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Greenhouse gas and climate change

Current law, regulation and policy

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Regardless of strongly held beliefs regarding climate change, the law now recognizes — at least as of this writing — that greenhouse gases (or GHG) are "air pollutants" regulated by the Clean Air Act. Entities potentially subject to greenhouse gas regulation, and their counsel, should become familiar with the scope and applicability of this new regulatory structure to ensure that compliance requirements are properly considered in project scoping, timing and staffing.

The impact of U.S. climate change and GHG policy extends far beyond mere compliance with the requirements triggered by the Environmental Protection Agency's (EPA) new GHG regulations. The Securities and Exchange Commission has issued guidance instructing publicly held entities regarding proper disclosure of risk factors related to climate change. Municipalities and industry are preparing for impacts expected due to climate change, referenced with the umbrella term "adaptation," and including measures to mitigate the impact of a rise in sea level and changing weather patterns including severe storms, flooding and prolonged drought. Engineering schools are even developing "adaptation" elements within core engineering curricula. Certainly, lawyers should become more aware of these developments to ensure clients are informed of potential legal issues. This article provides a short summary of these developments for all practitioners.

What are greenhouse gases?

Greenhouse gases are those gaseous substances that absorb and emit radiation (energy from sunlight) within the portion of the sunlight spectrum called the thermal infrared range. Generally the concept is that these gases present in our atmosphere, by absorbing and emitting the energy from sunlight, trap this energy within our atmosphere contributing to changes in our climate that may already be occurring.

Greenhouse gases include many naturally occurring substances such as water vapor, carbon dioxide, methane, nitrous oxide and ozone, which may also be emitted from manmade sources, as well as wholly manmade substances, such as chlorofluorocarbons (Freon) and sulfur hexafluoride (SF6). All greenhouse gases are not created equal. Some greenhouse gases trap a lot more heat than others. The degree to which a greenhouse gas traps heat is called the "global warming potential" or GWP. GWPs are calculated in reference to carbon dioxide, and over time, e.g., 100 years. By definition, carbon dioxide's GWP is 1, with several others as follows: methane, 25; nitrous oxide, 298; HFC-23, 14,800; sulfur hexafluoride, 22,800.[1] Thus, one ton of carbon dioxide would be expected to result in the same degree of heat trapping potential as 0.08 pounds of sulfur hexafluoride (*i.e.*, 1 /22,800 tons x 2,000 pounds/ton).

We generate these greenhouse gases in many ways. The most obvious is oxidation of carbon (to form carbon dioxide) from, say, just breathing, as well as from combustion of hydrocarbon fuels. Methane, *i.e.*, natural gas, is both a hydrocarbon fuel, as well as a greenhouse gas emission in its own right, generated by living creatures famously recognized by Justice Scalia quite literally as flatulence in his dissent in

Massachuetts v. EPA,[2] — but also fossil fuel extraction, landfills, wastewater treatment systems and other operations. Nitrous oxide (yes, laughing gas) is produced from agriculture soil management, vehicle emissions and nitric acid production, among other sources. Sulfur hexafluoride is generated primarily in manufacturing liquid crystal display (LCD) televisions.[3]

Background and common concepts

Some people recall "the Kyoto Protocol" and "cap-and-trade." The United States has never signed the Kyoto Protocol, an international treaty, linked to the United Nations Framework Convention on Climate Change (UNFCCC), pursuant to which participating countries (not including the United States) agreed to reduce their emissions of greenhouse gases to below 1990 levels by 2012, the end of the first "commitment period." Some may recall the highly publicized 2009 attempt by the participating countries to achieve commitments beyond 2012, *i.e.*, the 15th meeting of the UNFCCC Council of the Parties in Copenhagen in December 2009. This meeting failed to result in the final agreement originally contemplated, although "The Copenhagen Accord" initiated by President Obama did serve as a basis for recording consensus reached at COP15.[4] Follow-up meetings of the UNFCCC continue with the participation of the United States.[5]

The UNFCCC relies on findings of the Intergovernmental Panel on Climate Change (IPCC) formed in 1988 by the World Meteorological Organization and the United Nations Environment Programme (UNEP). Itself relying on voluntary contributions from thousands of scientists from 194 United Nations and World Meteorological Organization member countries, the IPCC's first assessment report in 1990 served as the impetus for the creation of the UNFCCC. The IPCC has developed much of the science upon which U.S. policies rest, including development of GWPs and basic greenhouse gas emission estimation methods — for engineering types, simple and familiar gross heat and mass balance approaches derived from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories[6] including, for example, the U.S. GHG Inventory and the EPA's Mandatory GHG Reporting Rule (discussed herein).

