

**The Case for Co-Benefits: Regulatory Impact Analyses, *Michigan v. EPA*, and the Environmental Protection Agency's Mercury and Air Toxics Standards**

February 2016

*Submitted for consideration for the Olaus and Adolph Murie Award  
June 20, 2016*

## Table of Contents

<b>I. Introduction: Co-Benefits in Federal Regulations</b> .....	<b>4</b>
<b>II. History: The Bipartisan Story of Co-Benefits</b> .....	<b>6</b>
<b>A. History of Regulatory Review and Economic Analyses</b> .....	<b>6</b>
1) <i>1970s – The First Regulatory Analysis Requirements</i> .....	<b>6</b>
2) <i>1980s – Executive Order 12,291</i> .....	<b>7</b>
3) <i>1990s – Executive Order 12,866</i> .....	<b>8</b>
4) <i>2000s – Continuing Clinton-Era Policies</i> .....	<b>8</b>
<b>B. Executive Consensus on ‘Overall’ Social Costs and Benefits</b> .....	<b>9</b>
<b>C. Examples of Previous Use of Co-Benefits at EPA</b> .....	<b>10</b>
1) <i>Lead in Gasoline – 1985</i> .....	<b>11</b>
2) <i>Inter-Media Effects of Organic Chemicals – 1987</i> .....	<b>12</b>
3) <i>Assessing the Montreal Protocol – 1987</i> .....	<b>13</b>
<b>D. Co-Benefits in the Obama Administration</b> .....	<b>13</b>
<b>III. Analytical Practice: The Accepted Role of Co-Benefits</b> .....	<b>14</b>
<b>A. Consensus on Inclusion in Principle</b> .....	<b>14</b>
<b>B. Differences Emerge in Practice</b> .....	<b>15</b>
<b>IV. Legal Justification: The Clean Air Act and MATS</b> .....	<b>16</b>
<b>A. As-Applied Objections from EPA Critics</b> .....	<b>16</b>
<b>B. Three General Arguments from Administration Critics</b> .....	<b>16</b>
1) <i>Section 112 PM Co-Benefits Are ‘Inappropriate’ in Light of Section 110</i> ..	<b>17</b>
2) <i>EPA’s Estimates Regarding Low-Level PM Reductions Are Erroneous</i> ..	<b>18</b>
3) <i>Excessive Targeting of PM Reductions – Pattern of Agency Practice</i> .....	<b>19</b>
<b>C. Avoiding the Common Law of Benefit-Cost Analysis</b> .....	<b>19</b>
<b>D. Four Rejoinders to MATS Critics</b> .....	<b>21</b>
1) <i>The Clean Air Act Does Not Preclude PM Co-Benefits</i> .....	<b>21</b>
2) <i>Court Support for Action Based on Ancillary Effects</i> .....	<b>22</b>
3) <i>BCA Methodology Falls Well Within Agency Discretion</i> .....	<b>23</b>
4) <i>Interconnectedness of Air Regulations Explains Multiple PM Effects</i> ....	<b>24</b>
<b>V. Conclusion</b> .....	<b>25</b>

## I. Introduction: Co-Benefits in Federal Regulations

A coincidental benefit (or co-benefit) of federal regulatory action is officially defined by the Office of Management and Budget as “a favorable impact of [a] rule that is typically unrelated or secondary to the statutory purpose of the rulemaking.”<sup>1</sup> Under longstanding and heretofore uncontroversial Executive Branch analytical practice, federal agencies assess and include the coincidental impacts of regulatory action in studying proposed rules.<sup>2</sup> For decades, benefit-cost analyses that inform federal regulatory decisions have included the value of co-benefits.

However, since 2011, critics of the Obama Administration’s Environmental Protection Agency (EPA) have challenged the role of co-benefits in recent air pollution regulatory impact analyses (RIAs).<sup>3</sup> Because air quality control technologies installed to capture particular pollutants like mercury often reduce other types of pollution as well, regulatory analyses identify and attempt to monetize the value to society of *all* the expected emissions reductions from proposed air rules. Critics allege that the EPA has inappropriately and erroneously over-relied on these coincidental effects to justify new regulations, especially with respect to the health benefits from reducing particulate matter (PM) concentrations.

Approved in 2011, the EPA’s Mercury and Air Toxics Standards (MATS) for power plants are expected to result in sizeable coincidental PM-related health benefits, which according to the MATS RIA, greatly exceed the value of the rule’s mercury-related benefits.<sup>4</sup> Since regulatory action was thus found cost-effective by the Obama Administration, the MATS rule proceeded, with the EPA acknowledging but not legally relying on the results of the RIA for its regulatory authority. To at least some petitioners

---

<sup>1</sup> OFFICE OF INFO. & REGULATORY AFFAIRS, OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, REGULATORY IMPACT ANALYSIS: A PRIMER 7 (Aug. 15, 2011) [hereinafter OMB CIRCULAR A-4 PRIMER], *available at* [https://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4\\_regulatory-impact-analysis-a-primer.pdf](https://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf).

<sup>2</sup> *See* discussion *infra* Part II.

<sup>3</sup> *See* discussion *infra* Part IV.B.

<sup>4</sup> OFFICE OF AIR QUALITY PLANNING AND STANDARDS, HEALTH AND ENVIRONMENTAL IMPACTS DIVISION, U.S. ENVTL. PROT. AGENCY, REGULATORY IMPACT ANALYSIS FOR THE FINAL MERCURY AND AIR TOXICS STANDARDS ES-1-ES-9 (December 2011) [hereinafter 2011 MATS RIA], *available at* <http://www3.epa.gov/ttnecas1/regdata/RIAs/matsriafinal.pdf>.

challenging the MATS rule in the on-going case *Michigan v. EPA*,<sup>5</sup> this represents a “textbook case of the administrative misuse of statutory authority.”<sup>6</sup>

Critics and petitioners in *Michigan* ground their legal argument in the fact that the statutory authority for the MATS rule comes from Section 112 of the Clean Air Act (CAA) devoted to regulating mercury and other hazardous air pollutants (HAPs), while a different section—Section 110—addresses ambient PM levels. Other critiques have similarly suggested that PM health benefits can only be obtained (legally and efficiently) through setting Section 110 standards. The present controversy raises at least three key questions about the use of co-benefits in regulatory impact analyses:

- **History** – Does the consideration of co-benefits in previous presidential administrations and agencies rise to the level of an established bipartisan administrative practice?
- **Analytical Practice** – Is the inclusion of co-benefits in agency benefit-cost studies considered sound analytical practice by economists and other experts?
- **Legal Justification** – Was the EPA justified in considering co-benefits in the particular legal context of Section 112 and the MATS RIA?

This paper contends that the answer to each of the above is yes. The sections below address the history and analytical practice of using co-benefits to inform federal regulatory decision-making before turning to the particular legal context of the MATS rulemaking at issue in *Michigan v. EPA*.

