August 7, 2025

To: Lee Zeldin, Administrator
Attn.: Docket ID No. EPA-HQ-OAR-2025-0124
Subject: Public Comment on EPA's Analysis of Climate Impacts in the Proposed Repeal of Emission Standards

Professors Matthew Gibson, Derek Lemoine, and Jeffrey Shrader respectfully submit the following comments to the Environmental Protection Agency regarding the agency's proposal "Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units" (Docket ID No. EPA-HQ-OAR-2025-0124). We are environmental economists at Williams College, University of Arizona, and Columbia University's School of International and Public Affairs, respectively, who are experts on the economics of climate change and regulatory policy. Between the three of us, we have published many studies on the design of environmental policy, the economic effects of climate change, how the government should weigh evidence when evaluating policy, and the effect of uncertainty on optimal responses to climate change.[1]

We are writing with comments on the regulatory impact analysis (RIA) for the proposed rule. These comments are, in brief: (1) by not including climate change impacts of the proposed rule in the RIA, the analysis arbitrarily and capriciously overlooks an important category of costs of the proposed repeal of pollution control regulation; (2) uncertainty about the impact of greenhouse gas emissions is not a sufficient reason for treating climate damages as exactly zero but is in fact an important reason to *include* nonzero climate damages; and (3) the best available evidence shows that climate change poses a threat to both public health and economic activity.

1. Failing to include climate impacts violates central principles of regulatory benefit-cost analysis

The RIA for EPA's proposed rule fails to include or monetize climate impacts. This omission is a fundamental flaw that biases the resulting analysis and should be corrected.

The RIA uses benefit-cost analysis (BCA) to evaluate the likely effects of the proposed policy. When assessing a policy using BCA, an agency should endeavor to comprehensively evaluate all relevant effects and put those effects in monetary terms.[2] Failing to include or monetize relevant

[1] For more information on our research, please see our CVs at the following links: Gibson, Lemoine, and Shrader.
[2] See, e.g., Boardman, A. E., Greenberg, D. H., Vining, A. R., & Weimer, D. L. *Cost–Benefit Analysis: Concepts and Practice* (2nd ed.). Cambridge University Press (2018): 2, which defines CBA as follows: "CBA is a policy assessment method that quantifies in monetary terms the value of all consequences of a policy to all members of society."

effects—whether costs or benefits—undercuts one of the key purposes of BCA, which is to help identify policy alternatives that deliver the highest social welfare.[3]

Excluding relevant effects also contravenes guidance from both the OMB and EPA. OMB *Circular A-4* notes that excluding costs or benefits makes BCA "less useful, and it can even be misleading."[4] EPA's own *Guidelines for Preparing Economic Analyses* states that "[a]nalysis of benefits and costs … should capture all relevant outcomes to the extent possible."[5] Climate impacts are relevant to this policy because one of the main effects will be to cause more emissions of greenhouse gases. And it is feasible to include such effects in the analysis given the long history that agencies, including the EPA, have of quantifying and monetizing climate impacts using readily available tools such as the Social Cost of Greenhouse Gases (SC-GHG; the present value of the damage caused by the emission of a unit of greenhouse gases such as carbon dioxide).

We recommend that the RIA be edited to include GHG emission estimates and place a monetary value on those emissions using an estimate of the SC-GHG consistent with the best available science and economics.

2. Uncertainty is not a sufficient reason for excluding climate change impacts

In the RIA, the EPA only briefly discusses why climate impacts are not included. Citing the OMB memo "Guidance Implementing Section 6 of Executive Order 14154, entitled 'Unleashing American Energy,'" the agency argues that climate impacts are too uncertain.[6] This argument ignores the wealth of scientific evidence on likely climate impacts, contravenes both Federal Government guidance and textbook approaches to BCA, and is logically inconsistent given that excluding climate change effects ends up treating them as if they are known with perfect certainty.

All regulatory analysis is, in part or wholly, forward-looking and therefore uncertain. This is true of BCA underlying regulations of seatbelts, workplace safety, securities regulation and agricultural markets. Indeed, the literature on climate impacts is larger than many relevant to regulatory

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[3] Office of Management and Budget. *Circular A-4: Regulatory analysis* (2003): 2: "Where all benefits and costs can be quantified and expressed in monetary units, benefit-cost analysis provides decision makers with a clear indication of the most efficient alternative, that is, the alternative that generates the largest net benefits to society." See also, Boardman, et al. (2018): 189, which lists exclusion of impacts as the first of the "major sources of error" that can arise in producing a CBA: "Three major sources of error arise during the application of CBA. First, omission errors, the exclusion of impacts with associated costs or benefits, prevent CBAs from being comprehensive."

