ENVIRONMENTAL DEFENSE FUND

March 31, 2009

BY E-MAIL TRANSMISSION

Mabel Echols
Office of Information and Regulatory Affairs
Records Management Center
Office of Management and Budget
Room 10102, NEOB
725 17th Street, NW
Washington, D.C. 20503
Email: oira_submission@omb.eop.gov

Re: *Federal Regulatory Review*, 74 Fed. Reg. 8819 (Feb. 26, 2009)

Dear Ms. Echols:

Environmental Defense Fund gratefully appreciates the opportunity to comment on how to improve the role of the Office of Information and Regulatory Affairs (OIRA) in the federal regulatory process.

Transparency, analytical rigor and equity are the cornerstones of a government that is truly "for the people." Environmental Defense Fund respectfully requests that President Barack Obama take the actions set forth below to forge enduring transparency in OIRA's activities, to restore lasting rigor in the conduct of economic analyses of benefits and costs, and to reclaim equity in government policy-making.

We also respectfully incorporate and attach as a central foundation of our comments *Fixing Regulatory Review: Recommendations for the Next Administration* by Richard L. Revesz and Michael A. Livermore (NYU Law Institute for Policy Integrity, Dec. 2008).

Policy-makers must also recognize, and respect, the regulatory actions for which cost-benefit analysis is prohibited or restricted under the statutory delegation of rulemaking authority to the Agency. In appropriate circumstances, such as the establishment of the national ambient air quality standards under the Clean Air Act, Congress has judiciously instructed an Agency to make decisions solely on the basis of public health or other relevant non-cost factors.[1] These legislative choices serve vital societal functions and must be respected.

[1] *Whitman v. American Trucking Assns., Inc.*, 531 U.S. 457, 465 (2001) (Justice Antonin Scalia: "Were it not for the hundreds of pages of briefing respondents have submitted on the issue, one would have thought it fairly clear that this text does not permit the EPA to consider costs in setting the standards.")

I. ENDURING TRANSPARENCY

Justice Louis Brandeis attested to the accountability benefits of transparency when he declared: "Sunlight is said to be the best of disinfectants."

For far too long, in far too many important instances, OIRA has operated without sunlight.

OIRA has often thwarted transparency – and accountability – through two unfortunate practices: (1) obscuring the applicability of OIRA review, and (2) obscuring the actual role of OIRA during its review of regulatory actions.

Terminating "Informal" Review. OIRA has evaded accountability by classifying oversight activities as "informal" review and thereby averring that OIRA review has not commenced for purposes of disclosure and transparency requirements. These tactics must be terminated and transparency restored. Applicability should be triggered upon an Agency's submittal of draft regulatory materials to OIRA or the commencement of significant policy discussions about a regulatory action.

Disclosing OIRA's Oversight. We respectfully request complete and contemporaneous disclosure of OIRA's regulatory oversight activities. There is no justification for the opacity that has characterized OIRA's participation in critical federal regulatory decisions – opacity that mocks the open, on-the-record procedures that Congress has laboriously detailed for the administrative agencies statutorily charged with taking regulatory actions.

Section 307(d)(4)(B)(ii) of the Clean Air Act, 42 U.S.C. §7607(d)(4)(B)(ii), provides a useful framework governing disclosure of the regulatory actions delineated in section 307(d)(1) of the Act. This provision states: "The drafts of proposed rules submitted by the Administrator to the Office of Management and Budget for any interagency review process prior to proposal of any such rule, all documents accompanying such drafts, and all written comments thereon by other agencies and all written responses to such written comments by the Administrator shall be placed in the docket no later than the date of proposal of the rule. The drafts of the final rule submitted for such review process prior to promulgation and all such written comments thereon, all documents accompanying such drafts, and written responses thereto shall be placed in the docket no later than the date of promulgation." This statutory language, promulgated in 1977, should be modernized to encompass all regulatory actions subject to OIRA review and communications whether written or oral, as noted below.

Disclose Written and Oral Communications. OIRA has evaded accountability by communicating its oversight through verbal communications. OIRA must be required to disclose written *and verbal* comments propounded during the pendency of regulatory review.

Contemporaneously Disclose Contacts with Outside Parties. The nation must also modernize the transparency principles embodies in section 307(d) of the Clean Air Act by leveraging 21st Century information technologies to disclose third party contacts in real time. OIRA has evaded accountability by providing a conduit for outside parties to influence Agency policy with

selective disclosure. OIRA must be required to disclose – contemporaneously – all contacts with outside parties regarding a regulatory matter.

Transparency Is Important to Help Counterbalance Informational Asymmetries that Bias Access to Information on Costs and Benefits. OIRA should recognize that the parties who are most likely to provide information on costs are those with a near term interest in minimizing their own compliance costs and have the resources to adduce supporting quantitative analyses. OIRA should account for such potential bias, and actively encourage analyses from concerned parties that are likely to capture the full public benefits of regulation, and that do not have a vested interest in overstating costs.

Public Disclosure Through Listservs Will Bolster Accountability in a Lasting Way. OIRA should promptly create a listserv menu for unlimited subscribers. The menu should notify subscribers of the submittal of draft regulatory actions by Agency or by particular subject matters. The listserv should also have a feature for a subscriber to track the progress of the regulatory action by notifying subscribers when meetings with outside parties are conducted, when materials are docketed, and at the conclusion of OIRA review and associated disclosure of the OIRA oversight (consistent with the Clean Air Act section 307(d) enhanced disclosure recommended above).

II. INTEGRITY IN ANALYZING SOCIETAL BENEFITS AND COSTS

To restore the public's trust and rigor in cost-benefit analysis, we respectfully request issuance of up-to-date guidance on the following central economic issues and the convening of a public advisory committee to provide on-going input on these matters:

- The monetary valuation of human life and morbidity.
- The consideration of inter-generational equity.
- The rigorous consideration of ancillary benefits including the social costs of carbon.
- The expression of all benefits in natural units.
- The consideration of technological innovation.
- The incorporation in cost-benefit analysis of non-trivial, but highly uncertain, risks of catastrophic harm – such as those associated with climate change – in a way that gives meaningful weight to such threats.

Public Closure Memo. For the elements identified above, we also request that OIRA prepare a one page closure memo on each regulatory action in which it discloses to the public a transparent summary of its recommendations on each such element.

Valuing Human Life Without Age-Based Discounts. Discounting the value of human life based on age is flawed and fails to account for the precious (scarcity) value assigned to life in one's later years, latency periods in the manifestation of harm, and materially diminishes the contribution to society of older Americans.

Inter-Generational Equity. Discounting raises considerable ethical issues, especially when applied over long time horizons. For the purposes of inter-generational comparisons, discount

rates should not exceed 1 to 3 percent, and sensitivity analysis around those rates should be performed. Where discounting is a determining factor in the relative magnitudes of estimated costs and benefits, a transparent discussion of the assumptions used in determining the discount rate should be presented. Relevant issues include but are not limited to: the choice of a pure rate of time preference; parameters governing equity and risk aversion; and the degree of substitutability between environmental amenities and other consumption.

Full Accounting of Ancillary Benefits. The failure to account for the ancillary benefits of regulatory actions has diminished progress in protecting human health and the environment. Integrity in economic analysis demands a full accounting of the ancillary benefits.

Accounting for the Social Cost of Carbon. The social cost of carbon is an important ancillary benefit in many regulatory actions. The Intergovernmental Panel on Climate Change defines the social cost of carbon as:

> ...an estimate of the economic value of the extra (or marginal) impact caused by the emission of one more tonne of carbon (in the form of carbon dioxide) at any point in time; it can, as well, be interpreted as the marginal benefit of reducing carbon emissions by one tonne.[2]

The U.S. Environmental Protection Agency released a synthesis of the social cost of carbon as a Technical Support Document accompanying EPA's Advance Notice of Proposed Rulemaking on "Regulating Greenhouse Gas Emissions Under the Clean Air Act," 73 Fed. Reg. 44,354 (July 30, 2008). While EPA noted limitations that likely undervalued the benefits of carbon mitigation, the Agency has produced an important synthesis of the economics literature.[3] It provides an important starting point for more robust analyses incorporating the social cost of carbon in federal regulatory actions.

Environmental Defense Fund has examined missed regulatory opportunities arising from the failure to consider the social cost of carbon and recommended corrective action. See *Carbon Counts: Incorporating the Benefits of Climate Protection Into Federal Rulemaking* (Environmental Defense Fund 2008), attached.

In 2006, NHTSA issued final fuel economy standards addressing many sport utility vehicles, minivans, and pickup trucks for Model Years 2008-2011. The statute calls for NHTSA to establish fuel economy standards reflecting the "maximum feasible average fuel economy level" considering the "technological feasibility, economic practicability, the effect of other motor

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[2] Yohe, G.W., R.D. Lasco, Q.K. Ahmad, N.W. Arnell, S.J. Cohen, C. Hope, A.C. Janetos and R.T. Perez, 2007: Perspectives on Climate Change and Sustainability. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, eds., Cambridge University Press, Cambridge, United Kingdom, 821, available at http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter20.pdf.

[3] U.S. Environmental Protection Agency, "Technical Support Document on Benefits of Reducing GHG Emissions" June 12, 2008.

vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy."[4]

NHTSA relied on benefit cost analysis in establishing the fuel economy standards for light-duty trucks. In its benefit cost analysis, however, the Agency refused to consider the benefits of reducing carbon dioxide emissions despite a 2002 report by the National Academy of Sciences and extensive public comments documenting the monetary benefits of carbon dioxide emissions cuts.[5]

The U.S. Court of Appeals for the Ninth Circuit held that NHTSA's refusal to consider these benefits was arbitrary and capricious. The court pointedly focused on the paradox of NHTSA's approach. NHTSA was employing benefit cost methodology to develop its fuel economy standards while assigning no value at all to the considerable benefit of reducing carbon dioxide emissions.

> Under this methodology, the values that NHTSA assigns to benefits are critical. Yet, NHTSA assigned no value to *the most significant benefit* of more stringent CAFE standards: reduction in carbon emissions.[6]

NHTSA's CAFE rulemaking is a recent example of a deeply flawed failure to consider ancillary benefits such as the social cost of carbon. The resulting flaws are precisely the deficiencies that the Ninth Circuit endeavored to correct by removing "a thumb on the scale" and restoring a balanced application of benefit cost analysis:

> Even if NHTSA may use a cost-benefit analysis to determine the "maximum feasible" fuel economy standard, it cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards.[7]

Express all benefits in natural units. All benefits that can be quantified should be expressed in natural units (e.g., estimated lives saved per year, reduction in risk, asthma cases avoided, improvement in views, etc.) whether or not they can also be monetized. (In making this recommendation we assume that dollars are the "natural unit" for costs.) In addition, in cases where costs or benefits can be identified but not easily quantified, those benefits should be expressly delineated and fully described in qualitative terms.

Costs Estimates Must Account for Technological Innovation. Years of empirical experience and research shows that technological innovation, spurred by well-designed regulation, drives down the costs of compliance. Estimates of the costs of regulatory actions should, to the greatest extent possible, reflect the cost savings due to technological innovation. Recognizing that this is an active area of research, we recommend that OIRA both support current research into better

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[4] 49 U.S.C. § 32902.

[5] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *57-*70; see also National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFÉ) Standards* (National Academy Press 2002).

[6] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *13-15, *58 (emphasis added).

[7] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *13-15, *57.

methods of modeling technological change, and require that cost-benefit analyses explicitly address the issue and discuss its likely implications for the accuracy of cost forecasts.

III. RECLAIMING EQUITY

Rigorous, transparent analysis can identify potential inequities and help reclaim fairness in crafting important regulatory actions. Some policies, for example, may shift burdens from one generation to another. Other policy decisions may be regressive in imposing a heavy burden on low income families. Still other policies may fail to account for pronounced risks on children or other vulnerable populations. Proper regulatory analysis should account fully and openly for such distributional concerns. To address these issues, to provide greater transparency and to recognize the limitations of cost-benefit analyses methodologies, regulatory analysis should meaningfully describe the incidence of proposed regulatory actions with respect to geographic regions, income groups and vulnerable populations.

At the same time, a consideration of the distributional effects of individual policy actions cannot remedy the effects, aggregated over time, of the adverse impacts imposed on disadvantaged groups that bear the brunt of multiple burdens. This is evidenced by recent air toxics data suggesting elevated exposures to school children. We respectfully request that Agencies be charged with carrying out biennial analyses that examine the overall impacts of policies. A central obligation under these analyses should be a requirement for an Agency to assess the overall distribution of its polices and to find – affirmatively or negatively – whether vulnerable populations are subject to multiple environmental, health or safety burdens.

* * *

Thank you for considering these comments.

Sincerely,

Vickie Patton
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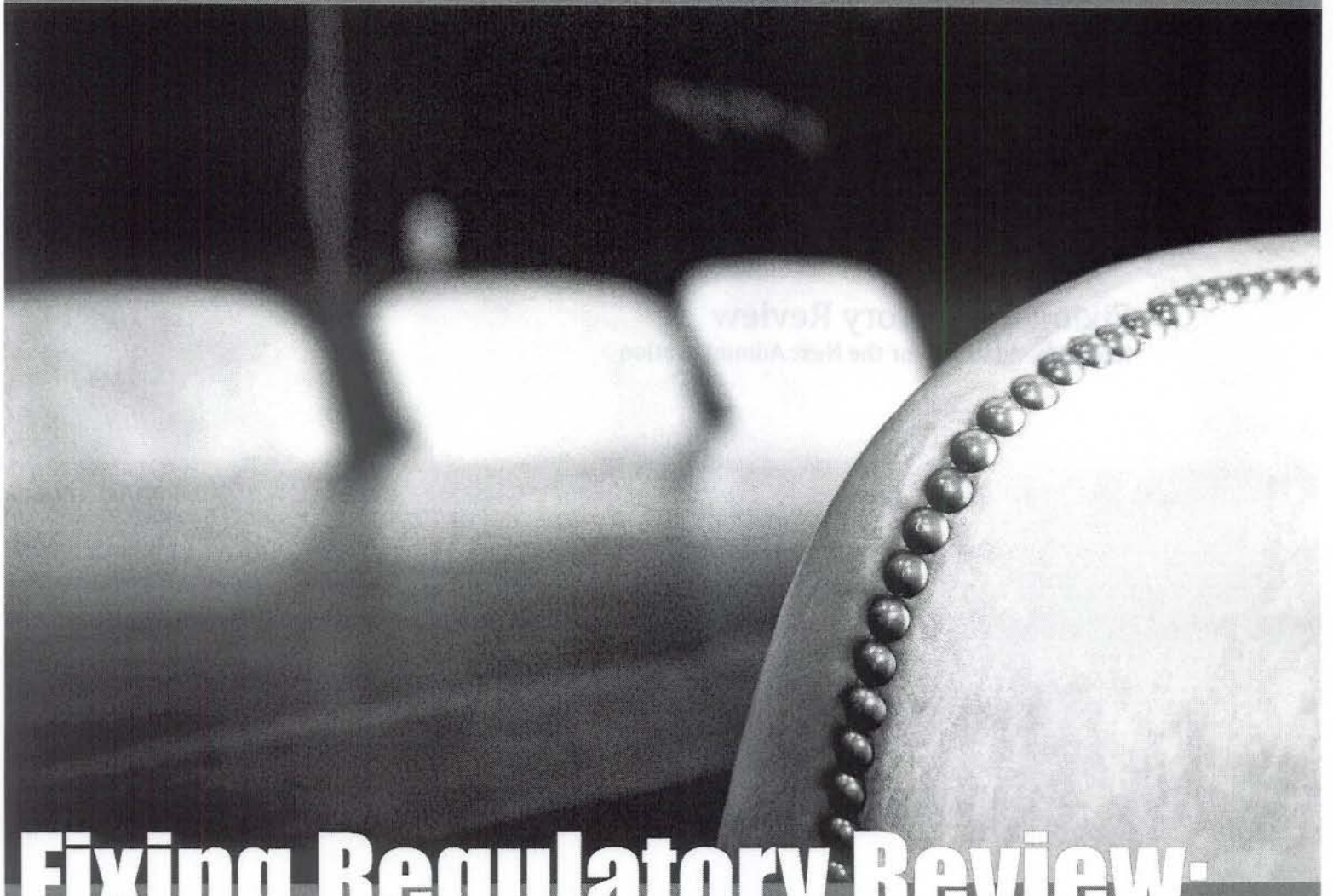
Environmental Defense Fund

Institute *for* Policy Integrity
New York University School of Law



Fixing Regulatory Review:
Recommendations for the Next Administration

Richard L. Revesz
Michael A. Livermore

Report No. 2
December 2008

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Contents

Acknowledgements

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Executive Summary

This report contains a set of recommendations for the next administration to improve the process of regulatory review, including a set of ten principles that should inform regulatory review and cost-benefit analysis of regulation, and a detailed markup of the Executive Order signed by President William Jefferson Clinton that established the structure of review that is currently in place.

Our recommendations are divided into two categories: the role of OIRA, and methodological issues relating to cost-benefit analysis. After a brief introduction, the following two sections include ten primary recommendations, along with brief background information, and parts of the Executive Order that should be revised. The final section includes detailed revisions of the Clinton Executive Order, and is cross-referenced with the relevant recommendations.

