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Re: Regulating Greenhouse Gases Under the Clean Air Act
Docket ID: EPA-HQ-OAR-2008-0318

Contact Information

Name: Marlo Lewis, Ph.D.
Organization: Competitive Enterprise Institute (CEI)
Mailing Address: 1899 L Street, 12th Floor
Washington, DC 20036
Phone: 202.669-6693
E-mail: mlewis@cei.org

The Competitive Enterprise Institute (CEI) submits these comments on EPA's Advance Notice of Proposed Rulemaking (ANPR), "Regulating Greenhouse Gases Under the Clean Air Act (CAA)," published in the *Federal Register* on July 30, 2008.[1]

As these comments show, the CAA is a flawed, inappropriate, even destructive instrument for regulating greenhouse gas (GHG) emissions. CAA regulation of GHGs has a high potential to stifle development, depress the economy, and cripple environmental administration. The only way EPA can regulate GHGs under the CAA without imperiling an already weakened economy is to assume legislative powers and effectively re-write the statute.

CEI urges EPA not to make an endangerment finding for GHGs. Doing so would trigger a regulatory cascade throughout the Act, imposing potentially crushing burdens on regulated entities and the economy.

[1] EPA, Regulating Greenhouse Gas Emissions Under the Clean Air Act, Advanced Notice of Proposed Rulemaking, *Federal Register*, Vol. 3, No. 147, July 30, 2008. Hereafter cited as ANPR.

The Court majority in *Massachusetts v EPA* said that EPA does not have to make an endangerment finding if the agency provides a "reasonable explanation" why it cannot or will not do so. Here are several compelling reasons:

- An endangerment finding would set the stage for multiple policy disasters no Congress would ever approve.
- The only way EPA can regulate GHGs under the CAA without risk of administrative chaos and economic devastation is to flout statutory language and effectively amend the Act.
- Had the Justices known in 2006 and early 2007 what the ANPR and other analyses have brought to light, they likely would have decided *Massachusetts* differently.
- Persistent uncertainties regarding climate sensitivity to rising greenhouse gas concentrations; new research indicating that climate models exaggerate climate sensitivity; the implausibility of extreme event scenarios; the divergence between model projections and actual temperatures; dramatic increases in coastal population, development, and property values despite a century and a half of sea-level rise; and historic declines in U.S. mortality due to extreme weather, air pollution, heat waves, and malaria despite increases in global temperatures make it unreasonable at this time to anticipate endangerment of public health and welfare from anthropogenic global warming.
- EPA cannot establish GHG emission standards for new motor vehicles yet "avoid inconsistency" with the fuel economy standards Congress established via the Energy Independence and Security Act of 2007.
- EPA cannot coherently define "the air pollution related to GHGs"; hence it lacks the requisite subject matter upon which to make a finding of endangerment.

1. *Massachusetts v EPA*: What did the Supreme Court decide, on what grounds, and with what potential consequences?

The ANPR is EPA's preliminary response to *Massachusetts v EPA* (April 2, 2007), and appropriately begins by reviewing the case. This comment does so as well, but chiefly to reassess the Court majority's reasoning in light of the regulatory consequences to which it could lead. As the ANPR repeatedly reveals, although never explicitly acknowledges, *Massachusetts* has set the stage for irrational and destructive policies that Congress never intended or approved. Had the Justices known in 2006 and early 2007 what the ANPR, several congressional testimonies by attorney Peter Glaser,[2] and the U.S.

[2] Testimony of Peter Glaser and John Cline, "EPA's Approach to Addressing Greenhouse Gases in the Wake of the Supreme Court's Decision in *Massachusetts v. EPA*," House Committee on Oversight and Government Reform, November 8, 2007; Testimony of Peter Glaser, "The U.S. Environmental Protection Agency's Response to the Supreme Court's Decision in *Massachusetts v. EPA*," House Select Committee on Energy Independence and Global Warming, March 13, 2008; Testimony of Peter Glaser, "Strengths and Weaknesses of Regulating Greenhouse Gas Emissions Under Existing Clean Air Act Authorities," Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, April 10, 2008; Peter Glaser, "Responses to Questions of the Select Committee on Global Warming," September 4, 2008.

Chamber of Commerce's compliance burden report[3] have since brought to light, they likely would have decided *Massachusetts* differently.

In *Massachusetts*, a majority of five Justices held that the CAA authorizes EPA to regulate carbon dioxide (CO_2) and other GHGs as "air pollutants." The majority further held that CAA §202 obligates EPA to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or else provide statutory reasons why the agency cannot or will not make such a determination.[4] If EPA finds that GHG emissions endanger public health or welfare, then §202 requires EPA to establish GHG emission standards for new motor vehicles.

When *Massachusetts* was being litigated, plaintiffs claimed that the case posed no risks to the U.S. economy. For example, they assured the Court that, "The NAAQS program is an entirely separate program from the mobile source program at issue in this case."[5] Yes, they acknowledged, setting GHG emission standards for new motor vehicles could have the effect of tightening new-car fuel economy standards. But, they noted, §202 requires EPA to consider compliance costs and the lead times automakers need to commercialize new technologies. Thus, plaintiffs said, concerns voiced by the business community and others about slippery slopes and potentially devastating economic impacts were alarmist.

Persuaded by these assurances, the Court majority rejected respondent EPA's argument, based on *FDA v Brown & Williamson Tobacco Corp*, 529 U.S. 120 (2000), that GHG regulation was a policy decision of "such economic and political magnitude" that Congress would not delegate it to an administrative agency, especially in "so cryptic a fashion." Following plaintiffs, the Court majority held that CAA §202 "would lead to no such extreme measures [as banning cigarette sales or advertising]. EPA would only *regulate* emissions [from new motor vehicles], and even then, it would have to delay any action 'to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance,' § 7521(a)(2)."

The opinion that regulating GHG emissions under §202 could not lead to "extreme measures" or to policy decisions of enormous "economic and political magnitude" is no longer tenable. Thanks to the aforementioned Glaser testimonies, the ANPR, and the U.S. Chamber study, it is clear that setting GHG emission standards

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[3] Mark and Portia Mills, *A Regulatory Burden: The Compliance Dimension of Regulating CO2 as a Pollutant*, U.S. Chamber of Commerce, September 2008. Hereafter cited as *Regulatory Burden*.

[4] The Court majority concluded: "We need not and do not reach the question whether on remand EPA must make an endangerment finding, or whether policy concerns may inform EPA's actions in the event that it makes such a finding [ref. omitted]. We hold only that EPA must ground its reasons for action or inaction in the statute."

[5] Initial Brief: Appellant-Petitioner at 28, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120). This statement ignored two key facts: (1) an endangerment finding under §202 could compel EPA to set NAAQS for GHGs; (2) GHG regulation under §202 would automatically trigger GHG regulation of stationary sources under an essential adjunct of the NAAQS program—the Prevention of Significant Deterioration (PSD) program.

under CAA §202 could trigger a regulatory cascade throughout the CAA. GHG sources potentially subject to CAA regulation include not only new motor vehicles but also power plants,[6] refineries,[7] cement kilns,[8] and, indeed, virtually all energy-consuming equipment or processes such as lawnmowers,[9] aircraft takeoffs and landings,[10] factory work practices,[11] diesel truck cruising speeds,[12] marine vessel coatings,[13] and even household furnaces.[14]

Tens of thousands of previously unregulated buildings and facilities could face new regulation, monitoring, controls, and penalties under the Prevention of Significant Deterioration (PSD) program; hundreds of thousands could face pointless paperwork burdens under the Title V program; millions could face onerous yet inscrutable technology requirements under the Hazardous Air Pollutant (HAP) program. The administrative and financial pain would vastly outweigh any environmental gain. In addition, EPA could be compelled to set GHG National Ambient Air Quality Standards (NAAQS) that even an outright de-industrialization program would be insufficient to attain.

Few Members of Congress would vote to regulate GHGs under the PSD, Title V, NAAQS, or HAP programs, especially in these perilous economic times. More importantly, neither the 90th Congress, which enacted §202 in 1970, nor the 95th Congress, which amended §202 in 1977, authorized any such course of action. This is easily demonstrated.

First, global warming regulation was not on the agenda of either the 90th or 95th Congress. Second, Congress never intended for §202, which deals solely with a subset of mobile sources, to jump-start an unprecedented expansion of stationary source regulation, impose a de facto moratorium on new construction, or bog down environmental agencies in a morass of paperwork. Yet applying PSD requirements to GHGs could produce all those undesirable consequences, and GHGs would be subject to PSD regulation the moment EPA sets motor vehicle GHG emission standards. Third, Congress never intended for §202, which requires EPA to consider compliance costs when setting emission standards, to leverage money-is-no-object regulation under the NAAQS program. Yet, the endangerment finding prerequisite to setting GHG emission standards for new motor vehicles could compel EPA to initiate the most expensive NAAQS rulemaking in history.

The proposition that the CAA authorizes EPA to regulate CO_2 emissions was always dubious, which is why four Justices dissented in *Massachusetts*. To begin with,

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[6] ANPR 44439.
[7] ANPR 44439.
[8] ANPR 44487.
[9] ANPR 44461.
[10] ANPR 44471.
[11] ANPR 44491.
[12] ANPR 44456.
[13] ANPR 44467.
[14] ANPR 44494.

when Congress wants EPA to regulate particular types of substances for particular purposes, it has no trouble making its intent clear. No one disputes whether EPA has authority to regulate ambient air pollutants, hazardous air pollutants, acid rain-forming substances, visibility-impairing haze, or ozone-depleting substances. A glance at the CAA's table of contents dispels any possible doubt about EPA's authority to regulate those substances. In stark contrast, there is no climate protection title, part, or subpart in the CAA—nothing remotely resembling the NAAQS program, the HAP program, the acid rain control program, the regional haze program, or the stratospheric ozone protection program.

In fact, the CAA is virtually silent about global warming. The terms "greenhouse gas" and "greenhouse effect" appear nowhere in the Act. The terms "carbon dioxide" and "global warming potential" do appear, but only once, each time in the context of a non-regulatory provision, and in each instance followed by a caveat admonishing EPA not to infer authority for "pollution control requirements" [§103(g)] or "additional regulation" [§602(e)]. These admonitions would be pointless if, as the Court majority held, authority to regulate CO_2 for global warming mitigation purposes is already contained in the Act's most general provision—the definition of "air pollutant" [§302(g)].

It may seem strange that the CAA says next to nothing about an issue widely regarded as the biggest environmental challenge in human history. Yet the Act's reticence about global warming actually makes perfect sense, because climate policy is an issue of *unresolved* controversy. Congressional support for regulatory climate policy is certainly much stronger today than it was in 1970 and 1977, when Congress enacted and amended §202. Yet in June 2008, the Senate rejected the Lieberman-Warner bill, and the House has never even voted on a cap-and-trade bill.

The climate policy stalemate long predates the Bush Presidency. Vice President Al Gore negotiated the Kyoto Protocol, and President Clinton signed it, yet they did not see fit to submit the treaty to the Senate for a debate and vote on ratification. Going back further, during deliberation on the 1990 CAA Amendments, the Senate rejected a committee proposal to establish CO_2 emission standards for new motor vehicles.[15] Although the rejected proposal was much like the policy sought by plaintiffs in *Massachusetts*, the Court majority belittled this legislative history, arguing that "post-enactment congressional deliberations and actions" cannot curtail EPA's "pre-existing" authority under §202. Well, of course it can't. Nobody ever said that it could. The point, rather, is that it is silly to pretend that in 1970 or 1977—years before Al Gore held his first congressional hearing on global warming—Congress authorized EPA to adopt regulatory climate policies that lawmakers in future Congresses tried but failed to enact.

EPA's regulatory practice over three decades also counsels against the view that Congress in 1970 or 1977 authorized EPA to regulate CO_2 emissions from new motor vehicles as "air pollution." Ponder for a moment the function of those mainstays of

[15] As originally introduced on September 14, 1989, the Senate draft version of the 1990 CAA Amendments (S. 1630) contained a provision (§216) requiring EPA to promulgate CO_2 emission standards for new motor vehicles during model years 1995 through 2003.

mobile emissions control, catalytic converters and oxygenate fuel additives. Since 1970, the overarching objective of §202 regulation was to ensure that automobile engines burn so cleanly that, ultimately, nothing comes out of the tailpipe except two greenhouse gases: carbon dioxide and water vapor.[16] Are catalytic converters "pollution sources"? Maybe so in the minds of climate campaigners today, but surely not in the minds of those who enacted and amended §202.

To reach the conclusion that CO_2 is an "air pollutant" for regulatory purposes, the Court majority had to withhold *Chevron* deference from respondent EPA's reasonable reading of §302(g). EPA argued that emitted substances are "air pollutants" only if they are "air pollution agents." The majority, following plaintiffs, held that anything emitted per se is an "air pollutant." This was in fact the lynchpin of plaintiffs' argument. Obviously, if *anything* "emitted into" the ambient air is ipso facto an "air pollutant," then GHGs are within EPA's regulatory reach. But to affirm this conclusion, the majority had to read §302(g) selectively—no mean feat, since the provision is only two sentences long. Here it is, in full:

> The term "air pollutant" means any air pollution agent or combination of such agents, including any physical, chemical, biological, or radioactive (including source material, special nuclear material, and by-product material) substance or matter, which is emitted into, or otherwise enters, the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent that the Administrator has identified such precursor or precursors for the particular purpose for which the term "air pollutant" is used.

If Congress had meant that any substance emitted into the air is an "air pollutant," it could have easily said so. Instead, the text says that any "air pollution agent or combination of such agents" emitted into the air is an "air pollutant." The text does not define "agent," but that's because it does not have to. An agent is something that causes or contributes to an effect. To be an air pollution agent, a substance must cause or contribute to *air pollution*—it must dirty, foul, or otherwise pollute the air. This plain English meaning of "air pollutant" is reflected in the very title of the law: *Clean Air* Act. Carbon dioxide does not make air unclean. It is not an "air pollution agent." Hence, it is not an "air pollutant."

