SYMPOSIUM PANEL

ECONOMICS & ENVIRONMENTAL POLICY

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INTRODUCTION: THREATS TO THE ROLE OF ECONOMICS IN ENVIRONMENTAL POLICYMAKING, BY MICHAEL A. LIVERMORE[*]

From its very beginnings, the modern era of environmental law and policy has been bound up with the field of economics. Part of the reason for this longstanding relationship is that economics provides a useful perspective on a set of questions that arise in almost any environmental policy-making context, such as the appropriate level of stringency or the tools that ought to be used to achieve environmental goals.[1] Certainly, economics is not the only framework for asking and answering those questions, but its utility to decisionmakers is well demonstrated by its durability: from Nixon through Obama, environmental decisionmakers—and especially officials at EPA—have consistently looked to the field of economics for guidance when designing, evaluating, and implementing environmental policy.

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[1] *See* MICHAEL A. LIVERMORE & RICHARD L. REVESZ, *Environmental Law and Economics*, *in* 2 OXFORD HANDBOOK OF LAW AND ECONOMICS: PRIVATE AND COMMERCIAL LAW 509, 510 (Francesco Parisi ed., 2017).

Today, the beneficial relationship between economics and environmental decisionmaking at EPA is under attack. The Trump administration has never officially abandoned economic analysis and even purports to operate under longstanding executive orders that require cost-benefit analysis of major regulatory decisions.[2] Perhaps worse than an explicit disavowal, however, has been this administration's tendency to use economics to provide thinly veiled post-hoc rationalizations for politically motivated decisions, rather than a tool to provide guidance and insight. This approach threatens the legitimacy of the entire enterprise of economic analysis of environmental policy. And it may do lasting damage to the capacity of EPA and other environmental decisionmakers to productively use economics to inform their decisions.

As part of Policy Integrity's tenth anniversary conference, "Energy and Environmental Policy: The Quest for Rationality," I moderated a panel with four experts on the intersection of economics and environmental policy: Megan Ceronsky, Executive Director, Center for Applied Environmental Law and Policy and former Special Assistant and Associate Counsel to President Obama; Richard Morgenstern, Senior Fellow, Resources for the Future and former Senior Economic Counselor to the Undersecretary for Global Affairs, U.S. Department of State; Vickie Patton, General Counsel, Environmental Defense Fund; and Jonathan Pershing, Program Director for Environment, William and Flora Hewlett Foundation and former Special Envoy for Climate Change, U.S. Department of State. In the transcribed, edited remarks that follow, Ceronsky, Morgenstern, and Patton provide insights about the past and future role of cost-benefit analysis and economics in the design and evaluation of environmental policy. In this introduction, I provide a very brief discussion of the value of the economic perspective for environmental decisionmaking and describe how the current administration's abuse of economic analysis threatens to undermine its legitimacy.

A. *Economics and Environmental Decisionmaking*

The major pollution control statutes adopted during the height of U.S. environmental lawmaking in the last decades of the twentieth century represented the culmination of a political and legislative process, but also the beginning of a decades-long stage

[2] *See generally* Exec. Order 13,771, 82 Fed. Reg. 9339 (Feb. 2, 2017).

of regulatory implementation. The Clean Air Act and Clean Water Act establish the broad shape of pollution-control regimes but then ultimately leave it to EPA to fill in the details. In essence, the statutes create the legal and institutional foundation, but it has been EPA, working over many years, that has built complex and interdependent structures that make up contemporary environmental law.

In undertaking this task, EPA has had to answer many questions that the statutes leave open. A statute might require the agency to consider certain factors when setting a regulatory standard, but leave great discretion to the agency concerning how to consider and balance competing considerations against each other. Statutes often also leave open many questions of regulatory design, such as the degree of flexibility to give regulated entities when complying with environmental requirements.[3]

Since its earliest days, EPA has turned to the field of economics to help it answer these difficult questions.[4] Of course, economists are not the only professionals with input into the regulatory process; engineers, public health researchers, toxicologists, and lawyers all have their say. But economics has a special place in regulatory decisionmaking in part because it provides a framework—cost-benefit analysis—for collecting and aggregating information from many sources.

There are three main areas where economics has been particularly influential in environmental decisionmaking. The first has been in providing a basic rationale for environmental regulation through the concept of market failure. The basic insight is that individuals operating in private markets will often engage in behavior that is privately rational but that delivers socially irrational results.[5] One classic way to formulate this problem is one of

[3] *See* MATTHEW C. STEPHENSON, *Statutory Interpretation by Agencies*, *in* RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW 285, 286–92 (Daniel A. Farber & Anne Joseph O'Connell eds., 2010) (explaining why Congress might choose to leave open how the agency will implement a statute).

[4] *See* EPA, EPA'S USE OF BENEFIT-COST 1981–1986, at S-2 (1987) ("Beginning with the 'Quality of Life' reviews under the Nixon Administration, the requirements for review by OMB have evolved from a relatively simple analysis of costs to the comprehensive benefit-cost analyses required for the current Regulatory Impact Analyses.").

[5] *See* Richard B. Stewart, *Models for Environmental Regulation: Central Planning Versus Market-Based Approaches*, 19 B.C. ENVTL. AFF. L. REV. 547, 548 (1992) ("Because the polluter is not confronted with the need to pay for this

externalities, where private parties fail to account for the consequences of their decisions on third parties. Unless some institution—such as the tort system or an environmental rule—can "internalize" these effects, externalities result in inefficiency and waste.[6]

The second important insight builds from the concept of market failure to derive a normative standard for the optimal stringency of a potential environmental regulation. The level of environmental quality to be pursued is the one that would exist in the absence of a market failure. Under this approach, the appropriate level of regulation is not one that maximally limits environmental risk, but instead one that balances the environmental harms from an activity against the benefits of that activity and the costs of control.[7]

The final insight again builds from the concept of market failure and urges regulators to use tools that most directly address the failure in question, typically through the use of a market-based mechanism such as a pollution fee or a cap-and-trade system.[8] The basic idea is that the government can use policy to ensure that private actors face the correct price for their decisions, which includes the costs that are borne by third parties. Once prices accurately reflect the wide range of consequences from people's decisions, private actors seeking to maximize their individual well-being will also make decisions that are socially desirable. [9]

These general insights into environmental policy can be applied to a range of specific regulatory contexts. For example,

degradation, he or she produces more degradation than society as a whole desires.").

[6] *See id.* at 548 (explaining that environmental degradation is a type of externality that can be addressed through government regulation).

[7] *See* RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH 12 (2008).

[8] *See generally* Robert B. McKinstry Jr., *Putting the Market to Work for Conservation: The Evolving Use of Market-Based Mechanisms to Achieve Environmental Improvement in and Across Multiple Media*, 14 PA. ST. ENVTL. L. REV. 151 (2006) (describing a variety of market-based tools for reducing environmental harm).

[9] *See* Nathaniel O. Keohane, Richard L. Revesz & Robert N. Stavins, *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313, 314 (1998) ("At least in theory, market-based instruments minimize the aggregate cost of achieving a given level of environmental protection, and provide dynamic incentives for the adoption and diffusion of cheaper and better control technologies.").

climate change can be understood as one massive global market failure; the problem is that private actors who emit greenhouse gases do not face the social costs of those emissions, which are borne by people around the world and in future generations.[10] The socially desirable amount of greenhouse gas emissions is not zero, but rather the amount that would occur were private actors to face the social costs of emissions. And the best tool to reach the socially desirable level of emissions would be carbon pricing, either in the form of a carbon tax or a cap-and-trade system.[11] Similar logic can be applied to many other environmental questions, from interstate air pollution to non-point-source water pollution.

