



WORLD CLIMATE CHANGE REPORT



December 4, 2009

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CLEAN AIR ACT

Because of various proposals currently under consideration by the Environmental Protection Agency, the authors of this article say it is likely that many stationary sources of greenhouse gas emissions will face new regulation under the Clean Air Act in coming months. As applicability of the prevention-of-significant-deterioration and Title V operating permit programs is driven by the adoption of any form of greenhouse gas emissions control, the authors say that sources of greenhouse gas emissions may be subject to these programs as soon as EPA finalizes its light-duty vehicle greenhouse gas regulation. Therefore, the authors say that companies and other regulated entities should begin preparing for this outcome, while simultaneously taking whatever measures they deem necessary to continue to influence the rulemaking process.

EPA Actions Trigger Regulation of Greenhouse Gas Emissions Under Clean Air Act

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A series of recent regulatory initiatives by the Environmental Protection Agency has set the stage for the first wave of massive federal regulation of greenhouse gas emissions. Among other things, the Obama Administration may be on the verge of subjecting thousands of sources of greenhouse gas emissions to complex federal permitting requirements, many for the first time. At the same time, new greenhouse gas reporting requirements will provide EPA with a registry of most sources emitting greenhouse gases above certain thresholds, thereby enhancing its ability to enforce

the permitting rules. Beginning with new emissions standards for light-duty vehicles—which also will serve as the basis for applying prevention-of-significant-deterioration (PSD) and Title V operating permit regulations to a host of stationary sources—this series of initiatives will impose sweeping requirements on greenhouse gas sources in broad-ranging sectors of the U.S. economy, without Congress having lifted a finger.

The rules and proposals at issue are EPA's recently proposed PSD and Title V tailoring rule, its proposal to regulate greenhouse gas emissions from light-duty vehicles, and its recently adopted greenhouse gas reporting regulation. Collectively, these measures would: (1) set greenhouse gas limits for certain mobile sources,

while simultaneously affirming at least four, and possibly six, greenhouse gases as “regulated pollutants” under the Clean Air Act; (2) affirm EPA’s position that once “regulated” under the Clean Air Act, stationary sources of emissions of these greenhouse gases are subject to extensive permitting requirements (including scores of sources regulated under state or local PSD programs that potentially would not be subject to new, higher permitting thresholds proposed by EPA); and (3) require thousands of sources of these greenhouse gases to report their emissions, thereby establishing a registry of sources known to emit above regulatory thresholds.

The initiatives all but ensure that potentially thousands of sources will be swept into PSD and Title V permitting as a result of their potential greenhouse gas emissions. In addition, existing sources currently subject to Title V and PSD permitting requirements for other pollutants will have to account for, and may also have to control, their greenhouse gas emissions. And facilities that are currently in the middle of the permitting process could face new challenges and disruptions in that process if they have not anticipated the potential impacts of greenhouse gas regulations.

The purpose of this article is to explore the possible ramifications for stationary sources that will be subject to PSD and Title V permitting as a result of their greenhouse gas emissions, and discuss measures these sources should consider taking to prepare.

Background

The history of greenhouse gas regulation under the Clean Air Act is long and tortured. This article will focus solely on the key developments that have led to the potential for regulation of greenhouse gas emissions under the PSD and Title V programs.

In April 2009, EPA proposed a finding that emissions of greenhouse gases from motor vehicles are contributing to air pollution that may be endangering the public health and welfare.¹ The finding, which followed on the Supreme Court’s 2007 decision in *Massachusetts v. EPA*,² set in motion the process for regulating greenhouse gas emissions from mobile sources, which in turn triggers potential regulation of greenhouse gas emissions from stationary sources under the Clean Air Act. More specifically, in addition to laying the groundwork for an endangerment finding related to stationary source emissions under Section 108 of the Clean Air Act, the regulation of greenhouse gas emissions from any source under the act establishes the basis for regulation of these pollutants under the PSD and Title V provisions.

