



CLEAN AIR
TASK FORCE

Climate Change and the Clean Air Act

Environmental Law Institute: Summer School Series
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Overview

- Endangerment Finding for Greenhouse Gases (*Massachusetts v. EPA*; *Coalition for Responsible Regulation v. EPA*)
- Public Nuisance Cases (*American Electric Power v. Connecticut*)
- Permit Limits for Greenhouse Gas (*Utility Air Regulatory Group v. EPA*)
- Performance Standards for Power Plants (*ALA v. EPA*; *West Virginia v. EPA*)
 - Clean Power Plan
 - Affordable Clean Energy
 - Biden Proposal

Clean Air Act: 42 U.S.C § 7521(a)(1) Authority of the Administrator to prescribe by regulation

The 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.

Endangerment Finding

- October 20, 1999: Environmental Groups Petition EPA to make a finding that greenhouse gases from vehicles endanger public health
- September 8, 2003: EPA denies the petition believing that the CAA does not authorize regulation of GHG and based on policy considerations it would inappropriate to regulate them
- April 2, 2007: Supreme Court holds in *Massachusetts v. EPA* that greenhouse gases fit well within the Act's definition of air pollutant and that policy reasons are an insufficient basis to deny regulation
- April 24, 2009: EPA finalizes the Endangerment Finding that greenhouse gases from motor vehicles contribute to pollution that threatens public health and welfare
- June 26, 2012: The D.C. Circuit upholds the Endangerment Finding as consistent with *Massachusetts v. EPA* and adequately supported by the administrative record

Prevention of Significant Deterioration Program

The Clean Air Act imposes permitting requirements on stationary sources, such as factories and powerplants. The Act's "Prevention of Significant Deterioration" (PSD) provisions make it unlawful to construct or modify a "major emitting facility" in "any area to which [the PSD program] applies" without a permit. §§ 7475(a)(1), 7479(2)(C).

A "major emitting facility" is a stationary source with the potential to emit 250 tons per year of "any air pollutant" (or 100 tons per year for certain types of sources). § 7479(1).

Facilities seeking to qualify for a PSD permit must, comply with emissions limitations that reflect the "best available control technology" (BACT) for "each pollutant subject to regulation under" the Act. § 7475(a)(4). In addition, Title V of the Act makes it unlawful to operate any "major source," wherever located, without a permit. § 7661a(a). A "major source" is a stationary source with the potential to emit 100 tons per year of "any air pollutant." §§ 7661(2)(B), 7602(j).

Permit Limits for Greenhouse Gases

June 3, 2010: EPA determined that the Endangerment Finding triggered a responsibility to set emission limits based on best available control technology for major sources of greenhouse gases. The Clean Air Act sets the threshold for major sources at 100-250 tpy, which would pull thousands of previously unregulated sources into the program. Therefore, EPA tailored the numbers to 100,000 tpy

June 23, 2014, *Utility Air Regulatory Group v. EPA*

- The Act-wide definition of “air pollutant” found in the endangerment finding provision is more all encompassing than the term’s definition in its operative provisions. EPA can give it a narrow, context appropriate meaning.
- EPA cannot “tailor” the plain numbers in the PSD provisions
 - EPA’s interpretation is unreasonable because it would bring about an enormous and transformative expansion in EPA’s regulatory authority without clear congressional authorization. When an agency claims to discover in a long-extant statute an unheralded power to regulate “a significant portion of the American economy,” we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast “economic and political significance.
- Upholds EPA’s alternate position that BACT can be required greenhouse gases for sources already subject to PSD provisions due to some other pollutant

Public Nuisance Cases

- States, trusts, cities started filing federal common law public nuisance claims against power companies asking the courts to set carbon-dioxide emission limits. They argued that the power companies created a “substantial and unreasonable interference with public rights” and sought relief from the courts.
- *American Electric Power Co. v. Connecticut*
 - Building on *Massachusetts*, the Court held that the CAA “speaks directly to emissions of carbon dioxide from emissions of carbon dioxide from the defendants’ plants”
 - Under Section 111, “Congress delegated the decision whether and how to regulate carbon dioxide emissions from power plants; the delegation displaces federal common law.”

