

CHAPTER SIX: CLEAN AIR ACT: STATIONARY SOURCES (Updated September 2018) (Items added or updated in 2018 are in yellow.)

On page 349, under Section B, the last sentence in the first paragraph should read:

In 2006, the PM_{2.5} standard was further lowered from 65 to 35 micro-grams per cubic meter (µg/m³) of air.

Replace Table 6.1 on page 350 with the following:

TABLE 6.1 National Ambient Air Quality Standards (updated 29 September 2017)

Carbon Monoxide	<p><u>Primary</u> (1970) – 35 ppm averaged over 1 hr and 9.0 averaged over 8 hrs; neither to be exceeded more than once per year.</p> <p><u>Secondary</u> – none.</p>
Particulate Matter:	<p>(Note that PM_{xy} below refers to particles equal or less than xy microns in diameter)</p>
PM₁₀	<p><u>Primary</u> (1970) – 150 µg/m³ averaged over 24 hrs, with no more than one expected exceedance per calendar year; also, 50 µg/m³ or less for the expected annual arithmetic mean concentration.</p> <p><u>Secondary</u> – same as primary.</p>
PM_{2.5}	<p><u>Prior Primary</u> (1997) – 65 µg/m³ averaged over 24 hrs; 15 µg/m³ annual maximum</p> <p><u>Revised Primary</u> (2006) – 35 µg/m³ averaged over 24 hrs</p> <p><u>Further Revised Primary</u> (2012) – 12 µg/m³ annual maximum</p>
Ozone	<p><u>Prior Primary</u> (1979) – 235 µg/m³ (0.12 ppm) averaged over 1 hr, no more than one expected exceedance per calendar year (multiple violations in a day count as one violation). Revoked June 2005. Codified August 2005.</p> <p><u>Prior Secondary</u> – same as primary.</p> <p><u>Revised Primary and Secondary</u> (1997/2008) – Changed from 0.08 ppm (1997) to 0.075 ppm (2008) averaged over 8 hrs. Secondary standard set aside in 2013.</p> <p><u>Further revised Primary and Secondary standards</u> were set in 2015: 0.070 ppm averaged over 8hrs.</p>
Nitrogen Dioxide	<p><u>Primary</u> (1970) – 100 µg/m³ (0.053ppm) as an annual arithmetic mean concentration</p> <p><u>Secondary</u> – same as primary.</p>
Sulfur Oxides	<p><u>Prior Primary</u> (1970) – 365 µg/m³ (0.14 ppm) averaged over 24 hrs, not to be exceeded more than once per year; 80 µg/m³ (0.03ppm) annual arithmetic</p>

	<p>mean.</p> <p><u>Secondary</u> – 1300 µg/m³ (0.50 ppm) averaged over a 3-hr period, not to be exceeded more than once per year.</p> <p><u>Revised Primary</u> (2010) – hourly standard of 0.075 ppm (75 ppb); prior daily and annual standards revoked.</p>
Lead	<p><u>Primary</u> (1977): 1.5 µg/m³ arithmetic average over a calendar quarter.</p> <p><u>Secondary</u>: same as primary.</p> <p><u>Revised Primary and Secondary</u> (2008): 0.15 µg/m³ arithmetic average over a calendar quarter.</p>

Add to Note 3 on page 351 and Note 8 on p 395:

In 2008, EPA tightened the 8-hour national ambient air quality standard for ozone to 0.075 ppm. 73 *Fed. Reg.* 16,436 (March 27, 2008). Many public health advocates argued that the 2008 standard was not sufficiently protective of public health. A host of states and many environmental and public health groups challenged the rule as not being sufficiently protective, while the State of Mississippi and many industry groups challenged the rule as being overly stringent. In a consolidated opinion addressing all the petitions, the D.C. Circuit upheld the primary ozone standard, finding EPA’s reasoning to have been “rational” in its application of the act’s requirements to the scientific data, and noting that deference is due to the agency’s determination of an “adequate” margin of safety, especially where the scientific data regarding the effects of low dose exposure were uncertain. However, the court set aside the secondary standard for ozone, finding that EPA had not adequately justified its decision to make the secondary standard “identical in every way to the revised primary standard.” See *Mississippi v. EPA*, 723 F.3d. 246 (D.C. Cir. 2013). The Supreme Court declined to review the appellate decision. Responding to the statutory requirement to review standards for the criteria pollutants every five years, EPA again tightened the standard, to 0.070 ppm, in 2015, bowing to industry and states’ objections to a still stricter and economically-burdensome standard and rejecting the recommendation of the Clean Air Scientific Advisory Committee (CASAC) and other science/medical groups that the standard be lowered to 0.060 ppm to provide adequate margins of safety and to protect vulnerable populations. EPA also exempted certain PSD permit applications from demonstrating compliance with the new standard. See the later discussion of EPA’s program on the prevention of significant deterioration (PSD). In 2018, EPA announced that it would keep the 2015 standards, but indicated that it will focus on the role that background concentrations play in meeting the federal requirements during its next five-year review of the standards, which is required by the CAA to occur in 2020. If the agency were to discount natural background levels of ozone in setting the standards, this likely would reduce the restrictions on the emission of ozone precursors such as VOCs. Public health groups argue that such an approach would be illegal because it conflicts with the language of the Clean Air Act. See Amena Saiyid, “EPA Prepares for Next Ozone Battle While Keeping Obama Standards,” *Env. Rptr.*, August 2, 2018.

Add Note 4 to page 351:

4. In response to the statutory directive to review the technical basis for primary ambient air quality standards every five years, EPA released a report concluding that sulfur dioxide exposures between 0.2 ppm and 0.3 ppm for as little as 10 minutes can negatively affect the respiratory system of asthmatics and those with allergies. [U.S. EPA (2008) *Integrated Science Assessment for Sulfur Oxides – Health Criteria*, EPA-600/R-08/047F, Washington, D.C.] In June 2010, the prior standard of 0.14 ppm (averaged over a 24-hour period), as well as the annual standard, were replaced by an hourly standard of 0.075 ppm.

Add to Note 4 to page 368:

In response to this order, in 2008 EPA issued a revised lead standard setting the permissible primary and secondary ambient lead level at 0.15 $\mu\text{g}/\text{m}^3$, averaged over a calendar quarter. 73 *Fed. Reg.* 66,964 (Nov. 12, 2008). The D.C. Circuit Court of Appeals upheld the standard against a challenge based on the adequacy of the underlying science offered in support of the standard. See *Coalition of Battery Recyclers Assn. v. EPA*, 604 F.3d 613 (D.C. Cir. 2010).

While EPA has maintained that the current lead standard provides protection for at-risk populations, including children, from effects on the nervous system, the federal Children's Health Protection Advisory Committee disagrees. The committee believes that the current health-based standard of 0.15 $\mu\text{g Pb}/\text{m}^3$ is insufficient to prevent neurodevelopmental damage and the effects of low birth weight in children associated with exposure to lead (46 ER 141). The committee instead recommends the standard of 0.02 $\mu\text{g Pb}/\text{m}^3$ based on recent studies which have found: (1) blood levels as low as 0.1 $\mu\text{g Pb}/\text{dl}$ of blood could be associated with a loss of IQ, (2) neurotoxicity of lead increases in the presence of manganese and other metals, (3) there is a correlation with maternal blood lead levels and decreased birth weight (46 ER 141). Note that the first revision of the lead standard was a ten-fold reduction and the current recommended further reduction involves almost another ten-fold reduction. New science seriously moves the goalposts for protection. In 2014, however, EPA chose to retain the lead standard at 0.15 $\mu\text{g}/\text{m}^3$ despite the new health concerns.

Add to Note 11 to page 369:

For example, the opinion notes that Congress “specifically directed the Administrator to allow an adequate margin of safety in setting primary air quality standards in order to provide some protection against effects that research has not yet uncovered.” This interpretation is the strongest expression of the reach of the precautionary principle found in the EPA air cases.

Replace Note 7 on page 395 with the following:

7. Ultimately, EPA issued a final rule lowering the 24-hour standard for fine particulate matter (PM_{2.5}) to 35 µg/m³, left the annual primary and secondary standard for PM_{2.5} intact at 15 µg/m³, and retained the 24-hour PM₁₀ standard of 150 µg/m³. Certain exemptions were also provided for rural areas, and for agricultural and mining facilities. See 71 *Fed. Reg.* 2,620 (January 17, 2006). The D.C. Circuit Court of Appeals subsequently remanded the 15 µg/m³ annual primary PM_{2.5} standard to EPA, finding that the agency had not adequately demonstrated that the standard would sufficiently protect public health. The court also remanded the secondary standard for PM_{2.5}, finding that EPA's decision to set the secondary standard at the same level as the primary standard was arbitrary and capricious. See *American Farm Bureau Federation v. EPA*, 559 F.3d 512 (D.C. Cir. 2009). In 2012, EPA revised the annual standard for PM_{2.5} by lowering the limit to 12 µg/m³, and the D.C. Circuit subsequently upheld the new standard. See *National Association of Manufacturers v. EPA*, 750 F.3d 921 (D.C. Cir. 2014). (The 24-hour fine particulate standard of 35 µg/m³ was retained.) In 2010, EPA officially notified 29 states and territories that they have failed to meet Clean Air Act deadlines for submitting revised State Implementation Plans (known as "SIPs," discussed in the next section of this chapter), to meet the 24-hour PM₁₀ standard of 150 µg/m³.

Add Note 10 to page 396:

10. Based on data from 2011-2013, the American Lung Association found that despite air quality improvements over time, 138.5 million people in the US live in areas with unhealthy levels of ozone or particulate matter. The report found that many areas in the western U.S. had increased instances of short-term particulate pollution, due to drought and wildfires (46 ER 1317).

Add new Notes on page 402:

2. Addressing an issue that has been increasingly in the public eye, EPA issued New Source Performance Standards in 2012 covering air emissions from some aspects of what is commonly known as the natural gas "fracking" process – operations designed to extract underground quantities of natural gas through horizontal drilling coupled with multi-stage hydraulic fracturing. See 77 *Fed. Reg.* 49,490 (Aug. 16, 2012). The rule covers any gas well that is "an onshore well drilled principally for production of natural gas." For fractured and refractured gas wells, the rule generally requires owners/operators to use "reduced emissions completions," also known as "RECs" or "green completions," to reduce VOC emissions from well completions. "To achieve these VOC reductions, owners and/or operators may use RECs or completion combustion devices, such as flaring, until January 1, 2015; as of January 1, 2015, owners and/or operators must use RECs and a completion combustion device." *Id.* at 49,492. The rule does not require RECs where their use is deemed not "feasible" under criteria specified in the rule.

3. As scientific studies are underway to understand and quantify methane emissions from fracking, industry is already beginning to work on containing methane (getting "ahead of the

game”) (45 ER 3020). Thirty percent of methane emissions in the U.S. come from the production, transmission, and distribution of oil and natural gas (46 ER 2912).

4. A key component of the 2012 rules is a requirement to capture emissions from hydraulically fractured and refractured natural gas wells. The rationale for these restrictions is to help combat climate change, reduce air pollution that harms public health, and provide greater certainty about Clean Air Act permitting requirements for the oil and natural gas industry. The rules also require operators to find and repair leaks and capture natural gas from the completion of fracking wells. In July 2107, an appellate court invalidated EPA’s attempt to delay the standard for 90 days, heralding future delays unlikely (48 ER 1229 7/14/2017). As of September 2018, however, EPA reportedly was preparing to issue a final rule largely repealing restrictions on the intentional release (“flaring”) of methane from oil and gas wells and was also set to propose rescinding most of the requirement that companies monitor for (and, where necessary, repair) methane leaks at such wells. See Coral Davenport, “White House Set to Weaken Rules Curbing Methane,” *New York Times*, Sep. 11, 2018, p. 1.

Add to Note 2 on pages 404-405:

The D.C. Circuit vacated the Clean Air Interstate Rule in 2008 and subsequently remanded it to EPA so that it could be reconsidered by the Obama administration [*North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir., 2008)]. In 2010, EPA proposed a regulation that would replace the Clean Air Interstate Rule with a program that would establish state-by-state emissions budgets for nitrogen oxides and sulfur dioxide and allow only limited interstate emissions trading to help downwind states meet the NAAQS for ozone and particulate matter. See 75 *Fed. Reg.* 45,210 (Aug. 2, 2010). The final rule, known as the Cross-State Air Pollution Rule, was promulgated a year later. See 76 *Fed. Reg.* 48,208 (Aug. 8, 2011). Once again, however, the D.C. Circuit invalidated the rule, holding that the rule’s requirement that some upwind states be required to reduce emissions by more than their own significant contributions to a downwind state’s nonattainment exceeded EPA’s authority under the Clean Air Act (Section 110(a)(2)(D)(i)(I)). See *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7 (D.C. Cir. 2012). Two years later the Supreme Court reversed, upholding the rule, and noting that EPA’s method of allocation among the states represented a “permissible construction of the statute” in accordance with the *Chevron* doctrine. See *EPA v. EME Homer City Generation, L.P.*, 134 S.Ct. 1584 (2014).

