UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MEMORANDUM

OFFICE OF
AIR AND RADIATION

To: Holly Stallworth, DFO
Science Advisory Board Staff Office

From: Paul Gunning, Acting Director
Climate Change Division

Subject: Accounting Framework for Biogenic Carbon Dioxide (CO_2) Emissions from Stationary Sources and Charge Questions for SAB peer review

The purpose of this memorandum is to transmit the draft *Accounting Framework for Biogenic CO_2 Emissions* study and the charge questions for consideration by the Science Advisory Board (SAB) during your upcoming peer review in fall 2011.

In January 2011, the U.S. Environmental Protection Agency (EPA) announced a series of steps it would take to address biogenic CO_2 emissions from stationary sources. In addition to specific regulatory action, EPA committed to conduct a detailed examination of the science and technical issues related to accounting for biogenic CO_2 emissions and to develop an accounting framework for those emissions. The study transmitted today is that examination.

The study identifies key scientific and technical factors that should be considered when constructing any framework for accounting for the impact of utilizing biologically-based feedstocks at stationary sources. It then provides EPA's recommendations on those issues and presents a framework for "adjusting" estimates of onsite biogenic CO_2 emissions (i.e., a "biogenic accounting factor" or BAF) on the basis of information about the carbon cycle.

As indicated in the accompanying materials, advice on these issues will be important as EPA moves through the steps to address biogenic CO_2 emissions from stationary sources. We look forward to the SAB's review.

Please contact me if you have any questions about the attached study and charge.

Attachments:
1) Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources
2) Synthesis of the Call For Information on Bioenergy and Other Biogenic Sources

ACCOUNTING FRAMEWORK FOR BIOGENIC CARBON DIOXIDE (CO_2) EMISSIONS FROM STATIONARY SOURCES

PEER REVIEW CHARGE

EPA is providing this study, *Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources* (September 15, 2011), to the Science Advisory Board (SAB) to review EPA's approach on accounting for biogenic CO_2 emissions from stationary sources, including the scientific basis and methodological components necessary to complete that accounting.

Objective

EPA is charging the SAB to review and comment on (1) EPA's characterization of the science and technical issues relevant to accounting for biogenic CO_2 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.

This charge does not ask the SAB for regulatory recommendations or legal interpretation of the Clean Air Act statutes related to stationary sources.

Charge Questions

1. *Evaluation of the science of biogenic CO_2 emissions*

In reviewing the scientific literature on biogenic CO_2 emissions, EPA assessed the underlying science of the carbon cycle, characterized fossil and biogenic carbon reservoirs, and discussed the implications for biogenic CO_2 accounting.

- Does the SAB support EPA's assessment and characterization of the underlying science and the implications for biogenic CO_2 accounting?

2. *Evaluation of biogenic CO_2 accounting approaches*

In this report, EPA 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. On the basis of these considerations, EPA concluded that a new accounting framework is needed for stationary sources.

- Does the SAB agree with EPA's concerns about applying the IPCC national approach to biogenic CO_2 emissions at individual stationary sources?
- Does the SAB support the conclusion that the categorical approaches (inclusion and exclusion) are inappropriate for this purpose, based on the characteristics of the carbon cycle?

- Does the SAB support EPA's conclusion that a new framework is needed for situations in which only onsite emissions are considered for non-biologically-based (i.e., fossil) feedstocks?
- Are there additional accounting approaches that could be applied in the context of biogenic CO_2 emissions from stationary sources that should have been evaluated but were not?

3. Evaluation of methodological issues

EPA identified and evaluated a series of factors in addition to direct biogenic CO_2 emissions from a stationary source that may influence the changes in carbon stocks that occur offsite, beyond the stationary source (e.g., changes in carbon stocks, emissions due to land-use and land management change, temporal and spatial scales, feedstock categorization) that are related to the carbon cycle and should be considered when developing a framework to adjust total onsite emissions from a stationary source.

- Does SAB support EPA's conclusions on how these factors should be included in accounting for biogenic CO_2 emissions, taking into consideration recent advances and studies relevant to biogenic CO_2 accounting?
- Does SAB support EPA's distinction between policy and technical considerations concerning the treatment of specific factors in an accounting approach?
- Are there additional factors that EPA should include in its assessment? If so, please specify those factors.
- Should any factors be modified or eliminated?

4. Evaluation of accounting framework

EPA's accounting framework is intended to be broadly applicable to situations in which there is a need to represent the changes in carbon stocks that occur offsite, beyond the stationary source, or in other words, to develop a "biogenic accounting factor" (BAF) for biogenic CO_2 emissions from stationary sources.

- Does the framework accurately represent the changes in carbon stocks that occur offsite, beyond the stationary source (i.e., the BAF)?
- Is it scientifically rigorous?
- Does it utilize existing data sources?
- Is it easily updated as new data become available?
- Is it simple to implement and understand?
- Can the SAB recommend improvements to the framework to address the issue of attribution of changes in land-based carbon stocks?
- Are there additional limitations of the accounting framework itself that should be considered?

5. Evaluation of and recommendations on case studies

EPA presents a series of case studies in the Appendix to demonstrate how the accounting framework addresses a diverse set of circumstances in which stationary sources emit biogenic CO_2 emissions.

- Does the SAB consider these case studies to be appropriate and realistic?
- Does the EPA provide sufficient information to support how EPA has applied the accounting framework in each case?
- Are there alternative approaches or case studies that EPA should consider to illustrate more effectively how the framework is applied to stationary sources?

6. Overall evaluation

Overall, this report is the outcome of EPA's analysis of the science and technical issues associated with accounting for biogenic CO_2 emissions from stationary sources.

- Does the report – in total – contribute usefully to the advancement of understanding on accounting for biogenic CO_2 emissions from stationary source?
- Does it provide a mechanism for stationary sources to adjust their total onsite emissions on the basis of the carbon cycle?
- Does the SAB have advice regarding potential revisions to this draft study that might enhance the utility of the final document?