



Immediate Executive Action:
Unexplored Options for Addressing Climate Change Under the Existing
Clean Air Act

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INTRODUCTION

Climate change is, indisputably, a crisis. The Intergovernmental Panel on Climate Change, and other experts both international and domestic, continue to warn the public that anthropogenic climate change is already causing significant and potentially irreversible impacts.¹ And the world is rapidly running out of time to address the climate crisis: experts predict that avoiding potentially devastating effects like catastrophic sea level rise and drought will require immediate and significant action.² But in the United States, one of the world's largest emitters of greenhouse gases, no such action is forthcoming.³ Indeed, the Environmental Protection Agency under President Trump has worked to reverse any and all previous action on domestic greenhouse gas emissions.⁴ Clearly, the next presidential administration must be prepared to act on climate—and it must be prepared to utilize its existing executive power in so doing.

Joe Biden, the presumptive Democratic nominee, has already committed to action on climate.⁵ As part of his climate platform, Biden plans to “demand” legislation from Congress.⁶ Yet this may not be

¹ For instance, the IPCC reports recent rapid loss of ice in the polar regions, driven by climate change. *See Special Report on the Ocean and Cryosphere in a Changing Climate*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Sep. 25, 2019), <https://perma.cc/6XG2-NWRU>. Meanwhile, NASA explains that the Greenland ice sheet, which is nearly the size of Alaska and about 2 miles thick at its highest point, is shedding around 300 gigatons (300 billion tons) of ice into the ocean every year. *See Warming Seas and Melting Ice Sheets*, NASA (Aug. 26, 2015), <https://perma.cc/4H8U-ZCJJ>. If the entire ice sheet melted, the world's oceans could rise by more than 20 feet. *See id.*

² *See Fourth National Climate Assessment: Summary Findings*, U.S. GLOBAL CHANGE RESEARCH PROGRAM (2018), <https://perma.cc/SH8Z-DQQC>.

³ *See, e.g., Each Country's Share of CO₂ Emissions*, UNION OF CONCERNED SCIENTISTS (Oct. 10, 2019), <https://perma.cc/EEH6-GL8A>.

⁴ *See, e.g., Nadja Popovich, Livia Albeck-Ripka and Kendra Pierre-Louis, 95 Environmental Rules Being Rolled Back Under Trump*, THE NEW YORK TIMES (Dec. 21, 2019), <https://perma.cc/B8T2-MANJ>.

⁵ *See Joe's Plan for a Clean Energy Revolution and Environmental Justice*, Biden for President (last accessed May 23, 2020), <https://perma.cc/49QT-T4SK>.

⁶ *See id.*



a viable approach. So far, any hope for a legislative solution has come to nothing. Continued gridlock in the legislative branch, exacerbated by Senate Majority Leader McConnell's refusal to compromise with the Democrats, indicates that transformative legislative action of any kind is unlikely without a significant electoral upheaval.⁷ And even under Democratic leadership, past efforts to enact a legislative solution to address the problem have failed.⁸ Moreover, current legislative efforts are limited in scope and potential: the Green New Deal, a recent effort considered groundbreaking by many,⁹ is ultimately only a nonbinding resolution that would lend the Environmental Protection Agency (EPA) no legally binding regulatory authority or responsibility to address greenhouse gases.¹⁰ Finally, even assuming that Democrats maintain the House and take both the White House and the Senate in 2020, it seems unlikely that the next Congress will rapidly pass a comprehensive climate bill. In light of the ongoing Covid-19 crisis, an incoming Congress will almost certainly be preoccupied with addressing the corresponding economic downturn, and is thus more likely to neglect financially and politically costly climate legislation.¹¹ For all of these reasons, the next administration must be prepared to address climate change immediately with the tools already available to it: EPA's regulatory authority under the Clean Air Act.

⁷ See Ella Nilsen, *House Democrats have passed nearly 400 bills. Trump and Republicans are ignoring them*, Vox (Nov. 29, 2019), https://www.vox.com/2019/11/29/20977735/how-many-bills-passed-house-democrats-trump_

⁸ The last significant attempt at a legislative solution for climate change, the "Waxman-Markey Bill", which would have introduced a cap-and-trade system for greenhouse gases, *see* American Clean Energy and Security Act, H.R. 2454, 111th Cong. (2009), passed the House in 2009, but Democratic Senate Majority Leader Harry Reid declined to bring the bill to the Senate for a vote. *See* Bryan Walsh, *Why the Climate Bill Died*, THE NEW YORK TIMES (July 26, 2010), <https://perma.cc/B7HG-JRAY>.

⁹ *See* Ann Pettifor, *The Green New Deal Offers Radical Environmental and Economic Change*, THE GUARDIAN (Feb. 11, 2019), <https://perma.cc/72GS-ZDH4>.

¹⁰ *See* Recognizing the duty of the Federal Government to create a Green New Deal, H. Res. 109, 116th Cong. (2019); Lisa Friedman, *What is the Green New Deal? A Climate Proposal, Explained*, THE NEW YORK TIMES (Mar. 13, 2019), <https://perma.cc/3QRA-X8LT>.

¹¹ *See, e.g.,* Steven Erlanger, *Will the Coronavirus Crisis Trump the Climate Crisis?*, THE NEW YORK TIMES (May 11, 2020), <https://perma.cc/HV9L-UUY6>; Brad Plumer, *Emissions Declines Will Set Records This Year. But It's Not Good News*, THE NEW YORK TIMES (Apr. 30, 2020), <https://perma.cc/Z4KN-GWPQ>.



The executive branch has already pursued several avenues of greenhouse gas regulation under the Clean Air Act (CAA), with varied success—though all relevant programs have since been rolled back under the Trump administration.¹² An incoming Democratic administration should be prepared to revisit these efforts and attempt to reinstate previously successful regulations—but there is a limit to the emissions reductions that can be achieved under any of these approaches. While regulation of mobile sources under Title II has been effective, for instance, the transportation sector constitutes only 28% of total emissions nationally.¹³ And the new source review program under § 111(b) has its own limitations, including the significant fact that it does nothing to address pollution from existing sources.¹⁴

In addition to revisiting previously implemented programs, then, the incoming EPA should also be prepared to explore as-yet unutilized avenues for regulating greenhouse gases under the Act. Two significant unexplored avenues remain. These are: (1) regulating greenhouse gases as a criteria pollutant under the national ambient air quality standards program (“NAAQS program”) outlined in §§ 108, 109, and 110; and (2) regulating international greenhouse gas pollution under § 115. Each program offers a

¹² EPA has engaged in four significant regulatory actions on climate. First, EPA initiated regulation of mobile sources under § 202 with the 2011 “Tailpipe Rule”, see *EPA & NHTSA, Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, 75 Fed. Reg. 25,324, 25,545 (May 7, 2010). This action was rolled back under Trump with *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program*, 49 Fed. Reg. 51,310 (Sep. 27, 2019). Second, EPA attempted to regulate existing stationary sources under § 111(d) with the Clean Power Plan, see *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,661 (Dec. 22, 2015), and later rolled this regulation back under Trump, see *Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations*, 84 Fed. Reg. 32520 (Jul 8, 2019). Third, EPA initiated regulation of hydrofluorocarbon emissions under § 608, see *Protection of Stratospheric Ozone: Update to the Refrigerant Management Requirements Under the Clean Air Act*, 81 Fed. Reg. 82,272 (Nov. 18, 2016), and rolled back this action in 2020 with the *Protection of Stratospheric Ozone: Revisions to the Refrigerant Management Program’s Extension to Substitutes* rule, found at 85 Fed. Reg. 14150 (Mar. 11, 2020). Finally, EPA began regulation of GHGs by source category under § 111(b), see *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources*, 81 Fed. Reg. 35,824 (June 3, 2016). EPA began undoing this action in 2019, under Trump. See *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review*, 84 Fed. Reg. 50,244 (Sep. 24, 2019).

¹³ See *Sources of Greenhouse Gas Emissions*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (last updated Apr. 11, 2020), <https://perma.cc/SKE3-G6BN>.

¹⁴ See 42 U.S.C. § 7411(b).



vast regulatory potential, because each, if successfully implemented, could both address greenhouse gas emissions from all sectors of the economy and curtail pollution from existing sources.

With this promise of sweeping change, however, comes significant legal and practical challenge—and thus, in addition to exploring the regulatory potential of both the NAAQS program and § 115, this paper analyzes the legal and practical challenges associated with each approach, and suggests EPA’s best response to each challenge. Ultimately, in the case of a NAAQS program for greenhouse gases, analysis of the risks and benefits indicates that the potential for significant emissions reduction outweighs the risk of failure. The opposite is true for § 115, however, because efforts to regulate greenhouse gases under § 115 are both unlikely to survive judicial review and likely to invite bad precedent. For these reasons, and considering the fact that a successful NAAQS program for greenhouse gases would achieve essentially the same outcome as would a program under § 115, this paper recommends that an incoming EPA seriously consider implementing a greenhouse gas NAAQS program.

THE NAAQS PROGRAM

I. Overview of the Regulatory Potential and Process

By far the most impactful regulatory approach to greenhouse gas regulation under the existing Clean Air Act would be through implementation of the NAAQS program. The NAAQS program, outlined in §§ 108–110 of the CAA, centralizes EPA regulatory power by empowering the Administrator to set federal standards for each air pollutant “emissions of which, in [her] judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare”,¹⁵ and “the presence of which in the ambient air results from numerous or diverse mobile or stationary sources”,¹⁶ and then implement

¹⁵ *Id.* at § 7408(a)(1)(A).

¹⁶ *Id.* at § 7408(a)(1)(B).



those standards through a powerful system of cooperative federalism.¹⁷ The implementation process comprises a series of specific steps. First, EPA lists each pollutant which the Administrator determines meets the criteria outlined above, and details the effects of these pollutants on human health and welfare.¹⁸ In the case of greenhouse gases, EPA would presumably list the combination of the six “well-mixed” greenhouse gases together as a singular criteria pollutant (identified hereinafter as “GHGs”).¹⁹ Next, EPA sets national ambient air quality standards (“NAAQS”) for each criteria pollutant.²⁰ “Primary standards” are set at a level “requisite to protect the public health”,²¹ and secondary standards at a level “requisite to protect the public welfare”, according to the Administrator’s determination.²² Finally, states design and implement “state implementation plans” (SIPs) to meet and maintain the NAAQS.²³ EPA may provide guidance and requirements for SIPs in a NAAQS Implementation Rule, and would likely do so for

¹⁷ See *id.* at § 7407(a). If states fail to design adequate standards, they risk being subject to a federally designed plan. See *id.* at § 7410(c).

