# COMMENTS

## "FROM FRISBEES TO FLATULENCE"[1]: REGULATING GREENHOUSE GASES FROM CONCENTRATED ANIMAL FEEDING OPERATIONS UNDER THE CLEAN AIR ACT

BY

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*The grave threat of global climate change calls for immediate political action to mitigate climate change through the reduction of greenhouse gas emissions from the largest emitting sectors, including the agricultural sector. Crop and livestock production have been largely disregarded as a source of greenhouse gas emissions in the United States and thereby present an opportunity for mitigating vast amounts of domestic greenhouse gas emissions—a small but momentous feat in*

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1 Massachusetts v. U.S. Envtl. Prot. Agency, 549 U.S. 497, 558 n.2 (2007) (Scalia, J., dissenting). The Comment title quotes the late Justice Scalia's infamous footnote exclaiming that with EPA and the majority's interpretation of "air pollutant" as used in the Clean Air Act to include greenhouse gases, "[i]t follows that *everything* airborne, from Frisbees to flatulence, qualifies as an 'air pollutant.'" *Id.* (emphasis in original). The irony in Scalia's use of flatulence to denote the interpretation's absurdity is that most of the greenhouse gases emitted from Concentrated Animal Feeding Operations, which this Comment proposes to regulate, are due to enteric fermentation, the release of methane produced by ruminant livestock during digestion, or, colloquially, flatulence.

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*the fight against climate change. This Comment calls for the regulation of greenhouse gases from Concentrated Animal Feeding Operations through the Clean Air Act's Prevention of Significant Deterioration program as implemented by states through incorporation in their State Implementation Plans. This Comment focuses on this approach because it is promising, even given the present political climate, and because little, if any, study or consideration has been given to it. Parties interested in pursuing this avenue for regulation should target effective lobbying strategies at state legislatures and those state agencies responsible for implementing and revising their states' State Implementation Plans.*



## I. INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC), consisting of over 1,300 scientists internationally,[2] warned in its Fifth Assessment in 2014 that human influence is driving changes to the climate system that have already had widespread consequences on public health and the environment.[3] In 2014, the United Nations' Food and Agriculture Organization (FAO) reported that global greenhouse gas emissions from crop and livestock production totaled 5.3 billion tonnes in carbon dioxide

[2] *How Climate is Changing*, NAT'L AERONAUTICS & SPACE ADMIN., https://perma.cc/J2GM-ZFYN (last updated Oct. 3, 2018).

[3] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: SYNTHESIS REPORT v (2015), https://perma.cc/M7GS-4EPS [hereinafter IPCC FIFTH ASSESSMENT].

equivalent ($CO_2$eq), a metric used to compare greenhouse gas emissions.[4] According to the United States Environmental Protection Agency (EPA), 24% of 2010 global greenhouse gas emissions originated from agriculture and deforestation as compared to 14% of emissions from the global transportation sector.[5] Moreover, greenhouse gas emissions from crop and livestock production are on the rise with FAO's 2014 emissions total signifying a nearly two-fold increase in emissions since 1961[6] and a 14% increase since 2001–2014.[7]

Public outcry for U.S. political action on climate change is high, as exemplified by the March for Science and Peoples Climate March, where together in 2017 more than 450,000 people marched for climate action in the nation's capital, across the country, and around the world.[8] Due to congressional gridlock, the federal government's best effort to regulate greenhouse gases to mitigate global climate change has been through the Clean Air Act's[9] (Act) mobile source program[10] and Prevention of Significant Deterioration (PSD) stationary source program.[11] Despite public outcry and administrative action on greenhouse gases—albeit under a former, more climate-responsive administration—domestic air pollution emissions from Concentrated Animal Feeding Operations (CAFOs) have been largely ignored.[12] Because the threat of climate change is grave, political action should be taken immediately to mitigate climate change through the reduction of greenhouse gas emissions from the largest emitting sectors, including the largely disregarded agricultural sector.

4 FOOD & AGRIC. ORG. OF THE U.N., GREENHOUSE GAS EMISSIONS FROM AGRICULTURE, FORESTRY, AND OTHER LAND USES (2014), https://perma.cc/5CXC-W6MW [hereinafter GREENHOUSE GAS EMISSIONS FROM AGRIC.].

5 *Global Greenhouse Gas Emissions Data*, U.S. ENVTL. PROTECTION AGENCY, https://perma.cc/F84H-RAVU (last visited Nov. 25, 2018).

6 *Agriculture's Greenhouse Gas Emissions on the Rise*, FOOD & AGRIC. ORG. U.N. (Apr. 11, 2014), https://perma.cc/8CNK-V4EF [hereinafter *Agriculture's Greenhouse Gas Emissions*]; GREENHOUSE GAS EMISSIONS FROM AGRIC., *supra* note 4.

7 *Agriculture's Greenhouse Gas Emissions*, *supra* note 6.

8 *The Earth Day 2017 March for Science Made History*, EARTH DAY NETWORK, https://perma.cc/N42W-VUEJ (last visited Nov. 25, 2018); Nicolas Fandas, *Climate March Draws Thousands of Protestors Alarmed by Trump's Environmental Agenda*, N.Y. TIMES (April 29, 2017), https://perma.cc/7QEN-37GX.

9 42 U.S.C. §§ 7401–7671q (2012).

10 Control of Hazardous Air Pollutants from Mobile Sources, 72 Fed. Reg. 8,428 (Feb. 26, 2007) (codified at 40 C.F.R. pts. 59, 80, 85, 86); *see also* Massachusetts v. Envtl. Prot. Agency, 549 U.S. 497, 532–35 (2007) (requiring EPA to respond to a petition for regulating greenhouse gases from new motor vehicles under the Act); Coalition for Responsible Regulation, Inc. v. Envtl. Prot. Agency, 684 F.3d 102, 113–16 (D.C. Cir. 2012) (upholding EPA's Tailpipe Rule establishing greenhouse gas emissions standards for new motor vehicles); MELISSA POWERS, CLEAN AIR ACT (2016) (forthcoming) (manuscript at 8).

11 *See* Util. Air Regulatory Grp. v. Envtl. Prot. Agency, 134 S. Ct. 2427, 2447–49 (2014) (finding the regulation of greenhouse gases from anyway sources under the Act's PSD program permissible).

12 J. Nicholas Hoover, *Can't You Smell That Smell? Clean Air Act Fixes for Factory Farm Air Pollution*, 6 STAN. J. ANIMAL L. & POL'Y 1, 9 (2013).

This Comment stands for the premise that global climate change is real, human-caused, and a significant international threat that should be mitigated, in part, through the regulation of greenhouse gases from domestic CAFOs under the Act. Part II establishes that both the international scientific community and U.S. military community are in consensus that climate change is real, human-caused, and a significant global threat. Part III establishes that excessive air pollution, specifically greenhouse gas pollution, is emitted from CAFOs. Part IV provides an overview of the Act's National Ambient Air Quality Standards (NAAQS) and how they are implemented through State Implementation Plans (SIPs) as well as an overview of the Act's pertinent stationary source program, the New Source Review program's PSD program. Part V establishes the limited present regulation of CAFOs under the Act due largely to EPA's Air Compliance Agreement with most CAFOs, immunizing them from suit or enforcement under environmental statutes. Part VI provides an overview of the present regulation of greenhouse gases under the Act. Lastly, Part VII provides a promising avenue for regulating greenhouse gases from CAFOs under the Act and offers benefits and limitations to the proposal as well as recommendations for interested parties pursuing such regulation.

