were forced to sell cars subject to the new California standards because compliance with the state standards would make vehicles more expensive. The dealers argued that their customers would either buy cars in states that had not adopted the state standards or buy fewer cars because of the increased prices. The court, however, held that the dealers had failed to demonstrate with "substantial probability" that they would likely suffer the anticipated losses. It did not help the dealers that they could not show any losses even though their briefs were filed well after the California standards went into effect.

The D.C. Circuit also found the challenge to the California standards for model years 2012-2016 moot. Once California had amended its regulations to deem compliance with the federal standards compliance with the state standards, it had effectively made the federal standards the only operative standards during model years 2012-2016. Any challenge to national standards would need to occur through a separate petition (which, in fact, the petitioners had already filed). Since the California standards were not operative after model year 2011, the court found that aspect of the challenge moot.

4. California has reportedly begun the process of developing vehicle emissions standards for future model years, while EPA issued federal standards through the year 2025. If California ultimately finalizes more stringent state standards and seeks another waiver from EPA, a court may yet rule on the legality of the waiver.

IV. REGULATION OF GREENHOUSE GAS EMISSIONS FROM STATIONARY SOURCES

Since the Supreme Court's decision in *Massachusetts*, EPA has taken several actions to regulate greenhouse gases from stationary sources. Most of these actions have focused on the Prevention of Significant Deterioration (PSD) program, although New Source Performance Standards (NSPS) for several categories will soon begin to limit greenhouse gas emissions as well. Under both of these programs, mandatory regulations apply to new and modified sources, even though existing sources are the major emitters of greenhouse gases. Thus, environmental groups have sought to force regulation of existing sources through NSPS and, at least in one case, State Implementation Plan (SIPs). This chapter focuses on the PSD program in Section A, but it briefly discusses NSPS and efforts to regulate existing sources in Section B.

A. Regulation of Greenhouse Gases under the PSD Program

Even before the Supreme Court issued its decision in *Massachusetts*, litigation related to coal-fired power plants had begun to raise the specter of Clean Air Act regulation of greenhouse gas emissions from stationary sources. In the late 1990s and throughout the first part of this century, many utilities and independent power companies began efforts to construct new coal-fired power plants across the country. Several factors motivated the construction boom. First, energy consumption forecasts predicted substantial increases in electricity consumption. Second, several states had opened up electricity generation and sales to competition for the first time and thereby created new opportunities for profits in the electricity sector. Third, many people expected Congress to pass federal cap-and-trade legislation that would freely allocate emissions

credits to existing sources. In response, many companies tried to build plants before the enactment of legislation, in an effort to secure the anticipated free credits. These reasons, and many others, motivated a boom in proposals to build coal-fired power plants, or what some have called a "coal rush."

In response to the "coal rush," several environmental organizations, and most notably the Sierra Club, launched comprehensive campaigns to defeat new coal-fired power plant proposals. Litigation at the state and federal level served as a key strategy in their campaigns. In several cases, the groups challenged Clean Air Act permits on the basis that the permitting agencies had failed to comply with the Prevention of Significant Deterioration (PSD) requirements. Their arguments essentially proceeded as follows:

(1) the proposed coal-fired power plant is a major emitting facility that will emit more than 100 or 250 tons per year (tpy) of greenhouse gases;

(2) greenhouse gases are "regulated air pollutants" under the Clean Air Act and thus subject to PSD;

(3) PSD requires the regulatory agency to use a permitting process that will ensure compliance with the Best Available Control Technology (BACT) and meet other procedural and substantive requirements; but

(4) the regulatory agency failed to apply the PSD requirements to the plant's proposed emissions of greenhouse gases. As expected, the utilities — and often the permitting agencies — opposed applying the PSD program to greenhouse gases.

In several instances, courts and permitting agencies rejected these arguments. In a few cases, however, permitting agencies or federal courts ruled that the PSD program did apply to greenhouse gases. EPA then stepped in, first with guidance documents and then with final regulations, to limit the PSD program's applicability to greenhouse gases.

To understand the implications of the various rules EPA issued to resolve (at least in part) these disputes, it helps to have an understanding of the PSD program's requirements. The EPA summed them up recently:

ENVIRONMENTAL PROTECTION AGENCY, PREVENTION OF SIGNIFICANT DETERIORATION AND TITLE V GREENHOUSE GAS TAILORING RULE

75 Fed. Reg. 31514 (June 3, 2010)

C. What are the general requirements of the PSD program?

1. Overview of the PSD Program

The PSD program is a preconstruction review and permitting program applicable to new major stationary sources and major modifications at existing major stationary sources. The PSD

program applies in areas that are designated "attainment" or "unclassifiable" for a National Ambient Air Quality Standard (NAAQS). . . . The "nonattainment new source review (NSR)" program applies in areas not in attainment of a NAAQS . . . There is no NAAQS for CO_2 or any of the other well-mixed GHGs, nor has EPA proposed any such NAAQS; therefore, unless and until we take further such action, we do not anticipate that the nonattainment NSR program will apply to GHGs.

The applicability of PSD to a particular source must be determined in advance of construction or modification and is pollutant-specific. The primary criterion in determining PSD applicability for a proposed source is whether the source is a "major emitting facility," based on its predicted potential emissions of regulated pollutants, within the meaning of CAA section 169(1) and either constructs or undertakes a modification. EPA has implemented these requirements in its regulations, which use somewhat different terminology for determining PSD applicability, which is whether the source is a "major stationary source" or whether the proposed project is a "major modification."

a. Major Stationary Source

Under PSD, a "major stationary source" is any source belonging to a specified list of 28 source categories which emits or has the potential to emit 100 tpy or more of any pollutant subject to regulation under the CAA, or any other source type which emits or has the potential to emit such pollutants in amounts equal to or greater than 250 tpy. We refer to these levels as the 100/250-tpy thresholds. A new source with a potential to emit (PTE) at or above the applicable "major stationary source threshold" is subject to major source NSR. These limits originate from section 169 of the CAA, which applies PSD to any "major emitting facility" and defines the term to include any source that emits or has a PTE of 100 or 250 tpy, depending on the source category. Note that the major source definition incorporates the phrase "subject to regulation," which, as described later, will begin to include GHGs on January 2, 2011 . . .

b. Major Modifications

PSD also applies to existing sources that undertake a "major modification," which occurs: (1) When there is a physical change in, or change in the method of operation of, a "major stationary source;" (2) the change results in a "significant" emission increase of a pollutant subject to regulation (equal to or above the significance level that EPA has set for the pollutant in 40 CFR 52.21(b)(23)); and (3) there is a "significant net emissions increase" of a pollutant subject to regulation that is equal to or above the significance level. Significance levels, which EPA has promulgated for criteria pollutants and certain other pollutants, represent a de minimis contribution to air quality problems. When EPA has not set a significance level for a regulated NSR pollutant, PSD applies to an increase of the pollutant in any amount (that is, in effect, the significance level is treated as zero).

2. General Requirements for PSD

This section provides a very brief summary of the main requirements of the PSD program. One principal requirement is that a new major source or major modification must apply BACT,

which is determined on a case-by-case basis taking into account, among other factors, the cost effectiveness of the control and energy and environmental impacts. EPA has developed a "top-down" approach for BACT review, which involves a decision process that includes identification of all available control technologies, elimination of technically infeasible options, ranking of remaining options by control and cost effectiveness, and then selection of BACT. Under PSD, once a source is determined to be major for any regulated NSR pollutant, a BACT review is performed for each attainment pollutant that exceeds its PSD significance level as part of new construction or for modification projects at the source, where there is a significant increase and a significant net emissions increase of such pollutant.

In addition to performing BACT, the source must analyze impacts on ambient air quality . . .

The permitting authority must provide notice of its preliminary decision on a source's application for a PSD permit, and must provide an opportunity for comment by the public, industry, and other interested persons. After considering and responding to comments, the permitting authority must issue a final determination on the construction permit. Usually NSR permits are issued by state or local air pollution control agencies, which have their own permit programs approved by EPA in their State Implementation Plans (SIPs). In some cases, EPA has delegated its authority to issue PSD permits to the state or local agency. In other areas, EPA issues the permits under its own authority. * * *

QUESTIONS AND DISCUSSION

1. ***PSD Major Emitting Facilities.*** Note that under the PSD program, facilities in 28 specified categories are considered major if they emit at least 100 tpy of any regulated air pollutant. All other facilities must emit at least 250 tpy to qualify as major. Keep in mind that EPA typically conducts PSD review on a pollutant-by-pollutant basis. Thus, if a source fits within one of the 28 listed categories and emits 50 tpy of NO_X and 60 tpy of SO_2, it will not be considered a "major emitting facility," because it does not emit at least 100 tpy of either pollutant. However (and as explained a bit more in the next note), a source that is major for any single pollutant is considered major for all. Thus, if the same source emits 100 tpy of NO_X and 60 tpy of SO_2, it is now considered a "major emitting facility" because of its NO_X emissions. As the next note explains, this means that significant increases in both NO_X and SO_2 will trigger the BACT requirement for both pollutants, even though the facility's emissions are only "major" for NO_X.

2. ***Significance Levels.*** To understand EPA's greenhouse gas rules, it helps to understand a bit more about the dynamic behind "major modifications" and the significance levels. As EPA explains, existing facilities do not need to comply with PSD unless and until they make a modification. The Clean Air Act defines a modification to include "any physical change . . . which increases the amount of any air pollutant." CAA § 111(4), 42 U.S.C. § 7411(4). These terms are so broad they could conceivably trigger PSD if a facility were to change a single screw that allowed for more consistent operation and thus increased emissions by any amount. To avoid that outcome, EPA has narrowed the types of physical or operational changes that trigger PSD. It also requires that changes to major emitting facilities result in a "significant emissions

increase" and established "significant emissions rates" (or SERs) for some pollutants. By way of example, the SER for NO_X is 40 tons per year. If a major emitting facility (e.g., a facility within one of the 28 listed categories that emits at least 100 tons per year) makes a regulated physical change, and that change will increase the facility's emissions by only 39 tpy, the change will not count as a "major modification" and thus will not trigger PSD. Even if the source itself emits thousands of tons per year, the relevant inquiry is whether its change will result in emissions above the SER for each pollutant. If EPA has not established a specific SER for a pollutant, the SER is zero and any regulated physical change that will increase emissions at all will qualify as a "major modification."

It is equally important that the source itself be "major." If a source emits only NO_X and, as a result of a regulated physical change, increases its emissions from 40 tpy to 85 tpy, it will have made a "major modification," because its physical change will have increased emissions above the SER of 40 tpy. However, the source itself is too small to qualify as a major emitting facility because its total emissions are below 100 tpy (and, of course, below 250 tpy). If, however, a source that emits 40 tpy of NO_x and 1,500 tpy of SO_2 makes a regulated physical change that increases NO_X emissions by 45 tpy, this will trigger PSD for NO_X. The source qualifies as a "major emitting facility" because of the SO_2 emissions and the "major for one is major for all" rule described in note 1 above. The change qualifies as a "major modification" because it increases NO_X emissions above the SER. Now, because the facility is major due to the SO_2 emissions, it does not matter that the source emits less than 100 tpy of NO_X. However, the facility will trigger PSD for SO_2 only if the change increases emissions of SO_2 above its SER. This is because the "major for one is major for all" rule only affects whether the facility qualifies as a major emitting facility. To have a regulated modification, EPA uses a pollutant-by-pollutant inquiry to assess whether a regulated change has increased emissions about each pollutant's SER.

---

1. *PSD Regulation of Greenhouse Gases: Regulated Air Pollutants*

Before *Massachusetts*, the best argument contesting the PSD program's applicability was that greenhouse gases were not "air pollutants" at all. However, once the Supreme Court ruled that they were, permitting agencies (including EPA) began arguing that greenhouse gases are not "regulated air pollutants." The PSD program states that "[n]o major emitting facility . . . may be constructed . . . unless . . . the proposed facility is subject to the best available control technology for *each pollutant subject to regulation* under this chapter." CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4) (emphasis added). Regulations implementing the statute define "regulated [PSD] pollutant" to mean any pollutant subject to regulation under specific parts of the Clean Air Act and "[a]ny pollutant that otherwise is subject to regulation under the Act." 40 C.F.R. § 52.21(b)(50). Environmental groups argued that, because the Clean Air Act establishes monitoring and reporting requirements for carbon dioxide, carbon dioxide "otherwise is subject to regulation" and thus a regulated PSD pollutant. Permitting agencies, including EPA, argued in litigation that regulated PSD pollutants needed to be subject to "actual controls or limits," not simply monitoring and reporting requirements. Courts sometimes agreed with the agencies, but sometimes did not. When EPA's litigation strategy failed in a permit appeal before the Environmental Appeals Board, EPA issued a memorandum that interpreted the term "subject to

regulation" to mean subject to control. Memorandum from Stephen L. Johnson, EPA Administrator, to Regional Administrators, re: EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program (Dec. 18, 2008). EPA later codified that interpretation in what became known as the Timing Rule. 75 Fed. Reg. 17,004 (Apr. 2, 2010).

