Life:Powered

June 21, 2021

VIA ELECTRONIC SUBMISSION
Dominic J. Mancini
Deputy Administrator
Office of Information and Regulatory Affairs
Office of Management and Budget
1600 Pennsylvania Ave NW
Washington, DC 20500

ATTN: DOCKET ID NO. OMB_2021_0006

RE: Comments on "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990"

Dear Deputy Administrator Mancini:

The Texas Public Policy Foundation (TPPF), through its Life:Powered initiative, submits this comment in response to the Office of Management and Budget's (OMB) notice of availability and request for comments on "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates." TPPF is a 501(c)3 nonprofit, non-partisan research institute dedicated to promoting and defending liberty, personal responsibility, and free enterprise. Life:Powered is TPPF's energy policy initiative that seeks to raise America's energy IQ and end energy poverty around the world.

TPPF asserts that the entire exercise of using the social cost of carbon and other greenhouse gases (hereafter, simply "the SCC") in regulatory analysis is arbitrary, capricious, and not informative to the regulatory process. Numerous problems with the calculation of the SCC have already been addressed extensively in the literature (e.g., Dayaratna et al.[1]), including, but not limited to:

- The use of outdated and impossibly high emissions forecasts, which show emissions increasing at far faster rates than the latest estimates from the International Energy Agency.
- The enormous sensitivity to the rate at which future costs are discounted into present dollars, which changes the central estimate roughly fourfold depending on whether the discount rate chosen is 2.5% or 5%.
- The flaws and uncertainties in the underlying climate and economic models, many of which have been addressed by TPPF in its recent research.[2]

These problems lead to vast uncertainty in the final estimates, which range from nearly \$0/ton CO_2 at the low 5th percentile to over \$100/ton at the high 95th percentile. Yet, despite the uncertainty, the SCC exercise requires the interagency working group to settle on a central estimate, which they chose as the \$51/ton average for a 3% discount rate.[3] Two false premises on

1 Kevin D. Dayaratna, Ross McKitrick, and Patrick J. Michaels, "Climate Sensitivity, Agricultural Productivity and the Social Cost of Carbon in FUND," *Environmental Economics and Policy Studies 22, no. 3* (January 18, 2020): 433–448, https://doi.org/10.1007/s10018-020-00263-w.

2 Brent Bennett, *The Fourth National Climate Assessment: A Crisis of Its Own Making* (Texas Public Policy Foundation, 2021), https://www.texaspolicy.com/the-fourth-national-climate-assessment-a-crisis-of-its-own-making.

3 Interagency Working Group on Social Cost of Greenhouse Gases, "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990," February 2021, https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.

which the SCC exercise is built are (1) that mitigation should be the primary means for dealing with the effects of greenhouse gas (GHG) emissions and (2) that emissions mitigation policies in the U.S. can be implemented in isolation from the global context of those emissions and their impacts.

SCC Estimates Do Not Properly Account for Adaptation

The use of the SCC in regulatory analysis is built on the premise that reducing GHG emissions is the primary way to reduce their harm to the public welfare. It largely ignores or underestimates the far more cost-effective method by which humanity has dealt with climate change for centuries: adaptation. While the models used to calculate the SCC adjust for adaptation in some ways—for example, the FUND model supposes significant increases in air conditioning use—they often fail to properly account for many ways in which adaptation can reduce the harm that rising temperatures are supposed to inflict on the public welfare. The use of the SCC and the ignorance of adaptation fundamentally skew regulatory analysis toward favoring emissions reductions in an arbitrary and unscientific manner.

A clear example of how the SCC ignores adaptation is in its estimates of the potential damage from coastal flooding. Lomborg (2020)[4] provides a thorough review of the current empirical literature on the effect of climate change on increasing coastal flooding. He explains that the estimates of increased coastal flooding from climate change are usually wildly overstated because adaptation, the most efficient method of dealing with climate change, is neglected.[5,6,7]