---

<sup>5</sup> *White Stallion Energy Center v. EPA*, 748 F.3d 1222 (D.C. Cir. 2014), *rev'd sub nom.* *Michigan v. EPA*, 135 S. Ct. 2699 (2015), *remanded to* *White Stallion Energy Center v. EPA*, No. 12-1100, 2015 BL 411732 (D.C. Cir. Dec 15, 2015) (ongoing on remand in the D.C. Circuit as of this writing after a threshold matter was settled by the Supreme Court in 2015).

<sup>6</sup> Petition for Writ of Certiorari at 5, *Nat'l Mining Ass'n v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-49), 2014 WL 3530754 (U.S.) at \*5 (case consolidated with *Michigan v. EPA*).

## II. History: The Bipartisan Story of Co-Benefits

### A. History of Regulatory Review and Economic Analyses

Regulatory impact analyses have been conducted by the federal government since at least 1971. From the Nixon Administration until today, Presidents of both parties have built upon the regulatory review practices of their predecessors. Over time, this has resulted in increasingly sophisticated economic analyses of proposed regulations overseen by the Office of Management and Budget (OMB). From the very beginning these reviews have explicitly included the indirect and societal effects of agency action.<sup>7</sup>

#### 1) 1970s – *The First Regulatory Analysis Requirements*

For nearly 45 years, beginning in the Nixon Administration, executive branch agencies have been expected to prepare regulatory analyses. Agencies are generally expected to explain the basis for their proposed regulatory action, list action alternatives, and make some assessment of the economic impact of their choices.<sup>8</sup> President Nixon’s “Quality of Life” program, announced in a 1971 memo by then-OMB Director George Shultz, marked the first attempt to move agencies—namely EPA—towards comprehensive analyses of the impact of their regulations.<sup>9</sup> In a 1980s report on the use of benefit-cost analysis (BCA), EPA noted that they had “been preparing analyses of environmental regulations since [their] inception, both to provide information essential to fulfilling its statutory responsibilities and also to comply with executive orders.”<sup>10</sup>

President Ford continued this analytical tradition by issuing Executive Order 11,821 in 1974, requiring agency “Inflation Impact Statements,”<sup>11</sup> the first detailed

---

<sup>7</sup> See generally Alan Carlin, *The New Challenge to Cost-Benefit Analysis*, REGULATION, Fall 2005, at 18 (explaining “the history of bipartisan support for CBA”).

<sup>8</sup> John Graham et al., *Managing the Regulatory State: The Experience of the Bush Administration*, 33 FORDHAM URB. L.J. 101, 104 (2005); OFFICE OF POLICY PLANNING AND EVALUATION, U.S. ENVTL. PROT. AGENCY, EPA’S USE OF BENEFIT-COST ANALYSIS: 1981-1986 2-1 (August 1987) [hereinafter EPA 1981-1986], available at [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0222-1.pdf/\\$file/EE-0222-1.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0222-1.pdf/$file/EE-0222-1.pdf).

<sup>9</sup> Graham et al., *supra* note 8, at 104.

<sup>10</sup> EPA 1981-1986, *supra* note 8, at 2-1.

<sup>11</sup> Graham et al., *supra* note 8, at 105.

economic impact analyses of proposed regulations.<sup>12</sup> Despite being politically portrayed as indifferent to regulatory largesse, President Carter was the first to require holistic analyses that explicitly considered “unnecessary burdens on the economy, on individuals, or on State and local governments.”<sup>13</sup> By signing the Regulatory Flexibility Act, President Carter also played a key role in creating the Office of Information and Regulatory Affairs (OIRA) at OMB.<sup>14</sup>

## 2) 1980s – Executive Order 12,291

Swept into office on pledges to provide “regulatory relief,” President Reagan shifted the focus of regulatory review “from agencies policing their own regulations [over] to OMB review and oversight” at OIRA.<sup>15</sup> Issued less than a month after taking office, Reagan’s Executive Order 12,291 “strengthened the regulatory analysis requirements” in a more formal OMB review process.<sup>16</sup> Most importantly, Executive Order 12,291 required agencies “to the extent permitted by law” to refrain from regulatory action “unless the potential benefits to society for the regulation outweigh the potential costs to society.”<sup>17</sup> When acting, agencies were to prioritize “maximizing the net benefits to society” and pursue regulatory alternatives “involving the least net cost to society.”<sup>18</sup> Under this guidance, officials in the Reagan Administration produced several important studies that explicitly considered co-benefits, discussed below. President George H.W. Bush’s administration largely continued following Executive Order 12,291.<sup>19</sup>

---

<sup>12</sup> EPA 1981-1986, *supra* note 8, at 2-3.

<sup>13</sup> Graham et al., *supra* note 8, at 106 (describing President Carter’s Exec. Order No. 12,044). *See also* Exec. Order No. 12,044, 43 Fed. Reg. 12661 (Mar. 23, 1978); EPA 1981-1986, *supra* note 8, at 2-3, 2-4.

<sup>14</sup> Graham et al., *supra* note 8, at 106.

<sup>15</sup> *Id.* at 108.

<sup>16</sup> *Id.* at 109.

<sup>17</sup> Exec. Order No. 12,291, 46 Fed. Reg. 13193 (Feb. 17, 1981). Though this Executive Order did not explicitly mandate BCAs for all regulations, “such analysis is implicit in the requirement that the alternative with the greatest net benefits be chosen.” EPA 1981-1986, *supra* note 8, at 2-4.

<sup>18</sup> Exec. Order No. 12,291, *supra* note 17.

<sup>19</sup> Graham, *supra* note 8, at 112.

### 3) 1990s – Executive Order 12,866

President Clinton set the foundation for the current agency regulatory review process with Executive Order 12,866 in 1993, though the central question still remains whether proposed agency action produces “net benefits” for society.<sup>20</sup> In that executive order, and perhaps reflecting liberal critiques of agency paralysis, President Clinton explicitly called for consideration of non-quantifiable effects.<sup>21</sup>

Though not plainly defining the term “net benefits,” Executive Order 12,866 did direct agencies to “assess *all* costs and benefits of available regulatory alternatives” and unless otherwise directed by statute, “select those approaches that maximize net benefits” to society.<sup>22</sup> Rather than requiring a positive balance of benefits to costs, it urged: “[R]ecognizing that some costs and benefits are difficult to quantify, [each agency shall] propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation *justify* its costs.”<sup>23</sup> Likely because the practice of conducting these analyses remained largely idiosyncratic, a 2004 study reviewing 74 Reagan, Bush and Clinton RIAs “conclude[d] that there is no strong statistical evidence to suggest that the quality of RIAs is getting better or worse over time.”<sup>24</sup>

### 4) 2000s and 2010s – Continuing Clinton-Era Policies

President George W. Bush explicitly embraced and continued Clinton-era regulatory review policy. Finding Executive Order 12,866 “to be workable,” Bush’s OIRA did not seek or receive any changes in statutory authority from Congress to tweak the regulatory review process, and made only minor changes in 2002 and 2007.<sup>25</sup> Bush’s

---

<sup>20</sup> Graham, *supra* note 8, at 112.