¹⁸ 42 U.S.C. § 7408(a)(2). Listed pollutants are then referred to as “criteria pollutants”. See *Criteria Air Pollutants*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (last accessed May 27, 2020), <https://perma.cc/2LRT-VYW8>.

¹⁹ EPA’s 2009 endangerment finding for GHGs identified the six primary “well-mixed” greenhouse gases as a single pollutant for purposes of regulation. This approach is consistent with EPA’s regulation of particulate matter (PM)—a mixture of different materials with common properties and effects on human health and welfare, classified together as a sole criteria pollutant, see *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496, 66519 (Dec. 15, 2009), and EPA would presumably follow the same approach for a GHG NAAQS program.

²⁰ See 42 U.S.C. § 7508(b).

²¹ *Id.* at § 7508(b)(1) (emphasis added).

²² *Id.* at 7508(b)(2) (emphasis added). “Effects on welfare” is defined later in the CAA to include effects on “soils, water, crops, vegetation, manmade materials...weather, visibility, and climate.” 42 U.S. § 7602(h).

²³ 42 U.S.C. § 7410(a).



GHGs.²⁴ In any case, EPA continues to monitor the SIP process,²⁵ and if the agency finds a particular SIP unsatisfactory, it can impose a federal implementation plan (FIP) instead.²⁶

While the CAA does establish programs for regulation of pollutants other than those listed as criteria pollutants under the NAAQS program, none of these programs are as powerful as the NAAQS system. This is so because federal regulation of non-criteria pollutants is always tied to the source of the emissions, and thus all programs other than NAAQS are built on the assumption that sources of pollution must, and indeed should, endure in some capacity.²⁷ This statutory design has caused problems for EPA in its past attempts to regulate GHG emissions under non-NAAQS programs. For example, performance standards for new and existing stationary sources under § 111 are set based on the “best system of emissions reductions” which has been “adequately demonstrated”²⁸ for the source in question, which means that even assuming EPA can legally consider actions that a source may take “outside of the fenceline”,²⁹ EPA is ultimately shackled to the limits of what the “best” source can do.

²⁴ See, e.g., *Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements*, 81 Fed. Reg. 58010 (2016). It should be noted as well that EPA may be able to use a GHG NAAQS Implementation Plan to leverage other national GHG emissions control programs—an approach that EPA has taken in the past. For example, in 2012, in revising NAAQS standards for particulate matter and developing an Implementation Rule, EPA explained that it had been able to develop more stringent standards for PM in part due to the lower baseline established with the introduction of national programs like the 2005 Regional Haze Rule. See U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, *Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter*, 1-9 (Dec. 2012), <https://perma.cc/MJS2-FJUB>. Similarly, EPA could, for example, develop new national rules for GHG emissions control under § 111(b) or (d), and use a GHG NAAQS Implementation Plan as a method of adding legitimacy and context to those rules.

²⁵ See 42 U.S.C. § 7410(a).

²⁶ See *id.* at § 7410(c).

²⁷ This is true, for example, of the new and existing source performance standards programs outlined in §§ 111(b) and (d), and the Title II regulations allowing EPA to regulate emissions from mobile sources.

²⁸ 42 U.S.C. § 7411(a)(1).

²⁹ This “fenceline” issue is famously unsettled as a matter of law, and will remain an issue with which an incoming EPA will need to contend if it wishes to revisit regulation of greenhouse gas emissions under § 111(d) of the CAA, as it attempted to do in 2015 with the Clean Power Plan. See *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,661 (Dec. 22, 2015);



The NAAQS program, however, is different. NAAQS pollutants are the only ones for which EPA may set an acceptable concentration of the *pollutant itself* without attention to the capability of the source or source category.³⁰ This gives the NAAQS program two significant advantages. First, it liberates EPA from the confines of the existing industrial system, and allows the agency to focus on a science-based assessment on what concentration of pollution protects the public health within an “adequate margin of safety.”³¹ Second, in contrast to source-specific technology standards, setting a NAAQS conscripts states—subject to EPA review—to adopt a wide range of pollution-control measures, technology-based and otherwise, to ensure that the state maintains pollutant levels below the level required by the NAAQS.³² In practice, this creates a domino effect expansion of EPA power and responsibility over emissions, expressed not only through the powerhouse system of state implementation plans (SIPs) but also in such CAA programs as the Title V major source permitting program.

II. Analyzing the Legality and Feasibility

As demonstrated above, listing GHGs as a criteria pollutant under the NAAQS program would usher in a vast regulatory potential. Yet with great regulatory power comes great challenge. First, such a transformation of the regulatory landscape would certainly raise the ire of industry groups and other interests opposed to GHG regulation, and EPA would be required to defend its authority to list GHGs as a criteria pollutant, set NAAQS, promulgate a NAAQS Implementation Rule of some kind, and generally

³⁰ In *Whitman v. American Trucking Associations*, the Supreme Court held that the NAAQS program is dedicated to protecting the public health irrespective of the cost associated with adapting or shutting down the industry responsible for the pollution, and that EPA is therefore barred from considering this cost when setting NAAQS. See 531 U.S. 457, 465–466, 486. In concurrence, Justice Breyer specifically noted that the NAAQS program is intended to be “technology forcing.” See *id.* at 491, Breyer, J., concurring.

³¹ 42 U.S.C. § 7409(b)(1).

³² See, e.g., the “prevention of significant deterioration” (PSD) program outlined in § 165 and 169 of the CAA, and the nonattainment zone program outlined in §§ 171–79. Indeed, the PSD program has already triggered an expansion of EPA’s ability to regulate GHGs. After the *Utility Air Regulatory Group v. EPA*, case, for every “major source” of an existing criteria pollutant in a PSD area, EPA has the authority to require the “best available control technology” for any pollutant subject to regulation under the CAA—which, after EPA’s 2009 endangerment finding for GHGs, includes GHGs. 573 U.S. 302 (U.S. 2014).



oversee SIPs. Moreover, EPA would face significant practical challenges associated with the implementation of a GHG NAAQS and the corresponding expansion of regulatory responsibility, and the agency must develop legally viable plans to cope with these challenges. The following subsections examine the legality, feasibility, and implications of regulating GHGs as criteria pollutants, and outline EPA's best response to likely challenges. Ultimately, this section concludes that, armed with the requisite legal and practical knowledge, EPA can likely both (1) implement a GHG NAAQS program capable of surviving judicial review, and (2) prepare itself appropriately for the practical implications of so doing.

A. It is Likely that a GHG NAAQS Program Would Survive Judicial Review

As a preliminary matter, EPA must demonstrate its authority and ability to regulate GHGs as criteria pollutants. In so doing, EPA must prevail on three points. First, EPA must prove that GHGs fit the legal criteria for listing. Second, EPA must establish that the choice to regulate GHGs as a criteria pollutant is a reasonable exercise of EPA authority. Third, having listed GHGs as criteria pollutants and set appropriate NAAQS, EPA must contend with a timeline problem: the CAA specifies that primary standards must be met within ten years—an impossibility for GHGs, considering their long-lived, global nature.³³ In response to this dilemma, EPA must either set highly permissive primary standards, or decline to set primary standards at all—and it is likely to meet a legal challenge either way. On all points, however, EPA is likely to prevail in court.

1. It is Likely that GHGs Fit the Criteria for Listing Under the NAAQS Program

Although potential litigants may argue that GHGs fail the threshold criteria for listing under § 108, it is very likely that EPA can satisfactorily demonstrate that GHGs do qualify for listing under both essential

³³ See, e.g., Kenneth L. Denman et al., *Executive Summary of Chapter 7*, IPCC FOURTH ASSESSMENT REPORT, (2007), <https://perma.cc/X7AF-CUJ5> [hereinafter "IPCC FOURTH ASSESSMENT REPORT"]. See also Lisa Moore, *Greenhouse Gases: How Long Will They Last?*, ENVIRONMENTAL DEFENSE FUND (Feb. 26, 2008), <https://perma.cc/ZKD5-7Y3X>.



subparts of that section, and that EPA has the authority to make that determination. CAA § 108 outlines the listing requirements for criteria pollutants as follows:

(1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after December 31, 1970, publish, and shall from time to time thereafter revise, a list which includes each air pollutant—

(A) emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare;

(B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources...³⁴

The Administrator's determination that GHGs satisfy the requirements of subpart A is easily done. In 2009, following *Massachusetts v. EPA*,³⁵ EPA issued an endangerment finding for GHGs pursuant to CAA § 201, determining that the six primary "well-mixed" greenhouse gases were subject to regulation under that section, and an EPA interested in regulating GHGs under § § 108–110 could adopt much of the same reasoning utilized for § 201.³⁶ The question of whether GHGs constitute an *ambient* air pollutant, meanwhile, will likely be subject to more vigorous challenge. Opponents of this regulation may argue that the wording of subpart (B) indicates that the NAAQS program is limited to localized pollution from inherently dangerous materials. Ultimately, however, EPA should succeed in disproving this theory.

³⁴ 42 U.S.C. § 7408(a)(1)(A)–(B).

³⁵ 549 U.S. 497 (2007).

³⁶ See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496. See also *AEP v. Connecticut*, 564 U.S. 410 (2011) (holding that EPA has the authority to determine whether or not GHGs are pollutants. "The critical point is that Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions from powerplants..." *Id.* at 412.)



i. GHG Emissions Cause or Contribute to Air Pollution Which Endangers Public Health and Welfare

The first requirement for listing as a criteria pollutant under the NAAQS program is the simple endangerment finding outlined in § 108(a)(1)(A): the Administrator must determine that, in their judgement, emissions of the pollutant in question “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”³⁷ In so doing, an Administrator may adopt much of the reasoning utilized in EPA’s 2009 endangerment finding for GHGs, in which the agency determined that “elevated atmospheric concentrations of [GHGs] may reasonably be anticipated to endanger public health and to endanger public welfare.”³⁸ EPA explained in 2009 that while GHGs have not been found to have direct effects on human health, GHG pollution indirectly causes myriad health effects through climate change and such resultant phenomena as extreme weather events,³⁹ ozone pollution exacerbation,⁴⁰ and an increase in pathogens and disease vectors.⁴¹ Furthermore, EPA found that GHG pollution was already endangering public welfare⁴²—and would continue to do so.⁴³ Specifically, EPA predicted adverse effects on food and agriculture, forestry, water resources, and the energy sector, as well as impacts on coastal communities, natural ecosystems, and wildlife.⁴⁴

³⁷ 42 U.S.C. § 7408(a)(1)(A).

³⁸ 74 Fed. Reg. at 6649.

³⁹ *See id.* at 66524–25

⁴⁰ *See id.* at 66525.

