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Key Historical Court Decisions Shaping EPA's Program Under the Clean Air Act

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Summary

This report provides a selective overview of court decisions that historically have most shaped EPA's program under the Clean Air Act (CAA or Act). Court decisions described in the report deal with the following:

- **National ambient air quality standards (NAAQSs)**, holding that in setting the standards EPA is not to consider economic and technological feasibility.
- **State implementation plans** for achieving NAAQSs, holding that EPA may not consider economic and technological feasibility in approving or disapproving such plans, or that the state plan is more stringent than necessary, or does not require an EPA-preferred control method.
- **Interstate air pollution**, holding that EPA may consider costs in applying the CAA "good neighbor" provision, but any emissions trading program must assure some emission reduction in each upwind state. Nor does the CAA require that states be given a second opportunity to file an implementation plan after EPA has quantified the state emissions budget; EPA may promulgate its own plan for the state immediately.
- **New source performance standards (NSPSs)**, holding that while the Act requires NSPSs to be based on "adequately demonstrated" technology, EPA is allowed to consider technologies that will be fairly projected in the future so long as the technology is not speculative.
- **New source review** in areas not subject to NAAQSs, holding that EPA may override a state's determination of the "best available control technology" required for new stationary sources. EPA may require new source review for greenhouse gas emitters only if the new source will emit certain pollutants above threshold amounts.
- **The "routine maintenance" exemption** from NSPSs and new source review, created by EPA and accepted by the courts despite statutory silence. Courts hold that whether the exemption applies depends on the increase in a plant's expected life due to the project, and the project's cost, nature, and magnitude. Expansive interpretation of the exemption has been judicially rejected.
- **The "bubble concept**," an EPA approach that looks at *net* changes in the emissions of a pollutant from a facility, holding that its permissibility depends on statutory context.
- **National standards for hazardous air pollutants**, holding that EPA may determine if a facility triggers the Act's "maximum achievable control technology" requirement for such pollutants by aggregating emission sources in a contiguous plant under common control, not just sources within the same source category. EPA is not limited in setting emission standards to hazardous air pollutants currently controlled with technology.
- **Greenhouse gas emissions**, holding that the CAA generally covers them, and that EPA has to exercise that authority based on policy concerns. See, however, "new source review" above.
- **Enforcement**, holding that the recipient of an administrative compliance order must be allowed to seek pre-enforcement review of the order in court.

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Introduction

This report provides a selective overview of court decisions that have shaped the U.S. Environmental Protection Agency's (EPA's) implementation of the Clean Air Act (CAA or Act).[1] The subjects these decisions cover are broad, because almost every major EPA rule has been challenged in court. Challenges to EPA actions are filed largely in the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit), as the CAA requires for challenges to "nationally applicable regulations."[2] Claims that EPA has failed to perform a nondiscretionary duty under the Act, such as meeting a statutory deadline, are challenged through "citizen suits" filed in federal district courts.[3] Over the 46 years of the modern CAA's existence, more than a dozen circuit and district court decisions on the Act have yielded Supreme Court opinions on appeal.

This report also highlights several court cases currently being litigated that address a number of unresolved questions related to EPA's CAA authority.

A glossary of acronyms used in this report is provided on page 19.

National Ambient Air Quality Standards

The central construct of the CAA is the **national ambient air quality standard** (NAAQS), a maximum concentration for an air pollutant that all areas of the country must meet. To establish NAAQSs, CAA Section 108 directs EPA to issue **air quality criteria**—documents assessing the scientific evidence on a pollutant's effects—for pollutants that "may reasonably be anticipated to endanger public health or welfare," and "the presence of which in ambient air results from numerous or diverse mobile or stationary sources ...."[4] Section 109 then requires EPA to set **primary NAAQSs** at a level requisite to protect public health, allowing an "adequate margin of safety," and **secondary NAAQSs** at a level requisite to protect the "public welfare" from any known or anticipated adverse effects.[5] Finally, Section 110 requires states to adopt **state implementation plans** to attain or maintain each NAAQS (see following section).[6]

In the 1970s, EPA established NAAQSs for six pollutants, commonly referred to as "criteria" pollutants.[7] The agency has not added any pollutants to the list since then, although it is required to review the existing standards at five-year intervals and promulgate revisions if appropriate.[8] These reviews have raised continuing issues among stakeholders, including states, industrial and other sources of pollution, and nongovernmental organizations (NGOs) in the health and

[1] 42 U.S.C. §§ 7401-7671q.

[2] CAA § 307(b); 42 U.S.C. § 7607(b). In contrast, petitions for review of EPA actions that are only "locally or regionally applicable" must be filed in the U.S. Court of Appeals for the "appropriate" circuit, though even these actions must be filed in the D.C. Circuit if "based on a determination of nationwide scope or effect." *Id*.

[3] CAA § 304(a); 42 U.S.C. § 7604(a).

[4] CAA § 108(a)(1); 42 U.S.C. § 7408(a)(1).

[5] CAA § 109(b); 42 U.S.C. § 7409(b). "Welfare" is a term of art, defined in the CAA to include at a minimum "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being ...." CAA § 302(h); 42 U.S.C. § 7602(h).

[6] CAA § 110(a)(1); 42 U.S.C. § 7410(1)(1).

[7] NAAQSs have been set for ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. 40 C.F.R. pt. 50.

[8] CAA § 108(d)(1); 42 U.S.C. § 7408(d)(1).

environmental fields, particularly over the role of cost and feasibility in determining the level at which standards should be set. In directing EPA to set and revise the NAAQSs, Sections 108 and 109 make no reference to the cost or feasibility of attaining the standards—in contrast to other CAA sections where cost, feasibility, or the role of demonstrated technology are specifically required to be considered.

The silence of Sections 108 and 109 as to cost and feasibility led to a number of cases, all of which held that EPA must set NAAQSs without regard to their cost or technological feasibility. In *Lead Industries Ass'n v. EPA*, the D.C. Circuit addressed the primary and secondary NAAQSs for lead,[9] holding that requiring EPA to consider cost and feasibility in setting NAAQSs was "totally without merit."[10] Specifically rejected was the argument that the "adequate margin of safety" required by Section 109 to be factored into primary NAAQSs requires EPA to consider costs and feasibility. Persuasive to the court was that the CAA expressly provides for EPA to factor in costs and feasibility, and that even if the technology to achieve a NAAQS did not currently exist, the CAA was of a "technology forcing" character.[11]

In 2001, in *Whitman v. American Trucking Ass'ns*,[12] the Supreme Court unanimously affirmed *Lead Industries*, finding it impermissible to consider costs in setting primary NAAQSs. The *Whitman* challengers had argued that the high costs of imposing a stringent primary NAAQS might injure health by closing down whole industries and impoverishing workers and consumers dependent on them. The *Whitman* challengers contended that EPA had to consider this effect on health, too. The Court disagreed, pointing out that CAA Section 110(f)(1) allowed EPA to waive compliance deadlines for stationary sources in certain circumstances, and that, as noted in *Lead Industries*, numerous CAA provisions allow EPA to take compliance costs into account.[13] That being so, the Court refused to infer from the ambiguous language of Section 109 an authority for EPA to consider costs that elsewhere in the Act had been granted expressly.