[4] OMB *Circular A-4* (2003): 10.

[5] U.S. Environmental Protection Agency. (2024). *Guidelines for preparing economic analyses* (3rd ed., EPA Report No. 240-R-24-001). Washington, DC.

[6] U.S. Environmental Protection Agency. (2025). *Regulatory Impact Analysis for the Proposed Rule: Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units*. p. 6-6–6-7. Docket ID No. EPA-HQ-OAR-2025-0124, states that "There are significant uncertainties related to the monetization of greenhouse gases…Consistent with the memorandum titled 'Guidance Implementing Section 6 of Executive Order 14154, entitled 'Unleashing American Energy'', the EPA did not monetize impacts from changes in GHG emissions from this proposed action."

analysis, and the uncertainty is correspondingly less. Excluding regulatory impacts from analysis because they are not certain would make BCA impossible: no benefit or cost could be considered.[7]

In fact, OMB and EPA guidance emphasizes that uncertainty calls for better analysis, not ignoring uncertain values. *Circular A-4* states that "[w]hen benefit and cost estimates are uncertain … [the agency] should report benefit and cost estimates (including benefits of risk reductions) that reflect the full probability distribution of potential consequences."[8] EPA guidelines provide extensive details on how to carry out such an analysis.[9]

The agency has also not articulated why it is failing to use the tools it has developed in the past for evaluating climate impacts. In the recent "EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances," issued in 2023, the agency reported the results of a thorough analysis of climate damages. The analysis followed the guidelines discussed above including by using a Monte Carlo analysis to more fully characterize the distribution of potential climate impacts.[10] In the RIA, the agency does not provide any evidence that climate impacts have become substantially less certain since its own report in 2023.

Excluding climate impacts due to uncertainty is also illogical. By excluding the impacts, the agency is behaving as if they know *exactly* what climate impacts are: zero. For this reason, textbook discussions of BCA make clear that rather than excluding a relevant impact, the agency should endeavor to do the best job it can to provide an estimate of the impact.[11]

Such an estimate should account for how uncertainty may itself change the value of a policy proposal, as when uncertainty about a future storm surge leads a household to buy flood insurance rather than ignoring the problem. A body of academic literature indicates that uncertainty increases the SC-GHG, in part because reducing carbon emissions acts like insurance against the worst

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[7] Recognizing this fact, the courts have repeatedly found that uncertainty is not a valid reason for agencies to shirk their statutory duties; see Pub. Citizen v. Fed. Motor Carrier Safety Admin., 374 F.3d 1209, 1221 (D.C. Cir. 2004) ("Regulators by nature work under conditions of serious uncertainty, and regulation would be at an end if uncertainty alone were an excuse to ignore a congressional command"); Chamber of Commerce of U.S. v. SEC, 412 F.3d 133, 144 (D.C. Cir. 2005) ("Uncertainty may limit what an agency can do, but it does not excuse an agency from its statutory obligation to do what it can to apprise itself—and hence the public and the Congress—of the economic consequences of a proposed regulation before it decides whether to adopt the measure.")

[8] OMB. *Circular A-4*. (2003): 18.

[9] U.S. Environmental Protection Agency. *Guidelines for preparing economic analyses* (3rd ed., EPA Report No. 240-R-24-001). Washington, DC. (2024): 5-29–5-34.

[10] EPA. 2023. "Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review"'; EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances." Environmental Protection Agency. Docket ID No. EPA-HQ-OAR-2021-0317.

[11] Boardman et al. (2018): 89. "Sometimes it is not possible to find any existing quantitative evidence to predict an impact. As a prediction must be made – excluding the impact is equivalent to predicting it is zero with certainty – one can turn to logic or theory to specify its plausible range."

climate change impacts.[12] If uncertain climate impacts turn out to be severe, then reducing carbon emissions is a bet that pays off when society is otherwise poor and thus really needs the payout, whereas if uncertain climate impacts turn out not to be so bad, then reducing carbon emissions is a bet that does not pay off but society ends up in a relatively good place anyway—like buying car insurance and not getting in an accident.