Section 111 - Standards for performance

(d) Standards of performance for existing sources; remaining useful life of source.(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant not subject to the NAAQS and not already regulated by a NESHAP

(1) The term “standard of performance” means a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

Clean Power Plan

October 3, 2015: EPA finalized the Clean Power Plan determining that the best system of emission reduction for fossil fuel-fired power plants is three building blocks: 1) heat rate improvements; 2) shifting generation away from coal-fired power generation and replacing it with gas-fired generation; and 3) shifting generation away from fossil fuel-fired generation and replacing it with generation from new renewable generation.

February 9, 2016, on the shadow docket, the Supreme Court stays the Clean Power Plan through disposition at the D.C. Circuit Court of Appeals and any further Supreme Court action. The case is fully briefed at the D.C. Circuit and argued in October 2016. An opinion is never issued because the new Trump Administration disavowed the Clean Power Plan.

Affordable Clean Energy Rule

- July 18, 2019: EPA Repeals the Clean Power Plan based on its interpretation that a system of emission reduction must be applied to or at the source and that the CPP exceeded EPA's authority under the major questions doctrine. Provides states with a list of heat rate improvements to evaluate for their power plants to then base standards on.
- States and NGOs challenge the rule as too weak and failing to set a binding standard. Coal companies challenge the rule arguing that greenhouse gases from power plants cannot be regulated because they do not significantly contribute to climate change and because power plants are already regulated for their hazardous pollutants.
- January 19, 2021: *Am. Lung Assn v. EPA*
 - Finds that EPA can regulate GHGs from power plants. Finding that greenhouse gases from power plants significantly contributes to endangerment was proper. The statute allows EPA to regulate hazardous pollutants and greenhouse gases from one source. Finds the rule is indeed too weak because it has no binding emission limit. Rejects EPA's reading that a system must be applied to or at an individual source and does not find that EPA greenhouse gas emission regulation from power plants is was clearly authorized by Congress and therefore there is no major questions problem.

West Virginia v. EPA

- Confirms that EPA has authority to regulate greenhouse gas emissions from power plants under section 111 and must set a binding emission limit. Does not opine on whether a system must be applied to or at an individual source, but finds that standards based on shifting generation away from the source category is not authorized by Congress under the major questions doctrine.
- Major questions doctrine
 - our precedent teaches that there are “extraordinary cases” that call for a different approach—cases in which the “history and the breadth of the authority that [the agency] has asserted,” and the “economic and political significance” of that assertion, provide a “reason to hesitate before concluding that Congress” meant to confer such authority
 - in certain extraordinary cases, both separation of powers principles and a practical understanding of legislative intent make us “reluctant to read into ambiguous statutory text” the delegation claimed to be lurking there. To convince us otherwise, something more than a merely plausible textual basis for the agency action is necessary. The agency instead must point to “clear congressional authorization” for the power it claims.

Lessons from *West Virginia*

The Court made clear that emission limits may not be based on shifting generation from plants within the source category to those outside of it. It spoke more favorably about at the source, traditional, pollution controls that clean up operation.

There is a distinction between how the emission limit is set and how sources comply: “there is an obvious difference between (1) issuing a rule that may end up causing an incidental loss of coal’s market share, and (2) simply announcing what the market share of coal, natural gas, wind and solar must be, and then requiring plants to reduce operations or subsidize their competitors to get there.”