The United States never did enact greenhouse gas "cap-and-trade" legislation either, which you might remember as those hotly-debated legislative proposals including "McCain-Lieberman,"[7] "Lieberman-Warner"[8] and "Waxman-Markey"[9] — each including structures for mitigating greenhouse gas emissions with mandatory caps on emissions and greenhouse gas emission trading schemes. However, in 2006, California enacted its Global Warming Solutions Act of 2006 (AB32 cap-and-trade), which has survived challenge.[10] Also, in 2008, the Regional Greenhouse Gas Initiative (RGGI) was adopted in its 10 member states and held its first emission allowance auction.[11]

The Kyoto Protocol, proposed U.S. cap-and-trade legislation and state and regional cap-and-trade initiative — including California's AB32 and RGGI — focus on reduction of greenhouse gas emissions as one way to approach climate change "mitigation." Mitigation efforts are aimed at avoiding the worst impacts of climate change. One way to reduce greenhouse gas emissions from combustion of fossil fuels at large sources like coal-fired power plants is carbon dioxide capture and sequestration (CCS), which utilizes air pollution control equipment to remove or "capture" carbon dioxide from fossil fuel combustion emissions, compress the captured carbon dioxide, convey the compressed gas to an appropriate geological formation and then inject it into the geological formation where the hope is it will stay permanently.[12] There has also been reference to some fairly remarkable ideas involving "geoengineering," such as seeding the oceans with iron or infusing our atmosphere with aerosols to reflect sunlight back into space.[13]

Another climate change reference is "adaptation," which focuses on easing the world's experiences with the expected impacts of climate change. Adaptation efforts include protecting coastline areas by building sea walls, redesigning infrastructure such as wastewater treatment, drinking water treatment and power plants to withstand some of the expected impacts of climate change including power and supply chain disruption and water shortages, as well as moving infrastructure above expected rising sea levels.[14]

Contemplating these potential risks, the Securities and Exchange Commission expects publicly held companies to address climate change issues in disclosing risk factors. On Feb. 2, 2010, the SEC issued interpretive guidance explaining how public companies must disclose impacts of climate change related issues to shareholders. The categories of disclosures discussed by the SEC include impacts to business from:

1. Legislation and regulation including direct and indirect changes to profit or loss dynamics from cap-and-trade;

2. International accords;

3. Indirect consequences of regulation or business trends, such as decreased demands for goods that produce significant greenhouse gas emissions, or increased demand for services related to carbon-based energy sources, among others;

4. Physical impacts of climate change, including "severity of weather (for example, floods or hurricanes), sea levels, the arability of farmland, and water availability and quality, that have the potential to affect a registrant's operations and results."**[15]**

While Oklahoma practitioners may not find themselves routinely wrestling with California's AB32, RGGI or rising sea levels, Oklahoma entities are impacted by current EPA greenhouse gas regulation and potentially even recent greenhouse gas litigation.

Current U.S. greenhouse gas regulation and litigation

Greenhouse gas emissions are currently regulated as "air pollutants" pursuant to the Clean Air Act as implemented by the EPA, delegated to the state of Oklahoma, and implemented by the Oklahoma Department of Environmental Quality.**[16]** As "air pollutants," greenhouse gases are subject to air permitting, which does impose a form of emission restrictions. Additionally, GHG emissions are subject to reporting under a separate EPA rule, the "Mandatory Greenhouse Gas Reporting Rule." The EPA has also adopted regulation governing permanent geologic sequestration of carbon dioxide emissions.

It took a U.S. Supreme Court decision to prompt the EPA to regulate GHG as "air pollutants." On April 2, 2007, in *Massachusetts v. EPA*, the U.S. Supreme Court held for the state of Massachusetts and against the EPA, in a 5-4 decision, finding that the EPA does have authority under the Clean Air Act (CAA) to regulate carbon dioxide.**[17]** The case was granted certiorari from the U.S. Court of Appeals for the District of Columbia Circuit, *Massachusetts v. EPA*, 415 F.3d 50 (D.C. Cir. 2005). The Supreme Court reversed and remanded the D.C. Circuit's ruling which held that the EPA had not violated the CAA for refusing to regulate greenhouse gas emissions. Although the context of the decision was with regard to mobile source emission standards, the decision removed the EPA's previous basis for finding that it had no jurisdiction to regulate greenhouse gases.

