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The Biden Administration's Approach to the Social Cost of Carbon

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As part of his comprehensive climate change agenda, President Biden convened a task force to assess the social cost of greenhouse gases. At the end of February, the task force published an interim report estimating the "cost" of carbon at approximately $52 per ton, a figure aligned with the Obama Administration's estimates, but significantly increased from the negligible cost of carbon tagged by the Trump Administration.[1] As discussed in this client alert, this report is significant because it suggests that the Biden Administration will use that social cost of carbon figure in the cost-benefit analysis supporting what is expected to be a robust regulatory regime.

Federal agencies often have significant latitude in issuing regulations under the statutes they administer. To guide the exercise of their discretion, for four decades, the White House has required agencies to analyze proposed regulations to ensure their projected benefits exceed their estimated costs. But doing so requires making assumptions, not only about monetary costs and benefits but also about the many nonmonetary benefits such as improved public health that, while sometimes difficult to quantify, are meant to accrue from federal regulation.

Cost-benefit analysis is particularly difficult in environmental policy, where complex science meets a changing world, and where risk assessments play a central role in policy decisions. For climate change, the task of cost-benefit analysis becomes even more difficult. How can a policymaker quantify the social benefits of burning one less gallon of gas, given the ubiquitous effects of climate change? Equally challenging is the task of estimating the cost of impacts from greenhouse gas emissions on a per-ton basis.

To support cost-benefit analysis in the realm of climate change policy, the "social cost of carbon" (or "SCC") represents a holistic calculation of the costs of carbon dioxide and other greenhouse gas emissions on a rate-per-ton basis. Both the Obama and Trump administrations used a social cost

[1] Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990* (February 2021) ("Interim Report").

of carbon analysis to support their regulatory goals, though they reached very different values for the social cost of carbon. The Biden Administration is poised to give the social cost of carbon an even more prominent role in its regulatory agenda.

The Basics of Cost-Benefit Analysis in Federal Regulations

Federal agencies have long been required to perform cost-benefit analyses of any "significant regulatory actions" they take. In 1981, President Reagan issued Executive Order 12291, directing agencies that "regulatory action shall not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs to society." To support that mandate, the order required every agency to submit its proposed regulations, along with a draft cost-benefit analysis, to the Office of Information and Regulatory Affairs, an office within the White House's Office of Management and Budget (OMB). In 1993, President Clinton replaced the Reagan-era order with Executive Order 12866, which, although tweaked by each new president since then, still provides the basic framework for federal regulatory cost-benefit analyses today.

The process quantifies both benefits and costs of a regulatory action in dollars, even though many benefits (and some costs) are not inherently financial, such as avoided deaths or improved water quality for recreation. To capture these kinds of benefits, regulators have developed concepts such as "quality-adjusted life years saved," which they then convert into dollars using estimates of their equivalent monetary value. These methods allow easy comparison among alternatives but require some degree of judgment in setting a monetary value for nonmonetary benefits.

Cost-benefit analysis also uses a discount rate for costs and benefits experienced in the future, which are less valuable than costs and benefits today—the further in the future such benefits will be experienced, the less valuable they are. Using a higher or lower discount rate can significantly affect the analysis of a regulation whose main benefits or costs are felt far in the future.

Cost-Benefit Analysis in the Environmental Context

Cost-benefit analysis poses particular challenges for environmental policymaking for a number of reasons:

- First, the benefits and costs of a regulation intended to protect the environment are almost never experienced by the same person. The public health benefits of reducing pollution might accrue to everyone living in a certain area, but the cost of reducing the pollution might be borne only by a handful of companies.
- Second, because the science involved in projecting regulatory benefits is complex and involves some uncertainty, it can be hard to know with certainty what a particular environmental regulation will cause or prevent. This is especially difficult because the public health and other research undergirding these analyses is not static.

