

Summary Minutes of the  
U.S. Environmental Protection Agency (EPA)  
Science Advisory Board (SAB)  
Environmental Economics Advisory Committee (EEAC)  
Public Teleconference  
April 20, 2012  
11:00 a.m. – 3:00 pm Eastern time

Committee Members: Dr. Madhu Khanna, Chair  
Dr. Peter Wilcoxon  
Dr. Nicholas Flores  
Dr. Laura Taylor  
Dr. Junjie Wu  
Dr. Wayne Gray  
Dr. George Parsons  
Dr. James Shortle  
Dr. David Zilberman

Date and Time: April 20, 2012, 11:00 a.m. – 3:00pm

Purpose: The SAB EEAC discussed the draft paper from the National Center for Environmental Economics (NCEE) entitled *Retrospective Study of the Costs of EPA Regulations: An Interim Report of Five Case Studies (March 2012)*

SAB Staff: Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff: Al McGartland, Nathalie Simon, Al McGartland, Cynthia Morgan, Carl Pasurka, Peter Nagelhout, Ann Ferris, Ron Shadbegian, Brett Snyder, James Democker

Other: Mary Carol Wagner (Northern Kentucky Water District)  
Scott Biernat (Association of Metropolitan Water Agencies)

Meeting Webpage:  
<http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/10aeb87326d894f4852579bc00546943!OpenDocument&Date=2012-04-20>

Meeting Summary

The discussion followed the issues and general timing as presented in the meeting agenda posted at the URL above.

**FRIDAY, APRIL 20, 2012**

Opening of Public Meeting

Dr. Holly Stallworth, Designated Federal Officer (DFO), opened the meeting by reminding the audience that this was a continuation of the April 19, 2012 teleconference and that the Environmental Economics Advisory Committee (EEAC) is a standing committee of the chartered Science Advisory Board. As such, EEAC is a federal advisory committee whose meetings and deliberations meet the requirements of the Federal Advisory Committee Act as well as federal ethics laws.

Dr. Khanna first summarized discussion from the April 19, 2012 teleconference by emphasizing the need for an overarching framework, establishing the timeline of a regulation to capture the dynamic process and differentiating between short-run and long-run effects and capturing expectations about impending regulations and macroeconomic conditions. She also said that transactions costs and the Porter hypothesis might also inform the difference between ex ante and ex post costs. She noted that EPA's case studies had an ad hoc flavor and were data driven although it might be better to start with an overall conceptual framework. To summarize Dr. Zhao's comments, Dr. Khanna cited three factors that could explain the difference between ex ante and ex post estimates: inherent uncertainties, asymmetric information and strategic misreporting. One panelist noted that regulators might not have much incentive to deploy more resources into ex ante analysis so long as they believed industry could afford the costs. Dr. McGartland, Director of EPA's National Center for Environmental Economics (NCEE) said that some statutes have an affordability test and such a requirement made the analytic question more about affordability than accuracy. Another panelist wondered if EPA's analysis assumed ex post estimates were reliable. A suggestion was made for EPA to focus on some key pathways of costs instead of total costs.

On the methyl bromide case study, Dr. Wilcoxon said it was more important to understand why ex ante and ex post estimates differ than whether there was a systematic bias toward overestimation. There was a greater need to identify the key ways in which ex ante analysis could be improved. Since ex ante analysis was a forecasting exercise, confidence intervals might be needed. There might be classes of uncertainty that are associated with a bias in one direction or the other and classes of uncertainty that could not be associated with a bias. A future guidelines document might be helpful to provide guidance on how to do an ex post analysis. Dr. Wilcoxon said information from Florida's strawberry growers would have been very valuable, especially if it could be used in a sampling analysis. Another panelist said the ex ante analysis was based on cost budgeting. The analysis was complicated by the advent of new varieties of strawberries (of higher quality) as well as drip irrigation. In response to a question about how the Methyl Bromide quota was allocated among the farmers, Dr. Wolverton said the Methyl Bromide applications were submitted by the California Strawberry Commission as a whole rather than on a farmer-by-farmer basis and that NCEE could not determine who purchased Methyl Bromide from the Commission's set aside. NCEE did not request

information from the California Strawberry Commission because it was trying to do the analysis based on publicly available information. Panelists encouraged NCEE to go beyond publicly available information sources to get more data.

