic role of methane in the active carbon cycle nor did it capture the role of major loss events in the forest, e.g. fire risks, insects, and disease vectors. Thinning protects forests from the risks of fires and other carbon losses so Mr. Morris said this benefit (of a particular kind of harvest) needed to be incorporated into the *Framework*.

Sasha Lyutse of the Natural Resources Defense Council (NRDC) said EPA does not have legal authority to exclude biogenic emissions because of their off-site sequestration. Ms. Lyutse commended the Panel for rejecting EPA's regional approach. Ms. Lyutse said that actual emissions and removals should be accounted for when/where they occur. One panelist commented that in order to implement such an approach, EPA would have to monetize every bit of land in the U.S. and credit growth every year, paying out to landowners for the sequestration as it happens.

One panelist again pointed out that anticipatory planting would take place as forest managers adapt to provide more fuelwood through denser plantings or modified thinning and in other ways.

On the topic of soil carbon sequestration, Dr. Khanna asked if the Panel wanted to advance the idea of look-up tables. One panelist said USDA was working on information that related soil carbon to land use changes. Another panelist said he was also familiar with this work and could provide a little more language in a week or so. Another panelist said that soil carbon changes could be very large and very significant in gauging the carbon consequences of bioenergy. Dr. Khanna solicited changes for additional text, possibly in Section 4.6. One panelist said most look up tables were designed to underestimate soil carbon sequestration. Another panelist thought they would work for EPA's purposes. The suggestion was made that the Panel's report should merely lay out some options for EPA, pointing out their pros and cons. A panelist voiced discomfort with the anticipated baseline approach to estimating biogenic carbon emissions. Another panelist said he thought the process models could aid in gauging soil carbon sequestration. One panelist voiced a concern about adding additional complexity to the *Framework* when practical implementation difficulties may make the whole *Framework* unworkable. A panelist said that between the three options (modeling, measurement and look-up tables), he was more comfortable with the some combination of the three.

On the topic of permanence, Dr. Khanna pointed out that carbon sequestration could be temporary and that there was no guarantee of continued sequestration into the future. One panelist expressed some misgivings about getting further into the details of the *Framework*. Another panelist worried about the complexity of the whole *Framework* and expressed reservations about the Panel's recommendations for detailed improvements to the *Framework*.

On the decay of logging residues, a panelist said the interaction between the decay rate and the rotation of harvest defined an ongoing "store" of carbon in slash and that this was a steady state calculation that is independent of the 100 year time frame (or any other time frame). Dr. Khanna wondered if the Panel's report should be revised to acknowledge differential decay rates across the country (as suggested by some public commenters). Dr. Khanna said the text might need to acknowledge that the residue will decay completely within 20 – 30 years.

On the topic of certification approaches, one panelist expressed a concern about how additionality would be established and the possibility of high transactions costs. Panelists

voiced different opinions on whether a certification system could adequately capture additionality. One panelist said that certification systems would provide the best incentives for the best management of carbon on the land although certification would have to establish additionality, namely that carbon accumulation after harvest is a little higher than it would be without harvest. Another panelist said that establishing additionality was not necessary but so long as growth exceeded harvest in the forest, biomass energy was not adding additional carbon to the atmosphere. One panelist described a certification system as a “belief system.” Another panelist said the FIA data suggest that forest stocks are “certified” at a national level. Another panelist pondered the extent of data requirements and implementation issues.

Dr. Stallworth interrupted the conversation to ask whether panelists could stay on the line past the scheduled adjournment time of 4:00pm Eastern time. In response to a question from a panelist, she explained that most SAB panels try to achieve consensus but that if a panelist is at odds with the general thrust of the panel’s report, he could write a minority report. Dr. Khanna said she would like a subgroup on certification. In response to a panelist’s suggestion, she said there would also be a subgroup on waste feedstocks like black liquor. In addition, Dr. Khanna said the Panel should reconstitute the group on the anticipated baseline approach. Dr. Khanna said that edits on the latest draft would be welcome. Panelists agreed that citations listed at the end of the report should only be included if they are used in the text.

Before adjourning the meeting Dr. Stallworth said that she and Dr. Khanna would follow up with actions items via e-mail, including the scheduling of additional teleconferences.

On Behalf of the Committee,
Respectfully Submitted,

Holly Stallworth, Ph.D. /s/
Designated Federal Officer

Certified as Accurate:

Madhu Khanna, Ph.D. /s/
Chair, SAB Biogenic Carbon Emissions Panel

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings