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**Preliminary Quality Review Comments on the SAB Draft Report:
*Review of EPA’s Draft Technical Guidance for Assessing Environmental Justice in Regulatory Analysis***

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as of October 23, 2024**

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Comments from Lead Reviewers:

Dr. Sylvie Brouder

1. Were the charge questions to the Panel adequately addressed?

For the content as a whole, yes. However, as noted by the panel, some comments and recommendations are recurring and cross-cutting themes which can present challenges in comprehensively addressing a question without seeming repetitive.

Of particular importance are the panel recommendations around clarifying language use – not only thorough and comprehensive definitions but consistent use of terminology and avoidance of jargon without explanation. As a non-expert in EJ, language challenges in the domain seem fairly analogous to that encountered in Ecology where terms loosely used by non-experts in day-to-day life have different and/or a very specific, narrow meaning within the domain (e.g. resilience, ecosystem, diversity, ...). Likewise, suggestions for more case studies, worked examples, comprehensive lists of considerations and criteria, and consensus data sources seem critical to providing an effective technical guide for what is still a relatively novel analysis. The panel's recommendation (p.22) discussion on the need for clarity on extrinsic vs. intrinsic factors (p. 24-25) seems a key example. It appears the use of these terms in EJ analysis stems from a foundation or assumption that the regulatory action involves a chemical pollutant. Yet other regulatory actions to curb other adverse agents that fall under EPA's purview can be envisioned and parsing factors into categories with poorly understood labels is a recipe for confusion. See additional note below on the need for even more internal referencing.

The only charge Q that may not have been fully addressed is Q7. Specifically, Q7 calls for "prioritization" of gaps for the near and longer term. The panel identified 8 major or minor methodological gaps and 10 major/minor data gaps but these seem to be offered without prioritization or timeline (i.e., not tiered) in the separate sections that provide the rationale. In the tiered recommendations, is the order presented within a Tier the priority for the short (T1) and longer term (T2)? This should be clarified. An additional thought regarding the Tiered recommendations for Q7 is that the T1 recommendation for more literature synthesis could be a major scope of work that requires a longer timeline to complete even if it is a high priority. Giving EPA some more clear guidance on prioritization would likely be beneficial as the agency decides how to invest resources in improving the EJTG.

As Land Grant University employee with an Extension appointment, I was pleased by the thorough discussion on establishing enduring relationships of trust as prerequisite to successful community engagement and obtaining valid analytical results.

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2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

This list of acronyms does not appear to be complete.

In the Introduction, I find the one sentence description acknowledging the existence of the self-initiated advisory activity to be confusing rather than clarifying. Is this statement intended as just an FYI or is there specific relevance to the present document that should/could be inferred.

While not a technical error, I would encourage the panel to reconsider whether a P value of 0.05 is too strict a requirement (Pg. 44, L.2.). Given all the discussion on potential data gaps and lack of high-quality datasets, it seems a bit conventional to just recommend the “standard” given the relevance and utility of that standard is currently questioned (and for some of the same reasons) in many domains.

Other minor but specific points for clarification:

- Pg. 4, L26. Clarify “distributive EJ analysis” and/or what is meant by entire sentence.
- Pg.6, L.32-35. Something seems wrong with the phrasing of this sentence.
- Pg.13, L.22. Missing period.
- Pg.28, L.13. “monitoring” not “monitor”?
- Pg.38, L.18. “decision” seems to be the wrong word. “planned action” or “target”?
- P.41, L19-20. This sentence requires further explanation to be understood by those without domain expertise.
- P.42, L12-L14. This sentence is a fairly strong statement given the wide array of unknowns and the potentially immediate and devastating impacts of short term impacts of climate change. Perhaps modify to simply stress that long-term impacts of exposure are profound...