The Court majority read "air pollution agent" as a synonym for "air pollutant" rather than as a criterion for distinguishing pollutants from non-pollutants. This reading makes the first sentence of §302(g) hopelessly circular ("an 'air pollutant' is an 'air pollutant'"). It also turns the first sentence into a formalism whereby a thing can be an "air pollutant" without polluting the air. As Justice Scalia quipped in dissent, the majority effectively held that "anything airborne, from Frisbees to flatulence, qualifies as an 'air

[16] 40CFR85.2122: "Catalytic Converter" means a device installed in the exhaust system of an internal combustion engine that utilizes catalytic action to oxidize hydrocarbon (HC) and carbon monoxide (CO) emissions to carbon dioxide (CO2) and water (H2O).

pollutant.'" Indeed, under the majority's reading, even completely clean air—air that is entirely pollution free—is as an "air pollutant" if it is "emitted." That is absurd.

The majority not only gave short shrift to "air pollution agent," a key term in the first sentence, they totally ignored the second sentence. The second sentence of §302(g) says that a "precursor" of a previously designated air pollutant is also an air pollutant. This sentence would be utterly superfluous if, as the majority held, anything emitted into the air is automatically an "air pollutant," because precursors are also emitted. Courts are not supposed to assume that lawmakers pad statutes with superfluous verbiage. Rather, they are supposed to make a good faith effort to determine the meaning and implications of each sentence of each provision bearing on the case. Ignoring half the provision in dispute without explanation is not kosher.[17]

If this seems like quibbles over minutia, then let's look at the big picture. As the ANPR makes clear, setting GHG emission standards under §202 could trigger the biggest expansion of fossil-energy regulation in the Nation's history. There is something wacky in the claim that a two-sentence definition of "air pollutant"—the most abstract provision of a law enacted decades ago—mandates sweeping changes in U.S. environmental programs, energy systems, and the economy.

2. Does the ANPR coherently define "air pollution related to GHGs"?

An endangerment finding is a "judgment" that emissions of a particular type or description "cause or contribute to air pollution…which may reasonably be anticipated to endanger public health or welfare."[18] EPA is to assess the dangerousness not of the emissions per se but of "air pollution" related to the emissions. Logically, this means that EPA's first order of business is to identify or define the "air pollution" at issue. However, defining "air pollution" related to GHGs is difficult, because CO_2, the principal GHG emitted by industrial sources, is an essential building block of the planetary food chain, and does not impair air quality at several times ambient concentrations.

EPA is considering defining "the air pollution related to GHGs" as the "elevated combined current and projected atmospheric concentration of the six GHGs," and seeks comment on this potential approach.[19]

The suggested approach clashes with "air pollution" as that term applies to criteria air pollutants. The concentration of criteria pollutants determines whether they endanger public health and welfare, not whether their presence in the ambient air constitutes air pollution.

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[17] As it happens, the second sentence of §302(g) underpins EPA's authority to address the most pervasive type of air pollution—ozone smog. Most ozone is not "emitted." Rather ozone smog is produced by the interaction of heat, sunlight, and precursor chemicals—chiefly volatile organic compounds (VOCs) and oxides of nitrogen (NO_X). Evidently, Congress did not think the mere fact of being emitted ensured EPA's authority to control VOCs and NO_X.

[18] ANPR 44422.

[19] ANPR 44424.

Consider particulate matter (PM). Each particle pollutes the air to some extent, even if particles might pose no health risk at very low concentrations. With regard to PM pollution, the fewer the particles the cleaner the air. In completely clean (pollution-free) air, PM would not exist in any concentration.

Carbon dioxide does not fit this template. Removing all CO_2 from the air would not make it cleaner. Conversely, increasing CO_2 concentrations from 280 molecules per 100,000 (roughly the pre-industrial level) to 385 molecules per 100,000 (roughly today's level) does not make the air less clean. Yet the ANPR implies that although 280 molecules per 100,000 is not air pollution, every additional CO_2 molecule is air pollution. The ANPR mixes up two distinct questions: What is the air pollution related to the emissions of concern? At what concentration does such air pollution endanger public health or welfare?

EPA might respond that *Massachusetts* defined "air pollutant" as anything "emitted," and that emissions account for the "elevated combined current and projected atmospheric concentration of the six GHGs." In other words, natural or pre-industrial levels of GHGs are not air pollution; only the increment added by mankind via emissions is air pollution. But if this is EPA's reasoning, it is not grounded in the statute, because §302(g) neither states nor implies that "air pollution" comes only from Man and never from Nature.

CAA §302(g) does not limit "air pollutants" to "emitted" substances. An air pollution agent that "otherwise enters" the ambient air is also an "air pollutant." Particles, for example, pollute the air regardless of whether they come from volcanoes, dust storms, forest fires, or fossil fuel combustion. Most atmospheric CO_2 comes from natural sources—oceans, forests, soils, and volcanoes. Thus, if we accept the *Massachusetts* holding that anything emitted into *or otherwise entering* the ambient air is an "air pollutant," it follows that pre-industrial concentrations of CO_2 are also "air pollution."

In short, EPA's proposed definition of "air pollution related to GHGs" fails. This is not EPA's fault but that of the Court majority in *Massachusetts*. It is not possible to define "air pollution" coherently on the basis of a circular, formalistic definition of "air pollutant."

The incoherence of EPA's proposed definition of "air pollution related to GHGs" is of more than academic interest. The majority in *Massachusetts* held that EPA does not have to make an endangerment finding if the agency can provide a "reasonable explanation" why it cannot or will not make such a determination. As noted, an endangerment finding is a judgment not about emissions as such but about the related "air pollution." If EPA cannot coherently define "air pollution related to GHGs," then it lacks the requisite subject matter upon which to make an endangerment finding.

3. Could setting GHG emission standards under CAA §202 compel EPA to regulate tens of thousands of small businesses under the PSD program?

Attorney Peter Glaser raised this issue in several congressional testimonies. Glaser pointed out that regulating CO_2 through CAA §202 would automatically make CO_2 a pollutant "subject to regulation" under the Act's PSD pre-construction permitting program. The ANPR amply confirms the accuracy of this analysis.

Under the CAA, a firm may not build a new "major" stationary source of a regulated pollutant, or modify an existing source (if the modification significantly increases emissions) unless the firm first obtains a PSD permit. A source is defined as "major" if it is one of 28 listed industrial categories and has the potential to emit (PTE) at least 100 tons per year (TPY) of the regulated pollutant, or is any other type of establishment and has a PTE of at least 250 TPY. Two hundred and fifty tons is a reasonable threshold for regulating smog- and soot-forming emissions, which in that quantity may affect local air quality. However, 250 tons is a miniscule amount of CO_2—too little to have any discernible effect on global temperatures even if multiplied a million times over.

Moreover, whereas only large industrial concerns have a potential to emit 250 TPY or more of criteria air pollutants like sulfur dioxide or nitrogen oxides, vast numbers of previously unregulated small entities have the potential to emit 250 TPY of CO_2. As Glaser explained, "A very large number and variety of buildings and facilities exceed this threshold—including many office and apartment buildings; hotels; enclosed malls; large retail stores and warehouses; colleges, hospitals and large assisted living facilities; large houses of worship; product pipelines; food processing facilities; large heated agricultural facilities; indoor sports arenas and other large public assembly buildings; and many others."[20] The ANPR confirms this assessment, as do the accompanying comments by the Department of Commerce and the Small Business Administration Office of Advocacy.[21]

To obtain a PSD permit, a regulated entity must install "best available control technology" (BACT), which can be very costly. But even apart from the technology requirements, PSD permitting can be expensive and time-consuming, because BACT determinations are made on a case-by-case basis through a review "customized to account for the individual characteristics of each source."[22] In Glaser's opinion, "No small business requiring a moderate-sized building or facility heated with fossil fuel could operate subject to the PSD permit administrative burden." He cautions: "…just the administrative burden alone—putting aside any BACT or other requirements that would result from the permitting process—would create an overwhelming and unprecedented

[20] Testimony of Peter Glaser, "EPA's Response to *Mass v EPA*," House Select Committee, March 13, 2008, pp. 2-3.
[21] ANPR 44375, 44497-44500.
[22] ANPR 44497, 44501.

roadblock to new investment for a host of previously unregulated buildings and facilities."[23]

In testimony before Congress, David Bookbinder of the Sierra Club derided such concerns as a "red herring." CAA provisions are not self-enforcing, he argued. If litigants do not compel EPA to apply PSD to small sources, it won't happen. And, he averred, nobody—not the EPA, not industry, not the environmental community—wants to apply PSD to small sources.[24] Mr. Bookbinder overlooks the thousands of NIMBY ("not in my backyard") activists who would find PSD litigation a very convenient tool for blocking development projects. Anyone who doesn't want a new Walmart, shopping mall, large house of worship, McDonalds, or hotel in his neighborhood could file suit demanding that the developers submit to a BACT determination and obtain a PSD permit. The mere fact that NIMBY forces would have this new weapon in their litigation arsenal might be enough to scare off investment in many development projects.

The ANPR estimates that, if CO_2 becomes a regulated pollutant, the number of entities applying for PSD permits each year would increase by an "order of magnitude"—from about 200-300 permits annually to 2,000 to 3,000.[25] However, this estimate is "not comprehensive," as the ANPR acknowledges.[26] First, the ANPR estimate "does not include permits that would be required for modifications to existing major GHG sources because the number of these is more difficult to estimate." Yet in any given year, more buildings and facilities are modified than are built from scratch. Second, the ANPR estimate is "based on actual emissions, and thus excludes a potentially very large number of sources that would be major" if, *as stipulated by law* (CAA §169), major sources are defined as those with a "potential to emit" 250 TPY of any CAA-regulated pollutant. Third, the ANPR estimate does not include "non-combustion" CO_2 sources such as brewers, bakers, and manufacturers of carbonated beverages. Finally, the ANPR estimate assumes that "few of these additional permits would be for source categories (such as agriculture) where emissions are fugitive." Yet, as the U.S. Chamber study shows, as many as 17,000 large farms use enough heating oil or natural gas in enclosed facilities to emit at least 250 TPY of CO_2.

The U.S. Chamber study finds that, on average, a firm that annually uses about $70,000 worth of oil or natural gas in stationary equipment emits 250 TPY of CO_2. Based on U.S. Census and Energy Information data for energy consumption, at least one million mid-sized to large commercial buildings, nearly 200,000 manufacturing operations, and about 17,000 farms emit at least 250 TPY of CO_2. All these firms would be potentially subject to new PSD regulation, monitoring, controls, and enforcement.[27] A significantly greater number could be affected by PSD under a PTE definition of "major source," as required by the statute.

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[23] Testimony of Peter Glaser, "EPA's Response to *Mass v EPA*," House Select Committee, March 13, 2008, pp. 3, 12.
[24] Senate Committee on Environment and Public Works, "Regulation of Greenhouse Gases Under the Clean Air Act," September 23, 2008, uncorrected transcript, pp. 91-92.
[25] ANPR 44499.
[26] ANPR 44499.
[27] Mills & Mills, *Regulatory Burden*, p. 3.

Thus, once CO_2 is regulated under the CAA, EPA and its state counterparts could be compelled to issue tens of thousands of permits per year. Yet, as the ANPR acknowledges, processing just 2,000-3,000 permits annually would impose "significant new costs and administrative burdens" on permitting authorities, requiring "large investments of resources." In addition, GHG "sources would likely face new costs, uncertainty, and delay in obtaining their permits to construct."[28] The ANPR elaborates these points a few pages later:

> Even with advance notice, an increase of this magnitude [i.e. "ten-fold"] over a very short time could overwhelm permitting authorities. They would likely need to fund and hire new permit writers, and staff would need to develop expertise necessary to identify sources, review permits, assess control technology options for a new group of pollutants (and for a mix of familiar and unfamiliar source categories), and carry out the various procedural requirements necessary to issue permits. Sources would also face transition issues. Many new source owners and operators would need to become familiar with PSD regulations, control technology options, and procedural requirements for many different types of equipment. If the transition were not effectively managed, an overwhelmed permit system would not be able to keep up with the demand for new pre-construction permits, and construction could be delayed on a large number of projects under this scenario.[29]

That this process could be "effectively managed" is doubtful, because it unrealistically assumes a mere "order of magnitude" increase in the number of annual PSD permit applications. Let's consider a more realistic scenario in which just 3 percent or 40,000 of the sources potentially subject to PSD for greenhouse gases undertake new construction or modifications.

According to EPA, the agency issued 282 PSD permits last year. Each permit on average cost $125,120 and 866 burden hours for a source to obtain plus $23,280 and 301 burden hours for a state or local agency to process.[30] If 40,000 major stationary GHG sources undertake new construction or modifications, they would spend more than $5 billion and incur the burden-hour equivalent of 17,320 full-time employees. State and local agencies charged with processing PSD permits would spend $931.2 million and incur the burden-hour equivalent of 6,020 full-time employees. The hefty sum expended by state and local agencies—$931.2 million—is more than four times the $227.5 million Congress appropriated in 2008 for state, local, and tribal air quality management assistance grants.[31] This morass could not be managed effectively.

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[28] ANPR, p. 44502.
[29] ANPR 44507
[30] Carrie Wheeler, Operating Permits Group, Air Quality Division, Office of Air Quality Planning and Standards, Office of Air and Radiation, U.S. EPA, *Information Collection Request for Prevention of Significant Deterioration and Non-Attainment New Source Review* (40CFR Parts 51 and 52).
[31] Expenditure, burden hour, and budget calculations: U.S. Chamber of Commerce.

The bottom line is that applying PSD to CO_2 would create significant risks for both agencies and sources. Agencies could face an administrative quagmire. The costs, delays, and uncertainties imposed on sources could bring construction activity and economic development to a screeching halt.

Finally, because PSD and BACT requirements are not triggered unless a firm plans to build a new facility or modify an existing one, expanding the scope of the PSD program by orders of magnitude would discourage many firms from replacing older capital stock with newer, cleaner, more energy-efficient capital stock. Even under current PSD requirements there are "credible examples" of firms delaying or cancelling projects that would have increased energy efficiency and reduced air pollution.[32] Applying PSD to CO_2 would turn these relatively infrequent cases into a pervasive problem.

4. Could EPA avoid a PSD quagmire?

The ANPR proposes a number of remedies to minimize PSD burdens under a GHG control regime, and requests comment on these options. None of these options is free of legal difficulties.