Given the present political climate in the federal legislative and executive branches, this Comment calls for the regulation of greenhouse gases from CAFOs under the Act's PSD program as implemented by states through incorporation in their SIPs. This Comment focuses on this approach in particular as it is promising and little, if any, consideration has been given to it. This Comment recommends that interested parties seek regulation through effective lobbying of state legislatures and those state agencies responsible for revising their states' SIP as well as through comments on SIP revisions utilizing state notice and comment procedures. This Comment identifies and analyzes two possible obstacles to using this regulatory avenue: EPA's Air Compliance Agreement and the PSD program's prospective application.

## II. THE THREAT OF GLOBAL CLIMATE CHANGE: AN OVERVIEW

The United Nations Environmental Programme and World Meteorological Organization formed the IPCC in 1988 to provide scientific consensus on climate science for policy makers.[13] In 2014, the IPCC issued its Fifth Assessment in which it observed that "[h]uman influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems."[14] On October 8, 2018, the IPCC issued its first special report in its Sixth Assessment cycle, calling

13 CHRIS WOLD ET AL., CLIMATE CHANGE AND THE LAW 2 (2d ed. 2013).

14 IPCC FIFTH ASSESSMENT, *supra* note 3, at 2.

for dramatic action to limit global climate change to 1.5 degrees Celsius.[15] Scientists are calling the report "life changing."[16]

The Fifth Assessment stated that increased atmospheric concentrations of anthropogenic greenhouse gases—carbon dioxide, methane, and nitrous oxide—are "*extremely likely*" to be the dominant cause of global warming since the mid-20th century.[17] Further, the Assessment stated that continued greenhouse gas emissions will very likely cause long-lasting climate impacts, including increased global surface temperature, longer and more frequent heat waves, more intense and more frequent extreme precipitation events, ocean warming and acidification, and global sea level rise.[18] "Many aspects of climate change and associated impacts will continue for centuries," according to the Assessment, "even if anthropogenic emissions of greenhouse gases are stopped."[19] The Assessment cited adaptation and mitigation as complementary strategies for decelerating and managing climate change.[20]

In September 2016, the Center for Climate & Security Advisory Group, a voluntary and nonpartisan group consisting of forty-three U.S. senior military, national security, homeland security, and intelligence experts,[21] issued a statement stating that the climate trajectory "presents a []significant risk to U.S. national security, and inaction is not a viable option."[22] The group, which includes former advisers to President Ronald Reagan and President George W. Bush,[23] urged the incoming president, then undetermined, to create a cabinet-level position to manage the impacts of climate change on national security.[24]

Following the 2016 U.S. election of President Donald J. Trump, the group wrote to the president-elect calling on him to consider climate change a major threat to national security.[25] According to the Center for Climate & Security, "[s]tresses from climate change can increase the likelihood of international or civil conflict, state failure, mass migration, and instability in

15 Press Release, Int'l Panel on Climate Change, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5ºC Approved by Governments (Oct. 8, 2018), https://perma.cc/8NUJ-3G3U.

16 *See* Matt McGrath, *IPCC: Climate Scientists Consider 'Life Changing' Report*, BBC (Oct. 1, 2018), https://perma.cc/835W-A54B.

17 IPCC FIFTH ASSESSMENT, *supra* note 3, at 4.

18 *Id.* at 8–10.

19 *Id.* at 16.

20 *Id.* at 17.

21 Caitlin Werrel & Francesco Femia, *Military, Security Leaders Deliver Climate Change Briefing Book to President-Elect*, CTR. FOR CLIMATE & SECURITY (Nov. 14, 2016), https://perma.cc/TRD7-G38N.

22 Idrees Ali, *Climate Change 'Significant and Direct' Threat to U.S. Military: Reports*, REUTERS, Sept. 13, 2016, https://perma.cc/K8NH-PJFR.

23 Oliver Milman, *Military Experts Say Climate Change Poses 'Significant Risk' to Security*, GUARDIAN (Sept. 14, 2016), https://perma.cc/T329-BWUU.

24 Ali, *supra* note 22.

25 Erika Bolstad, *Military Leaders Urge Trump to See Climate as Security Threat*, SCI. AM. (Nov. 15, 2016), https://perma.cc/43LU-NS7J.

strategically significant areas around the world."[26] President Trump, however, has hailed that climate change is a "hoax" perpetrated by the Chinese.[27] On Tuesday, March 21, 2017, President Trump signed an executive order curbing EPA's enforcement of climate regulations to instead prioritize creating and maintaining American jobs,[28] demonstrating that his priorities lie with industry interests, not climate mitigation. The executive order is just one of several actions by the Trump administration to dismantle U.S. climate policy.[29]

Although the President has committed to climate inaction, the consensus of the international scientific community, as well as the U.S. military community, is that the threat of climate change is real, human-caused, and significant. The United States, as part of the international community, must act to mitigate greenhouse gas emissions and adapt to a warming world.

## III. CONCENTRATED ANIMAL FEEDING OPERATIONS AND AIR POLLUTION

### *A. Concentrated Animal Feeding Operations*

Today in the United States, most animal products for human consumption are produced in CAFOs, massive farm operations comprised of a single farmed animal species kept in confinement[30] and colloquially known as factory farms.[31] In that way, most of today's farms are markedly distinct from the romanticized, small, family-owned farms that dominated farming until the middle of the last century.[32] In the United States, "animal agriculture is a $100 billion dollar per year industry"[33] comprised of an estimated 10 billion land animals raised for meat, eggs, and milk annually, many of which are confined in the nation's approximately 18,800 CAFOs.[34] While CAFOs constitute just 5% of all Animal Feeding Operations in the United States, they produce more than half of all animals raised for consumption in the United States.[35]

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26 *Id.* (internal quotations omitted).

27 *Id.* President Trump later backed off of this comment, but doubts that climate change is human-caused and remains committed to inaction, stating "I don't think it's a hoax. . . . But I don't know that it's manmade. I will say this: I don't want to give trillions and trillions of dollars. I don't want to lose millions and millions of jobs." *Trump Says Climate Change Not a 'Hoax' But Questions If It's 'Manmade,'* CBS NEWS (Oct. 15, 2018), https://perma.cc/C3PV-N4RC.

28 *See* Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 31, 2017).

29 *See* Michael Greshko, et al., *A Running List of How President Trump is Changing Environmental Policy*, NAT'L GEOGRAPHIC (Aug. 21, 2018), https://perma.cc/ZGF5-595T.

30 CARRIE HRIBAR, UNDERSTANDING CONCENTRATED ANIMAL FEED OPERATIONS AND THEIR IMPACT ON COMMUNITIES 1 (2010).

31 *See id.* at 6–7.

32 *Id.* at 1.

33 CLAUDIA COPELAND, CONG. RESEARCH SERV., RL32948, AIR QUALITY ISSUES AND ANIMAL AGRICULTURE: A PRIMER 1 (2014) [hereinafter COPELAND, A PRIMER].

34 *Id.*

35 Hoover, *supra* note 12, at 5.

Congress first used the term "concentrated animal feeding operation" in 1972 when defining "point source" in the Clean Water Act[36] for the purposes of its National Pollutant Discharge Elimination System.[37] In 1976, EPA revised its regulations to include a definition for CAFO.[38] The term's definition was further revised by the agency in its 2003 regulations.[39] To meet the definitional requirements of a CAFO under the Clean Water Act, a facility must first qualify as an Animal Feeding Operation,[40] defined as operations where "animals . . . have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period."[41] An Animal Feeding Operation qualifies as a CAFO under the Clean Water Act if it meets the regulatory requirements of a Medium or Large CAFO or if it has been designated a CAFO by EPA or a state's Clean Water Act permitting authority.[42] This Comment utilizes this Clean Water Act definition of CAFO in its argument that greenhouse gas air emissions from such facilities should be regulated under the Clean Air Act.