With respect to the Cluster Rule and Maximum Available Control Technology (MACT) II rules, Dr. Parsons said using aggregate information from industry was fine for the express purpose of comparing ex ante versus ex post cost estimates but using aggregate information made it difficult to really see what was happening beneath the surface. To get a richer picture of industry's response to the Cluster and MACT rules, industry experts should be used. He noted that transactions costs and administrative costs might have escaped EPA's analysis as did mill closures. As one possible approach, Dr. Parsons cited a "prices and quantities" approach to get estimates of unit costs for a technological change multiplied by the number of mills in compliance. To do this, sampling would be needed to capture heterogeneity within the industry. He agreed with NCEE that cost estimates from contractors who worked on the original rule had to be used, albeit with caution, e.g. using error bounds for both ex ante and ex post estimates. He noted the difficulty of capturing the counterfactual scenario given the voluntary pre-regulatory spending that the pulp and paper industry undertook to eliminate dioxin discharges. Given the variation in actual capital expenditures over time, the change that EPA attributed to regulation (from 1995-1997) left room for some question as to whether the increase was actually the result of regulation. Dr. Khanna wondered what the emissions profile would look like over the same time period.

Dr. Parsons said he would need to know the ex ante baseline before commenting on whether the weight of evidence suggested EPA had overestimated compliance costs. With respect to NCEE's proposed +/- 25% as a benchmark for determining significant differences between ex ante and ex post, Dr. Parsons did not see a reason for such a hard and fast line. Dr. Wu commented that comparing the 1995-1997 costs versus 1998 - 2001 costs posed problems and more thinking was needed on the timeline and the dynamics of industry's expectations. Even if a correct timeline could be established, general macroeconomic conditions could pose problems for EPA's current approach given the 3.6% versus 4.5% economic growth rates respectively over those two time periods. Firm-level survey data should be used to get a better understanding of industry's dynamics vis-à-vis EPA's rule. Of the 155 mills subject to the rule, 15 mills had been closed by 2004 or about 10% although it isn't known what role compliance costs played in these closures. NCEE concluded that mill closures alone could not explain EPA's overestimate of compliance costs. Dr. Wu said the mill closures deserved more attention given the common belief that regulation destroys jobs. An NCEE representative said that they did not have access to the firm-level data from the National Council for Air and Stream Improvement (NCASI) survey. NCASI also used the aggregate compliance spending data in their analysis. According to NCEE, a recent Information Collection Request solicited information on costs of compliance for the Cluster Rule and MACT II rule but only one firm responded with cost information. In response to a question from Dr. Khanna, the NCEE representative stated that the ICR did not request any information on the timing of compliance with the rule. Dr. Wu stated that ex post costs could be lower than ex ante costs because the date when the regulation becomes effective can be

endogeneous given the tendency for government agencies to implement rules once they become affordable. Dr. Gray said it was important to see the data on spending at the mills that closed (even though they closed for other reasons).

With respect to the Arsenic Rule case study, Dr. Shortle spoke about the heterogeneity of options for reducing arsenic and suggested that NCEE might have found more information from states charged with implementing the rule. Dr. Shortle agreed with NCEE's conclusion that the weight of evidence was not strong enough to draw conclusions about EPA's ex ante cost estimates but he expressed a preference for more information on the numbers of water systems affected. Dr. Flores offered the view that NCEE should move away from the simple question of whether ex ante estimates were biased toward a goal of disentangling how the ex ante estimates were derived. One panelist suggested that NCEE start with the slide that listed cost components for complying with the locomotive emissions rule, relating the cost component to the source of information and EPA's assessment [of whether the ex post was higher or lower than ex ante costs]. Dr. Khanna noted the importance of the ex ante estimate of the Arsenic Rule's costs was evident when EPA decided to set the standard at 10µg/L rather than 5µg/L because anticipated costs were deemed too high. If EPA were always overestimating costs, then it might be missing opportunities for cost-effective regulation.

On the locomotive emissions case study, Dr. Gray complimented NCEE on the same slide (referenced above) and reiterated his agreement that it would be helpful to have a systematic conceptual approach to each and every case study. Dr. Gray lamented the absence of information on numbers of locomotives being produced in each class of equipment. Dr. Gray noted that long haul locomotives were the biggest users of diesel and switch locomotives were responsible for only about 7 – 8% of NOx emissions.

Dr. McGartland remarked that the NCEE was responding to “inside the Beltway” pressure to determine whether ex ante costs were systematically biased. One panelist noted that EPA might want to explore employment impacts more vigorously given the common belief that regulation destroys jobs.

In closing the meeting, Dr. Khanna and Dr. Stallworth asked panelists to submit their written responses to charge questions by June 15, 2012 in preparation for posting prior to the July 12, 2012 teleconference.

Respectfully Submitted:

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

Certified as Accurate:

Madhu Khanna, Ph.D./s/  
Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Committee member during the course of deliberations within the meeting. Such ideas, suggestions and deliberations do not necessarily reflect 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.