<sup>21</sup> Exec. Order No. 12,866, 58 Fed. Reg. 51735 (Sept. 30, 1993).

<sup>22</sup> *Id.* at Section 1(a) (emphasis added).

<sup>23</sup> *Id.* at Section 2(a)(6) (emphasis added). See also Cass Sunstein, Commentary, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1865 (2013).

<sup>24</sup> Robert Hahn and Patrick Dudley, *How Well Does the Government Do Cost-Benefit Analysis?*, in AEI-BROOKINGS JOINT CENTER FOR REGULATORY STUDIES WORKING PAPER 04-01 at ES, 18, 19, 22 (January 2004), available at [https://www.law.upenn.edu/institutes/regulation/papers/hahn\\_paper.pdf](https://www.law.upenn.edu/institutes/regulation/papers/hahn_paper.pdf).

<sup>25</sup> See CURTIS W. COPELAND, CONG. RESEARCH SERV., RL33862, CHANGES TO THE OMB REGULATORY REVIEW PROCESS BY EXECUTIVE ORDER 13422 3 (2007).

primary legacy in this regard is 2003's OMB Circular A-4, a guidance document giving agencies more substantial descriptions of how to perform RIAs.<sup>26</sup>

The Obama Administration, like its predecessor, has largely kept the same review policies in place.<sup>27</sup> Indeed, the EPA in 2014 noted that “with a few exceptions, the collection of [Executive Orders] and statutes that govern the conduct of economic analysis and distributional analysis has remained largely unchanged since 2000.”<sup>28</sup>

## B. Executive Consensus on ‘Overall’ Social Costs and Benefits

Throughout the entire history of regulatory review, Presidential administrations of both parties have stressed that regulatory analysis should focus on the *overall societal* benefits and costs expected to come from regulatory action. From the 1971 Shultz memo mentioning “expected benefits or accomplishments” of regulatory action, to the Carter expectation that “direct *and indirect* effects of the regulation” will be studied, to the Reagan directive to “maximize the net benefits to *society*,” regulatory analyses have always taken a societal-level approach to estimating benefits.<sup>29</sup> This focus continued in 1993 with the required assessment of “*all* costs and benefits of available regulatory alternatives.”<sup>30</sup> No Presidential policy on regulatory analysis has ever directed an agency *not* to consider co-benefits.

In fact, from 1996 on, Presidents of both parties have encouraged the formal consideration of indirect benefits. The Clinton OMB told agencies that “an attempt should be made to quantify *all potential real incremental benefits to society* in monetary terms to the maximum extent possible” including any interaction effects

---

<sup>26</sup> See OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, REGULATORY ANALYSIS, 2003 WL 24011971 (Sept. 17, 2003) [hereinafter OMB CIRCULAR A-4], *available at* [https://www.whitehouse.gov/omb/circulars\\_a004\\_a-4/](https://www.whitehouse.gov/omb/circulars_a004_a-4/).

<sup>27</sup> Exec. Order No. 13,497, 74 Fed. Reg. 6113 (Jan. 30, 2009). *See also* COPELAND, *supra* note 25.

<sup>28</sup> NAT'L CTR. FOR ENVTL. ECON., OFFICE OF POLICY, U.S. ENVTL. PROT. AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 1-1 (2014), *available at* [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf).

<sup>29</sup> Memorandum from George P. Shultz, Director, Office of Management and Budget, to Heads of Departments and Agencies (Oct. 5, 1971), *available at* <http://www.thecre.com/ombpapers/QualityofLife1.htm>; Exec. Order No. 12,044 *supra* note 13 (emphasis added); Exec. Order No. 12,291, *supra* note 17 (emphasis added).

<sup>30</sup> Exec. Order No. 12,866, *supra* note 21 (emphasis added).

between different federal regulations.<sup>31</sup> In 2000, OMB directed agencies to consider benefits indirectly traded in markets (like health and safety risks and ‘use’ values of environmental resources), and even benefits that have no tradable economic value at all, like the existence value of environmental or cultural resources.<sup>32</sup>

The Bush Administration took this commitment further. In order to “evaluate properly” in cost-benefit analysis, agencies are expected to: “Identify the expected undesirable side-effects and ancillary benefits of the proposed regulatory action and the alternatives. These should be added to the direct benefits and costs as appropriate [because a] complete regulatory analysis includes a discussion of non-quantified as well as quantified benefits and costs.”<sup>33</sup> Agency analysts are to “look beyond the direct benefits and direct costs of your rulemaking” to include “any important ancillary benefits and countervailing risks.”<sup>34</sup> This is important since “in some cases the mere consideration of these secondary effects may help in the generation of a superior regulatory alternative with strong ancillary benefits and few countervailing risks.”<sup>35</sup>

### C. Examples of Previous Use of Co-Benefits at EPA

Co-benefits have played a role in regulatory analyses in each of the last five presidential administrations.<sup>36</sup> As Circular A-4 states, consideration of secondary effects can indeed lead to the development of “superior regulatory alternative[s] with strong

---

<sup>31</sup> OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, ECONOMIC ANALYSIS OF FEDERAL REGULATIONS UNDER EXECUTIVE ORDER 12866 at III(B) (Jan. 11, 1996) (emphasis added), available at [https://www.whitehouse.gov/omb/inforeg\\_riaguide/](https://www.whitehouse.gov/omb/inforeg_riaguide/).

<sup>32</sup> OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, GUIDELINES TO STANDARDIZE MEASURES OF COSTS AND BENEFITS AND THE FORMAT OF ACCOUNTING STATEMENTS 10, 11 (Mar. 22, 2000), available at <https://www.whitehouse.gov/sites/default/files/omb/assets/omb/memoranda/moo-08.pdf>.

<sup>33</sup> OMB CIRCULAR A-4, *supra* note 26. See also OMB CIRCULAR A-4 PRIMER, *supra* note 1, at 7.

<sup>34</sup> OMB CIRCULAR A-4, *supra* note 26. See also OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, OMB CIRCULAR A-4 FORM (2003), available at [https://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a004/a04\\_form.pdf](https://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a004/a04_form.pdf).

<sup>35</sup> OMB CIRCULAR A-4, *supra* note 26 (also mentioning a study about weight-based fuel economy standards).

<sup>36</sup> Brief for the Inst. for Policy Integrity at New York Univ. Sch. of Law as Amicus Curiae in Support of Respondents at 8-9, *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-46, 14-47, 14-49), 2015 WL 1048432.

ancillary benefits.”<sup>37</sup> This can be seen most clearly in three examples of air co-benefits uncovered at EPA during the Reagan Administration.

