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OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

ADMINISTRATOR
OFFICE OF
INFORMATION AND
REGULATORY AFFAIRS

December 22, 2011

Rep. Andy Harris, MD
Chairman
Energy & Environment Subcommittee
Committee on Science, Space, and Technology
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Harris:

Thank you for your letter of November 15, 2011, and your follow-up letter from December 12, 2011, expressing concerns with the Environmental Protection Agency's (EPA) practices in developing Regulatory Impact Analyses (RIAs) of certain Clean Air Act (CAA) rules.

Let me begin by saying that I appreciate the care and attention that you have paid to these issues, and your thoughtfulness about the details. In the interest of a timely reply to the many questions in your letter, this general response focuses on an important subset of the broadest concerns.

Circular A-4, *Regulatory Analysis*, which can be found at this address: http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf describes best practices and governs OIRA's review of agencies' RIAs. This peer-reviewed circular includes numerous details about annualization, consideration of co-benefits, discounting, sensitivity analysis, uncertainty, and alternatives analysis. In particular, A-4 describes key elements of such analyses:

> A good regulatory analysis should include the following three basic elements: (1) a statement of the need for the proposed action, (2) an examination of alternative approaches, and (3) an evaluation of the benefits and costs—quantitative and qualitative—of the proposed action and the main alternatives identified by the analysis.
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> To evaluate properly the benefits and costs of regulations and their alternatives, you will need to do the following:
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> - Explain how the actions required by the rule are linked to the expected benefits. For example, indicate how additional safety equipment will reduce safety risks. A similar analysis should be done for each of the alternatives.
> - Identify a baseline. Benefits and costs are defined in comparison with a clearly stated alternative. This normally will be a "no action" baseline: what

the world will be like if the proposed rule is not adopted. Comparisons to a "next best" alternative are also especially useful.

- Identify the expected undesirable side-effects and ancillary benefits of the proposed regulatory action and the alternatives. These should be added to the direct benefits and costs as appropriate.

The last point is particularly relevant to your concern about the consideration of co-benefits in RIAs. Circular A-4 calls for a "full accounting" of costs and benefits, which requires consideration of ancillary benefits (no less than undesirable side-effects) in addition to direct benefits. (This approach is consistent with Executive Order 13563, which requires agencies "to use the best available techniques to quantify anticipated present and future benefits as accurately as possible.") Consideration of ancillary benefits promotes a full accounting; properly conducted, it does not produce duplication.

Circular A-4 also describes best practices on discounting benefits and costs:

> OMB's basic guidance on the discount rate is provided in OMB Circular A-94 (http://www.whitehouse.gov/omb/circulars/index.html). This Circular [*Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*] points out that the analytically preferred method of handling temporal differences between benefits and costs is to adjust all the benefits and costs to reflect their value in equivalent units of consumption and to discount them at the rate consumers and savers would normally use in discounting future consumption benefits. This is sometimes called the "shadow price" approach to discounting because doing such calculations requires you to value benefits and costs using shadow prices, especially for capital goods, to correct for market distortions. These shadow prices are not well established for the United States. Furthermore, the distribution of impacts from regulations on capital and consumption are not always well known. Consequently, any agency that wishes to tackle this challenging analytical task should check with OMB before proceeding.
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> As a default position, OMB Circular A-94 states that a real discount rate of 7 percent should be used as a base-case for regulatory analysis. The 7 percent rate is an estimate of the average before-tax rate of return to private capital in the U.S. economy. It is a broad measure that reflects the returns to real estate and small business capital as well as corporate capital. It approximates the opportunity cost of capital, and it is the appropriate discount rate whenever the main effect of a regulation is to displace or alter the use of capital in the private sector. OMB revised Circular A-94 in 1992 after extensive internal review and public comment. In a recent analysis, OMB found that the average rate of return to capital remains near the 7 percent rate estimated in 1992. Circular A-94 also recommends using other discount rates to show the sensitivity of the estimates to the discount rate assumption.