GHG Standards and Guidelines for Fossil Fuel-Fired Power Plants

PROPOSED BSER LEVELS FOR 111(B) - NEW STATIONARY COMBUSTION TURBINES

Phase I (By date of promulgation or upon initial startup)	Phase II Beginning in 2032-2035	Phase III Beginning in 2038
Low Load Subcategory (Capacity Factor <20%)		
BSER: Use of low emitting fuels (e.g., natural gas and distillate oil) Standard: From 120 lb CO ₂ /MMBtu to 160 lb CO ₂ /MMBtu, depending on fuel type	No proposed Phase II or Phase III BSER component or standard of performance	
Intermediate Load Subcategory (Capacity Factor 20% to ~50%*) *Upper bound limit based on EGU design efficiency and site-specific factors		
BSER: Highly efficient simple cycle generation Standard: 1,150 lb CO ₂ /MWh-gross	BSER: Continued highly efficient simple cycle generation with 30% (by volume) low-GHG hydrogen co-firing beginning in 2032 Standard: 1,000 lb CO ₂ /MWh-gross	No proposed Phase III BSER component or standard of performance
Base Load Subcategory (Capacity Factor >~50%*) *Limit		
BSER: Highly efficient combined cycle generation Standard: 770 lb CO ₂ /MWh-gross (EGUs with a base load rating of 2,000 MMBtu/h or more) Standard: 770 lb – 900 lb CO ₂ /MWh-gross (EGUs with a base load rating of less than 2,000 MMBtu/h)	Low-GHG Hydrogen Pathway BSER: Continued highly efficient combined cycle generation with 30% (by volume) low-GHG hydrogen co-firing beginning in 2032 Standard: 680 lb CO ₂ /MWh-gross CCS Pathway BSER: Continued highly efficient combined cycle generation with 90% CCS beginning in 2035 Standard: 90 lbCO ₂ /MWh gross	Low-GHG Hydrogen Pathway BSER: Co-firing 96% (by volume) low-GHG hydrogen beginning in 2038 Standard: 90 lb CO ₂ /MWh-gross CCS Pathway: No Phase III BSER component or standard of performance
The proposed definition of low-GHG hydrogen is hydrogen produced with less than 0.45kgCO ₂ e/kgH ₂ overall well to gate emissions, consistent with IRC section 45V(b)(2)(D).		

GHG Standards and Guidelines for Fossil Fuel-Fired Power Plants

PROPOSED BSER LEVELS FOR 111D – EXISTING COAL, OIL AND NATURAL GAS-FIRED BOILERS AND LARGE, FREQUENTLY USED NATURAL GAS COMBUSTION TURBINES

Coal-Fired Boilers	Natural Gas and Oil-Fired Boilers	Natural Gas Combustion Turbines
<p>For units operating past December 31, 2039, BSER: CCS with 90% capture of CO₂ an (88.4% reduction)</p>	<p>BSER: routine methods of operation and maintenance with an associated degree of emission limitation of no increase in emission rate (lb CO₂/MWh-gross).</p>	<p>For turbines >300MW, >50% capacity factor</p> <p>CCS Pathway BSER: By 2035: highly efficient generation coupled with CCS with 90% capture of CO₂ (90 lb CO₂/MWh)</p> <p>Low-GHG Hydrogen Pathway BSER: By 2032: highly efficient generation coupled with co-firing 30% (by volume) low-GHG hydrogen (680 lb CO₂/MWh) By 2038: highly efficient generation coupled with co-firing 96% low-GHG hydrogen (90 lb CO₂/MWh)</p>
<p>For units that cease operations before January 1, 2040 and are not in other subcategories, BSER: co-firing 40% (by volume) natural gas with emission limitation of a 16% reduction in emission rate (lb CO₂/MWh-gross basis)</p>		
<p>For units that cease operations before January 1, 2032, and units that cease operations after January 1, 2035, that adopt enforceable annual capacity factor limit of 20%, BSER: routine methods of operation and maintenance with associated degrees of emission limitation of no increase in emission rate</p>		
<p>The proposed definition of low-GHG hydrogen is hydrogen produced with less than 0.45kgCO₂e/kgH₂ overall well to gate emissions, consistent with IRC section 45V(b)(2)(D).</p>		



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