- Finally, many of the benefits of environmental regulation, such as lives saved or health improvements, are hard to reduce to a dollar figure, while the costs, such as factory equipment to comply with a regulation, are typically much more concrete. The tension between monetary cost and nonmonetary benefits is reflected in environmental statutes such as the Clean Water Act, which is built around concepts such as the "best available technology economically achievable" that require the Environmental Protection Agency (EPA) to balance a technology's societal benefits with its monetary cost when prescribing certain standards.

Climate change presents a greater challenge still. Although the effects of climate change itself are ubiquitous, any individual rulemaking will target one sector under specific statutory authority. To factor in the effects of climate change, agencies must compare concrete short-term costs with less-certain long-term costs. Nevertheless, courts have held that an agency must include the economic cost of climate change in its analysis of an environmental regulation's costs and benefits.[2] As a result, agencies developing a regulation that reduces greenhouse gas emissions can claim the benefits of doing so, while a regulation that will increase them must factor in the resulting economic costs.

Because courts review whether administrative actions are "arbitrary" or "capricious," an agency's unexplained failure to fully account for an action's costs or benefits can result in the action being struck down. Challengers can argue that an agency overcounted the benefits or minimized the costs to justify its rulemaking, or that an agency counted benefits or costs that are too distant from the rulemaking to be quantified with certainty.

Due to the difficulty of cost-benefit analysis in environmental policy, there is a long line of cases involving EPA's attempts to use, or avoid, cost-benefit analysis in its environmental rulemakings. Notable examples of litigation with industry and states over cost-benefit analysis include:

- *Michigan v. EPA* (D.C. Cir. 2000): The Clean Air Act's "good neighbor provision" requires states to prevent emissions that will "contribute significantly" to other states' inability to meet air quality standards.[3] In 1998, EPA issued a rule requiring 22 states to reduce their emissions of nitrogen oxide, an ozone precursor. The rule assigned nitrogen oxide "budgets" to each state based on how much of a state's emissions could be addressed with "highly cost-effective controls"—capable of removing nitrogen oxide at a cost of $2,000 or less per ton—and allowed states to trade emissions allowances. The D.C. Circuit upheld the rule, holding that the Clean Air Act allowed EPA to decide which states were "contribut[ing] significantly" to interstate air pollution by considering which states could reduce emissions at a lower price.[4]

[2] *See, e.g.*, *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198 (9th Cir. 2008).
[3] 42 U.S.C. § 7410(a)(2)(D)(i).
[4] *Michigan v. E.P.A.*, 213 F.3d 663, 678 (D.C. Cir. 2000).

- *Whitman v. American Trucking Ass'ns* (2001): Justice Scalia wrote for a unanimous Court rejecting EPA's attempt to consider costs when setting national air quality standards for ozone and particulate matter. The Clean Air Act requires EPA to set air quality standards, "the attainment and maintenance of which … are requisite to protect the public health" with "an adequate margin of safety."[5] Justice Scalia observed, "Were it not for the hundreds of pages of briefing respondents have submitted on the issue, one would have thought it fairly clear that this text does not permit the EPA to consider costs in setting the standards."[6] The Court held that EPA must set the standards to the levels necessary to protect public health without considering cost.
- *North Carolina v. EPA* (D.C. Cir. 2008): Building on EPA's "good neighbor provision" win in *Michigan*, the Bush Administration created regional emissions budgets for certain pollutants, allocating the budgets to states by population and then allowing states to trade allowances. EPA argued that, while "capping emissions in each state would not achieve reductions in the most cost-effective manner," the regional approach would allow states to reduce pollution where doing so was cheapest.[7] The court rejected EPA's approach, holding that the Clean Air Act requires apportionment based on each state's own emissions.[8]
- *Entergy Corp. v. Riverkeeper, Inc.* (2009): The Clean Water Act requires the use of the "best technology available for minimizing adverse environmental impact" for certain discharges into water sources, including for power plants' cooling water intake structures. The Court upheld EPA's consideration of cost in issuing its rule for technology meeting that requirement, holding that the phrase "'best technology' may also describe the technology that *most efficiently* produces some good."[9]
- *EPA v. EME Homer City Generation, L.P.* (2014): Again implementing the Clean Air Act's "good neighbor provision," after its loss in *North Carolina*, EPA used a combination of states' emissions and their ability to reduce emissions cost-effectively to calculate state emissions budgets. The Court upheld EPA's rule, reasoning that strict allocations based only on states' actual emissions were impossible given the complexity of interstate air pollution. Given that EPA had no choice but to allocate in part based on another metric, cost was a reasonable choice.[10]
- *Michigan v. EPA* (2015): The Clean Air Act required EPA to study whether regulating power plants' emissions of hazardous air pollutants was "appropriate and necessary."[11] In EPA's decision that such regulation was appropriate, although it evaluated the costs and benefits of regulation, it explicitly stated that it had not considered cost in its ultimate decision. The Supreme Court vacated the rule, holding that the terms "appropriate and

