

Charge Questions for Bullet Point Responses

CASAC

December 13, 2018

Charge Question: Executive Summary

- The Executive Summary is intended to provide a concise synopsis of the key findings and conclusions of the PM ISA for a broad range of audiences.
- Please comment on the **clarity** with which the Executive Summary communicates the key information from the PM ISA.
- Please provide **recommendations on information that should be added** or information that should be **left for discussion** in the subsequent chapters of the PM ISA.

Charge Question: Chapter 1

- Chapter 1 presents an integrated summary and the overall conclusions from the subsequent detailed chapters of the PM ISA and characterizes available scientific information on policy relevant issues. Please comment on the **usefulness and effectiveness of the summary** presentation.
- Please provide **recommendations on approaches that may improve the communication** of key findings to varied audiences **and the synthesis** of available information across subject areas. **What information should be added** or is more appropriate to **leave for discussion** in the subsequent detailed chapters?

Charge Question: Chapter 2

- To what extent is the information presented in Chapter 2 regarding **sources, chemistry, and measurement and modeling of ambient concentrations of PM** clearly and accurately conveyed and appropriately characterized?
- Please comment on the extent to which available **information on the spatial and temporal trends of ambient PM concentrations at various scales** has been adequately and accurately described.

Charge Question: Chapter 3

- Chapter 3 describes scientific information on **exposure to ambient PM** and **implications for epidemiologic studies**. To what extent is the discussion on **methodological considerations for exposure measurement and modeling** clearly and accurately conveyed and appropriately characterized?
- Please comment on the extent to which the discussion regarding exposure assessment and the **influence of exposure error on effect estimates in epidemiologic studies** of the health effects of PM has been **adequately and accurately described**.

Charge Question: Chapter 4

- Chapter 4 characterizes scientific evidence on the dosimetry of PM.
- To what extent does the **discussion clearly and accurately convey the dosimetry of inhaled PM** and the processes of deposition, clearance, retention, and translocation?

Charge Question: Chapters 5-11

- Please comment on the **identification, evaluation and characterization** of the available **scientific evidence** from epidemiologic, controlled human exposure, toxicological and associated human exposure and atmospheric sciences studies and the **application of information** from these studies **to inform causality determinations for human health outcomes**.

Charge Question: Chapters 5-11

- Chapters 5 – 11 present assessments of the health effects associated with short-term and long-term exposure to PM. The discussion is organized by PM size fraction, exposure duration, broad health effects (e.g., asthma, ischemic heart disease, etc.), and scientific discipline.
- Please comment on the **characterization of the evidence** within these chapters.

Charge Question: Chapters 5-11

- Please comment on the portrayal and discussion of the **biological plausibility** evidence presented at the outset of Chapters 5 – 11 and the extent to which: (1) the organization adequately captures the **current state of the science with respect to potential pathways** by which PM could impart health effects, and (2) as currently constructed, **inform causality determinations.**

Chapter 12

- Chapter 12 evaluates scientific information and presents conclusions on factors that may contribute to **specific populations or life stages being at increased risk** of a PM-related health effect.
- Please comment on the extent to which the **available scientific evidence from epidemiologic, controlled human exposure, and toxicological studies** been **integrated to inform conclusions** on populations and/or lifestages potentially at increased risk of a PM-related health effect.
- **Is there information available on other key factors** that is not included in the draft PM ISA that inform differential risk that should be added?

Chapter 13

- Please comment on the identification, evaluation and characterization of the **available scientific evidence** from studies of PM on **non-ecological welfare effects** of visibility impairment, climate, and materials and the application of information from these studies, as presented in Chapter 13, **to inform causality determinations and uncertainty characterizations** for these welfare outcomes.

Overarching Charge Question 1

- What **scientific evidence has been developed** since the last review to indicate if the current primary and/or secondary **NAAQS need to be revised** or if an **alternative level or form** of these standards is **needed** to protect public health and/or public welfare?
- Please recommend to the Administrator **any new NAAQS or revisions** of existing criteria and standards as may be appropriate.
- In providing advice, please consider a **range of options for standard setting**, in terms of indicators, averaging times, form, and levels for any alternative standards,
- along with a description of the **alternative underlying interpretations of the scientific evidence and risk/exposure information** that might support such alternative standards and that could be considered by the Administrator in making NAAQS decisions.

Overarching Charge Question 2

- Are there **areas in which additional knowledge is required** to appraise the adequacy and basis of existing, new, or revised NAAQS?
- Please describe the **research efforts** necessary to provide the required information

Overarching Charge Question 3

- What is the **relative contribution** to air pollution concentrations of **natural as well as anthropogenic activity**?
- In providing advice on any recommended NAAQS levels, please discuss **relative proximity to peak background levels**.

Overarching Charge Question 4

- Please advise the Administrator of any **adverse public health, welfare, social, economic, or energy effects** which may result from various strategies for attainment and maintenance of such NAAQS.

Overarching Charge Question 5

- Do key studies, analyses, and assessments which may inform the Administrator's decision to revise the NAAQS **properly address or characterize uncertainty and causality?**
- Are there appropriate criteria to ensure **transparency** in the evaluation, assessment, and characterization of key scientific evidence for this review?