A number of your comments focus on the fact that the health benefits from reducing particulate matter account for a large fraction of benefits from recent EPA rules. We agree that particulate matter co-benefits have been extremely important. Under Circular A-4 and Executive Orders 13563 and 12866, it is not only legitimate but necessary to consider such co-benefits. As

explained above, ancillary benefits, no less than unintended costs, must be measured to ensure the kind of "full accounting" required by Circular A-4. EPA continues to explore the underlying science to ensure that PM-related health benefits are properly considered, and to engage with other agencies and the public as a whole on the scientific questions.

You also raise questions about relevant calculations and the risk of double-counting. We agree that it is extremely important to ensure that calculations are based on the best available science (see Executive Order 13563). As noted, EPA continues to engage with the scientific community and to work with OIRA and others on the scientific issues. We also agree that double-counting should be avoided. When there are concerns about possible double-counting in particular rules, we work, and will continue to work, with EPA to address those concerns.

You ask several questions about understating compliance costs and failing to analyze and communicate uncertainties. We agree that compliance costs should not be understated and that uncertainties should be communicated. In a large number of recent rules, including the Mercury and Air Toxic Standards Rule, EPA refers to a number of uncertainties and offers ranges of values for both costs and benefits. We have worked closely with EPA to be clear about relevant uncertainties. We also agree that rules with "negative net present value should generally be avoided" and note that the benefits of recent EPA rules have far exceeded the costs.

You also raise concerns about EPA's calculations of the Value of a Statistical Life (VSL). VSL, in the context of RIAs, generally refers to the measurement of willingness to pay for small reductions in risks of premature death. The adoption of a value for the projected reduction in the risk of premature mortality is the subject of continuing discussion within the economic and public policy community, and OMB's Circular A-4 includes a lengthy discussion of VSL.

As stated in that Circular, a substantial majority of the resulting estimates of VSL vary from roughly $1 million to $10 million (in constant 2001 dollars) per statistical life. EPA's most recent VSL estimate is $8.6 million (in constant 2006 dollars), which is consistent with, and well within, Circular A-4's stated range. That estimate is also well within the range identified in the recent academic literature and within the general range established by the practices of other agencies. (There are some differences across agencies, but those differences are not large, and the relevant figures fall within the range established by the economic literature and Circular A-4.[1]) You refer to the possible use of statistical life-years rather than statistical lives; both

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[1] *See 2011Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities, 18, n. 20, available at http://www.whitehouse.gov/sites/default/files/omb/inforeg/2011_cb/2011_cba_report.pdf:* Agencies often design health and safety regulation to reduce risks to life, and valuation of the resulting benefits can be an important part of the analysis. What is sometimes called the value of a statistical life (VSL) is best understood not as the valuation of life, but as the valuation of *statistical mortality risks*. For example, the average person in a population of 50,000 may value a reduction in mortality risk of 1/50,000 at $150. The value of reducing the risk of 1 *statistical* (as opposed to known or identified) fatality in this population would be $7.5 million, representing the aggregation of the willingness to pay values held by everyone in the population. Building on an extensive and growing literature, OMB Circular A-4 provides background and discussion of the theory and practice of calculating VSL. It concludes that a substantial majority of the studies of VSL indicate a value that varies from roughly $1 million to $10 million per statistical life. Circular A-4 generally reports values in 2001 dollars; if we update these values to 2010 dollars the range would be $1.2-$12.2 million. In practice, agencies have tended to use a value above the mid-point of this range (i.e., greater than $6.7 million in 2010 dollars). Two agencies, EPA and DOT, have developed official

measures are authorized under Circular A-4, and it is certainly appropriate, under that Circular, for EPA to focus on VSL.

You also raise concerns about a number of scientific issues, including data transparency. As you point out, Executive Order 13563 states that "[t]o the extent feasible and permitted by law, each agency shall also provide, for both proposed and final rules, timely online access to the rulemaking docket on regulations.gov, including relevant scientific and technical findings, in an open format that can be easily searched and downloaded." OIRA takes this provision of the Executive Order very seriously and strives to make such information available wherever possible.