[5] 42 U.S.C. § 7409(b)(1).
[6] *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465 (2001).
[7] *North Carolina v. E.P.A.*, 531 F.3d 896, 907 (D.C. Cir. 2008).
[8] *Id.* at 908.
[9] *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 218 (2009).
[10] *E.P.A. v. EME Homer City Generation, L.P.*, 572 U.S. 489, 519 (2014).
[11] 42 U.S.C. § 7412(n)(1)(A).

necessary" inherently required the consideration of cost.[12] On remand, EPA issued another decision that did explicitly consider the cost of regulation and again concluded that regulation was appropriate.[13]

As regulatory agencies continue to balance the costs and benefits of regulation addressing climate change, the challenges highlighted by these cases are likely to recur. One way to avoid prolonged and complicated litigation with respect to regulating climate change is by developing a uniform, transparent, government-wide methodology for estimating the costs of climate change, an approach first widely used by the Obama Administration.

The Social Cost of Carbon in Regulatory Decision-Making

That approach, known as the social cost of carbon, quantifies the dollar value of a policy's effect on climate change due to changes in greenhouse gas emissions. It is often calculated in four steps: first, predicting future emissions based on population, economic growth and other factors; second, modeling the future climate, including any temperature increase or sea-level rise; third, calculating the economic impact that changes in the climate are likely to have on health, agriculture, energy and the overall economy; and finally, converting future damages into their present-day value to determine the emissions' total costs to society.[14]

Because of the complexity of calculating an SCC, the result depends in significant part on the assumptions used in making the calculations. Two threshold decisions are particularly important: whether the geographic scope of impacts analyzed includes global consequences or only domestic ones and, given that the most disastrous effects of climate change could occur in the distant future, the value used as a future discount rate.

In 2008, the Bush Administration first began to incorporate the SCC into rulemakings, using estimates from academic literature to support Department of Energy, Department of Transportation and EPA regulations.[15]

After these first attempts, the Obama Administration took more significant steps to build the SCC into the regulatory regime. In 2009, OMB convened an Interagency Working Group on the Social Cost of Carbon (the IWG) to develop a single set of estimates to be applied consistently across the federal government. The Clean Power Plan, the Obama-era EPA's ambitious rule intended to

[12] *Michigan v. E.P.A.*, 576 U.S. 743, 752 (2015).
[13] Environmental Protection Agency, "Supplemental Finding That It Is Appropriate and Necessary To Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units," 81 Fed. Reg. 24,419 (April 25, 2016).
[14] Resources for the Future, *Social Cost of Carbon 101* (August 1, 2019).
[15] Government Accountability Office, *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates* (July 2014).

reduce greenhouse gas emissions from the power sector, used an SCC of about $45 per ton in the cost-benefit analysis supporting the rule.[16]

That approach changed with the Trump Administration, which in March 2017 disbanded the IWG and revoked the government-wide SCC, instead directing agencies to determine an SCC through their normal regulatory analysis, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates."[17] When the Trump Administration issued its replacement for the Clean Power Plan, the Affordable Clean Energy Rule, that rule put the SCC at between $1 and $6 per ton. The Affordable Clean Energy Rule considered only domestic impacts from climate change, excluding effects on other countries, and used a much higher discount rate, reducing the assumed present cost of future effects.[18]

Changes to the SCC value can produce vastly disparate results. For example, the Trump Administration claimed that its proposed fuel economy standards resulted in $17 billion of net *benefits*, but the same analysis using the Obama Administration SCC would have found $15 billion of net *costs*.[19] The Trump Administration's lower SCC helped it justify regulatory rollbacks that, if applying the Biden Administration's new SCC value, were much more costly than beneficial.

