

Climate Change Legislation and Regulation: Impacts on Transportation and Manufacturing

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In the universe of prime suspects for greenhouse gas (GHG) controls, the transportation and manufacturing sectors at first blush seemingly emerge as relative afterthoughts in the legislative and regulatory agenda. While both sectors each contribute roughly one-third of the nation's GHG emissions, they are most often overshadowed by approaches to climate change controls on the utility sector, which contributes a greater percentage of emissions and which has been front and center in the discussions so far. Even the agriculture sector, which contributes only a sliver's share of emissions compared to transportation and manufacturing, at times attracts more of the debate in assessing impacts and approaches to climate change.

Yet, this relative lack of attention on the surface does not translate into a lack of focus by government regulators or any less impact to these sectors. Because of the significance of the emissions from transportation and manufacturing, and due to the operation of law that inevitably will encompass these sectors into GHG regulations in early 2011, neither sector will be immune in the short or long term from the nation's upcoming suite of GHG controls. While each sector poses unique challenges to regulators and legislators beyond those faced by utilities, the current question is no longer whether these sectors will be regulated, but rather when and how they will be.

I. The Unique Challenges of Regulating GHGs From Transportation and Manufacturing

At the outset, given the additional complexities in regulating GHGs from the transportation and manufacturing sectors, it may come as no surprise that the utility sector is frequently the poster child for mandatory GHG controls. Environmentalists at the leading edge of pushing GHG controls before

the U.S. Congress and the executive branch to date largely have focused their target on utilities, particularly coal-fired power plants, for a number of reasons. First, the utility sector represents the largest source of emissions in the United States and in the world. Second, energy production sits atop the GHG "food chain" and thus addressing utilities has a trickle-down effect (both environmentally and economically) on other sectors that depend on energy. Third, while utilities generate energy in different ways using varying conventional, alternative, and renewable resources, the GHG emissions from the sector are significantly attributed to coal-fired power plants, which share certain core designs and technologies, and thus can be approached through common and generalized means. Fourth, environmentalists increasingly have focused on non-climate change impacts of coal-fired power plants in their campaign to reduce reliance on coal, such as mountaintop mining, coal ash, mercury emissions, and water quality issues.

In contrast, both transportation and manufacturing are in relatively distinct positions from the utility sector. While all three sectors are responsible for significant amounts of GHG emissions, the similarities stop there. From a regulatory perspective, there are two fundamental distinctions between utilities and the transportation and manufacturing sectors. First, unlike coal-fired power plants for utilities, the transportation and manufacturing sectors typically do not share a "lowest common denominator" process such as coal-fired power plants responsible for the overwhelming bulk of their GHG emissions; instead, their emissions are contributed by different subsectors that are largely distinct from each other and which each contribute a relatively small proportion of GHGs by themselves (the closest contender would be passenger cars, which contribute one-third of the transportation sector's emissions). Second, due to the widely varying nature of the technologies and processes in the transportation and manufacturing subsectors, regulatory solutions must be specifically designed and narrowly tailored to each of the

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numerous different subsectors, imposing increased regulatory burdens on developing effective solutions.

The transportation sector, for example, is divided into several subsectors that include widely varying technologies, including cars and light-duty trucks, heavy-duty trucks, aircraft and aircraft engines, marine vessels, locomotives, and nonroad engines. Each of these subsectors requires fundamentally different approaches to reduce GHG emissions from other subsectors. For example, a solution to reduce GHGs for cars unlikely will be effective for marine vessels, and any approach to light-duty trucks bears little to no relevance to a solution for heavy-duty trucks. Further, existing technologies already vary widely within each subsector, making an effort to regulate any individual subsector a unique challenge. The nonroad engine category, for example, alone includes scores if not hundreds of mobile sources from lawnmowers and weed wackers to generators and earth-moving machines. In addition, there is an international component at least to marine vessels and aircraft that counsels for U.S. regulations to be reconciled with regulations around the world and international standards. Finally, the regulation of the transportation sector extends beyond mere engines and devices; the control of renewable and low-carbon fuels frequently is dovetailed with efforts to address GHGs from transportation. The regulatory challenges in approaching the transportation sector, therefore, are unique and significant.