State Implementation Plans

The CAA directs EPA to translate NAAQSs into emission limits for specific stationary sources. After EPA promulgates or revises NAAQS, CAA Section 110 requires each state to submit a **state implementation plan** (SIP) to EPA within three years.[14] SIPs specify what mix of federal, state, and local air pollution control measures the state will implement in order to reach or maintain the NAAQSs. To be approved by EPA, the SIP must satisfy a long list of requirements in Section 110(a)(2).[15] For example, the SIP must contain enforceable emission limitations, timetables for compliance, air quality monitoring, provisions addressing interstate pollution, and so on.[16]

Because Section 110(a)(2) does not require that SIPs be economically and technologically feasible, the Supreme Court concluded in *Union Electric Co. v. EPA* that EPA may not consider

[9] 647 F.2d 1130 (D.C. Cir. 1980).

[10] *Id.* at 1148.

[11] *Id.* at 1149.

[12] 531 U.S. 457 (2001).

[13] For example, the Court noted CAA Section 202(a)(2), specifying that motor vehicle emission standards can take effect only "after such period as the [EPA] Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance ...." 42 U.S.C. § 7521(a)(2).

[14] CAA § 110(a)(1); 42 U.S.C. § 7410(a)(1).

[15] 42 U.S.C. § 7410(a)(2).

[16] *Id.*

infeasibility when approving or disapproving a SIP.[17] Further, the Supreme Court held that states may submit SIPs more stringent than the CAA requires and EPA must approve them if they meet the Section 110(a)(2) factors.[18] In addition, as held in *Michigan v. EPA*, EPA may not condition SIP approval on a state's adoption of any specific control measure under the CAA.[19]

Finally, under *Indiana & Michigan Electric Co.*, EPA does not have to prepare an environmental impact statement under the National Environmental Policy Act (NEPA) when approving or disapproving a submitted SIP.[20] Courts have held EPA actions generally to be exempt from NEPA requirements, because the agency's mission of protecting the environment duplicates that of NEPA.[21]

Interstate Pollution

After EPA sets or revises a NAAQS, the governor of each state, using available monitoring data, must submit to EPA a list identifying each **air quality control region** in the state as either attainment, nonattainment, or unclassifiable for the pollutant in question.[22] After reviewing these submissions, and often after negotiating over the boundaries of the listed areas, EPA formally promulgates a list of **nonattainment areas**.[23] Affected states are then required to submit SIPs or SIP revisions specifying what mix of federal, state, and local air pollution control measures will be implemented for each of the areas to reach or maintain the NAAQS.[24]

In many states, particularly in the Northeast, air quality is so affected by emissions from other states (referred to as "transported" air pollution) that it is difficult or impossible for the state to demonstrate how all areas in the state will reach attainment. To assist these downwind states, the CAA contains several provisions dealing with transported air pollution. The most important (and most frequently litigated) is Section 110(a)(2)(D),[25] the so-called **"good neighbor" provision**. Section 110(a)(2)(D)(i)(I) requires that a state prohibit stationary sources within the state from emitting air pollutants in amounts that will "contribute significantly" to NAAQS nonattainment, or "interfere with maintenance" of a NAAQS, in any other state. States must include such measures in the SIPs they submit to EPA.[26] When EPA determines that existing SIPs must be revised to satisfy the good neighbor provision (or other CAA requirements), it issues a "SIP call," sometimes to many states at once.[27]

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[17] 427 U.S. 246, 256 (1976). Several CAA provisions noted in the *Union Electric* decision have been amended since, but it has never been suggested that these amendments undermine the Court's essential holdings.

[18] *Id*. at 265.

[19] 213 F.3d 663, 687 (D.C. Cir. 2000).

[20] 509 F.3d at 842.

[21] *See, e.g.*, Getty Oil Co. v. Ruckelshaus, 467 F.2d 349, 359 (3d Cir. 1972).

[22] CAA § 107(d)(1)(A); 42 U.S.C. § 7407(d)(1)(A). For a list of air quality control regions, see 40 C.F.R. pt. 81.

[23] CAA § 107(d)(1)(B); 42 U.S.C. § 7407(d)(1)(B).

[24] CAA § 110(a)(1)-(2); 42 U.S.C. § 7410(a)(1)-(2).

[25] CAA § 7410(a)(2)(D).

[26] CAA § 110(a)(2); 42 U.S.C. § 7410(a)(2).

[27] CAA § 110(k)(5); 42 U.S.C. § 7410(k)(5). Besides Section 110(a)(2)(D), the CAA also addresses interstate pollution through Section 126, 42 U.S.C. § 7426. Section 126(b) allows a state or political subdivision to petition EPA to make a "finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 110(a)(2)(D)(ii)." If EPA makes the finding, the source or sources in question cannot be constructed or can no longer operate, except under emission limitations and a compliance schedule prescribed by EPA.

Supplementing these provisions, CAA Section 115 creates a mechanism for dealing with emissions in the United States

Litigation over the good neighbor provision generally has involved emissions of nitrogen oxides (NO_x), particulates, and sulfur dioxide (SO_2), all of which can remain in the atmosphere and travel long distances from the point of emission. These substances are not only pollutants in their own right; they also contribute (through atmospheric reactions) to the formation of ozone, particulates, acid deposition, and other widespread regional pollution problems.[28] Litigation over the good neighbor provision has addressed how EPA defines when a state "contribute[s] significantly" to another state's pollution; what role cost-effectiveness can play in identifying control measures; whether regional cap-and-trade systems can substitute for emission control requirements imposed at specific sources; and the respective roles of EPA and the states in identifying required controls.[29]

In 2000, the D.C. Circuit held in *Michigan v. EPA*[30] that nothing in Section 110(a)(2)(D) bars EPA from considering costs.[31] Consequently, EPA had acted lawfully when it determined that a state would no longer be contributing "significantly" to a downwind state's NAAQS nonattainment if the state reduced the relevant emissions by the amount that could be eliminated using "highly cost-effective controls" (those that eliminate a ton of the relevant pollutant for less than $2,000 per ton).[32] The court found that EPA may apply this standard uniformly to all the covered states, no matter the amount of each state's contribution.[33]

North Carolina v. EPA[34] involved a challenge to EPA's Clean Air Interstate Rule (CAIR), issued in 2005.[35] CAIR sought to reduce SO_2 and NO_x precursor emissions in 28 states in order to reduce nonattainment of the NAAQSs for fine particulate matter and ozone in downwind states. The D.C. Circuit, however, found CAIR to be flawed.[36] Most important to the court, CAIR's emissions trading program, though aimed at reducing emission-control costs as approved in *Michigan*, did not assure some "measurable" emission reduction in *each* upwind state.[37] Emissions reduction by the upwind states *collectively* was not enough to satisfy Section 110(a)(2)(D).[38] Second, the court said, EPA must give independent effect to the "interfere with maintenance" prohibition in Section 110(a)(2)(D)—not, as CAIR did, as a prohibition triggered only after the "contribute significantly" prohibition was triggered.[39]

EPA's effort to remedy the CAIR deficiencies identified in *North Carolina* led it to issue the Cross-State Air Pollution Rule, also known as the Transport Rule or CSAPR, in 2011.[40] This rule addresses the same pollutants and the same states as did CAIR. Under CSAPR, an upwind state is

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that might endanger health or welfare in a foreign country. 42 U.S.C. § 7415.

[28] *See* EPA, National Air Quality: Status and Trends of Key Air Pollutants, at https://www.epa.gov/air-trends.

[29] *See, e.g., North Carolina v. EPA* and *Michigan v. EPA* decisions discussed in immediately following paragraphs.

[30] 213 F.3d 663 (D.C. Cir. 2000).

[31] *Id*. at 679.

[32] *Id.* at 680.