The Timing Rule made clear that any emissions standards promulgated for greenhouse gases under any of the Clean Air Act's federal programs, including the federal mobile source program, make greenhouse gases regulated PSD pollutants. In the spring of 2010, EPA finalized vehicle emissions standards for greenhouse gases. Thus, according to the EPA, greenhouse gases became regulated PSD pollutants once the vehicle emissions standards became effective on January 2, 2011.

The Timing Rule benefitted potential stationary sources by delaying the date on which they would be subject to PSD if they made any major modifications. However, it also clarified that the establishment of vehicle emissions standards (the Tailpipe Rule) would make greenhouse gases "subject to regulation" under the PSD program. Various states and industry groups challenged this interpretation of the Clean Air Act and EPA's regulations. The following decision, in which the D.C. Circuit considered in a single case multiple challenges to EPA's suite of greenhouse gas regulations, resulted.

COALITION FOR RESPONSIBLE REGULATION V. EPA

684 F.3d 102, 115, 133-38 (D.C. Cir. 2012)

Before: SENTELLE, Chief Judge; ROGERS and TATEL, Circuit Judges.

PER CURIAM:

Under EPA's longstanding interpretation of the CAA, the Tailpipe Rule automatically triggered regulation of stationary greenhouse gas emitters under two separate sections of the Act. The first, the Prevention of Significant Deterioration of Air Quality (PSD) program, requires state-issued construction permits for certain types of stationary sources . . . if they have the potential to emit over 100 tons per year (tpy) of "any air pollutant." *See* 42 U.S.C. §§ 7475; 7479(1). All other stationary sources are subject to PSD permitting if they have the potential to emit over 250 tpy of "any air pollutant." *Id.* § 7479(1). . . . EPA has long interpreted the phrase "any air pollutant" in both these provisions to mean any air pollutant that is regulated under the CAA. And once the Tailpipe Rule set motor-vehicle emission standards for greenhouse gases, they became a regulated pollutant under the Act, requiring PSD and Title V greenhouse permitting.

Acting pursuant to this longstanding interpretation of the PSD and Title V programs, EPA issued two rules phasing in stationary source greenhouse gas regulation. First, in the Timing Rule, EPA concluded that an air pollutant becomes "subject to regulation" under the Clean Air Act — and thus subject to PSD and Title V permitting — only once a regulation requiring control of that pollutant takes effect. *Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs* ("Timing Rule"), 75 Fed.

Reg. 17,004 (Apr. 2, 2010). Therefore, EPA concluded, major stationary emitters of greenhouse gases would be subject to PSD and Title V permitting regulations on January 2, 2011 — the date on which the Tailpipe Rule became effective, and thus, the date when greenhouse gases first became regulated under the CAA. * * *

V.A.

The dispute in this case centers largely on the scope of the PSD program — specifically, which stationary sources count as "major emitting facilities" subject to regulation. * * *

As mentioned above, since 1978 EPA has interpreted the phrase "any air pollutant" in the definition of "major emitting facility" as "any air pollutant regulated under the CAA." Thus, because the PSD program covers "major emitting facilities" in "any area to which this part applies," 42 U.S.C. § 7475, EPA requires PSD permits for stationary sources that 1) are located in an area designated as attainment or unclassifiable for any NAAQS pollutant, and 2) emit 100/250 tpy of any regulated air pollutant, regardless of whether that pollutant is itself a NAAQS pollutant. Consequently, once the Tailpipe Rule took effect and made greenhouse gases a regulated pollutant under Title II of the Act, the PSD program automatically applied to facilities emitting over 100/250 tpy of greenhouse gases. . . .

According to EPA, its longstanding interpretation of the phrase "any air pollutant" — "any air pollutant regulated under the CAA"— is compelled by the statute. * * *

We begin our analysis, as we must, with the statute's plain language. CAA Section 169(1) requires PSD permits for stationary sources emitting major amounts of "*any* air pollutant." 42 U.S.C. § 7479(1) (emphasis added). On its face, "the word 'any' has an expansive meaning, that is, 'one or some indiscriminately of whatever kind,'" Greenhouse gases are indisputably an "air pollutant." Congress's use of the broad, indiscriminate modifier "any" thus strongly suggests that the phrase "any air pollutant" encompasses greenhouse gases.

This plain-language reading of the statute is buttressed by the Supreme Court's decision in *Massachusetts v. EPA.* There the Court determined that CAA's overarching definition of "air pollutant" in Section 302(g) — which applies to all provisions of the Act, including the PSD program — unambiguously includes greenhouse gases. Noting that "[t]he Clean Air Act's sweeping definition of 'air pollutant' includes '*any* air pollution agent or combination of such agents. . . . which is emitted into or otherwise enters the ambient air," the Court held that "the definition embraces *all* airborne compounds of whatever stripe, *and underscores that intent through repeated use of the word 'any.'*" *Id.* at 529 (quoting 42 U.S.C. § 7602(g)) (second and third emphases added). Crucially for purposes of the issue before us, the Court concluded that "[t]he statute is unambiguous." *Id.*

Thus, we are faced with a statutory term — "air pollutant" — that the Supreme Court has determined unambiguously encompasses greenhouse gases. This phrase is preceded by the expansive term "any," a word the Court held "underscores" Congress's intent to include "all" air pollutants "of whatever stripe." *See id.* Absent some compelling reason to think otherwise, "'any' . . . means any," and Petitioners have given us no reason to construe that word narrowly

here. To the contrary: given both the statute's plain language and the Supreme Court's decision in *Massachusetts v. EPA*, we have little trouble concluding that the phrase "any air pollutant" includes *all* regulated air pollutants, including greenhouse gases.

In reaching this conclusion, we recognize that EPA's definition of "any air pollutant" slightly narrows the literal statutory definition, which nowhere requires that "any air pollutant" be a *regulated* pollutant. *See* 42 U.S.C. § 7479(1). But this does not make the statutory language ambiguous. Indeed, "any regulated air pollutant" is the only logical reading of the statute. The CAA's universal definition of "air pollutant" — the one at issue in *Massachusetts v. EPA* — provides that the term includes "any physical, chemical, biological [or] radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air." *Id.* § 7602(g). Of course, nothing in the CAA requires regulation of a substance simply because it qualifies as an "air pollutant" under this broad definition. As discussed *supra* in Parts II and III, for example, the Act requires EPA to prescribe motor vehicle "standards applicable to the emission of any air pollutant" only if that pollutant "cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare." *Id.* § 7521(a)(1). But if "any air pollutant" in the definition of "major emitting facility" was read to encompass both regulated and nonregulated air pollutants, sources could qualify as major emitting facilities — and thus be subjected to PSD permitting requirements — if they emitted 100/250 tpy of a "physical, chemical, [or] biological" substance EPA had determined was harmless. It is absurd to think that Congress intended to subject stationary sources to the PSD permitting requirements due to emissions of substances that do not "endanger public health or welfare." *Id.* § 7521(a)(1). Thus, "any regulated air pollutant" is, in this context, the only plausible reading of "any air pollutant." * * *

Finally, Congress made perfectly clear that the PSD program was meant to protect against precisely the types of harms caused by greenhouse gases. The PSD provision contains a section entitled "Congressional declaration of purpose," which provides, in relevant part, that "[t]he purposes of this part are . . . to protect public health and welfare from any actual or potential adverse effect which in the Administrator's judgment may reasonably be anticipated to occur from air pollution." 42 U.S.C. § 7470(1). The CAA further provides that "[a]ll language referring to effects on welfare includes, but is not limited to, effects on . . . weather . . . and climate." *Id.* § 7602(h). * * * Thus, one express purpose of the program is to protect against the harms caused by greenhouse gases.

In sum, we are faced with a statutory term — "any air pollutant" — that the Supreme Court has determined is "expansive," and "unambiguous[ly]" includes greenhouse gases. *Massachusetts v. EPA*, 549 U.S. at 529. Moreover, the PSD program requires covered sources to install control technology for "each pollutant" regulated under the CAA, 42 U.S.C. § 7475(a)(4), and to establish that they "will not cause, or contribute to, air pollution in excess of *any* . . . emission standard . . . under [the CAA]." *Id.* § 7475(a)(3) (emphasis added). These provisions demonstrate that the PSD program was intended to control pollutants regulated under every section of the Act. Finally, Congress's "Declaration of Purpose" expressly states that the PSD program was meant, in part, to protect against adverse effects on "weather" and "climate" — precisely the types of harm caused by greenhouse gases. *See id.* § 7470(1). Given all this, we have little trouble concluding that "any air pollutant" in the definition of "major emitting

facility" unambiguously means "any air pollutant regulated under the CAA." * * *

Industry Petitioners contend that the term "pollutant" in the PSD statute encompasses only air pollutants that, unlike greenhouse gases, "pollute locally." Industry Petitioners would thus apply a greenhouse gas-exclusive interpretation of "pollutant" throughout the statute's PSD provision. . . . We can easily dispose of Industry Petitioners' argument that the PSD program's "concerns with local emissions" . . . somehow limit the BACT provision. The statutory text provides, without qualification, that covered sources must install the "best available control technology for *each pollutant subject to regulation* under [the CAA]." 42 U.S.C. § 7475(a)(4) (emphasis added). Because greenhouse gases are indisputably a pollutant subject to regulation under the Act, it is crystal clear that PSD permittees must install BACT for greenhouse gases. * * *

---

2. *PSD Regulation of Greenhouse Gases: The Tailoring Rule*

Once EPA realized that greenhouse gases would be subject to PSD permitting requirements in 2011, it decided that it would need to somehow limit, or in EPA's wording, "tailor," the PSD program.

ENVIRONMENTAL PROTECTION AGENCY, PREVENTION OF SIGNIFICANT DETERIORATION AND TITLE V GREENHOUSE GAS TAILORING RULE

75 Fed. Reg. 31514 (June 3, 2010)

II. Overview of the Final Rule

EPA is relieving overwhelming permitting burdens that would, in the absence of this rule, fall on permitting authorities and sources. We accomplish this by tailoring the applicability criteria that determine which GHG emission sources become subject to the PSD . . . programs of the CAA. In particular, EPA is establishing with this rulemaking a phase-in approach for PSD . . . applicability, and is establishing the first two steps of the phase-in for the largest emitters of GHGs. We also commit to certain follow-up actions regarding future steps beyond the first two, discussed in more detail later. Our legal basis for this rule is our interpretation of the PSD . . . provisions under the familiar *Chevron* [Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837 (1984)] two-step framework for interpreting administrative statutes, taking account of three legal doctrines, both separately and interdependently: They are what we will call (1) The "absurd results" doctrine, which authorizes agencies to apply statutory requirements differently than a literal reading would indicate, as necessary to effectuate congressional intent and avoid absurd results, (2) the "administrative necessity" doctrine, which authorizes agencies to apply statutory requirements in a way that avoids impossible administrative burdens; and (3) the "one-step-at-a-time" doctrine, which authorizes agencies to implement statutory requirements a step at a time. . . . EPA also has authority for this Tailoring Rule under CAA section 301(a)(1), which authorizes the Administrator "to prescribe such regulations as are necessary to carry out his functions under [the CAA]."

