

**EPA Office of Air and Radiation Office of Atmospheric Programs (OAP) Climate Control Division (CCD) Science Integration for Decision Making Fact-Finding Interviews
November 19, 2009
Washington, DC**

Three members of the SAB Committee on Science Integration for Decision Making interviewed the CCD Staff: Drs. John Balbus and Thomas Wallsten in person and Dr. Catherine Kling by telephone. Following that meeting, the SAB committee members interviewed the CCD Director and Chief of the CCD Climate Science and Impacts Branch. For each interview, Dr. Angela Nugent, Designated Federal Office for the committee, provided a brief introduction to the purpose of the interview. She also took notes to develop a summary of the conversation. All interviewees were provided a copy of the committee's Preliminary Study Plan in advance.

Dr. Nugent noted in each interview that the purpose of the interview was to help SAB Committee members learn about OAP's current and recent experience with science integration supporting EPA decision making so that the SAB can develop advice to support and/or strengthen Agency science integration efforts. Dr. Nugent thanked participants for taking time for the interviews.

Interview with CCD Staff

Mr. Jason Samenow

Mr. Benjamin DeAngelo

Mr. Reid Harvey

Discussion focused on EPA's endangerment finding, since CCD has the lead on synthesizing the scientific information used in determining whether greenhouse gases endanger human health and the environment, a determination that would trigger EPA regulations of greenhouse gases. Staff described their role as a bridge between the outside scientific community and decision makers at EPA, other federal agencies, and Capitol Hill. They viewed their role as translators of climate science. Their goal is to be knowledgeable enough about science to know the issues and how they are evolving, and their relevance. They develop "policy-friendly" summaries of the science, often with the help of contractors. CCD's applied science work is conducted through contracts and cooperative agreements

In response to a question about scoping the nature of the climate change problem, staff agreed that the science supported and CCD proposed a broad scope, which was accepted by both Administrators Stephen Johnson and Lisa Jackson. The proposed finding states that climate change impacts human health, society, and the environment. Effects have a long time horizon, decades to 100 years. They relied on science assessments by the Intergovernmental Panel on Climate Change and the U.S. Climate Change Program. They conducted no new scientific analyses. A proposed endangerment finding was published in April 2009.

The technical document underlying the proposed endangerment finding (the Technical Support Document or TSD) received outside peer review, followed by review by EPA's Office of General Counsel, interagency review, and review by the Office of Management and Budget. They received over 380,000 individual comments, which include 10,000 to 11,000 unique

comments that EPA must address and conducted two public hearings. Scientists from EPA's Office of Research and Development contributed significantly to authoring the health and air quality chapters.

An SAB committee member asked CCD's plans to prepare the science for future decisions that would not be dichotomous and, instead, would involve decisions about safe levels of carbon dioxide. Staff acknowledged that regulatory analyses for greenhouse gas mitigation would raise benefit-cost issues, including how to communicate avoided risks that were very complex-- with a long time horizon, delayed effects, a range of climate sensitivities, and a range of assumptions about human behavior--issues requiring a high level of science integration.

A CCD staff member spoke of Congressional requests for analyses of different climate bills. EPA is presented with different assumptions as a basis for the requested analyses. Much of the focus is on costs. To assess benefits, EPA describes qualitative benefits, quantifies biophysical impacts related to ecosystem services, and is exploring methods to monetize benefits. One option is the social costs of carbon, where EPA is examining three different models for quantifying the economic benefits of avoiding a ton of carbon dioxide. He acknowledged that existing models do not capture a full range of benefits. The economic analyses contain a "Sea of uncertainty" for this problem where science "is telling you something is going on" and a decision has to be made. A CCD member spoke of the difficulty of communicating the benefits of climate change regulation, since traditional benefit-cost analysis is currently inadequate. Without benefit-cost analysis, policy makers find that anecdotal information can help them understand the impacts of climate change most effectively. Staff members spoke of the difficulty of communicating climate change information so decision makers are not overwhelmed.

Interview with CCD Managers

Participants:

Ms. Dina Kruger, Director, Climate Change Division

Ms. Rona Birnbaum, Chief, Climate Science and Impacts Branch, Climate Change Division

The managers spoke first about the significant challenges communicating the impacts of climate change the benefits of climate change policies, because tools for benefit assessment are lacking. Work on the social cost of carbon is nascent. Given the current science, managers are comfortable with strategy that communicates the available quantitative biophysical impacts of climate change and qualitatively describes other impacts. At this stage, a purely economic discussion would not fully address the environmental problem.

Managers noted that there was significant agreement about the known impacts of climate change, although there was some dispute about the degree of adversity associated with some of the projected effects.

CCD relies on the science provided by recent major assessments, but EPA's needs are broader, in part, from those science assessments, because EPA's scope is multi-scale including national, while many assessments are international or regional. Many international assessments haven't quantified effects at a scale that will support future EPA rulemakings. In the long term, EPA's goal is to integrate the science by quantifying health and ecological effects and monetize them by using appropriate economic models, but currently CCD is taking a more basic approach and leveraging available science to support policy.

The CCD managers acknowledge that future climate change regulations will call for more consideration of marginal costs and benefits and for a full reflection of benefits.

SAB members asked the CCD managers to identify other barriers to science integration other than the tight timeframe for the endangerment finding and barriers to full benefit cost analysis. One manager observed that the Global Change Research Program might be enhanced by a mechanism for enabling input from policy analysts and developing science products that might be directly helpful for decision making. She also noted that various climate change bills provide limited consideration of the human health drivers for climate change policy; such language could help agencies develop comprehensive policies.