Similar analogies and challenges can be drawn for the manufacturing sector. Beyond the relatively small handful of subsectors for transportation, the manufacturing sector is represented by hundreds of different source categories ranging from heavy industry, such as cement kilns, oil refining, paper manufacturing, and steel manufacturing, to high-technology chemical manufacturing, automobile assembly, and electronics manufacturing. While the manufacturing sector, as a whole, is a significant contributor of GHGs, each particular subsector represents a very small slice of the nation's GHG pie. Because rules have to be narrowly crafted for the technologies and processes applicable in each subsector, and the ultimate GHG contributions for each subsector are relatively small, manufacturing, to date, has not ranked highest on the agenda for GHG controls. It follows that a regulatory approach to addressing GHGs from manufacturing cannot feasibly be imposed at once; instead, such controls must be phased in subsector-by-subsector over a period of time depending on varying factors, such as court consent decrees, priorities, ease of developing technological solutions, and scope of GHG emissions. However, despite these formidable regulatory hurdles, like other sectors, manufacturing nonetheless will soon be subject to such requirements by operation of law.

II. Setting the Stage for Clean Air Act GHG Controls

Beyond any one sector, the United States at this moment is engaged in a fundamental shift toward a carbon-constrained economy that will encompass transportation and manufacturing. The nature and character of this transition fundamentally transformed in the latter half of 2009.

A. Early 2009: The Push Toward Market-Based Controls in the American Clean Energy and Security Act

In the first half of 2009, the focus of imposing GHG controls largely was on new legislation that would enact a market-based mechanism, such as a cap-and-trade system. As the Obama Administration took office, it appeared that there was a broad consensus and momentum, shared by the U.S. Environmental Protection Agency (EPA), that legislation should be the preferred route for regulating GHGs.¹ This consensus, in fact, was alluded to in late 2009 regulatory proposals by the Obama EPA, where the Agency itself stated that if it literally applied the Clean Air Act (CAA)² to GHGs, the results would be “absurd,” “contrary to expressed congressional intent for the PSD and title V provisions,” and would “severely undermine both programs.”³

The preference for legislation over regulation motivated passage of the American Clean Energy and Security Act (ACESA)⁴ by the U.S. House of Representatives. While, as discussed above, the debate surrounding ACESA focused disproportionately on utilities, the legislation would impact transportation and manufacturing in subtle but specific ways.

Regarding mobile sources, under ACESA, Congress largely would delegate discretion and authority to control emissions from the transportation sector to EPA's existing authority under CAA Title II, with a few limited exceptions. The legislation, for example, in §821 would have set a deadline of December 31, 2011, by which EPA was to promulgate

1. Robin Bravender, *Murkowski Accuses EPA Leader of Conflicting Statements on GHG Regulation*, NYTIMES.COM, Mar. 3, 2010, <http://www.nytimes.com/gwire/2010/03/03/03greenwire-murkowski-blasts-epa-leader-for-conflicting-st-92488.html>. This consensus was well reflected in the Advanced Notice of Proposed Rulemaking on regulating GHGs under the Clean Air Act (CAA), issued by the Bush Administration EPA in the summer of 2008. See *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44354 (proposed July 30, 2008). This consensus was based on the view that the CAA was designed to regulate pollutants that: (1) were distributed locally around the sources of these pollutants; (2) had significant local health effects around these sources; (3) could have a significant local health impact if a source released 250 tons of the pollutant annually; and (4) could be significantly curtailed without reducing energy use. None of these conditions holds true for carbon dioxide, and the consensus view was that CAA regulation of GHGs was unworkable.
2. 42 U.S.C. §§7401-7671q (2007), ELR STAT. CAA §§101-618.
3. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 74 Fed. Reg. 55292, 55303 (proposed Oct. 27, 2009).
4. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (as passed by the U.S. House of Representatives, June 26, 2009).

regulations for nonroad vehicles, likely accelerating the timing of such regulations from the Agency. That same provision also authorized averaging, banking, and trading of compliance credits among all mobile source sectors under the CAA, delegating EPA authority to enact its own market-based trading system for mobile sources, if it chose to do so. Section 276, in contrast, sent direction to EPA to avoid regulating the aircraft sector by providing a “sense of Congress” that EPA should defer regulation of aircraft to standards set by the International Civil Aviation Organization. Thus, on the whole, the highly complex cap-and-trade legislation largely shunned and skirted any novel approach for the transportation sector, deferring and authorizing at the outset to EPA’s existing command-and-control authority under Title II of the CAA to address GHGs.

