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California State Motor Vehicle Pollution Control Standards;
Greenhouse Gas Regulations; Reconsideration of Previous Denial of a
Waiver of Preemption
By Electronic Mail: a-and-r-docket@epa.gov

Contact Information:
Name: Marlo Lewis
Organization: Competitive Enterprise Institute
Address: 1899 L. Street, NW, 12th Floor
Washington, D.C. 20036
Tel: 202-669-6693
Email: mlewis@cei.org

The Competitive Enterprise Institute (CEI) submits this comment letter to the Environmental Protection Agency (EPA) on its reconsideration of the California Air Resources Board's (CARB) request for a waiver under §209 of the Clean Air Act (CAA). Granting the waiver would allow California—and other states opting into the CARB program—to establish greenhouse gas emission standards for new motor vehicles. Thirteen other states are poised to adopt the CARB program if EPA grants the waiver. In all, about 40% of the U.S. auto market would come under the CARB rules.[1]

EPA should continue to deny the waiver because:

(1) Granting the waiver could be a lethal blow to the financially-imploding U.S. auto industry. As such, it is inconsistent with CAA §202(a)(2), which directs the Administrator to give "appropriate consideration to the cost of compliance."
(2) California does not need its own greenhouse gas motor vehicle emissions standards to meet "compelling and extraordinary conditions," as former EPA Administrator Stephen Johnson correctly argued.
(3) The CARB emission standards are massively and directly "related to" fuel economy. As such, they are prohibited by the Energy Policy and Conservation Act (EPCA).
(4) Granting the waiver would unconstitutionally empower California and other States to nullify the "attribute-based" fuel-economy standards Congress adopted in the 2007 Energy Independence and Security Act (EISA).

(5) Granting the waiver would create a state-by-state "patchwork" of vehicle rationing programs, contrary to Congress's purpose of assuring a nationally integrated auto market.
(6) *Central Valley Chrysler-Jeep, Inc. et al. v Goldstone* (2007) tries but fails to uphold the legality of the CARB emission standards, propounding what amounts to a reverse preemption doctrine contradictory to the Supremacy Clause of the Constitution.

I. Granting the waiver is inconsistent with CAA §202(a)(2).

CAA §209 states that, "No such waiver shall be granted if the Administrator finds that . . . such State standards and enforcement procedures are not consistent with section 7521(a) [CAA §202(a)] of this title." CAA §202(a)(2) states that EPA-promulgated emission standards "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." This is essentially a do-no-harm provision. Congress wanted to ensure that EPA emission standards do not endanger the financial health and competitiveness of U.S. automakers. Emission standards that kill or cripple the industry, or that materially impair its ability to recover from multi-billion dollar losses and massive layoffs, would flout the core purpose of this provision.

As EPA knows as well as anyone who follows these matters, the U.S. auto industry is on the brink of collapse. General Motors' vehicle sales were down 23% in 2008, and January 2009 sales were down 59% compared to January 2008. GM last earned an accounting profit in 2004, lost a cumulative $72 billion between 2005 and third quarter 2008, has a negative net worth of $60 billion, and is largely unable to borrow additional funds in capital markets. Ford Motor Company's 2008 sales were down 23%. The firm lost nearly $30 billion since 2006, has a negative net worth of $2 billion, and is largely unable to borrow. Chrysler's unit sales fell 30% in 2008 and another 59% in January 2009, and company may not survive intact after this month.[2]

Even with additional taxpayer support, the new EISA fuel economy standards could well prove to be the straw that breaks Detroit's back. In its May 2008 proposed rule, the National Highway Traffic Safety Administration (NTSHA) estimated that for model years 2011-2015, automakers would have to spend $16 billion to comply with the EISA passenger car fuel economy standards and $31 billion to comply with the EISA light truck fuel economy standards—nearly $50 billion in all.[3]

CARB boasts that the emission standards for which it seeks a waiver are more stringent than the fuel economy regulations proposed last year by NTSHA pursuant to EISA.[4] More importantly, as will be explained below, the State-by-State patchwork of vehicle rationing schemes spawned by the CARB program could severely constrain automakers' ability to deliver for sale the types of vehicles consumers actually want to buy. Such market-distorting costs could endanger even a financially-sound auto industry. CAA §202(a)(2) would prohibit EPA from imposing such burdens on automakers. Therefore, the waiver that CARB requests is inconsistent with §202(a)(2) and must be denied.

II. California does not need a waiver to meet "compelling and extraordinary conditions."

This was the sole basis on which former EPA Administrator Stephen Johnson denied CARB's request for a waiver. His reasons, published in the *Federal Register* in March 2008,[5] may be summarized as follows.

(1) EPA's historic practice has been to grant CARB waiver requests to address air pollution arising from circumstances specific to California–the state's topography, regional meteorology, and number of vehicles. These California-specific circumstances are the "compelling and extraordinary conditions" that justify, in Congress's judgment, allowing CARB to establish motor vehicle emission standards different from the federal standards.
(2) The "air pollution" targeted by the CARB emission standards is the elevated atmospheric concentration of greenhouse gases, principally carbon dioxide (CO_2). Greenhouse gas concentrations are "basically uniform across the globe," hence there is nothing California-specific about the "air pollution" of concern. What is more, "atmospheric concentration of greenhouse gases is not affected by the geography and climate of California." Yes, motor vehicles in California contribute to the global atmospheric concentration, but so do vehicles and stationary sources throughout the world. The State has no "extraordinary conditions" with regard to the "global air pollution" linked to climate change.
(3) Even if "extraordinary" refers not to the "global air pollution" itself but its potential impacts, such as heat waves, drought, and sea-level rise, California's vulnerability is not "sufficiently different" from that of the rest of the nation to justify waiving federal preemption of State motor vehicle emission standards.

This argument is correct as far as it goes; however, it is purely formal. CARB's claim that California "needs" a waiver also fails on substantive grounds.

Assume for the sake of argument that "extraordinary" refers to the impacts of "global air pollution" related to greenhouse gas emissions. The severity of those impacts primarily depends on how much the Earth will warm, which depends on climate sensitivity to greenhouse "forcing," which in turn depends on the relative strength of positive and negative feedbacks. In most climate models, the dominant feedbacks are positive, such that each increment of warming causes the atmosphere to retain even more heat, causing additional warming, and so on. Sensitivity is typically defined as the global average surface warming following a doubling of CO_2 concentrations above pre-industrial levels. According to the IPCC, climate sensitivity is "likely to be in the range of 2°C to 4.5°C with a best estimate around 3°C, and is *very unlikely* to be less than 1.5°C."[6] For perspective, in a hypothetical climate with no feedbacks, positive or negative, a CO_2 doubling produces 1.2°C of warming.[7] In a climate where negative feedbacks dominate, a CO_2 doubling produces less than 1°C.

MIT Professor Richard Lindzen, who briefed EPA staff in December 2008,[8] recently reviewed several satellite studies measuring the actual amount of long-wave radiation emitted by the atmosphere into space following increases in sea-surface temperatures. According to Lindzen, observed outgoing long-range radiation characteristically exceeds model values by 7 times. He further notes that, if outgoing heat radiation were only 2-3 times model values, it would correspond to a no-feedback climate. From this disparity between model calculations and observations of heat emitted into space, Lindzen concludes that negative feedbacks dominate the climate system, and that the actual sensitivity of the climate to doubled CO_2 is low—about 0.3°C.

Lindzen's argument, of course, has profound implications not just for the waiver issue but also for EPA's endangerment analysis and, indeed, the global warming debate generally. The "global air pollution" related to greenhouse gases cannot have "extraordinary" impacts in a low-sensitivity climate. I attach Lindzen's presentation for EPA's consideration.

Suppose, however, that Lindzen is mistaken and rising greenhouse gas concentrations will produce significant warming and harmful impacts. Even in that case, California would not "need" a waiver, because *it is not possible to need an ineffectual remedy*. As University of Alabama-Huntsville Professor John Christy has shown, the CARB emission standards would have no discernible effect on global temperatures or the associated impacts.