### *B. Air Pollution and Greenhouse Gas Pollution from Concentrated Animal Feeding Operations*

In its 2006 report on the environmental issues from livestock, FAO ranked the livestock sector as a significant contributor to the most serious environmental problems.[43] Among these problems is air pollution emitted from CAFOs.[44] CAFOs result in considerable air emissions, including particulate matter, ammonia, hydrogen sulfide, volatile organic compounds, and greenhouse gases.[45] That CAFOs emit non-greenhouse gas air pollutants regulated under the Act is critical to the feasibility of regulating greenhouse gases from CAFOs under the Act's PSD program,[46] as explained later in this Comment.

The same FAO report ranked livestock as a leading driver of climate change, maintaining that the agricultural sector should be a major policy focus in attempts to mitigate and manage climate change.[47] In 2014, FAO compiled what it boasts to be the most comprehensive database on global

36 Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2012).

37 *See* 33 U.S.C. § 1362(14); U.S. ENVTL. PROT. AGENCY, EPA 833-F-12-001, NPDES PERMIT WRITERS' MANUAL FOR CONCENTRATED ANIMAL FEEDING OPERATIONS 2-1 (2012) [hereinafter NPDES PERMIT].

38 *See id.*

39 *Id.* at 2-2; *see also* 40 C.F.R. § 122.23(b)(2) (2017).

40 NPDES PERMIT, *supra* note 37, at 2-2.

41 40 C.F.R. § 122.23(b)(1).

42 40 C.F.R. § 122.23(b)(4)–(6), (c); NPDES Permit, *supra* note 37, at 2-5.

43 Hoover, *supra* note 12, at 5.

44 COPELAND, A PRIMER, *supra* note 33, at 1.

45 *Id.*

46 *See* Util. Air Regulatory Grp. v. Envtl. Prot. Agency, 134 S. Ct. 2,427, 2,449 (2014) (finding permissible the regulation of greenhouse gases from anyway sources under the Act's PSD program).

47 HENNING STEINFELD ET AL., LIVESTOCK'S LONG SHADOW xxi (2006).

greenhouse gas agricultural emissions ever assembled.[48] According to FAO data, global emissions from agricultural, forestry, and other land uses were responsible for over 10 billion tonnes $CO_2$eq in 2010, with more than 5 billion tonnes $CO_2$eq attributed to crop and livestock production.[49] Broken down, 40% of agricultural greenhouse gas emissions are attributed to enteric fermentation, 16% are attributed to manure left on pastures, and 7% are attributed to manure management.[50]

The main greenhouse gases produced by CAFOs are carbon dioxide, methane, and nitrous oxide.[51] Carbon dioxide emissions from CAFOs originate from feeds using energy-intensive crops with large chemical fertilizer inputs; fossil fuels used to cool, heat, and ventilate the farms as well as to fuel farm machinery; animal product processing and packaging; deforestation for animal agriculture; and desertification by pasture grazing.[52] Methane emissions from CAFOs originate from enteric fermentation and manure management practices.[53] Nitrous oxide emissions from CAFOs originate from manure management practices.[54]

Enteric fermentation, the largest source of agricultural greenhouse gas emissions, is the release of methane produced by ruminant livestock during digestion.[55] Ruminant livestock, which includes cows, sheep, and goats, have stomachs, called rumen, which enable digestion of otherwise indigestible grains and plants.[56] This digestion process produces methane eventually released to the atmosphere.[57] Due to enteric fermentation, for example, the U.S. cattle industry is a leading source of U.S. methane emissions.[58]

As of 2009, EPA considered manure management in the United States to be the fourth largest source of nitrous oxide emissions and fifth largest source of methane emissions.[59] These rankings can be attributed to the system for manure storage in the United States.[60] CAFOs commonly store excess manure in large lagoons where it breaks down anaerobically—in the absence of oxygen—increasing production of methane.[61] Alternatively, when manure is applied to land it is exposed to more oxygen, producing less methane than lagoon storage as a result.[62]

48 GREENHOUSE GAS EMISSIONS FROM AGRIC., *supra* note 4.

49 *Id.*

50 *Id.*

51 *An HSUS Fact Sheet: Greenhouse Gas Emissions from Animal Agriculture*, HUMANE SOC'Y U.S., https://perma.cc/Y7XK-FXGN (last visited Nov. 25, 2018).

52 *Id.*

53 *Id.*

54 *See* MICH. DEP'T OF ENVTL. QUALITY, CONCENTRATED ANIMAL FEEDLOT OPERATIONS (CAFOS): CHEMICALS ASSOCIATED WITH AIR EMISSIONS 2 (2006), https://perma.cc/4FPJ-XCAG.

55 *Agriculture's Greenhouse Gas Emissions*, *supra* note 6.

56 HRIBAR, *supra* note 30, at 7.

57 *Id.*

58 *Id.*

59 *Id.*

60 *Id.*

61 *Id.*

62 *Id.*

In addition to its large production of greenhouse gases, the agricultural sector emits greenhouse gases with notably higher global warming potentials than carbon dioxide: methane and nitrous oxide.[63] Global warming potential was developed to compare the climate impacts of different greenhouse gases.[64] Greenhouse gases differ from each other in two ways—their ability to absorb energy, called their radiative efficiency, and how long they remain in the atmosphere, called their lifetime.[65] Global warming potential measures the amount of energy a one ton emission of a given gas will absorb over a period of time relative to a one ton emission of carbon dioxide, meaning that the larger the global warming potential, the more the gas will raise Earth's temperature as compared to carbon dioxide over that same time.[66] Agriculture is globally responsible for 37% of anthropogenic methane emissions, which boasts a global warming potential 23 times that of carbon dioxide, and is responsible for 65% of anthropogenic nitrous oxide, which boasts a global warming potential 296 times that of carbon dioxide.[67]

In sum, the agricultural industry domestically and internationally is a serious contributor of greenhouse gas emissions with many of those emissions having much higher global warming potentials than carbon dioxide, thereby further exacerbating Earth's warming from global climate change. Fortunately, high emissions create opportunity for mitigation,[68] as this Comment will later propose through the regulation of greenhouse gases from CAFOs.

## IV. CLEAN AIR ACT OVERVIEW

Congress enacted the modern day Clean Air Act in 1970 and significantly amended the Act in 1977 and 1990.[69] The Act's stated goal is "to encourage or otherwise promote reasonable Federal, State, and local governmental actions . . . for pollution prevention"[70] with the stated primary purpose of "protect[ing] and enhanc[ing] the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population."[71] To this end, the Act regulates air pollutants emitted from stationary and mobile sources.[72]

The Act's primary regulatory instrument is the National Ambient Air Quality Standards (NAAQS), implemented by the states through State Implementation Plans (SIPs).[73] Importantly, CAFOs fit firmly into the Act's

63 STEINFELD ET AL., *supra* note 47, at xxi.

64 *Understanding Global Warming Potentials*, U.S. ENVTL. PROTECTION AGENCY, https://perma.cc/H7LH-VZCU (last updated Feb. 14, 2017).

65 *Id.*

66 *Id.*

67 STEINFELD ET AL., *supra* note 47, at xxi.

68 *Id.* at xxi–xxii.

