Institute *for*
Policy Integrity
NEW YORK UNIVERSITY SCHOOL OF LAW

March 23, 2016

Comments on the SAB panel draft report regarding EPA's Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources.

To the EPA Science Advisory Board,

The Institute for Policy Integrity offers these comments for your consideration on valuing the costs and benefits of carbon emissions and sinks over time. Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decision-making through advocacy and scholarship in the fields of administrative law, economics, and public policy. Our researchers have published extensively on how to value carbon emissions over time, and in particular on the "social cost of carbon" metric.

The Science Advisory Board's charge to review the framework for assessing biogenic carbon dioxide emissions implicates valuing the near-term damages of increased carbon emissions (from the combustion of biomass) against the long-term potential benefits of increased carbon sinks (from the regeneration of biomass). In performing this analysis, the Board should have focused on the well-established methodology to value changes in carbon emissions over time—the "social cost of carbon," which is the standard approach used by the federal government to evaluate policies that affect carbon dioxide emissions. (EPA has developed a related metric, the "social cost of methane," to value methane emissions over time.) Its failure to do so is neither explained, nor is it justified.

The Science Advisory Board acknowledges that a price on carbon is the most efficient method for internalizing the external cost of carbon, but misstates that this policy option is outside EPA's authority.[1] Whether or not EPA has authority to impose a carbon tax or economy-wide allowance auction is irrelevant to the separate questions of how EPA should assess the desirability of individual regulatory policies and whether EPA can internalize the costs of carbon through other regulatory and analytical tools. In fact, EPA has the authority to use the social

[1] See SAB Draft Report at 15 ("[T]he best policy tool for internalizing the external cost of carbon to reduce greenhouse gases on any time scale . . . is to impose a price on carbon across all sources, whether fossil or biogenic, a policy option that lies outside the EPA's regulatory authority.").

cost of carbon—an estimate of the external cost of emitting an additional unit of carbon into the atmosphere—in all regulatory analyses.

A federal interagency working group, including representatives from EPA, began developing in 2009 an estimate of the social cost of carbon, to harmonize the valuation of climate effects across all federal regulatory impact analyses.[2] The interagency working group's estimates draw from the best available literature, data, and models, and the Government Accountability Office has concluded that the social cost of carbon estimates are consensus-based and transparent.[3] The social cost of carbon and social cost of methane have been used by EPA and the Departments of Energy, Transportation, Interior, Housing, and Agriculture in over 60 different regulatory impact analyses and environmental impact statements,[4] including in several rules that implicate bioenergy, such as the Clean Power Plan[5] and various emissions standards for boilers and incineration units.[6]

The social cost of carbon methodology creates a consistent framework for valuing relative changes over time. The social cost of carbon "increases over time because future emissions are expected to produce larger incremental damages as physical and economic systems become more stressed in response to greater climatic change."[7] The interagency working group has developed annual growth rates, as well as specific estimates at five-year intervals.[8] For example, an additional ton of carbon emissions in 2015 caused about $41 worth of damage, while the mitigation of an additional ton of carbon emissions in 2030 would save about $57 worth of harm (figures roughly inflated from 2007US$ to current dollars). Each estimate also carries its own discount rate, to adjust future costs and benefits back to present value. The figures referenced above reflect the interagency working group's central estimates, which are based on a 3% discount rate. (Other estimates, at 5% discount rate, 2.5% discount rate, and a 95th percentile estimate at the 3% rate, are also provided by the methodology.) Consistent with economic theory, a key feature of the social cost of carbon is that current emissions are valued above future sequestration, after accounting for the discount rate. For instance, after discounting, mitigating an additional ton of carbon in the year 2030 only has a present value (i.e., in the year 2016) of about $37, while the additional emissions in 2015 still would have caused about $41 in damages.

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[2] Interagency Working Group, Technical Support Document on the Social Cost of Carbon (2010); Technical Support Update on the Social Cost of Carbon (2013).
[3] GAO-14-663, *Development of SCC Estimates* 12-20 (2014)
[4] Jason Schwartz & Peter Howard, *Think Global: International Reciprocity as Justification for a Global SCC* (forthcoming Policy Integrity Report, 2016).
[5] https://www3.epa.gov/ttnecas1/regdata/RIAs/111dproposalRIAfinal0602.pdf
[6] E.g., New Source Performance Standards for Commercial and Industrial Solid Waste Incineration Units, 76 Fed. Reg. 15,704 (Mar. 21, 2011).
[7] Interagency Working Group TSD 2013, *supra* note 4, at 14.
[8] *Id.* at tbls 2 & 3.

Social Cost of Carbon Estimates Over Time, Inflated and Discounted

Year of Emissions	Interagency Working Group's Central Estimate in 2007US$	Inflated to 2015US$	**Discounted (at 3%) to Present Value in 2015**
2015	$36	$41	**$41**
2020	$42	$48	**$41**
2025	$46	$52	**$39**
2030	$50	$57	**$37**
2035	$55	$63	**$35**
2040	$60	$68	**$33**
2045	$64	$73	**$30**
2050	$69	$79	**$28**

The social cost of carbon does reflect sources of uncertainty and is subject to limitations. For example, the estimates do not yet adequately reflect the risk of catastrophic damages or tipping points. Nevertheless, it is the best tool available for valuing carbon emissions over time,[9] and is particularly well suited to the very question now before the Science Advisory Board: namely, how to evaluate the tradeoff between higher carbon emissions in the short term and potential emissions reductions in the future. The Board should strongly consider using the social cost of carbon in its review of biogenic carbon dioxide emissions, or else explain why it is departing from what has become standard practice across the federal government and at EPA in particular.

We attach our latest comments to EPA on the social costs of carbon and methane, and we encourage the Science Advisory Board to review the latest interagency working group documents.

Sincerely,
Peter Howard, Economics Director
Jason A. Schwartz, Legal Director

[9] Richard L. Revesz et al., *Improve Economic Models of Climate Change*, 508 Nature 173, 174 (2014) ("[T]he current estimate for the social cost of carbon is useful for policy-making, nothwithstanding the significant uncertainties.") (co-authored with Kenneth Arrow, among others).