Of course, the economic perspective is not the only way to approach environmental decisionmaking and other normative views that focus on rights, justice, harm, or intrinsic environmental value exist.[12] Indeed, neither EPA nor the relevant statutes endorse the economic perspective as providing the exclusive normative lens through which environmental policy should be understood. Nevertheless, many statutory provisions in the major environmental statutes do acknowledge the importance of evaluating rational tradeoffs when engaging in regulatory decisionmaking, and executive orders that have been in place since the Reagan administration also require that agencies balance the costs and benefits of regulation.[13] EPA itself has built out considerable capacity to engage in economic analysis of its decisions and, where it is given discretion by statutes, has often favored flexible regulatory approaches in line with the insights derived from the economic perspective.

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[10] *See* Clara Changxin Fang, *Carbon Pricing: Correcting Climate Change's Market Failure*, 11 SUSTAINABILITY 162 (2018) ("The heart of the climate change problem is market failure: a consequence of the price of goods not reflecting their true cost to society.").

[11] *See id*. ("A proven method to correct this market failure is putting a price on carbon emissions. . . . The added price makes carbon-intensive goods and activities more expensive, while carbon-efficient goods and activities become more competitive.").

[12] *See, e.g.*, PAUL W. TAYLOR, RESPECT FOR NATURE: A THEORY OF ENVIRONMENTAL ETHICS 13 (25th anniversary ed. 2011) (advancing a "life-centered" theory of environmental ethics); *see also* MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT 2 (2d ed. 2008) (contrasting an economic approach that finds instrumental value in nature with an ethical approach that finds nature intrinsically valuable).

[13] *See* Exec. Order No. 12,291, 3 C.F.R. 127 (1982); Exec. Order No. 12,866, 3 C.F.R. 638 (1994).

B. *Opposition and Reconciliation*

The longstanding relationship between economics and environmental decisionmaking is not without detractors. In the first decades after the major environmental laws were adopted, the role of implementation often fell to Republican administrations during a period of divided government that saw Republicans in charge of the White House for all but four years in the period from 1968 to 1992. During this time, the language of economics was sometimes deployed as a shield against environmentalists and those in Congress who argued in favor of more stringent environmental protection.[14] This was especially the case during the Reagan administration, with its use of cost-benefit analysis and regulatory review by the White House's Office of Information and Regulatory Affairs (OIRA) to purse an anti-regulatory agenda.[15] In part because of these experiences, many environmentalists gained a deep suspicion about the value of economics for environmental policy making.

In our 2008 book, *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health*, Richard L. Revesz and I document how the failure of environmental groups to participate in debates over how best to conduct cost-benefit analysis had allowed this tool to become dominated by anti-regulatory interests.[16] Shortly after *Retaking Rationality* was published, we founded the Institute for Policy Integrity at New York University School of Law in part to work with environmental groups to show that, when done correctly, economic analysis often reveals that strong environmental protections are justified.

When we founded Policy Integrity, Revesz and I could not have known the degree to which the Obama administration would place economics at the heart of its environmental regulatory agenda, ultimately moving forward with a set of policies that, more than any prior administration, demonstrated the true potential of economics to lead to strong, wise environmental policies. In rules to require better fuel economy from automobiles, cut interstate air pollution, clean up the nation's waters, and reduce greenhouse gas emissions from power plants, the Obama administration showed how environmental protection can deliver massive net benefits for the

14 *See* Revesz & Livermore, *supra* note 7, at 24–27.
15 *See id.*
16 *See id.* at 9.

American people.[17] Often, the Obama-era EPA reached for the most flexible methods allowable under the relevant statutes, for example in its Good Neighbor Rule on interstate air pollution,[18] which creates as expansive a trading system as possible, given constraints imposed by prior court decisions.[19] The Obama administration also engaged in important efforts to improve cost-benefit analysis methodology, most significantly through an interagency taskforce that convened a group of experts across the government to generate a social cost of carbon value to be used when evaluating the benefits of rules that reduce greenhouse gas emissions.[20]

The years of the Obama administration marked a major turning point in the attitude of many environmentalists to economics. Seeing how cost-benefit analysis could justify strong environmental protection and market-based mechanisms could achieve impressive environmental results, many groups have come to recognize the value of economics for environmental decisionmaking.[21] Rather than reflexively opposing the use of cost-benefit analysis, many major environmental groups began to take an active role in helping to shape the methodology, creating a more diverse set of voices on

[17] *See* ISAAC SHAPIRO, ECON. POLICY INST., THE COMBINED EFFECT OF THE OBAMA EPA RULES 1–5 (2011), https://www.epi.org/files/2011/BriefingPaper327.pdf (finding the combined net benefits of EPA rules finalized under Obama range from $10 billion to $95 billion a year).

[18] *See* Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208, 48,272 (Aug. 8, 2011) (to be codified at 40 C.F.R. pts. 51, 52, 72, 78, and 97) ("[T]his approach provides the most flexibility for sources while meeting the Clean Air Act requirements and protecting public health. As a result, potential innovations and resulting cost savings are more likely to be found and implemented.").

[19] *See generally* Bryan Dooley, Comment, EME Homer City Generation v. EPA*: The Search for Meaningful Regulation of Interstate Pollution Under the Clean Air Act*, 14 MINN. J.L. SCI. & TECH. 893 (2013) (discussing the challenging legal precedents limiting EPA's regulation of interstate air pollution).

[20] *See* John H. Cushman Jr., *Government Auditors Say 'Social Cost of Carbon' Is by the Book*, INSIDECLIMATE NEWS (Aug. 26, 2014), https://insideclimatenews.org/news/20140826/government-auditors-say-social-cost-carbon-book (finding the interagency taskforce work "obsessively" adhered to "the rules of the regulatory road, consulting outside experts to double-check its work").

[21] *See* Michael A. Livermore, *Can Cost-Benefit Analysis of Environmental Policy Go Global?*, 19 N.Y.U. ENVTL L. J. 146, 153 (2011) ("[W]ith the embrace by the Obama Administration of cost-benefit analysis—coupled with that Administration's aggressive regulatory moves in several areas—the link between cost-benefit analysis and an antiregulatory agenda may be weakening.").

methodological questions that had previously been dominated by anti-regulatory interests.

C. *Developments Under Trump*

If the Obama administration helped demonstrate how an environmental agenda informed by faithful application of the economic perspective might look, the Trump administration has provided a clear object lesson in the terrible environmental consequences that can arise when the insights of economics are flagrantly ignored. On a wide range of regulatory matters, the Trump administration has attempted to reverse Obama-era rules that were very strongly justified on cost-benefit grounds.[22] In these efforts, the Trump EPA has purported to engage in economic analysis. But those analyses have been so transparently flawed that they can be interpreted as an implicit repudiation of EPA's longstanding view that economic analysis has something valuable to offer environmental decisionmaking.[23]

There are many egregious examples, which have been deconstructed by the dedicated staff at Policy Integrity in numerous public comment submissions and legal briefs. One key example helps illustrate the point. In one of its most consequential environmental rulemakings, the Obama administration adopted standards for hazardous air pollutants (HAPs) from electricity generating units.[24] As part of the rulemaking process, the Obama EPA conducted a cost-benefit analysis of the proposed rule, finding that the benefits of the rule—mostly in the form of reduced mortality risks—massively outweighed its costs.[25] This analysis was based on

[22] *See* Juliet Eilperin & Darla Cameron, *How Trump is Rolling Back Obama's Legacy*, WASH. POST. (Jan. 20, 2018), https://www.washingtonpost.com/graphics/politics/trump-rolling-back-obama-rules/?utm_term=.2b95194fa444 (detailing the Trump administration's reversal of Obama administration regulations).