The underlying facts were as follows: In response to previous rulemaking petitions filed by several states urging the EPA to regulate vehicle emissions of greenhouse gases, the EPA had concluded that it lacked authority under 42 U.S.C. §7521(a)(1) to regulate new motor vehicle emissions arguing that carbon dioxide is not an "air pollutant" as defined by 42 U.S.C. §7602. Further, even if it were, the EPA stated that it would decline to do so because regulation would conflict with other administration priorities.**[18]**

With *Massachusetts v. EPA,* the Supreme Court stated:

The Clean Air Act's sweeping definition of "air pollutant" includes "any air pollutant agent or combination of such agents, including any physical, chemical ... substance or matter which is emitted into or otherwise enters the ambient air ... ." §7602(g) (emphasis added). On its face, the definition embraces all airborne compounds of whatever stripe, and underscores that intent through the repeated use of the "any." Carbon

dioxide, methane, nitrous oxide, and hydrofluorocarbons are without a doubt "physical [and] chemical ... substances[s] which [are] emitted into ... the ambient air." The statute is unambiguous.[19]

Thus, the Supreme Court found that the GHGs are *air pollutants* as contemplated by the CAA. Further, the Supreme Court held that the EPA has no discretion to look to other administrative priorities in declining regulation of GHG, but must instead base its decision on whether this particular air pollutant "cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare."[20]

The Supreme Court remanded the case to the EPA to consider whether it would issue an "endangerment" finding consistent with the CAA. If the EPA were to find an "endangerment" to which vehicle emissions cause or contribute, the CAA requires the agency to regulate emissions of the pollutant from new motor vehicles.[21]

EPA rulemaking

On Dec. 15, 2009, the EPA promulgated its final rule, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act," finding that

1. The current and projected emissions of six key well-mixed greenhouse gases, including carbon dioxide and methane, constitute a threat to public health and welfare, and

2. The combined emissions from motor vehicles cause and contribute to the climate change problem which threatens public health and welfare.

These findings did not themselves impose any requirements on industry or other entities, but were a prerequisite to the EPA's adoption of greenhouse gas emission standards for motor vehicles.

On July 29, 2010, the EPA denied 10 petitions to reconsider its 2009 Greenhouse Gas Endangerment and Cause and Contribute Findings, including petitions from Coalition for Responsible Regulation, Competitive Enterprise Institute, Ohio Coal Association, Peabody Energy Company, State of Texas and the U.S. Chamber of Commerce, among others. With its denial, the EPA issued a Response to Petitions in three volumes:

- *Volume 1*, "Climate Science and Data Issues Raised by Petitioners";

- *Volume 2*, "Issues Raised by Petitioners on EPA's Use of IPCC"; and

- *Volume 3*, "Process Issues Raised by Petitioners."

In *Volume 1*, the EPA addressed petitioners' questions regarding the reliability of global temperature data, email discussions regarding temperature data, assertions that warming has slowed or stopped, questions regarding data sets maintained by NOAA, NASA and the Climatic Research Unit (CRU), and assertions that new studies not previously considered contradict key conclusions in the Endangerment Finding. In *Volume 2*, the EPA addressed claims regarding asserted errors in the IPCC's Fourth Assessment Report, assertions of bias within the IPCC, characterizations by petitioners of undue reliance by the U.S. Global Change Research Program and the National Academy of Sciences on the IPCC, and suggestions that the EPA's process was not rigorous. In *Volume 3*, the EPA addressed process issues raised by the petitioners including those regarding consideration of the CRU emails (referred to as climate-gate), the separate and independent nature of the USGCRP and NRC assessments, issues regarding integrity of peer-reviewed literature and freedom of information act requests.[22]

On May 7, 2010, the EPA and the Department of Transportation's National Highway Traffic and Safety Administration (NHTSA), promulgated new emission standards for certain motor vehicles reducing

greenhouse gas emissions and improving fuel economy, with the EPA adopting the standards under the CAA, and NHTSA adopting the standards as Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act.