3. Is the draft report clear and logical?

On the one hand, I very much liked the organizational approach of the review whereby the consensus recommendations immediately following the charge questions, which are, in turn, followed by the explanatory text. That said, this organizational approach may require some additional wordsmithing to make the recommendations more understandable/meaningful to a reader who has yet to have any explanation of context. For example, Tier 1 Rec #2 in response to Charge Q1, the request to consider “other sensitive or vulnerable groups more explicitly, under definition of...” would benefit from a few more words to indicate the nature of the limitation this request is intended to

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address.” This is a recurring challenge throughout the document. Another example is the T2 recommendation for Q5 (P.30) on “new science” – I believe this refers to recently released findings “from relevant EPA and White House documents...” (P.32) but it could also refer to planning for / executing real-time updating of the EJTG as a best practice.

Likewise, there are explanations that could use a better prefacing statement for the reader to quickly grasp the nature of problem, gap, etc. For example, in the discussion of “Limitations... pg 5. L.27” adding a contextualizing opening sentence regarding the nature of the steps detailed in the EJTG would help with readability and comprehension. More specifically, are the steps the 3 questions that should be asked in analysis of EJ concerns and should footnote 5 (pg. 10) be moved or the content incorporated here. Other places in the text just seem to lack a few key, additional words of explanation to ensure better communication of the message. On P25, L16-17, the fact that there are only twenty-six monitors for air toxics is seemingly provided as evidence of structural racism in the history of environmental protection. On the face of it, the sparse monitoring doesn’t seem to be direct evidence – I assume it’s the location or the location plus the paucity that makes this evidence of structural racism. On P42, L1-2, the statement on dynamic effects applying best to national-level analyses is followed by a discussion of observations of regional effects that do not seem to support the initial statement.

Lastly, there seem to be sections of text that are important but are not well-placed relative to the charge questions themselves. For example, charge Q2 concerns “key definitions” and strategies for “meaningful involvement” whereas charge Q6 concerns the presentation of “analytical considerations.” The tier recommendations seem appropriately aligned and there is supporting text on the need for definitions for statistical terms. However, this need for statistical definitions is followed by a fairly comprehensive paragraph on how to statistically determine differences/magnitudes and Bayesian versus frequentist approaches, which seems better suited to addressing what’s missing in analytical considerations where the tiered recommendations specifically call out uncertainty, statistical considerations, etc. (p. 36) and the supporting text details plusses and minuses of various statistical approaches and tools (section 6.4 starting on p. 36). Here and elsewhere enhanced internal cross-referencing could increase document readability (e.g. the discussion of need to clarify terms such as intrinsic vs extrinsic in response to charge Q4 on p. 24, L28-30 could be internally referenced in the response to charge Q2).

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

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In general, yes.

Dr. Lala Ma

1. Were the charge questions to the Panel adequately addressed?

Yes, I believe the Panel did a nice job and the responses to the charge questions were comprehensive.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

I did not find any technical errors in the draft report. I have two comments/questions and note a few minor typographical errors.

Pg. 53, Ln 39: "Curry *et al.*" should be "Currie et al."

Pg. 13, Ln 22: Missing a period between "etc.)" and "In-person tools".

Pg. 15, Ln 24: Consider "do not" instead of "don't". Same for Pg. 49, line 11.

Regarding Bullet 1 in the letter to the Administrator: I agree with the recommendation that a clear, structured framework for conducting EJ analysis is crucial and that relying on analyst judgement regarding feasibility and appropriateness is inadequate. An additional, related suggestion is to require the analyst to justify why analytical choices were made, especially if a choice deviates from what is considered best practice (e.g., if a choice on aggregation level for a factor is based on currently available spatial or demographic resolution and no lower level of disaggregation is available, then it should be stated.). This point is made in various places throughout the report, e.g., on pg. 20, Ln 24-26: "In cases where a specific directive cannot be followed or is not feasible, the analyst should explain why they did not or were not able to adhere to best practices." I think it should be emphasized as a broader point to make EJ analysis less subjective to analyst decisions (and reinforce a structured approach). Second, it would increase the transparency of the EJ analysis. Finally, as data availability and methods are continually evolving, this would encourage analysts to remain up to date with newly available resources and to verify whether the decisions being made based on feasibility are justified.

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Regarding the CPI (Pg. 13, Ln 9, CQ2): “The CPI does not measure qualitative changes or substitution of goods.” Is this referring to the environmental and social change in the previous sentence? If environmental amenities change and these changes are capitalized into housing prices, is this not included in the CPI? It would be helpful to clarify the types of “qualitative change” or “substitution of goods” referred here, perhaps through an example.