[23] *See* Dan Farber, *How Trump Officials Abuse Cost-Benefit Analysis to Attack Regulations*, WASH. MONTHLY (Jan. 9, 2019), https://washingtonmonthly.com/2019/01/09/how-the-trump-administration-abuses-cost-benefit-analysis-to-attack-regulations/ ("Call it cost-cost analysis: to justify getting rid of regulations they dislike, Republicans have decided to systematically ignore their benefits.").

[24] *See* National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9304 (Feb. 16, 2012) (to be codified at 40 C.F.R. pts. 60 and 63).

[25] *See id.* at 9306 ("The benefits of this rule outweigh costs by between 3 to 1 or 9 to 1 depending on the benefit estimate and discount rate used. The co-benefits

methodologies that are outlined in the relevant guidance by OIRA, and EPA's approach was consistent with longstanding agency practice.[26]

Upon taking over at EPA, Trump administration political appointees began moving forward with efforts to undermine the HAP rulemaking, and have recently published a rescission of the Obama EPA's finding that it was "appropriate and necessary" to regulate HAP emissions from power plants.[27] To support its decision, the Trump EPA revisited the Obama EPA's economic analysis.[28] Facing a rule that was overwhelmingly justified from a cost-benefit perspective, the Trump EPA decided to simply ignore the largest category of quantified benefits, which were associated with reductions in premature mortality from a decline in particulate matter emissions that resulted from the application of the HAP-reducing technology.[29]

The decision to ignore these "co-benefits" has no foundation whatsoever in economic logic, and so the administration put forward a variety of legal make-weight arguments to suggest that it is

are substantially attributable to the 4,200 to 11,000 fewer PM2.5-related premature mortalities estimated to occur as a result of this rule.").

[26] *See generally* Kimberly Castle & Richard Revesz, *Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations*, 103 MINN. L. REV. 1349, 1432 (2019).

[27] *See* National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding, 84 Fed. Reg. 6739 (Feb. 28, 2019) (to be codified at 40 C.F.R. pt. 63); *see also* Stuart Parker, *MATS Proposal Spurs Legal Debate On Co-Benefits, Air Toxics Rule's Fate*, INSIDE EPA (Mar. 22, 2019), https://insideepa.com/daily-news/mats-proposal-spurs-legal-debate-co-benefits-air-toxics-rule%E2%80%99s-fate ("EPA's proposal to scrap the Obama-era finding that its power plant air toxics rule was 'appropriate and necessary' while leaving the overall rule in place is spurring debate over expected legal challenges to the plan.").

[28] Press Release, EPA, EPA Releases Proposal to Revise MATS Supplemental Cost Finding and "Risk and Technology Review" (Dec. 28, 2018), https://www.epa.gov/newsreleases/epa-releases-proposal-revise-mats-supplemental-cost-finding-and-risk-and-technology.

[29] *See* Brady Dennis & Juliet Eilperin, *EPA to Make it Harder to Tighten Mercury Rules in the Future*, WASH. POST (Dec. 28, 2019), https://www.washingtonpost.com/energy-environment/2018/12/28/epa-make-it-harder-tighten-mercury-rules-future/?utm_term=.556beb18ff69 ("[T]he change would prevent regulators from calculating positive health effects—known as 'co-benefits'—that come from reducing pollutants other than those being targeted. The shift could have implications for public health protections across the federal government, experts said.").

constrained from considering co-benefits. The problem with these arguments is that there is a long history of EPA considering co-benefits, and no court has ever found this to be problematic.[30] Indeed, where EPA and other agencies have failed to account for the indirect effects of their rules, courts have frequently found the resulting decisions to be legally inadequate.[31] Consideration of co-benefits is also explicitly encouraged in the relevant guidance by EPA and OIRA.[32]

EPA's misuse of cost-benefit analysis in this and other cases reanimates the specter of economic analysis as an anti-regulatory cudgel. By openly manipulating cost-benefit analysis in its HAP rule and elsewhere, the Trump administration expresses hostility toward the enterprise of rational, economically informed regulatory decisionmaking. Future administrations of both parties may be hard-pressed to justify relying on economic analyses that cut against the interests of powerful factions within their parties, given this administration's clear precedent of flouting of established methodologies. When business interests in a future Republican administration urge a deregulatory action that is not justified on cost-benefit grounds, they can easily point to the HAP rule and other instances where a friendly administration happily violated established approaches to reach the politically desired results. And in future Democratic administrations, constituents of that party may legitimately ask why it makes sense for only one of the two parties to limit its options when pursuing its political goals.

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[30] *See* Castle & Revesz, *supra* note 26, at 1361 ("Courts . . . have long held that when a rule's justification includes economic analyses, agencies may not ignore important costs or benefits, whether the effect is direct or ancillary.").

[31] *See* Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 956 F.2d 321, 323 (D.C. Cir. 1992) (holding NHTSA failed to consider whether higher fuel economy standards would cause carmakers to produce smaller, less safe cars); *see also* Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1227 (9th Cir. 2008) (holding NHTSA failed to monetize the value of carbon emissions in setting fuel economy standards).

[32] *See* EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 11–2 (2010) ("An economic analysis of regulatory or policy options should present all identifiable costs and benefits that are incremental to the regulation or policy under consideration. These should include directly intended effects and associated costs, as well as ancillary (or co-) benefits and costs."); *see* OFFICE OF MGMT. & BUDGET, CIRCULAR A-4: REGULATORY ANALYSIS 26 (2003) ("Your analysis should look beyond the direct benefits and direct costs of your rulemaking and consider any important ancillary benefits and countervailing risks.").

Conclusion

The contemporary moment is a perilous one for the future of economics and environmental decisionmaking. Despite its long history and many substantial successes, there is no guarantee that economic analysis will always have a special place at EPA. This administration has aptly shown that there are at least some political actors who are more than willing to manipulate, and even jettison, economic analysis. There is still plenty of time for resistance, and if Congress, the courts, and the public at large reject this move, then it will stand as an object lesson to future administrations that might seek to replace economically informed decisionmaking with raw politics. But if the Trump administration finds that its misuse of economics is rewarded, then we can expect future administrations will be heavily tempted to follow suit.

At this fateful time, Policy Integrity convened a thoughtful panel of experts to share their thoughts on the dangers and opportunities of the current moment. Their remarks follow.