Of the ten principles, four are dedicated to OIRA's role in overseeing agency regulation:

I. **Coordination**: OIRA should increase its commitment to improving agency coordination by reestablishing regular meetings of the Regulatory Working Group, and by creating standing subgroups in key areas where coordination is needed.

II. **Transparency**: To ensure that informal review by OIRA is not used to circumvent transparency requirements, agencies should be given the power to trigger the formal review process by submitting a proposed regulation to OIRA.

III. **Scope**: OIRA should subject regulations of all agencies to equally high levels of scrutiny, rather than focusing on the regulations of particular agencies.

IV. **Inaction**: OIRA should review petitions for rulemakings that have been denied by agencies as part of an annual planning process, to protect against agency inaction.

The next six principles are dedicated to reforms in the methodology of cost-benefit analysis:

V. **Net Benefits**: Agencies should focus on maximizing net benefits—including quantified and unquantified benefits—not on minimizing regulatory costs.

VI. **Ancillary Benefits**: When accounting for the indirect effects of regulation, agencies should pay equal attention to both the positive and negative indirect effects.

VII. **Future Generations**: The current practice of discounting benefits for future generations at a constant rate consistent with the return on traditional financial instruments should be abandoned in favor of a valuation mechanism that reflects the fundamental moral and ethical difficulties that arise with regulations that have intergenerational effects.

VIII. **Distribution**: Cost-benefit analysis should be accompanied by distributional analysis to , conducted on a central and holistic level, to account for disadvantaged groups, including those that face disproportional environmental, health, and safety risks.

IX. **Costs**: Cost estimates should take account of possible production process changes and technological innovations in response to new regulation, and should not be based exclusively on end-of-the pipe or currently available technology.

X. **Deregulation**: Review of deregulation should be as stringent as review of new regulation.

Introduction

The regulatory review process has been a double-edged sword for the federal government. At its best, the practice offers the potential to improve regulations dramatically, by emphasizing broad administrative priorities, resolving inter-agency conflicts, harmonizing regulatory policies and procedures, and assessing distributive impacts. When executed faithfully and impartially, the review process has advanced properly-calibrated regulations that deliver key benefits to Americans with efficiency and fairness. Unfortunately, through much of its history, the review process has also been used to delay the passage of beneficial regulation and to inject bias and capriciousness into what should be evenhanded and reasoned decisionmaking.

Since 1981, presidential executive orders have shaped the federal administrative state by placing cost-benefit analysis at the center of regulatory review. While that system has at times helped develop many exemplary regulations, the current practice of federal regulatory review undeniably suffers from critical limitations and weaknesses. Using the last twenty-eight years of successes and failures as a guide, a revision of the current executive order can minimize potential pitfalls while enhancing the process's virtues.

Background

The process of federal regulatory review has evolved over the course of several presidential administrations. History shows both the dangers and the promises of a centralized system based on cost-benefit analysis.

Executive Order 12,291. Elected on a platform of deregulation, President Reagan quickly asserted an unprecedented level of control over the federal administrative apparatus upon taking office in 1981. Within a month of his inauguration, Reagan issued Executive Order 12,291, creating the essential architecture for the centralized review of agency action that still governs today.[1]

That Executive Order required agencies to prepare detailed cost-benefit analyses of any proposed regulation with a significant impact on the economy; and if a regulation's expected costs exceeded its expected benefits, it could not move forward. Reviewing those analyses and deciding regulations' fates were tasks assigned to the officials at the Office of Information and Regulatory Affairs (OIRA), which soon earned the nickname "the regulatory black hole."

Under Reagan, "cost-benefit analysis" became code for "deregulation." Influential back-channel communications from industry, combined with OIRA's tendency to focus more on potential costs than on potential benefits, precipitated the demise of many proposed regulations. Agencies received OIRA's demanding inputs and changes so late in the rulemaking process that it was nearly impossible to respond meaningfully. The size of OIRA's staff—tiny relative to the number of regulations it was meant to review—created costly and lengthy delays. Moreover, the entire review process was shrouded in secrecy, hidden from public scrutiny. Vice President, George H.W. Bush played a key role in developing Executive Order 12,291, and he largely continued Reagan's legacy during his presidency.

Executive Order 12,866. When President Clinton took office in 1993, he carefully weighed the pros and cons of centralized review. Under Reagan, regulatory review had been criticized heavily for stripping power from agency experts, reducing the transparency of the regulatory process, creating unnecessary delay, and giving OIRA undue influence over the regulatory process. However, there were also benefits of regulatory review including, quality-control over a growing and increasingly important regulatory state, a dispassionate second opinion concerning new regulation, and the introduction of a broader perspective into the sometimes parochial rulemaking process. Recognizing that regulatory review and cost-benefit analysis were not inherently biased or antiregulatory, Clinton chose to preserve Reagan's Executive Order, but with some key modifications.

Reissued as Executive Order 12,866, Clinton's directive maintained the basic existing structure, with OIRA reviewing cost-benefit analyses for significant regulatory actions.[2] However, Clinton changed the tone and substance of the Order. The review process followed firmer deadlines and more robust transparency requirements. Analysts were instructed to give due consideration to qualitative measures of costs and benefits, as well as to weigh the potential distributive impacts of regulations.

These were crucial improvements, and cost-benefit analysis under Clinton moved closer to becoming a neutral tool for rational decisionmaking. These reforms were important first steps, but the overall structure of regulatory review and many of the methodologies of cost-benefit analysis continued to include important flaws.

The Bush Reinterpretations. For the first six years of his presidency, George W. Bush maintained Clinton's Executive Order entirely intact. However, the actual practice of regulatory review changed significantly. While some aspects of transparency and timeliness improved during the Bush Administration, many others suffered. In particular, by augmenting the use of "informal" review, OIRA skirted around transparency requirements and formal review requirements. Agencies also felt that OIRA overstepped its role and interfered in their areas of expertise. Although Clinton's additions on qualitative measures and distributive impacts remained in effect, such instructions often went unheeded.

When President Bush did announce a revised Executive Order in January 2007, it tended to forge an even closer link between cost-benefit analysis and a larger deregulatory agenda. Executive Order 13,422 instituted the following key changes: it required agencies to identify a market failure before moving forward with proposed regulations; and it placed political appointees in agencies as Regulatory Policy Review Officers, further cementing presidential political influence over agency scientist and experts.[3]

Lessons from History. It is notable that Bush's 2007 revisions retained the essential structure of Clinton's Executive Order 12,866. History reveals the staying power of the fundamental architecture of regulatory review, though each administration finds new interpretations to advance its own agenda. The next presidential administration has an opportunity to re-imagine the structure of the federal administrative state. While it could simply reinterpret the existing Executive Order, it also has the chance to create more durable and lasting reforms that could preserve the neutrality and effectiveness of regulatory review far into the future.

Development of Recommendations

In this Report, we have distilled a set of recommendations from several sources, including our book *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health* (Oxford University Press 2008), a roundtable of experts convened at New York University School of Law on November 17, 2008, and other sets of recommendations on regulatory review issued during the transition process. The Institute for Policy Integrity hopes this collection of broad principles and specific recommendations for reform will assist the next presidential administration as it considers how to begin reshaping the federal regulatory state.

Retaking Rationality argues that cost-benefit analysis is a conceptually neutral tool to achieve a more rational system of regulation, but that this tool has often been used in the service of an ideological driven antiregulatory agenda. Due to this imbalance, groups that favor an active regulatory role for government—such as environmental groups, labor unions, and consumer organizations—have generally not participated in the debate over the methodology and uses of cost-benefit analysis. As a result, both substantive and institutional biases with antiregulatory effects have emerged in cost-benefit analysis. *Retaking Rationality* identifies eight of these biases, and proposes that by embarking on a campaign to improve cost-benefit analysis, rather than end its use, pro-regulatory groups can have more success in pursuing their agenda and promoting a more just and rational regulatory system.

Several other groups have recently released their own recommendations for reforms to the federal regulatory review process. In particular, OMB Watch,[4] the Center for Progressive Reform[5], and a collection of environmental groups[6] have issued recommendations on regulatory review. While there are areas of disagreement, most of these other publications substantially agree on several broad areas.[7]

To help inform our recommendations on how best to reform the process of regulatory review, the Institute for Policy Integrity hosted a roundtable discussion at New York University School of Law on November 17, 2008. The following individuals—all experts in the federal regulatory process—participated in that discussion and shared their own personal views:

- Rob Brenner, Director of EPA's Office of Policy Analysis and Review;
- Nancy Ketcham-Colwill, Counsel for EPA;
- Steven Croley, Professor of Law at the University of Michigan;

- Adam Finkel, Fellow and Executive Director, Penn Program on Regulation, University of Pennsylvania Law School; Professor of Environmental and Occupational Health at the University of Medicine and Dentistry of New Jersey School of Public Health; former Director of Health Standards Programs (1995-2000) and Regional Administrator for the Rocky Mountain states (2000-2003) at OSHA;

- Sally Katzen, Visiting Professor at University of Michigan Law School; former Administrator of OIRA (1993-1998); former Deputy Director for Management of the Office of Management and Budget (1999-2001);

- Michael A. Livermore, Executive Director, Institute for Policy Integrity;

- Rick Melberth, Director of Federal Regulatory Policy for OMB Watch;

- Richard D. Morgenstern, Senior Fellow at Resources for the Future;

- Vickie Patton, Deputy General Counsel for Environmental Defense Fund; Member, EPA's National Clean Air Act Advisory Committee; former attorney at EPA's Office of General Counsel;

- Kathleen Rest, Executive Director of the Union for Concerned Scientists; former Deputy Director for Programs at the National Institute for Occupational Safety and Health in the Centers for Disease Control;

- Richard L. Revesz, Dean of the New York University School of Law and Faculty Director of the Institute for Policy Integrity;

- Richard Stewart, University Professor and John Edward Sexton Professor of Law at New York University; former Assistant Attorney General, Environment and Natural Resource Division, U.S. Department of Justice (1989-1992);

- Katrina Wyman, Professor of Law at New York University.

The Institute for Policy Integrity has sole responsibility for the following recommendations, which do not necessarily reflect the views of any individual roundtable participant, nor of their affiliated organizations.

The Role of OIRA

The history of federal regulatory review has shown that OIRA's role easily shifts to reflect changing administrative ideologies: starting as a secretive and blunt instrument under President Reagan, changing to more of a facilitator under President Clinton, and reverting to a regulatory gatekeeper under President George W. Bush. The following four recommendations are geared towards making durable changes in OIRA's roles so that it can become a stabilizing force in regulatory review, rather than merely a mirror of the latest and mercurial administrative agenda.

I. Coordination

Recommendation: OIRA should increase its commitment to improving agency coordination by reestablishing regular meetings of the Regulatory Working Group, and by creating standing subgroups in key areas where coordination is needed.

Background: Under the current and past executive orders, part of OIRA's stated role has been to facilitate coordination between agencies. However, in practice, OIRA has dedicated the bulk of its resources to the regulatory review function, with relatively little done to enhance communication, harmonization, and coordination between agencies.

Coordinating federal agencies is crucial. Many risks are not easily cordoned off along bureaucratic lines, and agencies can, and sometimes do, engage in turf battles, work at cross-purposes, enact redundant regulation, or shuffle off difficult problems. These failures of coordination waste resources and reducte the effectiveness of agencies.

The are a large number of substantive overlaps and competing jurisdictions in the federal bureaucracy, which require coordinatation to achieve smart policy. Perhaps the most clear is example is energy policy, which touches on issues as far flung as environmental emissions standards and procurement processes for lighting in federal buildings. Another clear examples is air toxins exposure, which requires coordination between OSHA and EPA.

Often, when confronted with cross-agency issues, OIRA's job has been to help mediate conflict on an *ad hoc* case-by-case basis. However, OIRA should take on an expanded role

that moves beyond a zero-sum framework and proactively looks for areas where coordination can achieve greater regulatory efficiency.

Under the Clinton Administration, a Regulatory Working Group met monthly to discuss issues, agendas, and regulatory gaps. Though originally productive, the practice died when the Bush Administration came to power. Reviving the meetings as a useful tool will require commitments from top-level agency officials to attend and keep an open mind.

OIRA is already resource-constrained, and augmenting its role as a coordinator will require more staff and a bigger budget. While there is likely to be some concern about increasing OIRA's size and power, the importance of coordinating policy across agencies, and the distinction between the coordinating and review functions, counsel for expansions within OIRA in this area.

Revisions: Section 4(d) describes the Regulatory Working Group and its functions. Revisions should be made to establish standing subgroups, and increase the number of meetings.

II. Transparency

Recommendation: To ensure that informal review by OIRA is not used to circumvent transparency requirements, agencies should be given the power to determine when informal review ends, and when formal review begins, by submitting a rule to OIRA.

Background: Transparency of process and disclosure of information to the public are necessary for government accountability. During the adoption of the Clinton Executive Order, and in the early years of the Bush Administration, many important transparency reforms were adopted to open the process of OIRA review to public scrutiny. These reforms have led to a more public and accountable process, and have helped dispel some concerns directed at OIRA review.

However, in recent years, OIRA has increasingly used an "informal" review process to inject its comments earlier into the rulemaking process. Though OIRA claims this practice is motivated by concerns about scarce resources and quick deadlines, many experts feel informal review is neither a response to nor a solution for the timeliness problem, but has instead been an opportunity for OIRA to influence rulemaking off-the-record, before most transparency requirements kick in. OIRA skirts other transparency requirements by issuing most of its informal comments orally—such communications rarely are transcribed or released publicly. In other words, a great deal of transparency is lost during OIRA's informal reviews, reducing the accountability of both OIRA and agencies.

For example, in late 2007 and early 2008, EPA was prepared to propose new regulations of greenhouse gas emissions. Instead, OIRA and White House officials—outside of any formal or public review process—collected criticisms from other government agencies and industry and pressured EPA to withdraw its regulations before they could even be proposed.[8]

While the importance of transparency is clear, absolute transparency also presents some downsides. Candid conversations can be vital to the rulemaking process, but agency staff may feel the need to censor themselves and their ideas if every communication becomes part of the public record. Moreover, neither OIRA nor agencies have the resources to achieve full transparency: though the cost of disclosing a single communication may seem small, the cumulative effort required to draft or transcribe, edit, and post every individual communication and document would demand substantial resources. Where to draw the line between sufficient disclosure and too much disclosure is a thorny question.

Early review, however, can serve a very useful purpose. During the Clinton Administration, agencies often approached OIRA in the pre-rule stage, asking for guidance on how to proceed. These informal consultations helped agencies choose the most efficient and effective rulemaking tactics. In limiting OIRA's ability to exploit informal reviews, we should not create disincentives for agency initiation of early or informal reviews that could increase the quality of rulemakings.

However, OIRA-initiated informal reviews are dangerous when used early in the rulemaking process to forbid certain regulatory options before the agency even has a chance to study them. They are equally dangerous when used late in the rulemaking process as a substitute to a more transparent formal review.

Revisions: Section 6(b) contains transparency requirements for formal OIRA review. In order to ensure that informal review is not abused, a new definition should be created making it clear that agencies have the power to initiate the formal review process by submitting a rule to OIRA.

III. Scope

Recommendations: OIRA should subject regulations of all agencies to equally high levels of scrutiny, rather than focusing on the regulations of particular agencies.

Background: The outcome of regulatory review is often defined by OIRA's relationship with other government agencies. Giving OIRA centralized and supervisory powers over agency action serves an important regulatory function: it ensures quality-control and offers both a dispassionate second opinion and a broader perspective of the regulatory landscape. However, this function must be balanced against the need to express deference to and respect for agencies as the primary source of information and expertise. Finding the right equilibrium will allow OIRA and agencies to work collaboratively, rather than combatively.

During different administrations OIRA has acted as a "gatekeeper"—a restrictive hurdle agencies must surmount before they can regulate—and at other times has played the role of a "facilitator"—helping to improve rules and shepherd regulations through the review process. A 2003 study by the U.S. General Accounting Office (now called the Government Accountability Office) found that, over the last eight years, OIRA has acted more as a gatekeeper—aggressively imposing its will at the expense of reasoned analysis and science—whereas during the Clinton Administration it played the role of a facilitator.[9] This

abrupt change left many agencies feeling frustrated, leading to low morale and attrition among staff.

This difference in emphasis is seen in the types of rules that are subjected to OIRA scrutiny. Most importantly, there has been generally greater scrutiny of rules emanating from environmental, health, and safety agencies—like EPA and OIRA—and less scrutiny of regulations from other agencies—such as the Department of Homeland Security. This imbalance is not justified on economic grounds—counter-terrorism rules can generate as large economic consequences as environmental rules.

It is especially important that the regulatory review process recognizes the expansion of homeland securities regulations in the post-9/11 world. The recently created Department of Homeland Security has issued a large number of new regulations that have broad consequences across the economy. While many of these regulations many be justified, they should be subjected to the same scrutiny as the regulations of other agencies.