ACESA addressed manufacturing in a more direct way, but still not as explicitly as the energy sector or even agriculture. First, §700(F), (G), (H), and (I) would encompass virtually all manufacturing sectors within the coverage of the cap. While the former three provisions identify specific manufacturing sectors covered by the cap, §700(I) is effectively a “catchall” that applies to any fossil fuel-fired industrial boiler emitting more than 25,000 tons/year of carbon dioxide equivalent (CO₂e). Second, ACESA would create a dual regime of authority for manufacturing by subjecting certain manufacturing sources that emit between 10,000 and 25,000 tons/year of CO₂e (and thus not immediately subject to the cap) to EPA regulatory authority under the new source performance standards (NSPS) program.⁵ Third, ACESA largely preferred the utility sector over manufacturing by awarding the vast bulk of free allowances (which are ACESA’s permits to emit GHGs) to utilities. ACESA would assign allowances to only 47 specific industries that included almost the entirety of the utility sector and a portion of energy-intensive, trade-sensitive industries. This allocation would leave 427 manufacturing sectors without any free allowances and having to resort instead to buying allowances on a trading market.

B. Late 2009: Acquiescing to an EPA Command-and-Control Regime

Almost as soon as ACESA was passed by the House, the momentum toward legislation over regulation was beginning to come undone. National environmental organizations, such as the Natural Resources Defense Council (NRDC) and the Sierra Club, had become disenchanted with what they saw as a weakened bill that had emerged from the House.⁶ Believing the bill inadequate on its own, their preference became a “belt-and-suspenders” approach of legislation *plus* regulation, with the emphasis in the immediate term on the latter.⁷

5. The U.S. Senate version, discussed below, impacted manufacturing even further by subjecting manufacturing sectors *both* to the cap *and* to EPA regulatory authority at the same time.

6. See AEI Panel, Regulation of GHGs Under the Clean Air Act, July 24, 2009, available at <http://www.aei.org/event/100081> (presentations of David Doniger, NRDC, and Bruce Nilles, Sierra Club).

7. *Id.*

This move toward preserving—and even expanding—EPA’s regulatory authority only accelerated after ACESA’s passage, as the prospects of an enacted cap-and-trade regime receded. First, it became clear that ACESA would not move quickly through the U.S. Senate. Sens. Barbara Boxer (D-Cal.) and John Kerry (D-Mass.) introduced a similar bill, titled the Clean Energy Jobs and American Power Act,⁸ to Senator Boxer’s Environment and Public Works Committee on September 30, 2009. Although an incomplete version of the bill went through two sets of revisions, and was ultimately passed out of committee on November 5, 2009, on a party line vote, it has received little attention since that point. The focus of Senate efforts moved on to a triumvirate of Sens. Joe Lieberman (I-Conn.), Kerry, and Lindsey Graham (R-S.C.), and ultimately a Lieberman-Kerry proposal released in early May. During the Copenhagen negotiations, the senators released a four-page document laying out, in general terms, the goals of their proposal.⁹ Although Senators Kerry and Lieberman did ultimately release draft text on May 12, there seems to be little prospect of any proposal passing in the near future with mid-term elections looming. Consequently, the focus of GHG controls has increasingly shifted to EPA action.