69 POWERS, *supra* note 10, at 1.

70 Clean Air Act, 42 U.S.C. § 7401(c) (2012).

71 42 U.S.C. § 7401(b)(1).

72 POWERS, *supra* note 10, at 2.

73 *Id.* at 3–4.

definition of "stationary source."[74] The Act's stationary source program relevant for the purposes of greenhouse gas regulation is the New Source Review program's PSD for areas in attainment with the NAAQS.[75]

This section provides an overview of the Act's NAAQS program, how it is implemented through SIPs, and the Act's relevant stationary source program: PSD.

### *A. National Ambient Air Quality Standards*

NAAQS are nationally applicable air quality standards set by EPA to protect the nation's public health and welfare.[76] NAAQS apply only to so-called "criteria pollutants" listed by EPA and are expressed as the maximum allowable concentration of each criteria pollutant.[77]

The Act provides that EPA shall publish, and occasionally revise, a list of pollutants, emitted from mobile and stationary sources, which it believes to cause or contribute to air pollution endangering public health or welfare.[78] For each of those pollutants listed, the Act requires EPA to issue air quality criteria reflecting the latest scientific knowledge.[79] As such, the Act requires EPA to, first, compile a list of criteria pollutants and, second, establish NAAQS for each listed criteria pollutant so as to protect public health and welfare.[80] Public health, though not defined in the statute, has been interpreted to mean human health.[81] Public welfare is statutorily defined by a non-exhaustive list summarized by effects on the environment.[82]

To date, EPA has listed just six pollutants as criteria pollutants—sulfur dioxide, particulate matter, nitrogen oxide, carbon monoxide, ground level ozone, and lead.[83] Congress designated the first five criteria pollutants in the statute in 1970.[84] Lead was added as a criteria pollutant in 1978[85] following a

74 *See* Partial Withdrawal of Approval of 34 Clean Air Act Part 70 Operating Permits Programs in California, 67 Fed. Reg. 63,551, 63,555 (Oct. 15, 2002) (codified at 40 C.F.R. pt. 70) (using CAFOs as an example of a major stationary agricultural source).

75 *See* Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (Apr. 2, 2010) (codified at 40 C.F.R. 50, 51, 70, 71) (publishing the Timing Rule for application of PSD to greenhouse gases); Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010) (codified at 40 C.F.R. pt. 50, 51, 70, 71) (publishing the Tailoring Rule for application of PSD to greenhouse gases); *see also* Util. Air Regulatory Grp. v. Envtl. Prot. Agency, 134 S. Ct. 2427, 2429 (2014) (finding permissible the regulation of greenhouse gases from anyway sources under the Act's PSD program); POWERS, *supra* note 10, at 5.

76 42 U.S.C. § 7408 (2012); POWERS, *supra* note 10, at 3.

77 42 U.S.C. § 7409 (a)–(b) (2012); POWERS, *supra* note 10, at 11.

78 42 U.S.C. § 7408(a)(1)(A)–(B) (2012).

79 42 U.S.C. § 7408(a)(2) (2012).

80 POWERS, *supra* note 10, at 3–4.

81 *Id.* at 3.

82 42 U.S.C. § 7602(h) (2012); POWERS, *supra* note 10, at 11.

83 Applicability of 1-hour Ozone Standard, 68 Fed. Reg 38,160 (June 26, 2003) (codified at 40 C.F.R. pt. 50); POWERS, *supra* note 10, at 3.

84 POWERS, *supra* note 10, at 3.

85 National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. 46,246 (Oct. 5, 1978) (codified at 40 C.F.R. pt. 50).

citizen suit.[86] The Act's revision language suggests that EPA would add new criteria pollutants over time as they met the statute's requirements.[87] However, only lead has been administratively added.[88] Due in part to EPA's failure to add criteria pollutants, the Act's 1990 Amendments created a new process for listing pollutants by establishing the National Emissions Standards for Hazardous Air Pollutants.[89] Under this new program, many problematic pollutants became regulated by the Act.[90]

### *B. State Implementation Plans*

SIPs are the mechanism by which states implement and administer the Act for their state.[91] States develop SIPs pursuant to the Act's requirements[92] and EPA guidance.[93] Each state's plan, submitted to EPA following public notice and comment procedures, must implement, maintain, and enforce the NAAQS in the state's air quality control regions.[94] States employ a variety of strategies to achieve NAAQS attainment, including practices, emissions limitations, and exemptions.[95]

Once submitted to EPA, EPA then must approve the SIP.[96] In the EPA approval process, EPA determines whether the SIP is complete and, if complete, whether the SIP complies with the substantive requirements of the Act.[97] A state's failure to submit a complete SIP requires EPA promulgation of a Federal Implementation Plan, unless the state submits a completed SIP before EPA promulgates a Federal Implementation Plan.[98] Upon a completeness determination, EPA may approve or disapprove a SIP in full, approve or disapprove a SIP in part, or conditionally approve a SIP by identifying the enforceable measures a state must take within a year of conditional approval; otherwise the conditional approval becomes disapproval.[99] Once EPA approves a state's SIP, the state serves as the Act's primary administrator pursuant to its approved SIP.[100] The landmark case establishing the test for SIP adequacy is *Train v. Natural Resources Defense*

86 *See* Nat. Res. Def. Council, Inc. v. Train, 545 F.2d 320 (2d Cir. 1976).

87 POWERS, *supra* note 10, at 3.

88 *Id.*

89 *Id.* at 11.

90 *Id.*

91 *See* Clean Air Act, 42 U.S.C. § 7410 (2012); *see also* POWERS, *supra* note 10, at 4 (describing the role of the State Implementation Plans).

92 42 U.S.C. § 7410(a)(1)–(2).

93 POWERS, *supra* note 10, at 4; U.S. ENVTL. PROT. AGENCY, GUIDANCE ON INFRASTRUCTURE STATE IMPLEMENTATION PLAN (SIP) ELEMENTS UNDER CLEAN AIR ACT PARTS 110(a)(1) AND 110(a)(2) (2013).

94 42 U.S.C. § 7410(a)(1).

95 POWERS, *supra* note 10, at 65.

96 *Id.* at 61.

97 *See id.* (describing the requirements of a complete SIP).

98 *Id.*

99 *Id.*

100 *Id.* at 4.

*Council, Inc.*[101] The *Train* Court held that EPA should approve a state's SIP if EPA finds it likely to attain the NAAQS.[102] This means that unless EPA determines the SIP is unlikely to attain the NAAQS, it must approve the SIP.

While SIPs were intended to ensure state compliance with the NAAQS for criteria pollutants, states may also utilize SIPs to establish other permit limits or requirements for sources with EPA SIP approval.[103] This means states may establish and implement requirements for non-criteria pollutants through their SIPs.[104] Where states decide to regulate air pollution from sources not required by the Act, those laws are in effect as a matter of state law with no bearing as a matter of federal law.[105] EPA neither approves nor disapproves state SIP regulation of air pollution from sources not required by federal law.[106]

### *C. New Source Review: Prevention of Significant Deterioration*

The Act defines stationary source to mean any source of an air pollutant not resulting from mobile sources.[107] In 2002, EPA conceded CAFOs fit into the definition of stationary source under the Act.[108] The Act's principal stationary source program for regulating greenhouse gases is the New Source Review PSD program for regulating areas in attainment with the NAAQS.[109]

The stated purpose of New Source Review is "to assure that any decision to permit increased air pollution in any area . . . is made only after careful evaluation of all the consequences of such a decision."[110] New Source Review therefore requires a stationary source proposing to build or modify a facility to be subjected to one of two programs—PSD or Nonattainment New Source Review—to ensure that air emissions will not further degrade air quality.[111] PSD applies to sources proposing to operate in areas in attainment with the NAAQS and applies to any air pollutant regulated by the Act.[112]

101 421 U.S. 60 (1975); POWERS, *supra* note 10, at 65.