Christy estimates how much global warming would be averted if California, the Northeast separately, and the entire United States were to adopt the CARB emission standards. His estimates are based on emissions data from the U.S. Energy Information Administration and the model (MAGICC) that CARB uses to calculate climate sensitivity. What's more, Christy makes the very conservative assumption that fossil-fuel powered internal combustion engines will dominate vehicular transportation throughout the 21st century, "so that AB 1493 would have a long and continuing impact." I also attach Christy's analysis for EPA's consideration.

Here are the results. Adoption of the CARB program by California alone, by the Northeast alone, and by all 50 States combined would, by 2100, avert 0.014°C, 0.016°C, and 0.025°C of global warming, respectively. These values are too small to be detected amidst the noise of inter-annual climate variability. The associated reductions in climate change impacts on health and welfare would be similarly imperceptible. EPA is not obliged to waive preemption of federal law to accommodate a "need" for symbolism and political theater.

III. The CARB emission standards are massively and directly "related to" fuel economy and, thus, violate EPCA.

EPCA states:

> When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter. U.S.C. 49, Sec. 32919 (a)

This is a very strong statement of preemption. States or political subdivisions of States are prohibited not only from adopting fuel economy laws or regulations but also from adopting laws or regulations "related to" fuel economy. Congress clearly wanted to prevent States from adopting fuel economy measures packaged as something else or commingled with other measures.

As is widely known, no commercially proven technologies exist to filter out or capture CO_2 emissions from gasoline-powered vehicles. Thus, the only way CARB can achieve significant CO_2 emission reductions is via regulations that decrease the amount of fuel consumed per mile. To be sure, CARB's regulations also target other greenhouse gas emissions from new motor vehicles. However, CO_2 constitutes 94%-95% of motor vehicle greenhouse gas emissions.[9] The overwhelming preponderance of greenhouse gas emission reductions under the CARB program would come from CO_2 reductions via regulations that increase fuel economy.

That the California program is basically fuel economy regulation by another name is evident from the Staff Report presenting CARB's "initial statement of reasons" for regulating greenhouse gas emissions from motor vehicles.[10] The Staff Report's proposals regarding "Engine, Drivetrain, and other Vehicle Modification," on pages 49-61, are identical in substance, and often in detail, to a menu of technology options presented in the National Research Council (NRC)'s 2002 fuel economy report.[11] See the table below.

CARB GHG Reduction Technologies	NRC Fuel Economy Technologies
Near Term 2009-2012	
Intake Cam Phasing	Intake Valve Throttling
Exhaust Cam Phasing	Variable Valve Timing
Dual Cam Phasing	Multi-Valve, Overhead Camshaft
Coupled Cam Phasing	
Discreet Variable Valve Lift	Variable Valve Lift
Turbo-charging	Turbocharger or Mechanical Supercharger
Electrically Assisted Turbo-charging	
Cylinder Deactivation	Cylinder Deactivation
Variable Charge Motion	
Variable Compression Ratio	Variable Compression Ratio
Gasoline Direct Injection	Direct Injection Gasoline Engine
5-Speed Automatic Transmission	5-Speed Automatic Transmission
6-Speed Automatic Transmission	6-Speed Automatic Transmission
6-Speed Automated Manual	Automated Shift Manual Transmission
Continuously Variable Transmission	Continuously Variable Transmission