In light of the apparent inevitability of EPA regulations being enacted in early 2010, the attention on legislative efforts to control GHGs had become overtaken by legislative initiatives to block EPA regulation of GHGs. Sen. Lisa Murkowski (R-Alaska) offered multiple proposals to delay EPA regulations, one focused on revoking EPA’s endangerment finding regarding GHGs, a prerequisite to CAA regulation, and the other focused on delaying EPA’s regulation of stationary sources under the CAA, while enabling mobile source standards to move forward.¹⁰ Sen. George Voinovich (R-Ohio) introduced his own provisions that would preempt all executive branch authority from addressing GHGs, including under the Endangered Species Act¹¹ and the National Environmental Policy Act.¹² At the same time, Sen. Jay Rockefeller (D-W. Va.) and House Democrats have introduced bills to delay EPA regulations as well.¹³ The outcome of these efforts remains highly uncertain. Each of these options would be subject to a presidential veto, which means the most likely outcome is still action from EPA.

III. Controlling GHGs From Mobile Sources

The current effort underway at EPA to use the CAA to address GHGs from all sources began with an unassuming

8. S. 1733, 111th Cong. (Sept. 30, 2009).

9. Robin Bravender, *Long-Awaited Senate Blueprint Calls for 17 Percent Emissions Cut*, E&E NEWS, Dec. 10, 2009, <http://www.eenews.net/eenewspm/2009/12/10/archive/1>.

10. Robin Bravender, *Senate Agreement Allows Murkowski to Offer EPA Amendment*, E&E NEWS, Jan. 4, 2010, <http://www.eenews.net/eenewspm/2010/01/04/archive/2> (available through subscription).

11. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

12. 42 U.S.C. §§4321-4370f, ELR STAT NEPA §§2-209.

13. Robin Bravender, *Two Key House Dems Move to Block EPA Regulatory Authority*, NYTIMES.COM, Feb. 26, 2010, <http://www.nytimes.com/gwire/2010/02/26/26greenwire-two-key-house-dems-move-to-block-epa-regulator-62739.html>.

petition asking EPA to regulate GHGs from cars in 1998. Some 10 years later, that petition spawned the landmark U.S. Supreme Court decision *Massachusetts v. EPA*,¹⁴ which required EPA to decide whether GHGs from cars endanger human health and/or welfare, and which opened the legal door for EPA being able to actually regulate GHGs from cars under §202 of the CAA. EPA issued its final endangerment determination for cars on December 15, 2009, satisfying the legal prerequisite to move forward with GHG controls for cars and light-duty trucks and, ultimately, satisfying the 1998 petition's request 11 years later.

On the heels of the endangerment determination, EPA also finalized the Agency's and nation's first ever GHG standards for any sector by setting controls for cars and light-duty trucks. While being the first rule to lead the nation across the threshold into a carbon-constrained economy, EPA's first GHG standards for motor vehicles were, at the same time, one of the Agency's most significant yet anticlimactic events in its history. Any lack of controversy over the first GHG standards themselves stemmed from the fact that months earlier the nation's auto manufacturers had ceased their resistance to GHG regulations for their industry and joined forces with EPA to set standards through 2016. Thus, EPA, in an undeniably masterful way, had obtained the consent, collaboration, and endorsement from the stakeholders most directly impacted by its first set of GHG regulations: the auto industry. EPA ultimately finalized the GHG standards on April 1, 2010, in coordination with complementary Corporate Average Fuel Economy (CAFE) standards promulgated by the National Highway Traffic Safety Administration. Indeed, EPA's substantive approach to regulating GHG emissions from cars under §202 of the CAA is virtually identical to the well-established approach to regulating fuel efficiency under CAFE, with the exception that the EPA standards are expressed in grams of CO₂ per liter of fuel consumed, while the CAFE standards are based on miles per gallon.

Despite the full support of the auto industry, the rules did not remain uncontroversial. To the contrary, EPA's promulgation of both the endangerment determination and the car standards themselves generated among the greatest storms in the Agency's history. This is because, as explained below, EPA has interpreted the CAA as instantaneously expanding EPA's authority over cars to requiring controls for GHGs from *all other mobile and stationary sources*. For example, in the context of mobile sources, the endangerment determination itself likely will satisfy similar endangerment prerequisites for other mobile source sectors under the CAA.¹⁵ These endangerment determinations include CAA §213's finding for emissions from marine shipping vessels, §231's finding for emissions from aircraft and aircraft engines, and §213's finding for emissions from nonroad vehicles. In the next year, EPA is expected to respond to petitions from environmental nongovernmental organizations requesting regulations

of sources in each of these categories.¹⁶ And, as described below, beyond mobile sources, the promulgation of the motor vehicle standards will have far-reaching impacts on stationary sources.