Revisions: The preamble of the executive order should be revised to remove its emphasis on removing "unacceptable or unreasonable costs on society," and instead focus on facilitating well-designed regulation. Because regulations affecting homeland security have generally been subject to less scrutiny than environmental, health and safety rules, an d an interagency group should be convened to develop appropriate review of homeland security regulation.

IV. Inaction

Recommendation: OIRA should review petitions for rulemakings that have been denied by agencies as part of an annual planning process, to protect against agency inaction.

Background: Agency inaction is currently not subject to the same scrutiny as agency action, leading to a fundamental antiregulatory bias in how cost-benefit analysis is used.

OIRA can play a more affirmative role in tackling agency inaction when agencies do not engage in needed, efficient, and beneficial rulemaking. OIRA has at times used "prompt letters" to attempt to prod agencies to take action on under-regulated issues. However, the practice occurs inconsistently and infrequently, and it an *ad hoc* mechanism that is not enshrined in the Executive Order. Unfortunately, given the potentially unlimited universe of possible agency inaction, requiring OIRA to study every regulatory gap and make recommendations would place unbearable burdens on an already resource-strapped agency.

Other than the OIRA prompt letters, the only other institutional check on agency inaction is for outside groups to petition agencies for rulemakings. These petitions are generally denied, and judicial review of denials of petitions for rulemakings is very deferential to agencies.

OIRA should review petitions for rulemakings that have been denied as part of its yearly agency agenda setting process. Where a petition is denied or if an agency otherwise

formally decides not to take regulatory action, OIRA could require agencies to justify their decisions with some level of economic analysis. A substantial burden of proof would have to fall on the original petitioner so that agencies and OIRA are not over-burdened. This review process should happen on an annual basis and should take place in the context of agency agenda setting, so that ideas for new rulemakings can be evaluated in light of overall agency priorities.

Revisions: Section 4(a) discusses an annual planning meeting to be carried out by OIRA and agency heads. That meeting should be used as a forum to review denials of petitions for rulemaking and to give the public an opportunity to have input into the agenda setting process.

Cost-Benefit Methodology

Cost-benefit analysis is conceptually a neutral tool, but it is also malleable. Over much of the last twenty-eight years—and especially during the last eight—cost-benefit analysis has often been wielded by antiregulatory forces and its methodology has developed an antiregulatory bias. The next administration has the opportunity to reshape cost-benefit analysis as a neutral tool for the pursuit of effective, welfare-maximizing policies. Proper reforms now can help OIRA and agencies build good methodological habits, which could endure far into the future.

V. Net Benefits

Recommendation: Agencies should focus on maximizing net benefits—including both quantified and unquantified benefits—not minimizing regulatory costs.

Background: The goal of cost-benefit analysis is to help agencies identify regulatory options that will maximize net benefits. It should not be to act as a one-way ratchet to reduce regulatory stringency. The current Executive Order, with its emphasis on reducing costs rather than maximizing net benefits, should be revised to embrace the more rational goal of identifying efficient regulations.

While no analysis is ever perfect or complete, agencies should endeavor to capture the relevant consequences of proposed regulations and proceed on the basis of sound information. Of particular concern are qualitative costs and benefits. Some costs and benefits are impossible or too difficult to quantify and can only be measured in some qualitative fashion. But many of these qualitative costs and benefits can in fact be quantified—with additional research. The state of research now is limited. For example, willingness-to-pay studies are outdated; existence values remain highly contentious and poorly understood; and the complex nature of time preferences, particularly the concept of dread, need further exploration and incorporation into discounting tactics. Agencies should implement research agendas to expand the quantification possibilities in these areas.

It is also important to recognize that while maximizing net benefits is generally the goal of regulation—and regulatory review—there are exceptions. Where Congress has legislated

with other goals in mind—such as morality or distributional goals—these other priorities must be respected, as is currently provided for in the Executive Order.

Revisions: In the statement of regulatory philosophy in Section 1(a) the definition of net benefits should emphasize equal treatment of quantified and unquantified benefits. The regulatory principles in Section 1(b) should more clearly emphasize the maximization of net benefits. Section 1(b) should also be revised to charge agencies with implementing a research agenda to better inform regulatory decisions.

VI. Ancillary Benefits

Recommendation: When accounting for the indirect effects of regulation, agencies should pay equal attention to the both positive and negative indirect effects of regulation.

Background: As cost-benefit analysis has become more sophisticated, more of the collateral consequences of regulations have been taken into account. However, often, only the negative side effects of regulation are analyzed, while positive side effects are ignored. This practice creates a bias against regulations by systematically underestimated their potential benefits.

There is no good reason to believe that ancillary benefits are more rare than countervailing risks. Just as a regulation can have negative side effects, there are many potential pathways for regulations to have unintended positive consequences. There are many examples of ancillary benefits, such as the water filtration potential of wetlands, and the prevention of accidental death and suicide from carbon monoxide regulations targeted at clean outdoor air.

Perhaps the most egregious recent example of ancillary benefits that were ignored occurred in the case of a National Highway Traffic Safety Administration (NHTSA) rule on fuel-efficiency for light trucks. When promulgating that rule, NHTSA failed to place any value on the benefits that would be derived from greenhouse gas reductions associated with a higher standard. The omission was so egregious that the U.S. Court of Appeals for the Ninth Circuit struck down the rule, and instructed NHTSA to place a value on greenhouse gas benefits or provide better justification for its failure to do so.[10]

To correct these tendencies, the emphasis on ancillary benefits must be strengthened, and the practice of identifying and measuring secondary costs and benefits must be standardized. There is widespread agreement that, where ancillary benefits exist, they should be given parity with countervailing risks. The most recent guidelines from OIRA on conducting cost-benefit analysis also mention that ancillary benefits may be important. However, the actual practice of cost-benefit analysis continues to be biased in favor of finding countervailing risks and against finding ancillary benefits.

Revisions: Section 6(a) should be revised to clarify that indirect benefits will be given parity with indirect costs of regulation.

VII. Future Generations

Recommendation: The current practice of discounting benefits for future generations at a constant rate consistent with the return on traditional financial instruments should be abandoned in favor of a valuation mechanism that reflects the fundamental moral and ethical difficulties that arise with regulations that have intergenerational effects.

Background: The constant discount rate used in financial markets is based, in part, on the preference of individuals to enjoy benefits sooner rather than later. In keeping with the general practice of cost-benefit analysis to respect individuals' preferences, there is nothing wrong with discounting the benefits of certain types of regulations when the costs occur before the benefits and the regulatory beneficiaries fall within the current generation. For these types of regulations—which are commonly used to target long-latency threats—discounting can be justified.

However, in the intergenerational context—where regulatory costs occur now but the benefits will not be incurred for decades, by a different population—discounting is often inappropriate. Most troubling is the use of a rate of pure time preference, which is based on intrapersonal preferences and does not reflect a social decisions about the distribution of benefits and burdens between individuals.

Discounting on the basis of rates of pure time preferences is not sensible for intergenerational benefits. In a economy without productive capacity, with a fixed amount of resources and a fixed population—one that inhabits the economy at an early date than the other—there is no reason why more resources should be allocated to the early population. This moral intuition indicates that a pure time preference that favors the present is not justified.

Other frameworks for determining obligations to future generations, including sustainable development, utilitarianism, corrective justice, and the opportunity costs of regulation, should be used. Any mechanism that treats benefits that accrue to future generations differently than benefits for the current generation must be based on a full reckoning with the difficult moral and ethical questions inherent in such distributional decisions.

Revision: Section 4(d) should be modified to create a subgroup of the Regulatory Working Group tasked with developing consistent treatment for future generations.

VIII. Distribution

Recommendation: Cost-benefit analysis should be augmented with distributional analysis, conducted on a central and holistic level, to account for disadvantaged groups, including those that face disproportional environmental, health, and safety risks.

Background: Since 1993, the Executive Order has directed agencies to consider the distributional consequences of regulation—that is, to assess whether and how a regulation affects certain subpopulations of society. However, that Order treats distributional consequences as a potential "cost" of regulation, which is not analytically sensible, and does not integrate distributional analysis into the system of regulatory review.

Because cost-benefit analysis selects regulations that maximize net benefits across the entire population, subpopulations could be saddled with regulatory costs while other groups might enjoy the bulk of the benefits. Over the course of many regulations, some of these effects might cancel out, as the beneficiaries of one regulation could be burdened by another regulation. But if the regulatory system as a whole is burdening some groups significantly more than others—or unfairly benefiting certain subpopulations—then there is a clear concern about equity and fairness.

There are many ways that the distribution of regulatory costs and benefits may be unfair. For example, a particular subpopulation may be shut out from receiving the same regulatory benefits that many others enjoy. The distribution of regulatory costs could fall disproportionately on one subpopulation. Some groups may be subject to disproportionate risks, or regulatory costs could fall on those least able to bear them. In addition, a regulation may effectuate an undesirable transfer of wealth from poorer to richer.

In general, economic analysis tends to disregard distributional impacts, focusing on whether regulations are wealth-maximizing in the aggregate. Economists generally do not favor adjusting regulation on a case-by-case basis to achieve distributional ends—there are other more efficient mechanism to achieve distributional goals, such as the tax and transfer system. However, for those mechanisms to work, there must be information about the overall distributional consequences of the regulatory system, because current measures of inequity—which focus on income—fail to account for the welfare consequences of environmental, public health, and safety risks.

Revisions: Revisions are needed throughout the order to institutionalize the process of distributional analysis. Most important, Section 6(a) should be revised to explicitly direct agencies to conduct distributional analysis, apart from cost-benefit analysis, of major rules, and Section 6(b) should be revised to require OIRA to make an annual report on the distribution of costs and benefits of rules adopted in the prior year.

IX. Costs

Recommendation: Cost estimates must take account of production process changes and technological innovation in response to new regulation, and should not be based exclusively on currently available technology.

Background: Estimates of compliance costs are too frequently based on the price of end-of-pipe equipment, ignoring the possibility of technological advancements and production process improvements. Both end-of-pipe methods and production process changes have the potential to reduce emissions of harmful pollutants.

End-of-pipe methods attempt to capture some of the emissions before they escape the plant and are released into the atmosphere or water. Paradigmatic examples of end-of-pipe technologies are catalytic converters on cars and scrubbers on power plants. A simple screen that prevents debris from escaping is a low-tech version of the end-of-pipe method.

Production process changes seek to reduce the amount of harmful pollution that is created in the first place. Changes in production processes are often much cheaper per unit of pollution reduction than end-of-pipe technologies. For example, switching from high-sulfur coal to low-sulfur coal reduces the amount of pollution that is produced by coal-fired power plants. Switching from coal to natural gas reduces pollution to an even greater extent. In the manufacture of goods, toxic solvents can be replaced by nontoxic alternatives.

Because the difference in compliance costs between end-of-pipe technology and production process changes is often significant, it is vital that cost estimators look to both. Basing cost estimates on known pollution-control technology will tend to overestimate costs.

Because end-of-the-pipe technology is often used as the basis for cost-estimates, there may be important overstatements of regulatory costs. There have been many examples where early estimates of the costs of regulation were extremely high, and where technological change significantly reduced compliance costs. In order to accurate account for regulatory costs, the dynamic power of the marketplace and innovation to reduce compliance costs must be taken into account.

Revisions: Section 1(b) should be revised to create a new principle of regulation, requiring agencies to take account of the effects of regulation on innovation and technological change.

X. Deregulation

Recommendation: Review of deregulation should be conducted as stringently as review of new regulation.

Background: Under the current Executive Order, deregulation is often subjected to less stringent review than new regulations. There is no justification for this bias, because inefficient deregulation can be as costly, in terms of social welfare, as inefficient regulation.

Efficient regulations deliver large benefits and counteract important failures of the unregulated market. Just as regulations impose some cost on the economy, the lack of regulation, when regulation is needed, also imposes negative consequences in the form of reduced social welfare. Economic analysis can be just as valuable for cases of deregulation, non-regulatory approaches, and agency inaction as it is for examining new regulations.

There are many examples where deregulation has been subjected to a lower level of scrutiny. Perhaps the most egregious recent example was large scale changes made to the New Source Review Program under the Clean Air Act that extended grandfathering provision that protect old dirty power plants.

The National Association of Public Administration, the EPA's own Office of Inspector General, the American Lung Association, and a host of environmental groups have stated

that the new rule will result in increased levels of air pollution. Given the well-documented effects of air pollution on health, the economic impact generated from increases in health risks alone likely justified a cost-benefit analysis and OIRA review. The argument that the new rule will have little economic impact is further undermined by the scope of the New Source Review provision, which covers all "stationary sources," meaning any facility "which emits or may emit any air pollutant"—a very large number of facilities including power plants, factories, and oil refineries. Even small changes in the New Source Review rules will deeply affect these important economic actors, with ripple effects throughout the economy.

Revisions: Section 3(d) is revised to make clear that deregulation is subject to the same scrutiny as new regulations.

Markup of Executive Order 12866

Regulatory Planning and Review

Principles

The American people deserve a regulatory system that works. ~~for them, not against them: a regulatory system that~~ Well-designed regulation protects and improves ~~their~~ public health, safety, and the environment, ~~and well-being~~ and improves the performance of the economy, thereby promoting widespread opportunity and well-being for the American public. Poorly-designed regulation, or the failure to regulate significant risks, ~~without~~ imposes ~~inappropriate~~ unacceptable and ~~or~~ unreasonable costs on society, ~~regulatory policies that recognize that the private sector~~ and hampers private markets, and stalls ~~are the best engine for~~ economic growth. To be effective, regulatory approaches must ~~that~~ respect the role of State, local, and tribal governments; utilize the best scientific and economic information; and be ~~and regulations that are effective.~~ flexible, consistent, sensible, and understandable. ~~We do not have such a regulatory system today.~~

Net Benefits

With this Executive Order, the Federal Government ~~begins~~ strengthens the a program to reform and make more efficient the regulatory process. The objectives of this Executive Order are to enhance planning and coordination with respect to both new and existing regulations; to reaffirm the primacy of Federal agencies in the regulatory decision-making process; to restore the integrity and legitimacy of regulatory review and oversight; and to make the process more accessible and open to the public. In pursuing these objectives, the regulatory process shall be conducted so as to meet applicable statutory requirements and with due regard to the discretion that has been entrusted to the Federal agencies.

Accordingly, by the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. *Statement of Regulatory Philosophy and Principles.* (a) *The Regulatory Philosophy.* Federal agencies should promulgate ~~only such~~ regulations ~~as~~ that are required by law, that are necessary to interpret the law, or ~~are made necessary by compelling public need, such as material~~ that advance the public good by: correcting failures of private markets; protecting or improving the health and safety of the public, or the environment; promoting economic growth; or otherwise enhancing the well-being of the American people. In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits ~~that are difficult to quantify, but nevertheless essential to consider~~. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits ~~(including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity),~~ unless a statute requires another regulatory approach. Net benefits include both unquantifed and quantified economic, employment, environmental, public health and safety, and overall welfare effects. When choosing between regulatory alternatives, agencies should take due account of distributive impacts, including impacts on future generations, and equity. The American public should be given ample opportunity to comment on regulatory alternatives, and the regulatory process should be conducted expediently, without unnecessary delay, and with sufficient coordination between federal agencies and with State, local, and tribal governments.

Net Benefits

Net Benefits

Transparency

(b) *The Principles of Regulation.* To ensure that the agencies' regulatory programs are consistent with the philosophy set forth above, agencies should adhere to the following principles, to the extent permitted by law and where applicable:

(1) Each agency shall identify the problem that it intends to address (including, where applicable, the failures of

private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.

(2) Each agency shall examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct and determine whether those regulations (or other law) should be modified to help achieve the intended goal of the new regulation address the identified problem more completely or effectively.

Net Benefits

(3) Each agency shall identify and assess all feasible regulatory available alternatives, to direct regulation, including providing especially the use of economic incentives to encourage the desired behavior, such as user fees or marketable permits, or the provision providing information upon which to help the public make more informed choices can be made by the public.

(4) In setting regulatory priorities, each agency shall consider, to the extent reasonable, the degree and nature of the risks posed by various substances or activities within its jurisdiction.

(5) Each agency When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), and flexibility distributive impacts, and equity.

(6) Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, shall propose or adopt a regulation only upon a reasoned determination that the intended regulation maximizes net

benefits. In making this determination, the agency shall consider both quantified and unquantified costs and benefits. The agency shall also give due regard to the distributive impacts of the intended regulation and shall take appropriate steps to mitigate negative distributive effects.

Net Benefits

(7) Each agency shall take account of the effect of regulation on technical change and innovation, and shall ensure that estimates of compliance costs reflect the ability of market actors to adapt to new regulation.

Costs

(8) Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation. Each agency shall pursue an agenda of research and training to ensure that its staff gathers necessary background data and builds a sufficient knowledge base to make accurate regulatory decisions. Special focus shall be given to the accurate estimation of regulatory benefits—including mortality and morbidity risks—and to the effects of regulation on technological change.

Net Benefits

~~(8)~~ (9) Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.