One option is to redefine "major" source in terms of actual emissions instead of "potential to emit" (PTE).[33] This would reduce the universe of major sources somewhat because most buildings and facilities seldom emit up to their full potential. For example, few if any apartment buildings run their heating and air conditioning units 24 hours a day, 365 days a year. Such sources could obtain a "general permit" by agreeing to limit their CO_2 emissions to less than 250 TPY, the ANPR suggests.[34]

However reasonable this approach may seem, it conflicts with the statute. CAA §169 defines "major" stationary source as a "source with *the potential to emit* two hundred fifty tons per year or more of any air pollutant" (emphasis added). Using actual emissions as the threshold for determining which sources are "major" would likely be challenged in court.

In addition, CAA §165(a)(2) says that EPA must hold a "public hearing" before issuing a PSD permit.[35] If thousands of sources apply for permits, then, it would seem, EPA must hold as many hearings. The ANPR suggests that EPA could avoid this mess by seeking public comment on each type of general permit it issues. Whether courts would approve this practice is anybody's guess.

Even if courts allow EPA to use general permits, thousands of previously unregulated sources would still have to go through some sort of PSD permitting to avoid further regulation under the program, as the ANPR admits.[36] More importantly, as

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[32] ANPR 44413.
[33] ANPR 44504.
[34] ANPR 44504-05.
[35] ANPR 44509.
[36] ANPR 44504: "The rule would have to include recordkeeping and reporting…"

previously noted, the universe of stationary facilities with actual CO_2 emissions of at least 250 TPY is much larger than the ANPR assumes—about 1.2 million entities, according to the U.S. Chamber study. These sources would still be vulnerable to the full costs of PSD permitting and any BACT requirements.

The ANPR additionally suggests that "major source" for PSD purposes could be defined in terms of "carbon equivalent" (CE) emissions. It takes 917 tons of CO_2 to produce 250 tons CE. Thus, fewer sources would be major under a 250-ton CE cutoff than under a 250-ton CO_2 cutoff.[37] However, the statute defines as "major" any source with the potential to emit 250 TPY of "any air pollutant" (§169). CE is not an air pollutant, but a measure of global warming potential. This expedient would surely be challenged in court.

In a third option to reduce PSD burdens, the ANPR suggests that for sources emitting 250 tons of CO_2, EPA could replace case-by-case BACT determinations with "presumptive BACT." Under this approach, "BACT determinations could be for common types of equipment and sources, and those determinations could be applied to individual permits with little to no additional tailoring or analysis."[38] For example, sources would verify that their installed equipment meets Energy Star and other federal energy efficiency standards.[39] But, as the ANPR acknowledges, the statute requires that BACT determinations be made on a "case-by-case" basis, not for large numbers of ostensibly similar sources.[40] Moreover, as "add-on controls"[41] and "work practice standards"[42] are developed to limit CO_2 emissions from stationary sources, it will become harder to persuade courts that "presumptive BACT" yields the same emission reductions as would case-by-case BACT determinations. And again, even if courts uphold ""presumptive BACT," tens of thousands of previously unregulated sources could still have to undergo some type of PSD permitting.

The boldest option discussed in the ANPR would be for EPA, administratively, to set the major source cutoff much higher—at 10,000, 25,000, or even 100,000 tons.[43] This is shocking. Under *Chevron*, courts are to defer to an agency's "permissible construction" of an "ambiguous" term.[44] However, there is nothing ambiguous in the phrase "250 tons."

The ANPR's justification for effectively rewriting the statute—not only in the brazen way just described but also in the subtler ways previously discussed—is the doctrine of "absurd results and administrative necessity":

> The Supreme Court has stated that the plain meaning of legislation is not conclusive "in the 'rare cases [in which] the literal application of a statute will

[37] ANPR 44505.
[38] ANPR 44508.
[39] ANPR 44509.
[40] ANPR 44509.
[41] ANPR 44497.
[42] ANPR 44491.
[43] ANPR, p. 44505.
[44] *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc*. 1984. 467 U.S. 843.

> produce a result demonstrably at odds with the intentions of the drafters'…[in which case] the intention of the drafters, rather than the strict language controls.[45]

Surely, the drafters never intended for PSD to apply to tens of thousands of small firms. As evidence, the ANPR quotes from the D.C. Circuit case of *Alabama Power v Costle*:

> Congress's intention [in setting the 250 ton cutoff for major sources] was to identify 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 responsibl*e for emissions of the deleterious pollutants that befoul our nation's air. 636 F.2d. 323, 353 (D.C. Cir. 1980) (emphasis added).

The ANPR misses the triple irony here. First, if Congress intended for PSD to apply to "air pollutants that befoul the nation's air," then Congress did not intend to regulate CO_2 under §202, because doing so automatically applies PSD to CO_2, yet CO_2 does not "befoul the nation's air." Second, if a selective reading of the CAA definition of "air pollutant" leads to a "result demonstrably at odds with the intentions of the drafters," then the fault likely lies with the questionable interpretation rather than with the statute itself.

Third, in *Alabama v Costle*, the D.C. Circuit Court of Appeals remanded an EPA rule, adopted in the name of "administrative necessity," to limit the number of PSD permit applications sources would have to submit and agencies would have to review. EPA may take "into account circumstances peculiar to individual parties in the application of a general rule to particular cases," said the Court. "But there exists no general administrative power to create exemptions to statutory requirements based upon the agency's perceptions of costs and benefits." Thus, the very case cited in the ANPR to justify taking administrative liberties with statutorily-prescribed PSD requirements held that EPA may not exercise such discretion.

Note also that none of the administrative expedients outlined in the ANPR is designed to improve environmental protection by making existing programs more efficient or cost-effective. Rather, each and every contrivance is simply designed to allow EPA, other permitting agencies, and sources to get around the law.

It speaks volumes about the Court majority's opinion in *Massachusetts* that the only way EPA can regulate GHGs under PSD without risking administrative chaos and economic disruption is to assume legislative powers and amend the statute.

5. Could setting GHG emission standards under CAA §202 compel environmental agencies to regulate hundreds of thousands of stationary sources under Title V?

The Title V operating permits program was designed to improve CAA compliance by enabling each regulated stationary source, in a single consolidated document, to track, report, and certify its compliance with all applicable CAA

[45] ANPR, p. 44503.

requirements.[46] In general, the Title V permit does not add new pollution control requirements but rather facilitates compliance with other CAA program requirements.[47] Yet, regulating CO_2 under the CAA would compel many small sources to obtain Title V permits even if they have no other requirements under the Act. The only requirements on which those sources would be reporting would be the paperwork burdens imposed on them by Title V. Nothing could be more pointless or wasteful.

How many previously unregulated sources might be affected? Title V applies to all sources with a potential to emit 100 TPY of an air pollutant. About 15,000-16,000 stationary sources currently operate under Title V permits. The ANPR estimates that "more than 550,000 additional sources would require Title V permits," if EPA regulates CO_2 under the CAA.[48]

The actual number would likely be much larger. As already noted, the U.S. Chamber study found that 1.2 million stationary sources actually emit 250 TPY of CO_2. This suggests that more than 1.2 million actually emit 100 TPY, and an even larger number have the potential to emit 100 TPY. The staff time, legal and consulting services needed to comply with Title V could be very burdensome to small businesses. In addition, CAA §502(b)(3)(B)(i) requires agencies administering Title V to collect from each permitted source "an amount not less than $25 per ton of each regulated pollutant, or such other amount as the Administrator may determine adequately reflects the reasonable costs of the permit program." EPA's going rate is $43.40 per ton.[49] That translates into a significant burden for any brewer, baker, commercial kitchen, apartment complex, or other small entity with a PTE of 100 TPY of CO_2. Administrative costs and the associated fees could increase dramatically if the number of sources subject to Title V jumps from 16,000 to 550,000, 1.2 million or even more.

Worse, because CO_2 is typically emitted in much greater tonnages than traditional air pollutants, very small sources could end up paying as much for CO_2 emissions as large industrial sources pay for criteria air pollutant emissions. As the ANPR observes, "The most common approach, a cost per ton fee that is equal for all pollutants, would likely result in excessive costs to GHG emitting sources because of the large mass emissions of GHGs compared to other pollutants."[50]

For coal-fired power plants, the Title V tonnage fee would have the same impact as a carbon tax. Fees set at $25 per ton of CO_2 would cost U.S. coal-fired power plants almost $48 billion per year.[51] Even at $12 per ton, Title V tonnage fees for CO_2 could

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[46] ANPR 44510.
[47] ANPR 44510.
[48] ANPR 44511.
[49] ANPR 44513.
[50] ANPR 44512.
[51] U.S. coal electric generators emitted 1.9 billion tons of CO_2 in 2006. See EIA, Annual Energy Outlook 2008, Figure 97, Carbon dioxide emissions by sector and fuel, 2006 and 2030, http://www.eia.doe.gov/oiaf/aeo/excel/figure97_data.xls

severe impacts on investment in new coal generation.[52] Clearly, that was not what Congress intended when it enacted Title V.

As with PSD, the ANPR outlines options to limit administrative burdens from the application of Title V to GHGs. Whether courts will uphold these improvisations with statutory requirements is anybody's guess. Even if legal, the proposed simplifications would merely reduce—not eliminate—irrational administrative burden. For example, the ANPR proposes to raise the cutoff for Title V from 100 TPY of CO_2 to 250 TPY, so that only entities subject to PSD would have to obtain Title V permits.[53] That's cold comfort for the 1.2 million entities potentially subject to PSD permitting requirements.

When the Court majority in *Massachusetts* decided in favor of plaintiffs, did they have any idea that setting GHG emission standards for new motor vehicles could impose pointless Title V paperwork burdens and fees on 550,000, 1.2 million, or an even larger number of previously unregulated stationary sources? Did they anticipate that Title V tonnage fees could undermine the economic viability of coal generation? Sadly, nothing in *Massachusetts* suggests that they gave any thought to these questions.

6. Would millions of households become "major sources" of hazardous air pollutants?

At first glance, the proposition that EPA could be compelled to regulate CO_2 as a hazardous air pollutant (HAP) under §112, is ludicrous and not worth discussing. When Congress enacted §112, it specifically listed some 180 substances as HAPs, each of which is a poison. Consistent with the character of this initial list, §112(b)(2) requires the Administrator periodically to revise the list, "adding pollutants which present, or may present, through inhalation or direct routes of exposure, a threat of adverse human health effects (including, but not limited to substances which are known to be, or may reasonably be anticipated to be, carcinogenic, mutagenic, teratogenic [productive of monsters], neurotoxic, which cause reproductive dysfunction, or which are acutely or chronically toxic)…"

Carbon dioxide is certainly not carcinogenic, mutagenic, teratogenic, neurotoxic, acutely or chronically toxic, or implicated in reproductive dysfunction. Indeed, CO_2 poses no known or anticipated health risks to humans, animals, or plants via "inhalation or direct routes of exposure" even at several times ambient levels.

However, the same provision says that the Administrator "shall" also list as HAPs "pollutants which present, or may present … adverse environmental effects … through ambient concentrations." CAA §112(a)(7) defines "adverse environmental effect" as "any significant and widespread adverse effect, which may reasonably be

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[52] EIA estimates that a $7.00 per ton CO_2 penalty (increasing by 5 percent annually plus inflation) would cut the projected growth in coal generation from 53 percent during 2004 to 2030 to 23 percent. See EIA, *Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System*, January 2007, p. viii, http://www.eia.doe.gov/oiaf/servicerpt/bllmss/pdf/sroiaf(2007)01.pdf.
[53] ANPR 44513.

anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas." Both scientific and popular literature is rife with claims that global warming from rising ambient concentrations of GHGs threatens or harms wildlife and aquatic life, including endangered species, and degrades environmental quality over large areas. So we should not be surprised if litigation groups sue EPA to classify and regulate GHGs as HAPs.

As the ANPR indicates, regulating GHGs as HAPs could impose crushing compliance burdens on sources and the economy. §112(a)(1) defines as "major" any source that has the potential to emit 10 TPY of any one HAP or 25 TPY of any combination of HAPs. According to the ANPR, "small commercial or institutional establishments and facilities with natural gas-fired furnaces would exceed this major source threshold; indeed, a large single-family residence could exceed this threshold if all appliances consumed natural gas."[54] If GHGs become HAPs, millions of households would become "major" sources.

Major HAP sources must install maximum achievable control technology (MACT). MACT is more stringent than BACT, and sources have only three years to comply with the requirements of a §112 rule. Enforcing MACT standards for millions of households would likely require the equivalent of an EPA inspector on every block. The environmental gains, if any, would be stunningly trivial compared to the administrative burden on agencies and sources. Regulating GHGs as HAPs would epitomize the phrase "all pain for no gain." Developing MACT standards for GHGs could take many years, because EPA has no emissions data for households and households have no experience with emission controls.[55] The costs and uncertainties associated with future MACT requirements for buildings and facilities down to the household level would likely undercut any federal initiatives to revive the nation's depressed housing markets.

Applying the HAP program to GHGs—a potential consequence of the *Massachusetts* decision—would make the CAA "acutely or chronically toxic" to the economy. The only silver lining in this dark cloud is that if EPA does regulate GHGs as HAPs, it may not regulate GHGs under the NAAQS program.[56]

7. Could an endangerment finding under CAA §202 compel EPA to set NAAQS for CO_2 and other GHGs?

Before EPA can set vehicle emission standards under §202, it must first find that the emissions in question cause or contribute to health- or welfare-endangering air

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[54] ANPR 44495.

[55] ANPR 44495: "Determining MACT based on the best-controlled 12 percent of similar sources for each category would present a difficult challenge, owing to our current lack of information about GHG control by such sources and the effort required to obtain sufficient information to establish a permissible level of performance."

[56] CAA §112(b)(2) states that no air pollutant listed under §108(a) may be added to the list of HAPs unless it is a precursor to an air pollutant listed under §108(a) and "independently meets" the criteria for listing under §112.

pollution. As the ANPR notes, similar endangerment tests occur in other CAA provisions.[57] Consequently, an endangerment finding for GHGs under §202 could compel or authorize EPA to regulate GHGs under several provisions. The most important of these is §108, which governs the first phase of a NAAQS rulemaking.