Now that EPA has finalized the standards for cars and light-duty trucks, it is likely to start promulgating standards for other transportation sectors. It is likely to turn first to heavy-duty trucks and buses in June 2010, with a proposal for standards from those sources. However, because of the distinctions and complexities in heavy-duty technology, compared to passenger vehicles, the standards and rules are likely to be fundamentally different than the light-duty standards and go beyond technology-based standards to operational standards as well. EPA is likely to turn next to setting standards for specific classes and types of nonroad engines, particularly given the direction expressed by the House in ACESA to prioritize this sector. Marine vessels and aircraft pose additional challenges to EPA that implicate not only technological but international issues as well, and thus stand more likely to be deferred pending negotiations by the International Maritime Organization and the International Civil Aviation Organization, respectively.

While the regulations and standards among different sub-sectors of the transportation industry are unlikely to share much in common, the light-duty rules may provide one template for other mobile source sectors: cooperation. The willingness of the auto industry to work cooperatively with EPA on the promulgation of mobile source standards may well create precedent for other regulated transportation stakeholders. On the whole, the mobile source sector as of late has appeared less averse to the consequences of EPA regulation of GHGs than other sectors, for a number of reasons. First, EPA is required under the law to provide adequate lead time to the transportation industry prior to imposing any new standards. Stationary sources, in contrast, would be impacted immediately, and perhaps before EPA decides how to set GHG standards for such sources. Second, GHG standards for transportation ultimately equate to fuel efficiency, and most manufacturers have been planning for greater fuel efficiency for some time. Third, because of the advance-planning cycles for the industry, many manufacturers would prefer to bring certainty to the applicable standards in future years, in contrast to the uncertainty of litigation that would exist if the rules are challenged. For these same reasons, however, even those mobile source manufacturers who are willing to work collaboratively and support regulations of mobile sources themselves may remain concerned about EPA's efforts to regulate the assembly lines, manufacturing facilities, and other stationary sources that create those motor vehicles and engines.

Finally, beyond the regulation of engines and vehicles, EPA is simultaneously moving forward with important regulations aimed at improving the life-cycle GHG emissions associated with the combustion of fuels. On February 3,

14. 549 U.S. 497, 37 ELR 20075 (2007).

15. See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009).

16. Digests of EPA's statements on each of these categories, drawn from its Advanced Proposal for New Rulemaking, may be found at <http://www.sidley.com/climatechange>.

2010, EPA released its Renewable Fuel Standard regulations (RFS2). The RFS2 establishes significant baselines and analyses for a wide range of renewable, cellulosic, and advanced fuels that are mandated by Congress to be incorporated into the nation's fuel supply under the Energy Independence and Security Act, based on EPA's assessments of improvements in the life-cycle emissions associated with certain renewable fuels compared to petroleum (the so-called well to wheels comparisons). Meanwhile, this summer, EPA is planning to determine whether to approve a higher blend of ethanol in gasoline for conventional engines—a 15% ethanol blend.¹⁷

IV. Controlling GHGs From Stationary Sources

Even though EPA has yet to even propose any GHG standards for stationary sources, by operation of law, such standards will be imposed on manufacturing as early as January 2, 2011. EPA's approach to regulating manufacturing (along with the utility sector) will be fundamentally different than mobile sources. Unlike mobile source rules, which apply only to new productions of vehicles and engines rolling off assembly lines as of certain model years in the future, EPA will approach manufacturing in at least two, and possibly three, ways: (1) new and modified sources through the prevention of significant deterioration (PSD) permitting program; (2) existing and new sources through the NSPS program; and, *possibly*, (3) all sources through a market-based system imposed under the CAA, such as a cap and trade.

A. New and Modified Sources

The most imminent ramification on the manufacturing sector will be on new and modified sources that will require a PSD permit. The PSD permitting requirements will apply with equal force to all manufacturing sectors instantaneously. Thus, unlike transportation, applicability will be determined by whether a certain activity, once constructed, will emit GHGs above certain specified thresholds, not based on the nature of the activity itself.