Engine Friction Reduction	Engine Friction Reduction
Advanced Multi-Viscosity Lubricants	Low Friction Lubricants
Electric Power Steering	Electric Power Steering
Electric Hydraulic Power Steering	
Improved Alternator	
Electrification of Engine Accessory subsystems	Engine Accessory Improvement
Aggressive Transmission Shift Logic	Automatic Transmission Aggressive Shift Logic
Early Torque Converter Lockup	
Variable Displacement AC Compressor	
Aerodynamic Drag Coefficient	Aero Drag Reduction
Improved Rolling Tire Resistance	Improved Rolling Resistance
Mid-Term 2013-2015	
Electromagnetic Camless Valve Actuation	Electromagnetic Camless Valve Actuation
Electro-hydraulic Camless Valve Actuation	Electro-hydraulic Camless Valve Actuation
Gasoline Direct Injection Lean Burn	Gasoline Direct Injection Lean Burn
Gasoline Homogenous Compression Ignition	
Electric Water Pump	
42-Volt 10kW Integrated Starter-Generator ISG (Start Stop)	42-Volt Electric Systems ISG
Diesel – HDSI	Direct Injection Diesel Engines
Weight Reduction	Weight Reduction
Long-Term 2015 & Beyond	
Mild Hybrid Vehicle	Mild Hybrid Vehicle
Moderate Hybrid Vehicle	Moderate Hybrid Vehicle
Advanced Hybrid Vehicle	Parallel Hybrid Vehicle
Diesel, Advanced Multi-Mode	

A few options in the CARB list are not included in the NRC list. In each case, however, the CARB option is a fuel-saving technology, not an emission-control technology.

As mentioned, EPCA preempts not only State regulations but also State laws "related to" fuel economy. CARB is seeking a waiver to implement regulations pursuant to California Assembly Bill 1493. The text of AB 1493 clearly implies that CARB is to regulate fuel economy.

AB 1493 requires CARB to achieve "maximum feasible" greenhouse gas reductions that are also "cost-effective," defined as "Economical to an owner or operator of a vehicle, taking into account the full life-cycle costs of the vehicle." CARB rightly interprets this to mean that the reduction in "operating expenses" over the average life of the vehicle (assumed to be 16 years) must exceed the "expected increases in vehicle cost [purchase price] resulting from the technology improvements needed to meet the standards in the proposed regulation."[12] Nearly all of the "operating expenses" to be reduced are

expenditures for fuel. The CARB program cannot be "cost-effective" unless CARB regulates fuel economy.

The CARB Staff Draft estimates that the increase in new-car purchase price could be substantial. Depending on the package of technologies used to comply with the rules, the sticker price of a small car could exceed the baseline price by $812 in the near-term (2009-2012), $1,459 in the mid-term (2013-2015), and $5,752 in the long-term (2016 and beyond). Similarly, the price of a large car could exceed the baseline by $503 in the near term, $1,575 in the mid-term, and $5,268 in the long-term.[13] CARB suggests that there might be some reduction in air conditioner operating costs from "use of low permeability hoses and improved elastomer seals and connections" to reduce direct emissions of refrigerants with high global warming potential.[14] However, the payback, if any, would be small compared to the projected increases in vehicle cost.[15] Only very substantial reductions in fuel expenditures could possibly make the AB 1493 program "cost-effective."

The bottom line is this: Compliance with the CARB "emission standards" is impossible without substantial increases in fuel economy. Very nearly all of the greenhouse gas reduction will come from engineering and design modifications that decrease per-mile fuel consumption. The CARB rules are directly and massively "related to" fuel economy. As such, they violate EPCA.

IV. The CARB program would nullify fuel-economy reforms Congress enacted through EISA.

The original Corporate Average Fuel Economy (CAFE) program established "flat-rate" fleet-average mpg standards for passenger cars and trucks. This approach had several unintended (although by no means unforeseen) consequences.[16] The program skewed the market in favor of automakers (mostly foreign) who offer predominantly smaller vehicles, because smaller vehicles tend to exceed the flat-rate mpg standard. For the same reason, those companies had little incentive to develop fuel-saving technology. The program encouraged full-line automakers to downsize and down-weight their vehicles, contributing to thousands of fatalities and injuries (because lighter cars provide less mass to absorb collision forces and smaller cars provide less space between the occupant and point of collision).[17] Since the light truck standard (20.7 mpg) was lower than the passenger vehicle standard (27.5 mpg), the program encouraged automakers to redesign and market trucks as passenger vehicles. (This much-derided "SUV loophole" likely saved the U.S. auto industry during the 1990s,[18] allowing manufacturers to offer highly profitable substitutes for the "family cars" of yesteryear, such as large station wagons, which the CAFE program all but eliminated.)