Following on its proposed endangerment finding, EPA on Sept. 28, 2009, proposed regulations that would establish new greenhouse gas emissions standards for light-duty vehicles.³ The proposal followed a May 2009 announcement by EPA and the Department of Transportation of a joint rulemaking designed to establish a comprehensive regulatory program for controlling greenhouse gas emissions from and promoting fuel efficiency in light-duty vehicles.⁴

These mobile source standards, once finalized, will mark the first time EPA has established emission limits

for greenhouse gases under the Clean Air Act. The act’s PSD permitting requirements apply to any pollutant “subject to regulation” under the statute.⁵ Likewise, EPA has interpreted the operating permit requirements contained in Title V of the Clean Air Act to apply to sources with emissions greater than 100 tons per year (tpy) of “pollutants subject to regulation” under the act.⁶ In the context of greenhouse gas emissions, EPA has since further interpreted the term “subject to regulation” to apply upon the agency’s adoption of any regulation that requires “actual control” of emissions of a pollutant.⁷

The day after proposing its light-duty vehicle greenhouse gas regulation, EPA released a proposed greenhouse gas tailoring rule, affirming the agency’s position that “as soon as GHG become regulated under the light-duty motor vehicle rule, GHG emissions will be considered pollutants ‘subject to regulation’ under the CAA and will become subject to PSD and title V requirements.”⁸ As discussed below, the proposal seeks to establish emissions thresholds for purposes of PSD and Title V, in hopes of preventing tens of thousands of very small sources from being swept into the PSD and Title V programs. Again, and perhaps more significantly, the rule makes abundantly clear EPA’s position that once it finalizes the light-duty vehicle rule, expected in March 2010, all sources of certain regulated greenhouse gases could be subject to PSD and Title V permitting, depending on the magnitude of their emissions. In addition, the tailoring rule will not apply in states or localities that have state implementation plan-approved PSD programs. Each such permitting authority will have to independently amend their regulations in order to establish new PSD permitting thresholds for greenhouse gases.

The six greenhouse gases at issue are carbon dioxide (CO₂); methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).⁹ For purposes of determining emis-

⁵ See Clean Air Act § 165(a)(4), 42 U.S.C. § 7475; Clean Air Act § 169(3), 42 U.S.C. § 7479(3) (applying best available control technology (BACT) to “each pollutant subject to regulation” under the act).

⁶ See Clean Air Act § 502(a), 42 U.S.C. § 7661a(a); Memorandum from Lydia Wegman, Deputy Director, Office of Air Quality Planning and Standards, U.S. EPA, *Definition of Regulated Air Pollutant for Purposes of Title V*, April 26, 1993; *EPA Tailoring Rule*, pre-publication draft at 46, available at <http://www.epa.gov/region7/programs/artd/air/title5/t5memos/rapdef.pdf>.

⁷ Memorandum from Administrator Stephen L. Johnson to Regional Administrators, *EPA’s Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program*, Dec. 18, 2008. (Interpretive Memorandum), available at http://epa.gov/nsr/documents/psd_interpretive_memo_12.18.08.pdf. EPA currently is reconsidering this guidance on the issue of whether PSD requirements are triggered upon the adoption of regulations requiring only the monitoring and reporting of pollutants.

⁸ Proposed Rule, *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, Docket No. EPA-HQ-OAR-2009-0517 (Sept. 30, 2009) (*Tailoring Rule*), pre-publication draft at p. 46, issued Oct. 27, 2009 (74 *Fed. Reg.* 55,292).

⁹ A question remains as to whether all six greenhouse gases are “subject to regulation” as a result of EPA’s light-duty rule, which sets emissions limits for only the first four greenhouse

¹ 74 *Fed. Reg.* 18,886 (April 24, 2009)

² 549 U.S. 497, 63 ERC 2057 (2007)

³ 74 *Fed. Reg.* 49,454 (Sept. 28, 2009).

⁴ 74 *Fed. Reg.* 24,007 (May 22, 2009).

sions levels subject to regulation, each pollutant is assigned a factor—using carbon dioxide as a baseline—that is designed to account for differences in the global-warming potential of each gas. This is known as the pollutant’s carbon dioxide equivalent. For example, according to EPA, methane has a global warming potential that is 21 times that of carbon dioxide. In other words, each ton of methane released into the atmosphere has the heat-trapping equivalent of 21 tons of carbon dioxide over a 100-year time horizon. This would further mean 1,190 tons of methane is approximately equal to 25,000 tons of carbon dioxide equivalent.