~~(9)~~ (10) Wherever feasible, agencies shall seek views of appropriate State, local, and tribal officials before imposing regulatory requirements that might significantly or uniquely affect those governmental entities. Each agency shall assess the effects of Federal regulations on State, local, and tribal governments, including specifically the availability of resources to carry out those mandates, and seek to minimize those burdens that uniquely or significantly affect such governmental entities, consistent with achieving regulatory objectives.

In addition, as appropriate, agencies shall seek to harmonize Federal regulatory actions with related State, local, and tribal regulatory and other governmental functions.

~~(10)~~ (11) Each agency shall avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies.

~~(11) Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations.~~

~~(12)~~ (12) Each agency shall draft its regulations to be simple and easy to understand, with the goal of minimizing the potential for uncertainty and litigation arising from such uncertainty.

Sec. 2. *Organization.* An efficient regulatory planning and review process is vital to ensure that the Federal Government's regulatory system best serves the American people.

(a) *The Agencies.* Because Federal agencies are the repositories of significant substantive expertise and experience, they are responsible for developing regulations and assuring that the regulations are consistent with applicable law, the President's priorities, and the principles set forth in this Executive Order.

(b) *The Office of Management and Budget.* Coordinated review of agency rulemaking is necessary to ensure that regulations are consistent with applicable law, the President's priorities, and the principles set forth in this Executive Order, and that decisions made by one agency do not conflict with the policies or actions taken or planned by another agency. The Office of Management and Budget (OMB) shall carry out that review function. Within OMB, the Office of Information and

Regulatory Affairs (OIRA) is the repository of expertise concerning regulatory issues, including methodologies and procedures that affect more than one agency, this Executive Order, and the President's regulatory policies. To the extent permitted by law, OMB shall provide guidance to agencies and assist the President, the Vice President, and other regulatory policy advisors to the President in regulatory planning and shall be the entity that reviews individual regulations, as provided by this Executive Order.

(c) *Assistance.* The Vice President is the principal adviser to the President on, and shall coordinate the development and presentation of recommendations concerning, regulatory policy, planning, and review, as set forth in this Executive order. In fulfilling their responsibilities under this Executive Order, the President and the Vice President shall be assisted by the regulatory policy advisors within the Executive Office of the President and by such agency officials and personnel as the President and the Vice President may, from time to time, consult.

Sec. 3. *Definitions.* For purposes of this Executive Order: (a) "Advisors" refers to such regulatory policy advisors to the President as the President and Vice President may from time to time consult, including, among others: (1) the Director of OMB; (2) the Chair (or another member) of the Council of Economic Advisers; (3) the Assistant to the President for Economic Policy; (4) the Assistant to the President for Domestic Policy; (5) the Assistant to the President for National Security Affairs; (6) the Assistant to the President for Director of the Office of Science and Technology Policy (7) the Deputy Assistant to the President and Director for Intergovernmental Affairs; (8) the Assistant to the President and Staff Secretary; (9) the Assistant to the President and Chief of Staff to the Vice President; (10) the Assistant to the President and Counsel to the President; (11) the Deputy Assistant to the President and Director of the White House Office on Environmental Policy, and (12) Chairman of the Council on Environmental Quality and Director of the Office on Environmental Quality; (12) the

Assistant to the President for Homeland Security; and (13) the Administrator of OIRA, who also shall coordinate communications relating to this Executive Order among the agencies, OMB, the other Advisors, and the Director ~~Office of the Vice President~~.

(b) "Agency," unless otherwise indicated, means any authority of the United States that is an "agency" under 44 U.S.C. 3502(1), other than those considered to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5).

(c) "Director" means the Director of OMB.

(d) "Regulation" or "rule" means an agency statement of general applicability and future effect, which the agency intends to have the force and effect of law, that is designed to implement, interpret, or prescribe law or policy or to describe the procedure or practice requirements of an agency. It includes the amendment, suspension, or repeal of existing regulations or rules. It does not, however, include:

Deregulation

(1) Regulations or rules issued in accordance with the formal rulemaking provisions of 5 U.S.C. 556, 557;

(2) Regulations or rules that pertain to a military or foreign affairs function of the United States, other than procurement regulations and regulations involving the import or export of non-defense articles and services;

(3) Regulations or rules that are limited to agency organization, management, or personnel matters; or

(4) Any other category of regulations exempted by the Administrator of OIRA.

(e) "Regulatory action" means any substantive action by an agency (normally published in the *Federal Register*) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking.

(f) "Significant regulatory action" means any regulatory action that is likely to result in a rule that may:

(1) Have an annual effect on the economy or social welfare of $100 million or more;

(2) ~~or a~~ Adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

~~(2)~~ (3) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

~~(3)~~ (4) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

~~(4)~~ (5) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

Significant regulatory actions include actions that impose additional compliance costs or stricter regulatory standards, and those that relax protections or reduce compliance costs. Annual effect on the economy should be calculated on an aggregate (rather than net) basis and should include all quantifable and non-quantifiable effects, including all welfare effects such as effects on public health, safety, or the environment.

Deregulation

Sec. 4. *Planning Mechanism.* In order to ~~have an effective regulatory program,~~ identify efficient new regulatory proposals, to update and revise regulations on a timely basis, to provide for coordination of regulations, to maximize consultation and the resolution of potential conflicts at an early stage, to involve the public and its State, local, and tribal officials in regulatory planning, and to ensure that new or revised regulations promote the President's priorities and the principles set forth in this

Executive Order, these procedures shall be followed, to the extent permitted by law:

(a) *Agencies' Policy Meeting.* Early in each year's planning cycle, the ~~Vice President~~ Director shall convene a meeting of the Advisors and the heads of agencies to seek a common understanding of priorities and to coordinate regulatory efforts to be accomplished in the upcoming year. (1) Prior to that meeting, the head of each agency shall:

(A) Compile a list of all petitions for rulemaking that have been received over the course of the previous year, along with descriptions of the proposed rules and any substantive comments submitted in support of the petitions; and

Inaction

(B) Invite parties that have submitted petitions for rulemakings in the past year to offer additional comments in the form of cost-benefit analyses in support of new regulations to be considered at the Agencies' Policy Meeting.

(2) A portion of the Agencies' Policy Meeting will be open to the public to accept oral comment on petitions for rulemakings under consideration.

(b) *Unified Regulatory Agenda.* For purposes of this subsection, the term "agency" or "agencies" shall also include those considered to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5). Each agency shall prepare an agenda of all regulations under development or review, at a time and in a manner specified by the Administrator of OIRA. The description of each regulatory action shall contain, at a minimum, a regulation identifier number, a brief summary of the action, the legal authority for the action, any legal deadline for the action, and the name and telephone number of a knowledgeable agency official. Agencies may incorporate the information required under 5 U.S.C. 602 into these agendas.

(c) *The Regulatory Plan.* For purposes of this subsection, the term "agency" or "agencies" shall also include those considered

to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5). (1) As part of the Unified Regulatory Agenda, ~~beginning in 1994~~ each agency shall prepare a Regulatory Plan (Plan) of the most important significant regulatory actions that the agency reasonably expects to issue in proposed or final form in that fiscal year or thereafter. The Plan shall be approved personally by the agency head and shall contain at a minimum:

(A) A statement of the agency's regulatory objectives and priorities and how they relate to the President's priorities;

(B) A summary of each planned significant regulatory action including, to the extent possible, alternatives to be considered and preliminary estimates of the anticipated costs and benefits;

(C) A summary of the legal basis for each such action, including whether any aspect of the action is required by statute or court order;

(D) A statement of the need for each such action and, if applicable, how the action will reduce risks to public health, safety, or the environment, as well as how the magnitude of the risk addressed by the action relates to other risks within the jurisdiction of the agency;

(E) The agency's schedule for action, including a statement of any applicable statutory or judicial deadlines; and

(F) The name, address, and telephone number of a person the public may contact for additional information about the planned regulatory action.

(2) Each agency shall forward its Plan to OIRA by June 1st of each year.

(3) Within 10 calendar days after OIRA has received an agency's Plan, OIRA shall circulate it to other affected agencies, the Advisors, and the Director ~~Vice President~~.

(4) An agency head who believes that a planned regulatory action of another agency may conflict with its own policy or action taken or planned shall promptly notify, in writing, the Administrator of OIRA, who shall forward that communication to the issuing agency, the Advisors, and the Director Vice President.

(5) If the Administrator of OIRA believes that a planned regulatory action of an agency may be inconsistent with the President's priorities or the principles set forth in this Executive Order or may be in conflict with any policy or action taken or planned by another agency, the Administrator of OIRA shall promptly notify, in writing, the affected agencies, the Advisors and the Vice President.

(6) The Director Vice President, with the Advisors' assistance, may consult with the heads of agencies with respect to their Plans and, in appropriate instances, request further consideration or inter-agency coordination.

(7) The Plans developed by the issuing agency shall be published annually in the October publication of the Unified Regulatory Agenda. This publication shall be made available to the Congress; State, local, and tribal governments; and the public. Any views on any aspect of any agency Plan, including whether any planned regulatory action might conflict with any other planned or existing regulation, impose any unintended consequences on the public, or confer any unclaimed benefits on the public, should be directed to the issuing agency, with a copy to OIRA.

(d) *Regulatory Working Group.* Within 30 days of the date of this Executive Order, the Administrator of OIRA shall convene a Regulatory Working Group ("Working Group"), which shall consist of representatives of the heads of each agency that the Administrator determines to have significant domestic

regulatory responsibility, and the Advisors ~~and the Vice President~~. The Administrator of OIRA shall chair the Working Group and shall periodically advise the Director ~~Vice President~~ on the activities of the Working Group. The Working Group shall serve as a forum to assist agencies in identifying and analyzing important regulatory issues (including, among others (1) the development of innovative regulatory techniques, (2) the methods ~~, efficacy, and utility~~ of ~~comparative~~ risk assessment in regulatory decision-making, and (3) the development of short forms and other streamlined regulatory approaches for small businesses and other entities). The Working Group shall meet at least monthly ~~quarterly~~. The Working Group shall establish standing ~~and may meet as a whole or in~~ subgroups of agencies with an interest in particular issues or subject areas including, at a minimum, subgroups on energy policy, and workplace air quality. The Working Group shall also convene subgroups devoted to the long-term harmonization of risk-assessment, especially the identification and characterization of cancer risks, to developing a consistent mechanism for valuing costs and benefits of regulations for future generations, and to subjecting homeland security policy to appropriate review. To inform its discussions, the Working Group may commission analytical studies and reports by OIRA or any other agency, and may request advice from outside experts.

Coordination

Future Generations

Scope

(e) *Conferences.* The Administrator of OIRA shall meet quarterly with representatives of State, local, and tribal governments to identify both existing and proposed regulations that may uniquely or significantly affect those governmental entities. The Administrator of OIRA shall also convene, from time to time, conferences with representatives of businesses, nongovernmental organizations, and the public to discuss regulatory issues of common concern.

Sec. 5. *Existing Regulations.* In order to determine the cumulative distribution of ~~reduce the~~ regulatory benefits and burdens; to ensure the balanced treatment of ~~on~~ the American people, their families, their communities, their State, local, and tribal governments, and their industries; to determine whether

regulations promulgated by the executive branch of the Federal Government should be modified ~~have become unjustified or unnecessary~~ as a result of changed circumstances; to confirm that regulations are ~~both~~ compatible with each other ~~and not duplicative or inappropriately burdensome in the aggregate~~; to ensure that all regulations are consistent with the President's priorities and the principles set forth in this Executive Order, within applicable law; and to otherwise improve the effectiveness of existing regulations: (a) Within 180 ~~90~~ days of the date of this Executive Order, each agency shall submit to OIRA a program, consistent with its resources and regulatory priorities, under which the agency will periodically review its existing significant regulations. This review will assess the accuracy of original estimates regarding the costs and benefits of existing regulations and will determine the distributional impacts of current regulations; the review will also take account of changed technological, scientific, and economic circumstances to determine whether ~~to determine whether any such~~ regulations should be modified or eliminated, or if new regulations are needed to achieve agency objectives. ~~or eliminated so as to make the agency's regulatory program more effective in achieving the regulatory objectives, less burdensome, or in greater alignment with the President's priorities and the principles set forth in this Executive order. Any significant regulations selected for review shall be included in the agency's annual Plan. The agency shall also identify any legislative mandates that require the agency to promulgate or continue to impose regulations that the agency believes are unnecessary or outdated by reason of changed circumstances.~~

Net Benefits

Distribution

(b) The Administrator of OIRA shall work with the Regulatory Working Group and other interested entities to pursue the objectives of this section. State, local, and tribal governments are specifically encouraged to assist in the identification of regulations that should be modified and of areas where new regulations are needed. ~~that impose significant or unique burdens on those governmental entities and that appear to have outlived their justification or be otherwise inconsistent with the public interest.~~

Inaction

Sec. 6. *Centralized Review of Regulations.* The guidelines set forth below shall apply to all regulatory actions, for both new and existing regulations, by agencies other than those agencies specifically exempted by the Administrator of OIRA:

(a) *Agency Responsibilities.* (1) Each agency shall (consistent with its own rules, regulations, or procedures) provide the public with meaningful participation in the regulatory process. In particular, before issuing a notice of proposed rulemaking, each agency should, where appropriate, seek the involvement of those who are intended to benefit from and those expected to be burdened by any regulation (including, specifically, State, local, and tribal officials). In addition, each agency should afford the public a meaningful opportunity to comment on any proposed regulation, which in most cases should include a comment period of not less than 60 days. Each agency also is directed to explore and, where appropriate, use consensual mechanisms for developing regulations, including negotiated rulemaking.

(2) Within 60 days of the date of this Executive Order, each agency head shall designate a Regulatory Policy Officer who shall report to the agency head. The Regulatory Policy Officer shall be involved at each stage of the regulatory process to foster the development of effective, innovative, and least burdensome regulations and to further the principles set forth in this Executive Order.

(3) In addition to adhering to its own rules and procedures and to the requirements of the Administrative Procedure Act, the Regulatory Flexibility Act, the Paperwork Reduction Act, and other applicable law, each

agency shall develop its regulatory actions in a timely fashion and adhere to the following procedures with respect to a regulatory action:

(A) Each agency shall provide OIRA, at such times and in the manner specified by the Administrator of OIRA, with a list of its planned regulatory actions, indicating those which the agency believes are significant regulatory actions within the meaning of this Executive Order. Absent a material change in the development of the planned regulatory action, those not designated as significant will not be subject to review under this section unless, within 10 working days of receipt of the list, the Administrator of OIRA notifies the agency that OIRA has determined that a planned regulation is a significant regulatory action within the meaning of this Executive Order. The Administrator of OIRA may waive review of any planned regulatory action designated by the agency as significant, in which case the agency need not further comply with subsection (a)(3)(B) or subsection (a)(3)(C) of this section.

(B) For each matter identified as, or determined by the Administrator of OIRA to be, a significant regulatory action, the issuing agency shall provide to OIRA:

(i) The text of the draft regulatory action, together with a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet that need; and

(ii) An assessment of the potential costs and benefits of the regulatory action, including an explanation of the manner in which the regulatory action is consistent with a statutory mandate and, to the extent permitted by law, promotes the President's priorities and avoids undue interference with State, local, and tribal govern-

ments in the exercise of their governmental functions; and

(iii) An assessment of the distribution of the costs and benefits of the proposed rule, with special focus on disadvantaged groups or groups subject to multiple environmental, public health, or safety burdens.

Distribution

(C) For those matters identified as, or determined by the Administrator of OIRA to be, a significant regulatory action within the scope of section 3(f)(1), the agency shall also provide to OIRA the following additional information developed as part of the agency's decision-making process (unless prohibited by law):

(i) An assessment, including the underlying analysis, of benefits anticipated from the regulatory action. Such benefits include, ~~as,~~ but are not limited to, direct benefits for ~~the promotion of the efficient functioning of~~ the economy and private markets, ~~the enhancement of~~ health and safety, ~~the protection of~~ the natural environment, and the elimination or reduction of discrimination or bias and indirect economic, environmental, health and safety, or other benefits, ~~together with,~~ To the extent feasible, the assessment will include a quantification of those benefits. Where it is difficult or impossible to quantify benefits, the assessment will include a qualitative analysis of such benefits;

Ancillary Benefits

(ii) An assessment, including the underlying analysis, of costs anticipated from the regulatory action. Such costs include, ~~as,~~ but are not limited to, the direct cost both to the government in administering the regulation and to businesses and others in complying with the regulation, and any adverse effects on the efficient functioning of the

economy, private markets (including productivity, employment, and competitiveness), health, safety, and the natural environment. ~~together with.~~ To the extent feasible, the assessment will include a quantification of those costs. Where it is difficult or impossible to quantify costs, the assessment will include a qualitative analysis of such costs; and

(iii) An assessment, including the underlying analysis, of costs and benefits of ~~potentially effective and reasonable~~ feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and reasonably viable nonregulatory actions), and an explanation why the planned regulatory action is preferable to the identified potential alternatives.

(D) In emergency situations or when an agency is obligated by law to act more quickly than normal review procedures allow, the agency shall notify OIRA as soon as possible and, to the extent practicable, comply with subsections (a)(3)(B) and (C) of this section. For those regulatory actions that are governed by a statutory or court-imposed deadline, the agency shall, to the extent practicable, schedule rulemaking proceedings so as to permit sufficient time for OIRA to conduct its review, as set forth below in subsection (b)(2) through (4) of this section.