In EISA, Congress replaced flat-rate CAFE standards with "attribute-based" standards varying according to a vehicle's "footprint" (the area formed by the wheel base multiplied by vehicle track width). The reformed system aims to encourage fuel-economy improvement across all vehicle size categories, promote innovation rather than

downsizing, remove the market-distorting regulatory bias against manufacturers of large vehicles, and reduce the incentive to market trucks as cars.

Although the CARB greenhouse gas standards are calibrated in grams CO_2-equivalent per mile rather than miles per gallon, they are "flat-rate" rather than "attribute-based."[19] Since they are substantially fuel economy standards by another name, the CARB standards conflict *in basic approach* with the fuel-economy reforms Congress adopted in EISA. The structure of the CARB program and that of the EISA program are incompatible. The CARB program would reinstate the flawed system that Congress deliberately and specifically sought to reform through EISA. Granting CARB a waiver would nullify EISA in California and every other State that opts into the California program. What CARB requests, therefore, is *preemption in reverse*—the power to nullify the operation of federal law within State boundaries. That is not permissible under the Supremacy Clause of the Constitution.

V. Granting the waiver would create a State-by-State patchwork of vehicle rationing schemes, contrary to Congress's purpose of assuring an integrated auto market for U.S. motor vehicle manufacturers.

CARB and its allies deny that granting the waiver would create a regulatory "patchwork," with automakers required to comply in different ways in different states. According to them, there would be only two programs: the federal program and the California program. A dual system of regulating air pollution from vehicles has been in place since the start of the CAA. Vehicles built to EPA standards are "federal cars" and vehicles built to CARB standards are "California cars." Automakers have had no trouble building cars that meet two different emission standards. Promulgating GHG emission standards would merely update a system that has worked well for decades, CARB contends.

The National Automobile Dealers Association (NADA) convincingly rebuts CARB's argument in *Patchwork Proven*.[20] Carbon dioxide is not like the air-quality damaging pollutants subject to existing EPA and CARB emission standards. For smog-forming pollutants such as nitrogen oxides, both EPA and CARB emission standards specify how many grams per mile *individual vehicles* may emit. That's not how CARB regulation of GHG emissions would work. There would not be two types of vehicles, "California" and "federal." Rather, the CARB standards specify the CO_2-equivalent grams per mile that each automaker must attain *on average* for the *fleet* it delivers for sale.[21] In other words, the CARB program implicitly specifies fleet-average fuel economy.

Because the CARB standards are a quasi- (sub-rosa) fuel economy program, they inexorably produce a regulatory patchwork. Here's why.

Consumer preferences and the corresponding mix of vehicles delivered for sale differ from State to State. For example, in 2007, the Dodge Ram (with a fuel economy rating of 18.7 mpg) accounted for 20.66% of all Chrysler vehicles sold in California, but only 9.46% of all Chrysler vehicles sold in Rhode Island, and 8.43% in New Jersey. In contrast, the Jeep Grand Cherokee (with a fuel economy rating of 20.2 mpg), accounted

for only 5.23% of Chrysler vehicles sold in California but 11.23% of Chrysler vehicles sold in Rhode Island, and 16.26% in New Jersey.

Because the number and percentage of vehicle models an auto company "delivers for sale" differ from State to State, no two States are likely to have the same average fuel economy or CO_2-equivalent grams per mile. Thus, to comply with the CARB standards, automakers would have to adjust the "mix" of vehicles offered for sale in each State adopting those standards. In each "California" State, an automaker would have to "deliver for sale" enough vehicles with CO_2-equivalent per mile (fuel economy) ratings above the CARB standard to offset vehicles delivered for sale with ratings below. The "mix-shuffling" required for compliance in State A would almost certainly be different from that required for compliance in State B, C, and so on.

Note that the CARB program would create a vehicle-rationing patchwork even if there were no competing federal fuel economy standards. As the NADA report puts it, "If CARB's regulation were to take effect in all 50 states, the resulting 50-state patchwork would require automakers to manage 50 unique state fleets and to individually meet CARB's standard 50 different ways."