⁴¹ *See id.* at 66525–26

⁴² “Effects on welfare” is defined in the CAA to include effects on “soils, water, crops, vegetation, manmade materials...weather, visibility, and climate.” 42 U.S.C. § 7602(h).

⁴³ *See* 74 Fed. Reg. at 66530–31.

⁴⁴ *See id.* at 66531–36.



The original six criteria pollutants, and final ambient air quality standards for each, were officially listed in the federal register in 1971.⁴⁵ In defending its endangerment findings for these pollutants, EPA noted the power of the Administrator’s discretion in listing criteria pollutants and setting corresponding standards, and emphasized the importance of promulgating standards with an adequate margin of safety even when scientific knowledge and data was imperfect.⁴⁶ For instance, although commenters on the proposed rule for carbon monoxide had expressed doubt regarding the quality of the evidence establishing carbon monoxide’s threat to public health, EPA declared that because it was “the Administrator’s judgement” that the agency’s originally proposed primary standards would protect public health within an adequate margin of safety, the original standards would not be relaxed.⁴⁷ Thus, in listing GHGs as a criteria pollutant, EPA should rely both on the compelling findings presented in the agency’s 2009 endangerment finding for GHGs, and on the context of significant discretion lent to the Administrator under the NAAQS program as envisioned by Congress.

ii. GHGs Can be Considered “Ambient” Air Pollutants

The significant and indisputable effects of climate change notwithstanding, opponents may argue that EPA’s choice to regulate GHGs as criteria pollutants fails at § 108(a)(1)(B) because Congress’s use of the word “ambient” in that subpart limits the NAAQS program to regulation of pollution which is inherently dangerous at a local level. Certainly, in contrast to the existing six listed criteria pollutants, GHGs as a pollutant appear to be fundamentally un-local. Unlike the existing criteria pollutants, GHGs are considered to be a “pollutant” not because they pose a danger to human health when emitted from a

⁴⁵ See National Primary and Secondary Ambient Air Standards, 36 Fed. Reg. 8186 (Apr. 30, 1971).

⁴⁶ See *id.* at 8186.

⁴⁷ *Id.*



local source and subsequently inhaled,⁴⁸ but because they are long-lived gases and their buildup and long-term concentration in the global atmosphere causes global climate change.⁴⁹ Litigants may argue that this means there is a disconnect between the concentration of GHGs in the ambient air and the danger that GHGs pose to human health, and therefore GHGs cannot be considered ambient air pollutants. In fact, however, this perceived disconnect is a legal red herring.

First, as a matter of statutory construction, because subparts (A) and (B) are separate clauses, separated by a semicolon, they should be read independently.⁵⁰ Because it would be inappropriate to apply the “ambient” requirement to the endangerment finding, it follows that criteria pollutants need not be inherently dangerous at the local level in order to qualify for listing under § 108. With this understanding, subpart (B) can be satisfied just as easily as was subpart (A). The Cambridge Dictionary defines “ambient” in the context of environmental conditions as those “existing in the surrounding area,”⁵¹ and EPA itself has historically defined “ambient air” as “that portion of the atmosphere, external to buildings, to which the general public has access.”⁵² GHGs are certainly present in the ambient air: they

⁴⁸ See, e.g., Jody Freeman and David B. Spence, *Old Statutes, New Problems*, 163 U. PENN. L. REV. 1, 20 n.64 (Dec. 2014).

⁴⁹ See EPA’s endangerment finding under § 202, 74 Fed. Reg. at 66536. See also IPCC FOURTH ASSESSMENT REPORT, supra note 31 (describing the slow breakdown of carbon dioxide (CO₂) in the atmosphere thus: “[a]bout 50% of a CO₂ increase will be removed from the atmosphere within 30 years, and a further 30% will be removed within a few centuries. The remaining 20% may stay in the atmosphere for many thousands of years.”)

⁵⁰ See, e.g., *Lockhart v. United States*, 136 S. Ct. 958, 960 (2016) (applying the rule of the last antecedent to hold that in the sentence “a prior conviction . . . under the laws of any State relating to aggravated sexual abuse, sexual abuse, or abusive sexual conduct involving a minor or ward”, the phrase “involving a minor or ward” applied only to the item immediately preceding it, and not separated by a comma: “abusive sexual conduct”.)

⁵¹ *Ambient*, *Cambridge Dictionary* (2020).

⁵² 40 C.F.R. § 50.1(e) It should be noted, however, that under President Trump EPA has revised this definition of “ambient air” to specify that EPA may consider a particular area to be closed to public access, and thus not part of the ambient air, if the facility in question maintains adequate measures to that effect, and moreover that such indicators may include signage, security patrols, or even video surveillance. In considering whether or not a particular area should be considered part of the ambient air EPA is directed to evaluate the situation on a case-by-case basis, considering the effectiveness of the measures in question. Suffice it is to say here that the general thrust is this policy de-emphasizes localization of air monitoring, and arguably supports the idea that the NAAQS program is concerned with regulating the broader atmosphere, and is thus suited to addressing well-mixed,



are emitted everywhere, and from everything. The United States' transportation, industrial, commercial, agricultural, and electrical sectors together are responsible for emitting 6.68 billion metric tons of GHGs each year.⁵³ And after *Utility Air Regulatory Group v. EPA* (hereinafter referred to as the *UARG* case), the Supreme Court itself is well acquainted with the fact that GHG emissions can be traced to millions of sources, both mobile and stationary.⁵⁴

Still, § 108 does not exist in a vacuum, and it must be noted that the word “ambient” is relevant in the broader context of the NAAQS program because, once criteria pollutants are listed under § 108, § 109 requires that EPA set a permissible standard for each pollutant’s concentration in the *ambient air*.⁵⁵ It is clear that there must be *some* connection between the concentration of GHGs in the ambient air and the danger posed to human health and welfare. But of course, there is such a connection: it is a matter of settled science—and indeed, of settled law⁵⁶—that the effects of climate change increase as the concentrations of GHGs in the atmosphere increase. Merely because GHGs do not pose an inherent danger to human health when inhaled at the local level, it does not follow that EPA cannot utilize the concentrations of GHGs in the ambient air as a metric for regulation—just as it does for every other criteria pollutant.⁵⁷

globally dispersed GHGs. See United States Environmental Protection Agency, *Revised Policy on Exclusions from “Ambient Air”*, 5 (Nov. 2018), <https://perma.cc/8YLW-JSKC>.

⁵³ See *Sources of Greenhouse Gas Emissions*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (2020), <https://perma.cc/UN9Y-USWX>.

⁵⁴ See 573 U.S. 302 (U.S. 2014).

⁵⁵ 42 U.S.C. § 7409(a)(1)(A).

⁵⁶ Justice Stevens began his opinion in *Massachusetts v. EPA* with the following declaration: “A well-documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related.” 549 U.S. 497 (2007).

⁵⁷ See, e.g., National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66964, 66965 (2008).



2. EPA Has a Workable Argument that the Regulation of GHGs Under NAAQS is Reasonable as a Matter of Law

Having established GHGs as criteria pollutants, EPA must establish NAAQS for GHGs at levels “requisite” to protect public health or welfare as applicable,⁵⁸ develop an Implementation Rule of some kind, and review resulting SIPs. Critics of the idea of regulating GHGs as a criteria pollutant—including EPA itself, in the past⁵⁹—have argued that GHGs are unsuited to the NAAQS program because GHGs are long-lived, and as they build to dangerous levels over time, they become “well-mixed” across the global atmosphere.⁶⁰ Thus, to the extent that GHGs endanger public health and welfare, their measurable concentration is uniform across the globe, and specific gases cannot be traced to their point of emission.⁶¹ This means that EPA cannot directly trace the actions of an individual state in reducing their local emissions to measurable decreases in global GHG concentrations—and the agency must also contend with the fact that foreign states also play a role in GHG pollution. In this difficult context, EPA must defend its GHG NAAQS against arbitrary and capricious challenges, and convince a reviewing court that the regulation of GHGs under the NAAQS program is a reasonable proposition appropriately left to the administrator’s authority. Although the unique nature of GHGs puts EPA in a difficult position, EPA has a good chance of surviving judicial review on this matter.

⁵⁸ EPA sets “primary standards” to address health concerns, and “secondary standards” to protect welfare. As will be discussed further in subsection A(3), however, EPA should set only secondary standards for GHGs.

⁵⁹ See *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44354, 44364. Full text at <https://perma.cc/PD8T-X5QF>.

⁶⁰ See IPCC FOURTH ASSESSMENT REPORT, *supra* note 31. See also *The Causes of Climate Change*, NATIONAL AERONAUTICS AND SPACE AGENCY (last updated May 7, 2020), <https://perma.cc/JX7S-L8U9>.

⁶¹ See, e.g., *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Executive Summary*, ES-1 (Dec. 7, 2009), <https://perma.cc/H835-P88P> (“Greenhouse gases, once emitted, can remain in the atmosphere for decades to centuries, meaning that 1) their concentrations become well-mixed throughout the global atmosphere regardless of emission origin, and 2) their effects on climate are long lasting.”)



Per *State Farm*, in defending itself against an arbitrary and capricious challenge, EPA must demonstrate that it considered relevant factors, avoided a “clear error of judgement”, and considered reasonable policy alternatives—and it must defend itself with an adequate basis of evidence.⁶² Theoretically, in the case of GHGs this is relatively straightforward—EPA has ample access to information on what percentage of atmospheric GHG is “requisite” to protect public welfare and health. Recent IPCC reports have provided predictions of welfare impacts based on various global temperature increases associated with related levels of GHGs. Moreover, EPA has access to data recording the United States’ share of global emissions, as well as GHG emission by state.⁶³ And international agreements like the Paris Accords provide EPA with reasonable expectations regarding the extent to which the rest of the world will work to reduce GHG emissions in the coming decades.⁶⁴ As a result of all this, EPA is well placed to consider relevant factors, avoid errors of judgement, and set attainment goals with a reasonable expectation that international parties will work to reduce emissions on a predictable timeline and scale, set NAAQS at a standard that it considers, based on the evidence, to be requisite to protect welfare, and monitor SIPs based on its understanding of each state’s contribution to GHG emissions and climate change.

In practice, arbitrary and capricious and reasonableness review are bound up together, and in acquitting itself well on the former question, EPA has a better chance of succeeding on the latter as well. The problem is that in practice, the Court is free to take a broader view of reasonableness review in deciding whether to leave the choice to regulate GHGs under NAAQS to EPA discretion at all. In some ways, this question is out of the agency’s hands. Still, EPA should be prepared to convince the court against

⁶² *Motor Vehicle Mfrs. Ass'n v. State Farm*, 463 U.S. 29, 43 (1983).