A New Era of PSD and Title V Regulation

EPA’s tailoring rule and interpretative memorandum, once combined with final greenhouse gas regulations for light-duty vehicles, will usher in a new era of regulation that could subject a multitude of facilities to PSD and Title V permitting requirements based on their greenhouse gas emissions. For many, this may be the first time they enter the labyrinth of EPA’s major source preconstruction and operating permit programs. While the tailoring rule is designed to limit this impact, the emissions thresholds established by EPA likely still will have wide-ranging impacts for many facilities. Moreover, as EPA acknowledges, it may not have the authority to set new thresholds for triggering PSD and Title V permitting requirements, meaning that the existing thresholds of 100 tpy (Title V) and 100 or 250 tpy (PSD) could remain in effect. As EPA acknowledges further, this would extend these requirements to “millions” of additional sources, resulting, among other things, in “enormous administrative burdens” for regulators.¹⁰

Expansion of Title V and PSD Applicability. As noted, the regulation of greenhouse gas emissions under the Clean Air Act could result in millions of sources becoming subject to Title V permitting requirements, and tens of thousands of sources becoming subject to PSD permitting rules. As explained further below, under existing applicability thresholds, for instance, a facility containing coal-fired boilers with just 0.27 mmBtu of total heat-input capacity could trigger Title V permitting requirements instantly and PSD requirements upon modification of that source. Likewise, a facility could trigger Title V and/or PSD requirements through the operation of a natural-gas fired boilers with just 0.48 mmBtu heat-input capacity.

The significance level established under Title V of the act is 100 tpy, meaning that all stationary sources that have the potential to emit 100 tpy of any one pollutant must obtain a Title V permit from either EPA or a state permitting authority. Newly constructed sources are subject to the PSD program, meanwhile, if they having the potential to emit 250 tpy or more of a regulated pollutant, or 100 tpy if the source falls within one of 28 source categories listed in the statute.¹¹ Existing sources also can be subject to PSD if they meet these

gases. Either way, the predominant greenhouse gas, carbon dioxide, would be subject to regulation.

¹⁰ *Tailoring Rule*, pre-publication draft at p. 48.

¹¹ The PSD program applies where either: (1) EPA has established National Ambient Air Quality Standards (NAAQS) for regulated pollutants and the location of the source meets those standards, or (2) EPA has not established a NAAQS for a regulated pollutant, as is the case for greenhouse gases. By

thresholds and are modified such that the modification results in a “significant” net increase in the source’s potential to emit a regulated air pollutant. “Significance levels” for regulated pollutants are established by EPA regulations.¹² Where no such level has been established (as in the case of greenhouse gases), however, any increase is deemed significant.

According to EPA, Congress calibrated these thresholds so that larger sources of “criteria pollutants” (primarily sulfur dioxide, particulate matter, nitrogen oxides, and carbon monoxide) would be subject to the significant regulatory burdens of the Title V and PSD programs, while small sources, such as “houses, dairies, farms, highways, hospitals, schools, [and] grocery stores,” would be exempt.¹³ It was expected that sources emitting more than the thresholds would in general be larger facilities “which, due to their size, are financially able to bear the substantial regulatory costs imposed by the PSD provisions and which, as a group, are primarily responsible for emissions of the deleterious pollutants that befoul our nation’s air.”¹⁴

But while the PSD and Title V thresholds established by Congress may have accomplished this goal with respect to sources of criteria pollutants, their application to sources of greenhouse gas emissions would pose enormous administrative problems. Stationary sources of greenhouse gas emissions are ubiquitous, and include everything from coal-fired power plants to apartment buildings and commercial kitchens. More importantly, greenhouse gases are emitted in far greater quantities than other pollutants, so the number of stationary sources with the potential to emit more than 250 tpy of greenhouse gases dwarfs the number of sources potentially emitting that amount of other regulated pollutants. The problem is exacerbated by the fact that the PSD and Title V source thresholds generally are based on a source’s potential, rather than actual, emissions—so that, for example, an elementary school’s potential emissions for PSD applicability purposes would be based on the assumption that it would operate its HVAC systems at maximum capacity 24 hours a day, 365 days a year.¹⁵

As a result, using the existing PSD major source applicability thresholds for sources of greenhouse gases would increase drastically the number of sources required to obtain permits, overwhelming permitting authorities’ already-stretched resources, and subjecting an enormous number of small entities to complex new permitting requirements for the first time. According to EPA, approximately 280 PSD permits are issued every year under the existing program, with an average permit processing time of about one year. EPA estimates

contrast, the Nonattainment New Source Review program applies to sources of pollutants located in areas that do not comply with the NAAQS for those pollutants. Because there are no NAAQS for greenhouse gases (and EPA has stated that it does not intend to promulgate any in the foreseeable future), the Nonattainment NSR program does not apply to any source of greenhouse gases.

¹² 40 C.F.R. 52.21(b)(23).

¹³ *Tailoring Rule*, pre-publication draft at pp. 90-39, quoting 123 Cong. Rec. 18021 (June 8, 1977) (statement of Sen. Edmund Muskie, D- Maine).

¹⁴ *Tailoring Rule*, pre-publication draft at p. 94, quoting *Alabama Power v. Costle*, 636 F.2d 323, 353-54, 13 ERC 1993 (D.C. Cir. 1980).