102 *See Train*, 421 U.S. at 61; POWERS, *supra* note 10, at 65.

103 POWERS, *supra* note 10, at 4.

104 *Id.*

105 *Id.* at 61–62.

106 *Id.*

107 42 U.S.C. § 7602(z) (2012).

108 Partial Withdrawal of Approval of 34 Clean Air Act Part 70 Operating Permits Programs in California, 67 Fed. Reg. 63,551, 63,556–57 (Oct. 15, 2002) (codified at 40 C.F.R. pt. 70).

109 *See* Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (Apr. 2, 2010) (codified at 40 C.F.R. pts. 50, 51, 70 & 71) (publishing the Timing Rule for application of PSD to greenhouse gases); Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010) (to be codified at 40 C.F.R. pts. 50, 51, 70 & 71) (publishing the Tailoring Rule for application of PSD to greenhouse gases); Util. Air Regulatory Grp. v. Envtl. Prot. Agency, 134 S. Ct. 2427, 2448 (2014) (finding permissible the regulation of greenhouse gases from anyway sources under the Act's PSD program).

110 42 U.S.C. § 7470(5) (2012).

111 POWERS, *supra* note 10, at 5–6.

112 *Id.*

Nonattainment New Source Review applies to sources proposing to operate in areas not in attainment with the NAAQS and, notably, applies only to criteria pollutants.[113] Because this Comment seeks to regulate greenhouse gases, which are non-criteria pollutants, it will focus on the Act's PSD program.

PSD applies prospectively to new or modified major stationary sources.[114] A source is considered major if it emits more than 100 tons per year of a regulated pollutant from statutorily listed facilities or 250 tons per year of a regulated pollutant from any other facility.[115] A source is modified where there is a physical change or change in the method of operation that results in new or increased emissions exceeding the pollutant's Significant Emissions Rate.[116] For new or existing modified major sources, PSD regulatory controls apply to the air pollutant triggering the program's major emissions threshold as well as those other air pollutants emitted from the triggered source exceeding their regulatory Significant Emissions Rate.[117] This once-triggered applicability requirement is sometimes described as "major for one is major for all,"[118] meaning that once a pollutant has triggered PSD for a source, PSD applies to all significant air pollutant emissions from that source. Those sources to which PSD applies must install the Best Available Control Technology, which is set on a case-by-case basis by the relevant permitting agency.[119]

## V. PRESENT REGULATION OF CONCENTRATED ANIMAL FEEDING OPERATIONS UNDER THE CLEAN AIR ACT.

Despite its tremendous contribution to air and greenhouse gas pollution, the agricultural sector is one of few remaining industries in the United States that is unregulated by environmental law.[120] Although EPA explicitly stated that CAFOs fit firmly within the Act's definition of a stationary source[121] and has the authority to address air pollution from Animal Feeding Operations, EPA has rarely brought enforcement action against CAFOs to bring them into compliance with the Act.[122]

113 *Id.* at 3, 5–6.

114 *Id.* at 6.

115 *Id.*

116 *Id.* at 259.

117 *Id.* at 247.

118 *Id.* at 246.

119 *Id.* at 6.

120 *See* J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 Ecology L.Q. 263, 265 (2000).

121 Partial Withdrawal of Approval of 34 Clean Air Act Part 70 Operating Permits Programs in California, 67 Fed. Reg. 63,551, 63,556–57 (codified at 40 C.F.R. pt. 70).

122 *See infra* Part V.A.

### *A. Air Compliance Agreement*

In January 2005, EPA announced the Air Compliance Agreement, which was "intended to produce air quality monitoring data on domestic, animal agriculture emissions."[123] However, the plan had the effect of retroactively and prospectively immunizing all participating farms from liability under federal environmental laws, notably the Act, thereby immunizing participating farms from lawsuit or enforcement.[124] As of August 2006, 13,900 farms in forty-two states signed on to the agreement.[125]

While those industries involved in "negotiating [this] agreement, notably pork and egg producers, strongly supported it," state and local air quality officials as well as environmental groups strongly opposed the agreement.[126] Opposition from state and local air quality officials stems from the belief that the agreement impinges on states' and localities' enforcement of air pollution laws and attainment or maintenance of air quality standards.[127] Although the agreement stated it would not affect state or citizen enforcement of applicable environmental laws,[128] officials feared the agreement's broad waiver of liability would curb enforcement by states, localities, or citizens.[129] According to EPA, the agreement would not affect the use of state enforcement tools, including state permits.[130]

Several environmental advocacy groups challenged the legality of the Air Compliance Agreement just after its enactment.[131] However, the suit was dismissed in 2007 by the United States Court of Appeals for the D.C. Circuit in a 2-1 decision for failure to constitute a reviewable claim as the agreement arguably fell within EPA's enforcement discretion.[132] Notably, the dissenting judge found the agreement to be broader than a discretionary enforcement action as the agreement will likely be in force for many years, until EPA creates a program tailored to regulate air emissions from animal agriculture.[133]

In 2015, the Humane Society of the United States sued a large Wisconsin pork producer in the United States District Court for the Eastern District of North Carolina.[134] The Humane Society challenged the defendant CAFOs' use of the Air Compliance Agreement as a defense as well as EPA's

123 COPELAND, A PRIMER, *supra* note 33, at 2.

124 *Id.*

125 CLAUDIA COPELAND, CONG. RESEARCH SERV., RL32947, AIR QUALITY ISSUES AND ANIMAL AGRICULTURE: EPA'S AIR COMPLIANCE AGREEMENT 10 (2014) [hereinafter COPELAND, EPA'S AIR COMPLIANCE AGREEMENT].

126 COPELAND, A PRIMER, *supra* note 33, at 2.

127 COPELAND, EPA'S AIR COMPLIANCE AGREEMENT, *supra* note 125, at 7.

128 Animal Feeding Operations Consent Agreement and Final Order, 70 Fed. Reg. 4.958, 4,959 (Jan. 31, 2005).

129 COPELAND, EPA'S AIR COMPLIANCE AGREEMENT, *supra* note 125, at 8.

130 *Id.*

131 Ass'n of Irritated Residents v. Envtl. Prot. Agency, 494 F.3d 1027, 1028 (D.C. Cir. 2007).

132 *Id.* at 1037.

133 *Id.* at 1037–45 (Rogers, J., dissenting).

134 Humane Soc'y of the U.S. v. Hanor Co. of Wis., LLC, 289 F. Supp. 3d 692, 694 (E.D.N.C. 2018).

"diligent pursuit" defense against enforcing the Emergency Planning and Community Right-to-Know Act violations at issue.[135] According to the Humane Society in its motion for partial summary judgment on the issue, the Air Compliance Agreement has yet to produce the study or emissions estimation tools intended by the agreement despite the passage of more than a decade since the Agreement's enactment.[136] The motion provides EPA's timeline to issue its emissions estimating tools is twenty to thirty years, with a total timeline for the agreement of thirty to forty years.[137] This timeframe effectively sums up the Humane Society's argument; no court, until the D.C. Circuit in 2007,[138] has held that a thirty- to forty-year compliance schedule amounts to diligent prosecution by an agency.[139] In 2018, the court denied the Humane Society's summary judgment motion, relying, in part, on the D.C. Circuit precedence.[140] However, the court also denied defendant CAFOs' summary judgment motion as to its Air Compliance Agreement immunity and EPA's "diligent pursuit" enforcement discretion, allowing the case to go forward.[141]

While the Humane Society is currently relitigating the issue of whether the Air Compliance Agreement constitutes diligent prosecution by EPA or falls within the agency's enforcement discretion,[142] until the agreement is struck down, it remains in effect. This means, for the time being, CAFOs are immune from liability under the Act.[143] Uncertainty remains regarding the effect of the agreement on state and local enforcement of the Act using state enforcement tools. As will be seen, barring state and local enforcement would create a potential obstacle to this Comment's proposal that CAFOs be regulated through incorporation in state SIPs of a requirement applying PSD regulatory requirements to CAFOs.[144]

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135 Memorandum in Support of Plaintiffs' Motion for Partial Summary Judgment at 1, Humane Soc'y of the U.S. v. Hanor Co. of Wis., LLC, No. 4:15-cv-00109-FL (E.D.N.C. Feb. 27, 2017).

