Comments of the Power Generators Air Coalition on the U.S. Environmental Protection Agency's Proposed Rule: "Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter"

89 Fed. Reg. 26,620 (April 15, 2024)

Docket ID No. EPA-HQ-OAR-2014-0128

June 14, 2024

The Power Generators Air Coalition ("PGen") appreciates the opportunity to submit these comments on the U.S. Environmental Protection Agency's ("EPA" or the "Agency") proposed rule, entitled "Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter" ("Proposed Rule" or "Proposal").[1] The Proposed Rule would amend the existing secondary sulfur dioxide ("SO_2") standard to an annual average with a concentration level within 10 to 15 parts per billion ("ppb") and would retain the existing secondary standards for oxides of nitrogen ("NOx") and particular matter ("PM").

PGen is an incorporated nonprofit 501(c)(6) organization whose members are diverse electric generating companies—public power, rural electric cooperatives, and investor-owned utilities—with a mix of solar, wind, hydroelectric, nuclear, and fossil generation. PGen is a collaborative effort of electric generators to share information and expertise in the interest of constructively evaluating and effectively managing air emissions to meet and exceed environmental laws and regulations and in the interest of informing sound regulation and public policy.[2] Our members include leaders in the ongoing transition to cleaner energy in the United States. PGen and its members work to ensure that environmental regulations support a clean, safe, reliable, and affordable electric system for the nation.

PGen members own and operate electric generating units that must comply with measures designed to achieve the secondary national ambient air quality standards ("NAAQS"). Accordingly, PGen has a substantial interest in the Proposed Rule.

I. Background

The Clean Air Act ("CAA") establishes requirements for setting and revising the NAAQS in Sections 108 and 109. Section 108 (42 U.S.C. § 7408) requires the EPA Administrator to identify air pollutants and issue "air quality criteria" for them. These criteria

[1] 89 Fed. Reg. 26,620 (April. 15, 2024).

[2] Additional information on PGen and its members can be found at PGen.org.

must accurately reflect current scientific knowledge about the pollutants' effects on public health and welfare.

Section 109 (42 U.S.C. § 7409) instructs EPA to establish, review and potentially revise primary and secondary NAAQS for criteria air pollutants. Primary standards protect public health, while secondary standards safeguard public welfare. The CAA defines welfare to include such things as "soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, … and climate."[3]

The CAA also mandates the establishment of an independent scientific review committee tasked with reviewing the NAAQS and advising EPA on the need for new standards or revisions to existing ones.[4] That role is filled by the Clean Air Scientific Advisory Committee ("CASAC"). If, in reviewing the NAAQS, EPA takes action that differs from CASAC's recommendations, EPA must explain the reasons for the differences.[5]

In this proposed rule, EPA requests comments on the following proposed actions and potential alternative actions:

1. EPA's proposed revision of the existing short-term secondary SO_2 standard to an annual average standard, averaged over 3 years, with a level within the range from 10 to 15 ppb;
2. An alternative SO_2 standard in the range from 5 to 10 ppb;
3. An alternative SO_2 standard set to match the existing SO_2 primary standard;
4. EPA's proposal to retain the existing secondary nitrogen dioxide ("NO_2") and PM standards without revision;
5. An alternative NO_2 standard with a 3-year averaging time and a level set to a value within the range from 35 to 40 ppb; and
6. An alternative $PM_{2.5}$ standard set to a level of 12 micrograms per meter cubed ("$\mu g/m^3$").

EPA's review timeline for these proceedings has been determined by a consent decree, which requires that EPA sign a notice of its final decision by December 10, 2024.[6]

For the reasons discussed below, EPA should retain the existing secondary NAAQS without revision.

II. Acidification Is Properly Addressed under Title IV of the Clean Air Act.

EPA has proposed to revise the secondary SO_2 NAAQS to protect against aquatic acidification caused by the deposition of sulfur ("S") into soil and waterbodies.[7] EPA's

[3] 42 U.S.C. § 7602(h).

