

**U.S. Environmental Protection Agency
Science Advisory Board
Economic Guidelines Review Panel**

**Summary Minutes for the Public Meeting
held on
June 9, 2020**

Meeting Participants:

Economic Guidelines Review Panel Members*

Dr. John D. Graham, Chair	Dr. Caroline Cecot	Dr. Craig Landry
Dr. Joseph E. Aldy	Dr. Karen Clay	Dr. Arik Levinson
Dr. Dan Black	Dr. R. Scott Farrow	Dr. Joshua Linn
Dr. Spencer Banzhaf	Dr. Art Fraas	Dr. Richard A. Williams

*See the rosterⁱ for full membership.

Designated Federal Officer (DFO)

Dr. Shaunta Hill-Hammond, EPA Science Advisory Board Staff Office.

Dr. Sue Shallal, EPA Science Advisory Board Staff Office.

Other Attendees

See Attachment A.

Meeting Summary:

The Science Advisory Board (SAB) Economic Guidelines Review Panel (also referred to as EGRP or Panel) convened a public meeting on June 9, 2020. The purpose of the meeting was to discuss the Panel's 6-2-20 draft reportⁱⁱ on the revised *Guidelines for Preparing Economic Analyses (Guidelines)* by the EPA National Center for Environmental Economics.

Meeting convened

The SAB Economic Guidelines Review Panel convened for a public meeting at approximately 11:00 a.m. Eastern Time (EST). Dr. Shaunta Hill-Hammond (Hill), DFO for the EGRP opened the meeting. She gave an opening statement informing participants that the EGRP operates under the Federal Advisory Committee Act and federal ethics laws. Dr. Hill noted that two registered speakersⁱⁱⁱ would provide oral comments during the meeting. She then invited Dr. John Graham, chair for the EGRP to offer remarks. Dr. Graham welcomed the Panel and public to the meeting and conducted a roll call. Following Dr. Graham's comments, Dr. Hill initiated the public comment period.

Public comments

Mr. Jason Schwartz of NYU IPI noted that climate change blurred the traditional lines between domestic and international standing. He expressed some alarm with the Panel's draft recommendation in favor of an upper end discount rate which would be a break from EPA's longstanding guidance to use the consumption rate of interest for long time horizons as well as

the National Academy of Sciences recommendation. In a 2017 Resources for the Future post, Richard Newell warned against adherence to the letter of Office of Management and Budget (OMB)'s discounting approach as inconsistent with good economics. Recent literature, including from Billy Pizer, shows 5% is the top discount rate for the Social Cost of Carbon. Lots of work points toward a lower discount rate for long-term planning and intergenerational effects. There are many reasons for why the current social opportunity of capital is over estimated. The Council of Economic Advisors recommended in 2017 that current estimates should be lower because they do not account for biases from unpriced externalities and other factors. Current EPA Guidelines cites the literature showing the social opportunity cost of capital could be as low as 4.5%. The literature points toward using a lower rate over time as did the late economist Marty Weitzman who showed how it should be lower. The literature also shows uncertainty over the magnitude of the shadow price of capital. These are all economic considerations but there are also ethical implications. Mr. Schwartz encouraged the Panel to move the recommendation on declining discount rates over time to a higher tier. Such a move would help to resolve some of the disagreement here about what to do about intergenerational effects.

Mr. Roy Gamse said he was responsible for EPA's economic analysis in the Nixon, Ford, Carter and Reagan Administrations. Mr. Gamse applauded the Panel for addressing co-benefits but asked them to be more explicit. In 1985, the Reagan Administration considered co-benefits from ozone reduction. EPA has considered co-benefits many times since, e.g. with the tailpipe emissions standard. In its recent regulatory rollbacks, the Trump Administration has reversed the practice and explicitly disregarded co-benefits. Mr. Gamse urged the Panel to insist that EPA restore the sentence missing from the revised Guidelines where mention of co-benefits had been deleted. EPA dismissed co-benefits of reducing fine particles when rolling back the mercury standard and gutting the Clean Power Plan.