¹⁵ *Tailoring Rule*, pre-publication draft at p. 148.

that if greenhouse gas sources were brought into the PSD program using the existing threshold, 41,000 new and modified facilities per year would be subject to PSD review, and the processing time would triple to three years.¹⁶

The implications of applying the existing thresholds to greenhouse gas sources would be even more dramatic under Title V. There are approximately 14,700 active Title V permits in the United States, according to EPA.¹⁷ The agency estimates that approximately six million stationary sources in the United States have the potential to emit 100 tpy or more of greenhouse gases, all of which would require Title V permits if the statutory threshold were observed.¹⁸ Unless significant additional resources were made available, EPA estimates the influx of permit applications would increase the average processing time for a Title V permit from about 6 months to 10 years.¹⁹

The impact of these thresholds can be gauged in another way. Using emissions factors for carbon dioxide, one can calculate the necessary size of a facility's combustion-unit capacity, taking into consideration the most commonly used fuels that it would take to generate, for instance, 250 tpy of carbon dioxide. These calculations are set forth in the following table, with the unit size reflected in heat input capacity.

| FUEL | Emission Factor (lb CO ₂ /mmBtu) | Heat Input (mmBtu/hr) |
|---------------------------------|--|--------------------------|
| Petroleum Coke | 225 | 0.25 |
| Coal | 210 | 0.27 |
| Residual Oil | 174 | 0.33 |
| No. 2 Oil (home heating oil) | 158 | 0.36 |
| Refinery Fuel Gas | 120 | 0.48 |
| Natural Gas | 117 | 0.48 |

To put these potential impacts into perspective further, using the above table as a reference point, a standard restaurant range with twelve burners and two ovens has a heat input of 0.43 mmBtu/hr, and a single deep fryer has a heat input of 0.15 mmBtu/hr. As a result, if the existing 250 ton major source threshold is used this standard restaurant would be considered a major source. If the restaurant wished to install a second fryer, a PSD permit would be required.

EPA is attempting to minimize the impact of subjecting sources of greenhouse gas emissions to these requirements through its proposed tailoring rule, which would set new thresholds for triggering Title V and PSD permit requirements for new facilities at 25,000 tpy of carbon dioxide equivalent. The proposal also would set a new threshold for triggering PSD permit requirements for modified facilities at 10,000 tpy of carbon dioxide equivalent.²⁰ However, these thresholds—at least

initially—may only apply to sources in limited areas, in which: (1) EPA issues PSD permits, and (2) states or local areas are “delegated” the federal PSD program. These areas, in the minority across the country, are directly governed by federal regulations.

The remaining states have adopted and enforce their own PSD programs, which means that the higher threshold for PSD would not apply in these states unless and until they amend their regulations. As such, until the state and local authorities take action, EPA's rule will have quite limited applicability.

While questions remain regarding EPA's authority to establish new thresholds (as discussed further below) and the applicability of the federal rules, even the new thresholds will capture a very sizable number of facilities. Again using emissions factors for carbon dioxide, one can calculate the necessary size of a facility's combustion-unit capacity, taking into consideration the most commonly used fuels, that it would take to generate 25,000 tpy of carbon dioxide. These calculations are set forth in the following table.

| FUEL | Emission Factor (lb CO ₂ /mmBtu) | Heat Input (mmBtu) |
|---------------------------------|--|-----------------------|
| Petroleum Coke | 225 | 25.3 |
| Coal | 210 | 27.1 |
| Residual Oil | 174 | 32.7 |
| No. 2 Oil (home heating oil) | 158 | 36.0 |
| Refinery Fuel Gas | 120 | 47.5 |
| Natural Gas | 117 | 48.7 |

Therefore, depending on the type of fuel used, even under EPA's new thresholds, facilities with total combustion-related heat-input capacity as low as 25 mmBtu could face permitting obligations with respect to their greenhouse gas emissions. Although it certainly would reduce the number of sources subject to Title V and PSD permitting requirements significantly, EPA's proposed tailoring rule still would leave many facilities well within thresholds for triggering these requirements with respect to greenhouse gases.

Moreover, as EPA acknowledges, the tailoring rule itself may be subject to challenge. The Title V and PSD applicability thresholds EPA has proposed for greenhouse gas emissions deviate from the text of the Clean Air Act, which specifically sets the 100 tpy (Title V) and 100/250 tpy (PSD) thresholds. To justify its approach, EPA relies on two seldom-used doctrines of statutory interpretation: the “absurd results” doctrine and the doctrine of “administrative necessity.” It is at best unclear whether courts would agree with the agency that these doctrines justify deviating from the plain language of the statute.