1) *Lead in Gasoline – 1985*

In the mid-1980s, the EPA decided to study the effects of reducing lead in gasoline to zero or near-zero levels. Lead had been used as a fuel additive for decades to improve engine performance and octane ratings, though its phase-out due to harmful health effects began in 1973.<sup>38</sup> Although lead is a criteria air pollutant under the CAA’s Section 110 ambient air quality program, it “settles out of the air relatively quickly,” and instead of Section 110, EPA used their CAA mobile-source regulatory authority to address lead in gasoline.<sup>39</sup>

Partially to show that risk management principles could be successfully used to promote cost-effective regulation, EPA conducted a benefit-cost analysis to explore potential lead reduction possibilities. What emerged was a draft “substantially more extensive than that of a typical EPA analysis,”<sup>40</sup> which informed a final study uncovering an important co-benefit: ancillary reductions in uncombusted hydrocarbon and nitrogen oxides (NO<sub>x</sub>) pollution.<sup>41</sup>

EPA realized in 1982 that as many as 12% of all cars on the road designed to use only unleaded gasoline were being “misfueled” with leaded gasoline.<sup>42</sup> Since these cars were not designed to handle lead, misfueling caused pollution-controlling catalytic converters to stop functioning. By reducing average lead content from 1.1 grams per gallon to 0.1 grams per gallon – and thereby alleviating 80% of the destructive impact of misfueling on catalytic converters – EPA estimated that a new lead rule would bring about ground-level ozone reductions (and corresponding health benefits) in addition to

---

<sup>37</sup> *Id.*

<sup>38</sup> Albert L. Nichols, *Lead in Gasoline*, in *ECONOMIC ANALYSES AT EPA* 49-51 (Richard D. Morganstern ed., 1997).

<sup>39</sup> *Id.* at 50.

<sup>40</sup> *Id.* at 55.

<sup>41</sup> OFFICE OF POLICY ANALYSIS, U.S. ENVTL. PROT. AGENCY, *Benefits of Reducing Pollutants Other than Lead*, in *COSTS AND BENEFITS OF REDUCING LEAD IN GASOLINE: FINAL REGULATORY IMPACT ANALYSIS* at VI-I (February 1985) [hereinafter *EPA REDUCING LEAD*], available at [http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0034-1.pdf/\\$file/EE-0034-1.pdf](http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0034-1.pdf/$file/EE-0034-1.pdf).

<sup>42</sup> Nichols, *supra* note 38, at 53.

providing direct children's health and car maintenance benefits.<sup>43</sup> In the finalized analysis, EPA estimated the monetized co-benefits of reducing ozone precursors to be worth \$222 million in 1986, the first full year of implementation, amounting to 16.9% of the rule's total benefits.<sup>44</sup> EPA moved to finalize this rule not because of Congressional pressure or statutory mandates, but rather on EPA's own initiative, given that the rule was "strongly supported by the benefit-cost analysis included in the RIA."<sup>45</sup> In practice, the rule was even more successful than anticipated since gasoline stations *en masse* moved away from selling leaded gasoline at all, leading the way towards a total Congressional prohibition on lead gasoline additives that took effect in 1995.<sup>46</sup>

## 2) *Inter-Media Effects of Organic Chemicals – 1987*

While studying effluent discharges related to chemicals and plastics under the Clean Water Act, EPA in 1987 found that these discharges also led to ozone-causing volatile organic compound (VOC) air emissions at wastewater treatment plants.<sup>47</sup> EPA included the possibility of installing control technologies in a proposed RIA, concluding that VOC controls would increase the rule's cost-effectiveness per unit of emissions reduction. Though EPA eventually decided against imposing controls, EPA staff noted that their inclusion in the RIA "helped ensure OMB approval of a controversial regulation" on effluent discharges.<sup>48</sup> In total, these co-benefits totaled between 5-16% of all benefits.<sup>49</sup>

---

<sup>43</sup> *Id.* at 69, 70. See also EPA 1981-1986, *supra* note 8, at 4-6.

<sup>44</sup> Nichols, *supra* note 38 at 74. For 1986, EPA estimated \$600 million in children's health benefits, the \$222 million in ozone benefits mentioned above, as well as \$1.101 billion in car maintenance and fuel economy benefits. Costs were estimated at \$608 million in increased refining costs. Similar results were noted for the 1987 and 1988 years. EPA REDUCING LEAD, *supra* note 41, at E-12.

<sup>45</sup> Nichols, *supra* note 38 at 62.

<sup>46</sup> Nichols, *supra* note 38 at 76. EPA predicted that 16 billion gallons of leaded gasoline would be sold per year at the lower threshold of 0.1 grams per gallon, but only 800 million (1/20<sup>th</sup> as much) were eventually sold. *Id.*

<sup>47</sup> Peter Caulkins and Stuart Sessions, *Water Pollution and the Organic Chemicals Industry*, in ECONOMIC ANALYSES AT EPA, *supra* note 38 at 113-14. See also EPA 1981-1986, *supra* note 8, at 4-6.

<sup>48</sup> Caulkins and Sessions, *supra* note 47 at 120. VOC controls were later required in 1994. *Id.* at 121.

<sup>49</sup> *Id.* at 115.

### 3) *Assessing the Montreal Protocol – 1987*

Late in the Reagan Administration, during the negotiation and consideration of the Montreal Protocol's chlorofluorocarbon (CFC) reductions, EPA undertook an analysis of potential domestic impacts. EPA found that without action, continued breakdowns in stratospheric ozone would cause higher levels of UV-B radiation to reach Earth's surface, creating very significant human health impacts.<sup>50</sup> In addition, more UV-B would create heightened ground-level ozone levels by intensifying ozone formation in the lower atmosphere. EPA pegged the ozone co-benefits of the Montreal Protocol as high as \$24 billion in net-present value terms.<sup>51</sup> Though President Reagan decided to support it before EPA's analysis was publicly released, the analysis was released in time to bolster the case for ratification. EPA analysts concluded that "benefit-cost analysis was clearly important in decision[-]making about this issue."<sup>52</sup>

#### D. Co-Benefits in the Obama Administration

Critics of the Obama Administration have claimed that the approach to co-benefits must have changed in the last few years, given the predominance of co-benefits in recent rule approvals.<sup>53</sup> OIRA Director Cass Sunstein's response to an inquiry by several House Republicans noted the above history and grounded its defense of MATS in longstanding practices: "Under Circular A-4 and Executive Orders 13563 and 12866, it is not only legitimate but necessary to consider such co-benefits" in order to provide

---

<sup>50</sup> James Hammitt, *Stratospheric Ozone Depletion*, in ECONOMIC ANALYSES AT EPA, *supra* note 38 at 153.

<sup>51</sup> *Id.* at 151.

<sup>52</sup> *Id.* at 156.