⁶³ EPA has conducted an annual report of GHG emissions and sinks by source, economic sector, and greenhouse gas since 1990. See United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Last updated April 13, 2020), <https://perma.cc/4DG2-6VRR>.

⁶⁴ See *What is the Paris Agreement?*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (2020), <https://perma.cc/24NU-CVF3>.



declining to extend Chevron deference on major questions grounds. Under the Court’s major questions doctrine, recently cited in *UARG*, the Court requires a “clear statement” from Congress in matters of great economic or regulatory significance.⁶⁵ But EPA should point out that in this case, a clear statement already exists: in developing the NAAQS program, Congress explicitly assigned a massive regulatory power to EPA discretion. The choice to list a particular pollutant under the NAAQS program is specifically left to the Administrator’s discretion, and once listed, that pollutant is subject to the entire reach of the NAAQS program. Thus, while regulating GHGs under NAAQS would extend EPA’s power over GHG emissions, it would not extend EPA’s regulatory power in *general*. Moreover, implementing SIPs for GHG emissions is not truly “transformative”: thirty states already maintain “renewable portfolio standards”, and in recent years, as renewable energy sources costs have fallen in comparison to the price of fossil fuels, more and more states are implementing dramatic shifts toward renewable energy.⁶⁶

Ultimately, it cannot be denied that the Supreme Court is capable of shutting down a GHG NAAQS program by imposition of its own policy judgement. But it should not do so. In striking down EPA’s “Tailoring Rule” in *UARG*, the Court itself declared that to leave the rule in place would mean allowing EPA to “revise clear statutory terms” and thus “deal a severe blow” to the separation of powers.⁶⁷ The NAAQS program constitutes a clear Congressional grant of power, endowing EPA with the authority to list criteria pollutants and implement NAAQS as it sees fit. Thus, throwing out a GHG NAAQS on statutory

⁶⁵ See 573 U.S. at 324.

⁶⁶ Along these lines, EPA’s case for a GHG NAAQS will be strengthened with the more information and understanding it is able to provide to the Court. The Court betrayed its (understandable) ignorance of the CAA, for instance, in declaring in *UARG* that “the PSD program and Title V...cannot rationally be extended beyond a relative handful of large sources.” 573 U.S. at 321. This is not quite true, of course—the Title V program includes, for instance, the § 111 new source performance standards program which is based on source categories, and which includes numerous small sources emitting various pollutants, including GHGs, which are regulated as a group. See *Title V Operating Permits: NSPS & NESHAP, United States Environmental Protection Agency* (last updated Jan. 29, 2020), <https://perma.cc/M2YB-QDT6>.

⁶⁷ See 573 U.S. at 327.



interpretation grounds would both undermine a foundational building block of the CAA and constitute a serious threat to the separation of powers—a result that the Court should certainly wish to avoid.

3. The Primary Standards Timeline Problem Will Not Necessarily Preclude a GHG NAAQS Program

The last significant legal challenge relates to the timeline requirements associated with primary and secondary NAAQS. Both primary and secondary standards establish a timeline encouraging the Administrator to work toward attainment over a period of years. While secondary standards require only that the Administrator set a date by which she expects attainment can be achieved “as expeditiously as practicable,”⁶⁸ primary standards require the Administrator to set an attainment date no later than ten years after the nonattainment finding.⁶⁹ This is problematic, both because GHGs are long-lived gases which remain in the atmosphere for longer than ten years,⁷⁰ and because the United States cannot control for international emissions of GHGs over the same period. EPA has two potential options for avoiding a timeline issue: the agency could set primary standards for GHGs at a level clearly attainable over a ten-year period, or the agency could find that it is unnecessary to set primary standards at all. As will be discussed below, the latter course is likely to be the more legally defensible option.

i. EPA Could Set Primary Standards at a Level Clearly Attainable Over a Ten-Year Period

One possible solution to the timeline problem would be for EPA to set primary standards at a level clearly attainable over a ten-year period—in other words, at a level either equal to or above current levels.

⁶⁸ See 42 U.S.C. § 7502(a)(2)(B). For further discussion of the feasibility of setting secondary NAAQS for GHGs, see Howard M. Crystal, Kassie Siegel, Maya Golden-Krasner, and Clare Lakewood, *Returning to Clean Air Act Fundamentals: A Renewed Call to Regulate Greenhouse Gases Under the National Ambient Air Quality Standards (NAAQS) Program*, 31 GEORGETOWN ENVTL. L. REV. 233, 266–67 (2019); Michael A. Quirke, *We Can Fight Climate Change With the Army We Have*, 31 VILLANOVA ENVTL. L.J. 1, 20–22 and 58 (2020).

⁶⁹ See 42 U.S.C. § 7502(a)(2)(A)

⁷⁰ IPCC FOURTH ASSESSMENT REPORT, *supra* note 31.



GHGs are not directly hazardous to human health, and the indirect health effects of GHGs are fundamentally related to their effects on welfare: climate change creates adverse ecological and meteorological effects which lead to adverse effects on human health through, for example, increased disease vectors associated with ecological disruption, or sea level rise and severe storms.⁷¹ It could reasonably be argued, then, that primary standards could be set at or above currently observed levels. There is a problem with this approach, however. Assuming that EPA does not revoke its previous endangerment finding, setting a NAAQS for GHGs above the level currently observed in the atmosphere would be in tension with EPA's previous finding that GHGs already endanger public health, albeit indirectly—and may leave EPA vulnerable to a challenge of arbitrary and capricious rulemaking.⁷²

ii. EPA Could Set Secondary Standards Only

Although setting primary standards at or above primary standards is inadvisable, all is not lost, because EPA can reasonably argue instead that it is not required to set primary standards at all. First, EPA has a good case to argue that it is within the discretion of the agency to decline to set primary or secondary standards as appropriate. Importantly, § 108(a) requires EPA to find a danger to the public health *or* welfare—not both. It follows that for any criteria pollutant posing no danger to the public health, it would be well within reasonable EPA discretion to determine that standards to protect public health are not “requisite”,⁷³ and therefore no such standards need be set. Furthermore, there is regulatory precedent for this interpretation: in 1985, EPA revoked the existing secondary standards for carbon monoxide, finding that because the pollutant had no known adverse effects on the public welfare, “no standards

⁷¹ See *Regulating Greenhouse Gas Emissions Under the Clean Air Act: Advanced Notice of Proposed Rulemaking*, 73 Fed. Reg. 44354 (July 30, 2008).

⁷² See 74 Fed. Reg. at 66525.

⁷³ See *Whitman v. American Trucking*, 531 U.S. 457, 473 (2001) (“Requisite...‘means sufficient, but not more than necessary.’”)



appear[ed] to be requisite” to protect welfare.⁷⁴ To this day, only primary standards exist for carbon monoxide.

And EPA can reasonably argue that no primary standards are “requisite” to protect public health, because GHGs are *directly* hazardous only to welfare. In 2008, in considering the possibility of a NAAQS program for GHGs in 2008, EPA itself cited the indirect connection between climate change and effects on human health, and posited that it may not be necessary to implement primary NAAQS for GHGs.⁷⁵ And in documenting the potential health effects of GHGs in its 2009 endangerment finding for GHGs under § 202—which also allows EPA to find endangerment to either health *or* welfare, and does not require both—EPA noted that there had been some debate at the comment stage over whether indirect health effects caused in the first instance by effects on welfare could or should be classified as health effects.⁷⁶ Although EPA decided in 2009 to find endangerment to both health and welfare,⁷⁷ this decision does not necessarily bind EPA to the same interpretation under § 108(a), and it certainly does not prevent EPA from amending its prior interpretation.⁷⁸ Moreover, in revoking its health effects finding for GHGs EPA would not lose any

⁷⁴ *Review of the National Ambient Air Quality Standards for Carbon Monoxide*, 50 Fed. Reg. 37484, 37494 (Sep. 13 1985).

⁷⁵ See *Regulating Greenhouse Gas Emissions Under the Clean Air Act: Advanced Notice of Proposed Rulemaking*, 73 Fed. Reg. 44354, 44478 (July 30, 2008).

⁷⁶ See *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496, 66527 (Dec. 15, 2009).

⁷⁷ EPA declared that it was “interpreting the endangerment provision in CAA section 202(a) as meaning that the effects on peoples’ health from changes to climate can and should be included in EPA’s evaluation of whether the air pollution at issue endangers public health.” *Id.*

⁷⁸ Per *FCC. v. Fox Television Studios*, agencies may amend prior policy so long as it provides a “reasoned explanation” for the new policy, and acknowledges that it is changing policy in the first place—but the agency need not demonstrate that the new policy is better. See 556 U.S. 502, 515 (2009). There may be occasion to worry, after the Court’s decision in *Department of Commerce v. New York*, that an agency’s change in policy could be found arbitrary and capricious on the basis that the reasons given were pretextual, because litigants may argue that EPA’s decision to address only the direct effects of climate change is merely a pretext to impose inappropriate regulation—but it is likely that *Commerce v. New York* can be distinguished because the suspected motivation for changing policy in that case was not only objectionable (identifying undocumented Americans for purposes of targeting them for deportation) but also at odds with the purpose of the statute (arranging for the United States census.) See 139 S. Ct. 2551, 2575 (2019).



regulatory power over GHG emissions, because in every instance of language in the CAA requiring an endangerment finding by the Administrator for pollutant regulation, the statute allows EPA to find that the pollutant poses a danger to *either* health *or* welfare.⁷⁹ Danger to both is never required.

B. It is Likely that EPA Can Effectively Respond to the Practical Implications of a GHG NAAQS Program, and Survive the Legal Challenges of So Doing

Assuming EPA’s decision to regulate GHGs under the NAAQS program survives judicial review, the agency’s troubles will not yet be over, because significant practical challenges will arise with implementation. Two such challenges are particularly relevant. First, listing GHGs as criteria pollutants under the NAAQS program, and subsequently establishing secondary NAAQS that would throw every state into nonattainment, would trigger the CAA’s nonattainment zone requirements under § 172. This would require EPA to monitor state SIPs for permitting programs mandating “reasonably available control technology” (RACT) to control GHG emissions from all existing sources of GHGs,⁸⁰ and “lowest achievable emissions rate” (LAER) technology to control GHG emissions from new or modified “major” sources of GHGs⁸¹—an enormous regulatory undertaking.⁸² Second, due to the CAA’s system of cooperative federalism for implementing the NAAQS program, if enough states refuse to comply, EPA is in danger of becoming overwhelmed with the responsibility to implement the program itself.

Both of the above are significant challenges for EPA, but neither is necessarily fatal to a GHG NAAQS program, because in both cases it is likely that EPA can develop a practical solution in response.