136 *Id.* at 2.

137 *Id.* at 3.

138 *Ass'n of Irritated Residents*, 494 F.3d at 1028.

139 Memorandum in Support of Plaintiffs' Motion for Partial Summary Judgment at 10, Humane Soc'y of the U.S. v. Hanor Co. of Wis., LLC, No. 4:15-cv-00109-FL (E.D.N.C. Feb. 27, 2017); *see also Ass'n of Irritated Residents*, 494 F.3d at 1032–33.

140 Humane Soc'y of the U.S. v. Hanor Co. of Wis., LLC, 289 F. Supp. 3d 692, 711, 715 (E.D.N.C. 2018).

141 *Id.* at 716 ("The court reserves for another day the issue raised by the parties' briefs whether the scope of relief awarded is cabined by the limitation on plaintiffs' cause of action authorized under the statute.").

142 *See id.* at 717 (ordering parties to confer regarding scheduling of further discovery and dispositive motions).

143 *See* COPELAND, A PRIMER, *supra* note 33, at 2 (noting that the Air Compliance Agreement protects all participants from liability under certain provisions of federal environmental laws).

144 *See infra* notes 199–203 and accompanying text.

## VI. REGULATION OF GREENHOUSE GASES UNDER THE CLEAN AIR ACT

In 2007 in *Massachusetts v. EPA*,[145] the Supreme Court held that EPA had the authority to regulate greenhouse gas emissions from new motor vehicles under the mobile source provisions of the Act if it formed a "judgment" that greenhouse gas emissions cause or contribute to climate change.[146] The Court found that EPA was thereby obligated to respond to the petition by states, localities, and private organizations to regulate greenhouse gases from new motor vehicles.[147] The Court further held that EPA could evade regulatory action only if it determined that greenhouse gas emissions do not cause or contribute to climate change or provided a reasonable explanation for why it cannot or will not exercise its discretion to determine whether they do.[148]

Responding to *Massachusetts v. EPA* in 2009, EPA published its final Endangerment Finding providing that "six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations" and that new motor vehicles are a contributor to this greenhouse gas air pollution.[149] In 2010, EPA published its "Tailpipe Rule" and "Timing Rule."[150] The Tailpipe Rule established greenhouse gas emissions standards for new motor vehicles.[151] Because PSD applies to any regulated air pollutant,[152] which EPA interpreted to mean pollutants subject to a provision in the Act or regulation adopted by EPA under the Act requiring emissions control,[153] EPA's Endangerment Finding also led to regulatory controls of stationary sources.[154] The Timing Rule provided that PSD requirements would not apply to newly regulated air pollutants, notably greenhouse gases, until after a regulatory requirement to control that pollutant's emissions takes effect.[155]

145 549 U.S. 497 (2007).

146 *Id.* at 528.

147 *Id.* at 533.

148 *Id.* at 533–35.

149 Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (codified at 40 C.F.R ch. I).

150 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25,324 (May 7, 2010) (codified at 40 C.F.R. pt. 85, 86, 600; 49 C.F.R. pt. 531, 533, 536, 537, 538); Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (April 2, 2010) (codified at 40 C.F.R pt 50, 51, 70, 71).

151 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. at 25,324.

152 Clean Air Act, 42 U.S.C. § 7479(3) (2012); Coalition for Responsible Regulation, Inc. v. Envtl. Prot. Agency, 684 F.3d 102, 133–34, 136 (D.C. Cir. 2012).

153 Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. at 17,004.

154 WOLD ET AL., *supra* note 13, at 649.

155 Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. at 17,004.

Later in 2010, EPA published its "Tailoring Rule."[156] The Tailoring Rule, appropriately named, tailored the Act's PSD applicability criteria to better fit the characteristics of greenhouse gas emissions and therefore applies in lieu of the Act's usual PSD applicability requirements detailed above.[157] Pursuant to the Tailoring Rule, PSD requirements apply to greenhouse gas emissions from new sources exceeding 100,000 tons per year $CO_2$eq.[158] For "anyway sources," or those new and existing sources already subject to PSD review and regulation for non-greenhouse gas emissions, PSD requirements apply to greenhouse gas emissions exceeding 75,000 tons per year $CO_2$eq.[159] The Tailoring Rule further stated that sources emitting less than 50,000 tons per year $CO_2$eq would not be regulated for six years.[160]

In 2012 in *Coalition for Responsible Regulation, Inc. v. EPA*,[161] the D.C. Circuit upheld EPA's greenhouse gases Endangerment Finding and its Tailpipe, Timing, and Tailoring Rules.[162] In 2014 in *Utility Air Regulatory Group v. EPA*,[163] however, the Supreme Court overruled the D.C. Circuit's determination in *Coalition for Responsible Regulation* that EPA was required to extend PSD requirements to major emitters of greenhouse gases.[164] In determining whether it was permissible for EPA to determine that its motor vehicle greenhouse gas regulations automatically triggered PSD requirements, the Court ruled in the negative.[165] The Court found that EPA exceeded its statutory authority when it interpreted the Act to require PSD applicability based solely on a source's greenhouse gas emissions.[166] However, the Court upheld the Tailoring Rule's "anyway source" requirement, meaning those sources already subject to PSD requirements for non-greenhouse gas emissions with greenhouse gas emissions exceeding 75,000 tons per year $CO_2$eq could be subjected to PSD requirements.[167] This approval by the Court likely has the effect of shielding PSD applicability requirements from rollback by the Trump administration.

In addition to regulating greenhouse gas emissions from stationary sources under the Act's PSD program, EPA and environmental advocates have employed a number of strategies attempting to regulate greenhouse gas emissions from stationary sources under the Act's other programs—New

156 Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010) (codified at 40 C.F.R. pt. 51, 52, 70, 71).

157 *Id.*

158 *Id.* at 31,516.

159 *Id.*

160 *Id.*

161 684 F.3d 102 (D.C. Cir. 2012).

162 *Id.* at 113–14.

163 134 S. Ct. 2427 (2014).

164 *Id.* at 2439.

165 *Id.*

166 *Id.*

167 *Id.* at 2449.