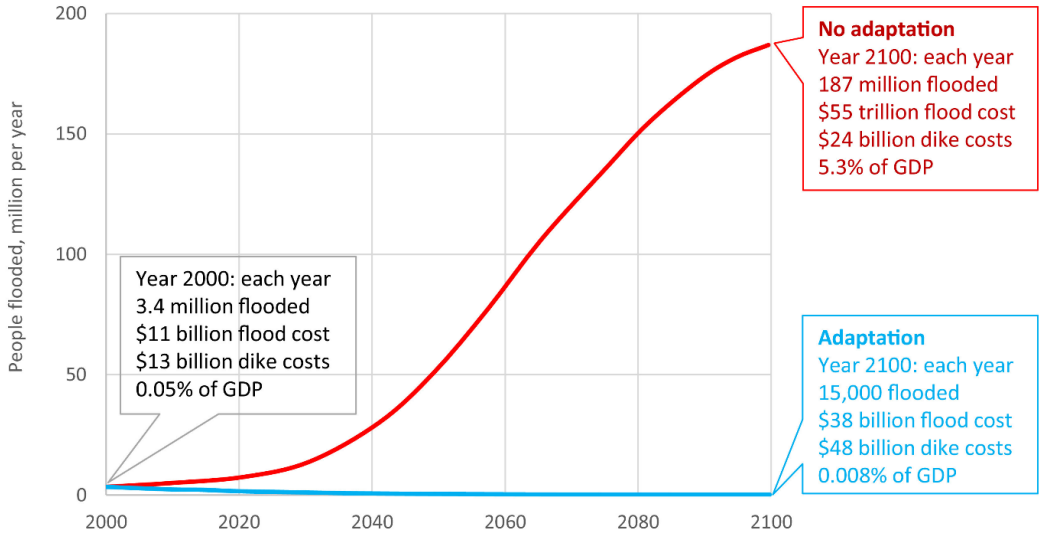

Figure 1: People subject to flooding risk and estimated cost under an extreme emissions pathway, SSP5 with the RCP8.5 climate scenario.[8] Even the sea level rise, under the highest conceivable emissions scenario, can still be adapted to with relatively little cost. All costs in 2005 US$, from Hinkel et al., 2014, S4, S5 and S6.[9]

4 Bjorn Lomborg, "Welfare in the 21st Century: Increasing Development, Reducing Inequality, the Impact of Climate Change, and the Cost of Climate Policies," *Technological Forecasting and Social Change* 156 (July 2020): 119981, https://doi.org/10.1016/j.techfore.2020.119981.

5 David Wallace-Wells, *The Uninhabitable Earth: Life After Warming* (New York: Tim Duggan Books, 2019).

6 Michalis I. Vousdoukas, Lorenzo Mentaschi, Evangelos Voukouvalas, Martin Verlaan, and Luc Feyen, "Extreme Sea Levels on the Rise Along Europe's Coasts," *Earth's Future 5, no. 3* (March 2017): 304–323, https://doi.org/10.1002/2016EF000505.

7 Aliza Fleischer, Robert Mendelsohn, and Ariel Dinar, "Bundling Agricultural Technologies to Adapt to Climate Change." *Technological Forecasting and Social Change 78, no. 6* (July 2011): 982–990, https://doi.org/10.1016/j.techfore.2011.02.008.

8 Bjorn Lomborg, "Welfare in the 21st Century: Increasing Development, Reducing Inequality, the Impact of Climate Change, and the Cost of Climate Policies," *Technological Forecasting and Social Change 156* (July 2020): 119981, https://doi.org/10.1016/j.techfore.2020.119981.

9 Jochen Hinkel, Daniel Lincke, Athanasios T. Vafeidis, Mahé Perrette, Robert James Nicholls, Richard S. J. Tol, Ben Marzeion, Xavier Fettweis, Cezar Ionescu, and Anders Levermann, "Coastal Flood Damage and Adaptation Costs Under 21st Century Sea-Level Rise," *Proceedings of the National Academy of Sciences of the United States of America 111, no. 9* (March 2014): 3292–3297, https://doi.org/10.1073/pnas.1222469111.

For example, one model described by Lomborg predicts that, under the Intergovernmental Panel on Climate Change's (IPPC's) highest emissions scenario (SSP 5/RCP 8.5) with no adaptation, 187 million people will experience catastrophic flooding events annually by 2100, with damages totaling $55 trillion, or 5.3% of global GDP. However, even in this impossibly high emissions scenario, improving dikes reduces flood costs by more than 99.9%, down to $38 billion per year. Even when the additional $24 billion in annual dike costs are considered, the total cost in the adaptation scenario is still 99.8% less than with no adaptation.

The three economic forecasting models used to derive the SCC—which go by the acronyms DICE, FUND, and PAGE—assume far less adaptation than what is accomplished in the model above. For example, the PAGE model does not allow for adaptation to sea level rise that might occur if the global average temperature rises more than 2 degrees Celsius.[10] There is no empirical evidence to say that the assumptions in the three models used by the interagency working group are superior to those in other models, yet these three models will be used to justify policies that will have vast impacts on the U.S. economy. This type of problem is endemic in the entire SCC exercise.

U.S. GHG Regulations Cannot Ignore Global Emissions

The development of the SCC for regulatory analysis has evolved primarily from the process of equating health impacts from the six criteria pollutants in the Clean Air Act to the costs of mitigating emissions of those pollutants. Applying that process to GHG emissions is fatally flawed for two reasons.