<sup>53</sup> See generally Susan E. Dudley, *Perpetuating Puffery: An Analysis of the Composition of OMB's Reported Benefits of Regulation*, 47 BUSINESS ECONOMICS 165 (2012) (discussing regulatory benefits from 2002-2012).

for “full accounting” of costs and benefits.<sup>54</sup> This outlook is consistent with previous administrations.<sup>55</sup>

### III. Analytical Practice: The Accepted Role of Co-Benefits

#### A. Consensus on Inclusion in Principle

The use of co-benefits in benefit-cost analysis is and always has been sound analytical practice at OIRA and elsewhere. Nobel Laureate Kenneth Arrow, along with a host of other distinguished co-authors, noted the importance of ‘spillover effects’ in summarizing the accepted principles of BCA in 1996:

If a regulation results in economic spillovers that contribute significantly to job losses or increased costs to a specific industry in a local economy, then it is appropriate to consider those in a benefit-cost analysis. Agencies should, however, *weigh those impacts against positive impacts that result elsewhere in the larger economy.*<sup>56</sup>

Conservative analysts and commentators, including Bush-era OIRA Administrator Susan Dudley, agree that in principle co-benefits must be included in respectable benefit-cost analyses:

It is certainly true that the principles of cost-benefit analysis have always required that, to the extent practicable, the ancillary or unintended side-effects of government action – both positive and negative – should be included in the accounting . . . [though] both ancillary benefits *and* costs should be included in the analysis.<sup>57</sup>

Even studies critical of the MATS rule, like the American Energy Alliance report disdaining the “New ‘Benefits’” of environmental regulation, have agreed with the basic

---

<sup>54</sup> Letter from Cass Sunstein, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget to Rep. Andy Harris (Dec. 22, 2011), *available at* <http://science.house.gov/sites/republicans.science.house.gov/files/documents/20111222.pdf>.

<sup>55</sup> Sunstein, *supra* note 23 at 1864-74; *Id.* at 1844 (“On the basis of discussions with OIRA staff and with former Administrators, I believe [this account] is consistent” with other administrations).

<sup>56</sup> KENNETH J. ARROW ET AL., BENEFIT-COST ANALYSIS IN ENVIRONMENTAL, HEALTH, AND SAFETY REGULATION: A STATEMENT OF PRINCIPLES 6-7 (1996) (emphasis added), *available at* [https://www.aei.org/wp-content/uploads/2014/04/-benefitcost-analysis-in-environmental-health-and-safety-regulation\\_161535983778.pdf](https://www.aei.org/wp-content/uploads/2014/04/-benefitcost-analysis-in-environmental-health-and-safety-regulation_161535983778.pdf).

<sup>57</sup> SUSAN DUDLEY, BRIAN MANNIX AND SOFIE MILLER, PUBLIC INTEREST COMMENT ON OMB’S DRAFT 2014 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS 8 (2014), *available at* [https://www.whitehouse.gov/sites/default/files/omb/inforeg/2014\\_cb/comments/dudley-mannix-miller-2014-omb-report-to-congress.pdf](https://www.whitehouse.gov/sites/default/files/omb/inforeg/2014_cb/comments/dudley-mannix-miller-2014-omb-report-to-congress.pdf).

principle behind co-benefits: “If such a secondary benefit can be documented, it should be monetized and included in a cost-benefit analysis of the mercury regulation. So in principle, co-benefits are not objectionable.”<sup>58</sup>

Indeed, “[BCA] strives to be complete – including, with appropriate weights, all of a decision’s consequences: remote as well as proximate, indirect as well as direct, diluted as well as concentrated, delayed as well as immediate, improbable as well as probable, unintentional as well as intentional.”<sup>59</sup> Analysis should strive to find and establish “a clear view of those things that are not expected to balance” or even themselves out in the wake of agency action.<sup>60</sup> The consensus opinion among economists and observers is that “analysts should consider reinforcing effects (‘co-benefits’) as well as countervailing effects” since not including them would present an incomplete picture of the expected results of regulation.<sup>61</sup>

### B. Differences Emerge in Practice

In practice, however, the scrutiny applied to BCA often depends on the perspective of the commentator.<sup>62</sup> According to Richard Revesz and Michael Livermore at NYU, conservative commentators in the 1990s, though accepting in principle of both co-benefits and “countervailing risks,” tended to focus on the negative impacts of regulation, to the exclusion of potential upsides.<sup>63</sup> Revesz and Livermore characterize this as a “pathology of failing to properly account for ancillary benefits” and cite Bush’s Circular A-4 as a step in the right direction.<sup>64</sup>

---

<sup>58</sup> SCOTT BEAULIER AND DANIEL SUTTER, AMERICAN ENERGY ALLIANCE, THE NEW “BENEFITS” OF ENVIRONMENTAL REGULATION 28 (2012), available at [http://americanenergyalliance.org/wp-content/uploads/2012/10/New-Benefits-of-Environmental-Regulation\\_Final.pdf](http://americanenergyalliance.org/wp-content/uploads/2012/10/New-Benefits-of-Environmental-Regulation_Final.pdf).

<sup>59</sup> Brian Mannix, *Employment and Human Welfare: Why Does Benefit-Cost Analysis Seem Blind to Job Impacts?*, in DOES REGULATION KILL JOBS? 192 (Cary Coglianese et al. eds., 2013).

<sup>60</sup> *Id.*

<sup>61</sup> Adam Finkel, *Emitting More Light than Heat: Lessons from Risk Assessment Controversies for the ‘Job-Killing Regulations’ Debate*, in DOES REGULATION KILL JOBS?, *supra* note 59 at 141.

<sup>62</sup> See, e.g., Amy Sniden, *Formality and Informality in Cost-Benefit Analysis*, 2015 UTAH L. REV. 93, 120-29 (2015), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2442357](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442357); Daniel Farber, *Rethinking the Role of Cost-benefit Analysis*, 76 U. CHI. L. REV. 1355, 1361-65 (2009), available at <http://ssrn.com/abstract=1324388>.

<sup>63</sup> Michael Livermore and Richard Revesz, *Rethinking Health-Based Environmental Standards*, 89 N. Y. U. L. REV. 1184, 1247-51 (2014).

<sup>64</sup> *Id.* at 1250.

## **IV. Legal Justification: The Clean Air Act and MATS**

### **A. As-Applied Objections from EPA Critics**

Not surprisingly then, it is on the specifics and the judgment employed in the MATS RIA and rulemaking where the critics of co-benefits have leveled their challenges. Generally, Obama Administration critics object to the fact that PM co-benefits dwarf benefits directly applicable to mercury reductions: “co-benefits in excess of primary benefits suggest that at a minimum the regulation is mislabeled, and perhaps unfounded . . . Absent direct benefits, co-benefits do not provide evidence of the need for regulation. The main benefits from regulating mercury should be from reductions in mercury.”<sup>65</sup>

### **B. Three General Arguments from Administration Critics**

Three notable challenges—from the American Energy Alliance, Susan Dudley, and economist Anne Smith—all follow the same general pattern. First, they allege that indirect particulate matter regulation through Section 112’s Hazardous Air Pollutants program is inappropriate given the fact that PM levels are already regulated under Section 110’s ambient air quality programs. They approach this question from quasi-legal and cost-effectiveness perspectives. Second, critics take issue with the scientific conclusion that EPA drew from studies of PM health impacts regarding the magnitude of impacts assumed to occur below the lowest measured exposure levels in extant studies. Third, critics allege excessive EPA targeting of PM reductions, framing recent regulations as an unreasonable pattern of agency practice.