For the first step of this Tailoring Rule, which will begin on January 2, 2011, PSD . . . requirements will apply to sources' GHG emissions only if the sources are subject to PSD . . . anyway due to their non-GHG pollutants. Therefore, EPA will not require sources or modifications to evaluate whether they are subject to PSD . . . requirements solely on account of their GHG emissions. * * *

The second step of the Tailoring Rule, beginning on July 1, 2011, will phase in additional large sources of GHG emissions. New sources as well as existing sources not already subject to title V that emit, or have the potential to emit, at least 100,000 tpy CO_2e will become subject to the PSD . . . requirements. In addition, sources that emit or have the potential to emit at least 100,000 tpy CO_2e and that undertake a modification that increases net emissions of GHGs by at least 75,000 tpy CO_2e will also be subject to PSD requirements. For both steps, we also note that if sources or modifications exceed these CO_2 e-adjusted GHG triggers, they are not covered by permitting requirements unless their GHG emissions also exceed the corresponding mass-based triggers (i.e., unadjusted for CO_2 e). * * *

We are also including in this action a rule that no source with emissions below 50,000 tpy CO_2e, and no modification resulting in net GHG increases of less than 50,000 tpy CO_2e, will be subject to PSD . . . permitting before at least 6 years from now, April 30, 2016. This is because we are able to conclude at the present time that the administrative burdens that would accompany permitting sources below this level will be so great that even the streamlining actions that EPA may be able to develop and implement in the next several years, and even with the increases in permitting resources that we can reasonably expect the permitting authorities to acquire, it will be impossible to administer the permit programs for these sources until at least 2016.

Further, we are establishing an enforceable commitment that we will (1) complete a study by April 30, 2015, to evaluate the status of PSD . . . permitting for GHG-emitting sources, including progress in developing streamlining techniques; and (2) complete further rulemaking based on that study by April 30, 2016, to address the permitting of smaller sources. That rulemaking may also consider additional permanent exclusions based on the "absurd results" doctrine, where applicable.

This Tailoring Rulemaking is necessary because without it, PSD . . . would apply to all stationary sources that emit or have the potential to emit more than 100 or 250 tons of GHGs per year beginning on January 2, 2011. This is the date when EPA's recently promulgated Light-Duty Vehicle Rule (LDVR) takes effect, imposing control requirements for the first time on carbon dioxide (CO_2) and other GHGs. If this January 2, 2011 date were to pass without this Tailoring Rule being in effect, PSD . . . requirements would apply at the 100/250 tpy applicability levels provided under a literal reading of the CAA as of that date. * * *

Under these circumstances, many small sources would be burdened by the costs of the individualized PSD control technology requirements and permit applications that the PSD provisions, absent streamlining, require. Additionally, state and local permitting authorities would be burdened by the extraordinary number of these permit applications, which are orders of magnitude greater than the current inventory of permits and would vastly exceed the current

administrative resources of the permitting authorities. Permit gridlock would result with the permitting authorities able to issue only a tiny fraction of the permits requested. * * *

The thresholds we are establishing are based on CO_2e for the aggregate sum of six greenhouse gases that constitute the pollutant that will be subject to regulation, which we refer to as GHGs. These gases are: CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Thus, in this rule, we provide that PSD . . . applicability is based on the quantity that results when the mass emissions of each of these gases is multiplied by the Global Warming Potential (GWP) of that gas, and then summed for all six gases. However, we further provide that in order for a source's GHG emissions to trigger PSD . . . requirements, the quantity of the GHGs must equal or exceed both the applicability thresholds established in this rulemaking on a CO_2e basis and the statutory thresholds of 100 or 250 tpy on a mass basis. * * *

IV. Summary of Final Actions * * *

B. When will PSD and title V applicability begin for GHGs and emission sources? * * *

1. What are the Step 1 thresholds, timing, and calculation methodology?

a. PSD Permitting

Step 1 of the Tailoring Rule phase-in will begin on January 2, 2011. With respect to the PSD program, GHG sources will become subject to PSD for their GHG emissions if they undergo PSD permitting anyway, either for new construction or for modification projects, based on emissions of non-GHG pollutants, in which case they will be subject to the PSD requirements for GHG if they increase GHG emissions by 75,000 tpy CO_2 e or more. Under this step, only these sources, which we refer to as "anyway" PSD sources, will become subject to PSD; no sources will become major sources for PSD purposes or be treated as undertaking modifications that trigger PSD based solely on their GHG emissions. As a result, no additional PSD permitting actions will be necessary solely due to GHG emissions. However, existing or newly-constructed sources that are determined to be major sources based on non-GHG emissions are required to conduct a BACT review for their GHG emissions (from new construction) or emissions increases (from modifications), if they are subject to PSD due to their non-GHG emissions from construction or modification actions and each of the following conditions is met:

(1) The GHG emissions (or net emissions increase) due to the new construction (or modification) project, calculated as the sum of the six well-mixed GHGs on a mass basis (no GWPs applied) exceed a value of 0 tpy; and

(2) The GHG emissions (or net emissions increase) due to the new construction (or modification) project, calculated as the sum of the six well-mixed GHGs on a CO_2e basis (GWPs applied) equal or exceed a value of 75,000 tpy CO_2e.* * *

2. What are the Step 2 thresholds, timing, and calculation methodology?

a. PSD Permitting

Step 2 will begin July 1, 2011. Under Step 2, anyway PSD sources — that is, sources already subject to PSD based on non-GHGs and covered under Step 1 previously — will remain subject to PSD. In addition, sources with the potential to emit 100,000 tpy CO_2e or more of GHG will be considered major sources for PSD permitting purposes (provided that they also emit GHGs or some other regulated NSR pollutant above the 100/250 tpy (mass based) statutory thresholds. Additionally, any physical change or change in the method of operation at a major source (including one that is only major due to GHGs) resulting in a net GHG emissions increase of 75,000 tpy CO_2e or more will be subject to PSD review and requirements with respect to GHGs (provided that it also results in an increase of GHG emissions on a mass basis).

Specifically, for purposes of determining whether a GHG emission source, resulting from either new construction or a physical or operational change at an existing source, is considered a major source under PSD, both of the following conditions must be met:

(1) The GHG emission source, which is not major for another pollutant, emits or has the potential to emit GHG in amounts that equal or exceed the following, calculated as the sum-of-six well-mixed GHGs on a mass basis (no GWPs applied):

- 100 tpy for sources in any of the 28 major emitting facility source categories listed under PSD, or

- 250 tpy for any other stationary source.

(2) The GHG emission source emits or has the potential to emit GHGs in amounts that equal or exceed 100,000 tpy CO_2e basis.

For determining whether a modification project at a major stationary source is subject to PSD review, both of the following conditions must be met:

(1) The net GHG emissions increase resulting from the project, calculated as the sum-of-six well-mixed GHGs on a mass basis (no GWPs applied) equals or exceeds 0 tpy.

(2) The net GHG emissions increase resulting from the project, calculated as the sum-of-six well-mixed GHGs on a CO_2e basis (GWPs applied) equals or exceeds 75,000 tpy CO_2e. * * *

As an example of how the mass-based test would apply, consider a modification project that results in a 5 tpy increase of GHG emissions on a mass basis, associated with a high-GWP GHG gas (for example, SF_6, with a GWP value of 23,900), but also results in a 100 tpy reduction in CO_2 emissions (assume no other contemporaneous increases or decreases of GHG). In this example, there would be a net decrease of GHG emissions on a mass basis (5 tpy-100 tpy = -95 tpy). Because there is no mass-based increase of GHG, this project does not trigger PSD, despite the fact that the net GWP-adjusted emissions increase of SF_6 in this example would equal 119,500 tpy of CO_2e and the project would thus exceed 75,000 tpy CO_2e. * * *

V. What Is the Legal and Policy Rationale for the Final Actions? * * *

*B. Rationale for Thresholds and Timing for PSD and Title V Applicability to GHG Emissions Sources * * **

1. Overview

Under the familiar Chevron two-step approach to construction of agency-administered statutes, the agency must first, at Chevron Step 1, determine whether Congress's intent in a particular provision on a specific question is clear; and if so, then the agency must follow that intent. If the intent of the provision is not clear, then the agency may, under Chevron Step 2, fashion a reasonable interpretation of the provision. The best indicator of congressional intent is the literal meaning of the provision and generally, according to the case law, if the literal meaning addresses the specific question, then the agency should follow the literal meaning.

However, the courts have developed three doctrines relevant here that authorize departure from a literal application of statutory provisions. The first is the "absurd results" doctrine, which authorizes such a departure if the literal application would produce a result that is inconsistent with congressional intent, and particularly if it would undermine congressional intent. The judicial doctrine of "administrative necessity" authorizes an agency to depart from statutory requirements if the agency can demonstrate that the statutory requirements, as written, are impossible to administer. The "one-step-at-a-time" doctrine authorizes an agency, under certain circumstances, to implement a statutory requirement through a phased approach. Each of the three doctrines fits into the Chevron framework for statutory construction because each of the three is designed to effectuate congressional intent.

To apply the statutory PSD . . . thresholds literally to sources of GHG emissions would bring tens of thousands of small sources and modifications into the PSD program each year. . . . These extraordinary increases in the scope of the permitting programs would mean that the programs would become several hundred-fold larger than what Congress appeared to contemplate. Moreover, the great majority of additional sources brought into the PSD and Title V programs would be small sources that Congress did not expect would need to undergo permitting and that, at the present time, in the absence of streamlined permit procedures, would face unduly high permitting costs. Further . . . in the absence of streamlined permit procedures the administrative strains would lead to multi-year backlogs in the issuance of . . . permits, which would undermine the purposes of those programs. Sources of all types — whether they emit GHGs or not — would face long delays in receiving PSD permits, which Congress intended to allow construction or expansion. . . . For both programs, the addition of enormous numbers of additional sources would provide relatively little benefit compared to the costs to sources and the burdens to permitting authorities. In the case of PSD, the large number of small sources that would be subject to control constitute a relatively small part of the environmental problem. . . . For these reasons, the "absurd results" doctrine applies to avoid a literal application of the thresholds at this time. By the same token, the impossibility of administering the permit programs brings into play the "administrative necessity" doctrine. This doctrine also justifies not applying the PSD or Title V applicability threshold provisions literally to GHG sources at this time.

The situation presented here is exactly the kind that the "absurd results," "administrative necessity," and "one-step-at-a-time" doctrines have been developed to address. Separately and interdependently, they authorize EPA and the permitting authorities to tailor the PSD . . . applicability provisions through a phased program as set forth in this rule, and to use the initial period of phase-in to develop streamlining measures, acquire expertise, and increase resources, all of which would facilitate applying PSD . . . on a broader scale without overburdening sources and permitting authorities. In this manner, the phased approach reconciles the language of the statutory provisions with the results of their application and with congressional intent.

2. Data Concerning Costs to Sources and Administrative Burdens to Permitting Authorities * * *

a. Costs to Sources

* * * For PSD, at proposal, we estimated that on average, an industrial source would incur costs of $84,500 to prepare the PSD application and receive the permit . . . This type of source would need 866 hours, which would cost $84,500, to prepare the application and the PSD permit. . . . [A]n average commercial or residential source would need 606 hours, which would cost $59,000, to prepare the PSD application and receive the permit. . . . The actual costs to sources to install BACT controls, while still uncertain at this point, would likely add additional costs across a variety of sources in a sector not traditionally subject to such permitting requirements. * * *

b. Administrative Burdens to Permitting Authorities * * *

[W]e estimate that in all, if sources that emit GHGs become subject to PSD at the 100/250 tpy levels, permitting authorities across the country would face over $1.5 billion in additional PSD permitting costs each year. This would represent an increase of 130 times the current annual burden hours under the NSR major source program for permitting authorities. The permitting authorities would need a total of almost 10,000 new FTEs to process PSD permits for GHG emissions. . . . [A]pplication of the PSD requirements to GHG-emitting sources at the level of 100/250 tpy or more of actual emissions would, without additional FTEs, increase the average processing time for a PSD permit from one to 3 years. * * *

3. "Absurd Results," "Administrative Necessity," and "One-Step-at-a-Time" Legal Doctrines * * *

b. The "Absurd Results" Doctrine

* * * The courts consider the best indicator of congressional intent to be the plain meaning of the statute. However, the U.S. Supreme Court has held that the literal meaning of a statutory provision is not conclusive "in the 'rare cases [in which] the literal application of a statute will produce a result demonstrably at odds with the intentions of the drafters' . . . [in which case] the intention of the drafters, rather than the strict language, controls." United States v. Ron Pair Enterprises, 489 U.S. 235, 242 (1989). This doctrine of statutory interpretation may be termed

the "absurd results" doctrine.