Add a Note 4 on page 405:

In September 2017, a federal district court ordered EPA to issue plans for five states to reduce soot [particulates] within three months 48 ER 1493 9/22/2017.

Add new paragraphs and set of Notes at the bottom of page 414:

In 2009, EPA made a formal finding (discussed in the Chapter 7 updates) that greenhouse gas emissions from motor vehicles pose an endangerment to public health and welfare. EPA then proceeded to set tailpipe GHG emission standards for cars and light duty trucks under the act’s

mobile source provisions (see Chapter 7 updates). The endangerment finding also triggered a requirement that GHG emissions from newly constructed or modified “major emitting facilities” be subject to BACT regulation under the PSD requirements. See Section 165(a)(4) of the CAA, 42 U.S.C. § 7475(a)(4). Depending on the type of facility, a “major emitting source” is one that emits 100 tons per year (tpy) (for certain listed source categories) or 250 tpy of any air pollutant. See Section 169(1). According to agency estimates, applying these thresholds to GHG emissions would have subjected “more than 81,000” facilities to PSD requirements, “an increase of almost 300-fold” over then-current numbers [75 *Fed. Reg.* 31,514, 31,554 (June 3, 2010)]. Moreover, EPA concluded that millions of smaller GHG-emitting facilities would be subject to CAA regulation under the Title V operating permit program (discussed later in this chapter), which imposes a 100 tpy threshold. See Section 502(a), 42 U.S.C. § 7661a(a), and Section 501(2), 42 U.S.C. § 7661(2) (defining “major source”).

Thus, in June 2010 EPA promulgated the “Greenhouse Gas Tailoring Rule,” 75 *Fed. Reg.* 31,514, which takes a phased approach and raises the threshold that triggers the applicability of the PSD and Title V programs to GHG emissions. For the first half of 2011, the rule applied PSD requirements to GHG emissions only for large sources—such as power plants and refineries—already subject to PSD requirements for other pollutants. Starting in July 2011, PSD requirements for GHG emissions were extended to new sources whose GHG emissions are greater than 100,000 tpy, and to modified sources emitting more than 75,000 tpy. All of these sources will be required to meet BACT limits for GHG emissions and will be subject to the Title V permitting program for GHG emissions. EPA estimates that this will extend PSD requirements to approximately 900 additional sources and will “account for approximately 67 percent of total national stationary source GHG emissions.” *Id.* at 31,571. The agency also pledges in the rule that “in no event will EPA apply PSD or title V to sources below the 50,000 tpy CO₂ levels prior to 2016.” *Id.*

In literally dozens of petitions for review, a broad coalition of industry groups and states challenged: (a) the endangerment finding; (b) the GHG tailpipe standards; (c) the application of GHG emission standards to stationary sources; and (d) the “tailoring” rule. The petitions were consolidated in the D.C. Circuit, which denied the first three of these challenges, and dismissed the fourth. The court held that EPA had an adequate scientific basis for both the endangerment finding and the resultant tailpipe emission standards, and the court rejected the petitioners’ argument that the agency had been required to consider, as part of its endangerment deliberations, “the benefits of activities that require greenhouse gas emissions, the effectiveness of emissions regulation triggered by the Endangerment Finding, and the potential for societal adaptation to or mitigation of climate change.” *Coalition for Responsible Regulation v. EPA*, 684 F.3d. 102, 117 (D.C. Cir. 2012). To the contrary, the court reasoned,

[s]ection 202(a) of the CAA states in relevant part that EPA's Administrator

shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his

judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.

.... At bottom, [this] requires EPA to answer only two questions: whether particular ‘air pollution’ — here, greenhouse gases — ‘may reasonably be anticipated to endanger public health or welfare,’ and whether motor-vehicle emissions ‘cause, or contribute to’ that endangerment.

These questions require a ‘scientific judgment’ about the potential risks greenhouse gas emissions pose to public health or welfare—not policy discussions.