3. Is the draft report clear and logical?

Yes, I thought the draft report was generally clear and logical. In some areas, it would be helpful to clarify terms used. I list my clarification questions below by charge question.

(CQ1) Pg. 5: “The Panel also notes that the Bureau of Indian Affairs has better and more reliable survey data on Tribal and Indigenous communities, compared to the American Community Survey (ACS).” What is “better” and “more reliable”? A brief sentence about why these data are preferred over the ACS would be helpful to the EPA.

(CQ2) Pg. 22, Ln 3: “Sovereign nations may have their own timelines that may not match those of other governments.” Can you clarify what “timelines” means in this context?

(CQ3) Pg. 18, Ln. 23-27: “While data on proximity to affected facilities might be relatively easy to acquire, data on cancer/asthma prevalence or unique consumption patterns can be restricted to some users and could be challenging to obtain.” In the next sentence, the report implies that, compared to demographic data, these data are not only “easier to collect” but are less “accurate”. Is it not usually the case that restricted data are often of high (spatial/temporal) resolution and are thus restricted because of privacy concerns, which makes these data of higher quality?

(CQ3) Pg. 20, Ln 11-19: “Finally, the goal of emphasizing intersectionality is difficult to operationalize as this is an individual level characteristic and it is difficult to understand how one might characterize it for specific groups.” What does “intersectionality” mean in this context?

(CQ3) Pg. 21, Ln 23-24: “Like the selection of the unit of analysis, guidance on how to define the baseline is needed, as well as examples of cases where information is not optimal.” Can you clarify what is meant by “optimal” in this case?

(CQ4) Pg. 23: Ln 34-35: The report references “other factors” that are contributors to increased risks and notes that “The term ‘other factors’ is vague and could benefit from elaboration to include multiple major sources and media (e.g., air, water, and soil concerns in specific overlapping geographical areas) and possible agencies and jurisdictions that might share information and provide coordination.” Should this be *lack*

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of information sharing and coordination by agencies/jurisdictions as a contributor to risks?

(CQ4) Pg. 28, Ln 6-8: “Monitoring, compliance, and enforcement may potentially be related if a state has or has not incorporated EJ in statutes or policies.” Can you clarify through an example?

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes, the recommendations are generally supported. There were some instances where I did not follow how the discussion related to the recommendation and I list the issues by charge question below.

(CQ1) Pg. 5-6: I had some confusion about the first paragraph in section, “Limitations Associated with EPA’s Proposed Analytical Methods”

First, regarding the discussion of “incremental change,” is the point that documenting a change in health due to a regulation is difficult because simple dose-response relationships used in a traditional risk assessment do not capture interactions with coinciding stressors (i.e., social determinants of health), behavioral responses to a policy, and local problems that are more idiosyncratic to a specific community?

Second, referring to the “incremental change” in health effects, the draft says, “To measure such an effect, a correlation would first need to be demonstrated, followed by an analysis of the fraction of the health effect attributed to the specific exposure(s).” Does this refer to a correlation between regulation and pollution? Why not a causal effect of the regulation on pollution risk?

Finally, in line 12 (pg. 6), it says, “EPA’s proposal that analytical evaluations be related to baseline, regulatory options, and whether impacts are exacerbated or mitigated in the introduction needs further explanation as to how the outcomes generated will inform the regulatory decision.” This recommendation (i.e., specifying how outcomes of an analysis are used in policy) seems like a separate recommendation than the focus of the rest of this paragraph, which discusses how outcomes from a regulatory decision should be measured (and the associated difficulties with measurement).

(CQ1) Pg. 6, Ln 33: In the recommendation to elaborate on how best to combine qualitative and quantitative data, the report writes, “The Panel appreciates the reliance on data quality as the backbone for defining EJ and technical approaches, but it is important to acknowledge that data quality is predicated on data quantity, availability, reliability, and national consistency. The draft EJTG should emphasize the necessity of

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having a presence in the field to experience EJ through the eyes of local residents living in the pathway of cumulative exposures or impacts, rather than discrete and disparate EJ stressors.”