While these motor vehicle regulations do not apply to stationary sources of greenhouse gas emissions, these final rules are significant in that they automatically triggered application of certain CAA permit programs for stationary greenhouse gas emissions sources. These programs, the Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs, have historically applied to sources of air pollutants "subject to regulation" with emissions exceeding a mere 100 and 250 tons per year. While these thresholds have been reasonably implemented for decades with respect to conventional CAA air pollutants, these thresholds are extremely low for greenhouse gas emissions, especially carbon dioxide which is emitted in such high volumes from very large emission sources such as power plants. For perspective, a single average household in the United States produces more than 25 tons per year of carbon dioxide from fossil fuel combustion. Imposing a GHG emissions threshold equivalent to the threshold utilized for other conventional CAA air pollutants would lead to "absurd consequences," according to the EPA.

To avoid the broad impact of such low permitting thresholds for greenhouse gas emission sources and relying on a "doctrine of absurd consequences," — on June 3, 2010, the EPA promulgated its "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule," — setting new "major" permitting thresholds of 75,000 tons per year carbon dioxide equivalents (CO_2e) for major modifications of a. stationary emission source (*i.e.*, physical change or change in the method of operation) and 100,000 tons per year CO_2e for new major sources.[23] As you might expect, carbon dioxide "equivalents" are merely the mass emission of a greenhouse gas multiplied by its GWP.

Sources triggering PSD permitting due to modification or new construction are required to undergo full PSD permitting, including application of Best Available Control Technology (BACT) and include GHG emissions in CAA Title V operating permits as set forth in the Tailoring Rule. While not "cap-and-trade," application of BACT is intended to result in emission reductions. BACT means "an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs determines is achievable for such facility through application of production processes and available methods, systems and techniques, including fuel cleaning, clean fuels or treatment or innovative fuel combustion techniques for control of such pollutant."[24] In March 2011, the EPA released PSD and Title V Permitting Guidance for Greenhouse Gases. This guidance includes comprehensive discussion as well as flow charts and examples illustrating proper application of the BACT analysis for PSD permits and additional guidance for Title V permitting.[25]

It is perhaps an understatement to say that the PSD program. and BACT application are recognized by industry as both expensive as well as litigious, and a scenario upon which an overlay of GHG uncertainty creates much apprehension. In any case, CAA, GHG and PSD permits are being issued at this time along with Title V GHG operating permits.

EPA GHG reporting rule

The FY2008 Consolidated Appropriations Act[26] required the EPA to implement rules requiring GHG reporting. The statute gave the EPA great discretion in determining "appropriate" reporting thresholds, but mandated such reporting in all sectors of the economy, including emissions resulting from upstream production and downstream sources.

On Sept. 22, 2009, the EPA finalized its mandatory reporting rule.[27] While the EPA was required to adopt this greenhouse gas reporting rule by the 2008 Appropriations Act, the EPA relied on the CAA Section 114 as the statutory basis for this rule. Section 114 is the section used to request information for

enforcement evaluations or policy making. The reporting rule does not impose CAA permitting requirements, but it is enforceable as a CAA requirement, analogous to a request for information.

The GHG Reporting Rule requires all facilities meeting defined categories of qualifying sources to report pursuant to the rule, including many common types of sources in Oklahoma such as: ammonia manufacturing; cement production; electricity generation facilities; lime manufacturing; manure management systems; municipal solid waste landfills; nitric acid production; petrochemical production; petroleum refineries; and oil and natural gas systems. Some categories must report regardless of emissions, while others need only report if their emissions exceed 25,000 metric tons of carbon dioxide equivalents or MTCO2e. Stationary source combustion sources generally report if the maximum rated heat input capacity is equal or greater than 30 mmBtu/hr, and the emissions exceed 25,000 MTCO2e. The rule also requires reporting by suppliers of fossil fuels and industrial gases, in addition to some mobile source requirements. The final rule became effective on Jan. 1, 2010, with monitoring required through 2010 for most sources, and GHG emission reports, while originally required to be submitted by March 31, 2011, were first filed upon the EPA's later completion of its online reporting system with a new deadline of Sept. 30, 2011.

The EPA's mandatory GHG reporting rule, codified at 40 C.F.R. Part 98, is complex and quite detailed, requiring in many cases hiring of additional staff and installation, calibration and maintenance of new equipment. Thus, this rule has represented a significant expense to many impacted entities. In addition to the expense, the data reported pursuant to this rule is public information, and as of Jan. 11, 2012, is now publicly available.[28] This data will be used by the EPA to develop future policy, but also represents actual emissions data that reporting entities should consider when reporting emissions in other contexts, such as CAA GHG permitting, compliance and emissions inventories. Given these implications, entities may wish to cease annual reporting by reducing their GHG emissions. Specifically, facilities and suppliers can cease reporting after five consecutive years of emissions below 25,000 metric tons CO2e/year, after three consecutive years of emissions below 15,000 metric tons CO2e/year, and then also if the GHG-emitting processes or operations are shut down. Facilities may also submit revised annual GHG reports if necessary to correct errors. Records supporting the annual reports must be retained for three years.