(E) After the regulatory action has been published in the *Federal Register* or otherwise issued to the public, the agency shall:

(i) Make available to the public the information set forth in subsections (a)(3)(B) and (C);

(ii) Identify for the public, in a complete, clear, and simple manner, the substantive changes between

the draft submitted to OIRA for review and the action subsequently announced; and

(iii) Identify for the public those changes in the regulatory action that were made at the suggestion or recommendation of OIRA.

(F) All information provided to the public by the agency shall be in plain, understandable language.

(b) *OIRA Responsibilities.* The Administrator of OIRA shall provide meaningful guidance and oversight so that each agency's regulatory actions are consistent with applicable law, the President's priorities, and the principles set forth in this Executive Order and do not conflict with the policies or actions of another agency. OIRA shall, to the extent permitted by law, adhere to the following guidelines:

(1) OIRA may review only actions identified by the agency or by OIRA as significant regulatory actions under subsection (a)(3)(A) of this section.

(2) OIRA shall waive review or notify the agency in writing of the results of its review within the following time periods:

(A) For any notices of inquiry, advance notices of proposed rulemaking, or other preliminary regulatory actions prior to a Notice of Proposed Rulemaking, within 10 working days after the date of submission of the draft action to OIRA;

(B) For all other regulatory actions, within 90 calendar days after the date of submission of the information set forth in subsections (a)(3)(B) and (C) of this section, unless OIRA has previously reviewed this information and, since that review, there has been no material change in the facts and circumstances upon which the regulatory action is based, in which case, OIRA shall complete its review within 45 days; and

(C) The review process may be extended ~~(1)~~ once by no more than 30 calendar days upon the written approval of the Director. ~~and (2) at the request of the agency head.~~

(3) For each regulatory action that the Administrator of OIRA returns to an agency for further consideration of some or all of its provisions, the Administrator of OIRA shall provide the issuing agency a written explanation for such return, setting forth the pertinent provision of this Executive Order on which OIRA is relying. If the agency head disagrees with some or all of the bases for the return, the agency head shall so inform the Administrator of OIRA in writing.

(4) Each year, beginning in 2010, the Administrator of OIRA shall prepare a report on regulatory activity that summarizes significant regulations that have been adopted, the costs and benefits of such regulations, the distributions of those costs and benefits, and a summary of the agency Regulatory Plans for the coming year. This report shall be submitted to the President no later than February 1, shall be made available to the public, and shall be posted on the OIRA website.

Net Benefits

Transparency

~~(4)~~ (5) Except as otherwise provided by law or required by a Court, in order to ensure greater openness, accessibility, and accountability in the regulatory review process, OIRA shall be governed by the following disclosure requirements:

(A) Only the Administrator of OIRA (or a particular designee) shall receive oral communications initiated by persons not employed by the executive branch of the Federal Government regarding the substance of a regulatory action under OIRA review;

(B) All substantive communications between OIRA personnel and persons not employed by the executive

branch of the Federal Government regarding a regulatory action under review shall be governed by the following guidelines: (i) A representative from the issuing agency shall be invited to any meeting between OIRA personnel and such person(s);

(ii) OIRA shall forward to the issuing agency, within 10 working days of receipt of the communication(s), all written communications, regardless of format, between OIRA personnel and any person who is not employed by the executive branch of the Federal Government, and the dates, subject matters, and names of individuals involved in all substantive oral communications (including meetings to which an agency representative was invited, but did not attend, and telephone conversations between OIRA personnel and any such persons); and

(iii) OIRA shall publicly disclose relevant information about such communication(s), as set forth below in subsection (b)(4)(C) of this section.

(C) OIRA shall maintain a ~~publicly available~~ log, publically available and posted on the OIRA website, that shall contain, at a minimum, the following information pertinent to regulatory actions under review:

(i) The status of all regulatory actions, including if (and if so, when and by whom) Vice Presidential and Presidential consideration was requested;

(ii) A notation of all written communications forwarded to an issuing agency under subsection (b)(4)(B)(ii) of this section; and

(iii) The dates, subject matters, and names of individuals involved in all substantive oral communications, including meetings and telephone conversations, between OIRA personnel

and any person not employed by the executive branch of the Federal Government, and the subject matter discussed during such communications.

(D) After the regulatory action has been published in the *Federal Register* or otherwise issued to the public, or after the agency has announced its decision not to publish or issue the regulatory action, OIRA shall make available to the public, and post on the OIRA website, all documents exchanged between OIRA and the agency during the review by OIRA under this section.

(6) An agency action is "under review" for purposes of (b)(5)(B) of this section whenever a proposed regulation is submitted to the OIRA Administrator by an agency.

Transparency

(7) All information provided to the public by OIRA shall be in plain, understandable language.

Sec. 7. *Resolution of Conflicts.* To the extent permitted by law, disagreements or conflicts between or among agency heads or between OMB and any agency that cannot be resolved by the Administrator of OIRA shall be resolved by the President, ~~or by the Vice President acting at the request of the President~~ with the relevant agency head (and, as appropriate, other interested government officials). ~~Vice Presidential and~~ Presidential consideration of such disagreements may be initiated only by the Director, by the head of the issuing agency, or by the head of an agency that has a significant interest in the regulatory action at issue. Such review will not be undertaken at the request of other persons, entities, or their agents.

~~Resolution of such conflicts shall be informed by recommendations developed by the Vice President, after consultation with the Advisors (and other executive branch officials or personnel whose responsibilities to the President include the subject matter at issue). The development of these recommendations shall be concluded within 60 days after review has been requested.~~

During the ~~Vice Presidential and~~ Presidential review period, communications with any person not employed by the Federal Government relating to the substance of the regulatory action under review and directed to the Advisors or their staffs ~~or to the staff of the Vice President~~ shall be in writing and shall be forwarded by the recipient to the affected agency(ies) for inclusion in the public docket(s). When the communication is not in writing, such Advisors or staff members shall inform the outside party that the matter is under review and that any comments should be submitted in writing.

At the end of this review process, the President, or the Vice President acting at the request of the President, shall notify the affected agency and the Administrator of OIRA of the President's decision with respect to the matter.

Sec. 8. *Publication.* Except to the extent required by law, an agency shall not publish in the *Federal Register* or otherwise issue to the public any regulatory action that is subject to review under section 6 of this Executive Order until (1) the Administrator of OIRA notifies the agency that OIRA has waived its review of the action or has completed its review without any requests for further consideration, or (2) the applicable time period in section 6(b)(2) expires without OIRA having notified the agency that it is returning the regulatory action for further consideration under section 6(b)(3), whichever occurs first. If the terms of the preceding sentence have not been satisfied and an agency wants to publish or otherwise issue a regulatory action, the head of that agency may request Presidential consideration through the Director ~~Vice President~~, as provided under section 7 of this order. Upon receipt of this request, the Director ~~Vice President~~ shall notify OIRA and the Advisors. The guidelines and time period set forth in section 7 shall apply to the publication of regulatory actions for which Presidential consideration has been sought.

Sec. 9. *Agency Authority.* Nothing in this Order shall be construed as displacing the agencies' authority or responsibilities, as authorized by law.

Sec. 10. *Judicial Review.* Nothing in this Executive Order shall affect any otherwise available judicial review of agency action. This Executive Order is intended only to improve the internal management of the Federal Government and does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

Sec. 11. *Revocations.* Executive Orders Nos. ~~12291 and 12498~~ 12866, 13258, and 13422; all amendments to those Executive Orders; all guidelines issued under those Orders; and any exemptions from those Orders heretofore granted for any category of rule are revoked.

Notes

[1] Exec. Order No. 12,291 , 46 Fed. Reg. 13193 (1981).

[2] Exec. Order No. 12,866, 58 Fed. Reg. 51735 (1993).

[3] Exec. Order No. 13,422, 72 Fed. Reg. 2763 (2007).

[4] GARY D. BASS ET AL., OMB WATCH, ADVANCING THE PUBLIC INTEREST THROUGH REGULATORY REFORM (2008), *available at* http://www.ombwatch.org/regulatoryreformrecs.pdf. OMB Watch developed its recommendations with advice from individuals from—but not necessarily representing—the following groups: United Automobile Workers, National Conference of State Legislatures, Center for Science in the Public Interest, Center for American Progress, Union of Concerned Scientists, Natural Resources Defense Council, various universities, and other organizations.

[5] REBECCA M. BRATSPIES ET AL., CTR. FOR PROGRESSIVE REFORM, WHITE PAPER NO. 806, PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT BY THE STROKE OF A PRESIDENTIAL PEN (2008) *available at* http://www.progressivereform.org/CPR_ExecOrders_Stroke_of_a_Pen.pdf.

[6] AMERICAN RIVERS ET AL., TRANSITION TO GREEN 2-12 to 2-17(2008), *available at* http://www.greencollarblog.org/documents/transition-to-green.pdf. The collection of groups signing off on those recommendations include: American Rivers, Center for International Environmental Law, Clean Water Action, Defenders of Wildlife, Earthjustice, Environment America, Environmental Defense Fund, Friends of the Earth, Greenpeace, Izaak Walton League, League of Conservation Voters, National Audubon Society, National Parks Conservation Association, National Tribal Environmental Council, National Wildlife Federation, Native American Rights Fund, Natural Resources Defense Council, Oceana, Ocean Conservancy, Pew Environment Group, Physicians for Social Responsibility, Population Connection, Population Action International, Rails-to-Trails Conservancy, Sierra Club, Wilderness Society, Trust for Public Land, Union of Concerned Scientists, and World Wildlife Fund.

[7] Among these publications, there is widespread agreement that:

> (1) On his first day in office, President Obama should impose a moratorium on finalizing any pending regulations and should review all of Bush's recently finalized (i.e., "midnight") regulations.
>
> (2) President Bush's Executive Order 13422 should be rescinded. It over-emphasizes market failures as the principal justification for government action and inappropriately empowers political appointees over agency staff.
>
> (3) Executive Order 12,866 may provide a foundation for a new, more effective administrative state, but is itself insufficient and should at least be modified.

(4) Transparency is essential for accountability. The federal government should move toward a presumption of openness through all stages of the regulatory process. Disclosure requirements should apply early in the rulemaking process—as soon as possible after documents, communications (including oral communications and communications with private entities), or other types of information are available.

(5) Transparency is essential for repeatability. Information and assumptions used in cost-benefit analysis should be disclosed, including statements of uncertainty about the assumptions.

(6) Cost-benefit analysis must accurately measure all costs and benefits. Qualitative measurements should be used when needed and should be given equal weight in decision-making as quantitative measurements. Ancillary benefits must not be ignored.

(7) Cost-benefit analysis should be accompanied by a rigorous and meaningful distributive analysis of how regulations impact sensitive subpopulations.

(8) OIRA must give greater deference to agency expertise. OIRA and White House officials should not manipulate the cost-benefit analyses performed by agencies.

(9) Regulatory decisions should be timely: OIRA's review should neither rush nor significantly delay regulatory action.

(10) OIRA should play a greater coordinating role, assisting with identifying regulatory gaps, resolving inter-agency conflicts, and harmonizing policies and practices.

[8] *See* SELECT COMMITTEE ON ENERGY INDEP. & GLOBAL WARMING MAJORITY STAFF, 110TH CONG., INVESTIGATION OF THE BUSH ADMINISTRATION'S RESPONSE TO *MASSACHUSETTS V. EPA* 2 (2008).

[9] U.S. GENERAL ACCOUNTING OFFICE, GAO-03-929, RULEMAKING: OMB'S ROLE IN REVIEW OF AGENCIES' DRAFT RULES AND TRANSPARENCY OF THOSE REVIEWS 38-44 (2003), *available at* http://www.gao.gov/new.items/d03929.pdf.

[10] *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508 (9th Cir. 2007).

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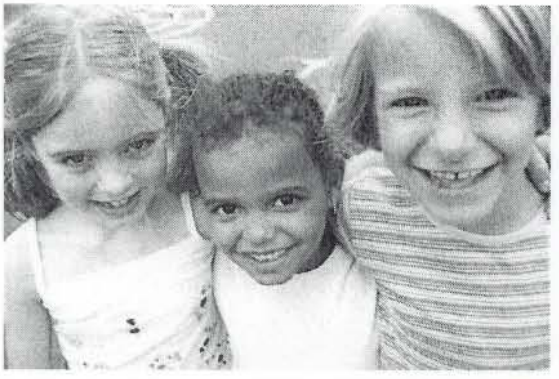
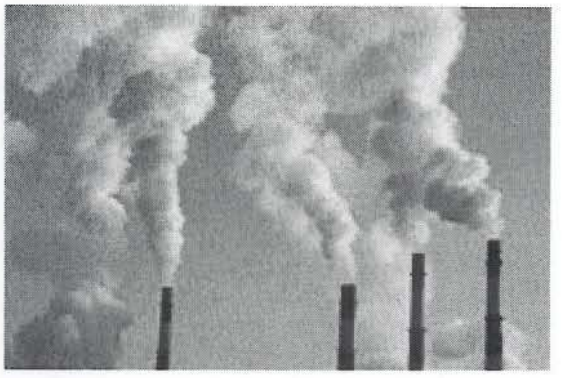
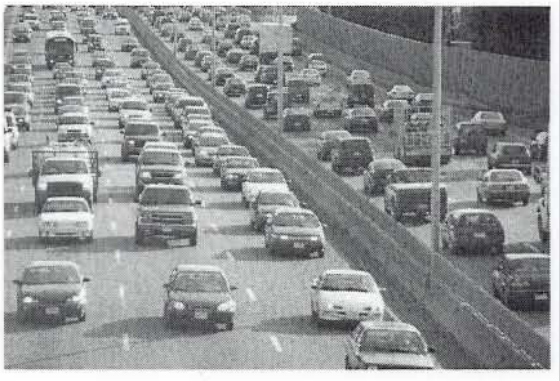
Carbon Counts


INCORPORATING THE BENEFITS OF CLIMATE PROTECTION INTO FEDERAL RULEMAKING

OCTOBER 28, 2008

AUTHORS

Martha Roberts
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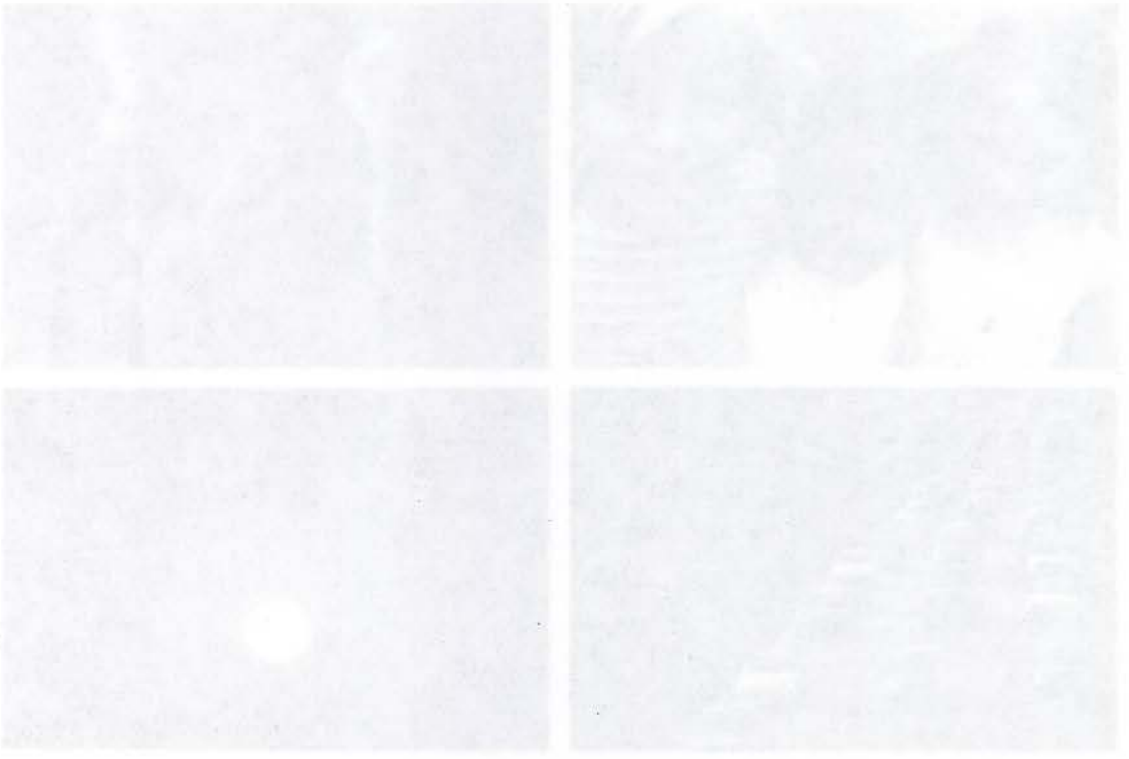
ENVIRONMENTAL DEFENSE FUND
finding the ways that work



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Our mission
Environmental Defense Fund is dedicated to protecting the environmental rights of all people, including the right to clean air, clean water, healthy food and flourishing ecosystems. Guided by science, we work to create practical solutions that win lasting political, economic and social support because they are nonpartisan, cost-effective and fair.