In response to a question from Dr. Farrow, Mr. Gamse said his issue was not with the analyst but with the decision makers. He suggested the Panel make an explicit recommendation that EPA's analysis should be used to make decisions.

Panel Discussion

Dr. Graham initiated the Panel's discussion of the draft report following the public comment period. He introduced the leads for Chapter 1 (Drs. Williams and Cecot) and asked for comments on the chapter from the Panel.

Chapter 1:

Dr. Williams said he went back and made edits to ensure that each charge question was answered for Chapter 1. Dr. Cecot asked whether the Panel should recommend that the *Guidelines* define the role of economic analysis and encourage its use in decision making. Dr. Landry asked what points from the Panel's comments on Chapter 1 should be highlighted in the letter to the Administrator. Dr. Levinson suggested the Panel's Tier 2 recommendation for a consistent definition for costs, benefits, co-benefits, etc. could go in the letter to the Administrator. Dr. Farrow cautioned against too much revision of Text Box 1 in as much as it is taken almost verbatim from the OMB. Panelists agreed to separate "issues for analysts" and "issues for decision makers" in making recommendations on Text Box 1.

Dr. Graham introduced the leads for Chapter 2 (Drs. Williams and Cecot) and asked for comments on the chapter from the Panel.

Chapter 2:

With respect to the Panel's recommendations for Chapter 2, Dr. Fraas noted that he wasn't sure what was meant by Tier 3 future considerations. Panelists agreed to strike the sentence under "Tier 3 Future Considerations" since retrospective reviews would be discussed later.

Dr. Graham cautioned against implying that explanations for choices among alternatives don't belong in the Regulatory Impact Analysis (RIA). Dr. Graham agreed to send his specific comments to Dr. Williams for incorporation.

Dr. Graham introduced the leads for Chapter 3 (Drs. Williams and Cecot) and asked for comments on the chapter from the Panel.

Chapter 3:

Dr. Cecot proposed elevating the Panel's Tier 2 suggestion [that footnote 63 should be expanded and moved to the text] to Tier 1. Dr. Levinson suggested changing the word "scope" to "coverage." Dr. Graham noted that "coverage" was an issue for both the analyst and the decision maker. Since Chapter 5 covers aspects of regulatory stringency and timing, panelists agreed to defer the "coverage" issue to Chapter 5. Dr. Graham suggested providing an example of a one-off market failure that isn't systemic. He asked panelists to check the written submission from the Small Business Administration (SBA) to ensure that the Panel's language referencing SBA on p. 11 was correct.

On p. 11, lines 43-44, Dr. Fraas sought to strengthen the recommendation [to look at options that are not authorized by law] by dropping "but are not required to ...". Dr. Fraas then wondered about the predominance of language such as "the SAB finds" "the SAB suggests ..." "the SAB notes ..." Should we be saying "the SAB recommends ..." Dr. Graham said Dr. Hill could provide editorial guidance so that the Panel's report conforms with other SAB reports. Panelists then decided to return the "coverage" issue to Chapter 3 after Dr. Farrow found bullets about requirements for different size firms, facilities, geographic regions, states, etc.

Dr. Graham introduced the leads for Chapter 4 (Drs. Farrow and Cecot) and asked for comments on the chapter from the Panel.

Chapter 4:

Dr. Farrow wondered whether value of information approaches should be called out in Chapter 4 since this chapter included discussion of licensing, insurance and pilot programs. He also mentioned the need to discuss the cost of public funds.

Dr. Graham said he would prefer to pull out pilots and make it a separate thing combined with value of information. Dr. Graham said the value of information is an important consideration when uncertainty characterizes a rule's costs and benefits. An approach that allows you to collect information over time can be very beneficial in that case.

Dr. Cecot explained that the Panel's comment (on p. 18, line 8) on behavioral economics in this chapter was more to introduce the idea of behavioral economics early on. Dr. Graham expressed his wish that more references be added here and possibly more discussion of alternative points of view. To avoid confusion, Dr. Cecot said she would take out the sentence relating behavioral economics to regulatory stringency. Dr. Williams expressed concern that using behavioral economics to justify regulation, as opposed to fashioning different regulatory options, opens the door to poor regulation.