Since the current mix in each state is determined by consumer preference, the adjusted mix could only clash with consumer preference. The most likely compliance strategy would involve "rationing larger vehicles, discounting smaller models for quick sale, or other pricing strategies that distort the market," the NADA report warns. CAA §209 does not authorize CARB to fragment (balkanize) U.S. auto markets. EPA should stick to its guns and uphold its denial of the waiver.

IV. *Central Valley* flouts the Supremacy Clause.

In *Central Valley Chrysler-Jeep, Inc. et al. v. Goldstone* (December 2007), the District Court for the Eastern District of California ruled that EPCA does not preempt AB 1493 or the associated greenhouse gas/fuel economy regulations. However, the court's tortuous reasoning leads to the indefensible conclusion that States may nullify federal law—a reverse preemption doctrine repugnant to the Supremacy Clause. A comment on the case is appropriate, because CARB and its allies are sure to claim that *Central Valley* settled the legal issues in its favor.

The court strains to explain away the plain language of EPCA's prohibition of State laws or regulations "related to" fuel economy. The court argues that the words "related to" should be construed "as narrowly as the plain language of the law permits." But "related to" is about as broad a descriptor as exists in the English language. How does one narrowly construe broad language? The court says that "the plain language of EPCA's preemptive provision . . . encompasses only those state regulations that are explicitly aimed at the establishment of fuel economy standards, or that are the *de facto* equivalent of mileage regulation . . ." But this reading turns the EPCA preemption into a practical nullity. Under the court's "narrow" reading, any State—not just California—could circumvent EPCA (or EISA, for that matter) just by relabeling fuel economy regulations

as something else (e.g. greenhouse gas regulation) and then combining them with other requirements.

The court holds that AB 1493 is not a de-facto fuel economy program because there would not be a "one-to-one correlation" between the mandated emission reductions and the fuel economy measures required to achieve those reductions. Some portion of the total greenhouse gas reductions would be achieved by other means, such as "air conditioning offsets, hybrid and plug-in hybrid credits, and up-stream carbon offsets for ethanol-gasoline blends and other fuel source considerations." But by this logic, even CAFE is not really a fuel economy program, because automakers can comply in part with credits earned by producing flex-fuel vehicles. The basic reality that the court struggles but fails to overcome is this: The overwhelming lion's share of greenhouse gas reductions under AB 1493 are to come from enhanced fuel economy, and compliance with AB 1493 is impossible without major improvements in fuel economy. AB 1493 is highly "related to" fuel economy. As such, it is prohibited under EPCA.

A key step in the court's argument is the observation that EPCA requires DOT to consider "other motor vehicle standards of the government" whereas EPA has no corresponding obligation to consider federal fuel economy standards when regulating motor vehicle emissions. The court infers that DOT must adjust its fuel economy standards to conform to EPA emission standards rather than vice versa. And because, in the court's opinion, CARB standards become "other motor vehicle standards of the government" once EPA grants a waiver, the court concludes that DOT must also adjust its fuel economy standards to conform to CARB emission rules.

However, the reason DOT is supposed to consider "other motor vehicle standards" is that emission controls can decrease fuel efficiency, as the court acknowledges. Congress put the "other motor vehicle standards of the government" language in EPCA to ensure that DOT regulates in light of the constraints on fuel economy created by other federal requirements. The California court, however, reads this language as a license for EPA and CARB to impose stricter fuel economy requirements than adopted by DOT or Congress.

Invoking *Massachusetts v. EPA*, 127 S. Ct. (2007) at 1462, the California court says it is up to DOT to "avoid inconsistency" with EPA emission standards, and, as noted above, infers that DOT must adjust its fuel economy standards to conform to CARB emission standards. But *Massachusetts* did not specify which agency's rules, EPA's or DOT's, should take precedence in the case of a conflict. More importantly, CARB's program differs from DOT's program not only in regard to potential *stringency* but also in regard to *structure*. As discussed above, the CARB program is a reversion to pre-EISA, flat-rate fuel economy regulation. The only way DOT can "avoid inconsistency" with CARB is to jettison the attribute-based approach Congress adopted through EISA and reinstate the older CAFE program. The *Massachusetts* Court did not even address preemption issues much less affirm a right of reverse preemption.