[33] *Id*. at 679-680.

[34] 531 F.3d 896 (D.C. Cir. 2008).

[35] 70 Fed. Reg. 25,162 (May 12, 2005).

[36] Though initially vacating the CAIR rule, the D.C. Circuit changed its mind some months later, leaving CAIR in effect "until it is replaced by a rule consistent with our opinion." *North Carolina v. EPA*, 550 F.3d 1176, 1178 (D.C. Cir. 2008).

[37] 531 F.3d at 908.

[38] *Id.*

[39] *Id*. at 910.

[40] 76 Fed. Reg. 48,208 (Aug. 8, 2011).

deemed to "contribute significantly" to downwind nonattainment to the extent its pollution produces more than 1% of the NAAQS concentration in at least one downwind state and could be eliminated cost-effectively. Through modelling, EPA set the total amount of pollution an upwind state could produce in a given year. This second EPA effort also was found by the D.C. Circuit to be inconsistent with Section 110(a)(2)(D),[41] but this time the decision was reversed by the Supreme Court. In *EPA v. EME Homer City Generation, L.P.*, the High Court upheld CSAPR.[42] First, the Court found no fault with the fact that EPA, having found the relevant SIPs to be inadequate, had along with CSAPR promulgated federal implementation plans allocating each state's total allowed emission amount among sources of that pollutant within the state. The CAA, held the Court, does not require that states be given a second opportunity to file a SIP after EPA has quantified the state's emissions budget.[43] Second, the Court held that nothing in the Good Neighbor Provision compelled the "cost-blind" interpretation of the D.C. Circuit.[44] Rather, it concluded, EPA's allocation of emission reductions among upwind states based on cost-effectiveness is a permissible, workable, and equitable reading of the Provision.[45]

New Source Performance Standards

CAA Section 111[46] directs EPA to develop federal "standards of performance" for new, modified, and reconstructed stationary sources of air pollution, called **New Source Performance Standards** (NSPSs). NSPSs are nationally uniform, lessening the incentive for companies to "shop" for locations with less stringent requirements. "Standards of performance" are defined as emission standards reflecting the amount of emission reduction "achievable" through the use of the "best system of emission reduction" (BSER) that is "adequately demonstrated," "taking into account" cost and nonair quality impacts.[47]

Most of the phrases just quoted have been litigated, beginning in the CAA's early years. Case law holds that "adequately demonstrated" does not necessarily imply that any existing source of the type proposed for an NSPS is able to meet the NSPS. Rather, *Portland Cement Ass'n v. Ruckelshaus* says that Section 111 "looks toward what may fairly be projected for the regulated future, rather than the state of the art at present ...."[48] Still, *Lignite Energy Council v. EPA* cautions that "EPA may not base its determination that a technology is adequately demonstrated or that a standard is achievable on mere speculation or conjecture ...."[49] The agency may compensate for the absence of emissions data in a new source category by, for example, "extrapolation of a technology's performance in other industries."[50] Where EPA *is* able to show that existing sources of the type proposed for an NSPS can meet the NSPS, *National Lime Ass'n v. EPA* instructs that those existing sources must be representative of the industry as a whole.[51] Finally, courts have

[41] 696 F.3d 7 (D.C. Cir. 2012).

[42] 134 S. Ct. 1584 (2014).

[43] *Id*. at 1600-1602.

[44] *Id*. at 1583.

[45] *Id.* at 1603-1609.

[46] 42 U.S.C. § 7411.

[47] CAA § 111(a)(1); 42 U.S.C. § 7411(a)(1).

[48] 486 F.2d 375, 391 (D.C. Cir. 1973).

[49] 198 F.3d 930, 934 (D.C. Cir. 1999).

[50] *Id*.

[51] 627 F.2d 416, 432-433 (D.C. Cir. 1980).

noted that Section 111 is silent as to the weight to be given the cost and nonair quality impacts of a control technology, the section saying only that they shall be "taken into account."[52] Given that silence, *Lignite Energy Council* and other D.C. Circuit decisions have granted EPA much discretion: "EPA's choice [of best adequately demonstrated technology] will be sustained unless the environmental or economic costs of using the technology are exorbitant."[53]

As to what standards are "achievable," *Essex Chemical Corp. v. Ruckelshaus* describes an achievable standard as "within the realm of the adequately demonstrated system's efficiency and which, while not at a level that is purely theoretical or experimental, need not necessarily be routinely achieved within the industry prior to its adoption."[54] The question on what standards are considered "adequately demonstrated" is central in the litigation over EPA's regulations limiting CO_2 emissions from new power plants.[55] Twenty-five states—led by North Dakota and West Virginia—have filed petitions in the D.C. Circuit challenging EPA's final NSPS for carbon dioxide (CO_2) emissions from new, modified, and reconstructed fossil fuel-fired power plants under CAA Section 111(b), which it calls the "Carbon Pollution Standards."[56] The states have been joined by other petitioners including a labor union, a rural electric cooperative association, several other fossil-fuel-related companies and utilities, and several industry and trade groups.[57] One of the primary issues raised by the petitioners is whether the technologies on which EPA based the standards of performance, including carbon capture and sequestration/storage (CCS), have been "adequately demonstrated" or are the "best system" under Section 111(b).[58] A three-judge panel is to hear oral argument for this case on April 17, 2017.[59]

Emission Guidelines Under CAA Section 111(d)

At the same time or after it issues Section 111(b) NSPSs, EPA must establish, under certain circumstances, emission guidelines for existing sources in that category pursuant to Section 111(d).[60] These guidelines establish binding requirements that states are required to address when they develop plans to regulate the existing sources in their jurisdictions.[61] Similar to Section 110 of the CAA, which requires states to develop and revise implementation plans to achieve EPA's NAAQS and subsequent changes to those standards, Section 111(d) directs EPA to establish state plan "procedures."[62]

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[52] *See, e.g.,* New York v. Reilly, 969 F.2d 1147, 1150 (D.C. Cir. 1992).

[53] *Lignite Energy Council*, 198 F.3d at 933.

[54] 486 F.2d 427, 433-434 (D.C. Cir. 1973).

[55] North Dakota, et al. v. EPA, No. 15-1381 (D.C. Cir. filed Oct. 23, 2015); Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,510 (Oct. 23, 2015) (hereinafter "NSPS Final Rule").

[56] *See generally* docket for North Dakota v. EPA, No. 15-1381 (D.C. Cir. filed Oct. 23, 2015); Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,510 (Oct. 23, 2015) [hereinafter *NSPS Final Rule*].

[57] For further information on the legal challenge to the NSPS Final Rule, see CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

[58] *See, e.g.*, State Pet'rs' Opening Br., North Dakota v. EPA, Nos. 15-1381 (D.C. Cir. filed Oct. 13, 2016).

[59] Order, North Dakota v. EPA, No. 15-1381 (D.C. Cir. Dec. 2, 2016).

[60] CAA Section 111; 42 U.S.C. § 7411(d)(1).

[61] *Id.*

[62] *Id.*; CAA Section 110; 42 U.S.C. § 7410.