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The complete report is available at www.edf.org/

Contents

Executive Summary

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The United States is developing national climate legislation. While the nation debates and assembles a comprehensive policy, federal agencies are issuing important policies – from clean energy codes to air pollution standards – that affect greenhouse gas emissions today. For these policies, the final choice among different regulatory alternatives can have significant consequences for global warming pollution. Ensuring that "carbon counts" in the development of federal rules is critical to identify and implement cost-effective opportunities for greenhouse gas reductions.

Recent economic analyses in California and Florida examined the economic benefits and job growth associated with clean energy solutions. In both states, the studies found that climate-friendly policies would yield considerable economic dividends. As the nation faces serious economic challenges, these studies show that well-designed policies can maximize societal benefits by reducing a host of air pollutants including heat-trapping gases. And, as Florida policymakers found, these policies can hasten economic revitalization by "creating new job opportunities, and positioning Florida's 'green tech' sector as an economic engine for growth."[1]

Executive Branch directives govern the federal regulatory planning and review process. Executive Order 12,291, Executive Order 12,866, and their progeny provide for Executive Branch coordination and centralized review of federal regulations. These directives instruct federal agencies to assess the benefits and costs of each significant regulatory action where legally permitted. The resulting economic assessments accompany the development and issuance of these regulations. And, under Executive Branch policies currently in effect, federal agencies are admonished to select the approaches that maximize net societal benefits:

> "...the Action Team [on Energy and Climate Change] firmly believes that current economic conditions precisely sharpen the 'call to action' first issued by Governor Crist in 2007. Now is the time for strategic investment in Florida's low-carbon energy infrastructure if we are to be successful in diversifying the state's economy, creating new job opportunities, and positioning Florida's 'green tech' sector as an economic engine for growth." – Florida Energy and Climate Change Action Plan, Executive Summary[2]

> [I]n choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.[3]

All too often, however, the White House Office of Management and Budget has leveraged its review to weaken health protective standards and has declined to provide a complete and transparent accounting of societal benefits.

The White House Office of Management and Budget's myopic approach is manifest in the area of global warming. The benefits of greenhouse gas emissions reductions have been neglected or altogether omitted in policy development, despite an important body of economic research that monetizes the considerable societal benefits of global warming pollution reductions. The U.S. Environmental Protection Agency recently released an analysis of this body of research. The Agency's review further demonstrates that if benefit cost analysis is to be rigorous and complete, it must take carbon into account.

The White House Office of Management and Budget's myopic approach is manifest in the area of global warming.

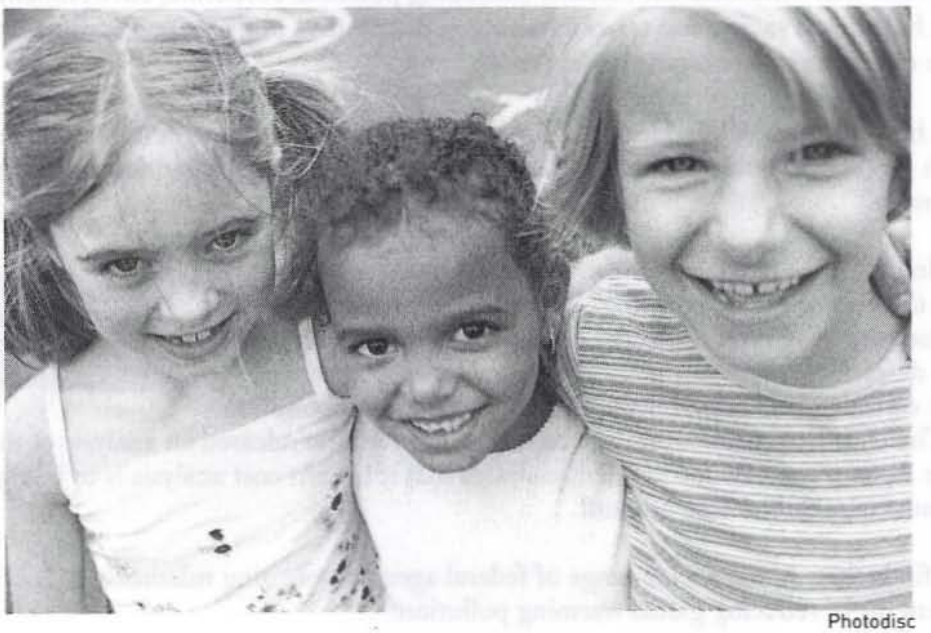
Our research finds that, across a wide range of federal agencies, ongoing rulemakings fail to account for the societal benefits of reducing global warming pollution:

- The U.S. Department of Transportation's Corporate Average Fuel Economy standards for sport utility vehicles, minivans and pickup trucks, finalized in 2006, were deemed inadequate by a federal court of appeals because the Agency refused to consider the benefits of carbon dioxide reductions. The Agency's subsequent proposed fuel economy standards, announced in April 2008, include only a cursory, flawed analysis of carbon dioxide mitigation benefits.
- The U.S. Department of Energy's 2007 furnace efficiency standards failed to include the benefit of reduced greenhouse gas emissions in its benefit cost analysis, despite prominently touting those reductions in press outreach.
- In September 2008, the U.S. Environmental Protection Agency issued emission standards for high-emitting gasoline engines, including those used in lawnmowers and personal watercraft. The standards failed to account for the climate benefits of reducing ground-level ozone, identified by the Intergovernmental Panel on Climate Change as the third largest contributor to global warming of all air pollution caused by human activities.[5]

"Even if [the Department of Transportation] may use a cost-benefit analysis to determine the 'maximum feasible' fuel economy standard, it cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards. [The agency] fails to include in its analysis the benefit of carbon emissions reductions in either quantitative or qualitative form." – U.S. Court of Appeals in rejecting the Department of Transportation's 2006 fuel economy standards.[4]

The results of benefit cost analysis can heavily influence policy development. By giving global warming short shrift in benefit cost analysis, the nation is missing important, cost-effective opportunities to achieve emissions reductions. While America continues to work toward comprehensive federal climate change legislation, incorporating the social cost of carbon into the federal rulemaking process is a common sense opportunity to craft policies that secure the benefits of greenhouse gas reductions today.

1. Defining the Social Cost of Carbon



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The costs of climate change

Current scientific understanding shows definitively that anthropogenic emissions of greenhouse gases are driving significant changes in the global climate. The Intergovernmental Panel on Climate Change's (IPCC) most recent compilation and assessment of climate change science, the *Fourth Assessment Report*, found that evidence of global warming is "unequivocal,"[6] and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations."[7]

These increases in temperature have already led to a variety of physical manifestations of warming that have important consequences for the United States and the globe.[8] Worldwide, the IPCC reported that ongoing and predicted impacts include increased frequency of extreme weather events, sea level rise and species extinction, among many others.[9] In North America, the IPCC reviewed the findings of hundreds of studies that predicted decreases in winter snowpack and earlier snowmelt in the West, with serious potential ramifications for water supply systems; increasing severity of coastal flooding and erosion hazards due to rising sea levels; and heightened health risks due to increased ozone pollution and increased frequency of heat waves.[10]

A particular source of concern is the dramatic impact that climate change is predicted to have on human health. The IPCC report outlined a wide range of expected impacts, from changing the range of malaria and other infectious diseases, to higher levels of ground-level ozone ("smog") and increasing death and disease associated with natural disasters.[11] A recent report on the U.S. health and welfare consequences of climate change predicted increased heat-related morbidity and mortality, increased spread of pathogens and increased health risks stemming from extreme weather events.[12] Research by the National Aeronautics and Space Administration's Goddard Institute for Space Studies on 85 major U.S. cities found that continued warming would produce higher ambient ozone levels, leading to more

frequent and widespread exceedances of health-based regulatory standards and higher daily mortality levels.[13]

Another profound risk from climate change is the potential for catastrophic impacts that could be irreversible on time scales relevant to society. Increasing evidence suggests that even relatively low increases in temperature may trigger a range of devastating impacts across the globe. To take just one example, science indicates that there may be a relatively low temperature threshold, between 1.7 and 3.7°C of warming above today's temperatures, beyond which the Greenland ice sheet could begin irreversible meltdowns.[14] This would eventually raise sea levels as much as 7 meters (23 feet).[15]

Scientists have identified many other examples of key vulnerabilities to even low levels of global warming, including irreversible changes such as a long-term shift in ocean circulation[16] and widespread species extinction.[17] Average global temperature has already increased 0.74°C over the past one hundred years, and the current concentration of greenhouse gases in the atmosphere commits the globe to approximately 0.6°C of further warming.[18] Thus, the existing atmospheric concentration of greenhouse gases has already put us on the path of increasingly perilous risk of some of these catastrophic, irreversible impacts of climate change.

Monetizing the social cost of carbon

Observed and predicted impacts from unmitigated climate change have profound implications for the global and U.S. economy. In an effort to gauge the scale of these impacts, economists have been evaluating the potential impact of climate change on economic growth, monetizing its overall cost and estimating a value of the social cost associated with emission of one metric ton of carbon dioxide, or the "social cost of carbon." The IPCC defines the social cost of carbon as:

> ...an estimate of the economic value of the extra (or marginal) impact caused by the emission of one more tonne of carbon (in the form of carbon dioxide) at any point in time; it can, as well, be interpreted as the marginal benefit of reducing carbon emissions by one tonne.[19]

Economic estimates of the impact of climate change are typically based on the results of integrated assessment models, which pair a scientific model of the predicted physical impacts of climate change with a socioeconomic model that evaluates the economic impact of these effects.[20] The models predict likely impacts of climate change at different points in the future, estimate their value and discount the values back to the present. In recent years, a number of analyses have created new social cost of carbon estimates, either by using the results of new runs of integrated assessment models, or by using a meta-analysis to generate social cost of carbon estimates based on a variety of model runs with an assortment of underlying assumptions.

The U.S. Environmental Protection Agency (EPA) recently released an assessment of the social cost of carbon that integrates the most recent work in this field. EPA's June 2008 analysis, "Technical Support Document on Benefits of Reducing GHG Emissions," outlines key concepts and strategies for estimating social cost of carbon values, as well as EPA's own proposed social cost of carbon estimates.[21] EPA's document offers an important starting point for federal agencies to incorporate social cost of carbon into their analyses of rules that affect greenhouse gas emissions.

Based on a meta-analysis of recent peer-reviewed studies, EPA's preliminary mean estimate of the marginal benefit of reducing emissions of carbon dioxide was \$40/tCO_2 (3% discount rate) or \$68/tCO_2 (2% discount rate).[22] These figures represent the cost of 2007 emissions, in 2006 dollars.[23] For

emissions in the future, the estimates are larger because emissions produce larger incremental damages as the magnitude of climate change increases. For example, the mean estimates for emissions in 2040 rise to $\$105/tCO_2$ (3% discount rate) or $\$179/tCO_2$ (2% discount rate).[24] The EPA meta-analysis was built on the methods used by Professor Richard Tol in his two peer-reviewed, published meta-analyses of social cost of carbon research, but the Agency included only recent peer-reviewed studies that met a range of quality criteria in its evaluation.

EPA found that existing analyses, including its own, likely underestimate the social cost of carbon

EPA acknowledged that studies used in the meta-analysis omitted a number of important impact categories. Climatic change presents profound ethical issues that economic tools are often poorly suited to address, particularly the risk of irreversible or catastrophic impacts to future generations.[25] The research of Professor Martin Weitzman at Harvard University has shown that the risk of catastrophic climate change fundamentally affects the usual economic calculus of costs and benefits.[26] Professor Weitzman's work indicates that the expected damages of climate change may be dominated by the existence of calamitous impacts that have low probability but very high damages (such as double-digit increases in mean global temperature). In contrast, most economic analyses to date have put very little weight on such events because of their low probability.

EPA also acknowledged that existing economic tools do a poor job of accounting for "nonmarket" impacts of climate change. Nonmarket impacts refer to damages that are not traded explicitly in markets. These effects include many of the most serious potential impacts of climate change: increased risks from extreme weather events, increased potential for violent conflict, and disruption of coastal and agriculture-dependent communities.[27] But because the economic value of nonmarket impacts is not revealed through market prices, these impacts can only be approximated through a range of imperfect economic techniques and many of these impacts are not currently included in estimates of the social cost of carbon. As a result, according to the IPCC, "[i]t is very likely that globally aggregated figures underestimate the damage costs because they cannot include many non-quantifiable impacts."[28]

In addition, EPA highlighted that existing studies fail to incorporate findings that climate change is occurring faster than expected and that populations may be more vulnerable than expected.[29] Together, all of these omissions indicate that existing estimates of the social cost of carbon, including the recent EPA estimates, may significantly underestimate the value of climate protection.

EPA recommended the use of a global social cost of carbon estimate

Climate change has far-reaching global consequences. EPA emphasized that because of the long lifetimes and global mixing that are characteristic of greenhouse gases, emissions from one country have worldwide effects.[31] Moreover, social cost of carbon estimates that reflect only direct domestic U.S. effects will miss the effects that international feedback impacts, like economic disruption or national security concerns, can have on the United States.[32] For example, recent testimony before the U.S. House Intelligence Committee and Select Committee on Energy Independence and Global Warming by Dr. Tom Fingar, Deputy Director of National Intelligence for Analysis and Chairman of

"We judge global climate change will have wide-ranging implications for US national security interests over the next 20 years...We judge that the most significant impact for the United States will be indirect and result from climate-driven effects on many other countries and their potential to seriously affect US national security interests." – Dr. Tom Fingar, Deputy Director of National Intelligence for Analysis [30]

the National Intelligence Council, highlighted the findings of a National Intelligence Assessment on the security implications of climate change:

> We judge global climate change will have wide-ranging implications for US national security interests over the next 20 years…We judge that the most significant impact for the United States will be indirect and result from climate-driven effects on many other countries and their potential to seriously affect US national security interests.[33]

Considering the serious global effects of greenhouse gases, EPA found strong justifications for use of a global social cost of carbon estimate.[34]

EPA advised that using a low discount rate is most appropriate for estimating the social cost of carbon

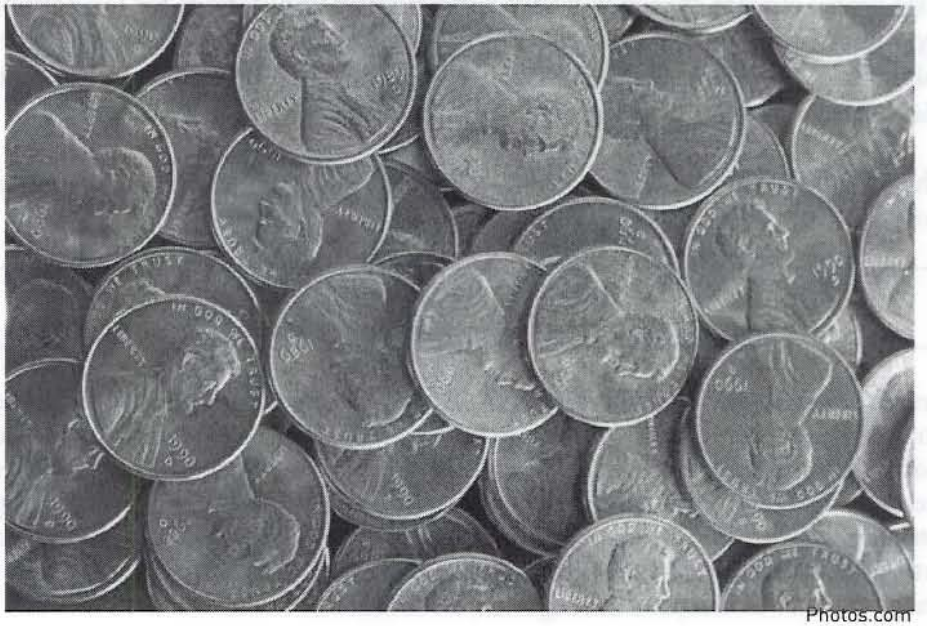
The discount rate represents the assumed rate at which society is willing to trade off present for future benefits and thus is a policy choice for decision-makers, rather than a figure dictated by the economic literature. A lower discount rate effectively places a higher value on the welfare of future generations, which translates into a larger present value of the damages from climate change. Many significant climate impacts are predicted to occur more than 50 years in the future, and therefore the choice of discount rate strongly affects the present value of these impacts.[35] Application of different discount rates is one of the major sources of variation among social cost of carbon estimates.[36]

EPA recommended that discount rates of 3% or lower are most consistent with the intergenerational nature of many of climate change's effects.[37] The White House Office of Management and Budget's (OMB) Circular A-4 general analytical guidance allows for the use of low discount rates (e.g., 1–3% by OMB, 0.5–3% by EPA) in cases with significant intergenerational implications.[38] Economic literature also indicates that discount rates of 3% or lower are appropriate to reflect the primarily consumption-based impacts, the risks of disastrous impacts to future generations and uncertainty in economic growth and interest rates far into the future.[39]

* * *

It is difficult to assign a monetary value to many of the predicted or potential impacts of climate change, or to the social and ethical dimensions of putting generations and societies at risk of disaster when they have not materially contributed to global warming. But it is precisely because of the grim impacts of climate change that there is an immediate urgency to incorporate the social cost of carbon throughout federal decision making, even given remaining uncertainty. Uncertainties about matters such as intergenerational equity and the risks of catastrophic impacts do not justify failing to assess the societal benefits of greenhouse gas mitigation in relevant rulemakings; instead they underscore the need for rigorous and transparent analysis that maximizes net societal benefits.