[4] 42 U.S.C. § 7409(d)(2)(A), (B).

[5] *Id.*

[6] 88 Fed. Reg. at 26,627.

[7] 88 Fed. Reg. 26,650.

alternative proposed NAAQS for NO_2 and PM are similarly focused on aquatic acidification.[8] EPA, however, fails to appreciate that the CAA forecloses EPA from addressing acidification through the use of secondary NAAQS.

Congress developed a program specifically designed to address acidification and codified that program in Title IV of the CAA, which establishes the Acid Rain Program ("ARP").[9] This particularly statutory authority was necessary to address the unique challenges and problems posed by acidification, which neither Congress nor EPA believed was readily susceptible to regulation through the Agency's existing authorities, including the secondary NAAQS program. Because Title IV was intended to fully address the acidification issue, it preempts any action to regulate acidification through the secondary NAAQS.

That Title IV precludes other action to address acidification is confirmed by section 404 of the 1990 amendments to the CAA, which EPA acknowledges in this Proposed Rule.[10] That provision required EPA to report to Congress on the feasibility of developing an acid deposition standard and to describe the actions that would be required to integrate such a program into the CAA.[11] Additionally, EPA was required to provide Congress with sufficient information to allow Congress itself to decide if further regulation was necessary and to create a legislative amendment to the CAA, if Congress determined such action was warranted. The clear implication of section 404 is that Congress did not intend for EPA to regulate the acidification effects of SOx (or any other pollutant) outside of the ARP without further congressional action.

Furthermore, EPA, in its 1993 final determination to retain the existing secondary NAAQS for SO_2, cited Congress's action in the 1990 amendments as the reason for not addressing acidification through the secondary NAAQS program.[12] In the 1993 final determination, EPA said, "both bodies of Congress . . . conclude[d] that a new legislative program was needed to address acidic deposition effects despite significant uncertainties concerning underlying scientific data and arguments over whether the EPA could address the acidic deposition problem under existing law."[13] EPA further stated:

> The 1990 Amendments and the legislative history indicate, however, that Congress *reserved judgment* as to whether further action might be necessary or appropriate in the longer term and, if so, what form it should take. Congress seems to have viewed these *as questions it would itself address* in the future, based on further studies and research to be conducted by the EPA and other agencies.

[8] 89 Fed. Reg. 26,620, 26,657, 26,659 (stating that the PA recognized options in revising secondary NO_2 (to 35-40 ppb) and PM (to 12 $\mu g/m^3$) standards due in part to aquatic acidification and other effects.).

[9] Title IV requires substantial reductions of SO_2, through a market-based allowance trading program. CAA §§ 403-406 (SO_2 program).

[10] 88 Fed. Reg. 26,624-26,625.

[11] 104 Stat. at 2632; CAA § 401 note (citations hereinafter to 1990 Act § 404).

[12] 58 Fed. Reg. 21,351, 21,356 (Apr. 21, 1993).

[13] *Id.* (emphasis added).

> Consistent with the 1988 proposal notice, C*ongress does not seem to have expected that the EPA would set a secondary standard for acidic deposition* . . . in the interim. To the contrary, in section 404 of the 1990 Amendments, Congress specifically required the EPA to conduct a study of the feasibility and effectiveness of an acid deposition standard or standards, and to report to Congress by November 15, 1993 on the role that a deposition standard might play in supplementing the acidic deposition control program adopted in title IV, and what measures would be needed to integrate it with that program.[14]

It is also clear from EPA's 1995 report responding to its § 404 obligation that the Agency believed it would need new legislative authority to take further action on acidification effects related to SOx deposition.[15] The 404 Study examined a number of what EPA deemed plausible approaches to regulating acidifying deposition. Each of these plausible methods was fundamentally at odds with the NAAQS program and its authorizing legislation. For instance, the 404 Study indicates that a standard could be designed to maintain "specific conditions" at specific locations and in a manner that "balances effects, costs, and other societal values."[16] Further, EPA concluded that "[a] standard can be designed to address chronic or episodic acidification and could vary by region based on the regional variability of ecological sensitivity." [17] Either such standard would be inconsistent with the existing secondary NAAQS program, which, for instance, applies nationally and does not take costs or other societal impacts into account.