On the same day that EPA issued the Carbon Pollution Standards for new, existing, and reconstructed power plants under CAA Section 111(b), the agency finalized emission guidelines to regulate CO_2 emissions from existing fossil-fuel power plants under Section 111(d). These guidelines, commonly referred to as the Clean Power Plan (CPP),[63] have been among the more controversial environmental regulations that EPA has ever promulgated, as reflected by the multi-party litigation over the CPP in the D.C. Circuit.[64] One of the key issues in the litigation is whether EPA has the authority under the CAA to go beyond the "fenceline" of an individual regulated source and consider shifting from fossil fuel to natural gas-fired power and renewable energy in the interconnected electric grid to establish the BSER.[65] Another issue in the CPP litigation relates to the interpretation of two differing amendments of Section 111(d)(1)(A) that were enacted into law, which sets forth exclusions to EPA's authority to issue Section 111(d) emission guideline rules.[66]

On September 27, 2016, the en banc (full court) D.C. Circuit heard oral argument in the CPP litigation.[67] Judicial decisions in this and the litigation over the Carbon Pollution Standards for new power plants will likely establish the boundaries of EPA's authority under CAA Section 111.

New Source Review

The CAA seeks not only attainment of NAAQSs in dirty-air areas; it also aims to limit air quality deterioration in areas that have met or exceeded the NAAQSs. To achieve the latter goal, the Act's **Prevention of Significant Deterioration** (PSD) program imposes requirements in addition to those in Section 111 for new and newly modified stationary emission sources in areas classified as attainment or unclassifiable as to a NAAQS.[68] For new major emitting facilities and new major modifications, this program requires **new source review**—in particular, preconstruction permits conditioned on installation of the **best available control technology** (BACT).[69]

BACT is determined by the states, with review by EPA, and thus may vary somewhat from state to state. However, BACT must be at least as stringent as the NSPS and Section 112 (hazardous air pollutant) standards for the pollutant,[70] and the PSD new source review program uses the same definitions as to what constitutes a major source, what is a modification, etc., as the NSPS program.[71] Because states can impose more stringent requirements than NSPS, and may need to

[63] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Final Rule, 80 Fed. Reg. 64,661, 64,663 (October 23, 2015). For additional background, see CRS Report R44341, *EPA's Clean Power Plan for Existing Power Plants: Frequently Asked Questions*, by James E. McCarthy et al.

[64] *See* docket for West Virginia, et al. v. EPA, No. 15-1363 (D.C. Cir. docketed Oct. 23, 2015). For further information on the legal challenge to the CPP, see CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

[65] *See generally* Opening Br. of Pet'rs on Core Legal Issues, at 29-61 (filed Feb. 19, 2016). For further information on the legal issues raised in the CPP litigation, see CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

[66] See "A Selection of Arguments on the Merits: Section 112 Exclusion" section of CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt for additional information on this issue.

[67] Order at 2, West Virginia v. EPA, No. 15-1363 (D.C. Cir. May 16, 2016).

[68] CAA §§ 165-169; 42 U.S.C. §§ 7475-7479.

[69] CAA § 165(a)(4); 42 U.S.C. § 7475(a)(4).

[70] CAA § 169(3); 42 U.S.C. § 7479(3).

[71] Note that Section 169(2)(C) states that "modification" in the PSD section shall be construed "as defined in" the

do so for nonattainment areas to demonstrate attainment, there may be states or areas with less stringent and more stringent emission requirements. However, by imposing NSPS and hazardous air pollutant standards as a floor in all states, this disparity is minimized.

The early D.C. Circuit decision in *Alabama Power Co. v. Costle* remains the fullest judicial exposition of new source review in PSD areas.[72] Among other things, the decision held that new source review is required only for sources to be constructed *in* PSD areas, not in other areas based on a source's projected adverse impacts in a PSD area in another state.[73] *Alabama Power* also held that the PSD sections of the CAA impose no requirement for *post*-construction monitoring of emissions.[74] Finally, the decision approved EPA's use of the "bubble concept" to define which changes in a stationary source constitute a "modification." (See later section on "Bubble Concept.")

The Supreme Court has weighed in on the federal-state relationship in determining BACT. In *Alaska Dep't of Environmental Conservation v. EPA*,[75] the high court said that the CAA authorizes EPA to block construction in a PSD area of a major emitting facility, despite the state's issuance of a PSD permit, when EPA finds that the state's determination of BACT for that facility is inconsistent with the CAA definition of BACT.[76] The state had argued that the Act limits EPA to reviewing whether the state's permit contained a BACT determination.[77]

In 2014, the Supreme Court took up the issue of whether PSD new source review applies in the special case of *greenhouse gas* (GHG) emissions. EPA had argued that once its regulations limiting GHG emissions from new motor vehicles[78] took effect in 2011, it was required to apply PSD new source review to GHG emissions from stationary sources as well. Its argument had some force: the PSD portion of the Act defines the new sources to which it applies as those emitting more than a certain amount of "any *air pollutant*"[79] and requires BACT for "each *air pollutant* subject to regulation under this act."[80] In 2007, the Supreme Court had squarely held that GHGs are indeed "air pollutants" under the CAA.[81] The problem with this argument, however, was administrative unwieldiness. EPA's view concededly meant that tens of thousands of new and modified stationary sources would now require PSD permits, owing to the low statutory emissions thresholds that trigger those permitting requirements and the huge number of sources that emit above-threshold quantities of CO_2, the primary GHG. Moreover, millions of existing stationary sources—office buildings, large apartment buildings, hospitals, etc.— would require Title V operating permits,[82] for the same reason. EPA proposed to take care of this

NSPS section. In *Environmental Defense v. Duke Energy Corp*., 549 U.S. 561, 576 (2007), however, the Supreme Court held that this common *statutory* definition does not remove EPA discretion to define the term differently in *regulations* under the two sections of the statute, if context so requires.

[72] 636 F.2d 323 (D.C. Cir. 1979).

[73] *Id*. at 364-366.

[74] *Id.* at 373.

[75] 540 U.S. 461 (2004).

[76] *Id.* at 492-493. The CAA definition of BACT is in Section 169(3), 42 U.S.C. § 7479(3).

[77] 540 U.S. at 488.

[78] 75 Fed. Reg. 25,323 (May 7, 2010).

[79] CAA § 169(1); 42 U.S.C. § 7479(1) (definition of "major emitting facility"). Emphasis added.

[80] CAA § 165(a)(4); 42 U.S.C. § 7475(a)(4). Emphasis added.

[81] Massachusetts v. EPA, 549 U.S. 497 (2007).

[82] CAA § 502; 42 U.S.C. § 7661a.

problem with its "Tailoring Rule,"[83] under which EPA raised the emission thresholds that would trigger PSD and Title V permitting, starting with the largest emitters, and then gradually would phase in lower thresholds.

Notwithstanding EPA's syllogistic argument for eventual full coverage of GHGs under PSD and Title V, the Supreme Court took a different tack in *Utility Air Regulatory Group v. EPA*.[84] As the Court explained, just because "air pollutant" as used in the CAA generally covers GHGs does not mean it includes GHGs every place it is used—especially since EPA has historically adopted narrow readings of "air pollutant" in specialized CAA contexts.[85] Moreover, the administrative unwieldiness of demanding PSD and Title V permits for so many sources argued strongly, in the Court's view, against a GHG-inclusive reading of those programs.[86] Nor did the Court allow EPA, through its Tailoring Rule, to phase in the low statutory emission thresholds in an effort to ease the daunting administrative workload, since the Act states the thresholds in absolute numerical terms.[87]

Yet the Court softened its ruling by holding that when new source review, with its BACT requirement, is required because a new or modified source emits a *conventional* pollutant, then such review can be demanded for GHG emissions from that source as well.[88] According to the Solicitor General's numbers submitted in the case, such "anyway" sources, so called because they are covered independently of their GHG emissions, account for roughly 83% of American stationary source GHG emissions. Had EPA's Tailoring Rule survived, EPA would have reached only 3% more of those emissions. Thus, on the primary *UARG* holding, EPA was largely victorious, even though its Tailoring Rule was rejected.