---

<sup>65</sup> BEAULIER AND SUTTER, *supra* note 58 at 28, 29.

1) *Section 112 PM Co-Benefits Are ‘Inappropriate’ in Light of Section 110*

As Susan Dudley wrote in 2012: “Ninety-nine percent of the benefits attributed to the MATS rule are derived by assigning high dollar values to reductions in emissions of fine particles . . . which are not the focus of this regulation and which are regulated elsewhere.”<sup>66</sup> This observation covers the essential logic of the Clean Air Act critique, that ambient air quality regulation of PM: 1) may not be properly calibrated if coincidental reductions can be effected through MATS; 2) in effect, bars EPA from also affecting PM under other authorities; and 3) implies that indirect PM reductions due to MATS will not be the most cost-effective approach of achieving reductions.

Although not an explicit legal argument – at the time of this writing, the *Michigan* case on remand in the D.C. Circuit has not been decided – these economists and business critics take the general approach that since PM is “a non-HAP pollutant” it is not within “the purpose or justification for a HAPs rule” and that if PM is “regulated to safe levels under other provisions of the CAA” then the MATS RIA is “an inappropriate justification for costly controls” under Section 112.<sup>67</sup>

Dudley claims that it is hard to reconcile the co-benefits claimed in the MATS RIA with EPA’s 2006 ambient air quality PM standard, since that standard must by law be based on “all identifiable effects on public health or welfare.”<sup>68</sup> If the ambient level was set to truly protect public health, this argument goes, then there should be no additional benefits to be had from additional (Section 112) regulation. “The current EPA practice of claiming that thousands of PM<sub>2.5</sub> related deaths remain on the table to provide co-benefits to justify an array of other air quality regulations with [an ambient standard] in place is unacceptable.”<sup>69</sup> Economist Anne Smith’s methodological critique, explained below, claims that “nearly all” of the claimed mortality co-benefits come from

---

<sup>66</sup> Dudley, *supra* note 53 at 173. See also Susan Dudley, *OMB’s Reported Benefits of Regulation: Too Good to be True?*, REGULATION, Summer 2013, at 26-30.

<sup>67</sup> *The American Energy Initiative: A Focus on What EPA’s Utility MACT Rule Will Cost U.S. Consumers: Hearing before the Subcomm. on Energy and Power of the H. Energy & Commerce Comm.*, 112th Cong. 8 (Feb. 8, 2012) (Prepared Statement of Anne Smith, NERA Econ. Consulting) [hereinafter Smith Statement], available at <http://energycommerce.house.gov/hearing/american-energy-initiative-what-epas-utility-mact-rule-will-cost-us-consumers>.

<sup>68</sup> Dudley, *supra* note 53 at 173.

<sup>69</sup> BEAULIER AND SUTTER, *supra* note 58 at 30-31.

“areas that are already in attainment with the current” ambient PM standards.<sup>70</sup> Thus, “all of those estimated deaths” would be from “areas that are protected with an ‘adequate margin of safety’” already.<sup>71</sup>

Dudley and others summarize the Section 110 cost-effectiveness argument by arguing that:

Straightforward economic analysis tells us that EPA should be able to reduce PM emissions more cost-effectively by constraining PM emissions directly (which it has, in fact, already done) than by constraining mercury emissions to produce an indirect PM reduction. Therefore, after taking into account EPA’s direct PM rules, it is implausible to claim that the mercury rule has incremental PM co-benefits that exceed the total costs of the rule. Any such benefits will have been obtained by paying a higher price than would be incurred by constraining PM directly.<sup>72</sup>

Essentially, by requiring reductions from all PM sources, rather than simply power plants, critics expect that stronger EPA regulation under Section 110 would reduce compliance costs.<sup>73</sup>

## 2) *EPA’s Estimates Regarding Low-Level PM Reductions Are Erroneous*

Smith lodges her main critique against the EPA RIA co-benefits analysis by claiming “the primary reason [these] estimates have become less credible is that EPA is now extrapolating PM<sub>2.5</sub> risk estimates far below the lowest level of PM<sub>2.5</sub> for which risks have ever been estimated in the epidemiological literature.”<sup>74</sup> Calling it an “inflationary effect,” Smith claims that EPA’s linear extrapolation regarding the health effects of low-level PM exposure purposefully overstates co-benefits.<sup>75</sup> Smith’s review of EPA’s RIA may leave little or no room for PM co-benefits at all. She asserts that it is “not appropriate” for EPA to be claiming health benefits for reductions below ambient air

---

<sup>70</sup> Smith Statement, *supra* note 67 at 17, 19.

<sup>71</sup> *Id.* at 17.

<sup>72</sup> DUDLEY ET AL., *supra* note 57 at 8.

<sup>73</sup> BEAULIER AND SUTTER, *supra* note 58 at 30.

<sup>74</sup> Smith Statement, *supra* note 67 at 16-17.

<sup>75</sup> *Id.* at 17, 18, 21. *See also* Dudley, *supra* note 53 at 169, 171. Smith contends that EPA’s figures would mean unreasonably large portions of American deaths are “due to PM<sub>2.5</sub>.” Smith Statement, *supra* note 67 at 19-21.

quality standards levels (representing 89% of claimed mortality co-benefits), and alleges that “extensive extrapolation” accounts for most benefits.<sup>76</sup>

### 3) *Excessive Targeting of PM Reductions – Pattern of Agency Practice*

Critics also lodge a generalized grievance about recent EPA rulemakings – that the increased prevalence of PM co-benefits in recent air rule analyses gives “the impression that the underlying analyses are, indeed, strongly biased by a one-sided search for beneficial ancillary effects.”<sup>77</sup> Smith points to five additional rulemakings other than MATS, “for which over 99 percent of reported benefits derive from ancillary reductions in PM<sub>2.5</sub>.”<sup>78</sup> This, to Dudley, indicates that the Obama Administration is using “these inflated benefits figures to make claims about regulatory success” which, using an umpire analogy with respect to OIRA, makes one wonder if “the game is played fairly.”<sup>79</sup> Even more aggressive claims on this score come from the American Energy Alliance, which asserts that “in practice, the EPA treats PM<sub>2.5</sub> deaths like a reservoir of benefits to apportion out to justify any new regulation.”<sup>80</sup>

### C. Avoiding the Common Law of Benefit-Cost Analysis

Before rebutting these potential claims, it should be noted that a potential threshold defense could be mounted against them all – arguing that EPA’s action in weighing the costs and benefits of MATS is not judicially reviewable. Though the Supreme Court opined in their 2015 *Michigan* decision that EPA’s appropriate and necessary finding under Section 112 must include some consideration of costs, it specifically observed that *benefit-cost analysis is not required under the relevant statute*.<sup>81</sup> Thus, since executive orders are not judicially enforceable,<sup>82</sup> in the absence of

---

<sup>76</sup> Smith Statement, *supra* note 67 at 19.