Although, as just noted, the U.S. Supreme Court has described the "absurd results" cases as "rare," in that case the Court seemed to be referring to the small percentage of statutory-construction cases that are decided on the basis of the doctrine. The DC Circuit, in surveying the doctrine over more than a century of jurisprudence, characterized the body of law in absolute numbers as comprising "legions of court decisions." In re Franklyn C. Nofziger, 925 F.2d 428, 434 (DC Cir. 1991). Indeed, there are dozens of cases, dating from within the past several years to well into the 19th century, in which the U.S. Supreme Court has applied the "absurd results" doctrine to avoid the literal application of a statute, or if not so holding, has nevertheless clearly acknowledged the validity of the doctrine. * * *

c. The "Administrative Necessity" Doctrine

. . . Under this doctrine, if a statutory provision, however clear on its face, is impossible for the agency to administer, then the agency is not required to follow the literal requirements, and instead, the agency may adjust the requirements in as refined a manner as possible to assure that the requirements are administrable, while still achieving Congress's overall intent. The DC Circuit set out the doctrine of "administrative necessity" in a line of cases that most prominently includes Alabama Power v. Costle, 636 F.2d 323 (DC Cir. 1980). . . .

As we stated in the proposed rulemaking, "We believe that the "administrative necessity" case law establishes a three-step process . . . :

> [T]he three steps are as follows: When an agency has identified what it believes may be insurmountable burdens in administering a statutory requirement, the first step the agency must take is to evaluate how it could streamline administration as much as possible, while remaining within the confines of the statutory requirements. The second step is that the agency must determine whether it can justifiably conclude that even after whatever streamlining of administration of statutory requirements (consistent with those statutory requirements) it conducts, the remaining administrative tasks are impossible for the agency because they are beyond its resources, e.g., beyond the capacities of its personnel and funding. If the agency concludes with justification that it would be impossible to administer the statutory requirements, as streamlined, then the agency may take the third step, which is to phase in or otherwise adjust the requirements so that they are administrable. However, the agency must do so in a manner that is as refined as possible so that the agency may continue to implement as fully as possible Congressional intent.

It should also be noted that we believe the administrative burdens encountered by the state and local permitting authorities are fully relevant under the "administrative necessity" doctrine. * * *

d. "One-Step-at-a-Time" Doctrine

In addition to the "absurd results" and "administrative necessity" doctrines, another judicial doctrine supports at least part of EPA's Tailoring Rule, and that is the doctrine that agencies may implement statutory mandates one step at a time, which we will call the "one-step-at-a-time" doctrine. . . . [T]he U.S. Supreme Court recently described the doctrine in Massachusetts v. EPA, 549 U.S. 497, 524 (2007), as follows: "Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop;" and instead they may permissibly implement such regulatory programs over time, "refining their preferred approach as circumstances change and as they develop a more nuanced understanding of how best to proceed." . . . The roots of the doctrine go back at least to the DC Circuit's 1979 decision in United States Brewers Association, Inc. v. EPA, 600 F.2d 974 (DC Cir. 1979). There, the Court considered a challenge to EPA's guidelines for managing beverage containers, which EPA was required to promulgate under the Resource Conservation and Recovery Act of 1976 (RCRA). RCRA gave EPA one year to promulgate the guidelines. EPA promulgated a partial set of guidelines, started two others, and was challenged before the year was out by petitioners who objected to the initial guideline, saying it fell short of the statutory mandate. The Court upheld the initial guideline, stating: "Under these circumstances we think the question of whether the Agency has fully satisfied the mandate of the statute is not fit for judicial review at this time, when the Agency, still well within the one-year period granted by statute, is deeply involved in the process of formulating rules designed to carry out the congressional mandate. The Agency might properly take one step at a time."

The Court addressed the doctrine at greater length in National Association of Broadcasters v. FCC, 740 F.2d 1190, 1209-14 (DC Cir. 1984). There, the Court noted that under certain statutory schemes, step-by-step agency action might not be authorized; but the Court emphasized that when it is authorized, it may offer significant benefits; and the Court went on to delineate some of the circumstances under which its use is justified. * * *

> Drawing a line between the permissible and the impermissible in this area will generally raise two questions. First the agency will likely have made some estimation, based upon evolving economic and technological conditions, as to the nature and magnitude of the problem it will have to confront when it comes to resolve the postponed issue. With regard to this aspect of the agency's decision, as long as the agency's predictions about the course of future events are plausible and flow from the factual record compiled, a reviewing court should accept the agency's estimation. . . . Second, once the nature and magnitude of the unresolved issue is determined, the relevant question is whether it was reasonable, in the context of the decisions made in the proceeding under review, for the agency to have deferred the issue to the future. With respect to that question, postponement will be most easily justified when an agency acts against a background of rapid technical and social change and when the agency's initial decision as a practical matter is reversible should the future proceedings yield drastically unexpected results. In contrast, an incremental approach to agency decision making is least justified when small errors in predictive judgments can have catastrophic effects on the public welfare or when future proceedings are likely to be systematically defective in taking into account certain relevant interests * * *.

740 F.2d at 1210–11 (citations omitted).

In City of Las Vegas v. Lujan, 891 F.2d 927 (DC Cir. 1989), the Court suggested that one component of upholding partial agency compliance with a statutory directive is evidence that the agency was on track for full compliance. * * *

e. Consistency of Doctrines With Chevron Framework

* * * Step 1 under Chevron calls for determining congressional intent for the relevant statutory directive on the specific issue presented. To determine Congress's intent, the agency must look first to the statutory terms in question, and generally interpret them according to their literal meaning, within the overall statutory context, and perhaps with reference to the legislative history. If the literal meaning of the statutory requirements is clear then, absent indications to the contrary, the agency must take it to indicate congressional intent and must implement it. Even if the literal meaning of the statutory requirements is not clear, if the agency can otherwise find indications of clear congressional intent, such as in the legislative history, then the agency must implement that congressional intent.

The DC Circuit has indicated that the "absurd results" doctrine fits into the Chevron Step 1 analysis * * *

Under these circumstances, the agency must not take the literal meaning to indicate congressional intent. . . . [I]f the agency can find other indications of clear congressional intent, then the agency must implement that intent. This may mean implementing the statutory terms, albeit not in accordance with their literal meaning, but in a way that achieves a result that is as close as possible to congressional intent. * * *

The "administrative necessity" doctrine is not as well developed as the "absurd results" doctrine, so that the courts have not had occasion to explicitly describe how the doctrine fits into the Chevron analytical framework. . . . Placed in the context of the Chevron framework, we think that that the "administrative necessity" doctrine is based on the premise that inherent in the statutory design is the presumption that Congress does not intend to impose an impossible burden on an administrative agency.

Therefore, if the literal meaning of a statutory directive would impose on an agency an impossible administrative burden, then that literal meaning should not be considered to be indicative of congressional intent. Rather, congressional intent should be considered to achieve as much of the statutory directive as possible. As a result, the agency must adopt an approach that implements the statutory directive as fully as possible. * * *

The "one-step-at-a-time" doctrine fits into the Chevron framework in much the same manner that the "administrative necessity" doctrine does. . . .

Under all of the circumstances described previously, congressional intent is clear — whether it is indicated by the plain language or otherwise — and as a result, the agency must follow that intent under Chevron Step 1. On the other hand, the agency may determine that congressional

intent on the specific issue is not clear. In these cases, the agencies should proceed to Chevron Step 2 and select an interpretation or an application that is a permissible construction of the statute. . . . Under all these circumstances, the agency is authorized, under Chevron Step 2, to develop and implement a construction of the statute that the courts will uphold as long as it is reasonable. * * *

g. Application of Chevron Approach

* * * For each of these applicability provisions, the approach under Chevron is as follows: Under Chevron Step 1, we must determine whether Congress expressed an intention on the specific question, which is whether the PSD . . . applicability provisions apply to GHG sources. Said differently, the specific question is whether, in the case of PSD, Congress intended that the definitions of "major emitting facility" and "modification" apply, respectively, to all GHG sources that emit at least 100 or 250 tpy or GHGs and to all physical or operational changes by major emitting facilities that "increase[ ] the amount" of GHGs . . .

To determine intent, we must first examine the terms of the statute in light of their literal meaning. Here, the literal reading of each provision covers GHG sources. For PSD, a GHG source that emits at least 100 or 250 tpy GHGs literally qualifies as "stationary source [ ] of air pollutants which emit[s] or ha[s] the potential to emit, one hundred [or two hundred fifty] tons per year or more of any air pollutant [subject to regulation under the CAA]." CAA section 169(1). For modifications, a physical or operational change that increases the amount of GHG emissions qualifies as a "modification" because it "increases the amount of any air pollutant emitted" by the source. . . .

Although each definition is clear that it applies to GHG sources as a general matter, applying each definition in accordance with its literal meaning to all GHG sources at the specified levels of emissions and at the present time — in advance of the development of streamlining methods and greater permitting authority expertise and resources — would create undue costs for sources and impossible administrative burdens for permitting authorities. These results are not consistent with other provisions of the PSD [program]. Accordingly, under the "absurd results" doctrine, neither the PSD definition of "major emitting facility" or "modification" . . . should be applied literally to all GHG sources, and therefore none should be considered to have a literal meaning with respect to its application to all GHG sources. * * *

On the issue of how to apply PSD to GHG sources, including the specific threshold levels and the timing, we believe that Congress could be considered to have expressed a clear intent that GHG sources be included in the PSD program at as close to the statutory thresholds as possible, and as quickly as possible, and at least to a certain point, all as consistent with the need to assure that the PSD program does not impose undue costs on sources or undue administrative burdens on the permitting authorities. Under this view, EPA would be required at Chevron Step 1 to adopt the Tailoring Rule because, by phasing in PSD applicability, it most closely gives effect to Congress's intent. Under these circumstances, EPA is authorized to exercise its expert judgment as to the best approach for phasing in the application of PSD to GHG sources.

Even so, we recognize that it could be concluded that on the issue of how to apply PSD to

GHG sources, congressional intent is unclear. Under these circumstances, EPA has the discretion at Chevron Step 2 to adopt the Tailoring Rule because it is a reasonable interpretation of the statutory requirements (remaining mindful that the applicability requirements cannot be applied literally). Under the Tailoring Rule, EPA seeks to include as many GHG sources in the permitting programs at as close to the statutory thresholds as possible, and as quickly as possible, although we recognize that we ultimately may stop the phase-in process short of the statutory threshold levels. * * *

Within the context of the Chevron framework, the "administrative necessity" doctrine applies as follows: Under the doctrine, Congress is presumed to intend that the PSD . . . requirements be administrable. Here, those applicability requirements, if applied to GHG sources in accordance with their literal meaning, would be impossible to administer. Accordingly, under Chevron Step 1, it is consistent with congressional intent that EPA and the permitting authorities be authorized to implement the applicability requirements in a manner that is administrable, that is, through the tailoring approach.

As for the "one-step-at-a-time" doctrine, we believe it applies within the Chevron framework in conjunction with the "absurd results" and "administrative necessity" doctrines. As we discuss elsewhere, the PSD . . . provisions by their terms require that sources at or above the 100/250 tpy thresholds comply with PSD . . . at the time those requirements are triggered, which is when GHGs become subject to regulation. Therefore, if the literal meaning of the applicability provisions as applied to GHG sources were controlling — that is, if it reflected congressional intent — it would foreclose use of the one-step-at-a-time doctrine to implement a phase-in approach. However, the literal meaning is not controlling because — in light of the absurd results, including the insurmountable administrative burdens, that would result from the literal meaning — congressional intent is not to require the application of the PSD . . . requirements to all GHG sources at or above the statutory thresholds at the time that GHGs become subject to regulation. Instead, as described previously, we consider congressional intent for the applicability provisions, as applied to GHG sources, either (i) to be clear that PSD . . .should be phased in for GHG sources as quickly as possible, or (ii) to be unclear, so that EPA may reasonably choose to phase PSD . . . in for those sources in that manner. Under either view, congressional intent for PSD . . . applicability to GHG sources accommodates the "one-step-at-a-time" approach.

QUESTIONS AND DISCUSSION

1. The Tailoring Rule requires facilities to calculate two sets of emissions levels: their mass-based emissions, measured in tons per year, which must meet the statutory threshold of 100 or 250 tons per year; and their global warming-based emissions, measured based on carbon dioxide equivalence, which must meet the new 100,000 or 75,000 tons per year. Do you understand how these emissions thresholds work together? If a new facility will emit 70 tons of a SF_6, which has a global warming potential of 23,900, will it trigger PSD? What about a new facility that will emit 300 tons of methane, which has a global warming potential of 23?