Panelists agreed to elevate their recommendation in Chapter 4 that the *Guidelines* discuss how policy options can be designed to promote effective retrospective review. Dr. Cecot said she would make revisions accordingly.

Dr. Graham introduced the leads for Chapter 5 (Drs. Farrow and Fraas) and asked for comments on the chapter from the Panel.

Chapter 5:

Dr. Farrow wondered if the Panel needed to strengthen its recommendation to create a new section on "comprehensiveness" to emphasize that the dominant message is to include all significant costs and benefits in an unbiased manner. He also wondered if the Panel wanted to strengthen its call for publicly available models and data. Dr. Fraas asked whether the Panel needed consistent language to strengthen its recommendation to consider all ancillary benefits and costs. Dr. Clay chimed in on this point, calling for coordination across Chapters 5, 7 and 11. In response, Dr. Graham suggested the Panel draft language they would like to have in the *Guidelines* to make their recommendation crystal clear. Dr. Farrow said he would work with Dr. Fraas on suggested language which would be checked by other panelists.

Dr. Williams said, with respect to p. 26, lines 1 – 3, the Panel should point out the longer the time horizon, the more likely there will be technological changes, including human enhancement as resistance or immunity to disease. Dr. Graham mentioned the National Academy of Sciences report on the Social Cost of Carbon and wondered whether the Panel should add some mention of its discussion of research that needs to be done in order to better isolate and quantify domestic versus international effects.

Dr. Graham introduced the leads for Appendix A and B (Dr. Graham) and asked for comments on the chapter from the Panel.

Appendix A and B:

With respect to Appendix A, panelists debated whether to propose that EPA merely reference an environmental economics textbook. No comments were raised for Appendix B.

The Panel then took a 10-minute break returning at 1:00 pm EST. Dr. Sue Shallal stood in as the DFO for remainder of the meeting. After completing a roll call, Dr. Graham introduced the leads for Chapter 6 (Drs. Aldy and Fraas) and asked for comments on the chapter from the Panel.

Chapter 6:

Dr. Aldy covered the six recommendations in the Panel's 6-2-20 draft report. He explained the Panel's Tier 1 recommendation on the choice of discount rates for intergenerational impacts. The Panel's report recommends that EPA employ both the consumption rate of interest and opportunity cost of capital (currently 3% and 7% in current guidance). For rules that have intergenerational impacts, EPA could describe the basis for using an alternative discount rate. Dr. Aldy said there was a lot in the *Guidelines* that's very thoughtful on this, e.g. a Ramsey approach that would justify a lower rate. As a second recommendation, EPA should employ a common discount rate for all benefits and costs that accrue in a given year. Third, a full Present Value analysis or annualized Present Value analysis is preferred to a snapshot of a full implementation year. Fourth, EPA should provide a robust discussion of the factors and assumptions that went into the selection of a time horizon. Fifth, EPA should clarify the value to the reader of the text boxes and sixth, clarify base year dollars.

Dr. Fraas highlighted three points for the letter to the Administrator: (1) For intergenerational effects, the *Guidelines* should use a discount rate more closely reflecting the opportunity cost of capital. (2) The Panel is urging EPA to use a consistent discount rate across given parts of their analysis for specific years. (3) EPA should use all the periods rather than looking at some future year down the road.

In response to panelists' questions, Dr. Aldy explained in more detail his reservations about EPA's "snapshot approach" where EPA provides an estimate of benefits at some point in the future. Dr. Graham asked Dr. Aldy to get more of his explanation into the text. Dr. Cecot cautioned against treating OMB Circular A-4 as a mandate when, in fact, it was guidance.

Dr. Graham introduced the leads for Chapter 7 (Drs. Clay, Aldy and Landry) and asked for comments on the chapter from the Panel.

Chapter 7:

Dr. Clay said the biggest single issue was lining up the discussion of comprehensiveness to ensure it is consistent across Chapters 3 and 7. She said she would incorporate Dr. Graham's comment about double counting.