Applicability. PSD permitting requires preconstruction permits when the emissions of a proposed project are above certain specified thresholds. The requirements apply both to new projects and modifications to existing projects. Thus, the PSD requirements stand to capture all construction within the manufacturing sector of a certain magnitude that occurs on or after January 2, 2011.

At the outset, the CAA allows EPA to set separate thresholds that determine whether PSD permitting will be required for both new or modified sources. The CAA, however, sets a cap on the thresholds of 250 tons per year. Under EPA's own estimates, a threshold of 250 tons per year would capture more than 6 million sources in the United States and require

the issuance of 40,000 PSD permits per year, compared to the 280 permits per year currently issued.

To avoid such "absurd results," EPA will raise the threshold for purposes of GHG permits. Initially, EPA proposed setting the threshold at 25,000 tons per year, which, according to its initial estimates, would capture roughly 400 industrial sources. EPA recently has indicated it will set the threshold at no less than 100,000 tons per year at the outset. However, these efforts to relieve smaller sources from permitting requirements, while well-intentioned, have been met with great scrutiny for several reasons. First, most PSD permitting is done by states, not EPA, and as many states have warned, it often takes at least two years to modify the state implementing laws.¹⁸ During this period, smaller sources will be subject to PSD. Second, both environmental and industry organizations have signaled an intent to challenge the Tailoring Rule, and the defensibility of EPA's approach is in significant legal jeopardy, because courts almost never authorize the kind of statutory rewriting that EPA has proposed—substituting the number 25,000 for the number 250.¹⁹ Third, even if efficiently implemented and upheld, the Tailoring Rule will be phased out by 2016,²⁰ and so only defers the inevitable overwhelming burden on smaller sources.

Effective Date. On March 29, EPA announced that GHG controls for stationary sources will be triggered on the first date that its GHG standard for cars takes effect: January 2, 2011. In the same final rule, EPA also stated that, for some period of time, GHG regulations would only apply to sources that would require permits for other pollutants anyway, thus limiting the impact of the PSD permitting program at the outset only to those sources that already would be subject to PSD, even without GHG emissions. But EPA will maintain this respite may last only six months. EPA also stated that it would not grandfather permit applications made before January 2, 2011. If a source cannot finalize a permit before January 2, it will have to accept GHG controls. Finally, EPA stated that it would not prevent state permitting authorities from imposing GHG controls before January 2.

Alternative No Automatic PSD Trigger (NAPT) Theory. Given the weaknesses that have emerged in EPA's proposed Tailoring Rule, possible alternate solutions have emerged. One, the NAPT theory, has emerged as the most debated alternative. The NAPT theory coincides with EPA statements that it "could address" the PSD problem by applying PSD regulation of GHGs only to those sources that are subject to PSD "on the basis of their emissions of a non-GHG

17. Allison Winter, *EPA to Decide on Fuel Blends by Late Summer—Jackson*, E&E News, Mar. 3, 2010, <http://www.eenews.net/eenewspm/2010/03/03/archive/6> (available through subscription).

18. See Coalition for American Jobs, *Stationary Source GHG Regulation Under PSD*, <http://coalitionforamericanjobs.com/2010/03/fact-sheet-stationary-source-ghg-regulation-under-psd/> (last visited Apr. 12, 2010). The Illinois EPA has stated: "We believe a reasonable estimate of the time needed to enact the needed revisions to our laws and regulations is a minimum of one to two years from the date we begin the formal process, which has not yet started." *Id.* (citing Illinois EPA, Docket ID: EPA-HQ-OAR-2009-0517-5135). The New Jersey Division of Air Quality (DAQ) has stated that the EPA "should provide at least 2 years for states to revise statutes and rules." *Id.* (citing New Jersey DAQ, Docket ID: EPA-HQ-OAR-2009-0517-4154).

