Fact Sheet

PROPOSED DECISION: REVIEW OF THE SECONDARY NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OXIDES OF SULFUR, OXIDES OF NITROGEN AND PARTICULATE MATTER

Action:

- On April 3, 2024, the U.S. Environmental Protection Agency (EPA) proposed to revise the secondary National Ambient Air Quality Standards (NAAQS) for oxides of sulfur (SO_x) and to retain the secondary standards for oxides of nitrogen (N oxides) and particulate matter (PM).
- EPA sets secondary standards to protect the public welfare against adverse effects – including ecological effects such as damage to vegetation –caused by certain air pollutants. EPA last reviewed the secondary standards for ecological effects of SO_x and N oxides in 2012, and PM in 2013.
- Consistent with the scientific evidence indicating that SO_x, N oxides, and PM contribute to sulfur and nitrogen deposition, EPA conducted a concurrent review of the ecological effects of these pollutants.
- The ecological effects addressed in this review include direct effects on vegetation, as well as ecological effects related to atmospheric deposition of sulfur and nitrogen compounds in sensitive ecosystems. Deposition-related effects include acidification and nutrient enrichment, which can damage sensitive ecosystems. These deposition effects were not specifically considered when the existing secondary standards for SO_x, NOx, and PM were put in place.
- Based on the latest scientific evidence, EPA is proposing to revise the existing secondary SO_2 standard to an annual standard with a level within the range of 10 - 15 ppb, averaged over 3 years.
- This review included consideration of advice from EPA's independent science advisors – the Clean Air Scientific Advisory Committee, or CASAC – and public comments on the scientific assessments.
- Emissions of sulfur dioxide (SO_2) and N oxides have trended downward for the past 20 years. SO_2 emissions decreased by 92% (2002 to 2022), and emissions of the two most highly emitted N oxides, nitrogen dioxide (NO_2) and nitrogen oxide, decreased by 71% (2002 to 2022). As a result, ambient air concentrations of SO_2 & NO_2 have also declined.
- To assess whether any additional emissions reductions might be needed to meet the proposed secondary annual SO_2 NAAQS, EPA prepared an air quality analysis for all monitor sites with SO_2 data.
    - For areas with monitors that meet the current primary SO_2 NAAQS (1-hour standard of 75 ppb), no emissions reductions are expected to be needed to meet the proposed secondary annual SO_2 standard.
    - For areas with monitors that do not meet the current primary SO_2 NAAQS, after adjusting air quality to meet the current primary NAAQS, no additional emissions reductions are expected to be needed to meet the proposed secondary annual SO_2 standard.

As a result, EPA does not anticipate additional emissions reductions would be needed to meet the proposed secondary standards beyond those already needed for some areas with monitors to meet the current primary SO_2 NAAQS.

- EPA will take comment on the proposal for 60 days after publication in the Federal Register and hold a virtual public hearing during the comment period.

Details of the Proposal:

- EPA is taking comment on the following proposed decisions and alternate options for the SO_2, NO_2 and PM secondary standards.

- **Oxides of Sulfur**
  - EPA is proposing that the current short-term secondary SO_2 standard (3-hour standard set at 500 parts per billion (ppb), not to be exceeded more than once per year) is not adequate to protect against public welfare effects, and that it should be revised to provide increased protection against effects related to sulfur deposition on the environment.
  - EPA proposes to revise the existing secondary SO_2 standard to an annual standard with a level within the range of 10 - 15 ppb, averaged over 3 years.
  - EPA is taking comment on alternatives, including an annual SO_2 standard level as low as 5 ppb, revising the secondary SO_2 standard to be identical to the primary SO_2 standard in all respects, and retaining the existing 3-hour standard in addition to the proposed new annual secondary standard.

- **Oxides of Nitrogen**
  - EPA considered the scientific evidence related to N oxides.
  - EPA is proposing to conclude the evidence does not clearly call into question the adequacy of protection provided by the existing NO_2 standard (annual average of 53 ppb).
  - The Agency proposes to retain the existing secondary annual NO_2 standard.
  - EPA is taking comment on alternatives, including revising the annual NO_2 standard to a level of 35-40 ppb, averaged over 3 years.