The absurd results doctrine, according to EPA, provides that in the “rare” instances where a literal application of the language of a statute “will produce a result demonstrably at odds with the intentions of the drafters,” agencies and courts should attempt to effectuate the intent of the drafters, rather than the language of the statute.²¹ In the preamble to the proposed tailoring rule, EPA argues that application of the statutory thresholds for PSD and Title V applicability to greenhouse gas sources would result in a massive expansion of both permitting programs that would be contrary to

¹⁶ *Id.* at 50, 53.

¹⁷ *Id.* at 133.

¹⁸ *Id.* at 133.

¹⁹ *Id.* at 60.

²⁰ EPA has framed the tailoring rule as a “temporary” measure. In its proposal, EPA commits to studying and implementing measures to “streamline” the permitting of greenhouse gas sources under Title V and PSD, and to conduct a subsequent rulemaking (within 6 years of the promulgation of the final tailoring rule) to promulgate “revised applicability and significance level thresholds and other streamlining techniques, as appropriate.” *Tailoring Rule*, pre-publication draft at p. 2.

²¹ *Tailoring Rule*, pre-publication draft at pp. 78-79.

Congress's intent to subject only large sources of air pollution to these requirements.²² In particular, EPA argues the resulting backlog of permitting decisions would make it impossible for permitting authorities to meet the 12- and 18-month statutory time frames for PSD and Title V permit processing established in Sections 165(c) and 503(c) of the act.²³ In support of its application of the doctrine, EPA cites numerous cases from both the U.S. Supreme Court and the D.C. Circuit, including *U.S. v. Ron Pair Enterprises*, 489 U.S. 235, 242 (1989); *Nixon v. Missouri Municipal League*, 541 U.S. 125, 132-33 (2004); *Raygor v. Regents of Univ. of Minn.*, 534 U.S. 533, 542-45 (2002); *In re Franklyn C. Nofziger*, 925 F.2d 428, 434 (D.C. Cir. 1991).

The administrative necessity doctrine is laid out in a series of D.C. Circuit cases including *Alabama Power v. Costle*, 636 F.2d 323, 13 ERC 1993 (D.C. Cir. 1980), *EDF v. EPA*, 636 F.2d 1267, 15 ERC 1081 (D.C. Cir. 1980), and *Sierra Club v. EPA*, 719 F.2d 436, 19 ERC 1897 (D.C. Cir. 1983). According to EPA, it may provide relief in this circumstance by allowing the Agency to deviate from the literal requirements of the Clean Air Act, even where a statutory requirement expresses a clear congressional intent, if the provision is impossible for the agency to administer.²⁴ Instead, according to EPA, "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."²⁵

EPA argues this doctrine justifies the tailoring rule's deviation from the language of the Clean Air Act because (for the reasons described above) it would be impossible for the Agency and state permitting authorities to administer the PSD and Title V programs using the statutory threshold for greenhouse gases, even if EPA took steps to streamline the administration of those programs as much as would be legally permissible.²⁶

The strength of EPA's case under these doctrines would require a substantive additional analysis that is beyond the scope of this article. Suffice it to say, however, EPA's proposal to establish new thresholds for Title V and PSD is vulnerable to challenge, and EPA acknowledges the vulnerability of its position. In fact, the tailoring rule outlines and requests comment on several proposals for "streamlining" the PSD and Title V permitting of stationary greenhouse gas sources, in the event EPA is not able to establish new emissions thresholds. EPA suggests that eventually, these proposed techniques could reduce sufficiently the burdens on permitting agencies and sources to allow the statutory PSD and Title V thresholds to be applied.²⁷

The proposed streamlining methods, many of which are already used in some form in other environmental regulatory contexts, include: (1) redefining a source's "potential to emit" to more closely approximate a source's actual emissions;²⁸ (2) establishing a "presumptive BACT" for greenhouse gas emission controls in certain source categories;²⁹ (3) using general permits

or permits-by-rule for certain categories of sources;³⁰ and (4) establishing e-permitting systems to ease the administrative burden of processing permit applications.³¹

Title V Requirements. As noted, many facilities never before subject to Title V operating permit requirements may find themselves grappling with operating permit applications as a result of EPA's regulation of greenhouse gases under the Clean Air Act. In some cases, however, this may raise the question of what exactly a source should put in that application.