19. *Id.*

20. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 74 Fed. Reg. 55292, 55303 (proposed Oct. 27, 2009).

pollutant.”²¹ Thus, under this NAPT approach, no new sources would have to apply for PSD permits due to their GHG emissions. Sources currently subject to the PSD program would still, for the first time, have to implement GHG controls. This could delay construction and modification of large industrial facilities already subject to PSD as GHG controls are decided. But, importantly, the NAPT approach would prevent the most drastic consequences of regulating GHGs under the CAA for millions of smaller sources not subject to PSD.

One advantage of the NAPT approach is that it is more faithful to the text of the CAA than the statutory rewrite proposed in the Tailoring Rule: there is no national ambient air quality standard (NAAQS) for GHGs, and the CAA dictates that only NAAQS pollutants should trigger the need for a PSD permit. Another benefit of the approach is that it would not undermine EPA’s regulatory authority to address GHGs from stationary sources. The largest emitters of GHGs will continue to require PSD permits, and once a permit requirement is triggered, these sources will have to adopt the best available control technology (BACT) for GHGs, as well as any other pollutants subject to regulation under the CAA. Second, EPA could continue to address GHG emissions from stationary source sectors through NSPS, adopted under CAA §111. These standards are set by EPA on a sector-by-sector basis, allowing EPA to prioritize sectors and adopt standards tailored to that category through an orderly notice-and-comment rulemaking. This stands in sharp contrast to PSD requirements, which would be immediately imposed across the board, and require individualized permitting determinations.

In the past, however, EPA has assumed that PSD can be triggered by any pollutant, whether or not an NAAQS has been set for it.²² Until now, this assumption was unimportant, because major sources of non-NAAQS pollutants are typically regulated by NSPS. Thus, to adopt this solution, EPA will need to clarify that PSD can only be triggered by a pollutant for which an NAAQS has been set. To date, the Agency has been unwilling to do so.

Consequences. Beyond when GHG standards will be imposed on stationary sources, perhaps the most critical, and most unresolved, issue is what will constitute BACT for GHGs. Although this issue has attracted significant brainstorming, there is still little consensus about what form BACT requirements will eventually take. In October 2009, EPA convened a Climate Change Work Group composed of members from industry, state agencies, and the environmental nonprofit worlds to discuss possible options for BACT.²³ These groups have examined many possible options for regulation, including energy efficiency, carbon sequestration,

fuel-switching, and allowance trading and offset regimes, but so far have not come to substantial consensus.²⁴

This is one area where manufacturing may ultimately be better positioned than the utility sector. It is foreseeable that EPA could approach BACT guidance in a bifurcated way for utilities and other sectors. For example, EPA may decide to approach more aggressive options for BACT for utilities, while promoting less-stringent requirements for other sectors relating to manufacturing, such as energy efficiency, at the outset. Any such bifurcated approach, however, would be of limited relief, given the manufacturing sector’s dependence on purchased electricity.

At the same time, manufacturing provides greater challenges for developing BACT guidance and standards than utilities. Whereas utilities share a limited set of technologies, manufacturing represents hundreds, if not thousands, of different processes and technologies. Thus, it will be more challenging for EPA to issue guidance in advance that would provide significant insight into how EPA may approach BACT for specific subsectors in manufacturing, and such decisions are likely to be delayed until case-by-case examples arise in the context of specific permits.

B. Existing Sources

The PSD permitting requirements will apply instantly, beginning January 2, 2011, to any new or modified source that does not have a completed PSD permit issued. In the meantime, EPA may begin in the summer of 2010 to develop NSPS that are intended to express appropriate GHG control technologies for various manufacturing source categories, as well as ultimately apply standards to existing sources.

CAA §111 authorizes EPA to develop NSPS for individual source categories. Sources subject to an NSPS must meet a best demonstrated technology (BDT) standard for that source category, rather than the case-by-case BACT standard established through the PSD program. Section 111, unlike other potential CAA regulatory options, provides for consideration of costs in establishing BDT and discretion in the type and size of facilities regulated, as well as the scope of the pollutants.