A NAAQS is an allowable pollution concentration standard. It determines how many parts per million (or billion) of a targeted pollutant are permissible in the ambient air. Plaintiffs in *Massachusetts* argued that *current* GHG levels *already harm* public health and welfare.[58] Similarly, as the ANPR mentions, a "common element" in all the endangerment petitions filed since *Massachusetts* is the assertion that GHG emissions "are already harming petitioners' health and welfare and further delay by the Agency will only increase the severity of future harms to public health and welfare."[59] Allegations of present harm by both the *Massachusetts* plaintiffs and recent petitioners raise an obvious policy question: What kinds of measures would be required to *lower* GHG concentrations *below current levels*?

The Kyoto Protocol, even if faithfully and fully implemented by all industrial countries, including the United States, would barely slow the increase in atmospheric CO_2 concentrations.[60] Many Kyotos would be required to stabilize CO_2 concentrations at 450 parts per million (ppm) or even 550 ppm. Actually reducing GHG concentrations below today's levels (roughly 385 ppm) may well exceed human capability in this century. Even outright de-industrialization of the United States might not be enough to lower atmospheric levels, especially if emerging economies such as China and India continue to industrialize, and energy-related U.S. production, jobs, and emissions migrate to those places.

Yet, as the ANPR explains, the CAA requires EPA to ensure that areas designated to be in "non-attainment" with a "primary" or health-based NAAQS come into attainment within five years. EPA has authority to extend the attainment deadline by up to another five years, but no later than 10 years after an area is designated as "non-attainment."[61] Because GHGs are well mixed throughout the global atmosphere, the entire country would be in non-attainment with GHG NAAQS set below current atmospheric levels.[62]

Again, *Massachusetts* has set the stage for policy disaster. If EPA makes an endangerment finding under §202, and this triggers the setting of a primary NAAQS, and EPA accepts plaintiffs' claim that current GHG concentrations already harm public

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[57] ANPR 44418-44420 finds variations on §202's endangerment test in §108 (ambient air quality), §111 (pollution from new sources), §115 (international air pollution), §211 (highway and non-road fuels), §213 (non-road engines and vehicles), §231 (aircraft), and §615 (adverse effects on the stratosphere).
[58] "Petitioners injuries are not 'some day' injuries, as respondents contend…; they are injuries in the here and now." Petitioners' Final Reply Brief, Massachusetts v EPA, November 16, 2006, p. 2.
[59] ANPR 44399.
[60] T.M.L. Wigley. 1998. The Kyoto Protocol: CO2, CH4, and climate implications. *Geophysical Research Letters*, Volume 25, Issue 13, pp. 2285-2288.
[61] ANPR 44484.
[62] ANPR 44498.

health, then EPA would have to achieve in five or 10 years what may not be achievable in 100 years even if all nations adopt tough GHG control measures.

One consequence of the nation's non-attainment with NAAQS for GHGs is that EPA would have to regulate major stationary sources of CO_2 under the non-attainment New Source Review (NNSR) pre-construction permitting program. NNSR is similar to PSD but differs in three key respects. First, the cutoff for regulation is a PTE of 100 TPY, not 250 TPY as would be the case for most stationary sources under PSD. Second, before a firm can obtain an NNSR permit to build or modify a major stationary source, the facility must comply with Lowest Achievable Emissions Rate (LAER) standards. Unlike BACT, EPA may not take into account compliance costs when setting LAER standards. Third, any emission increases from a new or modified source must be offset by reductions from an existing source in the same non-attainment area.[63] Roughly speaking, nothing could be built or expanded anywhere in the United States unless something else is shut down.

Another consequence of non-attainment with GHG NAAQS is that the federal government, pursuant to CAA "transportation conformity" provisions, would have to withhold funds and approvals for transportation projects:

> If states were unable to develop plans demonstrating attainment by the required date [i.e. 10 years], the result would be long-term application of sanctions, nationwide (e.g. more stringent offset requirements and restrictions on highway funding), as well as restrictions on approvals of transportation projects and programs related to transportation conformity.[64]

EPA would find itself at loggerheads with congressional appropriators, governors, mayors, highway users, and construction unions.

In short, applying the NAAQS program to GHGs—a not unlikely consequence of a GHG endangerment finding under §202—could turn the CAA into the equivalent of an economic suicide pact. Set a primary NAAQS for GHGs below current atmospheric levels, and there is virtually no economic sacrifice that could not be demanded of the American people. The ANPR tacitly acknowledges this, noting that under established legal interpretation, EPA is forbidden to take costs into account when setting NAAQS.[65]

8. Could EPA administratively avoid or reduce NAAQS-related economic risks?

The ANPR suggests—and some environmental groups argue—that a GHG endangerment finding under §202 need not compel the agency to initiate a NAAQS rulemaking. This argument goes as follows. Under §108, EPA has to initiate a NAAQS rulemaking if the pollutant of concern meets three criteria: (1) Emissions of the pollutant cause or contribute to dangerous air pollution; (2) the pollutant is emitted by numerous or

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[63] ANPR 44498.
[64] ANPR 44481.
[65] ANPR, p. 44478.

diverse stationary or mobile sources; and (3) the Administrator plans to issue an air quality "criteria" document for the pollutant. Thus, it is alleged, all EPA needs to do to avoid setting NAAQS for GHGs is simply not "plan" to issue a criteria document.[66]

This won't wash. It is tantamount to saying that EPA can avoid the obligation to set NAAQS to control dangerous air pollution from numerous or diverse sources just by declining to do the paperwork.

In the 1970s, EPA Administrator Russell Train tried to employ this dodge, claiming that EPA did not have to list lead as an ambient air pollutant, because he had no plan to issue a criteria document for lead. The Second Circuit Court of Appeals rejected Train's argument, explaining:

> If the EPA interpretation were accepted and listing were mandatory only for substances "for which (the Administrator) plans to issue air quality criteria…", then the mandatory language of §108(a)(1)(A) would become mere surplusage. The determination to list a pollutant and to issue air quality criteria would remain discretionary with the Administrator, and the rigid deadlines of §108(a)(2), §109, and §110 for attaining air quality standards could be bypassed by him at will.[67]

Both David Bookbinder of Sierra Club[68] and David Doniger of Natural Resources Defense Council[69] have made this "third criterion" argument in congressional testimony. Yet, it was NRDC that successfully sued EPA to overturn Train's interpretation and compel EPA to regulate lead under the NAAQS program.

Bookbinder and Doniger were also attorneys for petitioners in *Massachusetts*. In 2003, three of the *Massachusetts* petitioners—Attorneys General Thomas F. Reilly of Massachusetts, Richard Blumenthal of Connecticut, and G. Steven Rowe of Maine—filed a notice of intent to sue EPA for failing to initiate a NAAQS rulemaking for CO_2. The three AGs cited *NRDC v Train* as a precedent requiring EPA to list CO_2 as a criteria air pollutant:

> In *Natural Resources Defense Council v. Train* [cit. omitted], the issue was whether the Administrator could be subject to a mandamus action to compel him to list lead as a criteria air pollutant. The Administrator conceded that lead posed a serious risk, but, asserting a preference to exercise his discretion to regulate lead in a different manner, declined to list it. The Court emphatically rejected this approach and held that when it is uncontested that an air pollutant from numerous or diverse sources is contributing to air pollution that "may reasonably be

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[66] ANPR, p. 44477.
[67] *NRDC v Train*, 545 F.2d 320, November 10, 1976, paragraph 13.
[68] Testimony of David Bookbinder, "Hearing on *Massachusetts v EPA* Part II: Implications of the Supreme Court Decision," House Select Committee on Global Warming, March 13, 2008, p. 9.
[69] Testimony of David Doniger, "Strengths and Weaknesses of Regulating Greenhouse Gas Emissions Under Existing Clean Air Act Authorities," House Energy and Commerce Subcommittee on Energy and Air Quality, April 10, 2008, p. 18.

anticipated to endanger public health or welfare," the Administrator has a mandatory duty to list that pollutant pursuant to Section 108.[70]

Reilly, Blumenthal, and Rowe subsequently withdrew their notice of intent to sue when they and other plaintiffs filed the *Massachusetts* petition. Nonetheless, *NRDC v Train* has never been overturned, and the reasoning is cogent. It is not plausible that Congress would authorize EPA to avoid setting NAAQS for dangerous air pollution from numerous or diverse sources just by declining to produce the requisite analysis. This would arguably gut the NAAQS program, often described as the "cornerstone" of the CAA.

Apparently, the only way EPA can regulate GHGs from new motor vehicles without imperiling the economy is to revive a discredited legal theory and treat mandatory language in §108 as surplus verbiage. This is additional evidence that the Court majority in *Massachusetts* did not examine §202 and §304(g) in their proper context—the CAA *as a whole*.

In a footnote,[71] the ANPR observes that *NRDC v Train* was decided before *Chevron* and wonders whether EPA today might have more discretion to interpret its obligations under §108. This is whistling past the graveyard. *Chevron* did not invalidate all previous decisions pertaining to the scope of EPA's discretion. *Chevron* did not authorize EPA to "bypass at will" the "rigid deadlines of §108(a)(2), §109, and §110 for attaining air quality standards."

The ANPR suggests another solution to the NAAQS peril, but it too is legally dubious. The ANPR says that EPA could issue a "secondary" NAAQS to protect "public welfare" from the known or anticipated adverse effects of GHG emissions yet abstain from issuing a "primary" NAAQS to protect "public health" with an "adequate margin of safety." The advantage here is that unlike a primary NAAQS, which states must attain in five or at most 10 years, a secondary NAAQS has no prescribed attainment date. Secondary NAAQS must be attained "as expeditiously as practicable," but there is no statutory deadline. EPA compares this approach to its regional haze program, which aims to achieve natural visibility conditions in the nation's parks and wilderness areas by 2064.[72] The ANPR solicits comment on whether the regional haze program could serve as a "model" for regulating GHGs via a secondary NAAQS.

The ANPR's legal and scientific rationale for issuing a secondary NAAQS without issuing a primary NAAQS is as follows. CAA §302(h) defines "welfare effects" to include "effects" on "weather" and "climate." The adverse health effects attributed to climate change are "principally or exclusively welfare-related." For example, "increased viability or altered geographical range of pests or diseases; increased frequency or

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[70] Thomas F. Reilly, Richard Blumenthal, G. Steven Rowe, Notice of Intent to Sue Christine Todd Whitman, Administrator, United States Environmental Protection Agency, Under Clean Air Act §7604, January 30, 2003.
[71] ANPR 44477, fn 229.
[72] ANPR 44481.

severity of severe weather events including heat waves…are…indirect impacts resulting from these ecological and meteorological changes, which are effects on welfare."[73]

Although these observations have merit, they are unlikely to bear the legal weight EPA wants to place upon them. To begin with, there is no precedent for the suggested approach. Never before has EPA issued a secondary NAAQS for an air pollutant without also issuing a primary NAAQS. The ANPR cites one instance in which EPA revoked a secondary NAAQS—for carbon monoxide (CO)—while retaining the primary NAAQS.[74] This was entirely unproblematic, however, because an EPA scientific review determined that CO at or near ambient levels has no known or anticipated adverse welfare effects. It hardly follows from this action that EPA may avoid setting a primary NAAQS for air pollution reasonably anticipated to endanger public health.

Nothing in §108 suggests that EPA's obligation to protect public health from dangerous air pollution is reduced or delayed if the adverse health effects are indirect impacts of welfare effects. If the effects on public health are what make the ecological and meteorological changes dangerous, then litigants will undoubtedly demand that EPA issue a primary NAAQS to protect public health.

An analogy may be pertinent here. Ozone smog is an indirect effect of emissions of VOCs and NO_X. What is more, the formation of ozone smog is to a significant extent mediated by the change from winter weather to summer weather, especially in warm climates. Yet no one has ever suggested that because smog is an "indirect" effect of VOCs and NO_X mediated by "welfare" elements, EPA should not issue primary NAAQS for ozone.

The regional haze program is not the model EPA hopes it might be. For starters, EPA does not regulate regional haze via a secondary NAAQS, so the program provides no legal precedent for the approach the ANPR proposes. Second, few if any experts claim that regional haze endangers public health, whereas hundreds of experts claim that GHG-induced global warming endangers public health. Third, whereas most sources of regional haze are domestic, most GHG sources are international and beyond the power of states to control. As the ANPR admits, "…in the absence of substantial cuts in worldwide emissions, worldwide concentrations of GHGs would continue to increase despite any U.S. emission control efforts."[75] In 2064, the United States might be no closer to attaining a secondary NAAQS for GHGs than it is today. Yet the phrase "as expeditiously as practicable" in CAA §172(a)(2)(B) does not mean "never."

On the contrary, CAA §110(l) requires states with non-attainment areas to adopt measures assuring "reasonable further progress" towards attainment of the applicable NAAQS. Similarly, CAA §169A(a)(4) requires the Administrator to assure "reasonable progress" towards eliminating regional haze, and to assess at five-year intervals "actual progress and improvement in visibility in Class I federal areas." If EPA establishes a

[73] ANPR 44478.
[74] ANPR 44478.
[75] ANPR 44367.

secondary NAAQS for GHGs, states will have to adopt measures assuring reasonable progress towards attainment. Yet global CO_2 emissions and concentrations are rising rapidly,[76] and are expected to increase for decades to come. How could EPA and the states determine what measures are necessary to assure reasonable further progress if no measures will achieve progress in attaining the NAAQS?

As the ANPR explains, GHGs are unlike criteria air pollutants in fundamental respects. They persist in the atmosphere for decades to centuries rather than days to weeks. Consequently, they are well mixed throughout the global atmosphere rather than concentrated in particular locales. Further, atmospheric concentrations are a product of all sources and sinks worldwide, not just national or local sources.[77] This means that the NAAQS strategy of controlling local sources to improve local air quality has no rational application to GHGs in the context of global warming policy. Neither a primary health-based NAAQS nor a secondary welfare NAAQS is a reasonable framework for regulating GHGs.