Can you clarify whether the recommendation is to incorporate cumulative impacts or to incorporate the perspectives of residents? In either case, are cumulative impacts and/or resident perspectives treated as a source of qualitative data? I can see both being quantified and used in an analysis.

(CQ1) Pg. 7, Ln 21-23: The recommendation in the first part of this paragraph was to encourage co-regulator involvement. The paragraph then goes on to say “Additionally, it is difficult to reconcile EPA’s attempt to conduct a nationally consistent and scientific ‘EJ Analysis’ for rulemaking when EJ itself is not consistently defined nor implemented nationwide, nor is it written into federal law. Place-based considerations as well as IK may not be implementable nationwide.”

It is unclear how this relates to the recommendation. Perhaps this barrier to conducting nationwide EJ analyses is relevant because co-regulators might help provide local information? It would be helpful to clarify.

(CQ2) Cumulative impacts are discussed in various parts of the report. Its discussion in the section about integrating qualitative and quantitative data (pg. 11, CQ2) suggests that it is being treated as a qualitative measure. However, the discussion that relates cumulative impacts analysis to human health risk assessments (CQ5) suggests that it may be a quantitative measure. This is a little confusing. Related to this, it would be helpful to clarify the distinction between qualitative and quantitative data, especially since many of the recommendations encourage the EPA to provide more guidance on ways to integrate qualitative and quantitative data.

(CQ3) Pg. 20, Ln 3-10: This paragraph suggests additional population characteristics beyond EJTG and EO 14096 to be included (e.g., employment status, occupation, housing status) because these groups may be exposed to higher pollution concentration. It may be helpful to the EPA if citations are included on the research that documents high pollution exposure based on these additional population characteristics.

(CQ4) Pg. 22, Ln 32: For the Tier 1 recommendation, “The SAB recommends expanding the discussion on meaningful engagement.” Since this section is about contributors to risks and health effects, should this recommendation be about the lack of meaningful engagement as a contributor?

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(CQ4) Pg. 23, Ln 23-27: “However, including diverse risk factors while identifying the population of concern can be problematic if the proposed regulatory intervention will have a limited impact on the main risk factors identified in the population of concern. In other words, the more risk factors used to identify the population of concern, the harder it will be to show that one regulatory intervention will have a meaningful impact on the community risk profile.” This point seems to somewhat conflict with the suggestions in this section on incorporating cumulative risks and geogenic hazards, which generally encourage examining a broader set of risk factors.

(CQ4) Pg. 26: Figure 2 is described to provide “the relationship between social equality and public health” and the Panel suggests its inclusion in the technical document in the discussion of structural racism. I would like to note that the impact of markets in this schematic seems absent (or at least not stated explicitly) and this might be an important omission, given that both Ringquist (2004) and the Banzhaf edited volume (mentioned in the previous paragraph) discuss markets as a structural cause of environmental inequity.

(CQ4) Pg. 27: In “Section 4.1.1 Proximity to Emissions and Discharges from Nearby Sources”, it begins with a quote from the EJTG on the limitations of measures of proximity to an emissions source, and then goes on to say that historically marginalized communities experience a disproportionate amount of pollution and that government policies, e.g., redlining, (and other vulnerabilities) also contribute to disproportionate exposure. It is not clear to me what the recommendation is. Is the Panel suggesting that proximity measures are not completely *inadequate* because it can still capture the effects of redlining and limited access to resources and institutions? It would be helpful to clarify.

(CQ6) Pg. 39: “In multiple instances Chapter 6 refers to multivariate regression as a common method to employ for an EJ analysis; however, methods more advanced than multiple regression have been proposed in the literature for exposure assessment...”. The report then provides an example of methods that address spatial autocorrelation. Caution may be warranted since some of these advanced methods come with additional assumptions that may or may not be appropriate or satisfied. I am not an expert in this area, but is it not the case that many of the methods to address spatial autocorrelation require specifying the form of the spatial correlation? If so, then how are results impacted if the assumption is wrong? Relatedly, this underscores the importance of the Panel’s recommendation on characterizing uncertainty if there is a push to apply more advanced methods/models.