Recall the earlier discussion of significant emissions rates (SERs) necessary to trigger a

"major modification." The 75,000 CO_2eq tons per year threshold is the new global warming-based SER for greenhouse gases, and the mass-based SER is zero. Thus, if a facility makes a regulated physical change that will increase its mass-based emissions by 700 tons per year and global warming-based emissions by 70,000 CO_2eq tons per year, it will not trigger PSD, even though it has far exceeded its mass-based SER.

2. EPA initially proposed lower emissions thresholds that would trigger the PSD program. Specifically, its initial proposal would have applied to new sources that emitted 25,000 tons per year of greenhouse gases and to modified sources that increased their emissions by at least 10,000 tons per year. It estimated that these lower thresholds would apply to about 68 percent of U.S. greenhouse gas emissions and subject about 400 new and modified facilities to PSD permitting requirements each year. After receiving comments from states and industrial sources that EPA had underestimated the number of required sources and the administrative burdens associated with permitting the sources, EPA increased the emissions thresholds to the 100,000/75,000 tons per year levels in the Tailoring Rule. The Center for Biological Diversity claims that this change resulted from "pure fear politics." Robin Bravender, *Enviro Group Sues EPA Over "Tailoring" Rule*, Greenwire, Aug. 2, 2010. Did EPA justify the significant changes it made between the proposed and final rule?

3. What do you think of EPA's invocation of the "absurd results," "administrative necessity," and "one-step-at-a-time" doctrines? Do you think a court would uphold EPA's deviations from the statutory 100/250 tons per year thresholds?

4. EPA's changes to the PSD program have interesting implications for states under the Clean Air Act. As explained earlier in the text, EPA and states work through the Clean Air Act's "cooperative federalism" scheme to implement the Act. States must prepare State Implementation Plans (SIPs) demonstrating how states will comply with the various parts of the Clean Air Act. If a state wishes to administer the PSD program, it must receive EPA authority to do so. If EPA determines that a state's SIP no longer conforms to the requirements of the Clean Air Act, EPA will issue a "SIP call" identifying the ways in which the SIP is inadequate and recommending changes. If the state fails to correct the SIP, EPA will take over implementation of the programs the SIP does not adequately regulate. To do this, EPA must promulgate a Federal Implementation Plan (FIP) explaining how EPA will regulate in states with inadequate SIPs.

After EPA released the final Tailoring Rule, it began the SIP review process. It initially proposed to find more than a dozen state SIPs inadequate because the states either had rules that did not clearly authorize regulation of greenhouse gases or because the states had laws that affirmatively prohibited state regulation of greenhouse gases. Ultimately, EPA finalized the SIP call for several states, which then sued EPA. As of April 2013, the suit was still pending.

5. Perhaps not surprisingly, the Tailoring Rule triggered a flurry of lawsuits. Several states and industrial groups argued that EPA lacks authority to regulate greenhouse gas emissions under the PSD program and that the agency's recognition that a literal reading of the statute produces "absurd results" shows that the PSD program should not apply at all. Although some environmental groups threatened to challenge the rule, they dismissed their cases, leaving those

opposed to Clean Air Act regulation as the petitioners. Ultimately, the D.C. Circuit rejected their challenge on Article III standing grounds. Coalition for Responsible Regulation v. EPA, 684 F.3d 102 (D.C. Cir. 2012), *rhrg. en banc denied by* 2012 U.S. App. LEXIS 25997 (D.C. Cir. Dec. 20, 2012). The court held the petitioners could not demonstrate they would be injured from regulatory requirements that would actually reduce their regulatory burden. Moreover, the petitioners could not show redressability, since a favorable ruling would presumably vacate the Tailoring Rule and subject petitioners to the PSD program at much lower emissions thresholds. The court also rejected the petitioners' argument that this outcome would ultimately redress their injuries by motivating Congress to pass some sort of legislative exemption from the PSD program. ("We have serious doubts as to whether, for standing purposes, it is ever "likely" that Congress will enact legislation at all."). The petitioners sought certiorari in March 2013.

———————

3. *What is BACT for Greenhouse Gas Emissions?*

Applying the PSD program to greenhouse gases also raises questions about the best available control technology (BACT) for greenhouse gas emissions. Before EPA had even issued the Tailoring Rule, environmental organizations had challenged permits that failed to establish BACT-based limitations for greenhouse gas emissions. In particular, the groups argued that EPA could not allow construction of new coal-fired power plants that would use older technology without at least considering the availability of Integrated Gasification Combined-Cycle (IGCC) technology, which burns coal much more efficiently and thus emits fewer pollutants. In response, EPA argued that any consideration of IGCC technology would go beyond the scope of the BACT analysis. In essence, EPA took the position that the Clean Air Act did not allow EPA to order a facility to design a different type of coal combustion plant, but instead only allowed the agency to consider technologies that would either make the proposed coal plant more efficient or else capture pollutants once the pollutants entered the smoke stacks. After EPA issued the Tailoring Rule, it changed its approach to BACT analyses for greenhouse gases. The following materials excerpt a part of EPA's permitting manual, which the agency drafted to help permit writers understand how to implement the PSD program for greenhouse gases.

ENVIRONMENTAL PROTECTION AGENCY, PSD AND TITLE V PERMITTING GUIDANCE FOR GREENHOUSE GASES

(Nov. 2010)

III. BACT Analysis

Under the CAA and applicable regulations, a PSD permit must contain emissions limitations based on application of BACT for each regulated NSR pollutant. A determination of BACT for GHGs should be conducted in the same manner as it is done for any other PSD regulated pollutant.

* * * CAA § 169(3) defines BACT as:

> an emissions limitation (including a visible emission standard) based on the

> maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant. . . .

Each new source or modified emission unit subject to PSD is required to undergo a BACT review.

The CAA and corresponding implementing regulations require that a permitting authority conduct a BACT analysis on a case-by-case basis, and the permitting authority must evaluate the amount of emissions reductions that each available emissions-reducing technology or technique would achieve, as well as the energy, environmental, economic and other costs associated with each technology or technique. Based on this assessment, the permitting authority must establish a numeric emissions limitation that reflects the maximum degree of reduction achievable for each pollutant subject to BACT through the application of the selected technology or technique. However, if the permitting authority determines that technical or economic limitations on the application of a measurement methodology would make a numerical emissions standard infeasible for one or more pollutants, it may establish design, equipment, work practices or operational standards to satisfy the BACT requirement.

Top-Down BACT Process

EPA recommends that permitting authorities continue to use the Agency's five-step "top-down" BACT process to determine BACT for GHGs. In brief, the top-down process calls for all available control technologies for a given pollutant to be identified and ranked in descending order of control effectiveness. The permit applicant should first examine the highest-ranked ("top") option. The top-ranked options should be established as BACT unless the permit applicant demonstrates to the satisfaction of the permitting authority that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the top-ranked technology is not "achievable" in that case. If the most effective control strategy is eliminated in this fashion, then the next most effective alternative should be evaluated, and so on, until an option is selected as BACT.

EPA has broken down this analytical process into the following five steps, which are each discussed in detail later in this section.

Step 1: Identify all available control technologies.
Step 2: Eliminate technically infeasible options.
Step 3: Rank remaining control technologies.
Step 4: Evaluate most effective controls and document results.
Step 5: Select the BACT.

To illustrate how the analysis proceeds through these steps, assume at Step 1 that the permit applicant and permitting authority identify four control strategies that may be applicable to the particular source under review. At the second step of the process, assume that one of these four options is demonstrated to be technically infeasible for the source and is eliminated from further consideration. The remaining three pollution control options should then be ranked from the most to the least effective at the third step of the process. In the fourth step, the permit applicant and permitting authority should begin by evaluating the energy, environmental, and economic impacts of the top-ranked option. If these considerations do not justify eliminating the top-ranked option, it should be selected as BACT at the fifth step. However, if the energy, environmental, or economic impacts of the top-ranked option demonstrate that this option is not achievable, then the evaluation remains in Step 4 of the process and continues with an examination of the energy, environmental, and economic impacts of the second-ranked option. This Step 4 assessment should continue until an achievable option is identified for each source. The highest-ranked option that cannot be eliminated is selected as BACT at Step 5, which includes the development of an emissions limitation that is achievable by the particular source using the selected control strategy. Thus, the inclusion and evaluation of an option as part of a top-down BACT analysis for a particular source does not necessarily mean that option will ultimately be required as BACT for that source. * * *

This guidance (including the appendices) provides some preliminary EPA views on some key issues that may arise in a BACT analysis for GHGs. It is important to recognize that this document does not provide any final determination of BACT for a particular source, since such determinations can only be made by individual permitting authorities on a case-by-case basis after consideration of the record in each case. * * *

Relationship of BACT and New Source Performance Standards (NSPS)

The CAA specifies that BACT cannot be less stringent than any applicable standard of performance under the New Source Performance Standards (NSPS). As of the date of this guidance, EPA has not promulgated any NSPS that contain emissions limits for GHGs. EPA has developed this permitting guidance and associated technical "white papers" to support initial BACT determinations for GHGs that will need to be made without the benefit of having an NSPS and supporting technical documents to inform the evaluation of the performance of available control systems and techniques.

To the extent EPA completes an NSPS for a relevant source category, BACT determinations that follow will need to consider the levels of the GHG standards and the supporting rationale for the NSPS. The process of developing NSPS and considering public input on proposed standards will advance the technical record on GHG control strategies and may reflect advances in control technology or reductions in the costs or other impacts of using particular control strategies. Thus, the guidance in this document should be viewed taking into consideration the potential development of an NSPS for a particular source category. In addition, the fact that a NSPS for a source category does not require a more stringent level of control does not preclude its consideration in a top-down BACT analysis.

Importance of Energy Efficiency

As discussed in greater detail below, EPA believes that it is important in BACT reviews for permitting authorities to consider options that improve the overall energy efficiency of the source or modification – through technologies, processes and practices at the emitting unit. In general, a more energy efficient technology burns less fuel than a less energy efficient technology on a per unit of output basis * * *

B. BACT Step 1 – Identify All Available Control Options

General Concepts

The first step in the top-down BACT process is to identify all "available" control options. Available control options are those air pollution control technologies or techniques (including lower-emitting processes and practices) that have the potential for practical application to the emissions unit and the regulated pollutant under evaluation. To satisfy the statutory requirements of BACT, EPA believes that the applicant must focus on technologies that have been demonstrated to achieve the highest levels of control for the pollutant in question, regardless of the source type in which the demonstration has occurred. * * *

Air pollution control technologies and techniques include the application of alternative production processes, methods, systems, and techniques, including clean fuels or treatment or innovative fuel combustion techniques for control of the affected pollutant. In some circumstances, inherently lower-polluting processes are appropriate for consideration as available control alternatives. The control options should include not only existing controls for the source category in question, but also controls determined through "technology transfer" that are applied to source categories with exhaust streams that are similar to the source category in question. * * *

Technologies that formed the basis for an applicable NSPS (if any) should, in most circumstances, be included in the analysis, as BACT cannot be set at an emission control level that is less stringent than that required by the NSPS. In cases where a NSPS is proposed, the NSPS will not be controlling for BACT purposes since it is not a final action and the proposed standard may change, but the record of the proposed standard (including any significant public comments on EPA's evaluation) should be weighed when considering available control strategies and achievable emission levels for BACT determinations made that are completed before a final standard is set by EPA. However, even though a proposed NSPS is not a controlling floor for BACT, the NSPS is an independent requirement that will apply to an NSPS source that commences construction after an NSPS is proposed and carries with it a strong presumption as to what level of control is achievable. This is not intended to limit available options to only those considered in the development of the NSPS. . . .

EPA has placed potentially applicable control alternatives identified and evaluated in the BACT analysis into the following three categories:

- *Inherently Lower-Emitting Processes/Practices/Designs,*
- *Add-on Controls*, and

- *Combinations of Inherently Lower Emitting Processes/Practices/Designs and Add-on Controls*.

The BACT analysis should consider potentially applicable control techniques from all of the above three categories. Lower-polluting processes (including design considerations) should be considered based on demonstrations made on the basis of manufacturing identical or similar products from identical or similar raw materials or fuels. Add-on controls, on the other hand, should be considered based on the physical and chemical characteristics of the pollutant-bearing emission stream.