Finally, issuing a secondary GHG NAAQS without issuing a primary NAAQS would not spare either agencies or sources from burdens associated with PSD, NNSR, and Title V. If EPA sets the secondary NAAQS above current atmospheric levels, the entire country would be in attainment. In that case, major stationary sources would have to undergo PSD permitting and install BACT in a futile effort to keep GHG concentrations from rising. If, as is more likely, EPA sets the secondary NAAQS below current atmospheric levels, the entire country would be out of attainment. Major sources would have to undergo NNSR permitting, install controls meeting LAER standards, and obtain offsets before undertaking new construction or modification. States and localities would lose federal highway funds and face new restrictions on transportation project approvals.

As if that were not crazy enough, millions of sources with a potential to emit 100 TPY of CO_2 could face pointless paperwork burdens under Title V.

The real issue in *Massachusetts* was not whether the CAA definition of "air pollutant" can be massaged to justify regulating GHGs from one source category (new motor vehicles) under one provision (§202), but whether Congress intended for EPA to regulate GHGs from *all sectors and industries* under the CAA *as a whole*. In short, did Congress intend for EPA to regulate GHGs under the "cornerstone" of the CAA—the NAAQS program—and its statutory adjuncts: PSD, LAER, and Title V?

Few if any Supreme Court Justices would openly and directly order EPA to implement a Super-Kyoto program via either the NAAQS, PSD, LAER, and Title V programs, or the HAP program, for a very simple reason. No public official wants to take responsibility for damaging the economy. Had the real issue been squarely before the Court, *Massachusetts* would likely have been decided differently.

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[76] J.G. Canadell et al. 2007. Contributions to accelerating atmospheric CO_2 growth from economic activity, carbon intensity, and efficiency of natural sinks. *PNAS* November 20, 2007 vol. 104, no. 47: 18866-70.
[77] ANPR 44401.

9. Could EPA establish a GHG cap-and-trade program under CAA §110 or §111?

EPA believes that market-oriented regulatory approaches, such as emission fees and trading systems, "offer important advantages" over more prescriptive approaches for certain types of environmental problems. These advantages include lower cost, a continual incentive for over-compliance, greater incentives for technological innovation, and reduced liability for sources.[78] EPA further believes that market-oriented approaches are "relatively well-suited" to controlling GHG emissions: "Providing flexibility on the method, location, and precise timing of GHG reduction would not significantly affect the global climate protection benefits of a GHG control program … but could substantially reduce the cost and encourage technology innovation."[79]

The ANPR suggests that EPA could establish a GHG trading system under either the NAAQS program or the NSPS program. This is doubtful.

EPA notes that its Clean Air Interstate Rule (CAIR) established a cap-and-trade program for criteria pollutants under CAA §110(a)(2)(d).[80] However, after the ANPR was drafted, on July 11, 2008, the D.C. Circuit Court of Appeals, in *North Carolina v EPA*, vacated the CAIR cap-and-trade program as a violation of that provision. §110(a)(2)(d) prohibits sources in one state from contributing significantly to non-attainment in another state, or interfering with another state's maintenance of a primary or secondary air quality standard. Yet the hallmark of a cap-and-trade program is the flexibility sources have to buy their way out of emission reduction obligations by purchasing emission credits. The Court found that credit trading under CAIR would allow sources in upwind states to increase their emissions, contributing significantly to non-attainment, or interfering with maintenance of the applicable NAAQS, in downwind states.

The same reasoning would likely preclude a GHG cap-and-trade program under §110(a)(2)(d). Because GHGs are well-mixed global gases, every state is effectively "upwind" with respect to all other states. Every source anywhere in the United States that does not decrease its emissions would contribute to non-attainment, or interfere with NAAQS maintenance, in other states. In fact, given the long residence times of CO_2 and other GHGs, merely decreasing emissions might not be enough to comply with §110(a)(2)(d). To avoid contributing to NAAQS non-attainment or interfering with NAAQS maintenance in other states, sources might have to reduce their emissions to zero!

The ANPR also suggests that EPA could establish a GHG cap-and-trade program under the New Source Performance Standards (NSPS) program (§111), arguing that a trading program meets the CAA definition of "standard of performance."[81] This is far

[78] ANPR 44409-10.
[79] ANPR 44410.
[80] ANPR 44412.
[81] ANPR 44411.

from evident. CAA §302(l) defines "standard of performance" as a "requirement of continuous emission reduction," and §111(a) defines "standard of performance" as the "best system of emission reduction," taking various factors into account. Again, the chief virtue of a cap-and-trade program is flexibility. There is no requirement of "continuous emission reduction" for sources individually or even collectively. By purchasing emission credits, individual sources may increase their emissions. Sources are also under no obligation to install the "best system of emission reduction." Cap-and-trade supposedly fosters experimentation to discover the most cost-effective methods, not the one best method.[82] Any EPA rule to establish a GHG cap-and-trade program under §111 would likely be challenged in court.

Apart from these textual considerations, the ANPR seems unaware that several important choices in the design of a cap-and-trade program are not technical but political and, as such, beyond EPA's authority to make.

An eye-opening example emerged at a Senate Environment and Public Works Committee hearing on the U.S. Climate Action Partnership, where this commenter testified.[83] PG&E CEO Jim Darbee advocated a cap-and-trade scheme that allocates permits based on actions already undertaken to reduce emissions and the emitter's historical level of energy produced. This would favor utilities (like PG&E!) that don't burn much coal and instead invest heavily in state-mandated renewable generation. In contrast, Duke Energy CEO Jim Rogers advocated a cap-and-trade scheme that allocates permits based on each company's historical level of emissions. This would favor companies (like Duke!) that burn a lot of coal, in effect paying them to switch to producing more expensive electricity from lower-emitting fuels.[84] The two CEOs disagreed as to which type of cap-and-trade program was "fair." EPA might as well read tea leaves as try to divine the answer from CAA §§ 110 or 111.

Such internecine wrangling partly explains why Congress has never passed a cap-and-trade bill. As my colleague Myron Ebell puts it, the "thieves fall out" as soon as the discussion gets beyond generalities to the specifics of how emission permits worth potentially trillions of dollars are to be allocated. Existing CAA provisions do not authorize EPA to pick which companies make out like bandits and which get fleeced.

Additional thorny political issues must be resolved before EPA could administer a GHG cap-and-trade program. Should permits be auctioned or allocated free-of-charge? Should a percentage be auctioned at the start of the program and increase over time? If some credits are to be allocated free-of-charge, how many, to whom, and for how long? How should revenues from permit auctions be used—to fund R&D of non-emitting technologies, finance national health care, pay down the national debt, or reduce taxes on

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[82] This discussion draws on the Opening Brief of Environmental Petitioners in *State of New Jersey et al v EPA*, January 12, 2007, p. 25.

[83] "Global Warming Issues in the Power Plant Sector," Hearing before the U.S. Senate Committee on Environment and Public Works, June 28, 2007.

[84] Myron Ebell, "Thieves Fall Out," *Cooler Heads Digest*, June 5, 2007, http://cei.org/gencon/014,06019.cfm.

labor and capital? These inescapable power-of-the-purse choices are above EPA's pay grade.

10. Is the NSPS program a reasonable framework for regulating GHGs?

EPA seems to relish the prospect of setting NSPS for GHGs. CAA §111 "offers the potential for an independent, comprehensive program for regulating most stationary sources of GHGs." It "provides for consideration of cost, and allows substantial discretion regarding the types and size of sources regulated" plus "significant discretion to determine the appropriate level for the standards." Moreover, the emission control systems on which the standards are based must be "adequately demonstrated."[85] What's not to like?

But then the ANPR says that to be "adequately demonstrated," control systems "need not be actually in use or achieved in practice at potentially regulated sources or even at a commercial scale." In fact, the ANPR claims, EPA could establish future-year standards based on technologies it believes will be "adequately demonstrated" in the future.[86] EPA, it seems, is largely free to define "adequately demonstrated" as it sees fit.

More importantly, applying NSPS to GHG source categories would have no measurable effect on GHG concentrations or climate change.

The Department of Energy (DOE) projects that global CO_2 emissions will increase from 27 billion tons in 2005 to 48.1 billion tons in 2050.[87] To reduce global CO_2 emissions 50 percent below 2005 levels by 2050—the long-term goal of most climate campaigners[88]—global CO_2 emissions must decrease to 13.5 billion tons per year. In other words, global CO_2 emissions in 2050 must be 34.6 billion tons below the baseline projection. To reduce CO_2 emissions in 2050 by just 1 billion tons, nations would have to build 273 new zero-emission 500 MW coal-fired power plants instead of conventional coal power plants, *or* build 136 new nuclear power plants of 1 GW each (equivalent to about one-third of existing world nuclear capacity) instead of conventional coal plants, *or* convert a barren area larger than Germany and France combined into new forests for CO_2 storage.[89] Each of these strategies would be difficult to implement. Yet all three combined would reduce global CO_2 emissions only 4.3 percent in 2050—a far cry from the 50 percent reduction demanded by Al Gore, the European Union, and major environmental groups.

In the policy relevant future—the next five to 10 years—CO_2 reductions achieved via NSPS would be inconsequential. During that period, NSPS for CO_2 would chiefly require sources to undertake "energy efficiency or process efficiency improvements,"

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[85] ANPR 44486.
[86] ANPR 44487.
[87] Stephen D. Eule, U.S. Department of Energy, The Climate Change and Energy Security Challenge, 29 November 2007, slide 17.
[88] The IPCC calls for a 60-percent GHG emissions reduction by 2050 relative to 2000 levels to stabilize atmospheric concentrations at 440 ppm (ANPR 44401).
[89] Eule, Climate Change Challenge, slide 10.

which EPA estimates could reduce emissions from the regulated sources by 1 to 10 percent.[90] In 2006, U.S. electric sector and industrial sector CO_2 emissions totaled 3,344.4 million tons.[91] Now, let's generously assume that in 10 years, NSPS prompts *all* U.S. electric and industrial sector CO_2 sources to become 10 percent more efficient, and that those sources do not increase output as their energy input costs fall. In this unrealistic scenario, U.S. electric and industrial sector CO_2 emissions will decline by about one-third of 1 billion tons.

In reality, because all sources will not implement improvements, not all improvements will boost efficiency by 10 percent, and efficiency gains will encourage some sources to increase output, actual reductions will likely have no measurable effect on global emission levels in 2050.

The ANPR suggests that NSPS could make a significant difference in electric sector CO_2 emissions once carbon capture and storage (CCS) technology is adequately demonstrated.[92] However, it could take a decade just to determine whether CCS is economic under a range of carbon penalties. The Department of Energy, for example, says that with present technology, "estimates of sequestration cost are in the range of $100 to $300/ton of carbon emissions avoided," yet costs must decline substantially—to $10/ton or less—to keep coal generation with CCS competitive with natural gas or nuclear.[93] Building the infrastructure could take another decade, because a pipeline system big enough to handle the immense volumes of liquefied CO_2 would likely rival the U.S. natural gas and petroleum pipeline networks in size.[94] In addition, it would take years to work out the regulatory and liability issues, and years to overcome NIMBY opposition.

Thus, in the foreseeable future, CO_2 reductions achieved via NSPS would be largely symbolic. Yet EPA and sources might have to endure years of "regulatory agony," as Peter Glaser has explained.[95] The NSPS process "requires the functional

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[90] ANPR 44491.

[91] ANPR 44429. The Energy Information Administration (EIA) estimates that global energy-related CO_2 emissions totaled 28 billion tons in 2005. See *International Energy Outlook 2008*, Chapter 7: Energy-Related Carbon Dioxide Emissions, http://www.eia.doe.gov/oiaf/ieo/emissions.html. The ANPR puts the total at 30.6 billion tons in 2000. One of these figures is probably wrong, since global CO_2 emissions in 2005 were greater than in 2000.

[92] ANPR 44492.

[93] U.S. Department of Energy, Carbon Sequestration R&D Review, http://fossil.energy.gov/sequestration/overview/html.

[94] Coal burning U.S. power plants produce about 1.5 billion tons of CO_2 per year. "If all of this CO_2 is transported for sequestration, the quantity is equal to three times the weight and … one-third the annual volume of natural gas transported through the U.S. gas pipeline system. If 60% of the CO_2 produced were to be captured and compressed to a liquid for geologic sequestration, its volume would be equal to the total U.S. oil consumption of 20 million barrels a day." Massachusetts Institute of Technology, *The Future of Coal: Options for a Carbon-Constrained World*, 2007, p. ix, http://web.mit.edu/coal/The_Future_of_Coal_Summary_Report.pdf.

[95] Testimony of Peter Glaser, "Strengths and Weaknesses of Regulating Greenhouse Gases under the Clean Air Act," Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, April 10, 2008, pp. 20-21.

equivalent of a NEPA impact statement," says Glaser, quoting the D.C. Circuit Court of Appeals in *Sierra Club v Costle*.[96] He elaborates:

> In 1976, a number of parties petitioned EPA to revise the sulfur dioxide NSPS for coal-burning power plants. It took three years for EPA to conclude the proceedings and another two years for the court to review the case. The Court noted "[t]he importance of the challenged standards [that] arises not only from the magnitude of the environmental and health issues involved, but also from the critical implications the new pollution controls have for the economy at the local and national levels." The Court further noted that, "the volume and technical complexity of the material necessary for our review is daunting." According to the Court, the recent record before EPA included more than 2,520 submissions; EPA's statement accompanying the rule took up 43 triple columns of single-spaced type; EPA had performed or obtained from contractors 120 studies and collected more than 400 items of reference literature; and EPA had received almost 1400 comments, written 650 letters and 2000 interagency memos, held over 50 public meetings and substantive telephone conversations with the public, and conducted four days of public meetings. Briefs submitted to the Court ran up to 670 pages, and the Court's decision was more than 100 pages in length.

If EPA sets NSPS standards for only half a dozen CO_2 source categories, all in the next five to 10 years, it would not only have to spend vast resources chasing inconsequential reductions, it would also initiate the administrative nightmares described in sections 3 and 4 above. As the ANPR acknowledges, NSPS for CO_2 "would trigger pre-construction permitting requirements for all types of GHG major sources under the PSD program."[97] It would also trigger operating permit requirements for major sources under Title V.