You also mention the EPA Inspector General's report on EPA's greenhouse gases endangerment finding data quality processes.[2] OMB's views about this issue are captured in the letter from former OIRA Associate Administrator Michael Fitzpatrick, available in Appendix H of that report starting on page 87.

Finally, you discuss the return letter that I sent to EPA on its ozone reconsideration, and inquire why other rules have not been required to meet the same standard.[3] All rules, including those to

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guidance on VSL. In its 2009 update, DOT adopts a value of $6.0 million ($2009), and requires all the components of the Department to use that value in their RIAs. EPA recently changed its VSL to an older value of $6.3 million ($2000) and adjusts this value for real income growth post-2000. In its final rule setting a new primary standard for nitrogen dioxide, for example, EPA adjusted this VSL to account for a different currency year ($2006) and for income growth to 2020, which yields a VSL of $8.9 million. EPA stated in this RIA, however, that it is continuing its efforts to update this guidance, and that it anticipated presenting results from this effort to its Science Advisory Board, with draft guidance following soon thereafter. EPA has also recently published a white paper 'to highlight some key topics related to the valuation of mortality risks, and to describe several possible approaches for synthesizing the empirical estimates for mortality risk reductions from existing hedonic wage and stated preference studies for the purpose of valuing mortality risk reductions associated with future EPA policies.' Some of these issues include the possibilities of reporting value estimates in terms of risk changes, rather than statistical lives; adding a cancer differential to the standard estimates of mortality risk reduction values for policies expected to reduce carcinogenic pollutants; examining the role of altruism in valuing risk reductions; and, finally, incorporating alternative approaches to benefit transfer techniques. See Environmental Protection Agency (2010). For the agencies that have not developed binding internal guidelines, we have done a brief review of RIAs and other materials to understand how VSLs have been used in practice. Although the Department of Homeland Security has no official policy on VSL, it sponsored a report through its U.S. Customs and Border Protection, and has used the recommendations of this report to inform VSL values for several recent rulemakings. This report recommends $6.3 million ($2008) and also recommends that DHS adjust this value upward over time for real income growth (in a manner similar to EPA's adjustment approach). Other regulatory agencies that have used a VSL in individual rulemakings include DOL's Occupational Safety and Health Administration (OSHA) and HHS' Food and Drug Administration (FDA). In OSHA's rulemaking setting a Permissible Exposure Limit for Hexavalent Chromium, OSHA specifically referred to EPA guidance to justify a VSL of $7.0 million ($2003), as the types of air exposure risks regulated in this rulemaking were similar to those in EPA rulemakings. The FDA has consistently used values of $5.0 and $6.5 million ($2002) in several of its rulemakings to monetize mortality risks, but it also uses a monetary value of the remaining life-years saved by alternative policies. This is sometimes referred to as a "Value of a Statistical Life Year" or VSLY. (See Circular A4 for discussion.) Our review suggests that, in recent years, actual agency practice has generally avoided significant inconsistencies. In current dollars, we have not found recent values below $6 million or above $9.5 million, and hence agency practice suggests a narrower band than that found in the literature review in Circular A-4. For a recent overview by the Congressional Research Service, see Copeland (2010).

[2] http://www.epa.gov/oig/reports/2011/20110926-11-P-0702.pdf

[3] http://www.reginfo.gov/public/return/EPA_Return_Letter_9-2-2011.pdf

which you refer, must meet relevant standards, including those set out in Executive Order 13563 and 12866. We continue to work with EPA to create, in the words of Executive Order 13563, a regulatory system that will "protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation." This is an ongoing effort.

Thank you again for your careful attention to these important issues.

Sincerely,

Cass R. Sunstein

Identical letters sent to:

The Honorable Ralph M. Hall
Chairman
Committee on Science, Space, and Technology

Rep. Paul Broun, MD
Chairman
Investigations & Oversight Subcommittee