"Routine Maintenance"

As mentioned, NSPSs and new source review in PSD areas apply not just to new sources, but also to existing sources that undergo modifications (NSPS) or major modifications (PSD).[89] The CAA defines "modification" as "any" physical or operational change in a stationary source "that increases the emissions of any air pollutant or results in the emission of any air pollutant not previously emitted."[90] A modification is subject to the same requirements as a new source.

The CAA definition of "modification" has been interpreted by EPA and state pollution control agencies. Most important, EPA since 1974 has construed the term not to include "**routine maintenance, repair, and replacement**" (RMRR) at a stationary source[91]—despite the CAA's

[83] 75 Fed. Reg. 31,514 (June 3, 2010).

[84] 134 S. Ct. 2427 (2014).

[85] *Id*. at 2439-2442.

[86] *Id*. at 2442-2444. Said the Court: "the PSD program and Title V are designed to apply to, and cannot be extended beyond, a relative handful of large sources capable of shouldering heavy substantive and procedural burdens." *Id*. at 2443.

[87] *Id*. at 2444-2446.

[88] *Id*. at 2444-2449.

[89] In the parlance of the CAA, "new source" is defined to include both new and modified existing sources. CAA § 111(a)(2); 42 U.S.C. § 7411(a)(2).

[90] CAA § 111(a)(4), 42 U.S.C. § 7411(a)(4), defines "modification" for purposes of the NSPS section of the CAA. CAA § 169(2)(C), 42 U.S.C. § 7479(2)(C), specifies that that definition applies as well within the PSD portion of the statute.

[91] 40 C.F.R. § 60.14(e) (as to applicability of NSPS); 40 C.F.R. § 52.21(b)(2)(iii)(*a*) (as to applicability of PSD program).

inclusion of "any" physical or operational change that increases emissions in its definition of modification.[92] Courts have long accepted this agency-created exemption as reasonable.[93] Given the powerful financial incentives for a source to avoid application of stringent NSPSs, utilities have argued for an expansive reading of the RMRR exemption, extending even to major renovations.[94]

The seminal RMRR judicial pronouncement remains *Wisconsin Elec. Power Co. v. Reilly*,[95] referred to as the *WEPCO* decision. *WEPCO*, decided in 1990 by the Seventh Circuit, was the first time a court held that an electric power plant renovation was not RMRR and thus triggered NSPS and PSD new source review.[96] The case established that determining whether the RMRR exemption applies to an existing-source renovation depends on a case-by-case weighing of four factors: the resulting increase in a plant's life expectancy, and the project's cost, nature, and magnitude.[97] These factors are routinely cited by courts decades after the *WEPCO* decision.[98]

The other major RMRR decision is *New York v. EPA*,[99] rejecting a 2003 EPA effort to expand the exception. In its Equipment Replacement Rule of that year, the agency stated that the replacement of a plant's components is categorically within the RMRR exception if the new equipment does not exceed 20% of the replacement value of the process unit and does not change its basic design parameters.[100] The D.C. Circuit found this rule overbroad—inconsistent with the CAA definition of "modification" as including "any" physical change that increases emissions.[101] Phrased another way, the court found the rule too broad to fit within the *de minimis* rationale for the RMRR exception.

In *Environmental Defense v. Duke Energy Corp*.,[102] the Supreme Court took on the question of what constitutes a "modification," a threshold issue for application of the RMRR exception under either NSPS or PSD new source review. The Court held that even though the CAA defines "modification" in its PSD portion to mean the same as the NSPS definition of the term,[103] EPA did not have to define the term the same in each CAA program, owing to the different statutory contexts.[104] EPA, the Court held, can define the definitional phrase "any change in the method of operation of a stationary source"[105] by different measures of the amount of pollutant emitted. To this day EPA defines the emissions increase required by the definition of "modification"

[92] CAA § 111(a)(2); 42 U.S.C. § 7411(a)(2).

[93] *See, e.g*., Wisconsin Elec. Power Co. v. Reilly, 893 F.2d 901,906 (7th Cir. 1990).

[94] *See, e.g.,* United States v. Ohio Edison Co., 276 F. Supp. 2d 829, 840-849 (S.D. Ohio 2003).

[95] 893 F.2d 901 (7th Cir. 1990).

[96] *Id*. at 912.

[97] *Id*. at 910-911.

[98] *See, e.g*., United States v. Duke Energy Corp., 5 F. Supp. 3d 771, 775-76 (M.D.N.C. 2014).

[99] 443 F.3d 880 (D.C. Cir. 2006).

[100] 68 Fed. Reg. 61,248, 61,270 (Oct. 27, 2003). *See also* 70 Fed. Reg. 33,838 (June 10, 2005).

[101] 443 F.3d at 890.

[102] 549 U.S. 561 (2007).

[103] The NSPS definition is at CAA § 169(2)(B); 42 U.S.C. § 7479(2)(B).

[104] 549 U.S. at 574.

[105] *Id*. at 578-579.

differently in the NSPS and PSD contexts: in terms of emissions amount per hour for NSPS,[106] in terms of emissions amount per year for PSD.[107]

Bubble Concept

In three different CAA programs—NSPS, PSD, and nonattainment areas—the Act attaches regulatory consequences to modifications at an emissions source that increase the amount of an emitted regulated pollutant.[108] In the CAA's early years, a central question was whether the determination as to whether an emissions increase occurred focused on each individual unit at a plant, or instead on the net aggregate effect of contemporaneous changes within the same source.[109] The latter view was dubbed the **bubble concept** since it imagines a huge dome—that is, a bubble—placed over a facility, with a single emissions point at the top. Because the amount of emissions at the top of the dome is unaffected by emission increases at individual plant units that are offset by emissions decreases elsewhere in the plant, the bubble image was used to support measuring emission amounts on an aggregate plantwide basis. The bubble concept is preferred by industry because it allows a plant to avoid stringent CAA regulation triggered by emission increases by finding offsetting emission decreases.

By regulation, EPA adopted the bubble concept in each of the three programs listed above, and on each occasion was challenged. In *ASARCO v. EPA*, the D.C. Circuit in 1978 found the CAA barred the bubble concept for determining when a "modification" to an existing stationary source occurred for purposes of triggering application of NSPSs.[110] (As noted earlier, a modification to an existing source triggers NSPSs the same as construction of a new source.) The court saw EPA's bubble regulations, which defined "stationary source" to include any "*combination* of ... facilities,"[111] to be irreconcilable with the CAA definition of "stationary source" as "any building, structure, facility, or installation."[112] Nor was the court moved by EPA's argument that the flexibility afforded by the bubble concept was needed because the cost of bringing modified existing facilities into compliance with NSPSs was, EPA claimed, much greater than the cost of bringing new facilities into compliance.[113]

The following year, the D.C. Circuit further addressed the bubble concept. In *Alabama Power Co. v. Costle*, the same court that found the bubble concept unacceptable for determining whether NSPSs apply held that the bubble concept is required in PSD areas.[114] The alternate view, based on individual units within a plant, was, in the court's view, "unreasonable and contrary to the

[106] 40 C.F.R. § 60.14(b).

[107] 40 CFR §§ 52.21(b)(2)(i), 52.21(b)(23)(i).