Title V itself does not impose any air pollution control requirements on the permitted source; rather, a Title V permit incorporates all "applicable requirements" for the source originating under the act, the state implementation plan (SIP), or any other air permit required by the source (e.g., a PSD permit). A source that is not subject to other applicable requirements, however, and becomes subject to Title V solely as the result of exceeding emission thresholds for greenhouse gases, may not have applicable requirements beyond those imposed by EPA's greenhouse gas reporting rule, which is addressed briefly below. Of course, given the myriad air pollution control requirements that exist as part of SIPs and other permits, it is difficult to judge at this time whether this is an issue.

Regardless of what requirements it ultimately must identify in a Title V operating permit application, a facility that becomes subject to Title V permitting will face at a minimum the administrative burden of having to obtain and maintain a permit. When a facility becomes subject to Title V, it must apply for a permit within one year, and certify its continued compliance with all permit requirements each year thereafter.³²

Permit applications, meanwhile, must contain a host of information regarding the facility, including a description of its processes and products, a description of all regulated pollutants emitted from any emissions unit, emissions rates in terms of emissions units, identification and descriptions of air pollution control equipment, monitoring devices, work practice standards, limitations on source operation, any other information that a facility is required to maintain under any "applicable requirement" compliance plans, and compliance certifications.³³ Sources subject to Title V also are required to pay permit fees. In addition, once applicable requirements are included in a final operating permit, violations of those requirements are deemed to be separate permit violations. The ramifications of being subject to state and federal operating permit requirements under Title V, therefore, can be significant.

PSD Requirements. Unlike Title V, the PSD program does impose substantive new requirements on sources required to obtain PSD permits, in addition to the administrative burdens and delays associated with the permitting process. As noted, new major sources, and existing major sources that undergo major modifications are required to obtain PSD permits, and meet associated requirements. Most significantly, these sources must determine and apply Best Available Control Tech-

²² *Id.* at pp. 85-87, 92-96, 102-103.

²³ *Id.* at pp. 87-89, 101.

²⁴ *Id.* at p. 110.

²⁵ *Id.* at p. 110.

²⁶ *Id.* at pp. 128-135.

²⁷ *Id.* at p. 2.

²⁸ *Id.* at p. 159.

²⁹ *Id.* at p. 164.

³⁰ *Id.* at p. 170.

³¹ *Id.* at p. 178.

³² 40 C.F.R. § 70.5(a).

³³ 40 C.F.R. § 70.5(c).

nology (BACT) for each regulated air pollutant emitted by the source (regardless of whether the source is a “major source” for each such pollutant), and limit its emissions to the levels achievable by the application of BACT.³⁴

BACT is defined as an emissions limitation that is “based on the maximum degree of reduction for each pollutant subject to regulation under the 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 . . . through application of production processes or available methods, systems, and techniques . . . for control of such pollutant.”³⁵

There is limited experience at this time with respect to determining BACT for carbon dioxide. At least one BACT analysis looking at combustion sources has focused on carbon capture and sequestration (CCS), use of alternative fuels, and energy efficiency measures as available technologies.³⁶ That analysis concluded that use of low-carbon fuels and aggressive energy-efficiency design better represented BACT than did CCS. Based on the cost and environmental impacts, CCS was eliminated as BACT in favor of more cost effective and environmentally neutral controls, such as use of low carbon fuel (*i.e.*, natural gas) instead of oil or coal, use of renewable fuels (biomass), or steps to maximize energy efficiency.

Operation of a CCS system adequate to control a typical source of carbon dioxide (*i.e.* boilers, furnaces, kilns, and process heaters) results in significant adverse economic, energy, and environmental impacts. To capture the millions of tons per year of carbon dioxide from large combustion sources (electric utility boilers or petroleum refineries), a large amount of electric power and steam generating capacity is required to operate the multistep CCS system (*e.g.*, amine carbon dioxide scrubbing, drying, compression, and transport to a suitable disposal site).

Currently, the only commercial, large-scale CCS disposal alternative is the injection of carbon dioxide into oil fields for the purpose of enhanced oil recovery. For large scale CCS (*i.e.*, the most cost effective applications), the avoided cost of carbon dioxide is approximately \$100 per ton of carbon dioxide sequestered. The current credit value for carbon dioxide in the United States is less than \$20 per ton of carbon dioxide.

From an environmental impacts perspective, there is a significant increase in combustion pollutants associated with generating the steam and electricity needed to operate the CCS system even when natural gas is used. For the large CCS system needed to control a moderate sized electric utility boiler or petroleum refinery, therefore, hundreds of tons of PM_{2.5}, NO_x, SO₂, and CO would be emitted.

