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To: Office of Management and Budget, Executive Office of the President

Submitted By: Clean Air Task Force, Environmental Defense Fund, Food & Water Watch, Institute for Policy Integrity at New York University School of Law, Montana Environmental Information Center, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, Western Environmental Law Center, Wilderness Society

Subject: Comments Supporting the Widespread Usage and Recommending Updates to the Social Cost of Greenhouse Gases (Docket No. OMB-2021-0006-0001)

The undersigned organizations respectfully submit the following comments in response to the Office of Management and Budget’s call for comments, on behalf of the co-chairs of the Interagency Working Group on the Social Cost of Greenhouse Gases (“Working Group”), regarding the Working Group’s recent technical support document on the social cost of greenhouse gases.¹

The Working Group rigorously developed its existing estimates of the social cost of greenhouse gases using the best science and economics available at the time. Because those values are useful for any government decision or process with greenhouse gas implications, the Working Group should endorse the broad usage of its social cost values in all relevant government processes. At the same time, the Working Group should be guided by the latest and best available research in updating the social cost of greenhouse gas values.

Along those lines, these comments make the following suggestions:

- The Working Group should endorse the **broad application** of the social cost of greenhouse gas values in all relevant decisions and processes.
- The Working Group should bolster the justifications for focusing on **global damage estimates**.
- In light of voluminous evidence on discounting, the Working Group should apply **lower discount rates** below the current range.

¹ Our organizations may separately and independently submit other comments to this docket. This document does not purport to represent the views, if any, of New York University School of Law.

- The Working Group should **prioritize implementation of recommendations from the National Academies** based on the best available science and economics and consistent with the Group’s available resources. The Working Group should explicitly note which recommendations it cannot yet implement by January 2022 and provide its rationale.
- The Working Group should **promote better quantification**, or at least more detailed qualitative discussions, **of currently omitted damages**—including effects relevant to understanding and advancing environmental justice. The Working Group should **engage with relevant stakeholders on environmental justice**.
- Agencies should **use the Working Group’s interim social cost values** until updates are available.

1. The Working Group Should Endorse the Broad Application of the Social Cost of Greenhouse Gases in All Government Decisions and Processes with Quantifiable Climate Effects.

The social cost of greenhouse gases should be applied to any process or decision with quantifiable greenhouse gas implications. Broad application of the social cost of greenhouse gases throughout federal policymaking and processes will enable agencies and departments to identify programs or policies that cost-effectively reduce greenhouse gas emissions. This will promote rationality in federal climate policy and enable a speedy and well-managed transition to a greener economy.

Use of the social cost of greenhouse gases is particularly warranted in two broad categories of agency action in addition to rulemaking. First, use of the social cost of greenhouse gases allows agencies to capture climate effects and seamlessly compare them against other monetized economic effects. This is highly useful in assessments and determinations that require agencies to balance the beneficial and adverse impacts of proposed actions, such as in National Environmental Policy Act assessments, determinations under land-use or energy-management statutes, grant-making decisions, procurement applications, and other contexts. Second, when an agency seeks to internalize the costs of proposed actions with regard to their impact on climate change, such as through administrative penalties or mineral royalties, the social cost of greenhouse gases provides a monetized estimate of damages that can inform the applicable monetary rate. This will enable an efficient reduction in greenhouse gas emissions.

In short, the Working Group should endorse the broad usage of its social cost of greenhouse gas valuations in any decision-making, budgeting, or procurement context in which climate change impacts are a factor.²

² For more detail on these arguments, see Max Sarinsky et al., Inst. for Pol’y Integrity, *Broadening the Use of Social Cost of Greenhouse Gases in Federal Policy* (2021), which is being filed separately to this docket.

2. The Working Group Should Bolster the Justifications to Focus on Global Damages.

The Working Group’s social cost of greenhouse gases estimates properly assess damages from a global perspective. As the Interim Technical Support Document recognizes, considering global damages (as opposed to disregarding all climate effects that occur outside the physical borders of the United States) is preferable for a number of reasons, including the strategic value of spurring reciprocal action by foreign countries and the importance of capturing spillover effects to U.S. economic, health, and security interests from climate impacts occurring initially beyond the nation’s geographic borders.³ Moreover, from a purely technical perspective, the reduced-form integrated assessment models which undergird the Working Group’s social cost values are inherently globally-oriented platforms, and have not been designed to allow for an accurate extrapolation of domestic or regional costs.⁴

Though most federal courts that have examined the issue have recognized the importance of assessing climate damages from a global perspective,⁵ one court has expressed skepticism,⁶ and the previous administration’s use of an “interim domestic” social cost metric reflects the fact that some policymakers still resist the use of global values in this context. Both to minimize legal risk and to counter the flawed arguments that some parties have made in support of past domestic-only social cost estimates, the Working Group should bolster its justification for global values, including by fleshing out the legal,⁷ economic,⁸ and technical/methodological⁹ arguments as to why the U.S. strategy for promoting foreign reciprocal actions require application of the full global values.

