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OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD
STAFF OFFICE

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MEMORANDIUM

SUBJECT: Formation of the Reduced Form Tools Review Panel (RFTRP) under the Science Advisory Board (SAB)

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The EPA conducted a study of reduced-form tools to develop and demonstrate a protocol for systematically comparing PM_{2.5} monetized health benefits estimated using reduced-form tools with those generated using full-form air quality and health benefits models, in the specific context of using such tools to inform the economic impacts of regulatory analyses. As such, the project documentation subject to this peer review first describes the analytical approach developed to compare the two types of approaches and then presents the evaluation results for a number of reduced-form tools across multiple policy scenarios. The tools evaluated include: 1) EPA's Source Apportionment Benefit-per-Ton (SA-BPT) approach based on the 2005 National Emissions Inventory (NEI); 2) Air Pollution Emission Experiment and Policy Analysis Model (APX); 3) Intervention Model for Air Pollution (InMAP); and Estimating Air Pollution Social Impacts Using Regression (EASIUR). The project report concludes with a description of the limitations of the evaluation approach and findings, with suggestions for future research. EPA also has publicly provided all of the modeling inputs and processing scripts to assist model developers and users in conducting similar evaluations of new or updated reduced form tools.¹ EPA expects that reduced-form tools will continue to evolve in the future. As recommended within the current report, EPA has already begun to update its 2005 National Emissions Inventory (NEI) BPT tool to reflect recent updates to the emissions inventories and also plans to investigate other efficient modeling techniques that can also approximate full-form modeling

¹ Available here: <https://github.com/epa-kpc/RFMEVAL>

approaches. As a result, EPA believes there is value in having a peer review panel deliberate as to whether the evaluation framework developed in this study is appropriate, and to provide input with regard to future design improvements to enhance the capabilities of reduced form tools.

This memorandum addresses the set of determinations that were used in forming the Reduced Form Tools Review Panel under the Science Advisory Board.

1. The type of review body that will be used to conduct the review, and the nature of the review;
2. The types of expertise needed to address the general charge;
3. Financial conflict of interest considerations, including identification of parties who are potentially interested in or may be affected by the topic to be reviewed;
4. How regulations concerning “appearance of a loss of impartiality” pursuant to 5 C.F.R. § 2635.502 apply to members of the augmented committee;
5. Other considerations that might affect the objectivity of members of the augmented committee; and
6. How individuals were selected for the augmented committee.

DETERMINATIONS:

1. The type of review body that will be used to conduct the review, and the nature of this review.

The Reduced Form Tools Review Panel (RFTRP) consists of subject matter experts selected to provide advice through the chartered SAB on the evaluation of reduced form tools for estimating air quality benefits developed by OAQPS staff. The chair of the Panel will be a member of the chartered SAB and the Panel’s report(s) will be reviewed by the chartered SAB before they are transmitted to the EPA Administrator.

2. The types of expertise needed to address the general charge.

The EPA SAB Staff Office formed the Reduced Form Tools Review Panel (RFTRP). The SAB Staff Office identified current members of the Chartered SAB and its four standing committees with expertise in one or more of the following areas; environmental economists with extensive experience and expertise estimating benefits and/or costs of environmental outcomes, conducting and/or evaluating benefit cost analyses, and assessing distributional effects, including economic impacts of environmental regulation. In addition, SABS0 also included members with expertise in modeling and quantification of benefits.

3. Financial conflict of interest consideration, including identification of parties who are potentially interested in or may be affected by the topic reviewed.

- a) Identification of parties (or class of parties) whose financial interests may be affected by the matter to be reviewed:

The U.S. Environmental Protection Agency (EPA) routinely undertakes analyses to quantify the value of public health impacts as part of Regulatory Impact Analyses (RIAs) to estimate the costs and health benefits of major air pollution regulations. due to changes in air quality. These analyses can be both time- and resource-intensive endeavors that often require large, detailed datasets and sophisticated computer models. However, there are times when EPA has instead used “reduced-form” tools, which employ simpler models to approximate the more complex analyses with a lower computational burden. Because these reduced-form tools may be used to inform regulatory or policy decisions, EPA conducted a study to evaluate how the results from such tools compare to each other and to more comprehensive full-form approaches.

This review of the evaluation will not focus on any particular environmental policy issue. *Thus, this Panel’s deliberations will not be focused on the interests of specific parties or a discrete and identifiable class of parties.*

- b) Conflict of interest considerations: For Financial Conflict of Interest (COI) issues, the basic 18 U.S.C. § 208 provision states that: “An employee is prohibited from participating *personally or substantially* in an official capacity in any *particular matter* in which he, to his knowledge, or any person whose interests are imputed to him under this statute has a *financial interest*, if the particular matter will have a *direct and predictable effect* on that interest [emphasis added].” For a conflict of interest to be present, all elements in the above provision must be present. If an element is missing the issue does not involve a financial conflict of interest; however, the general provisions in the appearance of impartiality guidelines still apply and need to be considered.
- i. Does the general charge to the Panel involve a particular matter? A “particular matter” refers to matters that “...will involve deliberation, decision, or action that is focused upon the interest of specific people, or a discrete and identifiable class of people.” It does not refer to “...consideration or adoption of broad policy options directed to the interests of a large and diverse group of people.” [5 C.F.R. § 2640.103(a)(1)]. A particular matter of specific party means a particular matter that is focused on the interests of a specific party [5 C.F.R. § 2640.102(m)].