REMARKS OF MEGAN CERONSKY**

I am not an economist. I feel it's important to make that confession upfront with this audience. And even though I am not an economist, I am going to take the liberty of offering some thoughts on the very narrow topic of EPA, economics, and the environment. As a non-economist, I have to confess that I do not love economics as an art form or as an intellectual puzzle. I am interested in economics purely from the perspective of what economics can do to advance environmental protection, and what I deeply appreciate about the work of Policy Integrity is the rigor that they bring to this question and the unflagging devotion and tireless pursuit of the additional question of how can these tools be applied in a way that makes everyone better off. So, thank you all for that work.

This is a strange time in which we live. And one way to appreciate its strangeness—if you needed another one—is to actually think about this topic of EPA, economics, and environmental protection. If we go back in time ten years, that will bring us to the massive effort to pass the Waxman-Markey climate

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legislation. And in that effort to pass the Waxman-Markey climate change legislation, the Clean Air Act played the role of boogeyman.

So just to refresh your memory, a Boogeyman is a mythical evil creature that is used to scare children into behaving better. So, we said to Congress: if you do not pass this legislation, the Clean Air Act is coming—and you heard these terrified squeals around the campfires. Children were very afraid of what would happen. Waxman-Markey would offer this economically efficient, economy-wide approach. It will be market-based. We'll put a cap on emissions, there will be trading, we will get the most cost-effective emission reductions. We'll have an offsets program to get even more cost-effective emission reductions. If you do not pass this, the Clean Air Act will come and it will rain down horrible, inefficient command and control regulations upon all of you.

We did not pass the Waxman-Markey legislation. We could not convince enough conservative members of either party that they wanted to use these economically efficient market-based tools to address the major environmental issue of our time. We then spent the next six years unmasking the Boogeyman—who was, as it turns out, reasonably cute and cuddly, or at least very keen on efficient, market-based approaches to address greenhouse gas emissions.

The two major climate pollution standards put in place under the Obama administration addressed the two major sectors in terms of emissions: transportation and the power sector. You had the Clean Car Standards and the Clean Power Plan, and EPA applied all of its ingenuity to this question of how can we design these frameworks to actually employ efficient, market-based frameworks to get the emission reductions we need in a way that is as cost-effective as possible? The Clean Car Standards, reducing greenhouse gas emissions from vehicles—this was designed as a trading program. Effectively the standards involve compliance averaging and trading credits for things that cannot be measured at the tailpipe but that reduce greenhouse gas emissions. The Clean Power Plan, aimed at reducing greenhouse gas emissions from power plants, was based on flexible emission reduction strategies and implemented in the context of trading programs at the state level (if the state so chose), either rate-based trading programs or, to come full circle, a cap-and-trade program at the state level.

So, if we move forward to today, today we are in the middle of two public comment periods. This administration has put forward a proposal to roll back the Clean Car Standards for model years 2020

onwards. The auto industry has not publicly sought this rollback. They instead have talked about how they want more market-based flexibility—what they would like is more credits for the things that you can do to reduce emissions that they argue are not currently reflected in the program. For example, the auto manufacturers might say something about how we could put on this technology that is going to reduce traffic accidents, and when we reduce traffic accidents, we reduce traffic jams, and when we reduce traffic jams, then we reduce emissions—and so we want credits for technologies like this.

The Trump administration has not only failed to propose additional flexibilities and market-based mechanisms under this program, they have actually proposed taking some of the core flexibilities out. Part of the Clean Car Standards is focused on reducing emissions of highly potent greenhouse gases from the air conditioning systems in cars either by trading the actual refrigerants that you use for ones that are less potent greenhouse gases or by reducing the leaks wholesale. That framework has been strongly supported by auto manufacturers because it allows them to find the most cost-effective ways to reduce greenhouse gas emissions from vehicles—everybody's goal. Perhaps even more remarkably, in addition to trying to pull that framework out of the program, the Trump administration has said these very disparaging things about having a flexible regulatory framework at all. So, that's what's happening in the context of the car standards.

The second regulatory proposal that stakeholders are now providing public comment on is the proposal to replace the Clean Power Plan. As most or all of you remember, in the Clean Power Plan the best system of emission reduction to reduce greenhouse gas emissions from existing power plants was determined to be a combination of improving the heat rates or the efficiency of coal-fired power plants in combination with shifting generation from higher emitting generation sources to lower emitting generation sources—because you do not care how your electricity was made as long as it is "in" the outlet when you need it. This basically entailed a shift from coal-fired power generation to gas-fired power generation and from coal- and gas-fired power generation to renewable generation. That is of course the framework that was actually being used by power companies and states on the ground to get reductions not just of greenhouse gas emissions, but also of other pollutants from the power sector. And then in that

context, EPA said to the states, here are the emission reductions we need you to get. You can do this using a rate-based trading program, or you can do this with a mass-based trading program, a cap-and-trade program. Now, EPA proposes to find that the best system of emission reduction—that's the statutory language—cannot involve an approach that is not based on a physical or operational change to the power plant itself, and has proposed to find that the best system of emission reduction under their new statutory interpretation is just the heat rate improvements at the coal fire power plants, if the state finds that any of those look appealing on any timeframe the state chooses to propose. So, let's leave aside the unlawful failure of this proposal to actually identify a best system of emission reduction or to meaningfully address the danger to human health and welfare that is posed by greenhouse gas emissions from existing power plants, as they are obligated by the Clean Air Act to do. Let us also leave aside the question of whether or not their new interpretation of the statute actually precludes a system like the Clean Power Plan or an analogous system. Let's focus on the fact that this administration is making the argument voluntarily that the Clean Air Act does not allow the use of economically efficient, market-based, flexible frameworks under the part of the Act that will likely provide the foundation for climate mitigation policies for many years into the future—until that wonderful time when Congress acts.

This is kind of remarkable. This administration will end soon, but the outcome of the coming litigation over this new proposed interpretation of the Clean Air Act could shape the nature of climate policy for many years into the future.

Now, I would like to make what I think is a fairly unremarkable argument—that this idea of how you can achieve emission reductions using averaging, using trading, using these flexible market-based approaches, is the greatest gift that economics has given to environmental protection. In doing so, you have a system that is flexible for the regulated sources. You ensure that you're getting the most cost-effective emission reductions, and because you can get emission reductions more cheaply, you can actually get more emission reductions and more environmental protection. And I'm deeply grateful that this innovation came before the onset of the initial serious attempts to mitigate climate change, a problem that is particularly well-suited to this approach because of the large number of sources of emissions, because of the need to provide certainty and

a market-based regulatory signal for the development of innovations in emission reductions, because of the scale of the emission reductions that need to be achieved, because of the deep interconnectivity between fossil fuels and the world economy. And because of the very important fact that unlike other pollution problems, every ton of greenhouse gas that is avoided has the same effect in terms of mitigation of climate change, no matter where you are reducing it (if we leave aside airplanes). So, my gratitude to the economists who came up with these ideas, and my gratitude to the conservative Republicans who put forward these ideas initially as policy frameworks. But remarkably, in this strange world that we live in, we have a Republican administration rolling back market-based, economically efficient environmental protections and replacing them with less flexible, command and control frameworks. And we have these two competing visions of what is possible under the Clean Air Act, and these visions are swiftly heading to court.

