

Comments on US EPA's Integrated Review Plan for the Primary National Ambient Air Quality Standards for Sulfur Dioxide (External Review Draft)

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Thank you for the opportunity to speak today on behalf of the American Petroleum Institute. Overall, the draft Integrated Review Plan (IRP; US EPA, 2014a) presents a reasonable approach for conducting the sulfur dioxide (SO₂) review. However, I would like to point out two instances where the IRP could be improved.

The first is the National Ambient Air Quality Standard (NAAQS) causal framework. EPA used the same framework in the ozone (US EPA, 2013a), nitrogen oxides (US EPA, 2013b), and lead (US EPA, 2013c) Integrated Science Assessments (ISAs). Like other fields, such as epidemiology and toxicology, systematic review and evidence integration techniques are continuing to evolve. For example, in a 2014 review of the EPA Integrated Risk Information System (IRIS) process, the National Research Council made several suggestions to improve EPA's process of systematic review, data integration, and hazard assessment (NRC, 2014). In addition, in the "Draft Development Materials for the Integrated Risk Information System (IRIS) Toxicological Review of Inorganic Arsenic," EPA's National Center for Environmental Assessment built on the NAAQS causal framework but provided much more detail (US EPA, 2014b). This includes specific details on the literature search strategy and risk-of-bias analyses, for example. Despite these available suggestions and improvements, it does not appear that EPA has made any modifications to the causal framework to be used the SO₂ evaluation. The ISA would be more transparent, objective, and scientifically defensible by starting with a modified framework that incorporates recommendations from these and other sources (*e.g.*, Goodman *et al.*, 2013; Rhomberg *et al.*, 2014) rather than starting with the NAAQS causal framework in its current form.

The IRP could also be more specific about how EPA will interpret the scientific evidence with respect to the averaging time and form of the standard. This is an important issue for other NAAQS pollutants (such as ozone), and there does not seem to be a clear understanding of how to relate evidence from epidemiology and experimental studies that use different averaging times than the averaging time of the NAAQS. To determine the most appropriate level, averaging time, and form of the standard, there needs to be a clear connection between the level and averaging time at which health effects are observed and the level, averaging time, and form of the NAAQS. EPA should explore different averaging times and forms of the NAAQS to ensure that the SO₂ NAAQS are health-protective based on the best available science.

Thank you for your consideration.

References

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