⁷⁹ For instance, § 111(b), establishing the source performance program, directs the Administrator to establish source categories which “caus[e], or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health *or* welfare.” 42 U.S.C. § 7411(b)(1) (emphasis added).

⁸⁰ 42 U.S.C. § 7502(c)(1).

⁸¹ 42 U.S.C. § 7503(a)(2).

⁸² See 573 U.S. at 321–322. In its doomed Tailoring Rule, EPA itself concluded in 2010 that such a regulatory program would be impossible for EPA to undertake—it would in fact, the agency warned, be “flatly unadministrable.”⁸²



The following subsections provide an overview of the legal issues that are likely to arise as EPA does so, and an analysis of EPA’s best response to these issues. Although it is beyond the scope of this paper to provide a thorough technical and practical analysis of the implications of potential regulatory approaches, this paper concludes that, from a legal perspective, EPA has viable regulatory options for a GHG NAAQS.

1. EPA Can Likely Avoid the Responsibility of Regulating Millions of New Major Sources of GHGs

The § 172 nonattainment zone (NAZ) program, which would apply across the country if EPA establishes secondary standards for GHGs and throws every state into nonattainment, would require RACT to control GHG emissions from all existing sources of GHGs,⁸³ and LAER for new “major” sources.⁸⁴ This means that under a GHG NAAQS program, EPA must find a way to avoid regulating the millions of new GHG sources that would overwhelm the system if directly regulated.⁸⁵ Despite appearances, however, it is likely that EPA can avoid regulatory disaster, first by claiming an exception to the RACT requirements under § 502,⁸⁶ and second by addressing the LAER requirements either by arguing that, per the reasoning outlined in the *UARG* case on the PSD issues, “major” sources cannot be identified by virtue of their GHG emissions alone, or by implementing generally applicable regulation to cover unwelcome regulatory targets. The later approach is likely to be more legally viable.

⁸³ See 42 U.S.C. § 7502(c)(1).

⁸⁴ See *id.* at § 7503(a)(2).

⁸⁵ Had EPA been responsible for regulating all major sources based merely on GHG emissions under the PSD program, the scope of the program would have ballooned from thousands of sources to over 6 million, including residential sources and other unlikely targets for federal regulation. See *Action to Ensure Authority to Implement Title V Permitting Programs Under the Greenhouse Gas Tailoring Rule*, 75 Fed. Reg. 82254, 82260 (Dec. 30, 2010).

⁸⁶ See 42 U.S.C. § 7661a(a).



i. EPA Should Argue that Under § 502, Existing Non-Major Sources Need Not be Subject to RACT Requirements

As an initial matter, EPA should be able to avoid the RACT requirements by claiming an exemption under § 502. Per § 502(a), EPA may exempt certain non-major sources from regulation when it finds that such requirements would be “impracticable, infeasible, or unnecessarily burdensome”.⁸⁷ EPA is directed to make such exemptions by “source category”, and “either in whole or in part.”⁸⁸ Needless to say, EPA has a clear case to make that categories like individual residences are excellent candidates for wholesale exclusion from RACT requirements under the NAZ program, and it can and should apply the § 502(a) exemption to all non-major existing sources. But this will solve only a small part of EPA’s problem, because millions of small sources—including residences and other sources unsuited to federal regulation—meet the 250 tons per year standard for major sources on GHG emissions alone.⁸⁹ The LAER permitting problem, then, would remain, and would be triggered with any sufficient modification.

ii. EPA Could Argue that “Major” Sources Cannot Be Identified by Virtue of GHG Emissions Alone

One approach that EPA could take to solve the LAER problem would be to argue that § 502 should in fact cover all categories of GHG sources, because no source can be considered “major” on the basis of its GHG emission alone. In *UARG*, the Supreme Court determined that for purposes of the PSD program, “major” sources cannot be identified by volume of GHG emissions only,⁹⁰ and EPA can require BACT for

⁸⁷ 42 U.S.C. § 7661a(a). It is worth noting here as well that the fact that the CAA includes language exempting certain sources from regulation when that regulation would unreasonably “burdensome” indicates that Congress was interested in giving EPA the regulatory leeway to address important pollution.

⁸⁸ See *id.* For an example of EPA implementing this exception in rulemaking, see *Exemption of Certain Area Sources From Title V Operating Permit Program*, 70 Fed. Reg. 75320 (2005).

⁸⁹ See *Action To Ensure Authority To Implement Title V Permitting Programs Under the Greenhouse Gas Tailoring Rule*, 75 Fed. Reg. 82254, 82260 (Dec. 30, 2010).

⁸⁹ See 573 U.S. at 321–322.

⁹⁰ See 573 U.S. at 321–322.



GHG emissions only when a source emits at least 250 tons per year of a more “conventional” pollutant, and is thus already subject to Title V permitting requirements.⁹¹

EPA could adopt similar reasoning in the NAZ context, but it may wish to avoid doing so. For one thing, the agency would find it uncomfortable to simultaneously argue both that GHGs should be regulated as criteria pollutants, and that GHGs, unlike every other criteria pollutant, are broadly unsuited to regulation under the Title V permitting program.⁹² And furthermore, the language and context of the NAZ program strongly suggests that the Supreme Court’s understanding of what constitutes a “major” source should differ in this case, because the NAZ program is focused specifically on criteria pollutants. While the PSD program imposes BACT requirements for *any pollutant regulated under the CAA* once its source has been triggered in for regulation, the NAZ program requires LAER to control emissions of the non-attainment criteria pollutant only.⁹³ It seems nonsensical to argue that in a non-attainment area for GHGs, where the statute provides for the strict LAER requirement in the interest of bringing that area back into attainment for GHGs, EPA may not impose LAER unless the source in question is a major source of some other criteria pollutant.

iii. EPA Could Design Broadly Applicable Regulations to Cover Extraneous Sources

Will all of the above in mind, EPA could attempt to address its LAER problem for unwanted major sources with a more practical solution: by designing broadly applicable regulation to satisfy the permit

⁹¹ See 573 U.S. at 326.

⁹² Indeed, this approach would be likely to leave a GHG NAAQS program more vulnerable to arbitrary and capricious challenges.

⁹³ See § 173(c)(6), noting that when EPA designates a NAZ area, the responsible state must develop a plan which includes permit programs, including RACT and LAER, “as may be necessary or appropriate to provide for attainment of [the NAAQS for the nonattainment pollutant] in such area by the applicable attainment date...” 42 U.S.C. § 7502(c)(6). This distinction between the PSD and NAZ requirements makes sense because, while the PSD program is a catch-all designed to prevent any area from falling out of attainment for any criteria pollutant, the NAZ program is more pointed: its purpose is only to bring the non-attainment area back into compliance for the criteria pollutant in question—at which point the PSD program again applies.



requirement that would otherwise apply to residences and other sources unsuited to specific Title V requirements. In practice, EPA reads the language of § 172 relatively broadly, and has determined that so long as the states design satisfactory SIP provisions to address the nonattainment issue, states need not always satisfy the permitting requirement by issuing permits for each source on a case-by-case basis. Specifically, EPA has issued rules sketching out various methods of satisfying the PSD and NAZ requirements through “permits by rule” and “plantwide applicability limitations.”

Plantwide applicability limitations (PALs) are emissions limits for major sources which establish a plantwide pollutant cap and allow any modifications to the facility to proceed without triggering an NSR permitting requirement, as long as total facility emissions remain below that cap.⁹⁴ EPA itself has identified this as a useful method of “allow[ing] companies to respond rapidly to changing market conditions while protecting the environment”,⁹⁵ and indeed, PALs are particularly promising in the context of industrial sectors engaging in construction or modification projects that will decrease emissions in the long term.⁹⁶ With this in mind, EPA could certainly consider establishing PALs for more traditional sources of GHG pollution, like asphalt plants and sawmills.⁹⁷ In the case of less traditional sources, like residences, however, EPA could consider an even more permissive approach. In this latter case, permits by rule are the most promising strategy from a legal standpoint.

Under a permits by rule system, EPA allows states to satisfy certain Title V permitting requirements by issuing broad “permits by rule” which automatically approve specific categories of

⁹⁴ See 40 CFR § 51.165(f)(2)(v). (“Plantwide applicability limitation (PAL) means an emission limitation expressed in tons per year, for a pollutant at a major stationary source, that is enforceable as a practical matter and established source-wide in accordance with paragraphs (f)(1) through (f)(15) of this section.”)

⁹⁵ *FACT SHEET Proposed Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Step 3*, United States Environmental Protection Agency (2012), <https://perma.cc/29YK-BBMK>.

⁹⁶ All4 Staff, *Exploring Plantwide Applicability Limit (PAL) Basics*, All4 (2020), <https://perma.cc/2K4Y-CYQA>.

⁹⁷ *Tribal NSR Permitting in Region 8*, United States Environmental Protection Agency (last updated Sep. 24, 2019), <https://perma.cc/Q7XU-4MUG>.



sources, provided that they meet certain conditions outlined in the rule.⁹⁸ This is a promising strategy for EPA in the case of residences and other unconventional sources which would emit over 250 tons per year of GHGs and thus may be considered a major source for purposes of the NAZ program. EPA could establish a rule advising states that they may satisfy their Title V requirements for apartment buildings, for example, by establishing a set of conditions that every apartment building must meet, and reporting those conditions to EPA as part of the SIP process.

Of course, EPA must be prepared to defend this regulatory approach. For one thing, it should be noted that while permit by rule programs have been successfully implanted for area sources, it is not clear whether permits by rule can be applied to major sources.⁹⁹ Yet EPA may be able to avoid litigation on this question. If the agency develops a permit by rule program for GHG emissions from major sources, any pushback will likely not be from industry, but from environmental groups averse to mass permitting—and a climate-friendly EPA may be able to engage in successful negotiation with groups interested in promoting GHG regulation at large.¹⁰⁰

Ultimately, even if EPA is forced to endure judicial review on a rule allowing SIPs to include PAL and permit by rule programs for GHG emissions, it is not unlikely that EPA discretion will survive. There is something to be said for the fact that EPA has for years overseen a vast system of SIPs including PAL and permit by rule programs, and this system has thus far survived. Clearly, GHG pollution is not the only case in which EPA and states have felt the need to import some flexibility into the implementation of the Title

⁹⁸ See, e.g., *Permits By Rule: Oil and Gas*, 25 Tex. Reg. § 106.351 (2000), <https://perma.cc/V56N-33WN>.

⁹⁹ See, e.g., *Permit-by-Rule*, Indiana Department of Environmental Management, Module One: Air Permitting, 50 (Jan. 1, 2017), <https://perma.cc/E5BC-3WVX>.