The 404 Study also assessed whether EPA had adequate existing authority to implement an acidification standard. While EPA declined to state definitively whether it retained authority to set acid deposition standards,[18] the Agency explained "clear direction from Congress in this area would certainly make implementation more feasible and effective."[19] EPA explained why this was the case and why its existing secondary NAAQS authority was lacking. EPA noted, for instance, that "[c]ompliance deadlines for certain NAAQS have been refined and revised with each amendment to the CAA. The uncertainties of this process are not usually conducive to long range planning and cost-effective compliance by the regulated community."[20] The Agency also stated its preference for "explicit authority to set deposition standards,"[21] and explained that all of the most

[14] *Id*. (emphases added) (citation omitted).

[15] *See generally* Acid Rain Div., U.S. EPA, Acid Deposition Standard Feasibility Study: Report to Congress (1995) [hereinafter "404 Study"].

[16] 404 Study at 2.

[17] *Id*.

[18] *Id*. at 100.

[19] *Id*.

[20] *Id*. at 101.

[21] *Id*. at 100.

workable approaches to regulating acidic deposition required legislative action by Congress.[22] Thus, although EPA was less definitive in this publication with respect to its lack of authority to regulate acidic deposition than it had been in the past, the Agency still maintained that the NAAQS were ill-suited to the task and that new legislation would in all cases be preferable.

EPA's proposed NAAQS revision runs afoul of the limitations Congress placed on the Agency with respect to addressing acidification. EPA should acknowledge these limitations, including EPA's own past reliance on them for declining to extend the secondary NAAQS to address acidification, and determine that a secondary NAAQS to address acidification remains improper, unworkable, and inconsistent with Title IV of the CAA.

III. EPA Has Not Established that the Welfare Effects its Proposed Rule Would Address Are Adverse to Public Welfare.

EPA has not adequately assessed whether the effects it seeks to address in this Proposed Rule are, in fact, adverse to public welfare. As EPA explains:

> The ultimate determination as to what level of damage to ecosystems and the services provided by those ecosystems is adverse to public welfare is not wholly a scientific question, although it is informed by scientific studies linking ecosystem damage to losses in ecosystem services and information on the value of those losses of ecosystem services.[23]

EPA typically evaluates a number of factors to determine if effects are adverse to public welfare, including "the nature and degree of effects of the pollutant, including the Administrator's
judgments on what constitutes an adverse effect to the public welfare as well as the strengths and limitations of the available and relevant information, with its associated uncertainties."[24]

Despite this acknowledgement that a finding of adversity to public welfare is integral to decisions as to whether and how to revise a NAAQS, there is only minimal discussion of adversity to public welfare in the Proposed Rule. EPA notes, for instance, that many fish species have been documented to have experienced adverse effects from aquatic acidification.[25] EPA further asserts that "*some level* of S deposition and associated risk of aquatic acidification, including those associated with past decades of acidifying deposition in the Northeast, can impact the public welfare and thus *might reasonably be judged adverse* to the public welfare."[26]

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[22] *Id*. at 101 (discussing a national emissions-based approach and the amendments to Title IV and other sections of the CAA that would be required and stating "[n]ew statutory authority would be needed.").

[23] 89 Fed. Reg. at 26,628.

[24] *Id*.

[25] *Id*. at 26,636.

[26] *Id*. at 26,661 (emphases added).

