Legal Backgrounder

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EPA'S PENALTY CALCULATION MODEL MUST BE FAIRLY AND FULLY REVIEWED

by

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On January 10, 2001, the U.S. Environmental Protection Agency's Office of Enforcement and Compliance Assurance (OECA) sent two memoranda to the Agency's Science Advisory Board (SAB) regarding peer review of the "BEN" model.

Since the mid-1980s, EPA has used "BEN" to calculate the economic benefit that firms allegedly obtain by delaying and/or avoiding environmental compliance costs. For many years, certain economists and industry associations have criticized BEN's financial methodology, particularly its method for adjusting calculated past economic savings to present values. These individuals and entities have argued that this aspect of BEN results in inflated estimates of economic benefit and, therefore, in excessively large civil penalties.

In the first OECA memorandum to the SAB (SAB Project #01-35), OECA stated that OECA itself would like to peer review a list of "noncontroversial" changes to BEN unless the SAB's Environmental Economics Advisory Committee would like to undertake the effort. In the second (SAB Project #01-36), OECA proposed that the SAB conduct a peer review to consider how notions of "illegal competitive advantage" not captured by BEN could be incorporated into a practical methodology for use by EPA enforcement officials. The SAB's Executive Committee will consider both memoranda in a consultation now scheduled for May 25, 2001.

In its two memoranda, OECA made the following claims: BEN's economic methodology was peer reviewed in 1988 and again in 1991; the Agency made appropriate changes to the model in 1992; it sought informal public comments on its program of economic benefit recapture through Federal Register notices dated October 9,1996 and June 18, 1999; and none of the submitted comments persuaded the Agency that there was a fundamental defect in the BEN methodology.

However, the two memoranda left out certain important details:

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- From 1984 to late 1992, BEN's methodology was to discount all relevant cash flows back to the date of noncompliance at the cost of equity capital (at that time, approximately 15 to 18 percent). The difference between the present values of the "on time" (hypothetical) and "delayed" (actual world) case cash flows was said to be the "economic benefit" as of the date of noncompliance. The model would then compound that calculated value at the same very high rate of interest until the assumed date of penalty payment. In BEN, the higher the discount/interest forward rate, the higher the economic benefit component of the penalty. (A penalty could also be assessed for environmental harm or the "seriousness" of the violations, the alleged violator's history of noncompliance, and other factors.)

- BEN's methodology, controversial practically from its inception, was first challenged in litigation in 1988 in *United States v. Louisiana Pacific Corporation,* 846 F.2d 43 (9th Cir. 1988).

- EPA conducted its 1988 and 1991 consultations with financial experts without following the procedures it later established for conducting EPA peer reviews, such as providing a written charge to the peer reviewers and keeping sufficient records to enable a future decision maker to understand the peer reviewers' bases for reaching key decisions.

- Citing deliberative process privilege, potential disclosure of techniques and procedures for law enforcement investigations or prosecutions, attorney-work product, and considerations of personal privacy, EPA withheld from the public various memoranda memorializing the two so-called "peer reviews." EPA finally released these documents only in 1997 to end Freedom of Information Act litigation brought against it by the Washington Legal Foundation.

- Based on an August 22, 1988 memorandum prepared by Temple, Barker & Sloane, Inc., a consulting firm EPA hired to work with three finance professors on the first "peer review" of BEN, it is clear that the professors criticized the existing methodology, particularly the use of the same very high interest rate both for purposes of discounting and for adjusting past calculated values to the present. The professors recommended an alternative methodology in which all cash flows would be discounted on the basis of the "weighted average cost of capital" (WACC, which reflects the costs of both debt and equity in the firm's capital structure). Additionally, they recommended that the corporate borrowing rate be used for compounding, to adjust past calculated savings to present values. (The corporate borrowing rate is substantially lower than the WACC, which, in turn, is substantially lower than the cost of equity capital.)

- Although these two changes would have led to significantly lower calculations of economic benefit, EPA never implemented the changes recommended by the first "peer review" panel.

  Instead, in 1991, EPA convened a second panel of financial experts. From their written memoranda, it is not clear whether the second set of reviewers were aware of the recommendations of the first panel of experts, or why the two panels reached dramatically different conclusions about the appropriate rate for compounding past calculated savings to present values. (Two of the three members of the second panel recommended compounding at the WACC rate, and one recommended use of the cost of equity capital for this purpose.)

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- From the available documentation, it is not possible to fully reconstruct the thought process of the second "peer review" panel. For example, Dr. James C. Van Horne of Stanford University favored the use of an *ex ante* (before-hand, forward-looking) WACC calculation as of the time of noncompliance as the appropriate compounding or "interest forward" rate. Without explanation, Dr. Van Horne wrote that if an *ex post* (hindsight) approach is used, EPA would open itself up to the argument that a risk-free rate (i.e., a Treasury bill rate) should be used to adjust past to present values.

- As structured since its inception, BEN already makes use of a great deal of information that is known only with hindsight. It is unclear why Dr. Van Horne believed that the use of hindsight is permissible for certain input assumptions, such as compliance costs, but not for others, such as the interest forward rate.