2. Analyzing Economic Benefits and Costs in Federal Rulemaking



Since 1981, executive orders have called for federal agencies to prepare economic analyses to accompany major regulatory actions. The assessments include the benefits and costs anticipated from the regulatory action and potential alternatives. Within the White House, the Office of Management Budget has carried out the coordinated review of regulatory actions across federal agencies.

There is ongoing debate about the role of benefit cost analysis in federal rulemakings, particularly those dealing with human health and the environment.[40] Further, some health and safety laws properly proscribe the consideration of economic issues in standard-setting and carrying out other core statutory responsibilities. This discussion assumes that, in instances where it is permitted by law, analysis of societal benefits and costs will remain a central component of the federal rulemaking process. It focuses on the steps necessary to assure that economic assessments most accurately and consistently reflect the true costs and benefits of rules that affect greenhouse gas emissions, a matter of enormous societal consequence.

In 1981, President Ronald Reagan issued Executive Order 12,291, which called for agencies to conduct a "Regulatory Impact Analysis" (RIA) for "major" rules likely to result in an annual effect on the economy of $100 million of more.[41] Under this executive order, each RIA contained an explicit analysis of the rule's potential economic benefits and costs. With this action, President Reagan elaborated on earlier Presidents' policies providing for executive branch coordination of the rulemaking process.[42]

In 1993, President William Clinton revoked Reagan's executive order and replaced it with Executive Order 12,866, which called for agencies to prepare "[a]n assessment of the potential costs and benefits" of "significant regulatory action."[43] Executive Order 12,866 declared the following objectives:

> The objectives of this Executive order are to enhance planning and coordination with respect to both new and existing regulations; to reaffirm the primacy of Federal agencies

> in the regulatory decision-making process; to restore the integrity and legitimacy of regulatory review and oversight; and to make the process more accessible and open to the public.[44]

President George W. Bush amended Executive Order 12,866 with Executive Order 13,258 in 2002 and Executive Order 13,422 in 2007. These revisions made some adjustments to Executive Order 12,866 while retaining major components.[45] In practice, however, the Office of Management Budget has all too often exercised sweeping and damaging oversight by relying on its review role to preclude or weaken health-protective policies.

Executive Order 12,866 addresses the importance of quantifying the full range of costs and benefits of regulatory alternatives. Section 1(a) states that:

> In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.[46]

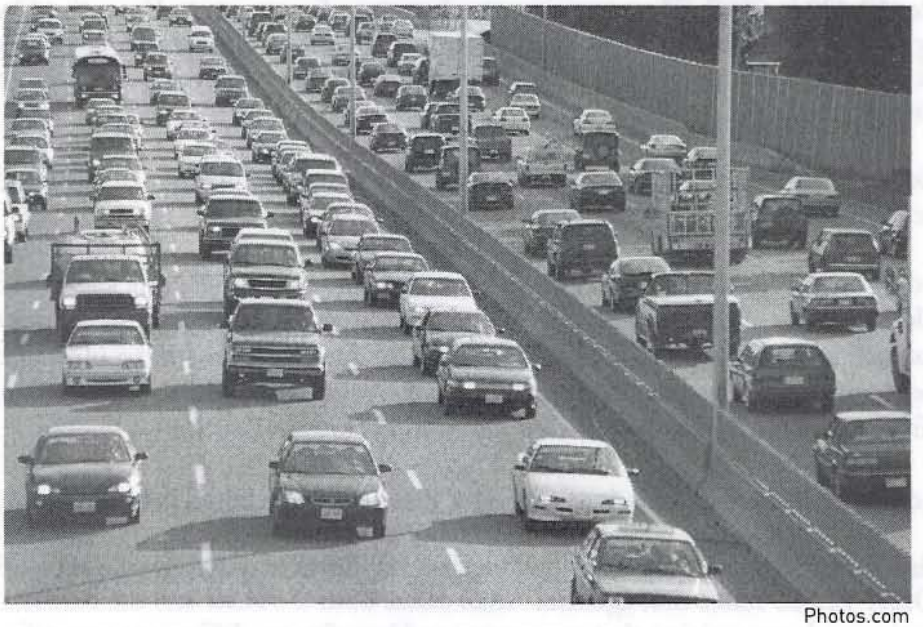
Thus, costs and benefits that are difficult to monetize must still be factored into the analysis.

Executive Order 12,866 does not require a showing that the benefits outweigh the costs. Section 1(b)(6) of Executive Order 12,866 states that agencies "shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs."[47]

The Office of Management and Budget has published a series of guidelines for preparing regulatory analysis. Its 2003 Circular A-4, "Regulatory Analysis," addresses at least four substantive issues relevant to monetizing greenhouse gas emissions.[48] It calls for agencies to: monetize nonmarket benefits through methods including stated preference and benefit-transfer; use multiple discount rates to calculate the present value of future benefits; consider international effects; and employ a rigorous quantitative analysis of uncertainty in key elements underlying the estimate of costs and benefits, such as uncertainty regarding "how some economic activities might affect future climate change."[49]

Greenhouse gas emissions carry with them great societal costs because they cause global climate change and its host of associated ill effects. Omitting the significant benefits of reducing greenhouse gases from economic assessments for major rules contravenes one of the fundamental precepts of economic analysis by failing to account for all of the societal benefits.[50] Executive Order 12,866 provides a framework for incorporating the social benefits of ameliorating these impacts into federal rulemaking across all agencies. Under Executive Order 12,866, federal agencies are called upon to craft policies that maximize societal benefits. By neglecting the benefits of reduced global warming pollution, federal policies fundamentally fail to maximize critical benefits to society.

3. Federal Fuel Economy Standards Were Recently Overturned for Failing to Value Carbon Dioxide Reductions



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Recently, a federal court of appeals found that the U.S. Department of Transportation erred in issuing the national Corporate Average Fuel Economy (CAFE) standards for light-duty trucks by failing to account for the benefits of reducing carbon dioxide emissions.[51] The federal fuel economy standards are issued by National Highway Traffic and Safety Administration (NHTSA) under the Energy Policy and Conservation Act of 1975, which was enacted to decrease dependence on foreign oil and to conserve fuel in the aftermath of the 1973 Mideast oil embargo.

In 2006, NHTSA issued final fuel economy standards addressing many sport utility vehicles, minivans, and pickup trucks for Model Years 2008-2011. The statute calls for NHTSA to establish fuel economy standards reflecting the "maximum feasible average fuel economy level" considering the "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy."[52]

NHTSA relied on benefit cost analysis in establishing the fuel economy standards for light-duty trucks. In its benefit cost analysis, however, the Agency refused to consider the benefits of reducing carbon dioxide emissions despite a 2002 report by the National Academy of Sciences and extensive public comments documenting the monetary benefits of carbon dioxide emissions cuts.[53]

The U.S. Court of Appeals for the Ninth Circuit held that NHTSA's refusal to consider these benefits was arbitrary and capricious. The court pointedly focused on the paradox of NHTSA's approach. NHTSA was employing benefit cost methodology to develop its fuel economy standards while assigning no value at all to the considerable benefit of reducing carbon dioxide emissions:

Under this methodology, the values that NHTSA assigns to benefits are critical. Yet, NHTSA assigned no value to *the most significant benefit* of more stringent CAFE standards: reduction in carbon emissions.[54]

The court reviewed and rejected several arguments the government made to justify its omission of carbon emissions from the benefit cost analysis. NHTSA argued that no value could be assigned to carbon emissions because of uncertainty about valuation. The court rejected this approach and held that evolving methodologies for valuing carbon emissions provided a sufficient, and indeed necessary, framework for benefit cost analysis:

> [W]hile the record shows that there is a range of values, the value of carbon emissions is certainly not zero. . . . By presenting a scientifically-supported range of values that does not begin at zero, Petitioners have shown that it is possible to monetize the benefit of carbon emissions reduction.[55]

The court similarly rejected NHTSA's argument that the range of values was too wide to monetize the benefits of carbon dioxide emissions reductions in benefit cost analysis.[56] Further, the court pointed out that NHTSA monetized other benefits with significant uncertainties: the reduction of criteria pollutants (including particulate matter, sulfur oxides and nitrogen oxides), reduction of crashes, noise, congestion, and energy security.[57] Finally, the court rejected NHTSA's argument that even if it could assign a value to greenhouse gas emissions, there was no evidence that this value would have affected the stringency of the fuel economy standards. The court pointed to information in the administrative record showing that NHTSA's argument "runs counter to the evidence before it."[58]

In holding that NHTSA's failure to consider the monetary benefits of carbon mitigation was arbitrary and capricious, the Ninth Circuit provided a framework for federal agencies to employ reasoned decision-making when carrying out delegated statutory authority or examining the economic implications of rulemaking pursuant to executive branch directives. Under the court's framework, federal agencies should exercise sensible judgment in determining the value of greenhouse gas reductions despite varying estimates, and should be complete and transparent in analyzing the societal benefits. Conversely, the court's holding cautions against pre-ordaining the policy outcome by neglecting or shunting aside the potentially considerable benefits of greenhouse gas mitigation.

More recently, NHTSA itself had an opportunity for corrective action. In April 2008, NHTSA purported to examine the social cost of carbon in its benefit cost analysis when it issued its Notice of Proposed Rulemaking on "Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011–2015."[59] While NHTSA's incorporation of a value greater than zero for the social cost of carbon was at least a modest improvement over its past refusal to assign any value for greenhouse gas emissions abatement, NHTSA's analysis still falls far short of reasoned decision-making.

NHTSA mishandled at least the following three central issues in its new analysis of the social cost of carbon:

1) How to discount the costs and benefits of greenhouse gas emissions reductions;
2) Whether to use a global or domestic value for the economic benefit of reducing greenhouse gas emissions; and
3) What methodology to use to estimate the social cost of carbon.

In considering how to approach each of these critical issues, NHTSA employed misguided choices to come up with an estimate of the social cost of carbon that consistently and significantly underestimated the benefits of reducing global warming pollution. NHTSA's analysis included discount rates far above those appropriate for intergenerational discounting;[60] NHTSA used an estimate of the domestic social cost of carbon, despite clear evidence of the importance of the global impacts of climate change and Office of Management and Budget policy that allows such impacts to be incorporated;[61] and NHTSA also arbitrarily selected some of its estimates.[62]

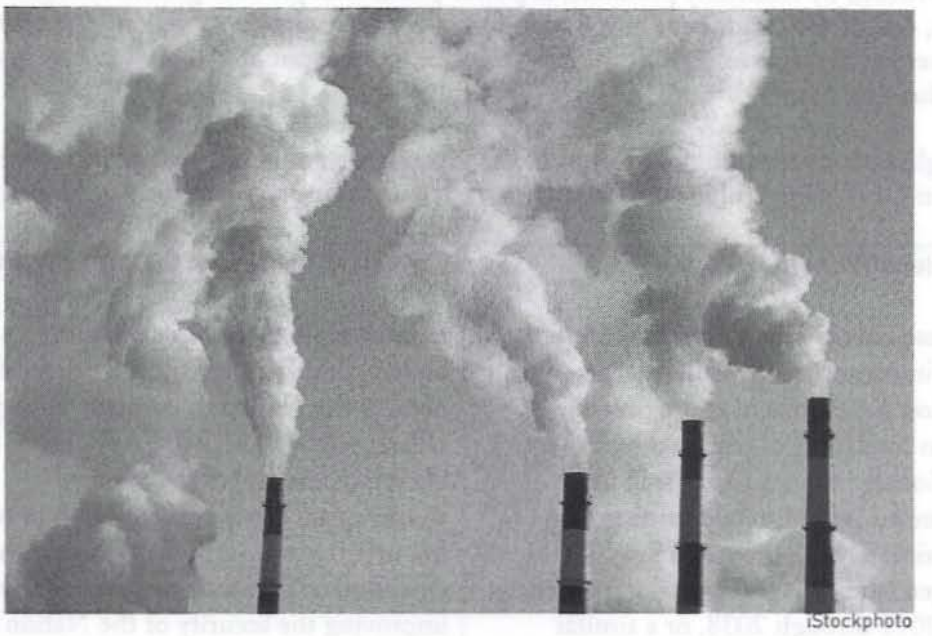
Together, these choices generated markedly low social cost of carbon estimates. NHTSA employed these misguided figures in the benefit cost analysis used to select the new proposed CAFE standards. As a result, NHTSA underestimated the benefits of strong fuel economy standards. Despite using a deeply flawed estimate of the value of reducing global warming pollution in its economic analysis, NHTSA's press release highlighted the greenhouse gas benefits of the standards, praising them for saving "nearly 55 billion gallons of fuel and a reduction in carbon dioxide emissions estimated at 521 million metric tons."[63]

On October 10th, NHTSA issued revised but still seriously flawed social cost of carbon estimates in its Final Environmental Impact Statement for the proposed CAFE standards.[64] NHTSA used a domestic social cost of carbon estimate of $2/ton of CO_2 in the analysis' reference case scenario.[65] This estimate is based on similarly flawed assumptions and reasoning regarding methodology, discount rates and global versus domestic estimates that plagued NHTSA's earlier estimates in its proposed standards.[66] While NHTSA performed sensitivity analysis that included social cost of carbon figures based on global estimates, these global figures were still based on problematic assumptions.[67] Moreover, NHTSA's analysis is fundamentally flawed by the arbitrarily low estimate used in its base case scenario. If NHTSA were to use this unsound domestic social cost of carbon figure as the basis of its final standards, NHTSA would again utterly fail to secure the full benefits of stronger fuel efficiency standards for energy and climate security.

NHTSA's CAFE rulemaking is the most recent example of the pitfalls of an inadequate consideration of the social cost of carbon. The resulting flaws are precisely the deficiencies that the Ninth Circuit endeavored to correct by removing "a thumb on the scale" and restoring a balanced application of benefit cost analysis:

> Even if NHTSA may use a cost-benefit analysis to determine the 'maximum feasible' fuel economy standard, it cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards.[68]

4. Missed Opportunities: Federal Rulemakings Have Neglected the Benefits of Global Warming Pollution Cuts



Executive Order 12,866 provides for centralized review of significant regulatory actions and for an assessment of the anticipated benefits and costs, to the extent authorized by the substantive law being administered by the agency. In choosing among alternative approaches, it calls for federal agencies to "select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach."[69] The social cost of carbon should be fully considered in the analysis of the benefits and costs for rules subject to this review. Our research has found, however, that federal agencies issue rules affecting greenhouse gas emissions without including the social cost of carbon in their analysis of benefit and costs. By ensuring that "carbon counts," federal agencies can help craft policies that secure the benefits of greenhouse gas mitigation and maximize overall societal benefits.

Department of Energy furnace energy efficiency standards

The Energy Policy and Conservation Act (EPCA) established energy efficiency standards for many types of major residential appliances and commercial equipment. EPCA directs the Department of Energy (DOE) to set new or amended efficiency standards that "achieve the maximum improvement in energy efficiency . . . which the Secretary determines is technologically feasible and economically justified."[70] A number of pieces of legislation require DOE to periodically review those statutory efficiency standards to determine whether they should be amended.[71] DOE is currently conducting a multiyear review of the EPCA energy efficiency standards under court order. Over the next two years, DOE is scheduled to set energy efficiency standards that will apply to the manufacture and import of air conditioners, refrigerators, ovens, lamps and many other types of appliances.[72] As DOE carries out its statutory responsibility to enhance the energy efficiency of appliances, each of these new standards will affect the level of greenhouse gases emitted by the equipment they cover.

In November 2007, DOE reviewed and revised the energy efficiency standard for residential furnaces and boilers.[73] The furnace rule was economically significant and subject to the requirement to conduct an assessment of the potential costs and benefits of the regulatory action, as well as the alternatives DOE considered. Gas furnaces emit greenhouse gases directly when they burn natural gas, and electrical furnaces are powered by electricity produced at power plants that produce greenhouse gases. Consequently, one of the major benefits of adoption of a more protective efficiency standard for gas and electric furnaces is the resulting significant reductions in the amount of greenhouse gases produced in the course of heating homes.