11. Can EPA "avoid inconsistency" with the Energy Independence and Security Act?

Because no technology exists to capture CO_2 emissions from automobile tailpipes, the principal way to reduce GHG emissions from automobiles is to increase fuel economy. Thus, in *Massachusetts*, respondent EPA argued that setting GHG standards for new motor vehicles would either wastefully duplicate or interfere with the statutory fuel economy program Congress established via the Energy Policy and Conservation Act (EPCA) of 1975, which is administered by the National Highway Traffic Safety Administration (NHTSA). The Court majority rejected this argument without explanation, asserting that, "there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency." The ANPR asks, "How best can EPA fulfill its CAA obligations under Title II yet avoid inconsistency with NHTSA's regulatory approach under EPCA."[98]

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[96] *Sierra Club v Costle*, 657 F.2d at 331 (D.C. Circuit, 1981), quoting *Portland Cement*, 486 F.2d at 384.
[97] ANPR 44486.
[98] ANPR 44443.

The fundamental issue, however, is not whether EPA can avoid inconsistency with NHTSA's "approach" but whether it can avoid inconsistency with the Energy Independence and Security Act (EISA) of 2007, which amended the EPCA fuel economy standards.

As the ANPR reveals, the lion's share of vehicular GHG reductions would come from fuel-economy boosting technologies: "hybrids, diesels, plug-in hybrid vehicles, full electric vehicles, and fuel cell vehicles, all with significant use of light-weight materials."[99] Indeed, all of the CO_2-reduction options reviewed in EPA's *Staff Technical Report*,[100] such as low-friction lubricants, variable valve lift systems, direct injection, turbo-charging, continuously variable transmission, aerodynamic drag reduction, and low rolling resistance tires, are well-known fuel-economy enhancers.[101]

EISA will increase average new-car fuel economy to at least 35 miles per gallon by 2020. This is an ambitious target. In 2007, only the Toyota Prius and Honda Civic Insight Hybrid—two out of 1,153 vehicle-models—achieved at least 35 miles per gallon in both city and highway driving conditions.[102] Yet those who view global warming as an unfolding catastrophe are unlikely to be satisfied with the EISA-related GHG reductions.

As the ANPR points out, EISA, which also mandates the sale of 21 billion gallons of low-carbon motor fuel by 2022, will accomplish only 25 percent of the auto sector's "proportional contribution" to achieving President Bush's long-term climate goal of no net increase in emissions after 2025.[103] Not one environmental group—certainly none of the plaintiffs in *Massachusetts v EPA* and none of the groups that have since filed petitions to regulate GHGs from non-road engines, construction equipment, coal power plants, petroleum refineries, marine vessels, and aircraft[104]—views President Bush's goal as strong enough. They undoubtedly share Rep. Henry Waxman's (D-CA) opinion that the EISA emission reductions do not go far enough.[105] From their perspective, the EISA fuel economy standards and the associated NHTSA rulemaking[106] are apple carts to be kicked over.

EPA may be tempted to oblige, since the agency can hardly play an important new role in fuel economy regulation just by ratifying decisions Congress and NHTSA have already made. In all likelihood, the only way EPA can "avoid inconsistency" with EISA is to decline to make an endangerment finding.

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[99] ANPR 44441.
[100] EPA, *Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-Duty Vehicle Carbon Dioxide Emissions*, March 2008, http://www.epa.gov/otaq/climate/420r08008.pdf.
[101] See National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards* (Washington, D.C.: National Academy Press, 2001), pp. 31-43, especially Tables 3-1 and 3-2.
[102] U.S. Department of Energy; Office of Renewable Energy and Energy Efficiency, Environmental Protection Agency, *Model Year 2008 Fuel Economy Guide*.
[103] ANPR 44437.
[104] ANPR 44458-61, 44399.
[105] The Honorable Henry Waxman, letter to EPA Administrator Stephen Johnson, March 12, 2008, http://oversight.house.gov/documents/20080312110250.pdf.
[106] NHTSA, 49 CFR Parts 523, 531, 533, 534, 535, 536 and 537, Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011-2015, April 22, 2008.

12. Would setting GHG standards for new motor vehicles produce large net consumer benefits?

EPA believes so, stating that the "cost per-ton of GHG reduced is more than offset by the value of the fuel savings, and the net present value to society could be on the order $340 to $830 billion without considering [climatic] benefits of GHG reductions."[107] Consumers would pay more for vehicles incorporating advanced technologies, but, says EPA, "the lifetime discounted fuel savings will exceed the initial cost increase substantially."[108] EPA writes as if the only factors consumers need to weigh and balance when purchasing an automobile are the upfront purchase price and the lifetime fuel costs. In this two-factor decision framework, politically mandated fuel economy standards might seem reasonable. But consumers also consider several other factors including performance, utility, amenities, and safety.

Indeed, when consumers purchase a car, they usually take into account costs that are completely unrelated to the vehicle itself. For example, a motorist may prefer a lower-priced car because she needs more disposable income this year for new home appliances, her daughter's music lessons, or her son's doctor bills. Forcing her to spend more of her income on a higher-mpg vehicle would not enhance her family's welfare, even if she could recover the extra expense in 8 to 10 years. Each consumer's welfare is subjective and involves a subtle weighing and balancing of many competing considerations. Yet EPA believes it knows that, "consumers undervalue fuel economy."[109] That is tantamount to saying that the motorist in the foregoing example overvalues her child's music lessons.

Motorists already have the option to buy high-mpg vehicles, and advances in diesel and battery technology will expand the choices available. They are also well aware of the volatility of gasoline prices and have no love of pain at the pump. Tightening fuel economy standards, as the ANPR effectively proposes to do, can only restrict consumers' freedom to make their own welfare maximizing choices. In many cases, tighter standards will force consumers who value utility more than fuel economy to pay higher prices for vehicles with less utility. As Joel Schwartz and Lynne Kiesling wrote about a similar proposal:

> When automakers can offer high-mileage vehicles with a palatable combination of price and other desired amenities, motorists will choose them without any external prodding. This suggests that mandating fuel efficiency increases will impose net costs on Americans. Therefore, rather than benefiting Californians, implementing the [CEC/CARB AB 2076] Report's recommendations would likely make people worse off.[110]

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[107] ANPR 44441.
[108] ANPR 44447.
[109] ANPR 44413.
[110] Joel Schwartz and Lynne Kiesling, Reducing California's Petroleum Dependence, Reason, June 10, 2003, http://www.reason.org/commentaries/schwartz_20030610b.shtml.

Title II requires EPA to take several factors into account when setting emission standards, including vehicle safety. Many motorists place a higher value on safety than on fuel economy. Yet the ANPR never asks for comment on the safety implications of GHG emission standards that effectively mandate increases in fuel economy.

The quickest and cheapest way to increase fuel economy is to reduce average vehicle size and weight. And there's the rub. Lighter cars have less mass to absorb collision forces and smaller vehicles provide less space between the occupant and the point of impact. Unsurprisingly, the National Research Council estimates that in 1993, a typical year, federal fuel-economy requirements contributed to 1,300 to 2,600 fatalities, 13,000 to 26,000 incapacitating injuries, and 97,000 to 195,000 total injuries.[111]

The ANPR accepts at face value automakers' claim that they can "utilize weight reduction as a means to improve vehicle efficiency while meeting all applicable safety standards."[112] We would hardly expect auto companies to say anything else, lest they scare customers away. More importantly, meeting applicable safety standards is not the same as giving consumers all the safety they are willing to pay for. Although advanced technologies can improve vehicle safety, a heavier car with advanced technology is still safer than a lighter car with advanced technology. The inescapable consequence of fuel economy regulation is to make the average car smaller, lighter, and, thus, less crashworthy than it would be in the absence of fuel economy mandates.

13. Would regulating GHG emissions achieve significant "co-benefits" from air pollution reductions?

The ANPR observes that many measures for controlling GHG emissions also contribute to reductions in criteria air pollutants, while some measures for controlling criteria pollutants also contribute to GHG reductions. EPA believes the "co-benefits" of reduced air pollution from GHG control measures "can be substantial," and requests comment on the potential for "integrated" regulatory strategies.[113]

GHG control measures are not cost-effective air pollution strategies. It costs billions of dollars more to reduce air pollution as a "co-benefit" of CO_2 reductions than to control air pollution directly. An Energy Information Administration (EIA) analysis of "multi-pollutant" legislation introduced in the 106th Congress by Rep. Henry Waxman (D-CA) and Sen. Jim Jeffords (D-VT) makes this clear.

In EIA's analysis, reducing NO_X and SO_2 emissions 75 percent below 1997 levels by 2005 would cost power generators and consumers $6 billion. Reducing CO_2 emissions 7 percent below 1990 levels by 2005 would cost $77 billion. If the three requirements are "integrated," the total cost is $77 billion—$5 billion less than the sum of their individual

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[111] National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*, (Washington, D.C.: National Academy Press, 2001), pp. 25-26, http://books.nap.edu/html/cafe/ch2.pdf.
[112] ANPR 44448.
[113] ANPR 44407-08.

costs.[114] That $5 billion "savings" is due to the "co-benefits" of "integrated" air quality management—that fact that CO_2 reductions entail ancillary NO_X and SO_2 reductions, and vice versa. However, if your goal is cleaner air, then you haven't saved any money at all. Rather, you have spent $77 billion to achieve $6 billion worth of SO_2 and NO_X reductions. Arguably, you have wasted $71 billion—wealth no longer available to meet other consumer or environmental priorities.

14. Is anthropogenic global warming "reasonably anticipated" to endanger public health and welfare?

Whether or not it is reasonable to anticipate warming-related endangerment of public health and welfare partly depends on how much global warming it is reasonable to anticipate. Warming projections, in turn, partly depend on assumptions about climate sensitivity.

Perhaps the most striking thing about the climate science debate, given the tens of billions of dollars the United States and other nations have invested in climate research over the past two decades, is how little progress has been made to determine climate sensitivity. According to the latest IPCC report, a doubling of atmospheric equivalent carbon dioxide concentrations is "likely" to produce warming "in the range of 2ºC to 4.5ºC."[115] This is pretty much the range scientists have given for decades.

Recent research by Roy Spencer of the University of Alabama in Huntsville shows that previous estimates of climate sensitivity rest on questionable assumptions. For example, all IPCC climate models assume that cirrus cloud cover increases as the tropical oceans warm up—a positive feedback, because cirrus clouds are transparent to incoming short-wave radiation but absorb and re-radiate outgoing long-wave radiation. However, Spencer's team of satellite researchers found a strong negative cirrus cloud feedback mechanism in the tropical troposphere. Instead of steadily building up as the tropical oceans warm, cirrus cloud cover suddenly contracts, allowing more heat from the surface to escape out to space.[116] Spencer reckons that if this mechanism operates on decadal time scales, it would reduce model estimates of global warming by 75 percent.[117]

A 2008 study by Spencer and colleague William D. Braswell found that climate modelers could be mixing up cause and effect, leading them to build models that forecast too much warming. Modelers have interpreted reductions in low-lying cloud cover as a positive feedback effect of increases in sea surface temperature. Yet it is equally possible

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[114] Energy Information Administration, *Analysis of Strategies for Reducing Multiple Emissions from Power Plants: Sulfur Dioxide, Nitrogen Oxides, and Carbon Dioxide*, December 2000, p. xviii.
[115] EPA, *Technical Support Document on Benefits of Reducing GHG Emissions*, June 12, 2008, p. 3, fn. 7.
[116] R. Spencer et al. 2007. Cloud and radiation budget changes associated with tropical intra-seasonal variations. *Geophysical Research Letters* Vol. 34, No. 15, L15707.
[117] "Cirrus Disappearance: Warming Might Thin Heat-Trapping Clouds," UAHuntsville News Center, 8/9/2007, http://www.uah.edu/news/newsread.php?newsID=875.

that the causality runs the other way, and increases in sea-surface temperature are an effect of natural random cloud variations.[118]

In an as yet unpublished study, Spencer finds that the Pacific Decadal Oscillation (PDO) influences the extent of low-lying cloud cover, which in turn influences global temperatures. He calculates that the PDO "can explain most of the features of 20th Century global average temperature variation," accounting for 75 percent of the centennial warming trend. He concludes that climate sensitivity is lower than all IPCC models assume: "For the multi-decadal time scales addressed here, the model simulations suggest relatively low climate sensitivity, 1.1 to 1.3 deg. C for a doubling of carbon dioxide, and an effective ocean mixing depth of around 700 to 800 m."[119]

CEI recommends that EPA invite Dr. Spencer to brief agency experts on his research. If climate sensitivity is as low as Spencer's latest study indicates, then it is not reasonable to anticipate public health- and welfare-endangerment from anthropogenic global warming.[120] Alternatively, if the IPCC models make unfounded assumptions about cloud feedbacks, as Spencer's 2007 and 2008 published studies indicate,[121] then the scientific uncertainties may be too large for EPA to make a reasonable judgment regarding endangerment.

Recent temperature history suggests that IPCC models are too "hot." Carbon dioxide emissions and concentrations are increasing at an accelerating rate.[122] Yet there has been no net warming since 2001 and no year was as warm as 1998.

The figure below, courtesy of University of Alabama Huntsville atmospheric scientist John Christy, shows how climate models and reality diverge. The red, purple, and orange lines are IPCC model forecasts of global temperatures under different emission scenarios. The yellow line supposedly shows how much warming is built into the climate system even if CO_2 levels don't change. The blue and green lines are actual temperatures from ground-based (HadCrut) and satellite (UAH LT) monitoring systems. Not one IPCC climate model forecast a roughly 10-year period of no net warming at the start of the 21st century. CEI recommends that EPA monitor this situation for another five to 10 years before deciding whether the IPCC models provide a reasonable basis for anticipating climate change impacts.