Social Cost of Carbon Under the Biden Administration

The Biden Administration wasted no time in returning to the Obama Administration's approach to the SCC. It reestablished the IWG on Biden's first day in office, requiring it to publish interim SCC estimates within 30 days and final SCC estimates by January 2022. The IWG released the interim estimates on February 26, 2021, pricing carbon at $51 per ton.[20]

Given President Biden's efforts to prioritize environmental and climate issues throughout his administration, the SCC will have an important role in the cost-benefit analyses supporting agencies' environmental regulations. For example, the value of avoided climate consequences will play a key role in making the case for stricter fuel economy standards, which the Biden Administration has already announced it will pursue.[21] The administration is also likely to use the SCC to justify tightened restrictions on fossil fuel extraction on public lands, on power plant emissions and in other areas.

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[16] Environmental Protection Agency, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (August 2016).
[17] Donald J. Trump, *Promoting Energy Independence and Economic Growth*, 82 Fed. Reg. 16,093 (March 31, 2017).
[18] Washington Post, *New EPA document reveals sharply lower estimate of the cost of climate change* (October 11, 2017).
[19] Tamma Carleton and Michael Greenstone, *Updating the United States Government's Social Cost of Carbon* (January 2021).
[20] Interim Report, *supra* note 1.
[21] Reuters, *Biden to order agencies to revisit vehicle tailpipe emissions standards* (January 20, 2021).

The Interim Report has already attracted scrutiny from Republicans. Senator Cynthia Lummis (R-Wy.) asked during the confirmation hearing for Brenda Mallory, Biden's nominee to lead the White House Council on Environmental Quality, about Mallory's role in Obama's SCC efforts. Senator Lummis said the Obama IWG "met behind closed doors with no public engagement to revise" the SCC, which agencies then "used to rationalize costly job-killing new regulations."[22] Twelve Republican attorneys general have also sued Biden over the SCC, arguing that it is "high enough to justify massive increases in regulatory restrictions on agricultural practices, energy production, energy use, or any other economic activity that results in the emission of such gases." The lawsuit argues that the White House lacks the legal authority to require agencies to use a government-wide SCC in their regulatory analyses.[23]

Conclusion and Implications

The Biden Administration will use its SCC estimates to shape climate change policy. It will be used as part of regulatory cost-benefit analysis, giving a boost to regulations that will reduce greenhouse gas emissions, while forcing a more fulsome cost-benefit analysis in federal action that could increase emissions. The federal SCC could also inform a carbon tax—if one were ever seriously considered. Members of Congress have already used the Obama SCC estimates as a basis for their own carbon tax proposals,[24] and the idea of a carbon tax shows signs of gaining support, including recently from the American Petroleum Institute.[25] The SCC estimate could also be used to support policy and permitting decisions with an environmental justice lens by demonstrating the significant negative impacts (the "costs") of industrial operations on human health. The Interim Report is a significant first step in laying the foundation for cost-benefit analysis in setting environmental policy, which will not be able to ignore the economic impacts of our changing climate.

[22] Senate Environment and Public Works Committee, "Hearing on the Nominations of Brenda Mallory to serve as chair of the White House Council on Environmental Quality and Janet McCabe to be Deputy Administrator of the Environmental Protection Agency" (March 3, 2021).
[23] The Hill, *12 states sue Biden over 'social cost' calculation of greenhouse gases* (March 8, 2021).
[24] Tax Foundation, *Three Carbon Tax Bills Introduced in Congress* (August 1, 2019).
[25] Wall Street Journal, *Oil Trade Group Is Poised to Endorse Carbon Pricing* (March 1, 2021).

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