Such effects *could*, EPA says, have ramifications on commercial and recreational activities.[27] This minimal discussion does not establish that aquatic acidification is adverse to public welfare. On the contrary, EPA has not evaluated or discussed the severity or extent of acidification effects or their importance to the public in terms of economic or other values in any detail, despite the Agency's acknowledgement that this is what it should do. EPA is obligated to establish that the effects it is evaluating rise to the level of adversity to the public welfare. The Proposed Rule lacks this information and, therefore, does not provide a basis for revising the NAAQS.

EPA's evaluation of adversity to public welfare is similarly incomplete for NOx and PM.[28] EPA only briefly explains, for instance, that "[w]hile there is extensive evidence of deleterious effects of excessive nitrogen loadings to terrestrial and aquatic ecosystems," consideration of adversity to public welfare is not straightforward.[29] EPA notes the effects of "co-stressors," the lack of data, and the beneficial effects of nitrogen enrichment as complicating factors that make judgments as to adversity difficult. EPA further notes that welfare effects of N deposition might be adverse if they were to result in changes to "forest ecosystem community structures in ways that appreciably affect use and enjoyment of those areas by the public."[30] But EPA does not make the next necessary step: demonstrating that N deposition in fact causes such effects.

For both SO_2 and NOx, it is not enough for EPA to merely note that adverse effects are possible. EPA must establish that these effects are likely to occur. It must then further explain why such effects are significant and rise to a level of "public" concern. The Proposed Rule does not contain this information and, as such, does not contain adequate support for the Agency's proposed NAAQS revision.

Finally, it is important to note that the science of aquatic and terrestrial acidification and nitrogen enrichment has not changed since the last review. EPA acknowledges that 3,000 new studies have been conducted, but that those studies "are largely consistent with the evidence that was previously available."[31] In its current state, the science and the record do not establish that current air quality results in effects that are adverse to the public welfare.

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[27] *Id*.

[28] EPA has not, however, developed a record that would allow adequate assessment of public adversity regarding these effects. EPA notes, for instance, that it did not prepare quantitative analyses of N enrichment effects. *Id*. at 26,645-48. It further does not attempt the address how considerable uncertainties in the science might nevertheless allow the agency to make a determination that N enrichment leads to adverse impacts.

[29] *Id*. at 26,629.

[30] *Id*. at 26,670.

[31] *Id*. at 26,635.

IV. The Lack of Unified CASAC Advice Supports Retention of the Existing Secondary Standards.

EPA must consider the advice of CASAC and explain any deviations from that advice when reviewing and potentially revising the NAAQS. The lack of CASAC consensus, along with considerable uncertainties and evidence in the record that the existing standards provide adequate protection of the public welfare all support retention of the existing secondary NAAQS without revision.

In these proceedings, CASAC provided consensus advice on only two major issues: the adequacy of the existing standards with respect to protection against effects resulting from direct exposure to SO_2, NOx, and PM and the inadequacy of standard to address deposition-related effects.[32] As EPA explains, the science with respect to direct-exposure effects is well-established, and has not changed in any appreciable way since the last review of the secondary standards.[33] Accordingly, EPA has a solid basis for adopting CASAC's consensus position as to this particular issue.

CASAC was not, however, able to reach a consensus view with respect to revision of the NAAQS to address deposition-related effects. This lack of consensus warrants a cautious approach to revision of the standards.

Regarding SO_2, the majority of CASAC recommended consideration of a standard set at a level in the range of 10 to 15 ppb, "which these members concluded would generally maintain ecoregion median S deposition below 5 kg/ha-yr."[34] The CASAC minority supported adoption of a new 1-hour SO_2 secondary standard identical in form, averaging time, and level to the existing primary standard. The CASAC minority explained that its recommendation was based on a finding that the "3-year average S [sulfur] deposition estimates for the most recent periods are generally below 5 kg/ha-yr and that those periods correspond to the timing of implementation of the existing primary SO_2 standard (established in 2010), indicating the more recent lower deposition to be a product of current regulatory requirements."[35]