Id. at 117-18. The court also agreed with EPA that, by the plain language of Section 165(a) of the CAA, the endangerment finding necessitated the application of GHG requirements for stationary sources under the act’s PSD program, and further agreed that Title V requirements were also applicable. Finally, the court held that none of the petitioners had Article III standing to challenge the timing and tailoring rule. Noting that the PSD and Title V requirements became operative under the language of the CAA itself, and that EPA’s tailoring rule both narrowed the scope of the statutory command and (through its “timing” component) delayed its application, the court concluded that the petitioners had not suffered any “injury in fact” as a result of the rule.

Indeed, the Timing and Tailoring Rules actually mitigate Petitioners' purported injuries. Without the Timing Rule, Petitioners may well have been subject to PSD and Title V for greenhouse gases before January 2, 2011. Without the Tailoring Rule, an even greater number of industry and state-owned sources would be subject to PSD and Title V, and state authorities would be overwhelmed with millions of additional permit applications.

Id. at 146.

The Supreme Court granted *certiorari* and, while it held that EPA lacked the authority under the Act to do all that it had done, the Court largely upheld the agency’s authority to regulate greenhouse gases from major stationary sources. See *Utility Air Regulatory Group v. EPA*, 134 S.Ct. 2427 (2014). The Court held that the Clean Air Act does not authorize EPA to require sources to obtain a PSD or Title V permit solely on the basis of the source’s potential to emit greenhouse gases, but also held that the act *does* authorize EPA to impose GHG restrictions on sources that are *already* subject to PSD or Title V permitting requirements because of other emissions, and held further that the agency could use the BACT requirements to regulate GHG emissions from these sources. The Court was especially critical of EPA’s attempt to “tailor” the act’s requirements to fit small sources of GHG, noting in colorful language that the agency had departed from the statutory text:

In the Tailoring Rule, EPA asserts newfound authority to regulate millions of small sources—including retail stores, offices, apartment buildings, shopping centers, schools, and churches—and to decide, on an ongoing basis and without

regard for the thresholds prescribed by Congress, how many of those sources to regulate. *We are not willing to stand on the dock and wave goodbye as EPA embarks on this multiyear voyage of discovery.* We reaffirm the core administrative-law principle that an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate. EPA therefore lacked authority to “tailor” the Act's unambiguous numerical thresholds to accommodate its greenhouse-gas-inclusive interpretation of the permitting triggers. Instead, the need to rewrite clear provisions of the statute should have alerted EPA that it had taken a wrong interpretive turn. Agencies are not free to “adopt ... unreasonable interpretations of statutory provisions and then edit other statutory provisions to mitigate the unreasonableness.”

134 S.Ct at 2446 (2014) (emphasis added).

NOTES

1. As discussed in the Chapter 7 updates, the GHG “pollutant” identified by EPA actually is a combination of six substances. For the purpose of determining whether a facility’s GHG emissions are above the threshold identified in the tailoring rule, they are measured in carbon dioxide-equivalent (“CO₂ e”) units. *75 Fed. Reg.* at 31,519, 31,527. However, the D.C. Circuit vacated EPA’s rule deferring for three years a decision on whether to regulate “biogenic” carbon dioxide – non-fossil-fuel carbon dioxide sources such as ethanol – holding that the agency had not justified its decision to delay action on these sources. See *Center for Biological Diversity v. EPA*, 722 F.3d 401 (D.C. Cir. 2013).
2. Prior to its formal endangerment finding, EPA issued a reporting rule for GHG emissions. Acting under its information-gathering authority in Clean Air Act sections 114 (for stationary sources) and 208 (for mobile sources), the agency imposed the reporting requirements on a variety of stationary sources (including oil and gas facilities, refineries, chemical plants, pulp and paper plants, and iron and steel plants) and on car and truck manufacturers. See *74 Fed. Reg.* 56,260 (Oct. 30, 2009), codified at 40 C.F.R. Subpart 98. EPA has since added four more sectors, including industrial landfills and industrial waste water treatment facilities, to the list of affected stationary sources [*Environmental Reporter* 41:1456 (2010)].
3. In 2016, as a companion piece to a revision of its NSPS for emissions from municipal solid waste landfills, EPA set technology-based limits for methane emissions from existing landfills. See 80 FR 59,276 (Aug. 29, 2016). Under the Trump administration, EPA has indicated its intention to postpone implementation of the methane limits, and eight states, led by California, have sued to compel implementation. Emily Dooley, “California, Other States Sue Over Delayed Landfill Emissions Rule,” *Env. Rptr.*, May 31, 2018. And as of September 2018, EPA reportedly was preparing to issue a final rule largely repealing restrictions on the intentional release (“flaring”) of methane from oil and gas wells and was also set to propose rescinding most of the requirement that companies monitor for (and, where necessary, repair) methane leaks at such wells. See Coral Davenport, “White House Set to Weaken Rules Curbing Methane,” *New York Times*, Sep. 11, 2018, p. 1.