<sup>77</sup> DUDLEY ET AL., *supra* note 57 at 8.

<sup>78</sup> Dudley, *supra* note 53 at 171 (citing to Smith).

<sup>79</sup> *Id.* at 175.

<sup>80</sup> BEAULIER AND SUTTER, *supra* note 58 at 9. The AEA researchers also claim that additional “co-costs” need to be added into EPA’s analysis, including the “cost of abridging freedom.” *Id.* at 31-32.

<sup>81</sup> *Michigan v. EPA*, 135 S. Ct. 2699, 2711 (2015).

<sup>82</sup> See *EDF v. Thomas*, 627 F.Supp. 566, 571-72 (D.D.C. 1986) (ordering OMB not to interfere at EPA, but treating Exec. Order No. 12,291 as legally unenforceable). In addition, Exec. Order No.

statutory commands there is no legal requirement for EPA to have even pursued *any* benefit-cost balancing, and by extension, no opportunity for the judiciary to go above and beyond those requirements to substantively review agency expert decisions and methodology.<sup>83</sup>

The Administrative Procedure Act's generous arbitrary and capricious review possibility, however, might offer enough law to apply for challengers to obtain searching review of the MATS RIA.<sup>84</sup> Noted benefit-cost scholar Kip Viscusi and co-author Caroline Cecot recently explored the question of judicial review of BCAs, and reported that challengers have three ways to obtain review: 1) authorization for the use of BCA under a specific statutory mandate; 2) adequacy of a BCA in the context of rationality review of agency action; or 3) indirect implication of a BCA as part of a broader legal challenge.<sup>85</sup> The second or third cases may apply here. Cecot and Viscusi catalogue a number of cases in an appendix, suggesting this review is often available, though courts in general may only be "comfortable evaluating BCAs in light of statutory guidance."<sup>86</sup>

Despite the general aversion of courts to engage in "Monday morning quarterbacking" (i.e. second-guessing) of substantive agency decisions,<sup>87</sup> some scholars have openly called for a "common law of cost-benefit analysis," where courts have freer rein to wade into "regulatory questions about cost-benefit analysis" and methodology, in order to give agencies "a reason to take cost-benefit analysis seriously" and attempt to "bring about 'net benefits' through judicial review."<sup>88</sup>

---

12,866 Sec. 10 makes clear that it "does not create any right or benefit, substantive or procedural, enforceable at law or equity," *supra* note 21.

<sup>83</sup> See *Vermont Yankee v. NRDC*, 435 U.S. 519, 543 (1978) (holding that "this much is absolutely clear . . . Absent constitutional constraints or extremely compelling circumstances, the administrative agencies should be free to fashion their own rules of procedure, and to pursue methods of inquiry capable of permitting them to discharge their multitudinous duties.") (citation omitted) (internal quotes omitted).

<sup>84</sup> Caroline Cecot and W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 *GEO. MASON L. REV.* 575, 575 (2015).

<sup>85</sup> *Id.* at 576-77.

<sup>86</sup> *Id.* at 608.

<sup>87</sup> See *Vermont Yankee*, 435 U.S. at 547.

<sup>88</sup> Michael Abramowicz, *Toward a Jurisprudence of Cost-Benefit Analysis*, 100 *MICH. L. REV.* 1708, 1735, 1736, 1738, 1741 (2002) (sharing an optimistic perspective on litigation's potential to maximize net benefits).

#### D. Four Rejoinders to MATS Critics

If the critiques of the MATS RIA must be answered on the merits, there are at least four reasons why EPA's treatment of co-benefits in MATS should withstand review. First, the idea that Section 110 and Section 112 programs are mutually exclusive regulatory avenues is not legally supportable. Second, several federal appeals courts have stressed the importance of full accounting for co-benefits in regulatory decision-making. Third, in the absence of clear statutory directives, BCA methodological judgments fall well within the bounds of agency discretion. And finally, the interconnectedness of air quality regulation means that cross-pollutant impacts are, in practical terms, unavoidable.

##### 1) *The Clean Air Act Does Not Preclude PM Co-Benefits*

It is important to note that MATS critics – at least those presently known to the author – have not advanced actual economic studies proving that Section 110's ambient air quality programs would be a more economically efficient means of achieving PM-related health benefits than MATS. What they have offered is simple reasoning from the breadth of regulation, or “straightforward economic analysis.”<sup>89</sup>

But even if rigorous studies had proven this point, critics openly acknowledge that under *Whitman v. American Trucking* and CAA Section 110, cost is explicitly *not* to be considered in setting ambient air quality standards.<sup>90</sup> In other words, the EPA is not legally permitted to pursue the sort of cost-engineering that its critics expect it to engage in. Comparative cost-effectiveness studies between Sections 110 and 112 would likely be an interesting academic exercise, but under current law, they would be only that. EPA is, however, now required to consider costs at all stages of its Section 112 decision-making under *Michigan*, costs that were analyzed in depth in the MATS RIA and found to be worth incurring, in the interests of society as a whole.

Also, critics seem to suggest a false choice between the two regimes, as if EPA can only have an impact on PM concentrations (directly or coincidentally) through at most one regulatory channel. Neither Section 110 nor Section 112 require exclusivity, in that

---

<sup>89</sup> DUDLEY ET AL., *supra* note 57 at 8.

<sup>90</sup> Dudley, *supra* note 53 at 170 (acknowledging *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457 (2001)).

EPA is not forced to pick only one avenue through which regulations can have an *impact* on PM, even if the two sections have differing objectives. In particular, Section 112(d)(7) specifically makes clear that HAP requirements do not “diminish or replace” any “other applicable requirement” under the Clean Air Act.<sup>91</sup>

## 2) Court Support for Action Based on Ancillary Effects

Livermore and Revesz, as well as major power producers Calpine and Exelon in their *Michigan v. EPA* Supreme Court briefs, have pointed to three instances where federal appeals courts encouraged agency consideration of and action based on ancillary effects as part of rationality review. First, a portion of the D.C. Circuit’s opinion in *American Trucking* not subsequently addressed by the Supreme Court involved ancillary impacts. “[I]n that case, the court accepted the challengers’ argument that EPA should have considered ‘the health *benefits* of tropospheric ozone as a shield from . . . the sun’ in their Section 110 analysis.<sup>92</sup> Second, the Ninth Circuit in *Center for Biological Diversity v. NHTSA*<sup>93</sup> reversed the “agency for quantifying ancillary costs of fuel economy standards (the impact on vehicle sales and employment) but not quantifying ancillary environmental benefits.”<sup>94</sup> And third, the D.C. Circuit in *Competitive Enterprise Institute v. NHTSA*<sup>95</sup> reversed the “agency for failing to consider whether benefits of fuel economy standards outweigh ancillary costs in terms of lives lost due to smaller vehicles.”<sup>96</sup> Though these authorities do not directly pertain to Section 112, they do indicate that courts see the value of coincidental effects as an important consideration and that co-benefits can be a permissible basis for moving the regulatory process forward.