As explained later in this guidance, in the course of the BACT analysis, one or more of the available options may be eliminated from consideration because they are demonstrated to be technically infeasible or have unacceptable energy, economic, and environmental impacts on a case- and fact-specific basis. However, such options should still be included in Step 1 of the BACT process, since the purpose of Step 1 of the process is to cast a wide net and identify all control options with potential application to the emissions unit under review that should be subject to scrutiny under later steps of the process.

While Step 1 is intended to capture a broad array of potential options for pollution control, this step of the process is not without limits. EPA has recognized that a Step 1 list of options need not necessarily include inherently lower polluting processes that would fundamentally redefine the nature of the source proposed by the permit applicant. BACT should generally not be applied to regulate the applicant's purpose or objective for the proposed facility.

In assessing whether an option would fundamentally redefine a proposed source, EPA recommends that permitting authorities apply the analytical framework recently articulated by the Environmental Appeals Board. Under this framework, a permitting authority should look first at the administrative record to see how the applicant defined its goal, objectives, purpose or basic design for the proposed facility in its application. The underlying record will be an essential component of a supportable BACT determination that a proposed control technology redefines the source. The permitting authority should then take a "hard look" at the applicant's proposed design in order to discern which design elements are inherent for the applicant's purpose and which design elements may be changed to achieve pollutant emissions reductions without disrupting the applicant's basic business purpose for the proposed facility. In doing so, the permitting authority should keep in mind that BACT, in most cases, should not be applied to regulate the applicant's purpose or objective for the proposed facility. This approach does not preclude a permitting authority from considering options that would change aspects (either minor or significant) of an applicants' proposed facility design in order to achieve pollutant reductions that may or may not be deemed achievable after further evaluation at later steps of the process. EPA does not interpret the CAA to prohibit fundamentally redefining the source and has recognized that permitting authorities have the discretion to conduct a broader BACT analysis if they desire. The "redefining the source" issue is ultimately a question of degree that is within the discretion of the permitting authority. However, any decision to exclude an option on "redefining the source" grounds must be explained and documented in the permit record, especially where such an option has been identified as significant in public comments.

In circumstances where there are varying configurations for a particular type of source, the applicant should include in the application a discussion of the reasons why that particular configuration is necessary to achieve the fundamental business objective for the proposed construction project. The permitting authority should determine the applicant's basic or fundamental business purpose or objective based on the record in each individual case. For example, the permitting authority can consider the intended function of an electric generating facility as a baseload or peaking unit in assessing the fundamental business purpose of a permit applicant. However, a factor that might be considered at later steps of the top-down BACT process, such as whether a process or technology can be applied on a specific type of source (Step 2) or the cost of constructing a source with particular characteristics (Step 4), should not be used as a justification for eliminating an option in Step 1 of the BACT analysis. Thus, cost savings and avoiding the risk of an apparently achievable technology transfer are not appropriately considered to be a part of the applicant's basic design or fundamental business purpose or objective. Since BACT Step 4 also includes consideration of "energy" impacts from the control options under consideration, such impacts should not be used to justify excluding an option in Step 1 of a top-down BACT analysis.

The CAA includes "clean fuels" in the definition of BACT. Thus, clean fuels which would reduce GHG emissions should be considered, but EPA has recognized that the initial list of control options for a BACT analysis does not need to include "clean fuel" options that would fundamentally redefine the source. Such options include those that would require a permit applicant to switch to a primary fuel type (*i.e.*, coal, natural gas, or biomass) other than the type of fuel that an applicant proposes to use for its primary combustion process. For example, when an applicant proposes to construct a coal-fired steam electric generating unit, EPA continues to believe that permitting authorities can show in most cases that the option of using natural gas as a primary fuel would fundamentally redefine a coal-fired electric generating unit. Ultimately, however, a permitting authority retains the discretion to conduct a broader BACT analysis and to consider changes in the primary fuel in Step 1 of the analysis. EPA does not classify the option of using a cleaner form of the same type of fuel that a permit applicant proposes to use as a change in primary fuel, so these types of options should be assessed in a top-down BACT analysis in most cases. For example, a permitting authority may consider that some types of coal can have lower emissions of GHG than other forms of coal, and they may insist that the lower emitting coal be evaluated in the BACT review. Furthermore, when a permit applicant has incorporated a particular fuel into one aspect of the project design (such as startup or auxiliary applications), this suggests that a fuel is "available" to a permit applicant. In such circumstances, greater utilization of a fuel that the applicant is already proposing to use in some aspect of the project design should be listed as an option in Step 1 unless it can be demonstrated that such an option would disrupt the applicant's basic business purpose for the proposed facility.* * *

GHG-Specific Considerations

Permit applicants and permitting authorities should identify all "available" GHG control options that have the potential for practical application to the source under consideration. The application of BACT to GHGs does not affect the discretion of a permitting authority to exclude options that would fundamentally redefine a proposed source. GHG control technologies are likely to vary based on the type of facility, processes involved, and GHGs being addressed. The

discussion below is focused on energy efficiency and carbon capture and storage (CCS) because these control approaches may be applicable to a wide range of facilities that emit large amounts of CO_2. . . .

The application of methods, systems, or techniques to increase energy efficiency is a key GHG-reducing opportunity that falls under the category of "lower-polluting processes/practices." Use of inherently lower-emitting technologies, including energy efficiency measures, represents an opportunity for GHG reductions in these BACT reviews. In some cases, selecting a more energy efficient process or project design is preferred over end-of-stack controls; in other cases, an energy efficient measure can be used effectively in tandem with end-of-stack controls to achieve additional control of criteria pollutants. Applying the most energy efficient technologies at a source should in most cases translate into fewer overall emissions of all air pollutants per unit of energy produced. Selecting technologies, measures and options that are energy efficient translates not only in the reduction of emissions of the particular regulated NSR air pollutant undergoing BACT review, but it also may achieve collateral reductions of emissions of other pollutants, as well as GHGs.

For these reasons, EPA encourages permitting authorities to use the discretion available under the PSD program to include the most energy efficient options in BACT analyses for both GHG and non-GHG regulated NSR pollutants. While energy efficiency can reduce emissions of all combustion-related emissions, it is a particularly important consideration for GHGs since the use of add-on controls to reduce GHG emissions is not as well-advanced as it is for most combustion-derived pollutants. Initially, in many instances energy efficient measures may serve as the foundation for a BACT analysis for GHGs with add-on pollution control technology and other strategies added as they become more accessible. Energy efficient options that should be considered in Step 1 of a BACT analysis for GHGs can be classified in two categories.

The first category of energy efficiency improvement options includes technologies or processes that maximize the efficiency of the individual emissions unit. For example, the processes that may be used in electric generating facilities have varying levels of efficiency, measured in terms of amount of heat input that is used in the process or in terms of per unit of the amount of electricity that is produced. When a permit applicant proposes to construct a facility using a less efficient boiler design, such as a pulverized coal (PC) or circulating fluidized bed (CFB) boiler using subcritical steam pressure, a BACT analysis for this source should include more efficient options such as boilers with supercritical and ultra-supercritical steam pressures. Furthermore, combined cycle combustion turbines, which have higher efficiencies than simple cycle turbines, should be listed as options when an applicant proposes to construct a natural gas-fired facility. In coal-fired permit applications, EPA believes that integrated gasification combined cycle (IGCC) should also be listed for consideration when it is more efficient than the proposed technology.[78] However, these options may be evaluated under the

[78] EPA no longer subscribes to the reasoning used by the Agency in a 2005 letter to justify excluding IGCC from consideration in all cases on redefining the source grounds. Letter from Stephen Page, EPA OAQPS to Paul Plath, E3 Consulting, *Best Available Control Technology Requirements for Proposed Coal-Fired Power Plant Projects* (Dec. 13, 2005) (last paragraph on page 2). The Environmental Appeals Board subsequently rejected the application of this reasoning in an individual permit decision, where the record did not demonstrate that IGCC was inconsistent with the fundamental objectives of the permit applicant or distinguish between prior permit decisions that evaluated

redefining the source framework described above and excluded from consideration at Step 1 of a top-down analysis on a case-by-case basis if it can be shown that application of such a control strategy would disrupt the applicant's basic or fundamental business purpose for the proposed facility. * * *

For the purposes of a BACT analysis for GHGs, EPA classifies CCS as an add-on pollution control technology that is "available" for large CO2-emitting facilities * * *

C. BACT Step 2 – Eliminate Technically Infeasible Options

General Concepts

Under the second step of the top-down BACT analysis, a potentially applicable control technique listed in Step 1 may be eliminated from further consideration if it is not technically feasible for the specific source under review. A demonstration of technical infeasibility should be clearly documented and should show, based on physical, chemical, or engineering principles, that technical difficulties would preclude the successful use of the control option on the emissions unit under review.

EPA considers a technology to be technically feasible if it has been demonstrated in practice or is available and applicable to the source type under review. The term "demonstrated" is focused on the technology being used in the same type of source, such as a similar plant producing the same product. Therefore, EPA considers a technology to be "demonstrated," if it has been installed and operated successfully on the type of source at issue. If application of a technology to the source type under review has not been demonstrated, then questions regarding "availability" and "applicability" should be considered. In the context of a technical feasibility analysis, the terms "availability" and "applicability" relate to the use of technology in a situation that appears similar even if it has not been used in the same industry. Specifically, EPA considers a technology to be "available" where it can be obtained through commercial channels or is otherwise available within the common meaning of the term. EPA considers an available technology to be "applicable" if it can reasonably be installed and operated on the source type under consideration. Where a control technology has been applied on one type of source, this is largely a question of the transferability of the technology to another source type. A control technique should remain under consideration if it has been applied to a pollutant-bearing gas stream with similar chemical and physical characteristics. The control technology would not be applicable if it can be shown that there are significant differences that preclude the successful

---

the technology in more detail. *In re Desert Rock Energy Company*, Slip. Op. at 68-69. Based on this decision, EPA also concluded that a state permit decision following substantially the same reasoning lacked a reasoned basis for excluding further consideration of IGCC. *In the Matter of: American Electric Power Service Corporation,* Order at 8-12. However, EPA continues to interpret the relevant provisions of the CAA, as described in the 2005 letter (pages 1-2), to provide discretion for permitting authorities to exclude options that would fundamentally redefine a proposed source, provided the record includes an appropriate justification in each case *In re Desert Rock Energy Company*, Slip. Op. at 76. Thus, IGCC should not be categorically excluded from a BACT analysis for a coal fired electric generating unit, and this technology should not be excluded on redefining the source grounds at Step 1 of a BACT analysis in any particular case unless the record clearly demonstrates why the permit applicant's basic or fundamental business purpose would be frustrated by application of this process.

operation of the control device. For example, the temperature, pressure, pollutant concentration, or volume of the gas stream to be controlled, may differ so significantly from previous applications that it is uncertain the control device will work in the situation currently undergoing review. * * *

GHG-Specific Considerations

* * * This guidance is being issued at a time when add-on control technologies for certain GHGs or emissions sources may be limited in number and in various stages of development and commercialization. A number of ongoing research, development, and demonstration programs may make CCS technologies more widely applicable in the future. These facts are important to BACT Step 2, wherein technically infeasible control options are eliminated from further consideration. When considering the guidance provided below, permitting authorities should be aware of the changing status of various control options for GHG emissions when determining BACT.

In the early years of GHG control strategies, consideration of commercial guarantees is likely to be involved in the BACT determination process. This type of guarantee may be more relevant for certain GHG controls because, unlike other pollutants with available, proven control technologies, some GHG controls may have a greater uncertainty regarding their expected performance. As noted above, the lack of availability of a commercial guarantee, by itself, is not a sufficient basis to classify a technology as "technologically infeasible" for BACT evaluation purposes, even for GHG control determinations.

As discussed earlier, although CCS is not in widespread use at this time, EPA generally considers CCS to be an "available" add-on pollution control technology for large CO2-emitting facilities and industrial facilities with high-purity CO2 streams. Assuming CCS has been included in Step 1 of the top-down BACT process for such sources, it now must be evaluated for technical feasibility in Step 2. * * *

D. BACT Step 3 – Ranking of Controls

General Concepts

After the list of all available controls is winnowed down to a list of the technically feasible control technologies in Step 2, Step 3 of the top-down BACT process calls for the remaining control technologies to be listed in order of overall control effectiveness for the regulated NSR pollutant under review. The most effective control alternative (*i.e.*, the option that achieves the lowest emissions level) should be listed at the top and the remaining technologies ranked in descending order of control effectiveness. The ranking of control options in Step 3 determines where to start the top-down BACT selection process in Step 4.