Moreover, claiming that climate impacts are exactly zero stands starkly at odds with both rigorous meta-analyses of climate damages and expert judgement from academic economists who study the issue and who consistently report that climate change is—and will be—damaging to the economy.[13] And an estimate of zero is at odds with the EPA's own evaluation of likely climate impacts reported in the 2023 SC-GHG report. The agency has provided no reasoning for why it has rejected the existing scientific evidence on this issue in favor of the extreme view it presents in the RIA. As BCA guidance makes clear, when evaluating the likely impacts of a regulation, the agency should provide its best estimate of those impacts based on available evidence. For climate change damages, the evidence is clear that an estimate of 0 is unreasonable.

3. Estimates of climate change damages are higher than when original endangerment finding was made by the EPA, further strengthening the case for including climate impacts

More recent evidence on the SC-GHG indicates that it is, if anything, higher on average than when the EPA made its original Greenhouse Gas Endangerment Finding in 2009. At that time, the EPA relied on the best available science. In the 16 years since that finding, climate science and economics have advanced significantly, and the evidence for severe climate damages has only grown stronger. Any reconsideration of climate policy must account for these updated findings, which overwhelmingly reinforce the dangers of unchecked greenhouse gas emissions to public health and economic activity.

Climate Change and Public Health: At the time of the original endangerment finding, evidence on health impacts from climate change was just emerging. In 2009, Deschênes and Moretti found that both extreme heat and extreme cold events lead to immediate increases in mortality.[14] Subsequent work has shown that climate change will lead to increased mortality both in the U.S.

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[12] Dietz, Simon, Christian Gollier, and Louise Kessler. "The climate beta." *Journal of Environmental Economics and Management* 87 (2018): 258-274; Lemoine, Derek. "The climate risk premium: how uncertainty affects the social cost of carbon." *Journal of the Association of Environmental and Resource Economists* 8.1 (2021): 27-57.

[13] Howard, Peter H., and Thomas Sterner. "Methodology Matters: A Careful Meta-Analysis of Climate Damages." *Environmental and Resource Economics* (2025): 1-39; Howard, Peter Harrison, and Derek Sylvan. "Wisdom of the experts: Using survey responses to address positive and normative uncertainties in climate-economic models." *Climatic Change* 162.2 (2020): 213-232.

[14] Deschênes, O., & Moretti, E. Extreme weather events, mortality, and migration. *The Review of Economics and Statistics*, 91.4 (2009): 659–681.

and for many countries around the world.[15] Emissions of greenhouse gases thus pose a threat to public health.

Economic and Market Impacts: Research has also found larger effects on the economy. Multiple review papers summarize this large literature, much of which emerged after the original endangerment finding.[16] The academic studies cited in these studies give quantitative weight to the harms anticipated in 2009.

EPA should recognize that the scientific underpinning for regulating GHGs is stronger than ever. Any rollback of emission standards or a failure to use the SC-GHG in its RIAs would be dangerously at odds with the best available evidence.

[15] Barreca, Alan, et al. "Adapting to climate change: The remarkable decline in the US temperature-mortality relationship over the twentieth century." *Journal of Political Economy* 124.1 (2016): 105-159; Carleton, T. et al., "Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits", *Quarterly Journal of Economics* 137.4 (2022): 2037–2094.

[16] Dell, Melissa, Benjamin F. Jones, and Benjamin A. Olken. "What do we learn from the weather? The new climate-economy literature." *Journal of Economic literature* 52.3 (2014): 740-798; Carleton, Tamma A., and Solomon M. Hsiang. "Social and economic impacts of climate." *Science* 353.6304 (2016): aad9837; National Academies of Sciences, et al. *Valuing climate damages: Updating estimation of the social cost of carbon dioxide*. National Academies Press, 2017; Auffhammer, Maximilian. "Quantifying economic damages from climate change." *Journal of Economic Perspectives* 32.4 (2018): 33-52; Hogan, Dylan, and Wolfram Schlenker. "Empirical approaches to climate change impact quantification." *Handbook of the Economics of Climate Change*. Vol. 1. No. 1. North-Holland, 2024. 53-111.