One vision is a return to command and control, and actually making the Clean Air Act the Boogeyman that we said it was back in the Waxman-Markey days. Under that vision, should it actually become ensconced in the law, which is not certain—these cases could decide that that's one possible approach, and it is okay for EPA to have done it this time, and EPA could take a different approach in the future—but if that approach actually becomes ensconced in the case law as the only possible way to do this, we are going to be left with a deeply non-ideal policy tool going forward. If we think about the best system of emission reduction for the power sector in the context of an administration that was actually interested in fulfilling both the law and its moral duty to address climate change, we would be looking at a highly constrained set of options. Let's take a coal plant. Let's co-fire with a bunch of natural gas. Let's co-fire with 100 percent natural gas. Let's put on carbon capture and sequestration. We can reduce emissions under that framework, but it is not nearly as flexible or cost-effective as the alternative. The alternative is the idea that under the Clean Air Act, the best system of emission reduction can actually mirror the way that the power sector operates in practice—the ramping up and down of different generation sources, the flexibility in terms of who is generating electricity at any one point in time, and optimizing that generation to reduce emissions.

That framework utilizes the policy tools that economics has given us to achieve emission reductions in a way that is cost-effective, flexible, and as efficient as possible. Now, thanks to the market forces that are accelerating the deployment of lower emitting generation in the power sector and to some really clutch tax credits (in retrospect), we are securing emission reductions in the power sector right now, regardless of what this administration does. But what we stand to lose is the potential to achieve the emission reductions that we are going to need going forward in a way that is flexible, efficient, and cost-effective. That would be a terrible loss, and the antithesis of all of the incredible work that the folks at Policy Integrity and others like them have been doing to try to develop environmental policy in a way that is as smart, thoughtful, cost-effective, and as environmentally effective as possible.

REMARKS OF RICHARD MORGENSTERN[***]

EPA's capacity to perform economic analyses of environmental policies and regulations has expanded dramatically over the years. At last count, the Agency employed almost fifty Ph.D. economists and hundreds more with Master's level training in the field.[33] In addition, EPA routinely draws on many hundreds more economists in academia, think tanks, and consulting firms. Unsurprisingly, the Agency's economics capacity has grown in parallel with the dramatic expansion of the academic field of environmental and natural resource economics, including the development of new analytic techniques and the availability of substantial new data on both the costs and benefits of environmental regulation.

It's widely believed that EPA's economics capabilities are rooted in the Reagan administration, particularly in the requirements under Executive Order (E.O.) 12,291 to prepare a Regulatory Impact Analysis (RIA) for major rules and to consider the results in decision making (consistent with statute).[34] While E.O. 12,291 clearly sowed a revolution in economic analysis at the Agency, serious history buffs will recognize that's not the full story. In the Agency's early years, there was extensive analysis of the economic

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33 *See* Interview with Al McGartland, Dir., EPA Nat'l Ctr. for Envtl. Econ. (Sept. 2018).

34 *See* Exec. Order No. 12,291, 3 C.F.R. § 127 (1982).

impacts and cost-effectiveness of new regulations.[35] Much of this work was driven by the Agency's Policy Office and reflected, in large part, Congressional concerns about local job losses and plant closings. Early economic incentive approaches, such as the "bubble policy" and "offset trading," were introduced during the Carter years. These measures allowed sources to trade pollution rights in pursuit of lower cost emissions reductions. In a parallel but separate path, the Agency's Office of Research and Development (ORD) was beginning research on benefits analysis, with an emphasis on stated preference measurement techniques.

Many remember the pockets of moral resistance to benefit cost analysis both inside the Agency and out, as well as the intense debates about the fate of E.O. 12,291 in the early Clinton years. Should the E.O. be replaced with a milder, gentler version that softened the role of economics? Should it be repealed altogether? In the end, E.O. 12,866, which recently passed its twenty-fifth anniversary, emerged as a relatively modest revision of its predecessor, with slightly greater emphasis on equity and transparency.[36]

Another widely held misconception about EPA's economic analyses is that they serve as a strong unifying force for the Agency's disparate programs in air, water, waste, pesticides, and toxics. While the Agency has issued detailed cross-program guidance on the conduct of RIAs consistent with consensus economic practices, and some early 'Cost of Clean' studies did attempt to create broad-scale estimates of the costs of environmental protection, the last of those comprehensive studies was completed more than thirty years ago.[37] In fact, there are and always have been major differences in both the conduct and use of economics across Agency programs. Although critics abound on all sides, the Air office is the acknowledged EPA leader in the use of economics, and

[35] *See* RESOURCES FOR THE FUTURE, ECONOMIC ANALYSES AT EPA: ASSESSING REGULATORY IMPACT ix (Richard D. Morgenstern, ed. 1997); *see also* Exec. Order No. 12291, 46 Fed. Reg. 13,193 (Feb. 17, 1981).

[36] *See* William F. West, *The Institutionalization of Regulatory Review: Organizational Stability and Responsive Competence at OIRA*, 35 PRESIDENTIAL STUD. Q. 76, 81 (2005) ("[A]lthough the Clinton order sought to address alleged problems in the review process, its departures from E.O. 12291 were relatively modest in the final analysis.").

[37] *See, e.g.*, EPA, ENVIRONMENTAL INVESTMENTS: THE COST OF A CLEAN ENVIRONMENT (1990), https://www.epa.gov/sites/production/files/2017-09/documents/ee-0294a-1_acc.pdf.

has developed the most sophisticated analyses since at least the 1980s when Agency and academic economists pioneered in the estimation of the particulate matter (PM)-induced damages to human health. Even as the research has been refined over the years, PM mortality remains the largest single benefit category by far in EPA's current RIAs.[38]

Beyond the requirements for economic studies, E.O. 12291 also established a formal review role for the Office of Management and Budget (OMB). This role was reaffirmed in the Clinton E.O., albeit with requirements for greater "sunlight" in the process. As my RFF colleague Art Fraas and I have shown in an analysis covering the period 1997–2012, under Republican Administrations, OMB has tended to focus more on uncounted costs at both the firm and societal level, while uncounted benefits of various types have often been given greater emphasis in Democratic years.[39]

The business community, especially some of the larger trade associations, has long taken an interest in RIAs, and often critiqued them as part of the formal notice-and-comment process. In some cases, they have even conducted independent economic studies of their own which they have entered into the record. In contrast, the environmental community has been somewhat late to the economics party. That began to change in a major way in the early 2000s.[40] Most major environmental groups now have economists on staff. Arguably, Michael Livermore and Richard Revesz's 2008 analysis and embrace of many aspects of benefit cost analysis played a valuable role in the evolution of thought about the role of economics

[38] *See, e.g.*, EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT FROM 1990 TO 2020 (2011), https://www.epa.gov/sites/production/files/2015-07/documents/fullreport_rev_a.pdf ("The estimated relationship between particulate matter exposure and premature mortality is one of the most important parameters in the overall quantified and monetized benefit estimate for this study."). The benefits from reducing lead in gasoline, drinking water and other sources is also a very large benefits category used by EPA in support of regulation. Extensive economic analysis on lead benefits was done by economists both inside and outside the Agency.

[39] *See* Art Fraas & Richard D. Morgenstern, *Identifying the Analytical Implications of Alternative Regulatory Philosophies*, 5 J. BENEFIT COST ANALYSIS 131, 141 (2014).