In determining and ranking technologies based on control effectiveness, applicants and permitting authorities should include information on each technology's control efficiency (*e.g.*, percent pollutant removed, emissions per unit product), expected emission rate (*e.g.*, tons per year, pounds per hour, pounds per unit of product, pounds per unit of input, parts per million),

and expected emissions reduction (*e.g.*, tons per year). * * *

E. BACT Step 4 – Economic, Energy, and Environmental Impacts

General Concepts

Under Step 4 of the top-down BACT analysis, permitting authorities must consider the economic, energy, and environmental impacts arising from each option remaining under consideration. Accordingly, after all available and technically feasible control options have been ranked in terms of control effectiveness (BACT Step 3), the permitting authority should consider any specific energy, environmental, and economic impacts identified with those technologies to either confirm that the top control alternative is appropriate or determine it to be inappropriate. The "top" control option should be established as BACT unless the applicant demonstrates, and the permitting authority agrees, that the energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not "achievable" in that case. If the most stringent technology is eliminated in this fashion, then the next most stringent alternative is considered, and so on. * * *

The economic impacts component of the analysis should focus on direct economic impacts calculated in terms of cost effectiveness (dollars per ton of pollutant emission reduced). Cost effectiveness should be addressed on both an average basis for each measure and combination of measures, and on an incremental basis comparing the costs and emissions performance level of a control option to the cost and performance of the next most stringent control option. The emphasis should be on the cost of control relative to the amount of pollutant removed, rather than economic parameters that provide an indication of the general affordability of the control alternative relative to the source. To justify elimination of an option on economic grounds, the permit applicant should demonstrate that the costs of pollutant removal for that option are disproportionately high. * * *

F. BACT Step 5 – Selecting BACT

. . . In Step 5 of the BACT determination process, the most effective control option not eliminated in Step 4 should be selected as BACT.

QUESTIONS AND DISCUSSION

1. EPA's new BACT guidance indicates that both IGCC technologies — which produce electricity more efficiently — and carbon capture and sequestration (CCS) may be available technologies under its top-down analysis. Does this mean that every new coal plant will need to use IGCC *and* include CCS capacity? Thus far, no commercial application of CCS technology has succeeded on a large scale in the United States. How can EPA reasonably suggest that CCS is available?

2. Many opponents of coal have promoted the use of natural gas instead. Does EPA's guidance mandate that permitting agencies consider natural gas as a replacement for coal? If not,

what discretion do agencies have to require substitute fuels? Moreover, what should BACT for natural gas emissions be? While natural gas is a cleaner burning fuel and emits about half the carbon dioxide that coal does during the combustion process, natural gas production and transportation result in significant emissions of methane. Indeed, several studies estimate that the lifecycle emissions of natural gas, when based on its 20-year global warming potential, exceed those of coal. *See e.g.*, Tom M. L. Wigley, *Coal to Gas: The Influence of Methane Leakage*, 108 CLIMATIC CHANGE 601 (2011); Robert W. Howarth, *Methane and the Greenhouse-gas Footprint of Natural Gas from Shale Formations: A Letter*, 106 CLIMATIC CHANGE 679 (2011). How should the BACT analysis factor in these lifecycle impacts, if at all?

———————

B. Regulation of New and Modified Sources under the NSPS Program and Regulation of Existing Sources

As noted above, environmental organizations and several states petitioned EPA in the early 2000s to establish New Source Performance Standards (NSPS) for categories of sources that emit greenhouse gases. After *Massachusetts*, EPA settled pending litigation regarding its refusal to set NSPS and instead negotiated settlements under which EPA agreed to release NSPS for fossil fuel-fired power plants and oil refineries within specified timeframes. Pursuant to the settlement agreements, EPA was supposed to have issued final regulations setting NSPS for power plants by May 2012 and for refineries by November 2012. EPA and the petitioners ultimately modified the settlement agreements to extend the deadlines into 2013. In April 2013, EPA missed its deadline to issue NSPS for power plants, and it became unclear when EPA would finalize its rule. These materials therefore only briefly explore how EPA might regulate greenhouse gas emissions for these source categories. They also briefly explore existing source regulation, which EPA indicated it would not pursue in its proposed NSPS for power plants.

1. *Regulation of New and Modified Sources under NSPS*

As explained above, the NSPS program requires certain categories and classes of stationary sources to comply with specified "standards of performance," which are emissions standards that "reflect[] the degree of emission limitation achievable through the application of the best system of emission reduction which . . . the Administrator [of the EPA] determines has been adequately demonstrated." CAA § 111(a)(1), 42 U.S.C. § 7411(a)(1). For NSPS to apply to a particular facility, the facility must fall within a category of sources which, in the EPA Administrator's judgment "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare," CAA § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1). Thus, when EPA sets NSPS for particular source categories, it must first make an endangerment and cause and contribution finding similar to the finding it made for motor vehicles.

Next, EPA must set NSPS that reflect emissions limitations achievable through the use of the "best system of emission reduction which . . . the Administrator [of the EPA] determines has been adequately demonstrated." CAA § 111(a)(1), 42 U.S.C. § 7411(a)(1). When EPA sets this standard — referred to as the best demonstrated adequate technology, or BDAT, standard — it must consider cost, any "nonair quality health and environmental impact," and energy requirements. *Id.* The emissions limitations EPA promulgates through this program typically

limit rates or concentrations of pollutants, rather than the total amount of emissions. In cases where EPA determines it is not feasible to prescribe or enforce a standard of performance, EPA may instead "promulgate a design, equipment, work practice, or operational standard . . . which reflects the best technological system of continuous emission reduction." CAA § 111(h)(1), 42 U.S.C. § 7411(h)(1). Standards of performance are often considered somewhat weak because of the degree to which cost concerns affect their establishment and because many are quite old. Nonetheless, they often serve as the minimum technology requirement applicable to many stationary sources.

In its proposed NSPS for power plants, EPA indicated that the standards of performance would require facilities to meet an output-based emissions limit of 1,000 pounds of CO_2 per megawatt-hour (lb CO_2/MWh gross). If adopted, this would effectively limit the construction of new fossil fuel power plants to either natural gas plants or coal plants that use carbon capture and sequestration technology. *See* EPA Fact Sheet: Proposed Carbon Pollution Standard for New Power Plants 2 (2012).

The most interesting aspect of its proposal was that EPA proposal stated the NSPS would apply only to new, rather than new and modified, power plants. If finalized, this would seem to violate the Clean Air Act. Specifically, Section 111(e) states: "After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source." 42 U.S.C. § 7411(e). While this language would seem to constrain NSPS to new sources only, the definitions define "new source" as "any stationary source, the *construction or modification* of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance . . . applicable to such source." CAA § 111(a)(2), 42 U.S.C. § 7411(a)(2). By defining new source to include any source that undergoes a modification, it appears that Congress intended EPA to regulate both new and modified sources. The question has never been litigated, however, and it may be possible that EPA could justify its establishment of NSPS for new sources only.

———————

2. *Regulation of Existing Sources under NSPS*

Notwithstanding the term New Source Performance Standards, section 111 of the Clean Air Act establishes regulatory requirements for existing sources as well. Unlike the rest of the NSPS program — under which EPA establishes national emissions standards for categories of sources, which states may then implement — section 111(d) gives states the primary authority for developing the standards. CAA § 111(d), 42 U.S.C. § 7411(d). The CAA directs EPA to "prescribe regulations which shall establish a procedure similar to that provided by section [110, regarding SIP development] under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any [designated] air pollutant . . . and (B) provides for the implementation and enforcement of such standards of performance." CAA § 111(d)(1), 42 U.S.C. § 7411(d)(1). If a state fails to submit a satisfactory plan, then EPA has authority to promulgate a FIP establishing standards of performance or implementation requirements for existing sources covered under § 111(d). *Id.* at § 111(d)(2), 42

U.S.C. § 7411(d)(2). If a state fails to enforce or implement the provisions of an approved plan, EPA may itself bring enforcement actions. *Id.* at § 113(a), 42 U.S.C. § 7413(a).

Various organizations have petitioned EPA to establish standards of performance for carbon dioxide emissions from existing fossil-fueled power plants. These materials first discuss the regulations applicable to the existing source program and then explore how EPA might establish standards of performance for carbon dioxide or other greenhouse gases.

a. *Which Existing Sources and Pollutants are Regulated?*

NSPS regulate only some existing sources and pollutants. First, existing sources are subject to NSPS only if they fall within a source category for which EPA has established NSPS for new and modified sources. Second, existing source NSPS may not regulate criteria pollutants or HAPs (although there are some exceptions for HAPs). Existing source NSPS would be appropriate for greenhouse gases, then, because they are neither HAPs nor criteria pollutants.

———————

b. *What Would Existing Source Emissions Standards Require?*

The "emissions standards" under § 111(d) are more flexible than the standards of performance applicable to new and modified sources. Notably, the regulations define "emission standard" as "a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions." 40 C.F.R. § 60.21(f). An allowance system, in turn, is a

> control program under which the owner or operator of each designated facility is required to hold an authorization for each specified unit of a designated pollutant emitted from that facility during a specified period and which limits the total amount of such authorizations available to be held for a designated pollutant for a specified period and allows the transfer of such authorizations not used to meet the authorization-holding requirement.

Id. at § 60.21(k). In other words, emissions standards include emissions trading programs in which designated facilities may receive pollution allowances and trade the right to emit pollution.

The following article proposes ways in which existing source standards of performance could apply to various industries. As you read it, consider whether you think EPA could use NSPS in the way the author recommends. Note also the somewhat moderate emissions reductions NSPS regulation would achieve. Do you think the focus on existing source standards makes sense?

———————

TERESA B. CLEMMER, STAVING OFF THE CLIMATE CRISIS: THE SECTORAL APPROACH UNDER THE CLEAN AIR ACT

40 ENVTL. L. 1125 (2010)

B. The NSPS Program

Stationary sources, including power plants, are responsible for 3747 teragrams of greenhouse gas emissions annually, or roughly 54% of all United States emissions. EPA regulations for stationary sources under the NSPS program therefore have the potential to address more than half of all United States greenhouse gas emissions.

Under section 111 of the Clean Air Act, EPA is required to issue technology-based performance standards for designated categories of industries that emit significant quantities of air pollution. As a first step, EPA must create a list of categories of stationary sources that, in EPA's judgment, "cause[], or contribute[] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." * * *

After EPA makes such a finding for one or more stationary source categories . . . EPA must issue "standards of performance" for new and modified sources within each listed category. EPA is also required to review and, if appropriate, revise each standard at least once every eight years. The eight-year review and revision process is meant to balance industry's need for regulatory certainty over an extended period of time with society's need to ensure that pollution controls keep pace with new scientific and technological developments. * * *

The performance standard at the heart of the NSPS program is known as the best demonstrated technology (BDT) standard. While EPA is expected to look at what level of emissions these "demonstrated" technologies can achieve, the final standard is framed as an emission limitation and does not actually require the use of any particular technology. This is an important feature because it gives facilities the flexibility to adapt to changing circumstances and look for cost-effective alternatives. EPA also has the discretion to craft a "design, equipment, work practice, or operational standard, or combination thereof" where it is "not feasible" to apply a simple emission limitation. * * *

Finally, despite the program's emphasis on new and modified sources, the statute also requires EPA to help develop standards for existing sources through coordination with states. Using EPA guidance, states must adopt and implement performance standards for existing sources that would otherwise be regulated by EPA if they were a new or modified source. An important caveat, however, is that these controls on existing sources are only required for non-criteria air pollutants. This means greenhouse gas emissions from the fleet of existing sources within the various NSPS categories can only be regulated under the NSPS program so long as they are not designated as criteria air pollutants. If greenhouse gases were to be listed as criteria air pollutants, this valuable regulatory tool would no longer be available.

We will now turn to what the NSPS program could actually achieve in practice, particularly in the near term. The following discussion describes several of the industrial categories that are responsible for the greatest share of greenhouse gas emissions (i.e., power plants, petroleum refineries, and concentrated animal feeding operations (CAFOs)) and hence are important to address in at least a preliminary fashion immediately. In addition, a few examples with smaller shares are included here (i.e., landfills, coal mines, cement plants, and nitric acid plants) because the technological solutions are so straightforward and cost-effective that these should likewise be

addressed right away. Early reductions achieved by controlling these low-hanging fruit emissions will help buy us the time we need to make the transition to alternative energy sources and adjust our energy consumption patterns.

