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Greenhouse Gas Regulation under the Clean Air Act

Primer on GHG Regulation under the Clean Air Act: PSD, Title V, and NSPS

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On January 2, 2011, the EPA began regulating greenhouse gas (GHG) emissions from large stationary sources.[1] The EPA will implement several new GHG regulations over the next two years using separate sections of the Clean Air Act.

- The first set of regulations creates air quality permitting requirements for power plants and industrial facilities under the Prevention of Significant Deterioration (PSD) and Title V permitting programs. The EPA is implementing these regulations in two phases.[2]
- The second set of regulations, announced at the end of 2010, will incorporate GHG emissions into the new source performance standards (NSPS) for power plants and refineries. The EPA plans to implement the final NSPS regulations in 2012. The Clean Air Act grants the EPA considerable flexibility regarding the design of NSPS provisions, and the NSPS requirementsmay differ between categories of emitters.

PSD (PRE-CONSTRUCTION PERMITS)

The Clean Air Act requires PSD permits before an entity constructs a large new source of emissions (e.g., power plants, factories, and refineries) or performs major modifications on an existing facility. The purpose of this program is to ensure that new sources of pollution do not significantly degrade existing air quality. PSD permits are necessary when: (1) a facility will operate in a geographic area that is

in compliance with air quality standards or (2) a facility will emit a regulated pollutant for which air quality standards have not been established (as is the case with GHGs).

PSD permits are typically issued by state or local air pollution control agencies. They set parameters for construction (such as stack height) and specify the air regulations that apply to the facility. PSD permits require the use of the best available control technology (BACT).

Best Available Control Technology

BACT refers to the emissions- reducing equipment or processes that produce the maximum degree of reduction that can be achieved cost-effectively. The permitting agency determines BACT requirements for new and modified sources

by evaluating existing pollution control technologies to determine the most effective options (considering energy, environmental, and economic impacts). This determination is typically made on a case-by-case basis.

The EPA released a guidance document in November 2010 to assist permitting authorities in determining BACT for GHGs. In this document, the EPA emphasizes energy efficiency as a primary consideration, and recommends that

[1] GHGs includecarbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
[2] Phase 1 (beginning January2, 2011) applies to sources that(1)must obtain a permit anyway based on emissions of pollutants other than GHGs AND (2) emit at least 75,000 tons per year (tpy) of GHGs. Phase 2 (beginning July 1, 2011) applies to sourcescovered in Phase 1, plus facilities that emit GHGs in specified amounts—100,000 tpy for new facilities and an increase of at least 75,000 tpy for major modifications. Phase 2 also requires a Title V operating permit for facilities that emit at least 100,000 tons of GHG s per year.

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permit writers determine BACT for GHGs in the same manner as they currently determine BACT for other pollutants.

TITLE V (OPERATING PERMITS)

Starting on July 1, 2011, facilities that emit at least 100,000 tons of GHGs per year will require an operating permit, often called "Title V" permits after the section of the Clean Air Act from which they derive. State and local permitting authorities typically issue Title V permits after a source has begun operation. Title V permits do not create new pollution control obligations. Instead, these permits consolidate existing state and federal air pollution control requirements governing the operation of the facility into a comprehensive air permit. Title V permits also contain monitoring, record keeping, and reporting requirements, and require annual compliance certification.

NEW SOURCE PERFORMANCE STANDARDS

The Clean Air Act requires the EPA to create categories of major polluters and to develop standards of performance (NSPS) for new or modified facilities in each category (e.g., petroleum refineries, coal-fired power plants, municipal landfills, etc.). For example, these standards may include emission limits, efficiency standards, and/or reporting requirements, but the EPA may not mandate a specific technology. The EPA recently announced its intent to include GHG emissions in the NSPS programs for power plants and refineries. Once a NSPS program covers a particular pollutant from new and modified sources, states must regulate that pollutant from existing stationary sources within the same category (e.g., existing coal-fired power plants), provided the pollutant is not already regulated as a hazardous air pollutant or as a criteria pollutant.[3]

Standards for new and modified facilities

The EPA creates NSPS requirements for new sources and existing sources that undergo major modifications. These standards apply uniformly throughout the nation, regardless of facility location. The EPA has significant flexibility in formulating standards that are appropriate for each specific category, and can consider cost in the determination. The NSPS must reflect "the best system of emission reduction" that has been "adequately demonstrated."[4]

BACT- Best Available Control Technology

NSPS- New Source Performance Standard

PSD- Prevention of Significant Deterioration

111(d)- Clean Air Act provision requiring states to regulate pollutants from existing stationary sources if the pollutant (1) is covered by NSPS and (2) is not regulated as a criteria pollutant or hazardous air pollutant.

Criteria Pollutants- Six major pollutants regulated using air quality standards under the Clean Air Act: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead.

Standards for existing facilities

Although the NSPS requirements do not apply to existing sources, section 111(d) of the Clean Air Act requires states to regulate existing sources when the EPA sets a NSPS for a pollutant, provided the pollutant is not a criteria pollutant or a hazardous pollutant (GHGs do not fall under either category). The EPA develops guidelines for existing sources, and states use these guidelines to develop and enforce emission standards for existing sources within their borders. Depending on the stringency of the guidelines, states may have considerable discretion as to how they go about regulating GHG emissions from existing facilities.

[3]There are 187 hazardous air pollutants that the EPA must regulate under section 112 of the Clean Air Act. In addition, there are six criteria pollutants that the EPA must regulate under sections 108–110 of the Clean Air Act because they are considered harmful to public health and the environment.

[4] 42 U.S.C. § 7411(a)(1)

Quick Comparison			
	PSD	**NSPS**	**111(d)**
Applies to...	New construction and major modifications	New construction and major modifications within a specific category	Existing sources within a specific category
Regulator	State or local regulators, subject to EPA review	EPA, but the EPA may delegate to states	State regulators, subject to EPA approval
Implementation	Case-by-case basis	Applies uniformly for each category of sources	States develop rules for existing sources within their borders for pollutants not regulated under sections 108–110 or 112 of the CAA
Consideration of costs?	Yes	Yes	Yes
Greenhouse gas regulation	Applies to large stationary sources of greenhouse gases (see footnote 1)	Rules under development – will apply to fossil fuel–fired power plants and refineries	To be determined

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