- **Particulate Matter**
  - EPA is proposing to conclude that the scientific evidence does not call into question the adequacy of protection provided by the existing secondary $PM_{2.5}$ standard.
  - The Agency proposes to retain the current secondary $PM_{2.5}$ annual standard of 15 $\mu g/m^3$. EPA is taking comment on alternatives, including revising the secondary $PM_{2.5}$ annual standard to a level of 12 $\mu g/m^3$.

Clean Air Act Implementation Considerations for the Proposed Secondary SO_x Standard:

- After EPA establishes a new or revised primary or secondary NAAQS, the Clean Air Act requires the EPA and states to take steps to ensure that the new or revised NAAQS is met.

The first step, known as the initial area designations, involves identifying whether areas of the country meet the new standard, do not meet the standard, contribute to areas that do not meet the standard, or do not have enough information to determine attainment.

- The Clean Air Act directs states to address basic state implementation plan (SIP) requirements to implement, maintain, and enforce the NAAQS. States are required to have SIPs that provide for necessary air quality management infrastructure, including, among other things, enforceable emissions limitations, an ambient air monitoring program, an enforcement program, air quality modeling capabilities, and adequate personnel, resources, and legal authority. EPA refers to this type of SIP submission as an "infrastructure SIP submission."
- Based on an air quality analysis, EPA does not anticipate additional emissions reductions would be needed to meet the proposed secondary annual SO_2 standards beyond those already needed to meet the current primary SO_2 NAAQS.
- While EPA is not proposing changes to the new source review permitting program, the Agency has provided notice of a process for an alternative compliance demonstration approach for Prevention of Significant Deterioration (PSD) purposes for the revised secondary SO_2 NAAQS.
    - Under the PSD permitting program, applicants must demonstrate that the proposed new or modified source emissions increase would not cause or contribute to a NAAQS violation. EPA has identified models, guidelines, and other tools for making this demonstration.
    - EPA anticipates that sources and reviewing authorities would be able to use most of these existing tools to demonstrate compliance with a revised secondary SO_2 standard, if finalized as proposed.
    - However, some adjustment and updates to these tools may be appropriate. EPA is considering an alternative compliance demonstration approach that the Agency may support using to make the required demonstration under the PSD program.
    - EPA has developed a technical memorandum to the docket, which provides a technical justification for how a demonstration of compliance with the 1-hour primary SO_2 standard could be used to demonstrate compliance with the proposed SO_2 secondary standard.
    - Even though EPA is not proposing new implementation requirements along with this proposal, the Agency welcomes the public to provide input on implementing a revised secondary standard.

Data Handling and Monitoring:

- EPA is proposing revisions to the data handling procedures for the proposed annual secondary SO_2 standard. These proposed revisions describe the data handling conventions and computations for assessing whether the NAAQS are met, including determining whether there would be sufficient data to make a comparison at all.

- Based on EPA's review of the SO_2 monitoring network history, current design and objectives, and data, we believe that the current network would be adequate to provide the data

needed to implement the proposed secondary SO_2 NAAQS. Therefore, we are not proposing any modifications to the existing SO_2 minimum monitoring requirements.

How to Comment:

- EPA will take comment on the proposal for 60 days after publication in the Federal Register and hold a virtual public hearing. Registration for the public hearing will open after the proposal is published in the Federal Register.
- Written comments, identified by Docket ID No. EPA-HQ-OAR-2014-0128, may be submitted by one of the following methods:
    - Go to https://www.regulations.gov/ and follow the online instructions for submitting comments.
    - Send comments by email to a-and-r-docket@epa.gov, Attention Docket ID No. EPA-HQ-OAR-2014-0128 in the subject line of the message.
    - Mail your comments to: EPA Docket Center, Environmental Protection Agency, Mail Code: 28221T, 1200 Pennsylvania Ave, NW, Washington, DC 20460, Attention Docket ID No. EPA-HQ-OAR-2014-0128.

For More Information:

- The preamble and other documents supporting this review are available at https://www.epa.gov/naaqs/nitrogen-dioxide-no2-and-sulfur-dioxide-so2-secondary-air-quality-standards.
- Additional information is available at https://www.epa.gov/so2-pollution/secondary-national-ambient-air-quality-standards-naaqs-nitrogen-dioxide-no2-and