³ For more detail on these arguments, see Jason A. Schwartz, Inst. for Pol’y Integrity, *Strategically Estimating Climate Pollution Costs in a Global Environment* (2021), which is being filed separately to this docket.

⁴ For instance, William Nordhaus, the author of the DICE integrated assessment model and a 2018 laureate of the Nobel Memorial Prize in Economic Sciences, has explicitly warned against using a domestic-only value, noting that “[t]he regional estimates [of the social cost of greenhouse gases] are poorly understood, often varying by a factor of 2 across the three models. Moreover, regional damage estimates are highly correlated with output shares.” William D. Nordhaus, *Revisiting the Social Cost of Carbon*, 114 PROCS. NATL. ACAD. SCIS. 1518, 1522 (2017).

⁵ *Zero Zone v. Dept. of Energy*, 832 F.3d 654, 679 (7th Cir. 2016); *California v. Bernhardt*, 472 F. Supp. 3d 573, 613 (N.D. Cal. 2020) (“[F]ocusing solely on domestic effects has been soundly rejected by economists as improper and unsupported by science.”).

⁶ *Wyoming v. U.S. Dep’t of the Interior*, 493 F. Supp. 3d 1046, 1081 (D. Wyo. 2020).

⁷ For example, the National Environmental Policy Act requires all federal agencies to “recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to . . . maximize international cooperation,” and instructs that all “public laws of the United States shall be interpreted and administered in accordance with the policies set forth” under NEPA. 42 U.S.C. § 4332(F).

⁸ See generally Peter Howard & Jason A. Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 COLUM. J. ENVTL. L. 203 (2017) (summarizing relevant economic literature).

⁹ See Env’tl. Def. Fund, et al., *Comments on Flawed Estimates of the Social Cost of Carbon in the Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, Dkt. No. EPA-HQ-OAR-2017-0355-20950 (Apr. 26, 2018), at 15-17.

3. The Working Group Should Apply Lower Discount Rates in Light of Extensive Evidence.

The Working Group’s existing social cost estimates appropriately reject the use of a 7% discount rate—which typically reflects a rate of return on private capital investment—and instead rely on a range of discount rates meant to reflect the long time horizon of climate damages. However, even the current range of discount rates used by the Working Group, from 2.5% to 5% with a 3% discount rate as the central estimate, is likely too high. In updating those estimates, the Working Group should apply lower discount rates to reflect recent research on interest rates and discounting over long time periods.

Due to the long timeframe of climate impacts, and because climate change affects well-being broadly rather than capital investment narrowly, a discount rate based on the consumption rate of interest, or a prescriptive approach, is appropriate.¹⁰ Uncertainty over the long time horizon of climate effects¹¹ along with the intergenerational nature of long-term climate impacts further counsels for a lower discount rate still.¹² Federal guidance broadly endorses the use of lower discount rates in intergenerational settings, and recognizes that analysts should apply the “best reasonably obtainable scientific, technical, and economic information available” rather than rigidly apply default assumptions.¹³ For these reasons, the Working Group rightly found that “use of [a] 7 percent [discount rate] is not considered appropriate for intergenerational discounting,”¹⁴ and has recommended a range of discount rates from 2.5% (or lower) to 5%.¹⁵

As the Working Group updates its social cost estimates, it should adopt a lower range of discount rates in light of recent research. Since long-term interest rates (including real rates of return on U.S. Treasury securities) have remained consistently low for several decades, the Council of Economic Advisers explains that a discount rate based on the consumption rate of interest “should be at most 2 percent.”¹⁶ Economists also widely agree that a lower discount rate

¹⁰ Off. of Mgmt. & Budget, Circular A-4, Regulatory Analysis 33 (2003) (“When regulation primarily and directly affects private consumption . . . a lower discount rate is appropriate”). See also Richard G. Newell & William A. Pizer, Uncertain Discount Rates in Climate Policy Analysis, 32 ENERGY POL’Y 519, 521 (2004) (“Because climate policy decisions ultimately concern the future welfare of people—not firms—the consumption interest rate is more appropriate.”).

¹¹ Circular A-4 at 36 (explaining that “the longer the horizon for the analysis,” the greater the “uncertainty about the appropriate value of the discount rate,” which supports a lower rate).

¹² *Id.* at 35–36.

¹³ *Id.* at 17.

¹⁴ Working Group, Response to Comments: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 at 36 (2015).

¹⁵ 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 13,990 at 4 (2021) [hereinafter “2021 TSD”] (“[A]gencies may consider conducting additional sensitivity analysis using discount rates below 2.5 percent.”).