To put the potential cost impacts of the proposed regulation into perspective further, for the smallest source that would be considered a major source (*i.e.*, 25,000 tons), the BACT cost impact associated with

CCS would be \$2,500,000 per year and the cost impact associated with the current carbon dioxide credit value of \$20 per ton would be \$500,000 per year.

BACT determinations are made on a case-by-case basis, and will evolve as new technologies emerge for controlling carbon dioxide and other greenhouse gas emissions. In the immediate future, however, it appears that combustion sources subject to BACT requirements for greenhouse gases will be implementing aggressive efficiency measures, exploring the use of low-greenhouse gas generating fuels, and possibly installing CCS systems.

Impacts of the Reporting Rule. EPA’s proposed tailoring rule and the looming regulation of greenhouse gas-generating facilities under the Title V and PSD programs come in the wake of another EPA regulation that alone could significantly affect these sources. EPA’s greenhouse gas reporting rule, which was signed Sept. 22, 2009, requires, among other things, that many stationary sources monitor and report to EPA their annual emissions of the six greenhouse gases described above (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs).³⁷

For most sources, greenhouse gas emissions are required to be tracked and reported at the facility level. Not coincidentally—and with the exception of certain listed sources that must monitor and report greenhouse gas emissions at any level—the rule also targets facilities with annual emissions above 25,000 tpy carbon dioxide equivalent. Of these, the rule identifies a second set of listed industries that are required to report their annual emissions of greenhouse gases from all sources at a facility if these emissions exceed the 25,000 tpy threshold.³⁸ All remaining facilities that have stationary fuel combustion units with an aggregate combustion capacity above 30 mmBtu and exceed 25,000 tpy carbon dioxide equivalent in emissions are required to monitor and report greenhouse gas emissions from those combustion units.³⁹

EPA has stressed the reporting rule does not place any limits on greenhouse gas emissions, noting that “[t]he rule does not require control of greenhouse gases, rather it requires only that sources above certain threshold levels monitor and report emissions.”⁴⁰ The agency maintains the rule will merely “inform decisions” about how to regulate greenhouse gas emissions, including whether new source performance standards are appropriate under Clean Air Act Section 111.⁴¹ The reporting rule’s preamble goes on to state: “This rule-making does not indicate EPA has made any final decisions on pending actions. In fact the mandatory GHG reporting program will provide EPA, other government agencies, and outside stakeholders with economy-wide data on facility-level (and in some cases corporate-level) GHG emissions, which should assist in future policy development.”⁴²

Notwithstanding EPA’s stated intentions, the greenhouse gas reporting rule will have immediate and prac-

³⁴ Clean Air Act § 165(a)(4), 42 U.S.C. § 7475(a)(4).

³⁵ 40 C.F.R. § 52.21(b)(12).

³⁶ Hyperion Energy Center, *BACT Analysis for Emissions of Carbon Dioxide*, March 2009, RTP Environmental Associates Inc., available at http://www.hyperionec.com/files/HEC_CO2_BACT_Analysis.pdf.

³⁷ Mandatory Reporting of Greenhouse Gases, Final Rule, Environmental Protection Agency, Sept. 22, 2009, Pre-publication notice at 21 (*Greenhouse Gas Reporting Rule*), issued Oct. 30, 2009 (74 *Fed. Reg.* 56,260).

³⁸ *Greenhouse Gas Reporting Rule* at pp. 33-36.

³⁹ *Id.*

⁴⁰ *Id.* at 1.

⁴¹ *Id.* at 24.

⁴² *Id.* at 26.

tical implications for the many sources to be regulated soon under the Title V and PSD programs, regardless of “future policy development.” It will effectively establish the framework for enforcement of the new PSD and Title V permitting requirements by providing EPA with the information it needs to determine whether carbon dioxide equivalent emissions thresholds have been exceeded. Facilities that report greenhouse gas emissions under the reporting rule, therefore, will be putting EPA on notice that they may also be subject to Title V and PSD permitting. Facilities that fail to report, meanwhile, could face penalties for violations of up to three regulatory programs (the reporting program, PSD, and Title V).

The most important thing for reporting entities to bear in mind now is that in light of the looming regulation of greenhouse gas emissions under the Title V and PSD programs, compliance with the reporting rule may have implications beyond merely providing the agency with emissions data.

Preparing for New Requirements

Though the regulation of greenhouse gas emissions under the PSD and Title V programs now seems inevitable, there are steps that companies and other entities can take now to mitigate the effects of the new regime.