[40] The exception is the Environmental Defense Fund, which had at least one economist on staff as early as the 1980s. *See* Charles F. Wurster, *Cap and Trade: Economic Efficiency and Reduced Emissions*, ENVT'L DEF. FUND BLOG (Aug. 19, 2009), http://blogs.edf.org/climate411/2009/08/19/cap-and-trade-economic-efficiency-and-reduced-emissions/.

in environmental regulation.[41] As we muddle through the Trump deregulatory efforts, some of the economic analyses that were initially controversial in the environmental community are now critical to the defense of key rules, especially those related to air and climate issues.

Established practices for regulatory analysis are under attack in the Trump administration, as a broad array of changes are being proposed. Many of these changes are troubling to a card-carrying economist like me who supports the net-benefit framework. In one sense, it looks like we're returning to the 1970s because of the heavy focus on costs and limited attention to benefits. In the 1970s, the cost emphasis derived from our limited knowledge about regulatory outcomes. Now that we have a lot more information about such outcomes, including, in many cases, credible retrospective studies, it is wrong to ignore or downplay that information.

I will mention two particularly troubling actions currently underway: scaling back the role of ancillary or co-benefits[42] and the arbitrary revisions of the social cost of carbon (SCC).[43] Existing Agency and OMB guidance reflects the broad consensus within the economics community regarding the consideration of ancillary benefits within RIAs. Specifically, OMB guidance states that "[a]nalytic priority should be given to those ancillary benefits and countervailing risks that are important enough to potentially change the rank ordering of the main alternatives in the analysis. . . . Like other benefits and costs, an effort should be made to quantify and monetize ancillary benefits and countervailing risks."[44] While one can argue for rigorous assessment of more cost-effective means of achieving the ancillary benefits, it is troubling to see an Administration that claims to support economics to propose

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[41] *See generally* RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH (2008).

[42] *See* Derrick Z. Jackson, *EPA's Plan to Ignore Co-Benefits Will Cost American Lives*, UNION OF CONCERNED SCIENTISTS BLOG (Apr. 30, 2019, 3:40 PM), https://blog.ucsusa.org/derrick-jackson/epas-plan-to-ignore-co-benefits-will-cost-american-lives.

[43] *See* Brad Plumer, *Trump Put a Low Cost on Carbon Emissions. Here's Why it Matters*, N.Y. TIMES (Aug. 23, 2018), https://www.nytimes.com/2018/08/23/climate/social-cost-carbon.html.

[44] *See* U.S. OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, at 26 (Sept. 17, 2003), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

arbitrarily limiting the consideration of ancillary benefits, as they have done in recent regulatory actions.[45]

A similar story applies to the SCC. The Trump Administration has argued that Obama-era regulators erred by using too low a discount rate, thereby giving greater weight to future benefits, and by erroneously including non-U.S. benefits in the calculations.[46] Clearly, the rationale for including non-U.S. benefits is part of a global strategic view that has not been embraced by the Trump Administration. The revised 2020 values for the SCC of one to six dollars per ton, depending on the discount rate, three percent and seven percent, respectively, represent a dramatic downward reduction of eighty-seven percent to ninety-seven percent from the previous central value of forty-five dollars per ton for 2020 at a three percent discount rate (all 2011 dollars).[47] The fact that the earlier numbers had been subject to extensive peer review and that the revisions were made without such review raises obvious questions about the legitimacy of the new numbers.

Finally, I want to comment briefly on three specific regulatory actions: Corporate Average Fuel Economy Standards,[48] the withdrawal of the Clean Power Plan,[49] and the draft of the proposed replacement rule, the Affordable Clean Energy Standard.[50] Each one

[45] *See* Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process, 83 Fed. Reg. 27524 (proposed June 13, 2018) (to be codified at 40 C.F.R. ch. I). Most recently, in December 2018, EPA proposed revision to the mercury air toxics rule that severely limits consideration of the ancillary benefits. *See* Kathiann M. Kowalski, *EPA Proposal Would Put Federal Mercury Rules on Shakier Legal Ground*, ENERGY NEWS NETWORK (Jan. 10, 2019), https://energynews.us/2019/01/10/national/epa-proposal-would-put-federal-mercury-rules-on-shakier-legal-ground/.

[46] *See* Plumer, *supra* note 43.

[47] *See* Richard Newell, *Unpacking the Administration's Revised Social Cost of Carbon*, RESOURCES (Oct. 10, 2017), https://www.resourcesmag.org/common-resources/unpacking-the-administrations-revised-social-cost-of-carbon/.

[48] *See* The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42986 (proposed Aug. 24, 2018) (to be codified at 40 C.F.R. pts 85 and 86, 49 C.F.R. pts. 523, 531, 533, 536, and 537).

[49] *See* Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48035 (proposed Oct. 16, 2017) (to be codified at 40 C.F.R. pt. 60).

[50] *See* Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units, 83 Fed. Reg. 44760, 44790 (proposed Aug. 31, 2018) (to be codified at 40 C.F.R. pts. 51, 52, and 60).

of these actions involves particular economic challenges. In the CAFE revision, despite an Administration that has questioned the use of ancillary benefits, we see strong reliance on estimates of negative safety benefits to justify relaxation of fuel efficiency standards.[51] Further, the RIA gives considerable weight to a recent estimate of the rebound effect and the negative ancillary benefits associated with the additional vehicle miles traveled.[52]

In contrast, the case for withdrawing the Clean Power Plan seems to rest almost exclusively on the cost analysis. Ancillary benefits are given short shrift, despite the substantial increase in PM mortality associated with the withdrawal.

To EPA's credit, the Affordable Clean Energy Standard does include a benefits analysis based on standard Agency approaches for treatment of ancillary benefits while relying on the revised values of the SCC.[53] By my reading, the RIA would support the most stringent of the three options considered. The fact that the Agency is proposing a less stringent option which leaves a lot of foregone net benefits on the table calls into question their adherence to the welfare maximizing provisions of the E.O.s.

I've touched on a wide range of topics in the history of economics at EPA. The obvious conclusion is that we've come a long way over the past five decades, but it's still a work in progress. Whereas most of the effort over the past years has involved defending rigorous economic analysis from attacks on the left, the battlefield has now moved to defending against attacks from the right. Stay tuned!

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[51] *See* Brad Plumer, *Trump Officials Link Fuel Economy Rules to Deadly Crashes. Experts Are Skeptical*, N.Y. TIMES (Aug. 2, 2018), https://www.nytimes.com/2018/08/02/climate/trump-fuel-economy.html.

[52] *See* Ted Nordhaus & Alex Trembath, *Using Trump's Bad-Faith CAFE Standards Proposal to Better Understand Efficiency Rebound*, GREEN TECH MEDIA (Sept. 11, 2018), https://www.greentechmedia.com/articles/read/using-trumps-cafe-standards-proposal-to-understand-efficiency-rebound#gs.r1p58a.

[53] *See* EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED EMISSION GUIDELINES FOR GREENHOUSE GAS EMISSIONS FROM EXISTING ELECTRIC UTILITY GENERATING UNITS 4–7 (2018), https://www.epa.gov/sites/production/files/2018-08/documents/utilities_ria_proposed_ace_2018-08.pdf.