¹⁶ *Id.* at 1. Recent updates to *Circular A-94* have also found that the real, 30-year discount rate is 0.4% or even negative, as compared to a 30-year rate of 3.2% when *Circular A-4* was adopted in 2003. Compare OMB, *Circular A-94*, App’x C (2019), <https://www.whitehouse.gov/wp-content/uploads/2019/12/M-20-07.pdf> and OMB, *Circular A-94*, App’x C (2020), https://www.whitehouse.gov/wp-content/uploads/2020/12/2020_Appendix-C.pdf with OMB,

is appropriate for assessing climate damages,¹⁷ and recent research on intergenerational impacts consistently points to lower discount rates for long-term effects.¹⁸ Accordingly, the Working Group should apply lower discount rates than the current range of 2.5% to 5%—including selecting a discount rate below 3% for its central estimates.¹⁹

4. The Working Group Should Implement Revisions Suggested by the National Academies of Sciences, Engineering, and Medicine.

The Working Group should prioritize implementation of the National Academies' recommendations and other appropriate recommendations from public comments based on the best available science, economics, and expert judgment. Priorities and implementation choices should further be based on what can realistically be accomplished first by January 2022 and, later, by subsequently scheduled timelines for updates. While the executive branch has discretion to prioritize its resources and to tackle problems one step at a time,²⁰ agencies that apply the Working Group's social cost values will also have to explain why this choice is consistent with legal principles for rational decision-making.²¹

To inform those explanations, the Working Group should detail why the updates it makes by January 2022 are those that are either the most important based on available evidence and/or the most practical given its resources. Insofar as the Working Group does not implement any particular updates recommended by public comments, it should explain at least at a general level why it is not currently proceeding with those recommendations and note whether—and, to the extent feasible, when—it plans to address those recommendations in the future. The Working Group should also include sufficient responses to common critiques, so that individual agencies have language readily available to cite to and borrow from if those same concerns are raised in their individual proceedings.²² And the Working Group should explicitly state, if that turns out to be the case, that considering all recommendations from the National Academies yet to be

Budget Assumptions: Nominal Treasury Interest Rates for Different Maturities (2016), <https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/a94/dischist-2017.pdf>.

¹⁷ Peter Howard & Derek Sylvan, *Wisdom of the Experts: Using Survey Responses to Address Positive and Normative Uncertainties in Climate-Economic Models*, 162 CLIMATE CHANGE 213, 220 fig.1(d) (2020); Moritz A. Drupp et al., *Discounting Disentangled*, 10 AM. ECON. J. 109 (2018) (finding “consensus among experts” at a 2% discount rate).

¹⁸ 2021 TSD, *supra* note 15, at 16–22 (2021).

¹⁹ For more detail on these arguments, see Peter Howard & Jason A. Schwartz, Inst. for Pol’y Integrity, *About Time: Recalibrating the Discount Rate for the Social Cost of Greenhouse Gases* (2021), which is being filed separately to this docket.

²⁰ See *Massachusetts v. EPA*, 549 U.S. 497, 524, 527 (2007) (explaining that agencies have “broad discretion to choose how best to marshal [their] limited resources and personnel to carry out [their] delegated responsibilities,” are not required to “resolve massive problems in one fell regulatory swoop,” and may “whittle away at [problems] over time, refining their preferred approach as circumstances change and as they develop a more nuanced understanding of how best to proceed”).

²¹ *California*, 472 F. Supp. 3d at 610–11 (explaining that agencies cannot “completely fail[]” to address an “important aspect of the problem,” or ignore evidence “pointing in the opposite direction” from its conclusions) (internal quotation marks omitted).

²² *Cf. Zero Zone*, 832 F.3d at 678 (expressing satisfaction that the Department of Energy had given “respon[s]es to . . . general concerns and made clear that, despite those concerns, the calculation of [the social cost of carbon] could be used” in regulatory proceeding).

implemented by January 2022, taken together with other omitted damages, the valuations published in January 2022 still likely underestimate the true extent of climate harm.²³

5. The Working Group Should Promote Better Quantification, or at Least More Robust Qualitative Discussion, of Currently Omitted Damages—Including Effects Relevant to Environmental Justice.