Dr. Aldy said the Value of a Statistical Life (VSL) discussion in the revised *Guidelines* was fairly dated in terms of references to the literature with an average publication date of 1985. Since monetizing premature mortality risks was the biggest single category of benefits in most RIAs, we need confidence EPA is using the most recent evidence to support VSL. There have been previous SAB reviews that should be incorporated. Dr. Landry agreed that one of the biggest issues to put in the letter to the Administrator had to do with VSL. He then offered specific comments on the travel cost method and stated preference approaches described in the revised *Guidelines*.

Dr. Banzhaf agreed that the current Panel is not a VSL panel but wondered whether the current Panel should nudge EPA to consider adopting one of the existing meta analyses. It seems like EPA has been conducting its own meta-analysis of all the original VSL studies and they've been banging their head on the wall so they're using this old study from 1990's. Dr. Aldy said he

would go back and take a look at recent meta analyses and see what the Panel should recommend on these.

Dr. Graham echoed Dr. Clay's suggestion that EPA consider collaborating with the Department of Health and Human Services to share information or fund research into Willingness to Pay (WTP) for morbidity reductions. Dr. Graham proposed pushing this suggestion to Tier 1.

Dr. Graham introduced the leads for Chapter 8 (Drs. Linn and Levinson) and asked for comments on the chapter from the Panel.

Chapter 8:

Dr. Linn said he found no clear definition of benefit or cost in Chapter 8. What could be counted as a benefit in one regulation might be considered a negative cost in a rollback. He pondered whether to retitile Chapter 7 as "externalities" and Chapter 8 as "markets."

Dr. Williams, in reference in Text Box 7.2 Integrating Economics and Risk Assessment in the revised *Guidelines*, said he would draft clarifying language for EPA on the types of risk assessment that are not useful for economists.

Dr. Linn covered the points made in the Panel's 6-2-20 draft report, specifically that the *Guidelines* need to clarify its audience; that the categorization of costs and benefits needed to be clarified and consistent; and the length of the *Guidelines* was daunting. He also said EPA should be regularly updating their approaches, not waiting for new *Guidelines* to come out. Dr. Linn volunteered to draft language on retrospective analysis.

Dr. Clay again reminded the Panel they needed to be consistent across Chapters 4, 7 and 8 and the behavioral topics needed to be consolidated in Chapter 4. Panelists then offered different thoughts on where the Panel's comments on behavioral economics should go. Dr. Levinson thought maybe comments on behavior should go in the *Guidelines'* discussion of market failure (Chapter 3) and the reasons for the regulation.

Dr. Levinson wasn't sure what guidance about behavioral economics the Panel could give the analyst when engineers say the rule will cost X and save 3X. Dr. Graham pointed out the analyst should consider how much of these internal savings would be incorporated in the market under the baseline. Dr. Fraas noted there is already discussion in the *Guidelines* on exactly this point, perhaps in Chapter 3.

Dr. Farrow returned to the issue of distinguishing between Chapter 7 and Chapter 8 in terms of what's being modelled. Where would fuel cost savings go? In the cost chapter or the benefits chapter? In response, Dr. Graham said the Panel could leave this burden to EPA who had already laid out some templates for presenting information in Chapter 11.

Dr. Graham introduced the leads for Chapter 9 (Drs. Black and Banzhaf) and asked for comments on the chapter from the Panel.

Chapter 9:

Dr. Black said Chapter 9 of the revised *Guidelines* did not have enough emphasis on heterogeneity of impacts across groups and the importance of location and timing. For example, job loss for the elderly is different from job loss for the young. Likewise, a plant closing in the Rust Belt was different from a plant closing in Silicon Valley.

Dr. Banzhaf said he could not find the dividing line between Chapters 9 and 10. It was possible Chapter 9 was limited to cost issues that stemmed from compliance whereas Chapter 10 was about all the impacts and changes that stem from environmental improvements. Alternatively, Chapter 10 is about environmental justice and health effects on children and Chapter 9 is about other effects. In response to Dr. Farrow's comments, Dr. Banzhaf said Chapter 10 appeared to be addressing distributional effects targeted by specific executive orders, whereas Chapter 9 is looking at the distribution of costs and benefits of the regulation. In both cases, panelists agreed, impact analysis can help inform benefit-cost analysis. The 6-2-20 draft report has a Tier 1 recommendation for a distributional analysis of net benefits across groups. The draft report also presents a Tier 3 recommendation for using group specific WTP functions for environmental improvements.