4. In August 2015, the EPA released its long-awaited “Clean Power Plan” to address greenhouse gas emissions from existing energy facilities (RIN 2060-AR33). Issued under Section 111(d) of the Clean Air Act, the regulation sets unique carbon dioxide emissions standards for the power sector in each state, with the standards phasing in between 2022 and 2030. The rule also tasks state regulators with developing their own compliance plans, subject to EPA oversight. The regulation was President Obama’s primary strategy for addressing climate change and it was hoped it would reduce overall CO₂ emissions from the power sector by 32 percent below 2005 levels by 2030. Obama believed the structure of the Clean Power Plan would provide flexibility for states with differing energy mixes.

The Clean Power Plan was almost immediately challenged in the D.C. Circuit by a coalition of industry groups. That court rejected industry’s motion to stay the rule until legal proceedings were at an end, but the Supreme Court reversed that decision and issued the requested stay in February 2016 (perhaps the first time that the Court has stayed an agency rule prior to a ruling on its merits by a lower court). The D.C. Circuit heard oral arguments on the rule in September 2016. That argument suggested – but did not determine – that the court had concerns about the legality of the rule. Section 111(d) calls for state plans which specify “standards of performance” (emission limits) for existing sources, which are to be based on the “best system of emission reduction” that EPA deems to be adequately demonstrated, taking costs into account, and authorizes EPA to develop those plans if the states do not. Opponents to the Clean Power Plan argued that EPA erred by setting the limits itself, rather than leaving them to the states. They also faulted EPA for treating each state’s entire electric grid as a “system” of emission reduction, an approach that led EPA to determine the feasibility of emission reductions based on each state’s capacity to replace fossil fuel-fired power sources with “cleaner” sources such as wind and solar.

Meanwhile, shortly after taking office in January 2017 President Trump indicated his intent to withdraw the Clean Power Plan. The Trump Administration has since repeatedly asked the D.C. Circuit to delay its decision and, over the objections of environmental groups and several states, the court has complied. In October 2017, EPA issued formal notice of its intent to withdraw the Clean Power Plan, in part because the agency now took the position that the rule exceeded EPA’s authority under the Clean Air Act, and it solicited comments on alternative approaches. The revised plan, issued as a proposed rule in 2018, would replace the Clean Power Plan with the “Affordable Clean Energy (ACE) rule,” which would ease restrictions on coal-fired and other fossil fuel-powered plants and shift primary responsibility for standard-setting to the states. *See* 83 *Fed. Reg.* 44,746 (Aug. 31, 2018). Before issuing the proposed rule, EPA removed all language – which had been in prior drafts and had provided the agency’s rationale for regulating GHGs – detailing the potential harmful effects of continued global climate change. However, the proposal does not seek to overturn EPA’s original 2009 “endangerment” finding. Jennifer Dlouhy, “Dire Climate Change Warnings Cut from Trump Power-Plant Proposal,” *Env’t. Rptr.* (Sep. 4, 2018). The proposed rule rejects the Clean Power Plan’s “grid-based” approach, and instead proposes to determine that the “best system of emission reduction” for coal-fired plants re “heat rate improvement measures” – (marginal) efficiency improvements at individual plants. Under this plan, EPA acknowledged, states would be free to allow older, heavily-polluting coal-fired plants to remain in use indefinitely, so long as the plants made efficiency improvements

consistent with their own economic viability. Critics were quick to attack the new ACE rule as inadequate. Sen. Sheldon Whitehouse (D-R.I.) reportedly remarked that the proposal “guts a solid and sensible plan” to fight climate change and seeks to replace it “with a fossil fuel handout.” Jennifer Dlouhy, “Trump Eases Coal-Pollution Curbs in Unwinding More Obama Rules,” *Env. Rptr.* (Aug. 22, 2018); Alex Ebert, “Aging Power Plants Get Lifeline in Clean Energy Rule, EPA Head Says,” *Env. Rptr.* (Aug. 28, 2018).

