



January 14, 2022

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460
Attn: Docket ID No. EPA-HQ-OAR-2021-0317
Submitted via: www.regulations.gov

Dear Administrator Regan,

On behalf of Resources for the Future (RFF), I am pleased to share the accompanying comments to the Environmental Protection Agency on the proposed *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*.

RFF is an independent, nonprofit research institution in Washington, DC. Its mission is to improve environmental, energy, and natural resource decisions through impartial economic research and policy engagement. RFF is committed to being the most widely trusted source of research insights and policy solutions leading to a healthy environment and a thriving economy.

While RFF researchers are encouraged to offer their expertise to inform policy decisions, the views expressed here are those of the individual authors and may differ from those of other RFF experts, its officers, or its directors. RFF does not take positions on specific legislative proposals.

If you have any questions or would like additional information, please contact Brian Prest at prest@rff.org.

Sincerely,

A handwritten signature in blue ink that reads "Richard G. Newell".

Richard G. Newell

President and CEO

Updated Estimates of the Social Cost of Methane for Usage in Regulatory Analysis

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In its regulatory impact analysis (RIA) supporting the proposed regulatory action Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, EPA uses an interim estimate of the social cost of methane (SC-CH₄) to quantify the economic benefits of reductions of methane from the proposed action. As noted in the proposal and in the RIA, the interim estimates are being used while the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) completes its work to provide updated estimates of the SC-CH₄, consistent with the 2017 recommendations of the National Academies of Sciences, Engineering, and Medicine (NASEM, 2017) as directed under EO 13990.

Resources for the Future's (RFF) Social Cost of Carbon initiative was established in 2017 as a multi-institutional, collaborative effort between RFF and the University of California–Berkeley, with additional contributors from Duke University, Harvard University, Princeton University, and the University of Washington, among others. The initiative has the following key objectives:

- improve the scientific basis for social cost of greenhouse gas (SC-GHG) estimates by implementing the full set of near-term recommendations from the 2017 NASEM study and provide a transparently updated set of estimates for multiple greenhouse gases, including carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons, with uncertainty bounds;
- develop open-source software tools for SC-GHG estimation to implement updated methods, promote transparency, and serve as a common platform for SC-GHG development by the scientific community; and
- facilitate the US government process to update values for SC-GHGs.

The initiative has now completed the necessary research and implemented the near-term NASEM recommendations to improve the scientific basis and transparency of the SC-GHG estimates across the full estimation methodology.

- Modularization of SC-GHG estimation methodology. We have accomplished the modularization of the SC-GHG estimation process and corresponding improvement of transparency of the estimates through the provision of a new open-source software framework ([Mimi.jl](#)) for building integrated assessment models. Mimi.jl has been utilized by the EPA in its RIA for the *Final Rule - Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program under the AIM Act*.
- Long-run socioeconomic projections. We have used a combination of statistical information and expert judgment to generate long-run socioeconomic projections, with associated uncertainty bounds, of global emissions and regional economic growth and population that account for future policies and dependencies between the variables. This work, detailed [here](#), has completed scientific peer review and is forthcoming in the *Brookings Papers on Economic Activity* (Rennert et al.).
- Improved climate model. We have implemented the Finite Amplitude Impulse Response (FAIR, Smith et al. 2018) model highlighted in the NASEM report as used in the Intergovernmental Panel on Climate Change Sixth Assessment Report (Forster et al. 2021), coupled with the BRICK model of sea level rise (Wong et al. 2017).
- Updated damage functions. We have implemented updated damage functions, which relate changes to the climate to economic impacts valued in dollars, for key sectors based on the latest peer-reviewed scientific literature.
- Economic discounting. We have developed and implemented a methodology for empirically calibrating the key discounting parameters required for implementing NASEM recommendations to link discounting with uncertain economic growth projections, while also reflecting the empirical literature on the term structure of interest rates and being consistent with near-term rates associated with related federal discounting guidance. The methodology, described [here](#) and [here](#), has completed

peer-review and is forthcoming in the *Journal of the Association of Environmental and Resource Economists*.

We have now assembled these elements, each of which has undergone its own scientific peer review, into a new integrated assessment model on the Mimi platform that is responsive to the near-term recommendations of the NASEM report. Updated estimates of the social cost of methane based on this new model are expected to be substantially higher than those employed in the RIA for this proposed action. The updated model and estimates are anticipated to complete peer-review in a timeframe relevant for consideration by EPA as it finalizes the rule.

References:

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