- In 1994, lawyers working on behalf of the American Automobile Manufacturers Association, American Forest and Paper Association, Chamber of Commerce of the United States, Chemical Manufacturers Association, and the National Association of Manufacturers filed a petition requesting that EPA conduct a rulemaking on BEN.

- Possibly in response to that petition, EPA published its 1996 Federal Register notice. A coalition of twelve industry associations submitted comments critical of the BEN methodology, including its assumption of WACC as the interest forward rate.

- In its June 18, 1999 Federal Register notice, EPA responded to comments it received in response to the 1996 notice and sought additional comments, particularly on its notions of "wrongful profits" and "illegal competitive advantages" allegedly not captured by BEN. Interestingly, the 1999 notice concluded, among other things, that (1) the *ex ante/ex post* distinction cited above is not very important and (2) that:

  "Given that both academicians and practioners in the field of financial economics disagree significantly (both on economic benefit analysis and a myriad of other issues), the Agency does not feel that the formation of an expert panel would be a productive exercise. For instance, tenured professors from business schools have reached diametrically opposed conclusions in the written comments they have submitted on the BEN model." 64 Fed. Reg. 32972.

- A coalition of ten industry associations filed comments in response to the 1999 notice, criticizing, among other things, the interest forward rate methodology still used in BEN and most of EPA's thinking regarding "illegal competitive advantage" and "wrongful profits".

- Federal district courts have reached dramatically different conclusions about the appropriate interest forward rate to use in economic benefit calculations in litigated cases, upholding at various times the equity cost of capital (*Friends of the Earth v. Laidlaw Environmental Services*, 890 F. Supp. 470 (S.D.S.C.1995)), the WACC (*United States v. Smithfield Foods, Inc.*, 982 F. Supp. 373 (E.D. Va. 1997)), and the after-tax risk-free rate associated with short-term U.S. Treasury bills (*United States v. WCI Steel, Inc.*, 72 F. Supp. 2d 810 (N.D. Ohio 1999)).

Last fall the Senate Appropriations Committee attached a rider to EPA's FY 2001 budget that stated:

> In view of the significant ramifications associated with revisions to the BEN Model, it is imperative that an independent peer review be undertaken. The Committee directs EPA to undertake such a review prior to finalizing revisions to the BEN Model or the formal adoption of its proposed new approach to recovery of economic benefit.

Senate Report No. 410, 106th Cong., 2d Sess. 81 (2000).

Unfortunately, in its two recent memoranda to the SAB, OECA has taken the position that there is no need to even inform the SAB about the long-standing controversy over BEN's interest forward rate. Given OECA's record of trying to preserve this aspect of the BEN methodology, this omission seems unlikely to have been accidental. The SAB should not allow this strategem to succeed.

In addition to expanding the scope of the proposed peer review to include the interest forward rate issue (discussed above as it relates to corporations), the SAB should instruct the peer reviewers to determine the applicability of the BEN methodology to (1) regulated utilities and (2) federal facilities. None of the complexities of these potential applications of BEN were addressed in EPA's 1988 and 1991 consultations with financial economists.

For regulated utilities, delayed or avoided compliance may have not resulted in an economic benefit to shareholders. Under rate-of-return regulation, public utility commissions might have allowed these regulated entities to amortize their capital expenditures for pollution control equipment, to earn a rate-of-return on these investments, and to pass through to customers the associated costs of operations and maintenance of the equipment. In current situations involving delayed compliance after the shift to market-based rates, deregulated utilities may or may not be able to recover these expenses and/or obtain a rate of return on them. This is clearly a much more complicated situation than the typical case for which BEN was designed.

On September 30, 1999, Stephen Herman, the then-Assistant Administrator of OECA, signed a memorandum entitled "Guidance on Calculating the Economic Benefit of Noncompliance by Federal Agencies" which contained the following passage: "There is no policy reason to treat Federal agencies differently from any other entity with respect to the application of penalties for delayed or avoidance of compliance with environmental requirements." Mr. Herman then identified the U.S. Treasury note rate of interest as the appropriate interest forward rate to use in economic benefit calculations for federal facilities.

How a federal facility saves money by failing to make pollution control investments in a timely manner is unclear. Federal agencies typically lack independent authority to raise funds from capital markets. There are statutory limitations on their ability to reprogram construction dollars without Congressional approval. Additionally, if failure to put on pollution control equipment in a timely matter results in a financial benefit, it is arguable that the financial benefit due to reduced federal borrowing accrues to the U.S. Treasury, not to the installation or Cabinet department in question.

The SAB's potential peer review of BEN poses a substantial opportunity that should not be wasted by policy makers and other people concerned about these or other issues related to BEN. Since the SAB's Environmental Economics Advisory Committee is composed largely of resource economists, the SAB should pick potential peer reviewers who have appropriate training in financial economics. It is important for this peer review to be both credibly conducted and broadly enough focused to minimize further controversy over BEN.

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