Greenhouse gas and climate change litigation

About 100 lawsuits have been filed in the D.C. Circuit Court of Appeals challenging the EPA's issuance of greenhouse gas rulemaking, including challenges to the EPA's Endangerment Finding, mobile source rules (Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards), Tailoring Rule and Mandatory GHG Reporting Rule (discussed below), with industry and environmental advocacy groups alike suing from different sides of the issue. Many of these challenges are driven by concerns arising from the EPA's permitting of stationary source GHG emissions, which is triggered by the EPA's Endangerment Finding and the mobile source rules.

Though under review by the D.C. Circuit, the EPA's CAA rules promulgated thus far have survived petitions for stay, and thus are currently final and effective, and will remain so unless vacated or remanded by the court, or unless Congress adopts legislation pre-empting the EPA's regulatory authority to address greenhouse gases under the CAA.

However, even before the EPA promulgated the suite of GHG regulations discussed above, many lawsuits had been filed alleging harm resulting from climate change caused by GHG emissions — with a goal of forcing government to act to address climate change pursuant to various statutes — including the Clean Air Act, the Endangered Species Act and Marine Mammal Protection Act, the Clean Water Act, the Global Climate Change Research Act, the Freedom of Information Act and the First Amendment, the Alternative Motor Fuels Act, and the Energy Policy Act and Energy Independence and Security Act. Plaintiffs in these cases are familiar advocacy groups including, for example, the Center for Biological Diversity, the Natural Resources Defense Council and the Sierra Club.[29] Suits have also been filed by the Sierra Club and others to stop government action, including issuance of permits to large greenhouse gas emission sources such as coal-fired power plants, and to enjoin issuance of a final Environmental

Impact Statements (EIS) without including climate change impacts, within an EIS impact analysis, pursuant to the National Environmental Policy Act (NEPA).

Other lawsuits seek to force companies to disclose climate risk information as well as business risks resulting from laws and regulations intended to address global warming. Still, others have been filed by industry interests against climate change scientists — with plaintiffs including Competitive Enterprise Institute and the American Tradition Institute — suing defendant NASA regarding issues related to "climate-gate." Recent cases include the "public trust cases." On May 4, 2011, advocacy groups Our Children's Trust and iMatter filed petitions in every state seeking a declaration that the state holds the atmosphere in trust for citizens and future citizens of that state, and that the state must take action to protect the atmosphere by requiring greenhouse gas emission controls.

The lawsuits reported most widely given the implications for individual greenhouse gas emission sources, particularly before the EPA promulgated its suite of GHG rulemaking, are the common law trespass and nuisance cases filed against large greenhouse gas emission sources seeking injunctive relief or money damages.

One of the most illustrative cases is *Connecticut v. American Elec. Power Co.* This case originated when Connecticut, seven other primarily coastline states, New York City and three land trusts, sued AEP and four large electric power producers operating coal-fired power plants, seeking relief from damages resulting from climate change (rising sea levels, etc.) based on a claim of public nuisance. The Southern District of New York had dismissed the case in 2005, finding the issue a political question, because "explicit statements of Congress and the Executive on the issue of global climate change in general and their specific refusal to impose the limits on carbon dioxide emissions Plaintiffs now seek to impose by judicial fiat confirm that making the 'initial policy determination[s]' addressing global climate change is an undertaking for the political branches."**[30]** However, in 2009, the 2nd Circuit reversed, holding that the federal courts were competent to deal with well-settled principles of tort and public nuisance, and that, while future laws and regulations might pre-empt the field of federal common law of nuisance, judicial action was not yet displaced.**[31]** Also, following *Massachusetts v. EPA*, the 2nd Circuit held that the plaintiffs have a legitimate interest in protecting their resources and citizens from the harm caused by GHG emissions, and that the redress sought, *i.e.*, reduction in GHG emissions, would reduce the harm alleged.