¹⁰⁰ For an in-depth discussion of the benefits of regulatory negotiation, see Jody Freeman and Laura I. Langrein, *Regulatory Negotiation and the Legitimacy Benefit*, 9 N.Y.U. ENVTL. L.J. 60 (2000). Freeman and Langrein argue that “reg neg” can decrease litigation on the negotiated topics, and improve the legitimacy of the rulemaking process. See *id.* at 63, 78, 138.



V program, and there is a strong argument to be made that the *Alabama v. Costle* theory of administrative necessity should continue to allow EPA to regulate emissions to protect the public health and welfare without binding the agency to untenable responsibilities.¹⁰¹

2. It is Likely That an Adequate Number of States Will Produce Acceptable SIPs

Lastly, in order to successfully implement a NAAQS program, EPA will rely on state participation. In order to avoid unconstitutional commandeering, the CAA and the NAAQS program rely on a system of cooperative federalism. EPA is free to set NAAQS at whatever level it sees fit¹⁰²—but EPA cannot force states to design SIPs in a particular way. EPA may disapprove a state SIP, but ultimately, if a state still refuses to comply, the agency’s only recourse is to design and implement its own FIP.¹⁰³ EPA and the states have performed this delicate dance for as long as the NAAQS program has been in existence: for the most part, states play along and design SIPs subject to EPA review because they wish to avoid subjecting themselves to direct federal regulation, which may be more burdensome and costly than a state plan would be.¹⁰⁴ But of course, EPA’s threat to impose a FIP is only good so long as the agency has the resources to do so, and implementation of FIPs on a mass scale would overwhelm the agency and its resources. This national game of chicken could present a real problem in the case of a GHG NAAQS. Due to the cooperative system of FIPs, EPA can comfortably assert that it enjoys the constitutional authority to set a NAAQS likely to result in the curtailing of certain industrial activities, such as the use of coal-fired power plants—but EPA’s practical ability to do so ultimately rests on the authority of state governors. It

¹⁰¹ See *Alabama Power Co. v. Costle*, 636 F.2d 323, 357 (U.S. 2014) (“Certain limited grounds for the creation of exemptions are inherent in the administrative process, and their unavailability under a statutory scheme should not be presumed, save in the face of the most unambiguous demonstration of congressional intent to foreclose them.”)

¹⁰² See *Whitman v. Am. Trucking Associations Inc.*, 531 U.S. 457, 471 (2001).

¹⁰³ See 42 U.S.C. § 7410(c)(1).

¹⁰⁴ See Daniel P. Selmi, *Federal Implementation Plans and the Path to Clean Power*, 28 *GEORGETOWN ENVTL. L. REV.* 640 (Mar. 19, 2016).



is not unlikely that some governors, driven perhaps by a desire to maintain political capital with voters who rely on highly-polluting sectors for their income, will be unwilling to acquiesce to EPA's directive, and will choose instead to accept a FIP.

In practice, however, EPA is not likely to face an unmanageable deluge of FIP requirements. In fact, the advent of the Trump administration's anti-regulatory agenda has demonstrated that many states are eager to address the climate issue independently. Since President Trump announced the United States' withdrawal from the Paris Accord, for example, twenty-four states formed the United States Climate Alliance, committed to meeting or exceeding the targets of the Clean Power Plan.¹⁰⁵ And many states within and without the Climate Alliance are engaged in significant legislation and policy aimed at shifting their energy grids toward renewable power over the next decade. In 2019, for example, New Mexico passed significant legislation aimed at shifting its state electricity grids toward complete renewable power over the next decade,¹⁰⁶ and Utah committed to shifting its sole electricity utility to a net 100% renewable energy portfolio.¹⁰⁷ Arizona recently placed a ban on new natural gas power plants in the state and began consideration of a plan to shift the bulk of state electricity generation to renewables,¹⁰⁸ while Indiana rejected a plan to shift an existing coal plant to natural gas, electing to pursue renewable options instead.¹⁰⁹ And Texas and Iowa, two traditionally "red" states, lead the nation in wind energy generation.¹¹⁰

¹⁰⁵ See United States Climate Alliance (last accessed Apr. 26, 2020), <https://perma.cc/WQ6E-8EEB>.

¹⁰⁶ See *Energy Transition Act*, NM S.B. 489.

¹⁰⁷ See *Community Renewable Energy Act*, Utah Code Ann. §§ 54-17-901 – 54-17-909;

¹⁰⁸ See David Wichner, *Regulators Extend Ban on New Gas Power Plants in Arizona*, ARIZONA DAILY STAR (Feb. 8 2019), <https://perma.cc/T9KV-RQ7A>.

¹⁰⁹ See Devashree Saha, *Natural Gas Beat Coal in the US. Will Renewables and Storage Soon Beat Natural Gas?*, WORLD RESOURCES INSTITUTE (July 8, 2019), <https://perma.cc/X8CR-VFU9>.

¹¹⁰ See John Siciliano and Josh Siegal, *Red States Lead the Switch to Renewables*, WASHINGTON EXAMINER (July 9, 2019), <https://perma.cc/YHR7-HTXH>.



Ultimately, EPA's choice to set a NAAQS for GHGs would be a gamble. It is incontrovertible that some governors would be displeased with the new emissions restrictions. But there is a good chance that the existing goodwill for a renewable energy transition will prepare the ground for EPA to set a reasonable GHG NAAQS target and work with states who are already undertaking efforts to address the problem of climate change. Further, in engaging with states early in the process, and seeking stakeholder input as a GHG NAAQS Implementation Rule is developed, EPA can promote goodwill and increase engagement and participation.¹¹¹

INTERNATIONAL AIR POLLUTION AND § 115

I. Overview of the Regulatory Potential and Process

Section 115 is an interesting case. The only provision of the CAA concerning international air pollution, this section boasts tantalizingly broad language lending the Administrator the power to address pollution endangering health and welfare in foreign countries. Beyond the breadth of potential regulatory authority, there is inherent appeal in the idea of bringing a statutory provision designed to address international pollution to bear on climate change, a global issue with international impacts. Moreover, § 115 represents a potential lever for significant emissions reduction because it operates through the SIP framework. In theory, this means that § 115 has the potential to provide the same greenhouse-gas emissions reduction benefit to EPA that listing greenhouse gases as criteria pollutants under the NAAQS program would.

¹¹¹ During the development of the Clean Power Plan, Administrator Gina McCarthy led a massive, and ultimately successful effort, to engage with states, industry, utilities, communities, and other stakeholders. See Gina McCarthy, *One Year Later: Climate Action and the Clean Power Plan*, THE EPA BLOG (Aug. 3, 2016), <https://perma.cc/T6A7-5HWU>. In so doing, EPA developed a Plan that mirrored existing trends in energy use and efficiency.



Section 115 designs a system for international pollution regulation by establishing international accountability for domestically-produced pollution, and then translating that accountability into domestic requirements. Specifically, § 115 directs that if the Administrator determines, based on international studies or reports, that “any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country”¹¹²—or the Secretary of State requests that the Administrator make such a finding¹¹³—then the Administrator must direct the state responsible for that pollution to revise their state implementation plan to address the issue.¹¹⁴ Further, subsection 115(c) establishes a reciprocity requirement, specifying that the protections given under § 115 shall apply only to those foreign countries which “the Administrator determines ha[ve] given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this section.”¹¹⁵

Compelling as it may be, § 115 has never before been used to implement actual regulatory policy. The only time EPA has acknowledged its existence was in 1980, under President Carter, when the United States contemplated attempting to use the section to address the problem of transboundary pollution contributing to acid rain in Canada.¹¹⁶ Then-Administrator Costle made the required endangerment and reciprocity findings,¹¹⁷ but when President Reagan entered the White House the following year his

¹¹² 42 U.S.C. § 7415(a).

¹¹³ *Id.* at § 7415(a).

¹¹⁴ *Id.* at § 7415(b).

¹¹⁵ *Id.* at § 7415(c).

¹¹⁶ The United States and Canada together signed a memorandum of intent to develop transboundary pollution control measures using new and existing laws. *See Transboundary Air Pollution, Can.-U.S., Aug. 5, 1980, 32 U.S.T. 2521.*

¹¹⁷ *See* Administrator Costle’s letters to Secretary of State Muskie to this effect, reproduced in *New York v. Thomas*, 613 F. Supp. 1472, 1486-93 (D.D.C. 1985). Administrator Costle concluded in this letter that the reciprocity requirement was satisfied by Canadian legislation which empowered the Canadian Minister of Environment to recommend new emissions standards for a particular pollutant if the Minister concluded that that pollutant was



administration declined to take further action on the matter.¹¹⁸ The state of New York and various environmental groups subsequently brought suit, alleging that EPA's previous findings required it to take further action under § 115, but the DC Circuit held that the Administrator's findings lacked the finality required for judicial review.¹¹⁹ Thus the matter died before § 115 could be used for SIP revision purposes.

Still, the acid rain case provides a helpful case study for the initial proceedings that would occur should EPA attempt to use § 115 to address GHGs. In an ideal scenario, EPA implementation of § 115 to address GHG emissions would proceed as follows. First, the Administrator would identify a country or countries which satisfy the reciprocity requirement set out in § 155(c). Next, having made the triggering endangerment finding, the Administrator would identify a responsible state: in this case, every state in the nation.¹²⁰ Finally, the Administrator would direct the states to revise their state implementation plans to address the pollution. At this point, EPA would in theory have significant flexibility in regulating GHGs on a statewide basis, including by setting GHG emissions limits and encouraging states to meet these limits through the implementation of federally-facilitated cap and trade and plans.¹²¹

endangering the health of persons in another country. In fact, this particular legislation had been largely modeled on § 115. See Clean Air Act, S.C. 1980, c 45, § 21.1(Can.), <https://perma.cc/H9QR-RXSF>.

¹¹⁸ See Michael Burger et al., *Legal Pathways To Reducing Greenhouse Gas Emissions Under Section 115 Of The Clean Air Act*, COLUMBIA UNIVERSITY SABIN CENTER FOR CLIMATE LAW, NEW YORK UNIVERSITY SCHOOL OF LAW INSTITUTE FOR POLICY INTEGRITY, UCLA SCHOOL OF LAW EMMETT INSTITUTE, 12 (Jan. 2016), <https://perma.cc/7J7M-7JD6>.

¹¹⁹ See *Thomas v. New York*, 802 F.2d 1443, 1446-48 (D.C. Cir. 1986).

¹²⁰ EPA has conducted an annual report of GHG emissions and sinks by source, economic sector, and greenhouse gas since 1990. See United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Last updated April 13, 2020), <https://perma.cc/4DG2-6VRR>.