As explained throughout these comments, the record provides strong support for the conclusion that the existing SO_2 standards, including the primary standard, already provide protection consistent with the CASAC majority and minority positions against any adverse welfare impacts by maintaining deposition rates below 5 kg/ha-yr. Given these facts, EPA has not provided an explanation as to why that is not the case or why lowering the level of the standard is necessary. Not only should EPA explain its position relative to the CASAC minority advice, the Agency should recognize that the lack of consensus on this issue, coupled with evidence of adequate protection under the existing NAAQS, provides strong support for retaining the existing standards. Indeed, a conservative approach is particularly warranted here,

[32] *Id*. at 26,674.

[33] *Id*. at 26,635.

[34] *Id*. at 26,675.

[35] *Id*.

where CASAC as a whole has determined that "'translation of deposition-based effects to an ambient concentration in air is fraught with difficulties and complexities.'"[36]

That is the approach EPA has taken with respect to its proposed actions on the NOx and PM standards. Regarding NOx, the CASAC majority recommended revising the NAAQS to a level "'<10–20 ppb.'"[37] The CASAC minority recommended adoption of a new 1-hour NOx secondary standard "identical in form, averaging time and level to the existing primary standard based on the conclusion that the N [nitrogen] deposition estimates for the most recent periods generally reflect reduced deposition that is a product of current regulatory requirements, including implementation of the existing primary standards for NO_2 and PM."[38] In evaluating this set of recommendations, EPA proposes to conclude that the CASAC majority position is not supported by the record, finding, in particular, that the data on which the majority relied (1) was "not directly translatable to concentrations at individual monitors or to potential standard levels," and (2) showed "no correlation between the ecoregion deposition and the EAQM-weighted values[39] at upwind locations." For these reasons, EPA disagrees with the CASAC majority and proposes to retain the existing NAAQS, consistent with the minority CASAC advice. EPA should take a similar approach with respect to SO_2.

EPA has proposed similar action with respect to PM. A majority of CASAC recommended revision of the annual secondary standard for fine PM ("$PM_{2.5}$") to a level of 6 to 10 mg/m^3.[40] The CASAC minority supported retention of the existing PM NAAQS.[41] In evaluating these recommendations, "the Administrator notes the lack of consensus" as part of its rationale for proposing the retain the existing NAAQS.[42]

Where there is a lack of CASAC consensus coupled with record support for concluding that the existing standards provide adequate protection, as is the case here with respect to each pollutant under consideration, revising the standards cannot be justified. As it did with NOx and PM, EPA should more carefully evaluate the CASAC advice regarding SO_2. As described here and in the following sections of these comments, such an evaluation supports retention of the existing secondary NAAQS.

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[36] *Id*. at 26,674 (quoting 2023 CASAC letter).

[37] *Id*. at 26,675 (quoting 2023 CASAC letter).

[38] *Id*. at 26,675.

[39] *Id*. at 26,682. The Ecoregion Air Quality Metrics ("EAQM") weighted-average is "the value of each site linked to the downwind ecoregion … weighted by how often the forward HYSPLIT trajectory crossed into the ecoregion, *i.e.,* sites with more frequent trajectory intersections with the ecoregion are weighted higher." *Id*. at 26,634.

[40] *Id*. at 26,675.

[41] *Id*. at 26,676.

[42] *Id*. at 26,683.

V. EPA Cannot Lawfully Establish a NAAQS That Will Not Redress Adverse Effects.

In addition to failing to establish that the welfare effects evaluated in this review are adverse to public welfare, EPA has not established that its proposed NAAQS revision would have any impact on those effects. On the contrary, the record supports the conclusion that the proposed revised NAAQS would not have any appreciable effect on the public welfare. In fact, EPA says that its own analysis of the proposed rule "concluded that no additional emissions reductions beyond any needed to meet the current 1-hour primary SO_2 NAAQS would be expected to be necessary to meet the proposed annual secondary SO_2 NAAQS, resulting in no costs or benefits associated with pollution controls for this proposed NAAQS revision, if finalized."[43] Such a standard cannot rationally be supported.