[108] As noted in the preceding section of this report, applicability of NSPSs is triggered by, among other things, "modifications" of existing stationary sources. "Modification" is defined for NSPS purposes as a physical or operational change in an existing stationary source that "increases" the amount of emissions therefrom. Both the PSD and nonattainment portions of the CAA are also triggered by modifications of existing stationary sources, and both incorporate the NSPS definition of the term. CAA § 168(2)(C), 42 U.S.C. § 7479(2)(C) (PSD); CAA § 171(4), 42 U.S.C. § 7501(4) (nonattainment).

[109] For a summary of the rulemaking proceedings, see *ASARCO v. EPA*, 578 F.2d 319, 322-325 (D.C. Cir. 1978).

[110] *Id.* at 326.

[111] *Id*. at 324 (emphasis added).

[112] CAA § 111(a)(3); 42 U.S.C. § 7411(a)(3).

[113] 578 F.2d at 328.

[114] 636 F.2d 323, 400-403 (D.C. Cir. 1979).

expressed purposes of the PSD provisions of the Act" and "extremely burdensome."[115] The court distinguished its earlier holding, in *ASARCO*, by pointing out differences in EPA's NSPS and PSD bubble regulations and noting the differing statutory purposes of the two programs.[116]

Finally, in 1984, the Supreme Court found EPA's use of the bubble concept in areas not attaining a NAAQS to be grounded on a permissible reading of the CAA. In *Chevron, U.S.A. v. NRDC*,[117] the Court found the Act's language and legislative history to be sufficiently vague as to use of the bubble concept in nonattainment areas as to warrant deference to EPA's interpretation. The only relevant definition, said the Court, is the general CAA definition of "major stationary source," which equates "major stationary source" with "major emitting facility."[118] The Court found it within "common English usage to take a reference to a major facility or a major source to connote an entire plant as opposed to its constituent parts."[119]

National Emission Standards for Hazardous Air Pollutants

Loosely speaking, "hazardous air pollutants" under the CAA are pollutants that are more toxic than pollutants addressed by NAAQSs.[120] For this reason, they are regulated pursuant to Section 112 of the Act, which directs EPA to set National Emission Standards for Hazardous Air Pollutants (NESHAPs). Section 112 is among the most litigated sections of the CAA.[121] In the 1970s and 1980s, EPA was slow to implement the section, largely because it found its requirements to be unworkable.[122] By 1990, the agency had set standards for only seven hazardous air pollutants (and not all sources of even these seven), despite informal acknowledgement that hundreds of substances might merit emission controls.[123] EPA was challenged frequently in court for its failure to act.[124]

As enacted in 1970, Section 112 directed EPA to issue NESHAPs that protected public health with an "adequate margin of safety." For several EPA Administrators, under both Democratic and Republican Presidents, this language posed a dilemma.[125] Many of the substances that might merit regulation under Section 112 were possible or probable human carcinogens.[126] As there is no known exposure level at which exposure to a carcinogen is considered safe, this implied that

[115] *Id.* at 401.

[116] *Id*. at 397.

[117] 467 U.S. 837 (1984).

[118] CAA § 302(j); 42 U.S.C. § 7602(j).

[119] 467 U.S. at 860.

[120] A more formal definition of hazardous air pollutants is at CAA Section 112(d)(2), 42 U.S.C. § 7412(d)(2).

[121] 42 U.S.C. § 7412.

[122] *See generally* Hearing Before the Subcomm. on Oversight and Investigations, House Comm. on Energy and Commerce, 98th Cong., 2d Sess. 21 (1984) (statement of William D. Ruckelshaus, Administrator, EPA).

[123] *See* S. Rep. No. 101-228, at 3 (1989).

[124] *See, e.g.,* Sierra Club v. Gorsuch, 551 F. Supp. 785 (N.D. Cal. 1982) (radionuclides); New York v. Gorsuch, 554 F. Supp. 1060 (S.D.N.Y. 1983) (arsenic).

[125] *See* Hearing Before the Subcomm. on Oversight and Investigations, *supra* note 122.

[126] *Id*.

emissions of such substances should be completely eliminated (though the D.C. Circuit rejected this view).[127]

This and other issues raised in litigation during the 1980s led Congress to rewrite completely Section 112 in the 1990 CAA amendments.[128] First, instead of requiring the Administrator to identify hazardous air pollutants, the 1990 amendments listed 187 hazardous air pollutants (HAPs) for EPA to regulate—a list EPA may then revise.[129] Second, instead of initially requiring EPA to protect public health with an adequate margin of safety, the 1990 amendments require the Administrator, as a first step, to impose *technology-based* emission standards, called "floors," for both new and existing sources. For "major sources," these standards must require use of "maximum achievable control technology" (MACT);[130] for other sources, termed "area sources" by the Act, EPA may elect to impose more lenient standards.[131] In the second, *risk-based* stage of regulation, EPA must review any residual health risks not eliminated by the foregoing standards, and report them to Congress.[132] If Congress does not act, EPA must impose standards providing an ample margin of safety to protect public health, or a stricter standard if needed (considering costs) to prevent adverse environmental effects.[133] These are called "beyond the floor" standards.

Because of ambiguities in the CAA definition of "major source," the D.C. Circuit held in *National Mining Ass'n v. EPA*[134] that EPA may determine if a facility is a major source by aggregating all sources in a contiguous plant site under common control; EPA is not restricted to aggregating only sources within a single source category or under the same Standard Industrial Classification Code.[135] Elsewhere, the court addressed the CAA directive that EPA, in determining what facilities are major sources, calculate whether a facility's "potential to emit" meets the Act's threshold quantities only after "considering controls."[136] The court found that the directive does not allow EPA to limit itself to controls that are federally enforceable.[137]

In *National Lime Ass'n v. EPA*, the D.C. Circuit found that Section 112 requires EPA to create a NESHAP for a hazardous air pollutant in a source category even if no sources in the category use technological controls for that pollutant.[138] Nothing in the statute, the court said, suggests that EPA may set emission levels only for listed hazardous air pollutants that are currently controlled with technology.[139] To the contrary, the D.C. Circuit noted, the CAA requires EPA to set emission standards for each category or subcategory of major sources of hazardous air pollutants listed for regulation.[140]

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[127] NRDC v. U.S. EPA, 824 F.2d 1146 (D.C. Cir. 1987) (en banc).

[128] P.L. 101-549, 104 Stat. 2531 (1990).

[129] CAA § 112(b); 42 U.S.C. §7412(b).

[130] CAA § 112(d)(2); 42 U.S.C. § 7412(d)(2). "Major source" is defined in CAA Section 112(a)(1).

[131] CAA § 112(d)(5); 42 U.S.C. § 7412(d)(5). "Area source" is defined in CAA Section 112(a)(2) as any stationary source of hazardous air pollutants that is not a "major source."

[132] CAA § 112(f); 42 U.S.C. § 7412(f).

[133] CAA § 112(f)(2)(A); 42 U.S.C. § 7412(f)(2)(A).

[134] 59 F.3d 1351 (D.C. Cir. 1995).

[135] *Id*. at 1359.

[136] CAA § 112(a)(1); 42 U.S.C. § 7412(a)(1).

[137] 59 F.3d at 1364.

[138] 233 F.3d 625, 633-634 (D.C. Cir. 2000).

[139] *Id*. at 633.

[140] *Id*.