(CQ7) Pg. 47, Ln 27-37: This paragraph relates to engagement, and is right after the list of Tier 1 and Tier 2 recommendations on data and methodological gaps. It leads with “Panel members emphasized the importance of EPA EJ analysts acquiring field

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experience in EJ communities.” It would be helpful to clarify how this discussion relates to method and data gaps. For example, is the point that this type of engagement can help with the data gap via the Tier 2 recommendation on ground-truthing?

Dr. Enid Neptune

1. Were the charge questions to the Panel adequately addressed?

Charge Question #1 – Clarity and Technical Accuracy

Recommendations are rational, sufficiently detailed and clearly stated.

Charge Question #2 – Key Definitions

The panel addressed the most problematic definitional issues. However, more clarity on the “right to nature” standard for tribal nations would be helpful to consider compatibility with new regulations.

Charge Question #3 – Best Practices

The responses are appropriate and outline the broad spectrum of analytical options that must be explored as final recommendations on rulemaking with EJ considerations are developed. The difficulty of defining populations of concern is discussed with potential approaches to prioritization. However, whether defining a large number of relevant “populations” will undermine efforts to operationalize an analytic strategy is suboptimally addressed.

Charge Question #4 – EJ Contributors and Drivers

The responses expand the range of drivers and factors that plausibly confer health risks associated with environmental exposures and should be viewed thru an EJ prism. While extrinsic factors are presented in detail, the intrinsic factors do not seem to be points of concern. The Figure 2 would be improved by adding the component of access to health care in the transition from Environmental health stress to Public health outcomes (p26). The panel does not discuss the competing advantages of environmental injustice that is experienced by more politically, economically and socially agile communities.

Charge Question #5 – EJ in Human Health Risk Assessment

The recommendations adequately address important elements of the HHRA that should be incorporated into the draft report.

Charge Question #6 – EJ in Regulatory Actions

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The recommendations adequately address the foundational question of whether and how EJ assessments should affect regulatory actions.

Charge Question #7 - Methodological or Data Gaps

The responses and recommendations sufficiently addressed the charge question. The delineation of methodological gaps and data gaps was detailed and provided guidance.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the SAB draft report?

None that are omitted or not addressed in sufficient detail.

3. Is the draft report clear and logical?

The report while having some redundancies, which is expected, is clear and logical. The schematics are helpful.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

The conclusions and recommendations are strenuously supported by the explanatory text and noted references.

Comments from other SAB Members:

Dr. Joseph Arvai

1. Were the charge questions to the Panel adequately addressed?

Given the thorny subject matter and the fact that this topic is open to analysis from many different disciplines in the social/behavioral sciences, I thought the panel did a remarkably thorough job.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

Regarding the matter of Integrating Qualitative and Quantitative Data to inform decision-makers (page 11), the report was light on insights from the decision sciences. There is an influential literature on developing objectives and performance measures for data that may be otherwise characterized as “qualitative”. While instruments such as story maps may help to characterize qualitative information, they may not be as useful to decision-makers as tools developed for aiding with the decision-making process. For more, see:

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Bond, S., K. Carlson, and R. L. Keeney. 2008. Generating objectives: Can decision makers articulate what they want? *Management Science* 54:56-70

Keeney, R., and R. Gregory. 2005. Selecting attributes to measure the achievement of objectives. *Operations Research* 53:1-11.

Regarding the matter of Outreach and Community Engagement, it seems impractical to recommend that EPA not rely on remote meetings to engage a broad array of affected stakeholders. Constraints on resources – e.g., EPA budgets and stakeholders’ time – would seem to make remote meetings almost essential. Are there not best practices for facilitating remote meetings that could be offered/explored.

Finally, even though it did not appear to be part of the panel’s charge to review the projected outcomes of the draft EJTG, it was not terribly clear to me how “success” after implementing the new EJTG would be measured. Perhaps this is a bigger question for the agency but it seems like one thing suggest that the agency “infuse equity and environmental justice principles and priorities into all EPA practices, policies, and programs (chapter 1, page 1)” but quite another to establish what this actually means in terms of the processes and outcomes of said “infusion”. Though I lack the lived experience of people who are “historically marginalized, overburdened, underserved, and living with the legacy of structural racism”, I strongly suspect they would like more details about how the infusion of EJ principles into agency practices, policies, and programs will be carried out and to what end.