The ineffectiveness of EPA's proposed revised standard is further illustrated by the Agency's assessment of the impacts of past deposition. EPA notes "that the impacts from the dramatically higher deposition rates of the past century can affect how ecosystems and biota respond to more recent, lower deposition rates, complicating interpretation of impacts related to more recent, lower deposition levels."[44] As EPA explains, studies have shown that "although atmospheric deposition in the Northeast declined" over past decades, soil acidity actually increased at the same time.[45] With additional time, ecosystems have finally begun to recover, even without intervening revisions to the secondary NAAQS to further ratchet down emissions.

In fact, the Proposed Rule notes that waterbodies have undergone a massive improvement in water quality, as measured by their "acid neutralizing capacity" ("ANC"). EPA has identified target levels of protection in terms of ANC, which EPA identified as 20, 30 and 50 meq/L.[46] These target levels of protection are already being achieved: "By the 2010–2012 period, the percentages of waterbodies achieving the three ANC benchmarks in all 25 ecoregions exceeded 80%, 80% and 70% (for 20, 30 and 50 meq/L, respectively). By the subsequent analysis period (2014–2016), these percentages were 90%, 80% and 80%."[47] Further, "by the 2018–20 period, only 1% and 4% of waterbodies analyzed nationally were estimated to be unable to achieve or exceed ANC targets of 20 meq/L and 50 meq/L, respectively (table 1)."[48]

This level of protection is consistent with CASAC's advice:

> The Administrator observes that the estimates of acid buffering capacity achievement for the 2010–12 period deposition—achieving the ANC benchmarks in at least 70% to 80% (depending on the specific benchmark) of waterbodies per ecoregion—are

[43] *Id*. at 26,692.

[44] *Id*. at 26,631.

[45] *Id*.

[46] *Id*. at 26,662.

[47] *Id*. at 26,653.

[48] *Id*. at 26,662.

> consistent with the objectives identified by the CASAC majority (in considering estimates from the ecoregion-scale analysis). The advice from the CASAC majority emphasized ecoregion ANC achievement estimates of 70%, 80% and 80% for ANC benchmarks of 50, 30 and 20 meq/L, respectively.[49]

Given the recovery achieved to date and the effectiveness of the existing NAAQS in achieving that recovery, considered alongside the role played by historical deposition, there is no clear basis for revising the NAAQS at this time. On the contrary, given the record, there is instead strong support for retaining the existing standards. This is consistent with the advice of the CASAC minority, which recommended that EPA:

> establish a 1-hour SO_2 secondary standard, identical to the primary standard, based on its [the CASAC minority's] observation that most of the S deposition estimates for the last 10 years are less than 5 kg/ha-yr and judgment that this indicates that the existing 1-hour primary SO_2 standard adequately protects against long-term annual S deposition-related effects.[50]

Despite the evidence supporting such a determination, the Administrator instead proposes to conclude "that an annual standard is a more appropriate form to address deposition."[51] The record provides minimal support for such a finding. Indeed, the basis for this conclusion is that the CASAC majority recommended such a standard and that EPA's analyses in its Policy Assessment document relied on longer-term averages.[52] This is thin support for revising the standard. It further fails to address the central issue, which is the level of protection already afforded under the existing primary and secondary NAAQS.

VI. EPA's Target Levels of Protection Are Based on Problematic Scientific Studies.

The form, averaging time, and level of EPA's proposed secondary SO_2 NAAQS, as well as the other standards under consideration in this proceeding, are based on target levels of protection that are specified in terms of ANC values of 20, 30 and 50 meq/L. Those ANC values have been derived from studies that make use of a "critical loads" approach to evaluating aquatic acidification (and other welfare endpoints). These critical loads "are typically based on the deposition amount that gives rise to a … chemical indicator value which is known to cause an adverse biological effect."[53] Accordingly, the studies EPA has relied on to establish the ANC targets do not themselves evaluate welfare effects at different levels of deposition such that objective determinations of potential adversity can be made. Instead, adverse determinations are *already embedded* in the studies themselves. Determinations as to what levels of deposition

[49] *Id*. at 26,678.