Source Performance Standards,[168] NAAQS,[169] and National Emissions Standards for Hazardous Air Pollutants.[170]

Perhaps the best-known strategy is the Obama Administration's Clean Power Plan for regulating greenhouse gas emissions from power plants under the Act's New Source Performance Standards program for existing sources.[171] Prior to President Trump's election, the plan had been tied up in the D.C. Circuit.[172] In accordance to his campaign promise, President Trump's March 28, 2017 executive order called for the plan's review.[173] On April 27, 2017, the D.C. Circuit granted the Administration's request to suspend the lawsuit indefinitely.[174] On August 21, 2018, EPA issued its proposed Affordable Clean Energy Rule to replace the Obama-era Clean Power Plan.[175] The rule would give states wider latitude than its predecessor, but would be much less protective and still ultimately tied to the Clean Power Plan's legal fate at the hands of the D.C. Circuit.[176] The rule was published in the Federal Register on August 31, 2018, with comments due by October 31, 2018.[177] In 2012, EPA proposed New Source Performance Standards for new and modified stationary sources.[178] President Trump's EPA, however, has since taken these proposals offline,[179] consistent with the administration's denialist approach to climate change.[180] In 2009, the Center for Biological Diversity and 350.org petitioned EPA to list carbon dioxide as

168 42 U.S.C. § 7411 (2012); *see also* WOLD ET AL., *supra* note 13, at 701 (discussing how EPA might regulate greenhouse gas emissions for new and modified sources under the New Source Performance Standards program).

169 42 U.S.C. § 7409; *see also supra* Part IV.A.

170 42 U.S.C. § 7412(d); *see also supra* Part IV.A.

171 Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,661, 64,663 (Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60).

172 LINDA TSANG, CONG. RESEARCH SERV., R44480, CLEAN POWER PLAN: LEGAL BACKGROUND AND PENDING LITIGATION IN WEST VIRGINIA V. EPA 1 (2017).

173 *Complying with President Trump's Executive Order on Energy Independence*, U.S. ENVTL. PROTECTION AGENCY, https://perma.cc/MUA3-WT6H (last visited Nov. 25, 2018).

174 West Virginia v. Envtl. Prot. Agency, No. 15-1363 (D.C. Cir. Apr. 28, 2017) (order to hold cases in abeyance).

175 Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units, 83 Fed. Reg. 44,746 (proposed Aug. 31, 2018); *EPA Publishes Proposed Replacement to Clean Power Plan*, SABINE CTR. CLIMATE CHANGE L. (Aug. 21, 2018), https://perma.cc/U8TR-MJDZ.

176 Jessica Wentz, *6 Important Rules About the 'Affordable Clean Energy Rule,'* SABINE CTR. CLIMATE CHANGE L. (Aug. 22, 2018), https://perma.cc/HDA7-MWLT.

177 Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units, 83 Fed. Reg. 44,746; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units, 83 Fed. Reg. 45,588 (Sept. 10, 2018) (extending deadline).

178 WOLD ET AL., *supra* note 13, at 701.

179 *See* Oliver Milman & Sam Morris, *Trump is Deleting Climate Change, One Site at a Time*, GUARDIAN (May 14, 2017), https://perma.cc/S9HT-N88F (reporting that the Trump administration has nearly erased climate change from its online content).

180 *See, e.g.*, Robinson Meyer, *Trump's EPA Chief Denies the Basic Science of Climate Change*, ATLANTIC (Mar. 9, 2017), https://perma.cc/BK7T-F63C.

a criteria pollutant and establish NAAQS for carbon dioxide.[181] EPA has not yet responded to the petition,[182] which could eventually lead to an Administrative Procedure Act unreasonable delay suit by the petitioners.[183] The final possible approach is to regulate greenhouse gas emissions from stationary sources under the National Emission Standards for Hazardous Air Pollutants provisions of the Act.[184] In its 2008 Greenhouse Gas Advanced Notice of Proposed Rulemaking, however, EPA seemed to provide that regulation of greenhouse gases under those provisions are unworkable.[185]

While the Act has come a long way in terms of regulating greenhouse gases, EPA has been successful in regulating those gases from stationary sources only in its application of the Act's PSD program to anyway sources, as upheld by the Supreme Court.[186] Alternative avenues for regulating greenhouse gases from stationary sources under the Act are improbable given the Trump administration's undoing of President Obama's action on climate change and its determination for climate inaction. Because the regulation of anyway sources under the PSD program was upheld by the Supreme Court, however, it is likely shielded from the Trump Administration's onslaught.

## VII. REGULATING GREENHOUSE GASES FROM CONCENTRATED ANIMAL FEEDING OPERATIONS UNDER THE CLEAN AIR ACT

So far, this Comment has established the very real and serious threat of anthropogenic climate change, CAFOs' contribution to climate change through excessive emissions of greenhouse gases, the very limited regulation of greenhouse gas emissions under the Clean Air Act, and the limited regulation of pollutants from CAFOs and nonexistent regulation of greenhouse gas emissions from CAFOs. This Comment maintains that immediate action should be taken to reduce greenhouse gas emissions from their largest emitting sectors, here domestic animal agriculture. This Part proposes such regulation of greenhouse gases from CAFOs under the Act's PSD program through incorporation of a requirement in state SIPs applying PSD to CAFOs. This Comment advocates for use of this regulatory avenue as it is promising because the Court upheld regulating greenhouse gases from

181 CTR. FOR BIOLOGICAL DIVERSITY, PETITION TO ESTABLISH NATIONAL POLLUTION LIMITS FOR GREENHOUSE GASES PURSUANT TO THE CLEAN AIR ACT i (2009).

182 Marlo Lewis, *Would EPA's Defeat in Clean Power Plan Case "Overthrow" the "Structure" of the Clean Air Act?*, GLOBALWARMING.COM (Apr. 20, 2015), https://perma.cc/9K6B-GBV7.

183 *See* 5 U.S.C. § 706 (2012) (stating a reviewing court under the APA may "compel agency action unlawfully withheld or unreasonably delayed").

184 *See* Clean Air Act, 42 U.S.C. § 7412 (2012).

185 *See* Regulating Greenhouse Gas Emissions under the Clean Air, 73 Fed. Reg. 44,354, 44,355 (July 30, 2008) ("[T]he [Advanced Notice of Proposed Rulemaking] demonstrates the Clean Air Act, an outdated law originally enacted to control regional pollutants that cause direct health effects, is ill-suited for the task of regulating global greenhouse gases."); *Greenhouse Gas (GHG) Advanced Notice of Proposed Rulemaking (ANPR): Abridged Presentation*, U.S. ENVTL. PROTECTION AGENCY (Sept. 18, 2008), https://perma.cc/CF3T-NTNH.

186 Envtl. Def. v. Duke Energy Corp., 549 U.S. 561, 573–74 (2007).

anyway sources and because it employs state rather than federal action. Further, limited, if any, legal scholarship has been devoted to the use of this proposed strategy.

As explained in Part IV.B above, states may use SIPs to create other permit limits or requirements, enforceable as a matter of state law with SIP approval. EPA approves SIPs where they are complete and meet EPA's substantive requirements.[187] Pursuant to *Train*, the standard for substantive SIP approval is whether the SIP will attain the NAAQS; unless EPA determines the SIP is unlikely to attain the NAAQS, it must approve it.[188] EPA neither approves nor disapproves those limits or requirements created by states but not required by federal law.[189]

As explained in Part IV.C above, PSD applies prospectively to new and modified major sources. A source is major where it exceeds 100/250 tons per year of a regulated pollutant.[190] Once triggered, PSD's Best Available Control Technology, determined on a case-by-case basis, applies to the triggering pollutant exceeding 100/250 tons per year, as well as those other pollutants emitted by the source that exceed their regulatory Significant Emissions Rates.[191] As explained in the immediately preceding Part VI, EPA's Tailoring Rule created a Significant Emissions Rate of 75,000 tons per year $CO_2$eq for greenhouse gases emitted from anyway sources. The Supreme Court upheld this provision of the Tailoring Rule,[192] likely shielding PSD applicability requirements from rollback by the Trump administration.