But DOE neglected any meaningful analysis of the greenhouse gas reduction benefits. The excerpts below are from DOE's final rule, which mentions carbon dioxide emissions only in passing:

E. National Benefits	**F. Need of the Nation to Conserve Energy**
...These energy savings are projected to result in cumulative greenhouse gas emission reductions of approximately 7.8 million tons (Mt) of carbon dioxide (CO_2). Additionally, the standards will help alleviate air pollution by resulting in approximately 9.2 thousand tons (kt) of nitrogen oxides (NO_x) emission reductions from 2015 through 2038, or a similar amount of NO_x emissions allowance credits in areas where such emissions are subject to emissions caps, and approximately 1.8 kt of household emission reductions of sulfur dioxide (SO_2).[74]	In considering standards for furnaces and boilers, the Secretary must consider the need of the Nation to conserve energy. (42 U.S.C. 6295[o][2][B][i][VI]) The Secretary recognizes that energy conservation benefits the Nation in several important ways, including slowing the depletion of domestic natural gas resources, improving the security of the Nation's energy system, and reducing greenhouse gas emissions.[75]

DOE also quantified the volume of emission reductions in carbon dioxide (CO_2), oxides of nitrogen (NOx) and sulfur oxides (SOx) that would result from each of the alternative standards (Trial Standard Levels, or TSLs) it considered (see Table 1). But DOE did not assign any specific dollar value to the reduction of carbon dioxide or other pollutant emissions in its economic analysis of benefits and costs. Instead, its economic analysis focused narrowly on the expenditures such as installation and fuel costs experienced by individual consumers that install new furnaces and boilers and the costs of new standards to equipment manufacturers. DOE's economic analysis, in other words, wholly ignored the societal benefits of reducing carbon dioxide emissions or harmful pollutants such as NOx and SOx.

TABLE 1. **Summary of Emissions Reductions for Residential Furnaces and Boilers**
[Cumulative reductions for units sold from 2015 to 2038][76]

Emission	TSL 1	TSL A	TSL 2	TSL B	TSL 4	TSL 5
CO_2 (Mt)	-6.1	-7.8	-20.0	-137.1	-141.3	-322.0
NOx (kt)	-7.3	-9.2	-23.9	-164.6	-169.2	-373.1
SO2 (kt)	-0.0	-1.8	-2.0	-6.2	-10.5	-63.9

Despite this considerable omission, DOE stated that its economic analysis of the competing standards was the deciding factor in its selection of which standard to adopt:

> In selecting energy conservation standards for residential furnaces and boilers for

> consideration in the October 2006 proposed rule as well as this final rule, DOE started by examining the maximum technologically feasible levels, and determined whether those levels were economically justified. Upon finding the maximum technologically feasible levels not to be justified, DOE analyzed the next lower TSL [Trial Standard Level] to determine whether that level was economically justified. DOE repeated this procedure until it identified a TSL that was economically justified.[77]

In the end, DOE selected TSL A for its final standard, finding that more stringent standards with greater emissions reductions were not economically justified. However, because DOE did not incorporate the value of the significant emissions reductions associated with stronger standards, its assessment of economic justification was incomplete and flawed. An analysis of benefits that incorporated these values may very likely have found that stronger standards were indeed economically justified.

While the Department of Energy failed to consider the economic benefits of reducing global warming pollution during the rulemaking process to determine the furnace efficiency standards, the Agency's press office nonetheless heralded greenhouse gas reductions as one of the principal benefits of its new furnace standards.

While DOE failed to consider the economic benefits of reducing global warming pollution during the rulemaking process to determine the furnace efficiency standards, the Agency's press office nonetheless heralded greenhouse gas reductions as one of the principal benefits of its new furnace standards:

> These amended standards will not only cut down on greenhouse gas emissions, but they also allow consumers to make smarter energy choices that will save energy and money . . . The total energy savings are estimated to result in cumulative greenhouse gas emission reductions of approximately 7.8 million tons (Mt) of carbon dioxide—an amount equal to the emissions produced by 2.6 percent of all light truck vehicles on U.S. roads in one year.[78]

DOE's determination of the appropriate efficiency standard is plainly incomplete without including the value of abating greenhouse gas emissions and the host of pollutants affected in its economic assessment of monetary benefits. The fact that DOE selected among competing technologically feasible standards on the basis of an incomplete evaluation of economic factors makes it likely that the agency would have made a different selection if greenhouse gas emissions and other airborne contaminants had been monetized. Inclusion of the considerable benefits of these reductions is essential for meaningful and transparent analysis of the costs and benefits of this or other energy efficiency standards.

Environmental Protection Agency emission standards for small spark ignition engines

In September, EPA published final emission standards for small gasoline-powered engines used in non-road applications such as lawn and garden equipment and personal watercraft.[79] EPA's final economic assessment mentioned the benefits of reducing greenhouse gas emissions from these small engines, but neither quantified nor monetized the climate benefits associated with the various emission standards EPA considered.

Small engines, such as those found in lawn equipment and small boats, contribute significantly to unhealthy air quality and to global warming pollution. These engines account for about 25% of mobile source hydrocarbon emissions, an essential ingredient of ground-level ozone ("smog").[80] The large quantities of ozone precursors released by these engines not only pose serious threats to human health, but also contribute significantly to global warming.[81]

EPA's final regulatory assessment for the small engine standards did briefly acknowledge the climate benefits of reducing ground-level ozone pollution. EPA stated that ozone "is a major greenhouse gas,"[82] and "is (after CO_2 and CH_4) the third most important contributor to greenhouse gas warming."[83] EPA also highlighted a recent statement by the National Academy of Sciences that "regulations targeting ozone precursors would have combined benefits for public health and climate."[84]

However, these climate benefits were not incorporated into the assessment of monetary benefits for significant regulatory actions performed under Executive Order 12,866. EPA's economic assessment accompanying the final standards did analyze and quantify the health benefits associated with the direct air quality impacts of reducing ozone and particulate matter pollution. EPA estimated that the improvements in air quality spurred by the final standards would result in $1.8 billion to $4.4 billion in annual benefits by 2030 from avoided deaths, hospitalizations and sick days, assuming a 3% discount rate.[85] However, this benefits analysis failed to monetize the climate benefits of reducing ozone pollution.

Because EPA's benefit cost analysis was incomplete, EPA's analysis may not have resulted in emission standards that maximize full societal benefits. The final regulatory analysis set forth a range of both stronger and weaker alternative standards considered by EPA.[86] In some instances, EPA rejected stronger alternatives in part because it judged that they were not cost effective.[87] Yet these conclusions were based on incomplete information without full consideration of the societal benefits of reducing global warming pollution. Had EPA monetized the social cost of climate change when calculating the benefits of stronger standards, the agency would have had more rigorous and complete information for evaluating the range of alternatives.

Strong emissions standards for small engines create significant societal benefits by protecting human health from harmful air pollutants as well as mitigating climate change. To weigh the full benefits of new standards, EPA should have quantified the climate benefits of reducing small engine emissions in its final regulatory assessment for small engine standards together with the significant health benefits from reducing ozone and particulate pollution. The resulting calculation would generate a more accurate portrait of the different standards, helping to inform EPA's choice of standards that maximize societal benefits.

Conclusion: Carbon Counts

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Federal agencies are taking regulatory actions under existing laws that affect the level of greenhouse gas emissions released to the air. A broad range of federal agencies, beyond EPA, issue rules that affect the level of greenhouse gases.

Executive Order 12,866 calls for federal agencies to assess the costs and benefits anticipated from the regulatory action including "the enhancement of health and safety" and "the protection of the natural environment" "together with, to the extent feasible, a quantification of those benefits."[88] Agencies are admonished to select those regulatory approaches that "maximize net benefits" including "environmental, public health and safety, and other advantages."

As climate scientists have documented the grim worldwide effects of climate change, economists studying its potential impacts have developed the social cost of carbon as an economic measure of the societal effects associated with greenhouse gas emissions. EPA's recent review of the social cost of carbon literature shows that, despite remaining uncertainty, this body of research can provide an important basis for monetizing the benefits of greenhouse gas emission reductions. The social cost of carbon can be incorporated into an economic assessment of benefits and costs in much the same way that the social cost of particulate pollution or ozone pollution is already considered when agencies evaluate regulatory action.

Unfortunately, most rulemakings have not addressed greenhouse gas emissions in their analysis at all, even though different policy choices may have significant consequences for global warming pollution. Even after having its refusal to consider the social costs of carbon overturned on judicial review, NHTSA's proposed new fuel economy standards continue to neglect meaningful consideration of greenhouse gas emissions reductions.

In many regulatory actions affecting the emissions of greenhouse gas emissions, the social costs of carbon may be a central societal benefit. By failing to monetize the benefits of greenhouse gas emission reductions in such rulemaking actions, federal agencies are missing important, cost-effective opportunities to protect human health and the environment from global warming pollution. In conducting analyses that are rigorous and transparent in maximizing societal benefits, carbon counts.

Endnotes

[1] Governor's Action Team on Energy and Climate Change, Florida Action Team Final Report (Oct. 15, 2008), 11, available at http://www.flclimatechange.us/documents.cfm.
[2] *Ibid.*
[3] Exec. Order No. 12,866 of Sept. 30, 1993, as amended by E.O. 13,258 of Feb. 26, 2002 and E.O. 13,422 of Jan. 18, 2007.
[4] Center for Biological Diversity v. NHTSA, 538 F.3d 1172 (9th Cir. 2008).
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[22] *Ibid.* at 12. EPA's analysis includes a table of results for a vast variety of different discount rates. The table also shows almost the whole distribution of results under different assumptions by including the 5th percentile, mean and 95th percentile results. The two mean figures calculated with a 2% discount rate and a 3% discount rate are appropriate to focus on because EPA's findings and economic research support estimates derived using discount rates of 3% or lower, and because the mean value can best represent the skewed shape of these distributions.

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[30] House Permanent Select Committee on Intelligence and the House Select Committee on Energy Independence and Global Warming, *National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030*, Statement for the Record of Dr. Thomas Fingar, Deputy Director of National Intelligence for Analysis and Chairman of the National Intelligence Council, 110th Cong., 4th sess., June 25, 2008, available at http://www.dni.gov/testimonies/20080625_testimony.pdf.

[31] *Ibid.* at 1.

[32] *Ibid.* at 11.

[33] *National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030 Before the H. Permanent Select Comm. on Intelligence and the H. Select Comm. on Energy Independence and Global Warming,* 110th Cong., 4th sess. (2008), (statement of Dr. Thomas Fingar, Deputy Director of National Intelligence for Analysis and Chairman of the National Intelligence Council), available at http://www.dni.gov/testimonies/20080625_testimony.pdf.

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[35] Rachel Warren, Chris Hope, Michael Mastrandrea, Richard Tol, Neil Adger and Irene Lorenzoni, "Spotlighting Impacts Functions in Integrated Assessment," Tyndall Centre for Climate Change Research, Working Paper 91 (Sept. 2006), available at http://www.tyndall.ac.uk/publications/working_papers/twp91.pdf.

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[37] The EPA analysis provides an important starting point for assessing the social cost of carbon. At the same time, areas for improvement and additional analysis remain. For example, for its preliminary social cost of carbon estimates, EPA highlighted discount rates of 2% and 3%. EPA could further reflect the intergenerational nature of climate change impacts by including calculations with even lower discount rates of 1% or 0.5%, as advised in EPA and OMB guidance. EPA could also evaluate uncertainty in the discount rate, as explored in Richard Newell and William Pizer, "Discounting the benefits of climate change mitigation: How much do uncertain rates increase valuations?" Prepared for the Pew Center on Global Climate Change, Washington DC (Dec. 2001). On the other hand, EPA's inclusion of a social cost of carbon figure calculated using a 7% discount rate is misleading, even if the Agency noted that peer reviewed literature generally did not employ such high discount rates.

[38] Technical Support Document on Benefits of Reducing GHG Emissions, p. 9. White House Office of Management and Budget (OMB), Circular A-4, *Memorandum to the Heads of Executive Agencies and Establishments* (Sept. 17, 2003), available at http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf.

[39] Technical Support Document on Benefits of Reducing GHG Emissions, p. 9. See for example Martin Weitzman, "Why the Far-Distant Future Should Be Discounted at Its Lowest Possible Rate," *Journal of Environmental Economics and Management* 26(2) (Nov. 1998):201-208.

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[41] Exec. Order. No. 12,291, § 3, 46 Fed. Reg. 13,193 (1981).

[42] President Nixon required a "quality of life" review of selected regulations in 1971. President Ford formalized this process in 1974 with Executive Order No. 11,821, 39 Fed. Reg. 41,501 (Nov. 29, 1974). President Carter's Executive Order 12,044 required analysis of proposed rules and centralized review by the Regulatory Analysis Review Group.

[43] See Exec. Order No. 12,866, § 6(a)(3), 58 Fed. Reg. 51,735 (Oct. 4, 1993). The Order defines "significant" regulatory actions as "any regulatory action that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order," Sec. 3(f).

[44] Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

[45] Exec. Order No. 13,258, 67 Fed. Reg. 9,385 (Feb. 28, 2002).

[46] Exec. Order No. 12,866, § 1(a), 58 Fed. Reg. 51,735 (Oct. 4, 1993).

[47] Exec. Order No. 12,866, § 1(b)(6), 58 Fed. Reg. 51,735 (Oct. 4, 1993).

[48] OMB Circular A-4.

[49] OMB Circular A-4, p. 38.

[50] See for example, Edith Stokey and Richard Zeckhauser, *A Primer for Policy Analysis*, 134, 136 (New York: Norton & Co., 1978) ("Benefit-cost analysis examines *all* aspects of a project, internal and external . . . ."; "*All* the impacts, both favorable and unfavorable, present and future, on all of society are determined."

[51] Center for Biological Diversity v. NHTSA, 538 F.3d 1172, 2008 U.S. App. LEXIS 17629, *57 (9th Cir. 2008).

[52] 49 U.S.C. § 32902.

[53] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *57-*70; see also National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFÉ) Standards* (National Academy Press 2002).

[54] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *13-15, *58 (emphasis added).

[55] *Ibid.*. at *63-*64.

[56] *Ibid.* at *64-*68.

[57] *Ibid.* at *68.

[58] *Ibid.* at *68-*69 (citation omitted).

[59] National Highway Traffic Safety Administration, Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011-2015; Proposed Rule, 73 Fed. Reg. 24,352 (May 2, 2008).

[60] *Ibid.* at 24,414. The Tol 2005 meta-analysis that NHTSA cites includes a number of studies that calculated social cost of carbon estimates with discount rates above 3%. Richard S.J. Tol, "The marginal damage costs of carbon dioxide emissions: an assessment of the uncertainties," *Energy Policy* 33 (2005) 2064–2074.

[61] *Ibid.* at 24,414 (noting exclusive use of domestic benefits that would only be a fraction of global benefits).

[62] *Ibid.* at 24,414 (electing to use $0/t$CO_2$ as a lower bound estimate for the domestic social cost of carbon and use the midpoint between $0 and $14 as its social cost of carbon estimate for 2011).

[63] U.S. Department of Transportation news release, "Secretary Peters Proposes 25 Percent Increase in Fuel Efficiency Standards Over 5 Years for Passenger Vehicles, Light Trucks," (April 22, 2008), available at http://www.dot.gov/affairs/dot5608.htm.

[64] National Highway Traffic Safety Administration, Final Environmental Impact Statement: Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011-2015 (Oct. 2008), available at http://www.nhtsa.dot.gov/portal/nhtsa_static_file_downloader.jsp?file=/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated Files/CAFE FEIS.pdf.

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[66] *Ibid.* at 10-80 – 10-87.
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[68] *Center for Biological Diversity*, 538 F.3d 1172, 2008 U.S. App. LEXIS at *13-15, *57.
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[71] See for example, Energy Policy and Conservation Act, 42 U.S.C. § 6295(a), (m).
[72] U.S. Department of Energy, Energy Efficiency and Renewable Energy Building Technologies Program, Schedule Setting for the Appliance Standards Rulemaking Process, available at http://www.eere.energy.gov/buildings/appliance_standards/schedule_setting.html.
[73] U.S. Department of Energy, Energy Conservation Program for Consumer Products: Energy Conservation Standards for Residential Furnaces and Boilers; Final Rule, 72 Fed. Reg. 65,136 (Nov. 19, 2007).
[74] *Ibid.* at 65,137.
[75] *Ibid.* at 65,140.
[76] *Ibid.* at 65,162. See Table VI.19.
[77] *Ibid.* at 65,163.
[78] U.S. Department of Energy news release, "DOE Increases Energy Efficiency Standards for Residential Furnaces & Boilers" (Nov. 19, 2007), available at http://www.doe.gov/print/5743.htm.
[79] U.S. Environmental Protection Agency, Control of Emissions From Nonroad Spark-Ignition Engines and Equipment; Final Rule, 73 Fed. Reg. 59,034 (Oct. 8, 2008).
[80] U.S. Environmental Protection Agency fact sheet, "Proposed Emission Standards for New Nonroad Spark-Ignition Engines, Equipment, and Vessels" (April 2007), available at http://www.epa.gov/OMS/regs/nonroad/marinesi-equipld/420f07032.pdf.
[81] See note 5 above.
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[85] See note 79 above, p. 59,034.
[86] Control of Emissions from Marine SI and Small SI Engines, Vessels, and Equipment: Final Regulatory Impact Analysis at pg. 11-1 – 11-23.
[87] *Ibid.* at 11-22 ("...this option does not appear cost effective..."). *Ibid.* at 11-23 ("Finally, the cost and cost effectiveness of this program sub-element are of concern...").
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