First, companies with facilities that currently are undergoing Title V or PSD permitting should work diligently with their permitting authorities to ensure their permit applications are processed as soon as possible—in advance of EPA’s light-duty vehicles regulation—to avoid having to account for greenhouse gas emissions. There is, unfortunately, no guarantee that permits issued during this interim period (especially PSD permits) will not escape challenge for not addressing greenhouse gas emissions, and, indeed, some permits already have been challenged on this basis. In November 2008, the Environmental Appeals Board remanded a PSD permit to EPA based on a challenge that the permit, issued to a proposed coal-fired power unit, did not include carbon dioxide emission limits. The EAB instructed the agency to consider whether requirements to monitor carbon dioxide emissions under other Clean Air Act programs are sufficient to trigger PSD applicability.⁴³ This remand prompted EPA to issue the Interpretive Memorandum (discussed above in footnote 6) concluding that greenhouse gases are not “subject to regulation” under the act until a requirement mandating “actual control” of these emissions is adopted. Although EPA is reconsidering this position, its interim policy is that actual control is required to consider a pollutant subject to regulation under the Clean Air Act, and therefore greenhouse gases are not (until the light-duty vehicle regulation goes into effect) part of the PSD or Title V program.⁴⁴ As such, facilities still have at least a chance to avoid PSD permitting if their permits

are issued prior to any regulations setting greenhouse gas emission limits. As soon as EPA issues its light-duty greenhouse gas regulation, however, this window most likely will close.

Second, companies should conduct a thorough evaluation of their greenhouse gas emissions, especially those with facilities that have a combustion capacity exceeding 20 mmBtu. Such evaluations likely will be necessary for many facilities to determine whether they are required to report emissions under the reporting rule. In light of possible PSD and Title V applicability, however, it also is prudent to evaluate greenhouse gas emissions with these programs in mind. Companies that may face new requirements as a result of what they report to EPA will be in a better position to handle these new requirements if they are prepared in advance.

Third, take advantage of the rulemaking process. There still are ample opportunities to comment on proposals that ultimately could determine whether sources of greenhouse gas emissions are subject to PSD and Title V permitting requirements, and further, how these programs are implemented with respect to these sources. This regulation likely will be the driver for regulation of stationary sources of greenhouse gas emissions under the PSD and Title V programs. These sources, therefore, have an interest in ensuring that their concerns are considered by the agency as it determines both the adoption and timing of these regulations.

In addition, EPA’s proposed reconsideration of its PSD Interpretive Memorandum remains open for comment until Dec. 7, 2009.⁴⁵ It was under this determination that EPA concluded that the actual regulation of greenhouse gas emissions under any Clean Air Act program triggers applicability of PSD and Title V. Entities that want to challenge this position, therefore, will need to provide their comments to EPA through this process.

Finally, EPA is taking comment on its proposed PSD tailoring rule until Dec. 28, 2009. Here, again, is an opportunity for regulated entities to voice concerns or ideas about this proposal, including how PSD and Title V might be implemented with respect to greenhouse gas emissions, whether the 25,000 tpy threshold is appropriate, and whether EPA has authority to establish greenhouse gas emission thresholds.

Conclusion

As a result of various proposals currently under consideration by EPA, it seems highly likely that many stationary sources of greenhouse gas emissions will face new regulation under the Clean Air Act in coming months. Since applicability of the PSD and Title V programs is, at least in EPA’s eyes, driven by the adoption of any form of greenhouse gas emissions control, sources of greenhouse gas emissions may be subject to these programs as soon as EPA finalizes its light-duty vehicle greenhouse gas regulation, which is expected in March 2010. Companies and other regulated entities, therefore, should begin preparing for this outcome, while simultaneously taking whatever measures they deem necessary to continue to influence the rulemaking process. These opportunities still exist with proposals

⁴³ *In re Deseret Power Electric Cooperative*, PSD Appeal No. 07-03 (EAB 2008). In this case, the petitioner, Sierra Club, argued that the term “subject to regulation” contained in the PSD regulation and discussed above, should be broadly interpreted to mean any pollutant that is subject to any type of requirement, including monitoring and recording-keeping. Because the Acid Rain Program requires utilities to monitor carbon dioxide emissions, Sierra Club claimed that they effectively are regulated under the Clean Air Act and thus trigger PSD permitting requirements.

⁴⁴ *Tailoring Rule*, pre-publication draft at p. 45.

⁴⁵ PSD: Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by the Federal PSD Program, 74 *Fed. Reg.* 51,535 (Oct. 7, 2009).

still subject to public comment. However, the time for acting is diminishing quickly.

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