5. In October 2015, a few months after it promulgated the Clean Power Rule for existing sources, EPA finalized New Source Performance Standards (in the form of emission limits) for GHG emissions from new coal-fired and other fossil-fuel-powered energy plants under Section 111(b) of the Clean Air Act. *See* 80 *Fed. Reg.* 64,509 (October 23, 2015). This rule, like many before it, is intended to encourage technological development in the pollution control industry through regulation of a polluting industry. This rule was challenged by the State of North Dakota, which filed a petition for review in the D.C. Circuit arguing that the specified emission limits are not based on adequately “demonstrated” technology. *North Dakota v. EPA*, Case No. 15-1381 (D.C. Circuit). In 2017, the court suspended the litigation after EPA published notice that it “is reviewing and, if appropriate, will initiate proceedings to suspend, revise or rescind” the rule. 82 *Fed. Reg.* 16,330 (April 4, 2017). The NSPS rule was not stayed, however, and it remains in effect even as the litigation remains in the D.C. Circuit.

In the past, the D.C. Circuit has indicated its understanding that Section 111 specifically aims to stimulate the development of pollution control technology. In *Sierra Club v. Costle*, 657 F.2d 298 (D.C. Cir. 1981), environmental organizations and regulated parties challenged the EPA’s 1979 NSPS for SO₂. The industry petitioners argued that the standard was impermissible because it required emission reductions beyond what was already achievable. The Court rejected this challenge, based on its deference to EPA’s view that the standard adopted by the agency would optimally motivate development of emissions control technology. In the preamble to the rule, EPA had stated that “the Administrator sought a percentage reduction requirement that would provide an opportunity for dry SO₂ technology to be developed ... yet would be sufficiently stringent to assure that the technology was developed to its fullest potential.” 44 *Fed. Reg.* 33,580, 33583 (June 11, 1979). The court concluded that the EPA appropriately considered how the rule might affect the development of technology. It held that the balancing required under Section 111(a) of the CAA “embraces consideration of technological innovation as part of that balance” even though the phrase is not specifically included. 657 F.2d at 346. That provision requires that EPA “tak[e] into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements” in setting an emission performance standard. 42 U.S.C. § 7411(a)(1). The “cost of achieving such reduction” would inevitably depend upon the technology available at the time of implementation, which encompasses the likely advances in technology between the issuance of the rule and when it goes into effect. Importantly, the court elaborated that the EPA should view technological development from a long-term perspective, counseling that as “long as EPA considers innovative technologies in terms of their *prospective* economic, energy, non-air health and environmental impacts the agency is within the scope of its authorized analysis.” *Id.* (emphasis added). Ultimately, the *Costle* court held that an NSPS may be set at a level that would require the deployment of yet-to-be-implemented technology applications:

Recognizing that the Clean Air Act is a technology-forcing statute, we believe EPA does have authority to hold the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard. ... [W]e uphold EPA's judgment that the standard can be set at a level that is higher than has been actually demonstrated over the long term by currently operating lime scrubbers at plants burning high sulfur coal.

657 F.2d 298, 347 (D.C. Cir. 1981). *See also Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973), cert. denied, 423 U.S. 1025 (1975) ("Section 111 looks toward what may fairly be projected for the regulated future, rather than the state of the art at present, since it is addressed to standards for new plants.... The essential question was ... whether the technology would be available for installation in new plants.")

Add the following paragraph to the end of the text directly above Section 4 on page 428:

The D.C. Circuit vacated the Clean Air Interstate Rule in 2008 and subsequently remanded it to EPA so that it could be reconsidered by the Obama administration [*North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir., 2008)]. In 2010, EPA proposed a regulation that would replace the Clean Air Interstate Rule with a program that would establish state-by-state emissions budgets for nitrogen oxides and sulfur dioxide and allow only limited interstate emissions trading to help downwind states meet the NAAQS for ozone and particulate matter. *See 75 Fed. Reg.* 45,210 (Aug. 2, 2010). The final rule, known as the Cross-State Air Pollution Rule, was promulgated a year later. *See 76 Fed. Reg.* 48,208 (Aug. 8, 2011). Once again, however, the D.C. Circuit invalidated the rule, holding that the rule's requirement that some upwind states be required to reduce emissions by more than their own significant contributions to a downwind state's nonattainment exceeded EPA's authority under the Clean Air Act (Section 110(a)(2)(D)(i)(I)). *See EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7 (D.C. Cir. 2012). In 2014, The Supreme Court reversed the D.C. Circuit, upholding the rule, and noting that EPA's method of allocation among the states represented a "permissible construction of the statute" in accordance with the *Chevron* doctrine. *See EPA v. EME Homer City Generation, L.P.*, 134 S.Ct. 1584 (2014).