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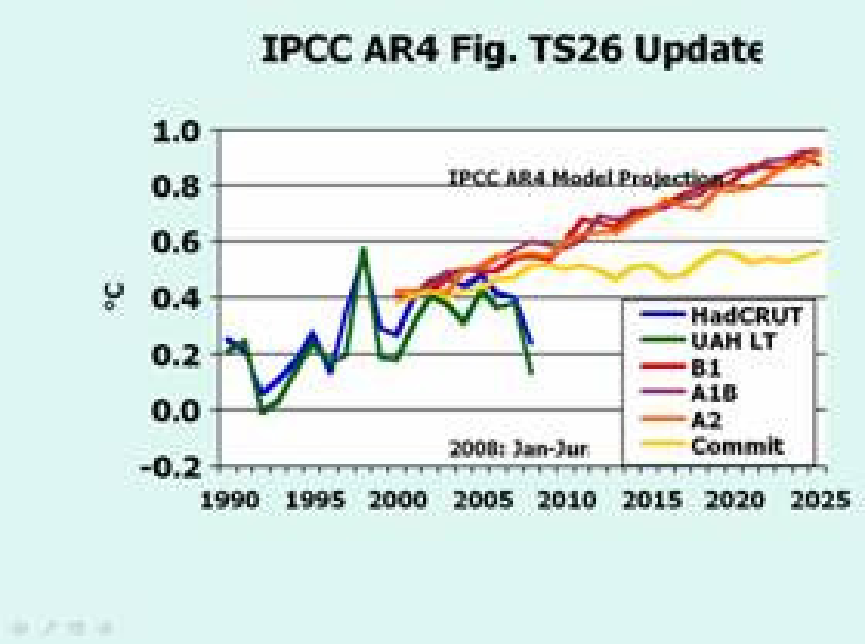
[118] R. Spencer and W.D. Brasell. 2008. Potential Biases in Feedback Diagnoses from Observational Data: A Simple Model Demonstration. *Journal of Climate* Vol. 21, Issue 21, 5624-5628.

[119] Roy Spencer, A Simple Model of Global Warming Caused by the Pacific Decadal Oscillation, October 2008.

[120] A warming of up to 2°C would likely produce net benefits for developed countries such as the United States. Robert Mendlesohn, *The Greening of Global Warming* (AEI Press, 1999), pp. 24-25, http://www.aei.org/docLib/20021130_71325.pdf.

[121] Spencer summarizes the two studies in a Power Point presentation, Recent Evidence for Reduced Climate Sensitivity, March 4, 2008, http://www.weatherquestions.com/Recent-Evidence-Reduced-Sensitivity-NYC-3-4-08.pps

[122] J.G. Canadell et al. 2007. Contributions to accelerating atmospheric CO_2 growth from economic activity, carbon intensity, and efficiency of natural sinks. *PNAS* November 20, 2007 vol. 104, no. 47: 18866-70.



The ANPR says that, "Climate warming may increase the possibility of large, abrupt, and worrisome regional or global climate events (e.g., disintegration of the Greenland Ice Sheet or collapse of the West Antarctic Ice Sheet)," and asks whether an endangerment determination should consider such "difficult-to-predict-and-quantify extreme events."[123] EPA should not base an endangerment determination on scientifically implausible doomsday scenarios, such as those popularized by former Vice President Al in *An Inconvenient Truth*.

Gore warns that half the Greenland Ice Sheet (GIS) and half the West Antarctic Ice Sheet (WAIS) could melt or break off and slide into the sea, raising sea levels 20 feet—all in our lifetimes or those of our children.[124] That is nonsense. The WAIS is more stable than scientists had previously assumed.[125] Antarctica as a whole is expected to remain too cold for widespread surface melting during the 21st century and to gain ice mass overall due to increased snowfall.[126] Basel lubrication by "moulins" (cracks transporting melt water from the surface to the bottom of the ice sheet) has little effect on

[123] ANPR 4426, 4428.
[124] Gore envisions a catastrophe in which 20 million people in Beijing would "have to be evacuated"; 40 million in Shanghai would be "forced to move"; and 60 million in Calcutta and Bangladesh would "be displaced." Al Gore, *An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do about It?* New York: Rodale (2006), pp. 196, 204-206. Hereafter cited as AIT.
[125] Sridhar Anandakrishnan et al. 2007. Discovery of Till Deposition at the Grounding Line of the Whillans Ice Stream. *Science* 315: 1835; William B. Alley et al. 2007. Effect of Sedimentation on Ice-Sheet Grounding-Line Stability. *Science* 315: 1838; John B. Anderson. 2007. "Ice Sheet Stability and Sea-Level Rise," *Science* 315: 1803.
[126] Intergovernmental Panel on Climate Change. *Fourth Assessment Report, Working Group I Report, "The Physical Basis,"* Summary for Policymakers, p. 17. Hereafter cited as AR4.

Greenland's main outlet glaciers and poses no known risk to ice sheet stability.[127] The IPCC projects a 21st century sea-level rise of 7 to 23 inches—not 20 feet.[128]

Note also that the IPCC may be overestimating the current rate of sea level rise. The IPCC says that, "Global average sea level rose at a rate of 1.8 [1.3 to 2.3] mm per year over 1961 to 2003. The rate was faster over 1993 to 2003: about 3.1 [2.4 to 3.8] mm per year. Whether the faster rate for 1993 to 2003 reflects decadal variability or an increase in the long-term trend is unclear."[129] A more recent study found that from 1955 to 2003, sea levels increased at 1.48 mm per year with no acceleration during the five-decade period.[130] If that trend continues, 21st century sea levels will increase by less than half a foot. Twenty-First century sea-level rise is more likely to be measured in inches than feet.

Another scary narrative that EPA should ignore for purposes of determining endangerment is the Atlantic Ocean "conveyor belt" shutdown scenario. Gore claims that ice melt from Greenland could so decrease the density of North Atlantic surface water that it no longer sinks forcefully enough to pull warm water up from the tropics. The Atlantic Ocean thermohaline circulation (THC) could shut down, plunging Europe into an ice age, he warns.[131] This is scientifically implausible.

Some scientists believe that a sudden infusion of fresh water disrupted the THC and caused cooling events 12,800 and 8,200 years ago. But in both cases, this happened when giant ice dams—relics of the previous ice age—burst, allowing huge fresh water lakes to drain swiftly into the North Atlantic. An estimated 9,500 cubic kilometers of fresh water poured into the North Atlantic 12,800 years ago,[132] and more than 100,000 cubic kilometers 8,200 years ago.[133] The amount of ice melt from Greenland today is a comparative trickle—about 220 cubic kilometers a year.[134]

The THC shutdown scenario briefly became a hot topic when Harry Bryden and two colleagues at the UK's National Oceanography Center reported a 30 percent decline in the THC's northward flow.[135] However, one year later, after more data came in,

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[127] Jan Joughin et al. 2008. Seasonal Speedup Along the Western Flank of the Greenland Ice Sheet. Science 320: 781; Richard Kerr. 2008. "Greenland Ice Slipping Away but Not All That Quickly," *Science* 320: 301.
[128] IPCC, AR4, Summary for Policymakers, p. 13.
[129] IPCC, AR4, Summary for Policymakers, p. 5.
[130] M. A. Berge-Nguyen et al. 2008. Reconstruction of past decades sea level using thermosteric sea level, tide gauge, satellite altimetry and ocean reanalysis data. *Global and Planetary Change*, 62, 1–13.
[131] Gore, AIT, p. 149.
[132] Lamont-Doherty Earth Observatory, Abrupt Climate Change, http://www.1deo.columbia.edu/res/pi/arch/examples.shtml.
[133] D.C. Barker et al. 1999. Forcing of the Cold Event 8200 Years Ago by Catastrophic Drainage of Laurentide Lakes. *Nature* 400: 344-348.
[134] E. Rignot and P. Kanagaratnam. 2006. Changes in the Velocity Structure of the Greenland Ice Sheet. *Science* 311: 986-990.
[135] H.L. Bryden et al., 2005. Slowing of the Atlantic meridional overturning circulation at 25ºN. *Nature*, 438, 655-657.

Bryden announced that his earlier finding was a false alarm.[136] Other studies also found no long-term change.[137] The IPCC summarized the scientific literature thusly: "Over the last 50 years, no coherent evidence of a trend in the strength of the meriodonal overturning circulation [THC] has been found."[138]

In short, an endangerment finding should be based only on what is "reasonably anticipated," not on "possible extreme outcomes, including those that are of low probability,"[139] which are essentially science fiction.

The ANPR mentions a "likely trend towards more intense hurricanes" as a potential consequence of global warming.[140] This is plausible, because hurricanes are heat engines, and global warming will increase average sea surface temperatures. However, global warming is also expected to strengthen vertical wind shear, a force that suppresses and disorganizes tropical storms.[141] Thus, global warming could weaken some hurricanes while strengthening others. It is unclear what the overall trend is likely to be.

Although some researchers find an increase in hurricane strength in recent decades,[142] others find no change,[143] or no clear evidence of such change.[144] A leading modeling study concludes that over the 21st century, global warming will decrease hurricane frequency by much more than it increases hurricane strength, leading to a 25 percent decline in the power dissipation index (PDI) of Atlantic tropical storms.[145] If this study is correct, then global warming could potentially enhance human welfare with respect to Atlantic tropical storms.

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[136] Richard Kerr, "Global Climate Change: False Alarm: Atlantic Conveyor Belt Hasn't Slowed Down," *Science*. 17 November 2006, 1064a.

[137] C.S. Meinen et al. 2006. Variability in Deep Western Boundary Current Transports: Preliminary Results from 26.5 N in the Atlantic. *Geophysical Research Letters* 33 L17610; F.A. Schott et al. 2006. Variability of the Deep Western Boundary Current East of the Grand Banks. *Geophysical Research Letters* 33 L20S07; M.C. Latif et al. 2006. Is the thermohaline circulation changing? *Journal of Climate* 19: 4631-4637.

[138] IPCC, AR4, Chapter 5, Observations: Oceanic Climate Change and Sea Level, p. 387.

[139] ANPR 44426.

[140] ANPR 44427.

[141] "Global Warming Increases Wind Shear, Reduces Hurricanes, Climate Model Shows," Science Daily Express, April 18, 2007, http://www.sciencedaily.com/releases/2007/04/070417182843.htm.

[142] P.J. Webster et al. 2005. Changes in tropical cyclone number, duration, and intensity in a warming environment. *Science* 309: 1844-46; Kerry Emanuel. 2005. Increasing destructiveness of tropical cyclones over the past 30 years. *Nature* 436: 686-688.

[143] P.J. Klotzbach. 2006. Trends in global cyclone activity over the past 20 years (1986-2005). *Geophysical Research Letters* 33: L10805; Patrick J. Michaels, "Global Warming and Hurricanes: Still No Connection," *Tech Central Station*, 16 September 2005, http://www.techcentralstation.com/.

[144] R. Pielke, Jr. et al. Normalized Hurricane Damage in the United States: 1900-2005. *Natural Hazards Review*, February 2008, 29.

[145] T.R. Knutson et al. 2008. Simulated reduction in Atlantic hurricane frequency under twenty-first-century warming conditions. *Nature Geoscience* I, 359-364: "The mean maximum wind speed increases slightly, +2.9% for tropical storms and hurricanes combined and +1.7% for hurricanes alone. However, simulated PDI decreases by about 25% … owing to the decrease in tropical storm and hurricane frequency."

Global temperatures increased during the 20th century, yet death rates and aggregate deaths related to extreme weather declined dramatically.

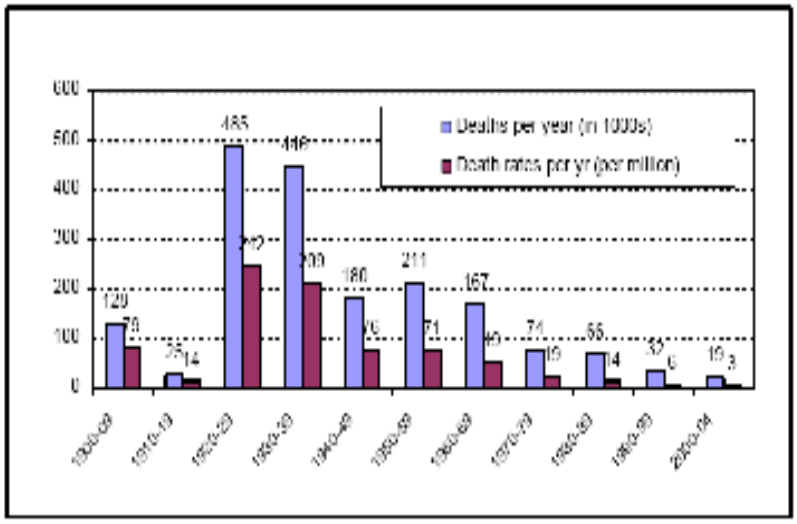

Figure 1: Global Death and Death Rates Due to Extreme Events, 1900-2004. Note that data for the last period are averaged over five years worth of data. Sources: EM-DAT (2005); Mcilwaith and Jones (1978); WRI (2005).

As Indur Goklany explains:

> Globally, mortality and mortality rates have declined by 95 percent or more since the 1920s. The largest improvements came from declines in mortality due to droughts and floods, which apparently were responsible for 95 percent of all deaths caused by extreme events during the 20th century. For windstorms, which contributed most of the remaining 5 percent of fatalities, mortality rates were also lower today but there are no clear trends for mortality. Cumulatively, the declines more than compensated for increases due to the 2003 [European] heat wave. With regard to the U.S., current mortality and mortality rates due to extreme temperatures, tornadoes, lightning, floods and hurricanes are also below their peak levels of a few decades ago. The declines for the last four categories range from 55 to 95 percent.[146]

The huge decline in aggregate deaths related to extreme weather is particularly remarkable considering that global population has roughly tripled since the 1920s. A reversal of these trends is not "reasonably anticipated."