REMARKS OF VICKIE PATTON[****]

In 2008, Judge Betty Fletcher was reviewing a policy advanced by the George W. Bush administration that provided for very nominal improvements in fuel economy.[54] The policy action assigned a zero value to the societal stakes for mitigating carbon pollution.[55] The Department of Transportation had a responsibility to set maximum feasible standards under the relevant statute, the Energy Policy and Conservation Act, and interpret that responsibility as providing for a cost-benefit analysis. And it said, when we're looking at the societal benefits of improving fuel economy and the commensurate reductions in climate pollution, the answer is zero. We're assigning a zero value.[56] A number of advocacy groups submitted comments laying out in extensive detail the science and the economics that actually showed that you could assign a monetized value to each ton of carbon pollution that is mitigated. And this was based on years of research and analysis.[57]

Judge Fletcher looked at that record and looked at the administrative agencies' own recognition that it was carrying out its responsibility, weighing societal benefits and costs, and said, you have inappropriately put your thumb on the scale to distort your responsibility.[58] You have undervalued, in a very serious way, societal benefits and distorted your delegated rulemaking

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[54] *See* Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1181 (9th Cir. 2008).

[55] *See id.* at 1181 ("[C]alculation of the costs and benefits of alternative fuel economy standards assigns zero value to the benefit of carbon dioxide (CO_2) emissions reductions.").

[56] *See* Average Fuel Economy Standards for Light Trucks, Model Years 2008–2011, 71 Fed. Reg. 17,566, 17,638 (Apr. 6, 2006) (codified at 49 C.F.R. pt. 533) ("The agency continues to view the value of reducing emissions of CO_2 and other greenhouse gases as too uncertain to support their explicit valuation and inclusion among the savings in environmental externalities from reducing gasoline production and use.").

[57] *See, e.g.*, Union of Concerned Scientists, Comments Concerning NHTSA's Notice of Proposed Rulemaking Regarding Average Fuel Economy Standards for Light Trucks – Model Years 2008–2011 (Nov. 25, 2005), https://www.regulations.gov/document?D=NHTSA-2005-22223-1978.

[58] *See Ctr. for Biological Diversity*, 538 F.3d at 1198 ("[The agency] cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards.").

responsibility.[59] She struck that down. And that decision really catalyzed a recognition that within the framework of consideration of societal benefits and societal costs, we've got to make sure it's thorough. It's got to be extensive. It's got to be fair and fulsome and complete.[60]

And the work of Policy Integrity over the last decade has really been all about that—ensuring that as policymakers are making these really important decisions that affect American life, they're examining all of the societal benefits at stake. Since that decision in 2008, it has become a hallmark, a pillar, of reasoned decisionmaking for policymakers that you consider the climate pollution implications of your actions, and you assign a monetary value to that.

There is a body of cases and a number of major court of appeals interpreting actions affecting energy efficiency appliance standards, major federal actions under the National Environmental Policy Act, important decisions all across American life where courts of appeals have now held that this is required as part of rigorous decisionmaking. States all across the country are now looking at incorporating the consideration of climate impacts and the costs, the societal costs, of carbon pollution into their decisionmaking.[61] It's a reminder that when we think about these issues in a multidisciplinary context, when we think about economics and science and law in an integrated way, it is really powerful. It can have a tremendous impact and we've seen that impact in the actions of the current administration because that rigor, that commitment to science and economics and law, underpins a number of major policy actions that are now the subject of rollbacks. That are now the subject of change and attack. And so we've seen that judges reviewing those actions have looked at the underlying record and concluded that those rollbacks are flawed.

In February of this year, Judge Orrick in the Federal District Court in the Northern District of California enjoined the Trump

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[59] *See id.* at 1200 (finding the failure to monetize carbon pollution arbitrary and capricious).

[60] *See* Robert Reiley, *The Evolution of NEPA in the Fight Against Climate Change*, 5 PITT. J. ENVTL. PUB. HEALTH L. 1, 40 (2011) ("The courts have effectively adopted a posture that these direct and indirect effects [of climate change] must be examined.").

[61] *See generally* Kirsten H. Engel, Barak Y. Orbach, *Micro-Motives and State and Local Climate Change Initiatives*, 2 HARV. L. & POL'Y REV. 119 (2008).

administration's suspension of oil and gas methane waste prevention standards on public lands.[62] These are public and tribal lands where the Bureau of Land Management (BLM) has had modest measures in place to require the oil and gas operators really do their fair share in not wasting what is fundamentally a public resource.[63] And they took this action. Again, putting their thumb on the scale. This was a one-year suspension. And the Trump administration assigned all of the cost savings and said, we're going to suspend this for a year and we'll have cost savings for decades. And in the benefits analysis, they assigned the benefits of mitigating air pollution for one year.[64] And so Judge Orrick looked at this and said, this is again putting your thumb on the scale to distort the proper consideration of societal benefits and costs, and struck it down.[65]

You can see that rigor and transparency are resilient. That having multidisciplinary economics, law, and science underpinning these policy decisions in a rational world makes it very difficult to overturn them without a compelling analysis to support those kinds of reversals. Megan Ceronsky talked about the changes to the Clean Power Plan. One of the major aspects of the change that the current administration has proposed indicates that, in their own analysis, there will be a thousand lives lost every year as a result of this shift in policy.[66] That has engendered some reporting and some public conversation. That will also be a central aspect of the legal challenge to this reversal in policy—that the U.S. government is putting in place a shift—a radical shift—in policy that by its own admission shows that a thousand lives will be lost every year. That makes it

[62] *See* California v. Bureau of Land Mgmt., 286 F. Supp. 3d 1054 (N.D. Cal. 2018).

[63] *See* Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008 (Nov. 18, 2016) (to be codified at 43 C.F.R. pts. 3100, 3160, and 3170).

[64] *See California*, 286 F. Supp at 1069 ("BLM cannot have it both ways: either the air quality and climate benefits will be lost indefinitely and not for only one year because the Waste Prevention Rule is not going into effect, and thus industry will never incur the compliance costs, or the air quality and climate benefits are lost for only one year, and there are no reductions in compliance cost because those costs are simply delayed for one year.").

[65] *See id.* at 1070, 1076.

[66] *See* Lisa Friedman, *Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year*, N.Y. TIMES (Aug. 21, 2018), https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.

very difficult, in the face of a world where you have to undertake the real concrete analysis of the health impacts and environmental impacts of your action. And you have to make those transparent. It makes it very difficult to justify radical shifts that don't withstand that kind of scrutiny.

This is a difficult moment in American life. The actions and the debate in Washington unfolding right now really underscore that history is not preordained. We fight. We fight for history. For those of you who need a little hope at this moment, I urge you to read the interview with Justice Ruth Bader Ginsburg in the February 2018 Atlantic.[67] That is someone who has looked over the horizon for a long time and made a sustained difference and fought for change and fought for hope.

As we look over the horizon on these important issues that Policy Integrity works on and that affect American life, there are a couple of key things to note. Richard Morgenstern mentioned this debate over the retrospective review of regulation and regulatory policy. Much of that debate right now centers upon reviewing in a retrospective way, looking back at regulatory policy through the lens of excessive costs. We also need to make sure we're looking back at regulatory policy through the lens of opportunities to secure greater public health and environmental benefits. It's not just a single examination.

We also, as we look over the horizon, need to beware of regulatory reform cloaked as a Trojan horse. In the last few years, there's been a big push for regulatory reform under a bill called the Regulatory Accountability Act.[68] The Regulatory Accountability Act would require essentially trial-type hearings for regulatory agencies to adopt regulatory policies, under the guise of regulatory reform.[69] Beware the Trojan horse that is cloaked as regulatory reform.