Dr. Graham introduced the leads for Chapter 10 (Drs. Banzhaf and Williams) and asked for comments on the chapter from the Panel.

Chapter 10:

Dr. Banzhaf said most points had already been made in reference in the Chapter 9 discussion. He only added that Chapter 10 could do more with the participation side of environmental justice. For example, Chapter 10 could discuss how to compare the relative opportunity under different policies to respond to feedback from different groups.

Dr. Graham introduced the leads for Chapter 11 (Dr. Graham) and asked for comments on the chapter from the Panel.

Chapter 11:

Dr. Graham pointed to the templates in Chapter 11 in which EPA offered templates for summarizing information about benefits and costs. Although EPA presented 3 or 4 templates for benefits, they did not have a template on costs. Dr. Graham would like the Panel to recommend that EPA generate 1 – 2 templates on costs. Dr. Williams said EPA's presentation of information was usually presented in a binary yes/no fashion as though EPA had only one option. It would be important to know when marginal benefits outweigh marginal costs so the scope or stringency of the regulation can be adjusted. Decision makers often find marginal benefits and marginal costs more important for decision making as opposed to accepting or rejecting an overall regulation..

Dr. Aldy again reminded the Panel of the 2014 version of the *Guidelines* that stated: "An economic analysis of regulatory or policy options should present all identifiable costs and benefits that are incremental to the regulation or policy under consideration. These should include directly intended effects and associated costs, as well as ancillary (or co-) benefits and

costs.” Since the sentence on ancillary (or co-) benefits and costs had been deleted for the 2020 revision of the *Guidelines*, Dr. Aldy said it was important to point that out again in Chapter 11. Before closing the meeting, Dr. Graham asked panelists to send in their nominations for what they would like to have in the letter to the Administrator by June 30, 2020.

Meeting adjourned

Dr. Shallal adjourned the meeting at approximately 3:10 p.m. EST.

On behalf of the Panel,
Respectfully Submitted and Certified as Accurate,

/s/
Dr. Shaunta Hill-Hammond
DFO

/s/
Dr. John D. Graham
EGRP Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.

Attachment A: Additional meeting participants in attendance or who requested the teleconference call-in number.

Name	Affiliation
Amena Saiyid	Bloomberg Industry Group
Anthony Oliver	California Air Resources Board
Caroline Cress	Washington State Attorney General's Office
Doug Obey	Inside EPA
Hayden Wong Hashimoto	Clean Air Task Force
George Onyullo	DC Department of Energy and Environment
Jason A. Schwartz	Institute for Policy Integrity
Jessica Gordon	California Air Resources Board
Korline Cress	--
Roy Gamse	--
Sean Reilly	E&E News
Al McGartland	U.S. EPA
Alex Marten	U.S. EPA
Allen Fawcett	U.S. EPA
Amy Lamson	U.S. EPA
Andrew Schreiber	U.S. EPA
Ann Ferris	U.S. EPA
Ann Wolverton	U.S. EPA
Brett Snyder	U.S. EPA
Bryan Parthum	U.S. EPA
Charles Griffiths	U.S. EPA
David Evans	U.S. EPA
Elizabeth Kopits	U.S. EPA
E. Jones	U.S. EPA
Heather Klemick	U.S. EPA
Holly Stallworth	U.S. EPA
Khanna Johnston	U.S. EPA
Matt Massey	U.S. EPA
Nathalie Simon	U.S. EPA
Nathan Pfisterer	U.S. EPA
Robin Jenkins	U.S. EPA
Thomas Brennan	U.S. EPA

Materials Cited:

The following meeting materials are available on the SAB website (<http://www.epa.gov/sab>) at the page for the June 9, 2020.

<https://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/3c146939e4a40fee852585520059a4bf!OpenDocument&Date=2020-06-09>

ⁱ Panel roster

ⁱⁱ SAB Peer Review of EPA's Revised Guidelines for Preparing Economic Analyses

ⁱⁱⁱ List of registered speakers