3. Is the draft report clear and logical?

In my opinion, yes.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

In my opinion, yes. However, though not a fault of the panel, the depth of the report’s recommendation might have been enhanced if the panel included experts from the decision/ management sciences.

Dr. Tami Bond

1. *Were the charge questions to the Panel adequately addressed?*

Yes, the charge questions were thoroughly addressed.

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2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

- a) The Panel discussed the practice of outreach and community engagement (pages 13-16) and identified some historic limitations in this type of process. The Panel recommended the Radical Candor approach. A wealth of facilitation techniques is available to foster engagement, to elicit disparate views, and to move toward a common vision. The Panel could recommend that individuals participating in community engagement seek formal training in facilitation or informal training by observing and working with skilled facilitators. The Radical Candor approach could be given as an example.
- b) I have a concern with the discussion of Section 6.2: Baseline and regulatory options (pages 37 and 38). I recognize the Panel's concern about the challenge associated with identifying an incremental change due to a proposed regulation. Nevertheless, regulations that change the status quo are one of the primary methods that EPA has to remedy existing injustice. The "baseline" analysis merely acknowledges existing, distributed burdens, which does not actively contribute to EPA's mission of protecting human health.

I suggest that the Panel consider language in this section to recognize the aspiration of reducing existing burdens by comparing baseline and regulatory options, rather than emphasizing only the quantitative challenges. Perhaps the discussion could clarify what can and should be presented (e.g. collocation of reduced concentrations with other exposures and social stressors) versus what is difficult to discern (attributable health effects).

3. Is the draft report clear and logical?

Yes, it follows the flow of the charge questions which are organized by chapters in the Technical Guidance. This structure makes it easy to read the report separately and also to match up the recommendations with the TG document.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Yes, the logic is clear.

Mr. Earl Fordham

1. Were the charge questions to the Panel adequately addressed?

I believe the charge questions were adequately addressed.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

I did not note any technical errors, omissions or issues that were not sufficiently addressed.

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3. Is the draft report clear and logical?

Generally, yes, the draft report is clear and logical. From my experience, I would strengthen the requirement for the analysts to gain relevant information on population impacts directly from the leaders of the affected community (e.g., church leaders, business leaders, tribal councils). Attendance at community meetings, allowing open dialogue, has worked well for endeavors in the state of Washington.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

I believe the conclusions and recommendations are supported by the body of the draft report.

Dr. Gloria Post

I have reviewed the SAB Draft Report, Review of EPA's Draft Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. My responses to the quality review questions are below.

1. Were the charge questions to the Panel adequately addressed?

It appears that the charge questions were adequately addressed.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

I did not note any technical errors or omissions or issues that were not adequately addressed.

3. Is the draft report clear and logical?

I have two comments related to the discussions of human health risk assessment in the draft report:

p. 39, lines 19-32 states that human health risk assessment (HHRA) is discussed in Section 6.4 - Analytic Methods of the draft EJTG and provides suggestions on discussing HHRA in EJ analysis. However, HHRA does not appear to be directly mentioned in Section 6.4 of the EJTG, and it is suggested that the comments on lines 19-32 be clarified regarding this point.

p. 49, lines 2-5 "The Panel recommends that data gaps in exposure assessment be filled, explicitly addressing gaps in toxicokinetic and toxicodynamic understanding across different life stages, especially for infants and children into adulthood." This sentence

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needs to be clarified, since toxicokinetics and toxicodynamics are relevant to characterization of toxicological effects rather than exposure assessment.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

It appears that the conclusions and recommendations are supported by the body of the draft report.

Dr. Amanda Rodewald

The panel did an excellent job reviewing and suggesting improvements to the EJTG report.