¹²¹ See Hannah Chang, *Cap and Trade Under the Clean Air Act?: Rethinking Section 115*, 40 ENVTL. L. REP. NEWS & ANALYSIS 10894 (2010), 10904. Although Chang does not suggest that EPA could *require* a cap and trade program under § 115, she argues that there is precedent for EPA setting a cap for a particular pollutant and then outlining a trading plan for states to use to meet that cap. Specifically, in 1998 EPA mandated that several states establish an NOx emissions cap for states as part of a required SIP revision under the interstate transport provision § 110(a)(2)(D)(i)(I), and sketched out a cap and trade system that states could use to meet that cap. See U.S. EPA, *NOx Budget Trading Program* (last updated February 26, 2019), <https://perma.cc/E6UY-YBRV>. Of course, it should be noted here that to the extent cap and trade would be available under a § 115 program for GHG regulation, it would also be available under a NAAQS regime.



II. Analyzing the Legality and Feasibility

As indicated above, § 115 is a tantalizing option for GHG regulation—and indeed, several scholars and advocacy groups are in vocal support of using § 115 to regulate GHG emissions.¹²² An EPA interested in utilizing this approach to addressing climate change would face significant legal and practical challenges, however. From a legal standpoint, EPA may be challenged in its efforts to establish endangerment, international reciprocity, and domestic allocation of responsibility among the states—and courts are likely to be suspicious of the EPA’s attempt to apply § 115 to GHGs in the first place. Furthermore, the reciprocity question may raise practical challenges for EPA and the executive branch.

While many of the legal and practical challenges that would arise under a § 115 program for GHG emissions regulation could be overcome with the appropriate strategy, it is very likely that the Supreme Court will determine that § 115 cannot be applied to GHGs, either because that section applies only to criteria pollutants, or, more problematically, because GHGs are uniquely unsuitable for CAA regulation in this manner. In the former case, if EPA were to develop a GHG NAAQS program, it could subsequently invoke § 115—though doing so would likely be more trouble than it would be worth—and in the latter case, such a decision by the Supreme Court would hamstring EPA’s ability to regulate GHGs under other provisions of the CAA, including the NAAQS program. This paper concludes, therefore, that an incoming administration should not focus its climate change mitigation efforts on a § 115 program.

A. An Attempt to Regulate GHGs under § 115 is Unlikely to Survive Judicial Review

If challenged in court, EPA’s attempt to regulate GHGs under § 115 must survive four threshold legal challenges: (1) the need to establish endangerment; (2) the need to establish reciprocity; (3) the need to allocate responsibility for GHG pollution among the states; and (4) the need to demonstrate that

¹²² See *id.* See also Burger et al., *supra* note 111, at 81.



§ 115 can be applied to GHGs at all. It is not out of the question that EPA would prevail on the first three questions, but a reviewing court may not deign to consider any of these, because it is likely that the Court will hold against EPA on the fourth question.

1. EPA Can Likely Establish Endangerment

As an initial matter, EPA must demonstrate that the United States' domestic GHG pollution "cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare in at least one foreign country."¹²³ If anything, this requirement should be even easier to satisfy than the endangerment finding requirement under the NAAQS program, because while both provisions admit of significant discretion on the part of the Administrator, § 115 offers another escape valve for the executive branch: the Secretary of State may "request" that the Administrator initiate rulemaking under § 115, and this formal request suffices to trigger the rest of the provisions of that section.¹²⁴ Precedent indicates that reviewing courts will be particularly deferential to the executive branch in matters of foreign affairs, and it is highly unlikely that a court would overturn such a directive from the Secretary.¹²⁵

2. EPA Can Likely Establish Reciprocity

Having established endangerment, EPA must satisfy the subsection 115(c) reciprocity requirement that the foreign state or states identified for purposes of a § 115 arrangement "has given the United States essentially the same rights with respect to the prevention or control of air pollution

¹²³ 42 U.S.C. § 7415(a).

¹²⁴ *See id.*

¹²⁵ *See, e.g.,* United States v. Curtiss-Wright Export Corp., 299 U.S. 304, 320 (1936) ("The President is the sole organ of the nation in its external relations, and its sole representative with foreign nations.")



occurring in that country as is given that country by this section.”¹²⁶ As a threshold matter, it is likely that EPA can satisfy this requirement.

Some scholars suggest that (assuming a future administration re-enters the Paris Agreement) EPA should use that agreement as demonstration that any co-signing country has satisfied the § 115(c) reciprocity requirement.¹²⁷ Although litigants may argue that because the Paris Agreement imposes no legally-binding agreements on any country, the text of § 115(c) admits of significant discretion on the part of the Administrator in determining whether reciprocity is present.¹²⁸ It is possible that a court would be satisfied that a signatory to the Paris Accords had thereby afforded “essentially the same rights” that the United States itself had in signing.¹²⁹ It should be noted, however, that accepting an argument that an otherwise non-binding agreement like the Paris Accord suffices to establish reciprocity for purposes of § 115 may lead to unwanted practical repercussions for EPA—a problem that will be examined in section B below.

In practice, however, EPA need not bother with concerns over whether or not the Paris Accords suffice to establish reciprocity, because the agency needs only one country to satisfy the endangerment and reciprocity requirements, and Canada is the perfect candidate for so doing. This is so because the Canadian transboundary pollution provision upon which Administrator Costle based his reciprocity finding for acid-rain related pollution still exists, and this provision, codified as part of the Canadian Environmental Policy Act, was specifically modeled on § 115. Its text empowers the Canadian Minister of the Environment

¹²⁶ 42 U.S.C. § 7415(c).

¹²⁷ See, e.g., Burger et al., *supra* note 111, at ii.

¹²⁸ Although the DC Circuit in *Thomas v. New York* held that Administrator Costle’s letter to the Secretary of State indicating reciprocity was insufficient to *compel* EPA action, it strongly indicated that that the reciprocity determination itself was squarely within EPA discretion. (See *Thomas v. New York* at 1448: “How and when the agency chooses to proceed to the stage of notification triggered by the [reciprocity] findings is within the agency’s discretion...”)

¹²⁹ 42 U.S.C. § 7415(c).



to recommend emissions standards to address pollution which the Minister believes endanger the “health, safety, or welfare of persons in a country other than Canada.”¹³⁰ It is difficult to see how a reviewing court would not find such a provision satisfactory to establish the reciprocity requirement under § 115(c).

3. EPA May be Able to Establish a Legal Grounding for Allocation

Having established endangerment and reciprocity on an international scale, EPA would also need to allocate domestic responsibility for the international pollution among the fifty states sufficiently to allow it to “give formal notification” to the states of the need to revise their SIPs.¹³¹

This is not such an impossible task as it may seem, because, as noted above in the NAAQS section, EPA has ample data on U.S. emissions and the relative responsibility of states.¹³² Moreover, Supreme Court precedent indicates that EPA should have broad discretion in determining the best methodology for apportionment of emissions reduction responsibility, and need not allocate emissions targets based on exact emissions responsibility. In *EPA v. EME Homer City Generation*,¹³³ a case in which EPA imposed FIPs to address the § 110(a) requirement that all implementation plans prohibit state emissions “in amounts which will...contribute significantly to nonattainment in...any other State,”¹³⁴ the Supreme Court deferred to EPA’s interpretation in the FIPs of what amounts of pollution could be said to “contribute significantly”, and further allowed EPA to allocate responsibility for those amounts according to its determination of

¹³⁰ Clean Air Act, S.C. 1980, c 45, § 21.1(Can.), <https://perma.cc/H9QR-RXSF>.

¹³¹ 42 U.S.C. § 7415(a).

¹³² In addition to international studies, EPA collects annual data on domestic GHG emission and sinks, and is well prepared to reasonably apportion state emission goals based on this data. See United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Last updated April 13, 2020), <https://perma.cc/4DG2-6VRR>.

¹³³ 134 S. Ct. 1584 (2014).

¹³⁴ 42 U.S.C. § 7410(a)(2)(D).



what was equitable and efficient, and not what was exactly proportional to actual contribution.¹³⁵ It follows that in the case of a § 115 GHG emissions reduction program, EPA could follow a similar course.

4. The Supreme Court is Unlikely to Hold that § 115 Applies to GHGs

Unfortunately, although establishing the endangerment, reciprocity, and allocation requirements under § 115 is not infeasible, a reviewing court (and in particular the Supreme Court) is still likely to strike down a § 115 rule for GHG emissions, because the Court is likely to conclude that § 115 cannot be applied to GHGs. Specifically, the Court is very likely to conclude that § 115 can only apply to criteria pollutants which are already regulated under the NAAQS program. It is also possible, however, that the Court would rule more broadly in striking down a § 115 GHG rule, and hold that GHGs are uniquely unsuitable to regulation through the SIPs process. For this reason, it is doubly unwise for EPA to attempt a § 115 GHG regulation program: in the first case, EPA would be better served by attempting a NAAQS program for GHGs, and in the second case, such a holding would hamstring future efforts to regulate GHGs under the existing CAA, including using the NAAQS program.

i. The Court is Likely to Hold that § 115 Applies Only to Criteria Pollutants

If EPA attempts to regulate GHGs under § 115 without first listing GHGs as criteria pollutants, the Supreme Court is likely to throw out such regulation on the theory that § 115 applies only to criteria pollutants. Several factors are likely to point the Court in this direction. First, the Court may be troubled by the fact that because regulating a non-criteria pollutant under § 115 would allow EPA to oversee SIPs in the same way that it does under the NAAQS program, implementation of § 115 for a pollutant not already designated as a criteria pollutant would essentially constitute a workaround of the entire NAAQS program outlined in §§ 108–110. The Court has repeatedly held that Congress does not “hide elephants

¹³⁵ See 134 S. Ct. at 1589–90.



in mouseholes” by “alter[ing] the fundamental details of a regulatory scheme in vague terms or ancillary provisions.”¹³⁶ While § 115 is not, perhaps, an “ancillary provision”, the Court may find it unlikely that Congress intended the relatively vague terms of that section to be inclusive of any and all pollutants, and thus to allow a complete workaround of the NAAQS program.

Furthermore, unless EPA first lists GHGs as a criteria pollutant and develops a NAAQS program accordingly, a reviewing court is very likely to find that it is inappropriate to attempt such a vast regulatory takeover of state SIPs without a clear statutory directive. As has been discussed above, the NAAQS program is uniquely powerful among CAA provisions because it is the only program that is untethered from the technological capability of the regulated sources. The regulatory power thus conferred to EPA is undeniably “transformative”, but in sketching the parameters of the NAAQS program itself in §§ 108–110, Congress has appropriately provided the necessary “clear statement” that the Supreme Court has recently highlighted as essential in regulatory matters that constitute a “major question.”¹³⁷ Thus, the only way for the Court to overturn EPA’s choice to regulate a particular pollutant under the NAAQS program would be to declare, *sua sponte*, that to regulate such a pollutant in this manner is clearly unreasonable or statutorily barred. It is likely that the Court would wish to avoid this move, because curtailing a clear Congressional grant of power to the executive branch could be seen as judicial overreach and an interference with the separation of powers.¹³⁸ All of this serves to provide some legal cover for EPA in surviving a reasonableness challenge to its GHG NAAQS program, but such protection is unlikely to apply if EPA attempts to regulate a non-criteria pollutant under § 115, for two reasons.