Initially, EPA was believed to be planning to propose the first NSPS with controls for GHGs in June 2010 for the Portland cement source category, which it likely would finalize in early 2011.²⁵ However, EPA appears at this point to be deferring GHG controls under NSPS until 2011, at which time it likely will turn to the NSPS for electric-generating units (including coal-fired power plants) and petroleum refineries in early 2011. It likely will take five to six years for EPA ultimately to revisit all relevant NSPS source categories to impose GHG controls.

21. 74 Fed. Reg. at 55327. EPA has already stated that it will adopt the NAPT approach when it first begins to regulate GHG emissions on January 2, 2011. But the NAPT theory states that this should be the Agency’s permanent approach, rather than a temporary respite.

22. 45 Fed. Reg. 52675, 52676 (Aug. 7, 1980).

23. U.S. EPA, Climate Change Work Group, <http://www.epa.gov/air/caaac/climatechangewg.html> (last visited Feb. 10, 2010).

24. See U.S. EPA, Climate Change Work Group: Climate Change Work Group Presentation to CAAAC and Group Reports, <http://www.epa.gov/air/caaac/climatechangewg.html> (last visited Feb. 10, 2010) (click hyperlinks under subsection “February 2010” for the Presentation and Group Reports).

25. See Jessica Leber & Saqib Rahim, *Cement Industry Seeks a Voice as EPA Sets Its Climate Rules*, E&E NEWS, Feb. 17, 2010, <http://www.eenews.net/climatewire/2010/02/17/archive/5> (available through subscription).

Once EPA establishes BDT for GHGs for any given source category, it could seek to impose such standards on existing sources. This path, however, is not a straightforward one. The CAA generally does not authorize EPA to impose NSPS standards on existing sources itself. Instead, §111(d) assigns primary responsibility for implementing NSPS for existing sources with the states. Application of §111(d) is virtually unprecedented, and thus the implementation of how NSPS will be imposed on existing sources is untested. At a minimum, it will take several years for EPA to first enact the NSPS for GHGs for any source category, and significant additional time for states to begin to impose such standards within the states. States likely will have some flexibility to implement the NSPS in different ways, and litigation likely will add further uncertainty and delays. Thus, ultimately, the impact of EPA CAA regulations on existing sources is more distant than on new and modified sources, but depending on how EPA ultimately defines BDT (including the possibility of fuel-switching), such regulations, once imposed, could have drastic consequences on the manufacturing sector.

C. Market-Based Systems

Finally, to the extent Congress does not pass legislation in the near term that implements an economywide cap-and-trade system, EPA likely will give consideration to implementing its own cap-and-trade regime under existing CAA authority. Once EPA implements the command-and-control regime described above through PSD and NSPS, it likely will consider whether to expand its regulatory authority to a market-based system as well.

EPA already has expressed strong policy rationales for implementing a market-based system under the existing CAA, and has cited legal authority in §§110 and 111 of the CAA, as well as Title VI pertaining to ozone-depleting substances.²⁶ Ultimately, the most likely scenario would be for EPA to attempt to utilize the flexibility of §111's NSPS regime to attempt to craft a market-based system, although the legal uncertainty of such an approach is in significant doubt following the U.S. Court of Appeals for the District of Columbia Circuit's decisions vacating the Clean Air Interstate Rule and Clean Air Mercury Rule. Nonetheless, despite those decisions, which have largely been interpreted as shutting the door to market-based systems under existing CAA authority, EPA may attempt to thread the needle in attempting a cap and trade under the CAA.

Notably, in discussing the possibility for a market-based system, EPA has discussed four options: (1) a cap-and-trade system; (2) an emissions fee or carbon tax; (3) a rate-based emission credit program based on performance standards, as opposed to absolute GHG emissions; and (4) a hybrid approach, such as a cap and trade with a price ceiling.²⁷ EPA has indicated that such a market-based system would operate in coordination with, and not in place of, a command-and-control system. According to EPA, a CAA market-based system "would not stand alone; it would be accompanied by source-specific or sector-based requirements as a result of other Clean Air Act provisions."²⁸

26. Advance Notice of Proposed Rulemaking, Regulating Greenhouse Gases Under the Clean Air Act, 73 Fed. Reg. 44354, 44482-90 (July 30, 2008).

27. *Id.* at 44514.

28. *Id.* at 44411.