The EPA then promulgated the suite of GHG rulemaking discussed above. Thus, upon review, the Supreme Court addressed industry's argument that the EPA's regulation of GHG emissions under the CAA pre-empted any further challenge relying upon a federal common law claim of public nuisance. On June 20, 2011, the Supreme Court held that the CAA and the EPA action authorized by the CAA displace any federal common-law right to seek abatement of carbon-dioxide emissions from fossil fuel-fired power plants.**[32]** Specifically, the Supreme Court stated the displacement test as simply "whether the statute 'speak[s] directly to the question' at issue," and that in this case, *Massachusetts v. EPA* had made clear that emissions of carbon dioxide qualify as air pollution subject to the CAA.**[33]** The Supreme Court found that the CAA Section 111 (New Source Performance Standards or NSPS) direction to the EPA to establish emission standards for categories of stationary sources, and the EPA's listing of the fossil fuel-fired power plant category, is enough to create carbon dioxide emission limits, leaving "no room for a parallel track" via federal common law. The Supreme Court rejected the argument that federal common law is not displaced until the EPA actually exercises its regulatory authority in adopting standards, citing the Milwaukee II displacement test, "'whether the field has been occupied, not whether it has been occupied in a particular manner.'"**[34]**

The Supreme Court's displacement finding is expected to impact other similar cases alleging federal common law nuisance. One such case is *Native Village of Kivalina v. ExxonMobil Corp.*, in which Inupiat Eskimos sued oil, energy and utility companies alleging that climate change had melted the Arctic Sea ice that had protected the Kivalina coastline from storms, resulting in erosion and requiring relocation of its residents.**[35]** The case was appealed to the 9th Circuit in November 2009 and remains pending. In *Comer v. Murphy Oil USA*, the U.S. 5th Circuit Court of Appeals partially reversed a lower court's dismissal of plaintiff claims that corporations, which operated in the energy, fossil fuel and chemical

industries, caused the emission of greenhouse gases that ultimately resulted in additional property damage from Hurricane Katrina. The plaintiffs asserted claims of federal common law public and private nuisance, trespass, negligence, unjust enrichment, fraudulent misrepresentation and civil conspiracy. In reversing, the 5th Circuit rejected the lower court's reliance on defenses similar to those claimed in *Connecticut v. American Electric Power Co.*, including the political question defense. Ultimately however, the 5th Circuit decided that it would not disturb the lower court's ruling, upholding a decision to vacate its own reversal. Subsequently, plaintiffs' petition for review by the U.S. Supreme Court was rejected. Plaintiffs refiled their case on May 27, 2011, relying on Mississippi statute.**[36]**

The outcome of these cases and others will illustrate the types of litigation risks awaiting significant greenhouse gas emission sources, sources which have become more visible upon the EPA's Jan. 11, 2012, public release of data reported pursuant to the EPA's GHG Reporting Rule. However, litigation risk would appear to increase should the EPA cease to regulate GHG emissions pursuant to the CAA and its regulation no longer displace federal common law causes of action.

Conclusion

General practitioners should be aware of the current landscape of greenhouse gas and climate change requirements which may impact client operations and business risk, requiring significant investment in compliance efforts and increasing exposure to enforcement and litigation. Politics continue to cloud this area of practice, creating a climate of uncertainty exacerbated by the storm of litigation in another upcoming election year. U.S. businesses must endure, gearing up for more permitting and reporting while closely tracking legislative, regulatory and judicial developments.

