

**Summary Minutes of the
U.S. Environmental Protection Agency (EPA)
Chartered Clean Air Scientific Advisory Committee (CASAC)
and CASAC Secondary NAAQS Review Panel for Oxides of Nitrogen and Sulfur
Public Teleconference
April 27, 2020**

Date and Time: Monday, April 27, 2020

Location: Telephone and live audio webcast

Purpose: To discuss the 03-20-2020 Draft CASAC Review of the *EPA's Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter – Ecological Criteria (Second External Review Draft – June 2018)*¹

Participants: Chartered CASAC Members (also see Chartered CASAC roster²)

Dr. Tony Cox, Chair
Dr. James Boylan
Dr. Mark Frampton
Dr. Ronald Kendall
Dr. Sabine Lange
Dr. Corey Masuca
Dr. Steven Packham

CASAC NO_x SO_x Secondary NAAQS Review Panel (see also panel roster³)

Dr. Ronald Kendall, Chair	Dr. Daven Henze
Dr. Ivan Fernandez, Immediate Past Chair	Dr. Robert Howarth
Dr. Edith Allen	Dr. Donna Kenski
Dr. Praveen Amar	Dr. William McDowell
Dr. Elizabeth Boyer	Dr. Erik Nelson
Dr. Douglas Burns	Dr. Hans Paerl
Ms. Lauraine Chestnut	Mr. Richard Poirot
Dr. Mark Fenn	Dr. Stephen Schwartz
Dr. Frank Gilliam	

Mr. Aaron Yeow, Designated Federal Officer (DFO)

Dr. John Vandenberg, US EPA, Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA)
Dr. Tara Greaver, US EPA, ORD, CPHEA

Other Attendees (See Attachment A)

Convene Meeting and Welcome

Mr. Aaron Yeow, DFO, opened the meeting. He noted that, as required under the Federal Advisory Committee Act (FACA), CASAC meetings are held in public, with advanced notice given in the Federal Register.⁴ He stated that FACA required that public meetings allow for public comment. He noted that the CASAC did not receive any public comments nor requests from the public to make oral statements, but that there was an additional opportunity for the public to make clarifying comments period towards the end of the teleconference. He stated that the meeting minutes would be made publicly available on the CASAC meeting webpage after the meeting. He stated that the SAB Staff Office determined that there were no financial conflicts of interest or an appearance of a loss of impartiality for any of the CASAC or Panel members participating on the teleconference. He noted that Dr. James Boyd would not be participating on the teleconference. He turned the meeting over to Dr. Ron Kendall, Chair of the CASAC Secondary NAAQS Review Panel for Oxides of Nitrogen and Sulfur, hereafter referred to as the Panel.

Dr. Kendall welcomed everyone, introduced himself, and reviewed the agenda.⁵

Remarks from EPA

Dr. John Vandenburg, Director of the Health and Environmental Effects Assessment Division in ORD CPHEA, thanked the Panel for their reviews of the First and Second Drafts of the ISA and that they will consider the Panel's comments and public comments in finalizing the ISA. Dr. Tara Greaver, ORD CPHEA, also thanked the Panel and had a few clarifying questions for the Panel regarding the Draft CASAC Report. The first question, pertaining to page 3 (lines 22-27) of the Letter to the Administrator, was whether the CASAC had any recommendations for references to cite for the alternative definition of ecological recovery. The second question, pertaining to p. 4 (lines 23-24) of the Report, was whether the CASAC could clarify their source of information for NO_x emissions and the circumstances to which they apply. The third question, pertaining to p. 9 (lines 32-35) of the Report, was whether the CASAC could clarify what the errors were with the characterization of the SPARROW model.

Public Comments on Draft CASAC ISA Report

Mr. Yeow indicated that there were not any requests from the public to make oral statements.

Discussion of the Draft CASAC ISA Report

Dr. Kendall turned the meeting over Dr. Ivan Fernandez, Immediate Past Panel Chair, to walk the Panel through the Draft Report. Dr. Fernandez recommended going through the consensus responses, chapter by chapter, then the Executive Summary, concluding with the Letter to the Administrator.

Dr. Schwartz questioned why EPA's ISA only had one chapter, and if that were the case, he suggested that they remove the term "Chapter 1." Dr. Vandenberg indicated that the title "Chapter 1 – Integrated Synthesis" would be renamed to just "Integrated Synthesis."

Chapters 1.2 through 1.6

The Panel had discussions on trends of oxides of nitrogen (NO_x), oxides of sulfur (SO_x), and ammonia (NH₃) emissions and deposition over time and agreed to revise lines 23-24 on page 4 to clarify their recommendation. On page 4, the Panel agreed to clarify what figure was being referred to on line 7, to

adding sulfur dioxide (SO₂) and NH₃ satellite data to line 20, and adding a new bullet on line 25 to recommend updating all appropriate figures in Appendix 2.

On page 7, line 1, the Panel agreed to add a sentence stating that the CASAC is not requesting any changes.

Chapter 1.7

The Panel agreed to add a sentence to page 8, line 31, indicating that the CASAC is not asking for any changes. The Panel had some discussion about how acidification needs to be deemphasized from Chapter 1.7. The Panel agreed to add a new paragraph on page 9, line 18, stating that recent studies indicate that there is not a clear and consistent linkage between atmospheric nitrogen and estuarine/coastal acidification and to recommend that EPA re-evaluate their causality determination. The Panel agreed to revise lines 32-35 of page 9 to clarify their recommendation regarding the discussion of the SPARROW model.