First, the effects of criteria pollutant emissions on atmospheric concentrations are, for the most part, limited to the regions in which the emissions occur. Although emissions from Asia have been shown to have a significant impact on pollution levels, especially ozone in the western U.S.,[11] elevated pollution levels in a region can generally be traced to emissions in that region. This is not the case for GHGs, which are well mixed in the atmosphere.Therefore, the assumption that U.S. GHG emissions can be regulated separate from the context of global emissions is false. If U.S. emissions regulations—for example, restrictions on methane emissions from oil and gas production—shift energy production outside of the U.S., then the benefit of those regulations on global GHG concentrations may be zero at best. The U.K. has had the largest percentage decrease in carbon dioxide emissions of any developed nation, falling by more than a third since 1990. However, their consumption emissions, which account for the emissions embodied in the products the country consumes, have been flat since then.[12] Plus, GHG emissions in the developing world will dominate emissions in the developed world in the coming decade, and changes in those emissions levels may swamp the impact of any regulations on U.S. emissions.

Second, the health effects of criteria pollutants, while very difficult to measure and subject to significant uncertainty and error,[13] are local and immediate. In contrast, the supposed health effects of GHG emissions are distant and global. Emissions of criteria pollutants in the U.S. have declined by 77% since 1970 and atmospheric concentrations have declined more than two thirds in aggregate,[14] and the EPA can perform empirical measurements of the effects on public health.

It is impossible to perform this task with any degree of precision for GHG emissions. First, the health effects of GHG emissions are determined by their effect on atmospheric temperatures. There is still vast uncertainty in how much GHG emissions will cause temperatures to rise, which is a main source of the uncertainty in the final SCC estimates. That problem exists even before considering the uncertainties in the health impacts of a given temperature rise. Second, the impacts to human welfare are concentrated decades into the future and must be discounted back into present dollars to compare to the costs of emissions reductions. Determining a discount rate on emissions may be feasible over a 10- or 20-year timeframe,

10 Interagency Working Group on Social Cost of Greenhouse Gases, "Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866," August 2016, https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf.

11 Meiyun Lin, Larry W. Horowitz, Richard Payton, Arlene M. Fiore, and Gail Tonnesen, "US Surface Ozone Trends and Extremes From 1980 to 2014: Quantifying the Roles of Rising Asian Emissions, Domestic Controls, Wildfires, and Climate," *Atmospheric Chemistry and Physics 17, no. 4* (March 2017): 2943–2970, https://doi.org/10.5194/acp-17-2943-2017.

12 UK Office of National Statistics, "The Decoupling of Economic Growth From Carbon Emissions: UK evidence, October 2019, https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/compendium/economicreview/october2019/thedecouplingofeconomicgrowthfromcarbonemissionsukevidence.

13 Kathleen Hartnett White and Brent Bennett, *The EPA's Pretense of Science: Regulating Phantom Risks* (Texas Public Policy Foundation, 2019), https://www.texaspolicy.com/the-epas-pretense-of-science-regulating-phantom-risks.

14 U.S. Environmental Protection Agency, "EPA Air Trends, Air Quality – National Summary," May 2020, https://www.epa.gov/air-trends/air-quality-national-summary.

but, as the technical support document notes, the task is vastly more difficult for an intergenerational timeframe, and the final SCC estimate is highly sensitive to this assumption.[15]

Conclusion

Regulations of GHG emissions and all Clean Air Act regulations should not be implemented without careful consideration of their costs and benefits. This is why the rulemaking process leans so heavily on regulatory impact analyses. The United States cannot gamble with its economic prosperity based on estimates that are, by their very nature, highly uncertain and arbitrary. Using the SCC in the weighing of costs and benefits is anything but fair because it equates the distant and difficult-to-forecast benefits of emissions reductions with the certain and immediate costs.

Adaptation is a much more efficient method of addressing the effects of climate change, and the binary choice of either experiencing the losses supposed by the SCC or avoiding them through mitigation is a false dichotomy. Furthermore, mitigating emissions must be done collectively on a global scale to be effective. A third of the world still lives with limited or no access to modern energy. This is a far larger and more pressing problem than climate change. Unless emissions-free energy can be created much more cheaply than fossil fuels at scale, not on the margins as it is done now, then the rest of the developing world should not be shackled by GHG emissions regulations, and neither should the U.S.

Finally, the social cost of GHG emissions can in no way outweigh the social benefits of the energy production that creates those emissions. Attempting to socially engineer a transition away from fossil fuels, working against market forces, will result in less wealth and less ability to adapt. The United States should instead allow the production of inexpensive and efficient energy from fossil fuels to facilitate wealth and climate adaptation that make the SCC so small that it will be difficult to measure.

Sincerely,

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15 Interagency Working Group on Social Cost of Greenhouse Gases, "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990," February 2021, https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.