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1. See Intergovernmental Panel on Climate Change Fourth Assessment Report or "AR4," available at www.ipcc.ch/publications_and_ data_reports.shtml. Note, for CAA permitting purposes, the EPA requires use of the GWPs in IPCC's AR2 (at the same link), for consistency with the EPA's Mandatory GHG Reporting Rule. See Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 65 Fed. Reg. 31514, at 31522 (June 3, 2010).
2. *Massachusetts v. EPA*, 549 U.S. 497 (2007), Dissent, Justice Scalia, footnote 2 (stating, "Not only is *EPA's* interpretation reasonable, it is far more plausible than the Court's alternative. As the Court correctly points out, 'all airborne compounds of whatever stripe,' ante, at [1460], would qualify as 'physical, chemical, ... substance[s] or matter which [are] emitted into or otherwise ente[r] the ambient air,' 42 U.S.C. §7602(g). It follows that everything airborne, from Frisbees to flatulence, qualifies as an 'air pollutant.' This reading of the statute defies. common sense.").
3. See generally, http://epa.gov/climatechange/index.html.
4. To review the Copenhagen Accord, see http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf.
5. To see the UNFCCC events, see http://unfccc.int/2860.php.
6. The methods used for these inventories are available at http://www.ipcc.ch/publications_and_data/publications_and _data_ reports.shtml.
7. See Climate Stewardship and Innovation Act of 2007, S. 280 (110th Congress), available at www.govtrack.us/congress/ bill.xpd?bill=s110-280.
8. See Climate Security Act of 2008, S. 2191 (110th Congress), available at www.govtrack.us/congress/bill.xpd?bill=s110-2191.
9. See American Clean Energy and Security Act of 2009, H.R. 2454 (111th Congress), available at www.govtrack.us/congress/ bill.xpd?bill=h111-2454.
10. See Global Warming Solutions Act of 2006, Cal. Health & Safety Code §38550, available at http://www.leginfo.ca.gov/pub/ 05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.html.
11. The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. Together these 10 states have capped and committed to reducing power sector CO2 emissions 10 percent by 2018. See www.rggi.org.
12. See *e.g.*, www.epa.gov/climatechange/emissions/co2_geosequest.html.
13. See *e.g.*, http://news.discovery.com/tech/geoengineering-schemes-top-5.html.
14. See *e.g.*, the Pew Center on Global Climate Change, State Adaptation Plans, available at www.pewclimate.org/what_s_ being_done/in_the_states/adaptation_map.cfm.
15. For more information, see SEC Release No. 33-9106, Commission Guidance Regarding Disclosure Related to Climate Change, Feb. 2, 2010, available at www.sec.gov/rules/interp/2010/33-9106.pdf.
16. 40 C.F.R. Part 52, Approval and Promulgation of Implementation Plans, Subpart LL - Oklahoma
17. *Massachusetts v. EPA*, 549 U.S. 497 (2007).
18. Control of Emissions From New Highway Vehicles and Engines, notice of denial of petition for Rulemaking, 68 Fed. Reg. 52,922 (Sept. 8, 2003) (responding to Oct. 20, 1999, petition for rulemaking to regulate emissions of greenhouse gases (GHG) from new motor vehicles pursuant to 42 U.S.C. §7521(a)(1)).
19. *Massachusetts v. EPA*, 549 U.S. at 528-29.
20. *Id.* at 497-498, quoting CAA §202(a)(1), 42 U.S.C. §7521(a)(1).

21. See CAA §202(a)(1), 42 U.S.C. §7521 (a)(1) (stating the EPA "shall by regulation prescribe ...standards applicable to the emission of any air pollutant from any class of new motor vehicles.").
22. For more information on the EPA's denial of the endangerment petitions, see www.epa.gov/climatechange/endangerment/petitions.html.
23. 75 *Fed. Reg.* 31514 (June 3, 2010).
24. CAA §169(3).
25. See www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf.
26. H.R. 2764; Public Law 110-161.
27. See Mandatory Reporting of Greenhouse Gases, 74 *Fed. Reg.* 56260 (Oct. 30, 2009), available at www.epa.gov/climatechange/emissions/ghgrulemaking.html.
28. EPA made available all GHG reporting data on Jan. 11, 2012, at this link www.epa.gov/climatechange/emissions/ghgdata/index.html.
29. See Michael Gerrard's Climate Change Litigation in the U.S. Chart — Columbia Law School Center for Climate Change Law, available at www.climatecasechart.com.
30. *Connecticut v. American Elec. Power Co.,* 406 F Supp. 2d 265, 274 (S.D.N.Y. 2005), vacated, 582 F.3d 309 (2d Cir. 2009). Connecticut v. American Elec. Power Co., 582 F.3d 309 (2d Cir. 2009).
31. *American Elec. Power Co., v. Connecticut*,131 S.Ct. 2527 (2011).
32. *Id.* at 2530.
33. *Id.* at 2531. Opinion available at www.supremecourt.gov/opinions/10pdf/10-174.pdf.
34. *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F.Supp.2d 863 (N.D. Cal. 2009) (order granting defendants' motion to dismiss for lack of subject matter jurisdiction).
35. *Comer v. Murphy Oil,* 585 F.3d 855 (5th Cir. 2009), *reh'g en Banc granted*, 598 F.3d 208 (5th Cir. 2010), *on reh'g en Banc, appeal dismissed*, 607 F.3d 1049 (5th Cir. 2010). See www.climatecasechart.com for tracking this tortured case.

LINKS

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