1. Were the charge questions to the Panel adequately addressed?

- Yes, they were adequately addressed overall.
- In response to Charge Question 2, there were several pages of review and recommendations that seemed much broader than the subsection heading of “Key Definitions”. The section included extensive text about topics that do not appear to relate to “Key Definitions”, such as best practices for community outreach and engagement, treaty rights of Tribal Nations, use of qualitative data, application of frequentist vs. Bayesian statistical approaches, and shortcomings of the Consumer Price Index to measure buying power of overburdened communities. The information provided was excellent, but it struck me as somewhat off-topic from the charge question, which was focused exclusively on key definitions.
- The last Tier 1 recommendation in response to Charge Question 4 (about the drivers and contributors of the greater risks and health effects in the EJTG) focused on how to design meaningful engagement, the role of states in co-regulation, and incorporation of Indigenous Knowledge, TEK, lived experience, and Indigenous People. The content was useful, but the wording in the recommendation overview did not seem to follow from the specific charge question. I suggest making the connections more explicit in the summary, as the authors did well in the full text.

2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

- No, not that I detected.

3. Is the draft report clear and logical?

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Related to Charge Question 2:

- Tier 1 and first paragraph of Page 9: I think it would be most helpful to identify all, rather than a subset of, terms for which additional clarification is needed in definitions.
- Tier 2 : Unclear to me determining the type of data that are “acceptable” means the type of data or the quantity/quality of data.
- Page 8, line 30: “Clarifying Definitions and Effective Meaningful Participation/Involvement Practices”. The two topics seem sufficiently different as to warrant their own subsections. I think it might be more clear to split up.

Related to Charge Question 3:

- In each of the Tier 1 and Tier 2 recommendations in response to Charge Question 3, the authors mentioned clarifying use and integration of qualitative data, as was extensively done in the Charge Question 2 section. Given that Charge Question 2 only asked about Key Definitions, it might make sense to move the recommendation and discussion of qualitative data to Charge Question 3 only.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

- Yes, the report has excellent content!

Dr. Godfrey Uzochukwu

Line 38 and supported by science *instead of scientifically supported...*

Well written transmittal letter.

Dr. Wei-Hsung Wang

Quality Review Comments:

1. Were the charge questions to the Panel adequately addressed?

Response

The draft report properly addressed all charge questions in great detail.

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2. Are there any technical errors or omissions or issues that are not adequately dealt with in the draft report?

Response

No technical errors or omissions were noticed, and technical issues were adequately and thoroughly addressed in the draft report.

3. Is the draft report clear and logical?

Response

The draft report is justified, organized, and based on sound science. It is clear and logical.

4. Are the conclusions drawn or recommendations provided supported by the body of the draft report?

Response

Recommendations provided by the SAB Environmental Justice Science & Analysis Review Panel are carefully considered and supported by the body of the draft report.

Comments from SAB Liaisons:

Dr. George Cobb

The report was comprehensive and well crafted. These comments are offered as complimentary and are intended to be supportive of the perspective already in the report.

Comment related to P. 4: LL16-31 and p6: LL 17-26... Differential exposures of overburdened groups are likely to influence Differential Effects. To evaluate these differential exposures, EPA must determine actual exposures of overburdened groups and exposures of overburdened groups relative to the broader population. This can simply be done by measuring chemical releases from various sources. Most often processes/activities that release large quantities are essential to measure, but there may be times when sources that release smaller amounts may be essential. This must be assessed on a case by case basis.

P. 4 LL27-31: Please note that current EPA approach to assess chemical release is to compile TRI (or NEI) data to identify potential exposures. The problem here is two fold, first the reports are not fully objective and there is a 25,000 lb/yr threshold of use before reporting is required for most chemicals. Moreover, reporting is NOT required unless a business has more than 10

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employees. Omitting emissions less than 25 tons produces significant data gaps, especially if these facilities are in or near Communities where PESS may reside. This reporting limit may miss 480lbs per week from EACH source. Monitoring of select airborne Toxic Chemicals from major producers/users as well as in or near PESS communities is essential to understand those exposure, and such monitoring can be required of larger businesses. Additionally, potential users/producers that fall below the reporting thresholds should be treated as “non-detects” for determination of spatial exposures.

Please note that EPA routinely excludes schools and daycare facilities from exposure and thus risk assessments (formaldehyde, phthalates, etc.). This leaves a major gap in assessments of vulnerable and perhaps overburdened populations.