Add a note to the end of section b(i)) on page 444 Concerning Section 112 and the *Chevron* Doctrine:

1. In *Michigan v. EPA*, 135 S.Ct. 2699 (2015), a 5-4 decision with an opinion authored by Justice Antonin Scalia, the Supreme Court held that EPA's interpretation of Section 112(n)(1)(A) of the Clean Air Act, which requires the agency to determine that the regulation of mercury emissions from power plants is "appropriate and necessary" before issuing such a regulation, was incorrect. EPA had made the "appropriate and necessary" determination without considering costs and had proceeded to issue mercury and air toxics standards it estimated would cost the power industry \$9.6 billion annually. Before the Supreme Court, EPA argued that the statutory language, which does not specifically mention costs, is at best ambiguous on the subject, and that the agency was entitled to deference in its interpretation, but the Court disagreed, suggesting that "appropriate" encompasses both cost and cost-benefit considerations. Arguably, then, "cracks"

are seen in the *Chevron* deference doctrine. Janet McCabe, EPA's acting assistant administrator for air and radiation at the time, wrote in a June 30, 2015, [blog post](#) that the Supreme Court's decision on the mercury air toxics standards would not affect the Clean Power Plan, the agency's 2015 rulemaking designed to limit carbon emissions from existing power plants. However, a shift in the Supreme Court's view of deference could affect the Court's view of the legality of the Clean Power Plan, should that rule survive EPA withdrawal and make its way to the Court. In defense of the Clean Power Plan, the Obama EPA argued that it is entitled to deference in its interpretation of ambiguous language in Section 111(d) of the Clean Air Act.

Add to Note 1 on page 429 and Note 4 on page 454:

The D.C. Circuit Court of Appeals struck down the mercury rule (fashioned by the Bush Administration), ruling that the cap-and-trade approach does not satisfy the section 112's mandate that a technology-based emissions standard be set. *See New Jersey v. EPA*, 517 Fed. 3d 574 (D.C. Cir. 2008). In 2012, EPA proposed emissions limits for mercury, filterable particulate matter as a surrogate for toxic metals, and hydrogen chloride as a surrogate for acid gases as part of its mercury and air toxics standards (MATS) for new and existing power plants. As discussed in the new note on page 444 (above), the Supreme Court held that EPA's rule must be set aside because EPA had not considered costs in making the statutorily-required determination as to whether regulation of mercury from power plants was "appropriate and necessary." *Michigan v. EPA*, 135 S.Ct. 2699 (2015). The rule was remanded to EPA for further proceedings and, in 2016, the agency issued "Supplemental Findings" concluding that (a) the power sector can afford to implement the existing rule and (b) the health benefits of that rule outweigh the costs. 81 *Fed. Reg.* 24,420 (April 25, 2016). Those findings were subsequently challenged by industry in the D.C. Circuit. *Murray Energy v. EPA*, Case No. 16-1127 (D.C. Cir.). In 2017, the Trump Administration asked the D.C. Circuit to stay the litigation to give the agency an opportunity to evaluate the rule, and the court has complied. Meanwhile, the Obama administration mercury rule remains in effect, and on July 10, 2018, a coalition of power companies wrote to EPA requesting that the agency leave the rule in place, as most of the industry has implemented the required emission reductions. *See* <http://src.bna.com/Ajk>.

Add a New Note 10 to the end of the Notes on page 455:

10. In 2014, EPA issued an Integrated Urban Air Toxics report to Congress under the provisions of Section 112. In the report, EPA noted "significant" reductions in ambient concentrations of hazardous air pollutants since 1990, but also reported that some areas of the country still have elevated and unhealthful levels of these pollutants. In particular, the report cites a 66 percent reduction in ambient levels of benzene since 1994, and an 84 percent drop in ambient lead levels between 1990 and 2010. The report also cites a 50 percent reduction in toxic emissions from mobile sources since 1990. *See Environment Reporter* 45:2452 (2014).