Chapters 1.8 through 1.11

On page 11, line 34, the Panel agreed to revise the sentence to reflect that the evidence shows only limited recovery. The Panel had some discussion regarding how to define ecological recovery and decided to delete lines 15-20 of page 12.

Chapter 1.12

On page 12, the Panel agreed to add a recommendation that EPA be more explicit on line 36, with clarifying the definition of climate on line 39, and with adding a recommendation on line 41 to replace “Addition” with “Deposition” in the chapter title.

Chapters 1.13, 1.14, Executive Summary

The Panel agreed to change “interesting” to “valuable, yet incomplete” and changing “viewing” to “interpreting” on line 4 of page 13. The Panel also agreed to strengthen its advice from a suggestion to a recommendation on line 9 of page 13.

Letter to the Administrator

Mr. Yeow indicated that any revisions to the consensus responses would also be reflected in the appropriate places in the Letter to the Administrator. The Panel agreed to change “that” to “whether” on line 3 and to remove the study citation from line 27 of page 2 of the Letter to the Administrator. On page 3, lines 2-3 of the Letter to the Administrator, the Panel agreed to revise that sentence to state that the chapter could be improved by including an expanded introduction of how ecosystem services research provides an understanding of why the effects of nitrogen and sulfur on ecosystems are important for public welfare.

Additional Clarifying Comments from EPA or Members of the Public

Mr. Yeow indicated that he did not receive any requests for additional clarifying comments.

Disposition of the Draft CASAC ISA Report

The CASAC members approved the report based on the revisions discussed during the meeting.

The meeting was adjourned at 3:45 pm.

Respectfully Submitted:

/s/

Mr. Aaron Yeow
Designated Federal Officer
EPA SAB Staff Office

Certified as Accurate:

/s/

Dr. Ronald Kendall
Chair
CASAC Secondary NAAQS
Review Panel for Oxides of
Nitrogen and Sulfur

/s/

Dr. Louis Anthony Cox, Jr.
Chair
CASAC

May 6, 2020

Date

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 consensus advice from the Committee 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.

Materials Cited

The following meeting materials are available on the CASAC April 27, 2020, meeting webpage:

[https://yosemite.epa.gov/sab/sabproduct.nsf/MeetingCalCASAC/C62760E3DFBF8C658525851A004D
FEAA?OpenDocument](https://yosemite.epa.gov/sab/sabproduct.nsf/MeetingCalCASAC/C62760E3DFBF8C658525851A004DFEAA?OpenDocument)

¹ 03-20-2020 Draft CASAC Review of the EPA's ISA for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter – Ecological Criteria (Second Draft)

² Chartered CASAC Roster

³ CASAC Secondary NAAQS Review Panel for Oxides of Nitrogen and Sulfur

⁴ Federal Register Notice Announcing the Meeting

⁵ Agenda

ATTACHMENT A – Other Attendees

Name	Affiliation
Allen, George	
Anderson, Avilone	San Joaquin Valley Air Pollution Control District
Bahadori, Tina	USEPA
Byrley, Peter	USEPA
Champlin, Anna	USEPA
Clark, Christopher	USEPA
Cooperstein, Sharon	USEPA
Coughlin, Justin	USEPA
Dolwick, Pat	USEPA
Dutton, Steven	USEPA
Evangelista, Mark	USEPA
Evans, David	USEPA
Felker-Quinn, Emmi	National Park Service
French, Timothy	Truck & Engine Manufacturers Association
Gorman, Teresa	
Haeuber, Richard	USEPA
Heninger, Brian	USEPA
Herrick, Jeffrey	USEPA
Hicks, Travis	Southern Company
Igoe, Sheila	USEPA
Jacobs, Wendy	CT DEEP
Jang, Carey	USEPA
Johnston, Khanna	USEPA
Kaylor, Steven	
Kneeland, Emily	San Joaquin Valley Air Pollution Control District
Lamson, Amy	USEPA
Langworthy, Cindy	Hunton Andrews Kurth
Leath, Emily	
Lempke, Douglas	Tri-State Generation and Transmission Association, Inc.
Lynch, Jason	USEPA
McDow, Steve	USEPA
Meyer, Leigh	USEPA
Miller, Madison	OK DEQ
Moorhead, Leigh	
O'Mara, Kate	USEPA
Owen, Russell D	USEPA
Paige, Carrie	USEPA
Parker, Stuart	IWP News

Name	Affiliation
Pavlich, David	Phillips 66
Perlmutter, Lars	USEPA
Popovitch, Marusia	ExxonMobil Biomedical Sciences
Rives, Glenn	
Sams, Charles	USDA Forest Service Air Program
Sandiford, Vicki	USEPA
Sasser, Erika	USEPA
Smith, James	USEPA
Smith, Travis	USEPA
Steichen, Ted	American Petroleum Institute
Tennant, Ginger	USEPA
Wayland, Bob	USEPA
Wesson, Karen	USEPA
Whiteman, Chad	U.S. Chamber of Commerce
Wilson, Linda M	NYS OAG