[50] *Id*. at 26,680.

[51] *Id*.

[52] *Id*. at 26,679.

[53] *Id*. at 26,660 n.63.

may or may not be acceptable have thus been made by study authors, not EPA, outside the framework of the CAA and without regard to the statutory standards that govern the secondary NAAQS. This renders these studies problematic and ill-suited to review of the NAAQS.

The Proposed Rule confirms this. EPA explains that the three ANC targets were selected because:

> these benchmark ANC concentrations reflect[] several considerations. For example, most aquatic CL [critical load] studies conducted in the U.S. since 2010 use an ANC of 20 and/or 50 meq/L, because 20 meq/L has been suggested to provide protection for a "natural" or "historical" range of ANC, and 50 meq/L to provide greater protection, particularly from episodic acidification events …. For example, levels below 20 meq/L have been associated with fish species reductions in some sensitive waterbodies of the Shenandoah and Adirondack Mountains. Levels of ANC ranging from 30 to 40 meq/L have been reported to provide sufficient buffering to withstand acidic inputs associated with episodic springtime rain or snowmelt events. An ANC value of 50 meq/L has often been cited in the literature as a target for many areas, and in the 2012 review, ANC values at or above 50 meq/L were described as providing an additional level of protection although with increasingly greater uncertainty for values at/above 75 meq/L.[54]

EPA acknowledges that these ANC values "involve authors' judgments regarding the magnitude of responses considered to be effects, and may also be limited by a lack of clarity as to references or baselines from which responses are assessed and with regard to judgments associated with reference or baseline conditions."[55] EPA cannot reasonably adopt these targets without conducting its own assessment of adversity and the effects that might occur under these various conditions.

Moreover, EPA also acknowledges that the critical loads identified in the studies on which it proposes to rely are themselves subject to large uncertainties. At the very least, EPA must fully evaluate these uncertainties before it can reasonably adopt ANC targets based on a critical loads approach to evaluating public welfare impacts.

Finally, as described above with respect to ecosystem recovery under the existing NAAQS, under current conditions, "few waterbody sites are estimated to be receiving deposition in excess of their CLs for relevant ANC targets under recent deposition levels."[56] Thus, even if EPA supports its decision to rely on its proposed ANC targets, which it has not done in this Proposal, the record would not support a revision of the NAAQS to prevent excess loadings.

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[54] *Id*. at 26,650-51.

[55] *Id*. at 26,660.

[56] *Id*. at 26,653.

VII. The Record Does Not Support Revising the Secondary NOx Standard.

EPA has properly proposed to determine that the record does not support a revision of the secondary standard for NOx at this time. As EPA explains, "the evidence suggests that NO_2 would be a weak indicator of total atmospheric N deposition."[57] There is no evidence of effects at ambient concentrations at the level allowed by the current NAAQS. The Administrator emphasizes "the limitations of the evidence and associated uncertainties and judges them too great to provide support to a revised secondary NO_2 standard."[58]

Most significantly, the Proposed Rule appears to take proper account of the relative roles of NOx and reduced nitrogen in proposing to find a revision of the secondary NAAQS for NOx is unwarranted. The Proposed Rule explains that reduced nitrogen, or ammonia, is the primary driver of nitrogen-related deposition and related effects. Because reduced nitrogen is responsible for the majority of N deposition, EPA proposes to conclude that **"**a secondary standard for N oxides cannot be expected to effectively control total N deposition."[59]

Reduced nitrogen is not a criteria air pollutant regulated under the CAA. It would therefore be inappropriate to attempt to address the welfare effects of reduced nitrogen deposition through a NOx standard.