The Working Group should make progress on improving the damage modules by January 2022, including by adding some key omitted damages and incorporating more recent evidence regarding the magnitude of the damages that are currently quantified. In its 2017 recommendations, the National Academies provided a framework for the Working Group to provide near-term improvements to the damage estimations, including more recent literature that could inform specific updates.²⁴ The Working Group should also consider incorporating global non-climate impacts of specific greenhouse gases to the damage estimates of those gases, such as the tropospheric ozone production resulting from methane emissions, for which monetized estimates of damages already exist in the literature.²⁵ Insofar as certain parameters cannot be updated with precision by January 2022 due to limitations of the existing literature, the Working Group should consider using expert elicitation to substitute or complement other methods of calibrating those parameters.²⁶

Consistent with the Presidential Memorandum on Modernizing Regulatory Review, the Working Group should especially consider ways to promote quantification, or at least more meaningful qualitative discussion, of the effects from greenhouse gas emissions that may burden disadvantaged, vulnerable, or marginalized communities.²⁷ To that end, the Working Group should also engage with environmental- and climate-justice stakeholders to better address considerations of distributional equity as it relates to climate impacts.

6. Agencies Should Use the Working Group’s Interim Social Cost Values Until Updates Are Available.

While the Working Group updates its social cost values, federal agencies should apply the interim values that the Working Group released in February 2021, which were based on the Working Group’s 2016 estimates while updating the dollar values to account for inflation. Although the interim estimates should be revised for the reasons discussed in this letter (and in

²³ Cf. 2021 TSD, *supra* note 15, at 31 (“[I]t is in the [Working Group’s] judgement that, taken together, the limitations suggest that the interim [social cost of greenhouse gases] estimates presented in this TSD likely underestimate the damages.”). Of course, the Working Group should transparently acknowledge all model limitations and uncertainties, whichever direction they point.

²⁴ Nat’l Acad. Sci., Engineering & Med., *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* 138–47 (2017), <https://www.nap.edu/read/24651/chapter/1> [hereinafter “NAS 2017 Report”].

²⁵ Working Group, Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide 11–12 (2016), *available at* https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/august_2016_sc_ch4_sc_n2o_addendum_final_8_26_16.pdf (highlighting limitations in methane valuations).

²⁶ For more detail on the use of expert elicitation, see Peter Howard & Derek Sylvan, Inst. for Pol’y Integrity, *Expert Elicitation and the Social Cost of Greenhouse Gases* (2021), which is being filed separately to this docket.

²⁷ Presidential Memo. on Modernizing Regulatory Review §§ 2(a), (b)(ii) (Jan. 20, 2021).

more comprehensive submissions to this docket), they were nonetheless the product of years of research and development reflecting the best science and economics available at the time. These valuations are reliable and appropriate for use until more accurate values can be generated, although agencies should make clear that they represent conservative underestimates of the true damage imposed by climate change.

The Working Group’s methodology has been repeatedly endorsed by independent reviewers. In 2014, the U.S. Government Accountability Office concluded that the Working Group had followed a “consensus-based” approach, relied on peer-reviewed academic literature, and disclosed relevant limitations.²⁸ Leading economists and climate experts have also endorsed the Working Group’s values as the best estimates of climate damages currently available.²⁹ The U.S. Court of Appeals for the Seventh Circuit has upheld agency reliance on the Working Group’s valuations.³⁰ And the National Academies issued two reports that, while recommending future improvements, supported the continued use of the Working Group’s estimates.³¹

Consistent with the recommendations of the National Academies, agencies should apply the Working Group’s current social cost estimates until the Working Group issues appropriate updates. And as such updates become available from the Working Group, agencies should revise their valuations of climate harms using the latest social cost values.

CONCLUSION

The Working Group’s methodology for developing and updating the social cost of greenhouse gases has thus far been rigorous and transparent. The Working Group should continue to follow best practices and provide clear rationales for its 2022 updates. As the Working Group revises the social cost of greenhouse gas values consistent with the latest science and economics, it should apply lower discount rates, bolster its justification for providing global rather than domestic or regional damage estimates, and implement other key improvements suggested by the National Academies. Furthermore, the Working Group should direct federal

²⁸ Gov’t Accountability Office, *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates* 12–19 (2014). Available at <http://www.gao.gov/assets/670/665016.pdf>.

²⁹ See, e.g., Richard Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 *Science* 655 (2017); Michael Greenstone et al., *Developing a Social Cost of Carbon for U.S. Regulatory Analysis: A Methodology and Interpretation*, 7 *Rev. Envtl. Econ. & Pol’y* 23, 42 (2013); Richard L. Revesz et al., *Global Warming: Improve Economic Models of Climate Change*, 508 *NATURE* 173 (2014) (co-authored by Nobel Laureate Kenneth Arrow, among others) (explaining that the Working Group’s values, though methodically rigorous and highly useful, are very likely underestimates).

³⁰ *Zero Zone*, 832 F.3d at 679.

³¹ NAS 2017 Report, *supra* note 24, at 3; Nat’l Acad. Sci., Engineering & Med., *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update* 1–2 (2016); <https://www.nap.edu/read/21898/chapter/1>.

agencies to apply its social cost values—the interim estimates currently and the updated estimates eventually—in all decisions and processes with quantifiable greenhouse gas impacts.

Sincerely,

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