---

<sup>91</sup> 42 U.S.C. § 7412(d)(7) (2015).

<sup>92</sup> Livermore and Revesz, *supra* note 63 at 1250 (citing *Am. Trucking Ass’ns v. EPA*, 175 F.3d 1027, 1051-52 (D.C. Cir. 1999)) (emphasis added).

<sup>93</sup> *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1193-1203 (9<sup>th</sup> Cir. 2008).

<sup>94</sup> Brief for Industry Respondents Calpine Corp., Exelon Corp., National Grid Generation LLC, and Public Service Enterprise Group, Inc. at 37, *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-46, 14-47, 14-49), 2015 WL 797452.

<sup>95</sup> *Competitive Enter. Inst. v. Nat’l Highway Traffic Safety Admin.*, 956 F.2d 321, 327 (D.C. Cir. 1992).

<sup>96</sup> Brief for Industry Respondents, *supra* note 94 at 37.

### 3) *BCA Methodology Falls Well Within Agency Discretion*

In addition to legal arguments rooted in *Chevron* deference, a rather persuasive policy case can be made for leaving the scientific details of BCA to the realm of agency discretion. This stems from the role of BCA in the regulatory review process – as a requirement “by executive order that [BCAs] be carried out for all proposed major regulations” but in terms of their conclusions should be treated as “advisory rather than determinative.”<sup>97</sup> This approach, explicitly advanced in Executive Order 12,866, also comports with the consensus approach of Professor Arrow and his colleagues:

Benefit-cost analysis should be required for all major regulatory decisions, but agency heads should not be bound by a strict benefit-cost test. Instead, they should be required to consider available benefit-cost analyses and to justify the reasons for their decision in the event that the expected costs of a regulation far exceed the expected benefits.<sup>98</sup>

Respected judicial observers agree. Judge Richard Posner, contributing to a compilation of papers on benefit-cost analysis, concluded that the ultimate test of a BCA regarding societal efficiency is “whether its use improves the performance of government in any sense of improvement that the observer thinks appropriate.”<sup>99</sup> Going further, he shared that “in my view the ultimate criterion should be pragmatic; we should not worry whether cost-benefit analysis is grounded in any theory of value. We should ask how well it serves whatever goal we have.”<sup>100</sup>

EPA’s RIA in MATS served as a check that agency action served overall societal efficiency, the longstanding goal of OIRA review. It was not designed to meet any particular statutory cost-consideration requirement (as there were none at the time), nor did the Supreme Court retroactively impose a BCA requirement on the agency. Since the final RIA anticipated and responded to many of the challengers’ critiques – including the important observation ambient air quality standards “are not set at a level of zero risk”<sup>101</sup> below which there are no health hazards – the agency noted and

---

<sup>97</sup> Carlin, *supra* note 7 at 23.

<sup>98</sup> ARROW ET AL., *supra* note 56 at 1-2.

<sup>99</sup> Richard A. Posner, *Cost-Benefit Analysis: Definition, Justification, and Comment on Conference Papers*, 29 J. LEGAL STUD. 1153, 1155-56 (2000).

<sup>100</sup> *Id.* at 1156.

<sup>101</sup> 2011 MATS RIA, *supra* note 4 at ES-4.

responded to concerns about its methodologies even though the benefit-cost analysis was for regulatory review, not statutory adherence.

Though EPA’s RIA may be attacked on the grounds that going “against scientific evidence or reason” is a flaw “that can topple an agency’s BCA under certain circumstances” – and the *Michigan* petitioners may make that claim with respect to low-level PM health effects – it is hard to believe that the EPA’s choice of extrapolation method “bears no rational relationship to the characteristics of the data to which it is applied.”<sup>102</sup> This challenge would be proposing that despite statutory silence EPA is not allowed to make straight-line assumptions in the face of scientific uncertainty.

#### 4) *Interconnectedness of Air Regulations Explains Multiple PM Effects*

Finally, and on a more general level, the claim that a series of EPA regulations are repeatedly and intentionally targeting PM reductions and operating beyond statutory authority is an argument assuming facts not in evidence. Despite clear agency statements that the decision to take regulatory action was not predicated on these ancillary benefits,<sup>103</sup> and the Supreme Court’s acceptance of that position,<sup>104</sup> this argument would be asking the D.C. Circuit to rule that regardless of those facts the *real* reason for EPA regulatory action was to reduce PM below levels required by the ambient air quality program.

As a political narrative this idea has obvious appeal to EPA opponents. But in the absence of clear evidence, it lacks substantial legal or factual justification. Air quality regulations often have impacts on co-pollutants, and Section 112 reflects that simple reality.<sup>105</sup> Congress specifically envisioned that air regulations would have collateral impacts when they observed that under Section 112 EPA “would consider the benefits which result from control of air pollutants that are not listed but the emissions of which are, nevertheless, reduced by control technologies or practices necessary to meet the

---

<sup>102</sup> Cecot and Viscusi, *supra* note 84 at 592, 598-99.

<sup>103</sup> National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9304, 9320 (Feb. 16, 2012) (commonly known as the MATS Rule). *See also* *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015) (describing EPA’s position).

<sup>104</sup> *See Michigan*, 135 S. Ct. at 2706.

<sup>105</sup> *See* 42 U.S.C. § 7412(d)(7) (2015). *See also supra* text accompanying note 91.

prescribed limitation.”<sup>106</sup> That sort of indirect impact on another pollutant is precisely what happened in the MATS rulemaking with respect to particulate matter.

## **V. Conclusion**

Unless otherwise instructed by statute, agencies consider co-benefits – a sound and longstanding federal agency practice. Co-benefits should be recognized as the product of expert reasoning, both generally and as employed in MATS. Over the past three and a half decades of RIAs, the consensus view of economists has been and continues to be that *all* benefits of agency action – both direct and indirect – should be considered and monetized to the greatest extent possible. The rhetorical frame taken up by MATS critics appears plausible at first glance, though upon further examination it falls short of being legally persuasive in light of statute, case law, the need to respect agency expertise, and the particular facts and Congressional intent at issue in MATS.

---

<sup>106</sup> S. Rep. No. 101-228, at 172 (1989) (quoted in Inst. for Policy Integrity, *supra* note 36 at 9).