Despite these considerations, a majority of CASAC recommended that EPA revise "the existing annual NO_2 standard to a level '<10–20 ppb.'"[60] EPA reasonably explains it proposed decision to reject this recommendation. In particular, the Agency says that the basis for CASAC's advice is "trajectory-based analyses for the weighted annual NO_2 metric (annual NO_2 EAQM-weighted), which … is not directly translatable to concentrations at individual monitors or to potential standard levels," and which "found no correlation between the ecoregion deposition and the EAQM-weighted values at upwind locations."[61] In addition, and most fundamentally, because there is no evidence of N-related effects at levels allowed by the existing NAAQS, there is no basis for revising the standard.

IX. The Record Does Not Support Revising the Secondary PM Standard.

EPA has correctly proposed to retain the existing secondary NAAQS for PM. As the Agency explains, deposition of sulfur is more appropriately and effectively addressed through an SO_2 standard.[62] EPA's evaluation has revealed a poor correlation between PM concentrations and S deposition with "no clear advantages to considering $PM_{2.5}$ mass, particle sulfate, or total

[57] *Id*. at 26,635.

[58] *Id*. at 26,681.

[59] *Id*. at 26,682.

[60] *Id*. at 26,675.

[61] *Id*. at 26682.

[62] *Id*. at 26,622.

sulfate as an indicator for a secondary NAAQS, over using SO_2."[63] EPA explains that there is "substantial and significant limitations and uncertainties associated with the evidence base for ecosystem effects related to N deposition associated with PM."[64] Further, an "appreciable percentage of $PM_{2.5}$ mass does not contribute to N deposition."[65]

Moreover, although fine PM, or $PM_{2.5}$, may be an appropriate indicator for a health-based standard (premised in part on penetration of fine particles deep into the lungs), there is no evidence that $PM_{2.5}$ is a relevant indicator for welfare effects.

Nevertheless, the CASAC majority recommended that EPA consider revising the annual secondary $PM_{2.5}$ standard to a level of 6 to 10 $\mu g/m^3$. In responding to this advice, EPA first notes that CASAC did not reach consensus on this recommendation, which supports EPA's decision to reject it.[66] Further, EPA explains that "the specific rationale for the range from 6 to 10 $\mu g/m^3$ is unclear, with levels within this range described as both relating to N deposition in a preferred range (at or below 10 kg N/ha-yr) and relating to deposition above that range."[67] EPA cannot reasonably adopt a standard with such limited support.

X. EPA Correctly Proposes Not to Revise the Secondary NAAQS to Address Direct Effects of SO_2, NOx, and PM.

The Proposed Rule explains that there are no effects resulting from direct exposure at current concentrations for any of the pollutants under review.[68] The science has not changed in any substantial way since EPA adopted the existing secondary standards. For those reasons, CASAC likewise recommended no change to the existing NAAQS to protect against direct exposure effects. Nothing in the record supports an alternative conclusion. Accordingly, EPA has correctly proposed that no revision to the standards is needed to address these welfare issues.

CONCLUSION

EPA's proposal to revise the secondary NAAQS for SO_2 is not adequately supported by the record. It is, moreover, inconsistent with CAA, because the standard is intended to address acidification which is ill-suited to the NAAQS program and already regulated pursuant to Title IV of the CAA. EPA has properly proposed to retain the existing secondary standards for NOx and PM, finding that the evidence is too limited to support revision of those standards and that such NAAQS would be ineffective at addressing welfare effects of concern. For these reasons, PGen urges EPA to retain the existing secondary standards for SO_2, NOx, and PM.

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[63] *Id*. at 26,634-35.

[64] *Id*. at 26,683.

[65] *Id*.

[66] *Id*.

[67] *Id*.

[68] *Id*. at 26,658-59.