¹³⁶ See *Whitman v. American Trucking Association*, 531 U.S. 457, 468 (2001). See also *King v. Burwell*, 135 S. Ct. 2480, 2484 (2015).

¹³⁷ See *UARG*, 573 U.S. at 324.

¹³⁸ See the Court’s discussion of judicial overreach in the *UARG* case, 573 U.S. at 327.



First, from a practical standpoint, the NAAQS program outlined in §§ 108–110 includes a trade-off for its vast grant of regulatory power to EPA: EPA must make rigorous scientific findings on the effects of the air pollutants, establish and defend its standards, and implement a timeline to meet those standards—all actions laid out in notice and comment rulemaking procedures subject to review and scrutiny under the APA. If, on the other hand, EPA were to regulate a non-criteria pollutant under § 115, and implement the SIPs program to do so without committing itself to the NAAQS process, EPA would thereby gain access to a vast regulatory power without “paying” for that power through the thoughtful implementation of scientific and regulatory expertise.¹³⁹

Second, the language of §§ 108-110 specifically commits the listing of criteria pollutants, the promulgation of NAAQS, and the monitoring of state SIPs to the Administrator’s judgement and discretion. But the choice of what pollutants apply under § 115 is not a matter of discretion, but of *definition*—specifically, the definition of “any air pollutant”—and the Court will surely feel comfortable critiquing the EPA’s choice of definition. *UARG* has already taught us that “any pollutant” does not always mean “any pollutant”,¹⁴⁰ and the Court is especially likely to narrow the meaning of the term in matters involving a “major question”, “[w]hen an agency claims to discover in a long-extant statute an unheralded power to regulate a significant portion of the American economy.”¹⁴¹ It is a near certainty that the Supreme Court would find that an attempt to regulate GHGs under the vast NAAQS program without a

¹³⁹ See David Bailey and David Bookbinder, *Section 115 Not a Viable Climate Policy Option*, NISKANEN CENTER (Feb. 5, 2016), <https://perma.cc/8FQF-U9ZA>.

¹⁴⁰ In *UARG*, Scalia noted that “[w]here the term ‘air pollutant’ appears in the Act’s operative provisions, EPA has routinely given it a narrower, context-appropriate meaning”, 573 U.S. at 316, and that in the case of the PSD provision, “there is no insuperable textual barrier to EPA’s interpreting ‘any air pollutant’...to encompass only pollutants emitted in quantities that enable them to be sensibly regulated at the statutory thresholds...” *Id.* at 320.

¹⁴¹ *Id.* at 324.



separate NAAQS mandate is just such a case. And indeed, it is difficult to argue that the Court would not be right to do so.

ii. The Court Could Make a Broader Declaration that GHGs are Broadly Unsuited for SIPs Regulation

More problematically still, an attempt by EPA to regulate GHGs under § 115 without first listing GHGs as a criteria pollutant would open the door to a broader judicial declaration: namely, that GHGs are uniquely unsuitable for regulation through fundamental CAA programs like NAAQS. While the Court's holding in *UARG* certainly did not foreclose EPA's ability to regulate GHGs as NAAQS pollutants, that case did indicate that the Court is skeptical of the suitability of GHGs to certain CAA regulatory programs—and an attempted § 115 program would provide the Court with a ripe opportunity to expand upon this idea.¹⁴² For one thing, if EPA pursues § 115 regulation of GHGs without setting a GHG NAAQS, this may be seen as a tacit acknowledgement that the NAAQS program applies only to local, directly hazardous pollutants. This would encourage the Court—following the *UARG* reasoning that it is permissible to read a context-specific meaning into the term “any pollutant”¹⁴³—to read a meaning into the listing requirements outlined in § 108 which excludes GHGs. Furthermore, even if the Court rejects EPA's § 115 regulation of GHGs under the narrower theory that § 115 applies only to criteria pollutants, it may beef up this holding

¹⁴² The Court noted in *UARG* that as regards the PSD permitting trigger, it was appropriate for EPA to “exclude those atypical pollutants that, like greenhouse gases, are emitted in such vast quantities that their inclusion would radically transform those programs and render them unworkable as written,” 573 U.S. at 320, and indeed that “it [was] beyond reasonable debate that requiring permits for sources based solely on their emission of greenhouse gases at the 100- and 250-tons-per-year levels set forth in the statute would be ‘incompatible’ with ‘the substance of Congress’ regulatory scheme.’” *Id.* at 322.

¹⁴³ The Court explained in *UARG* that “...the presumption of consistent usage ‘readily yields’ to context, and a statutory term—even one defined in the statute—‘may take on distinct characters from association with distinct statutory objects calling for different implementation strategies.’” 573 U.S. at 320 (quoting *Env'tl. Def. v. Duke Energy Corp.*, 549 U.S. 571 (2007)).



with some unfriendly dicta demonstrating that GHGs, as an “atypical” pollutant, do not belong in the ranks of the existing six.¹⁴⁴ In short, EPA should avoid pushing its luck.

B. Assuming Regulation of GHGs under § 115 Survives Judicial Review, Application of the Program Could Pose Unwanted Practical Repercussions

In the unlikely event that implementation of a § 115 program for GHGs survives judicial review, this undertaking would also present practical problems for EPA. For one thing, the responsibility to oversee fifty state implementation plans would involve significant cost to EPA—though this would be mitigated by the fact that the agency would likely have some flexibility under § 115 to rule with a light regulatory touch as it sees fit, and the fact that, as described above, many states are already taking steps to implement actions in line with a national GHG emissions reduction program. More significantly, however, while EPA may be able to overcome the reciprocity question as a threshold legal matter, it behooves the agency to be careful about how it does so. Specifically, there is reason to be concerned that if the United States adopts an understanding that signing an international agreement like the Paris Accord satisfies the reciprocity requirement under § 115, future international agreements could lead to unwanted domestic legal responsibilities.

Like many instances of international law, the Paris Accords are a confusing mix of binding and non-binding concepts. Participants are required to put forward domestic commitments for national GHG emissions reduction, for instance, but they are not bound to a specific amount of reduction.¹⁴⁵ Still, when the United States joined the Paris Accords, the Obama administration advertised the Clean Power Plan as evidence that the United States was meeting its commitments under the agreement.¹⁴⁶ And as President

¹⁴⁴ *See id.*

¹⁴⁵ *See What is the Paris Agreement?*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (2020), <https://perma.cc/24NU-CVF3>.

¹⁴⁶ *See, e.g.*, Fiona Harvey and Suzanne Goldenberg, *US Clean Power Plan Setback ‘Will Not Affect Paris Climate Change Deal’*, THE GUARDIAN (Feb. 10, 2016), <https://perma.cc/DVS4-PFLH>.



Trump withdrew from the Paris Climate Accords, supporters of this decision cited concerns that, under the interpretation pushed by the Obama administration, the Paris Accords were in practical effect a binding treaty that had avoided the treaty requirements of passing through Senate advice and consent.¹⁴⁷ Moreover, a coalition of Republican Senators expressed concern that remaining in the Paris Accords would give legal fodder to proponents of § 115 GHG regulation, who could attempt to use the Accords to “force EPA to regulate” GHGs under that section.¹⁴⁸

Michael Burger, Executive Director of Columbia University’s Sabin Center for Climate Change Law, and author of a paper encouraging the use of § 115 to regulate GHGs, argued that the coalition of concerned senators was mistaken, and that the acid rain case had demonstrated that the Court will defer to EPA’s discretion regarding whether or not to utilize § 115.¹⁴⁹ But the fact remains that if EPA does declare that signing the Paris Accords suffices to establish § 115 reciprocity, this would both provide fuel for the argument that the Accords were a treaty in disguise, and set a precedent for international commitment with no clear limit. This is problematic for two reasons. First, it would leave the executive branch vulnerable to unwanted commitments and costly litigation. Second, such a precedent may discourage future administrations from signing other international climate agreements, which, despite their nonbinding nature, could otherwise have the potential to encourage significant international cooperation on emissions control.

Ultimately, however, the practical problems associated with a boundless reciprocity standard may be possible to avoid. As indicated above, the Paris Accords are not the only possible source for establishing

¹⁴⁷ See Marlo Lewis, *Paris Agreement: Why Trump Should Ignore Obama Officials’ Legal Counsel*, COMPETITIVE ENTERPRISE INSTITUTE (Mar. 3, 2017), <https://perma.cc/E8L6-TVZC>.

¹⁴⁸ Letter from Senator James Inhofe et al., to President Donald Trump (May 25, 2017), <https://perma.cc/X6V8-FEA3>.

¹⁴⁹ Michael Burger, *Republican Senators’ New Legal Arguments For Withdrawal From Paris Agreement Wrong On Section 115 Of The Clean Air Act*, Climate Law Blog (May 26, 2017), <https://perma.cc/233M-R9X6>.



reciprocity under § 115, because Canada has passed legislation specifically modeled on that section.¹⁵⁰ If EPA wished to pursue GHG emissions regulation under § 115, it could put forth the theory that reciprocity may only be established in cases akin to the Canada situation. Under such an understanding, commitments to regulate under § 115 would only apply if the United States entered into an agreement with another country specifically for the purposes of addressing transboundary GHG pollution, and that country then adopted binding language similar to § 115.

CONCLUSION

It is clear to anyone paying attention that the United States—and the rest of the world along with it—is rapidly running out of time to make any kind of appreciable difference on climate change mitigation.¹⁵¹ It is equally clear that the next Democratic administration will need to take immediate action, using existing executive powers, if it wishes to use its remaining time effectively. Having analyzed the legal and practical feasibility of both the NAAQS program and § 115 in the context of GHG regulation, this paper recommends that an incoming EPA seriously consider implementing a NAAQS program for GHGs. Ultimately, although there is no guarantee that such an undertaking will succeed, the potential benefits are worth the risk.

¹⁵⁰ See Clean Air Act, S.C. 1980, c 45, § 21.1(Can.), <https://perma.cc/H9QR-RXSF>.

¹⁵¹ See, e.g., Editorial Board, *It's Time to Face the Inescapable Truth: We're Running Out of Time on Climate Change*, WASHINGTON POST (Dec. 6, 2018), <https://perma.cc/MN49-9FJP>.