The activity of the Review Panel and SAB Committee members for the purpose of addressing the charge for peer review of the draft document titled “Evaluating Reduced-Form Tools for Estimating Air Quality Benefits”, *will qualify as a particular matter of general applicability because the resulting advice will be part of a deliberation and under certain circumstances that advice could involve the interests of a discrete and identifiable class of people but does not involve specific parties. That group of people constitutes those who are involved with organizations facing potential regulatory decisions informed by EPA’s Reduced Form Tools for Estimating Air Quality Benefits.*

Will there be personal and substantial participation on the part of the panel members? Participating personally means direct participation in this review. Participating substantially refers to involvement that is of significance to the matter under consideration. [5 C.F.R. §2640.103(a)(2)].

For this review, the SAB staff office has determined that the Review Panel and SAB Committee members will be participating personally in the matter. Panel members will be providing the Agency with independent advice and recommendations on the development of the draft document “Evaluating Reduced-Form Tools for Estimating Air Quality Benefits”, and such advice is expected to directly influence the Agency’s use and enhancement of these tools to estimate air quality benefits. Therefore, participation in this review will be substantial.

- ii. Will there be a direct and predictable effect on panel members’ financial interests? A direct effect on a participant’s financial interest exists if “... a close causal link exists between any decision or action to be taken in the matter on the financial interest. A particular matter does not have a direct effect ... if the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter. A particular matter that has an effect on a financial interest only as a consequence of its effects on the general economy is not considered to have a direct effect.” [5 C.F.R. § 2640.103(a)(ii)]. The ethics regulations include an exemption allowing special government employees (SGEs) serving on federal advisory committees to participate in any particular matter of general applicability where the disqualifying financial interest arises from their non-Federal employment or non-Federal prospective employment, provided that the matter will not have a special or distinct effect on the employee or employer other than as part of a class [5 C.F.R. § 2640.203(g)]. (This exemption does not include the interests of an SGE arising from the ownership of stock in his employer or prospective employer.)

For this review, the SAB staff office has determined that the work conducted by the Panel will not have a direct and predictable financial effect on any members financial interests.

For a conflict of interest to be present, all elements in the above provision must be present. If an element is missing the issue does not involve a financial conflict of interest; thus no COI has been identified by the SAB staff office.

4. How regulations concerning “appearance of a loss of impartiality” pursuant to 5 C.F.R. § 2635.502. apply to members of the Panel.

The Code of Federal Regulations at 5 C.F.R. § 2635.502(a) states that: “Where an employee knows that a *particular matter involving specific parties* is likely to have a **direct and predictable** effect on the financial interest of a member of his household, or knows that a person with whom he has a covered relationship is or represents a party to such matter, and where the person determines that the circumstances would cause a **reasonable person** with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance

problem and has received authorization from the agency designee.” Further, § 2635.502(a)(2) states that, “An employee who is concerned that circumstances other than those specifically described in this section would raise a question regarding his impartiality should use the process described in this section to determine whether he should or should not participate in a particular matter.”

5. Other considerations that might affect the objectivity of members of the Panel.

Members of SAB panels must be scientific and technical experts who are objective and open-minded, able to engage in deliberative discussions with scientists who may have disparate perspectives. To evaluate candidates, the SAB Staff Office considers information provided by candidates (including on the EPA Form 3110-48), and information independently gathered by SAB staff.

As part of a determination that committee members are objective and open-minded on the topic of the review, and consistent with the agency’s Peer Review Policy, the SAB Staff Office considers previous involvement in the matter before the augmented committee. This evaluation includes responses provided by candidates to the following supplemental questions:

- (a) Do you know of any reason that you might be unable to provide impartial advice on the matter to come before the panel/committee/subcommittee or any reason that your impartiality in the matter might be questioned?
- (b) Have you had any current or previous involvement with the review document(s) under consideration including authorship, collaboration with the authors, or previous peer review functions? If so, please identify and describe that involvement.
- (c) Have you served on previous advisory panels, committees or subcommittees that have addressed the topic under consideration? If so, please identify those activities.
- (d) Have you made any public statements (written or oral) on the issue that would indicate to an observer that you have taken a position on the issue under consideration? If so, please identify those statements.

The SAB Staff Office has determined that there is no reason to believe that the members selected for the Panel would not be objective and open-minded and able to engage in deliberative discussions with scientists who may have disparate points of view on the matter before the augmented committee.

6. How individuals were selected for the panel.

The SAB Staff Office Director makes the final decision about who serves on the augmented committee based on all of the relevant information, including a review of each candidate’s confidential financial disclosure form (EPA Form 3110-48), the responses to the questions above, and information independently gathered by SAB Staff.

For the SAB Staff Office, a balanced committee or panel is characterized by candidates who possess the necessary domains of scientific knowledge, relevant perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the general charge. Specific criteria to be used in evaluating an individual panel member include: (a) scientific and/or technical expertise, knowledge, and experience; (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a loss of impartiality pursuant to 5 C.F.R. § 2635.502; (e) skills working on advisory committees and panels (including objectivity and open-mindedness); and (f) for the committee as a whole, diversity of scientific expertise and viewpoints.

Reduced Form Tools Review Panel (RFTRP) Members

On the basis of the above-specified criteria, the members of the RFTRP reviews are as follows:

- Dr. Jay Turner, Washington University **CHAIR**
- Dr. Richard Belzer, Independent Consultant
- Dr. James Boylan, Georgia Department of Natural Resources
- Dr. Tony Cox, Cox Associates
- Dr. Alison Cullen, University of Washington
- Dr. Sabine Lange, Texas Commission on Environmental Quality
- Dr. Anne Smith, NERA Economic Consulting
- Dr. Richard Smith, University of North Carolina

Concurred,

/s/

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04/21/2020

Date