In *NRDC v. EPA*,[141] the D.C. Circuit wrestled with an ambiguous CAA instruction as to second-stage risk-based standards. The statute says that if the initial, technology-based standard for a source category does not reduce lifetime excess cancer risk to less than 1 in 1 million, EPA "shall promulgate standards ... for such source category."[142] Because this instruction is silent about the stringency of those standards and is "deliberately ambiguous,"[143] the court upheld EPA's reaffirmation of its existing technology-based standard for the source category in question under which no individual would face an excess lifetime cancer risk of greater than 100 in 1 million. The court noted that 100 in 1 million was EPA's interpretation of "ample margin of safety" before the 1990 amendments, and that those amendments expressly disavow any intent to change the agency's pre-1990 interpretation.[144] The court similarly upheld EPA's consideration of costs in setting the risk-based standards, since the agency had considered costs before 1990.[145]

Although EPA may consider cost when setting second-stage risk-based standards, whether EPA may consider costs when determining if it is "appropriate and necessary" to regulate power plants under Section 112 has been subject to significant litigation. In Section 112, Congress created a special procedure for applying the NESHAP program to power plants.[146] Congress directed EPA to study the public-health hazards power plant HAP emissions pose after taking into account other CAA requirements controlling power plant emissions and allowed EPA to regulate HAP emissions from power plants under Section 112 only if EPA found that "regulation [was] appropriate and necessary" after considering the results of the study.[147]

In 2012,[148] EPA found that it was "appropriate and necessary" to regulate coal- and oil-fired power plants under Section 112 because mercury emissions from power plants (the largest domestic source of mercury emissions) present significant hazards to public health and the environment, and the CAA's other requirements had failed to sufficiently reduce the health risks.[149] In this finding, EPA interpreted the statutory phrase "appropriate and necessary" to preclude it from considering cost when deciding whether to regulate power plants under Section 112.[150] EPA then issued the Mercury and Air Toxics Standard (known as the "MATS rule"), which limits emissions of mercury and other toxics emitted by power plants.[151]

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[141] 529 F.3d 1077 (D.C. Cir. 2008).

[142] CAA § 112(f)(2)(A); 42 U.S.C. § 7412(f)(2)(A).

[143] 529 F.3d at 1081.

[144] *Id*. at 1082. CAA § 112(f)(2)(B); 42 U.S.C. § 7412(f)(2)(B).

[145] 529 F.3d at 1084.

[146] CAA § 112(n)(1)(A); 42 U.S.C. § 7412(n)(1)(A).

[147] *Id.*

[148] Prior to the 2012 finding, EPA concluded in 2000 that the regulation of power plants was "appropriate and necessary." Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826, 79,830 (Dec. 20, 2000). However, EPA attempted to revoke its "appropriate and necessary" finding in 2004 so that the agency could regulate power plants under Section 111(d). Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606, 28,610, 28,624-32 (May 18, 2005). The rule was challenged, and the D.C. Circuit held that Section 111(d) cannot be used to regulate sources listed under Section 112 and vacated the rule. *See* New Jersey v. EPA, 517 F.3d 574, 580, 583 (D.C. Cir. 2008).

[149] National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9,304, 9,363 (Feb. 16, 2012).

[150] *Id.* at 9326–27.

[151] National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9304, 9363 (Feb. 16, 2012).

Twenty-three states, along with numerous industry groups, sought review of EPA's MATS rule, arguing, among other things, that EPA acted unlawfully by refusing to consider cost in making its "appropriate and necessary" finding.[152] In a per curiam opinion, a divided panel of the D.C. Circuit upheld EPA's decision, holding that EPA's refusal to consider costs was a permissible interpretation of the phrase "appropriate and necessary" when it determined to regulate power plants under Section 112.[153] The court reasoned that Section 112(n)(1) on its face neither requires nor prohibits EPA from considering costs, and that "[t]hroughout section 112, Congress mentioned costs explicitly where it required EPA to consider them."[154] The court made clear that once the "appropriate and necessary" determination is made, EPA must consider costs if it seeks to set emission standards more stringent than those dictated by the statutory MACT standard.[155]

In 2015, the Supreme Court reversed in *Michigan v. EPA*.[156] The Court held that EPA's failure to consider costs as a part of its "appropriate and necessary" finding was an unreasonable interpretation of the CAA.[157] Although the Court agreed that EPA's interpretation of the ambiguous term "appropriate and necessary" was entitled to deference under *Chevron U.S.A., Inc. v. NRDC*, the Court concluded that EPA had "strayed far beyond [the bounds of reasonable interpretation] when it read § 7412(n)(1) to mean that it could ignore cost when deciding whether to regulate power plants."[158] The Court explained that

> Read naturally in . . . context, the phrase "appropriate and necessary" requires at least some attention to cost. . . . Agencies have long treated cost as a centrally relevant factor when deciding whether to regulate. . . . [I]t is unreasonable to read an instruction to an administrative agency to determine whether "regulation is appropriate and necessary" as an invitation to ignore cost.[159]

The dissenting Justices agreed that EPA was unreasonable in not taking into account costs in adopting the regulations, but they concluded that EPA had satisfied this requirement when it considered costs when setting the actual emissions standards.[160]

In response to *Michigan v. EPA*, EPA issued a supplemental finding in 2016, concluding that a consideration of cost did not change its determination that regulation of HAP emissions from power plants is "appropriate and necessary" under Section 112.[161] Utilities, industry groups, and 14 states have challenged EPA's finding while several states and local governments, along with two energy companies, have intervened in support of EPA.[162] The petitioners question, among other things, EPA's cost-benefit methodology and whether ancillary or "co-benefits" (i.e., reduction of power plants' emissions of particulate matter and sulfur dioxide, substances that are targeted neither under the MATS rule nor Section 112) can factor into the agency's cost-benefit

[152] White Stallion Energy Ctr., LLC v. EPA, 748 F.3d 1222, 1236 (D.C. Cir. 2014) (per curiam).

[153] *Id.* at 1241.

[154] *Id.* at 1237.

[155] *Id.* at 1240.

[156] 135 S. Ct. 2699 (2015).

[157] *Id.* at 2707.

[158] *Id.*

[159] *Id.* at 2706.

[160] *Id.* at 2716-17 (Kagen, J., dissenting).

[161] Supplemental Finding that It is Appropriate and Necessary to Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units; Final Rule, 81 Fed. Reg. 24,420 (Apr. 25, 2016).

[162] Murray Energy Corp. v. EPA, No. 16-1127 (D.C. Cir. docketed Apr. 25, 2016).

analyses to justify its finding.[163] In response, EPA argues that legislative history supports EPA's discretionary consideration of "co-benefits" from reducing non-HAP emissions, and "nothing in the CAA 'limits' EPA to considering benefits related only to hazardous air pollutants in a benefit-cost analysis."[164] The D.C. Circuit has not scheduled oral argument yet. The decision in the MATS supplemental finding case may have far reaching impacts on how and what costs and benefits EPA can or must consider for rulemakings under the CAA.