Another concern mentioned by the ANPR is that global warming will expand the "range of vector-borne diseases," such as malaria.[147] However, malaria is only weakly related to climate but strongly related to poverty. During the 18th and 19th centuries, when

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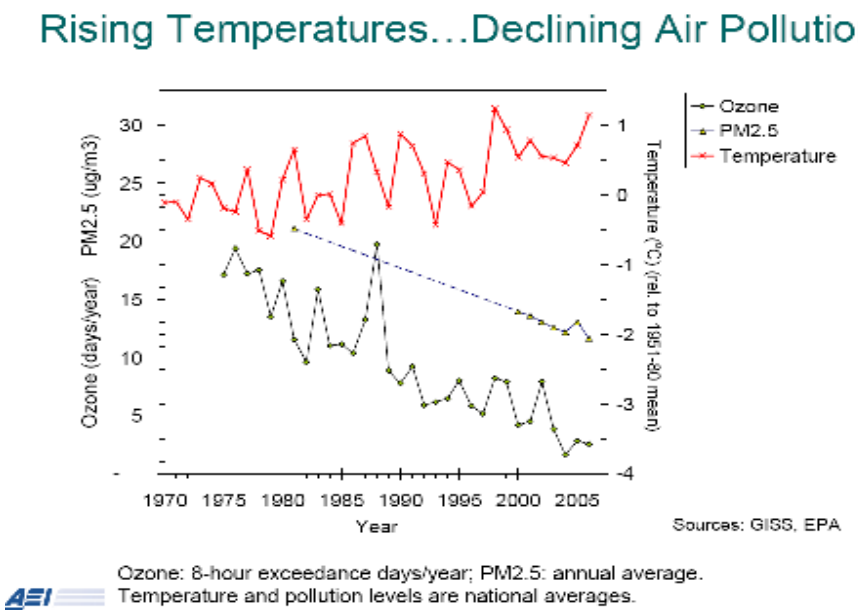
[146] I. M. Goklany. *Death and Death Rates Due to Extreme Weather Events: Global and U.S. Trends, 1900-2004*, June 6, 2006, prepared for the proceedings of the Climate Change & Disaster Losses Workshop, Hohenkammer, Germany, May 25–26, 2006, http://members.cox.net/igoklany/.
[147] ANPR 44426-27.

the world was in the grip of the Little Ice Age, malaria outbreaks were common in such non-tropical areas as Minnesota, Britain, Holland, Poland, Sweden, Norway, Finland, and Archangel, Russia.[148] The resurgence of malaria in some developing countries is chiefly due to decreased spraying of homes with DDT, anti-malaria drug resistance, and the breakdown of public health systems, not to any ascertainable changes in climate.[149] As long as America remains prosperous and free to deploy proven vector control methods, a significant increase in malaria risk related to climate change is not "reasonably anticipated."

The ANPR cites the IPCC claim of "greater than 99% likelihood" that global warming will produce "declining air quality in cities due to warmer days and nights," leading to "increases in regional ozone pollution, with associated risks for respiratory infection, aggravation of asthma, and potential premature death, especially for people in susceptible groups."[150] This claim flies in the face of history and public policy reality.

As American Enterprise Institute scholar Joel Schwartz documents, air quality in U.S. cities has improved steadily over the past three decades as urban air temperatures have increased:[151]



[148] P. Reiter. 2001. Climate change and mosquito-borne disease. *Environmental Health Perspectives* 109: 141-161; From Shakespeare to DeFoe: Malaria in England in the Little Ice Age. *Emerging Infectious Diseases* Vol. 6, No. 1, Jan-Feb 2000.

[149] D.R. Roberts et al. 1997. DDT, Global Strategies, and a Malaria Health Crisis in South America. *Emerging Infectious Diseases*. Vol. 3, No. 3; S.I. Hay et al. 2002. Climate Change and the Resurgence of Malaria in the East African Highlands. *Nature* 21: 905-909; G.D. Shanks et al. 2002. Meteorological Influences on Plasmodium Falciparum in the Highland Tea Estates of Kericho, Western Kenya. *Emerging Infectious Diseases* Vol. 8, No. 12: 1404-1408.

[150] ANPR 44426.

[151] Joel Schwartz, *Climate Activism in a Scientific Guise: Air Pollution as a Case Study*, Heartland Institute Climate Conference, New York City, March 3, 2008, slide 2.

Air quality improved despite increasing urban temperatures because polluting emissions declined dramatically. Nobody should know this better than EPA, because EPA deserves much of the credit and regularly publishes the relevant data. From 1980 to 2006, emissions of the six criteria pollutants fell by the following amounts: lead, 97 percent; oxides of nitrogen, 33 percent; volatile organic compounds, 52 percent; sulfur dioxide, 47 percent; carbon monoxide, 50 percent; PM_{10}, 28 percent; and $PM_{2.5}$, 31 percent.[152] As a consequence, ambient concentrations of polluting emissions have also declined. From 1980 to 2007, air pollution levels fell by the following amounts: nitrogen dioxide, 43 percent; sulfur dioxide, 68 percent; ground-level ozone, 21 percent.[153]

More importantly, under existing regulatory requirements, air pollution emissions and concentrations will continue to decline despite potential climate change. Schwartz explains:

> EPA's Clean Air Interstate Rule (CAIR) requires power plant SO_2 and NO_X emissions to decline more than 70% and 60%, respectively, during the next two decades, when compared with 2003 emissions. This is a cap on total emissions from power plants that remains in place independent of growth in electricity demand.[154]
>
> Recently implemented requirements for new automobiles and diesel trucks, and upcoming standards for new off-road diesel equipment will eliminate more than 80% of their VOC, NO_X, and soot emissions during the next few decades, even after accounting for growth in total driving. Dozens of other federal and state requirements will eliminate most remaining emissions from other sources of air pollution.[155]

We may "reasonably anticipate" that in 20 years most U.S. air pollution problems will have been solved, and that by mid-century significant air pollution will exist only in history books.

In a warming world, heat waves are likely to become more intense, more frequent, and longer lasting, as the ANPR observes.[156] History suggests, however, that this would not lead to higher heat-related mortality.

As urban air temperatures have increased, chiefly because urban heat islands expand as cities grow, heat-related mortality in U.S. urban centers has

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[152] EPA, Latest Findings on National Air Quality: Status and Trends through 2006, p. 6, http://www.epa.gov/air/airtrends/2007/report/trends_report_full.pdf.
[153] EPA, Air Trends, http://www.epa.gov/airtrends/.
[154] The D.C. Circuit Court of Appeals vacated CAIR after Schwartz's column appeared. However, whatever EPA puts in CAIR's place is likely to be even more stringent.
[155] Joel Schwartz, "Future Air Pollution Levels and Climate Change: A Step Towards Realism," World Climate Report, August 10, 2007, http://www.worldclimatereport.com/index.php/2007/08/10/future-air-pollution-levels-and-climate-change-a-step-toward-realism/.
[156] ANPR 44427.

gone down. Cities where hot weather is most common—places like Tampa and Phoenix, which have large elderly populations—have practically no heat-related mortality.[157]

There is a very simple explanation for this. People aren't dumb. Where hot weather is frequent, they adapt. Heat-related mortality should continue to decline unless carbon-suppression policies reduce incomes and drive up electricity costs, discouraging poor households from running their air conditioners.

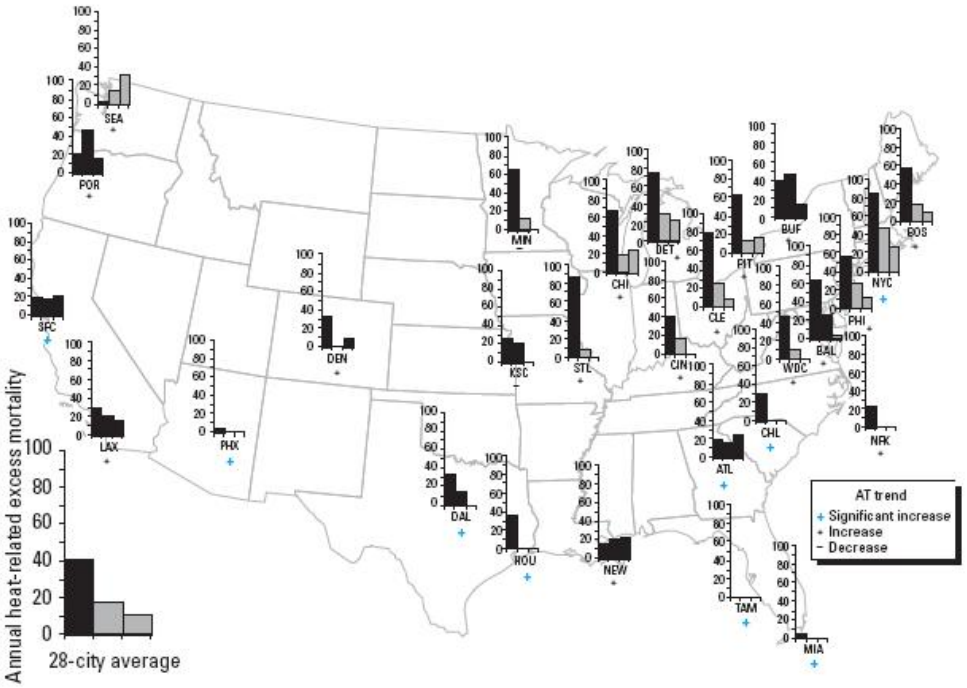

Figure: Population-adjusted heat-related mortality for 28 major cities across the United States. Each bar of the histogram for each city represents a different 10-yr period. The left bar represents the heat-related mortality in the 1960s/70s, the middle bar represents the 1980s, and the right-hand bar is the 1990s. No bar at all means that there was no statistically distinguishable heat-related mortality during that decade. Source: Davis et al. (2003)

A final caveat seems appropriate. Welfare-related "effects" on weather and climate do not in themselves constitute endangerment. The Court majority in *Massachusetts* made this rudimentary error. The majority stated, "Under the clear terms of the Clean Air Act, EPA can avoid taking further action only if it determines that greenhouse emissions do not contribute to climate change..." They implied that any amount of global warming, regardless of its rate, magnitude, or actual impacts, endangers public health and welfare.

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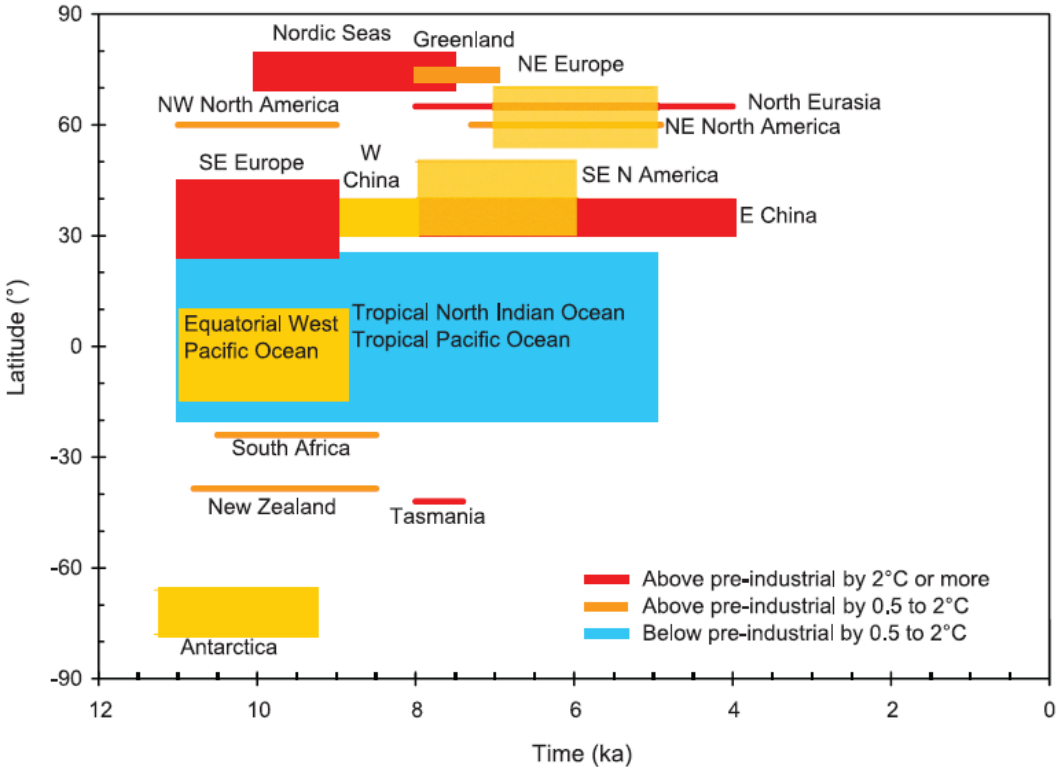
[157] R.E. Davis et al. 2003. Changing heat-related mortality in the United States. *Environmental Health Perspectives* 111: 1712-1718.

That opinion prejudges the endangerment issue and flouts common sense. Consider that millions of Americans voluntarily experience a greater degree of climate change just by moving, for example, from Buffalo or Chicago to Tampa or Phoenix than any particular U.S. locale will likely experience in 100 years. Consider also that sea levels have increased by about a foot since the mid-19th century. Yet something else increased much faster—population, development, and property values in U.S. coastal communities. Climate change per se is not endangerment.

Finally, recall that Northern Hemisphere temperatures were significantly warmer than they are today during a period lasting from about 4,000 to 11,000 years ago.[158] Traditional climate historians called that period the Holocene "optimum," believing it to have been the best climate for human civilization.



To sum up, it is not reasonable at the present time to anticipate severe health and welfare impacts from global warming.

15. Conclusion

EPA should not make an endangerment finding with regard to GHGs, for the following reasons.

[158] IPCC, AR4, p. 462.

- An endangerment finding would set the stage for multiple policy disasters no Congress would ever approve.
- The only way EPA can regulate GHGs under the CAA without risk of administrative chaos and economic devastation is to flout statutory language and effectively amend the Act.
- Had the Justices known in 2006 and early 2007 what the ANPR and other analyses have brought to light, they likely would have decided *Massachusetts* differently.
- Persistent uncertainties regarding climate sensitivity to rising greenhouse gas concentrations; new research indicating that climate models exaggerate climate sensitivity; the implausibility of extreme event scenarios; the divergence between model projections and actual temperatures; dramatic increases in coastal population, development, and property values despite a century and a half of sea-level rise; and historic declines in U.S. mortality due to extreme weather, air pollution, heat waves, and malaria despite increases in global temperatures make it unreasonable at this time to anticipate endangerment of public health and welfare from anthropogenic global warming.
- EPA cannot establish GHG emission standards for new motor vehicles yet "avoid inconsistency" with the fuel economy standards Congress established through the Energy Independence and Security Act of 2007.
- EPA cannot coherently define "the air pollution related to GHGs"; hence it lacks the requisite subject matter upon which to make a finding of endangerment.