1. Electricity Generation

Electricity generation is the proverbial elephant in the room. In 2008, for example, the power sector was responsible for 2404 teragrams of greenhouse gas emissions, which accounted for 64% of all industrial emissions and 34% of overall United States emissions. The NSPS standard for this category thus has the potential to control emissions from the sector that bears the lion's share of responsibility for climate change. In 2008, electricity generation alone produced more greenhouse gas emissions than the entire transportation and agriculture sectors combined.

As noted above, under the flexible BDT standard, EPA has the authority to adopt "design, equipment, work practice, or operational standard[s,]" rather than a specific emission limit. This approach could work well for existing power plants. These emissions could be addressed through an NSPS 111(d) guidance document directing states to incorporate energy efficiency measures and a variety of other operational and technological improvements into their implementation plans. In a recent report prepared for EPA, an expert consulting firm has identified specific plant systems and equipment where cost-effective efficiency improvements can be realized for existing coal-fired power plants, including 1) boiler modifications, 2) optimization of plant controls using more accurate neural network technology, 3) use of intelligent sootblowers, 4) improved air heater and duct leakage control, 5) lowering air heater outlet temperature by controlling acid dew point, 6) turbine upgrades, 7) effective operation of the steam surface condenser, 8) upgrading or rebuilding of boiler feed pumps, 9) upgrading or replacing the induced-draft fan, or adding a booster fan, in the flue gas system, 10) installing a variable-frequency drive for use with induced-draft fans in the flue gas system, and 11) modifications to air pollution control and water treatment systems. Measures like these can be implemented in the near future at existing power plants, and experts have concluded that, by doing so, it would be possible to reduce greenhouse gas emissions by approximately 120 teragrams, or 5%, annually.
* * *

2. Petroleum Refineries

Petroleum refineries are another key category as they are responsible for 514 teragrams of greenhouse gas emissions annually, or 7.3% of overall United States emissions. Petroleum refineries are already regulated as an NSPS stationary source category.

Work practice or operational standards would likely be appropriate for existing facilities in this context as well. The United States Department of Energy has found that efficiency and other operational measures at petroleum refineries using readily available technologies and processes could result in energy savings totaling 12% of each plant's total energy consumption, i.e., a reduction of roughly sixty teragrams of greenhouse gas emissions. Some examples of efficiency-enhancing measures appropriate for refineries include 1) improving the heat integration between atmospheric and vacuum towers, 2) fouling mitigation, 3) ultra-low emission process heaters with advanced fire heater design, 4) aggressive combustion/burner tuning and process

optimization programs for existing process heaters, 5) reduced reliance on flaring, 6) electricity cogeneration using excess fuel gas, and 7) carbon capture and sequestration in conjunction with steam methane reforming or gasification. Since energy efficiency measures by definition reduce the need for energy, the cost of these measures will be offset to a large extent by fuel savings, as we have seen with the rule for light-duty vehicles.

3. Concentrated Animal Feeding Operations

Concentrated animal feeding operations (CAFOs) emit high quantities of methane and nitrous oxide through the enteric fermentation of ruminant farm animals, as well as related manure treatment, storage, and disposal practices. Both methane and nitrous oxide are potent greenhouse gases, with global warming potentials 21 and 310 times that of carbon dioxide, respectively. The agricultural sector as a whole is responsible for approximately 428 teragrams of greenhouse gas emissions, or 6% of overall United States emissions, each year. Enteric fermentation and manure management are responsible for nearly half of these emissions, 203 teragrams annually, and the vast majority of these are generated through the operation of CAFOs. Although these facilities are not currently listed as an NSPS stationary source category, their high emissions and increasingly mechanized and confined operations may lead them to be designated as such in the future, as urged by numerous citizen groups in a recent petition to EPA.

As discussed above, NSPS standards can be based on "design, equipment, work practice or operational" measures, rather than traditional "end-of-pipe" controls. Many aspects of CAFO operations can be adjusted to minimize greenhouse gas emissions, including the anaerobic nature of manure storage conditions, the animals' diet, the acidity and temperature of the manure during storage, and the length of time the manure is kept in storage. One study conducted by the United States Department of Agriculture in 2006 at major pig confinement facilities, for example, showed that switching from a traditional anaerobic lagoon/spray irrigation technique to a dual wastewater treatment and manure composting approach resulted in a 97% reduction in greenhouse gas emissions. If this rate of reduction could be achieved at all CAFOs, it would mean a reduction of approximately 197 teragrams of greenhouse gas emissions annually.

4. Landfills

Landfills offer a golden opportunity for greenhouse gas reductions under the NSPS program because the technological solutions are not just cost-effective, they also generate power and serve as a source of income for facility owners. Landfills are responsible for over 126 teragrams of greenhouse gas emissions annually, primarily in the form of methane. Landfills are already a listed source category under the NSPS program.

Several members of the waste sector have already implemented landfill gas-to-energy projects, and these have been demonstrated to be feasible for both small and large landfills . . . This suggests that an NSPS based on gas-to-energy projects could reduce the vast majority of methane emissions from landfills. Assuming roughly a 90% reduction, or 113 teragrams annually, this would make another significant dent in overall United States industrial emissions.

———————

QUESTIONS AND DISCUSSION

1. Some people have suggested that EPA could establish an emissions trading program under section 111(d). The regulations do seem to create quite a bit of flexibility regarding existing source regulation. But do you think EPA could use them to establish a national cap-and-trade program? Even if it could, would this be a good idea? The following articles explore how this might happen and the limitations of using the CAA as the mechanism for regulation: DALLAS BURTRAW, ET AL., RESOURCES FOR THE FUTURE, PREVAILING ACADEMIC VIEW ON COMPLIANCE FLEXIBILITY UNDER § 111 OF THE CLEAN AIR ACT (2011); NATHAN RICHARDSON, RESOURCES FOR THE FUTURE, PLAYING WITHOUT ACES: OFFSETS AND THE LIMITS OF FLEXIBILITY UNDER CLEAN AIR ACT CLIMATE POLICY (2011).

2. Other commentators dispute whether existing source regulation would achieve any benefits at all. One pervasive critique is that, whatever emissions reductions the regulation might achieve would be offset by the global nature of climate change. Essentially, climate change results from greenhouse gas emissions from anywhere in the world, and localized reductions will have little to no impact on global emissions or global consequences of climate change. *See, e.g.*, Jonathan H. Adler, *Heat Expands all Things: The Proliferation of Greenhouse Gas Regulation under the Obama Administration*, 34 HARV. J. L. & PUB. POL'Y 421 (2011).

---

3. Using SIPs to Compel Greenhouse Gas Regulation of Existing Sources

A final tool for compelling existing source regulation may exist within specific state SIPs. The citizen suit provision of the Clean Air act authorizes suits against "any person" allegedly in a violation (ongoing or past, if repeated) of "an emission standard or limitation." CAA § 304(a)(1), 42 U.S.C. § 7604(a)(1). Section 304(f)(4) defines "emission standard or limitation" for the purpose of citizen suits to include "any other standard, limitation, or schedule established . . . under any applicable State implementation plan approved by the Administrator." 42 U.S.C. § 7604(f)(4). Courts have interpreted the citizen suit to authorize suits against states for failing to implement their approved SIPs. *See* Coalition Against Columbus Ctr. v. City of New York, 967 F.2d 764 (2d Cir. 1992); El Comite para el Bienestar de Earlimart v. Warmerdam, 539 F.3d 1062 (9th Cir. 2008).

Environmental groups successfully sued the state of Washington for failing to comply with its SIP's greenhouse gas limitations. Wash. Envtl. Council v. Sturdevant, 834 F.Supp.2d 1209 (W.D. Wash. 2011). Under Washington's SIP, greenhouse gases are specifically listed as regulated air contaminants (the equivalent of air pollutants under the Clean Air Act). Washington's SIP also requires the state agencies in charge of implementing the Clean Air Act to establish emissions limitations based on "reasonably available control technology" (RACT) for existing sources. The environmental groups argued this mean that the agencies were required to set RACT-based emissions limitations for greenhouse gases, and the court agreed:

> The RACT provision's plain language requires the Agencies to define RACT requirements where emission units are less than RACT. It provides: "Where

> current controls are determined to be less than RACT, the permitting authority *shall* . . . define RACT for each source or source category and issue a rule or regulatory order requiring the installation of RACT." *Id.* (emphasis added). . . . [T]he Agencies must establish a list of sources requiring RACT review, develop a schedule for review, and update the list at least once every five years. In establishing or revising RACT requirements, the Agencies "must address, where practicable, all *air contaminants* deemed to be of concern for that source or source category." In Washington, "air contaminant" includes "particulate matter, vapor, gas, odorous substance or any combination thereof." GHGs fall under this definition and Washington Governor Christine Gregoire's 2009 executive order confirms that, in Washington, "greenhouse gases are air contaminants." In sum, based on its plain language, the RACT provision is not discretionary and requires Agencies to establish RACT standards for GHGs.

Id. at 1213. If the case survives appellate review, other state SIPs may similarly require states to develop emissions standards for existing sources of greenhouse gases. Although states could theoretically revise their SIPs to remove any such requirements, EPA would need to approve the revisions for them to have the force of federal law. Unless and until that occurred, SIP requirements applicable to greenhouse gases could be federally enforceable.

QUESTIONS AND DISCUSSION

1. Distinctions between new, modified and existing sources apply to all pollutants in various parts of the Clean Air Act. The Act's prolific use of "grandfathering" has been criticized for allowing heavily polluting power plants to remain online well past their expected lifespans. In the case of climate change, failure to regulate greenhouse gas emissions from existing sources means that the largest sources of greenhouse gases avoid regulation, while newer, more efficient plants must comply with requirements under NSR and, eventually, NSPS. How do you think the Clean Air Act should regulate existing sources? At what point do the costs of regulation outweigh the benefits of requiring existing sources to reduce their emissions?

2. What do you think of the strategy of suing states for failing to implement their own laws? What are the risks and benefits?

VI. FUTURE CLEAN AIR ACT REGULATION OF GREENHOUSE GASES

It is hard to overstate how much the regulatory landscape has changed since the Supreme Court issued its decision in *Massachusetts* in 2007. The vehicle emissions program provides the most remarkable example of change within this short period, but stationary source regulations also seem likely to change over time as well. While most of EPA's actions to date have occurred under the PSD program, future regulatory actions under the NSPS program will command EPA's attention in the upcoming months, if not years. If EPA finalizes its proposal to limit NSPS to new sources only, this will almost certainly spur litigation and, perhaps, a mandated expansion of

NSPS to modifications. Perhaps more importantly, EPA may need to do more to regulate existing sources under NSPS. Even without EPA action, states may play a bigger role in the Clean Air Act's development and implementation. Those that have SIP provisions similar to Washington's may be forced to establish their own emissions limitations for existing sources. Some states may voluntarily increase their regulation of existing sources within their borders. As this chapter indicates, the Clean Air Act has a number of mechanisms available to regulate new, modified, and even existing sources of greenhouse gases.

Yet uncertainty continues to hang over the Clean Air Act even after *Massachusetts*. In her dissent from the D.C. Circuit's denial of *en banc* review of the *Coalition for Responsible Regulation* decision, Judge Brown made it clear she thought the Supreme Court should reverse its decision in *Massachusetts*:

> Bound as I am by *Massachusetts,* I reluctantly concur with the Panel's determination that EPA may regulate GHGs in tailpipe emissions. But I do not choose to go quietly. Because the most significant regulations of recent memory rest on the shakiest of foundations, Part I of this statement engages *Massachusetts's* interpretive shortcomings in the hope that either Court or Congress will restore order to the CAA.

Coalition of Responsible Regulation, 2012 U.S. App. LEXIS 25997, at *3 (D.C. Cir. Dec. 20, 2012) (Brown, J., dissenting). If the Supreme Court accepts Judge Brown's invitation to reconsider *Massachusetts* or at least agrees to evaluate EPA's implementation of the Act through the various vehicle emissions rules and the Tailoring Rule, Clean Air Act regulation may stall out until the Court issues a decision. If the Supreme Court declines review of *Coalition for Responsible Regulation*, it seems likely that Clean Air Act regulation of greenhouse gases will finally be on some solid footing.