Greenhouse Gas Emissions

In the absence of congressional action establishing a regulatory regime specifically for greenhouse gas emissions, the broad authority to control air pollutants provided by the CAA has become the principal federal tool for addressing GHGs. Under the Act, the term "air pollutant" is defined in sweeping terms to include "any physical, chemical, biological, radioactive ... substance or matter which is emitted into or otherwise enters the ambient air."[165] In 1999, advocates petitioned EPA to use this authority to identify GHGs as air pollutants that potentially endanger public health and welfare and, as a next step, to control GHG emissions from new motor vehicles under CAA Section 202.[166] Motor vehicles are the source of about one-fourth of all U.S. GHG emissions.[167] In 2003, EPA denied the petition, arguing that the CAA did not give it authority to regulate GHG emissions, and that, even if it did, the agency would not do so for policy reasons.[168]

This suit led to the first, and most important, of the Supreme Court's three decisions on GHG emissions. In 2007, the Court in *Massachusetts v. EPA* remanded EPA's 2003 denial of the petition, holding 5-4 that, contrary to EPA's position, "air pollutant" in the CAA is broad enough to include GHGs[169] and that once EPA finds that GHG emissions potentially endanger public health and welfare it may not decline to regulate them on policy grounds.[170] The *Massachusetts* decision led EPA in 2009 to a pair of "endangerment findings" under Section 202: that GHGs currently in the atmosphere potentially endanger public health and welfare, and that new motor vehicle emissions cause or contribute to that pollution.[171] Based on those endangerment findings, EPA under Section 202 has issued GHG emission standards for model year 2012-2016 cars and light trucks,[172] for 2014 and later model year medium- and heavy-duty vehicles,[173] for 2017-2025 model year cars and light trucks,[174] for 2018 and later model truck trailers,[175] and for 2021-2022 model year medium- and heavy-duty engines and vehicles.[176]

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[163] Opening Br. of State and Industry Pet'rs, at 41-55 (filed Nov. 18, 2016).

[164] Br. of Resp't EPA, at 56-65 (filed Jan. 18, 2017).

[165] CAA § 302(g); 42 U.S.C. § 7602(g).

[166] Massachusetts v. EPA, 549 U.S. 497, 510 (2007).

[167] *Sources of Greenhouse Emissions*, http://www.epa.gov/climatechange/ghgemissions/sources.html.

[168] 68 Fed. Reg. 52,922 (Sept. 8, 2003).

[169] 549 U.S. 497, 532 (2007).

[170] *Id.* at 534.

[171] 74 Fed. Reg. 66,496 (Dec. 15, 2009).

[172] 75 Fed. Reg. 25,323 (May 7, 2010).

[173] 76 Fed. Reg. 57,106 (Sept. 15, 2011).

[174] 77 Fed. Reg. 62,624 (Oct. 18, 2012).

[175] 81 Fed. Reg. 73, 478 (Oct. 25, 2016).

[176] *Id*.

The Supreme Court's second decision on GHG emissions, *American Electric Power Co. v. Connecticut*,[177] unanimously held that EPA's authority to regulate GHGs through NSPSs under CAA Section 111 means that federal judges no longer have authority under the federal common law of nuisance to impose GHG emission limitations on sources.[178] More important, *American Electric Power* clarified that including GHGs under CAA Section 202, as provided by *Massachusetts v. EPA*, also extends to NSPSs under CAA Section 111(b).[179] As such, the Court eliminated that issue from the debate over EPA's proposed Section 111 regulations setting NSPSs for CO_2 from new fossil fuel-fired power plants.[180] And because such NSPSs are a legal prerequisite for EPA's use of Section 111(d) to regulate CO_2 from *existing* fossil fuel-fired power plants,[181] the Court's ruling also eliminated this authority issue from the debate over EPA's rule restricting GHGs from those sources.[182]

The Supreme Court's third decision on GHG emissions, *Utility Air Regulatory Group v. EPA*, was discussed above in the "New Source Review" section. Briefly, that decision rejected EPA's argument that its regulation of new-motor-vehicle GHG emissions (this section, above) required it to apply two CAA permitting programs for stationary sources to GHG emissions from those sources. The Court did allow, however, that EPA *could* impose one of these programs, requiring installation of Best Available Control Technology on new and modified stationary sources in PSD areas, to GHG emissions from certain stationary sources: those that emit New Source Review pollutants in amounts sufficient to come under the program independently.

Enforcement

In *TVA v. Whitman*, EPA's use of the administrative compliance order (ACO), was successfully challenged.[183] Under the CAA, EPA has four enforcement options when it believes a violation of the statute has occurred: ask the Department of Justice (DOJ) to file a court action for civil penalties: ask the DOJ to do the same for criminal penalties; conduct an EPA adjudication and impose civil penalties; and finally, issue an ACO.[184] All of these options, save ACOs, give the accused party the right to challenge EPA's understanding of the law or the facts in court before penalties can be imposed. By contrast, EPA may seek potentially severe civil penalties or criminal penalties for noncompliance with an ACO even though EPA issues ACOs based on "any information available" and absent adjudication. Such penalties are in addition to penalties for violations of the Act itself. In reviewing an ACO noncompliance case, a court is limited to the question of whether the party complied with the ACO.

In *TVA*, the U.S. Court of Appeals for the Eleventh Circuit struck down this scheme as "repugnant to the Due Process Clause of the Fifth Amendment."[185] Pre-enforcement review by a court, it

[177] 564 U.S. 410 (2011).

[178] *Id.* at 424.

[179] *Id*. at 424-26.

[180] 79 Fed. Reg. 1,430 (Jan. 8, 2014).

[181] This linkage between CAA Sections 111(b) and 111(d) is evident from the fact that Section 111(d) applies only to emissions of air pollutants "to which a standard of performance under [section 111] would apply if such existing source were a new source." CAA § 111(d)(1); 42 U.S.C. § 7411(d)(1).

[182] 79 Fed. Reg. 34,830 (Sept. 25, 2014).

[183] 336 F.3d 1236 (11th Cir. 2003).

[184] CAA § 113(a); 42 U.S.C. § 7413(a).

[185] 336 F.3d at 1258.

held, must be made available to the recipient of the order.[186] Nor can EPA "save" the statute by conducting a voluntary adjudication, as before its internal Environmental Appeals Board.[187] In the Circuit's view, that would relegate Article III district courts to insignificant tribunals serving merely as forums for EPA to conduct show-cause hearings simply on whether the party complied with the ACO.[188] Parenthetically, the Supreme Court later rendered an identical ruling—that ACOs are subject to pre-enforcement court review—but in connection with the Clean Water Act and solely on statutory, rather than constitutional, grounds.[189]

In *Dow Chemical Co. v. United States*,[190] the Supreme Court held that CAA Section 114[191] authorizes EPA to use aerial photography in checking on emission sources.[192] Moreover, the Court rejected that the Fourth Amendment required a warrant for such surveillance on the theory that expectations of privacy outside an industrial plant are not akin to those surrounding a residential home.[193]

[186] *Id.*

[187] *Id.* at 1259.

[188] *Id.*

[189] Sackett v. EPA, 566 U.S. 120 (2012) (holding that Clean Water Act ACOs are "final agency actions" for which pre-enforcement review is available under the Administrative Procedure Act).

[190] 476 U.S. 227 (1986).

[191] 42 U.S.C. § 7414.

[192] 476 U.S. at 239.

[193] *Id.* at 238-239.

Glossary of Acronyms

ACO: administrative compliance order

BACT: best available control technology

BSER: best system of emission reduction

CAA: Clean Air Act

CAIR: Clean Air Interstate Rule

CO_2: carbon dioxide

CPP: Clean Power Plan

EPA: Environmental Protection Agency

GHG: greenhouse gas

HAP: hazardous air pollutant

MACT: maximum achievable control technology

NAAQS: national ambient air quality standard

NESHAP: national emission standard for hazardous air pollutant

NO_x: nitrogen oxides

NEPA: National Environmental Policy Act

NSPS: new source performance standard

PSD: prevention of significant deterioration

RMRR: routine maintenance, repair, and replacement

SIP: state implementation plan

SO_2: sulfur dioxide

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