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[67] *See* Jeffrey Rosen, *Ruth Bader Ginsburg Opens Up About #MeToo, Voting Rights, and Millennials*, ATLANTIC (Feb. 15, 2018), https://www.theatlantic.com/politics/archive/2018/02/ruth-bader-ginsburg-opens-up-about-metoo-voting-rights-and-millenials/553409/.

[68] *See* Regulatory Accountability Act of 2017, S. 951, 115th Congress (2017).

[69] *See* Sam Berger, *Trump's Regulatory Accountability Act Is a License to Kill*, CTR. AM. PROGRESS (May 9, 2017), https://www.americanprogress.org/issues/democracy/news/2017/05/09/432129/trumps-regulatory-accountability-act-license-kill/ ("Agencies would be forced to engage in endless analysis of the potential effects of their proposal and a number of alternate ones, hold time-

We also need to beware of the debate over co-benefits, which is right now one of the major debates in regulatory policy.[70] When you're mitigating the harm associated with one pollutant—for example, if you're addressing the mercury and the arsenic and the acid gases from coal-fired power plants—is it appropriate to also look at the lethal particulates that are being mitigated because of the technology that's going to be installed to reduce those other contaminants, those other air toxics? This is a huge, major debate unfolding right now in American life, and how it's resolved will have lasting consequences for the protection of human health and the environment.

There is an important case where the court looked at the inverse question, where industry was before the court saying, we are worried that EPA has established these new health-based standards for ground-level ozone, tropospheric ozone, and didn't take account of the fact that when ground-level ozone is reduced, there could be increases in skin disease because of ultraviolet radiation.[71] And the court said, yes, you have to consider all of the adverse impacts of salutary positive public policy action, and remanded that to EPA to take a look at those issues and to see if the standard needed to be adjusted in any way.[72]

It cannot be the case that we can't also take into account the co-benefits of those same sort of public policy actions. That we can't say, when we're reducing mercury and arsenic and acid gases from

consuming, trial-like proceedings to resolve any technical or scientific issue raised by industry.").

[70] *See* INST. FOR POLICY INTEGRITY, THE IMPORTANCE OF EVALUATING REGULATORY "CO-BENEFITS" (2017), https://policyintegrity.org/files/publications/Co-Benefits_Factsheet.pdf.

[71] Am. Trucking Ass'ns, Inc. v. EPA, 175 F.3d 1027, 1051 (D.C. Cir. 1999) ("Petitioners presented evidence that according to them shows the health benefits of tropospheric ozone as a shield from the harmful effects of the sun's ultraviolet rays—including cataracts and both melanoma and nonmelanoma skin cancers. In estimating the effects of ozone concentrations, EPA explicitly disregarded these alleged benefits.").

[72] *See id.* at 1053 ("[W]e can see no reason for imposing a higher information threshold for beneficent effects than for maleficent ones . . . . [W]e are remanding to EPA to formulate adequate decision criteria for its ordinary object of analysis—ill effects. We leave it to the agency on remand to determine whether, using the same approach as it does for those, tropospheric ozone has a beneficent effect, and if so, then to assess ozone's net adverse health effect by whatever criteria it adopts.").

coal-fired power plants through methods and technologies that also save lives, that that doesn't matter, that that doesn't count.

And then the final and major issue that we need to be thinking of as we look over the horizon for the next decade, is thinking about distribution of costs and benefits. There's a huge focus on aggregate, but we all know that there have been many, many communities all across America who bore the heavy burden of pollution for far too long.[73] And that matters. And that needs correcting. And the distribution of the harm associated with air pollution matters, and needs to be addressed, and needs to be counted. We also know that the costs get distributed in important ways that affect American life.

There is a transition happening in America in the coal industry. It is happening because coal-based power cannot compete with other forms of electricity. It's not happening because we're putting in well-designed public policies that save lives and ensure healthier, longer life for millions of Americans. That's not why the transition is happening. It's happening because coal-based electricity cannot compete in the marketplace.[74]

In my home state of Colorado, just a couple of weeks ago, the Colorado Public Utilities Commission approved a plan that's going to retire two coal-fired units in Pueblo, Colorado, a manufacturing town.[75] In its place will be over $2 billion of investments of large scale solar, wind, storage—the largest storage energy storage project in the country.[76] The local steel manufacturing facility, which employs a thousand people, has just negotiated a new contract with the power company for 240 megawatts of utility scale solar.[77] That is going to keep that steel mill in that community because energy is its single largest cost. The people of Pueblo are going to see billions of dollars of investments in clean energy. There will be

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[73] *See* Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619, 620 (1992) ("Poor people bear the brunt of environmental dangers.").

[74] *See* Chris Mooney, *It's The Same Story Under Trump as Under Obama: Coal is Losing Out to Natural Gas*, WASH. POST (Jan. 9, 2018), https://www.washingtonpost.com/news/energy-environment/wp/2018/01/09/its-the-same-story-under-trump-as-under-obama-coal-is-losing-out-to-natural-gas/?utm_term=.463505bf5f88.

[75] *See* Julia Pyper, *Xcel to Replace 2 Colorado Coal Units With Renewables and Storage*, GREEN TECH MEDIA (Aug. 29, 2018), https://www.greentechmedia.com/articles/read/xcel-retire-coal-renewable-energy-storage#gs.r152fc.

[76] *See id.*

[77] *See id.*

wind farms in northeastern Colorado that keep farms in people's families. There will be wind manufacturing in Windsor, Colorado and in Pueblo, Colorado that supply the wind turbines that replaced those coal units.

Coal is being out-competed by other forms of electricity. The reason this action was approved is because it's going to save ratepayers money. This transition is happening in a way that's going to save $213 million dollars for the rate payers, for the power company.[78] We have to be mindful of the distribution of the costs. Right now, President Trump is thinking about a $35-billion bailout for coal.[79] That bailout would be rate payers across America paying for the benefit of a few major coal companies.

Public policy needs to make sure that we're protecting the coal communities. Public policy needs to be mindful of the distribution so that, as we're putting in place all of these new policies and all of these new measures, we're ensuring that the coal communities are not left behind, that there's shared economic benefits like we're seeing in Pueblo, Colorado. The distribution of costs and benefits matters and we have to make sure that's part of how we are thinking about these issues going forward.

In this difficult time, I find hope as we look over the horizon to take on these new challenges, that like the past decade, where it started with a decision of one judge looking at a flawed and poorly reasoned explanation for a Bush administration action that really just refused to improve our nation's fuel economy standards. And out of that came a whole body of policy and case law and a shift in administrative policymaking that made the full consideration of public health and environmental impacts the pillar of regulatory policy and reflected in a whole set of case law and leadership at the state level. That as we look over the horizon and we take on the challenges ahead, Policy Integrity's work is building from leading economics, from dedicated scientists, from attorneys who are taking work from New York University School of Law and law schools across the country and translating it into public policy. We'll leave a nation that has greater protection for human health and the

78 *See id.*

79 *See* Kelsey Tamborrino, *All Eyes on Carbon Tax Vote*, POLITICO (July 19, 2018), https://www.politico.com/newsletters/morning-energy/2018/07/19/all-eyes-on-carbon-tax-vote-284289 (reporting the coal bailout could cost up to $35 billion).

environment that's really thoroughly anchored in and law and economics and science. Thank you for all your work.