Together, the Act's SIP provisions and Court-endorsed provision of the Tailoring Rule may be utilized by states to regulate greenhouse gas emissions from CAFOs. As states may use SIPs to establish other limitations or requirements not mandated by the Act,[193] states should revise their SIPs to include a mandate subjecting CAFOs to the upheld provision of the Tailoring Rule. Because EPA does not approve or disapprove of those requirements not required by the Act and because EPA may only disapprove a SIP where it finds the SIP unlikely to attain the NAAQS,[194] EPA would, in theory, be unable to disapprove of the additional SIP requirement.

With EPA approval, the SIP requirement takes effect and becomes enforceable as a matter of state law.[195] States incorporating the proposed requirement into their SIPs would subject in-state CAFOs to PSD's Best Available Control Technologies for greenhouse gas emissions to those CAFOs that trigger the major threshold of 100/250 tons per year for a regulated, non-greenhouse gas pollutant and whose greenhouse gas emissions exceed 75,000 tons per year $CO_2$eq.[196] As noted in Part III.B above,

187 42 U.S.C. 7410 (2012).

188 Train v. Nat. Res. Def. Fund, 421 U.S. 60, 98 (1975).

189 POWERS, *supra* note 10, at 61–62.

190 *Id.* at 6.

191 *Id.*

192 Util. Air Regulatory Grp. v. Envtl. Prot. Agency, 134 S. Ct. 2427, 2449 (2014).

193 *Train*, 421 U.S. at 98–99.

194 *Id.*

195 *Id.* at 62.

196 *See* WOLD ET AL., *supra* note 13, at 669, 687.

in addition to greenhouse gases, CAFOs emit large quantities of particulate matter, ammonia, hydrogen sulfide, and volatile organic compounds, all pollutants regulated under the Act. In the likely case of a major triggering by one of these pollutants, or the numerous other regulated, non-greenhouse gas air pollutants emitted from CAFOs, a CAFO's greenhouse gas emissions would need to exceed 75,000 tons per year $CO_2$eq to be subjected to PSD.[197] For those CAFOs to which PSD applies, Best Available Control Technologies would need to be established on a case-by-case basis by the state permitting agency for those non-greenhouse gas air pollutants triggering PSD's major threshold or exceeding their Significant Emissions Rates and, more pertinent, for those greenhouse gases exceeding their Significant Emissions Rates.[198] Research should therefore be devoted to measuring the tons per year $CO_2$eq emissions of carbon dioxide, methane, and nitrous oxide from CAFOs. Research should also be devoted to innovating technologies to be utilized as the Best Available Control Technologies for greenhouse gases emitted from CAFOs. This could include regulating the farmed animals' feed, farm's manure management, or capturing the emitted greenhouse gases.

In addition to being the most promising avenue under the Act for regulating greenhouse gases from CAFOs given the federal political climate, the proposed strategy would also trigger PSD regulation of non-greenhouse gas air pollutants emitted from CAFOs in those states employing it. There also exist, however, possible limitations to the proposed strategy. Though not exclusive, possible limitations include the uncertainty of the Air Compliance Agreement's effect on state, local, and citizen enforcement, as explained in Part V.A, and PSD's prospective application to new and modified sources.

The Air Compliance Agreement, which immunizes participating CAFOs from liability under the Act,[199] was opposed by states and localities for fear it would interfere with state, local, and citizen enforcement of the Act against CAFOs.[200] While the agreement stated it would not affect state or citizen enforcement,[201] the issue has not been litigated and therefore uncertainty remains. If the agreement does bar state and citizen enforcement, this could preclude states and citizens from enforcing the proposed SIP revision applying PSD to CAFOs, thereby gutting the efficacy of the proposal. If such were the case, the proposal could only succeed against those participating CAFOs if the D.C. Circuit's diligent prosecution ruling in *Association of Irritated Residents v. EPA*[202] was overruled, which the Humane Society is requesting in its present relitigation of the issue.[203] Those CAFOs not

197 *See id.* at 679.

198 *See id.* at 671.

199 COPELAND, A PRIMER, *supra* note 33, at 2.

200 COPELAND, EPA'S AIR COMPLIANCE AGREEMENT, *supra* note 125, at 7–8.

201 *Id.* at 8.

202 494 F.3d 1027 (D.C. Cir. 2007).

203 Humane Soc'y of the U.S. v. Hanor Co. of Wis., LLC, 289 F. Supp. 3d 692, 695 (E.D.N.C. 2018).

participating in the agreement, however, would not be shielded from state or citizen enforcement under the proposal.

Even if the Air Compliance Agreement does not bar state or citizen enforcement, another limitation of the proposal is the prospective application of PSD requirements. As explained, PSD only applies to new and modified major sources.[204] This means that this Comment's proposal for regulating greenhouse gas emissions from CAFOs would only apply to new or modified CAFOs. As explained in Part IV.C, PSD modification requires a physical change or change in the method of operation that results in new or increased emissions exceeding the pollutant's Significant Emissions Rate. Applied here, for greenhouse gas emissions from CAFOs to become regulated, the CAFO would need to either be newly constructed or make a physical change, or change in the method of operation resulting in new or increased emissions exceeding the Significant Emissions rate for a non-greenhouse gas pollutant as well as 75,000 tons per years $CO_2$eq of greenhouse gas emissions. Arguably, however, an addition of farmed animals, a change in the farm equipment used, or a change in operating procedures on a CAFO could all amount to a PSD modification so long as the source is major for a non-greenhouse gas pollutant and the modification results in increased emissions for a non-greenhouse gas exceeding the pollutant's Significant Emissions Rate and 75,000 tons per years $CO_2$eq for greenhouse gases.

While this Comment identifies and addresses two possible limitations to its proposal to regulate greenhouse gases from CAFOs, more legal research should be devoted to determining other possible limitations.

Advocacy groups interested in employing this Comment's proposal can do so by targeting effective lobbying strategies at state legislatures and those state agencies responsible for implementing and revising their states' SIPs as well as provide comments on SIP revisions utilizing state notice and comment procedure. As is ordinary, advocacy groups pursuing this regulatory avenue for regulating greenhouse gases from CAFOs should expect political pushback from the agricultural industry in those states in which groups seek to utilize the proposal.

## VIII. CONCLUSION

Greenhouse gases emitted by CAFOs can and should be regulated under the Act's PSD stationary source program through incorporation by states into their SIPs. At the very least, more resources should be expended into further exploring the legal and technical feasibility of this approach as it has been largely neglected from legal scholarship and consideration to date. Potential obstacles to this approach, though not exclusive, include the Air Compliance Agreement's bar of state and citizen enforcement of the Act against CAFOs and the PSD program's prospective application. Parties interested in pursuing this avenue for regulation should target effective

204 POWERS, *supra* note 10, at 6.

lobbying strategies at state legislatures and those state agencies responsible for implementing and revising their State Implementation Plans, as well as provide comments on SIP revisions utilizing state notice and comment procedure.

The regulation of greenhouse gases from CAFOs is like low-hanging fruit. Since greenhouse gas emissions from CAFOs are presently entirely unregulated by the Act, they create the opportunity for mitigating vast amounts of domestic greenhouse gas emissions. This would be a momentous feat in the struggle to mitigate the effects of climate change domestically and internationally. This Comment recognizes that many other sectors contribute to anthropogenic greenhouse gas emissions causing climate change. This Comment's proposal should thereby be used in concert with other strategies aimed at mitigating and adapting to the effects of global climate change.