Conclusion

Waiving federal preemption would enable CARB to impose unreasonable and potentially lethal burdens on an industry in crisis, flouting the do-no-harm intent of CAA §202(a)(2). California does not "need" a waiver to meet "extraordinary and compelling conditions," because neither the "air pollution" of concern nor the potential impacts thereof are preferentially concentrated in California. The CARB program massively and directly regulates fuel economy, violating EPCA. Granting the waiver would allow CARB and other "California" States to nullify the fuel economy reforms Congress adopted through EISA, violating the Supremacy Clause. Granting the waiver would also create a State-by-State patchwork of vehicle rationing programs, an economically-ruinous policy clearly at odds with congressional intent. For these and other reasons discussed above, the waiver should be denied.

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[1] "Obama Memos on California Waiver and CAFE Create Opportunity for Harmonization of Federal and State Economy/GHG Standards," Green Car Congress, 27 January 2009, http://www.greencarcongress.com/2009/01/obama-memos-on.html.

[2] National Highway Traffic Safety Administration (NHTSA), *Final Regulatory Impact Analysis: Corporate Average Fuel Economy for MY 2011 Passenger Cars and Light Trucks*, March 2009, p. VII-9; Greg Gardner, "Fiat would own biggest slice of Chrysler under latest scenario proposed by U.S.," *Free Press Business Writer*, April 6, 2009; http://www.freep.com/article/20090406/BUSINESS01/904060344/Fiat+would+own+biggest+slice+of+Chrysler+under+latest+scenario+proposed+by+U.S..

[3] NHTSA, 49 CFR Parts 523, 531, 533, 534, 536, and 537, *Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011-2015; Proposed Rule*, p. 24449, http://edocket.access.gpo.gov/2008/pdf/08-1186.pdf.

[4] California Air Resources Board (CARB), Addendum to February 25 Technical Assessment, May 8, 2008, *Comparison of Greenhouse Gas Reductions for the United States and Canada under ARB GHG Regulations and Proposed Federal MY 2011-2015 Model Year Fuel Economy Standards*, p. http://www.arb.ca.gov/cc/ccms/reports/final_pavleyaddendum.pdf2.

[5] U.S. Environmental Protection Agency (EPA), California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, *Federal Register* Vol. 73, No. 45, March 6, 2008, pp. 12156-12169, http://www.epa.gov/fedrgstr/EPA-AIR/2008/March/Day-06/a4350.pdf.

[6] Intergovernmental Panel on Climate Change (IPCC), *Fourth Assessment Report*, Working Group I Report "The Physical Science Basis," Summary for Policymakers, p. 12, http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

[7] IPCC, *Fourth Assessment Report*, Working Group I Report "The Physical Science Basis," Chapter 8: Climate Models and their Evaluation, p. 631, http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter8.pdf.

[8] Richard Lindzen, *Global Warming: What Is It All About?* EPA, Washington, D.C., December 9, 2008.

[9] EPA, Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle, EPA420-F-05-004, February 2005, http://www.epa.gov/OMS/climate/420f05004.htm.

[10] CARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles*, August 6, 2004, http://www.arb.ca.gov/regact/grnhsgas/isor.pdf.

[11] National Research Council (NRC), *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*, 2002, pp. 31-43, especially Tables 3-1 & 3-2, http://www.nap.edu/openbook.php?isbn=0309076013.

[12] CARB, *Staff Report*, p. 148.

[13] CARB, *Staff Report*, p. 88.

[14] CARB, *Staff Report*, p. 70.
[15] Natural Resources Defense Council, for example, estimates that each AC servicing avoided due to reduced refrigerant leakage would save the owner or operator about $100. However, motorists who experience no problems with their AC would never see these savings. CARB's regulations do not assume consumer savings from AC upgrades "given the limited information that was available." CARB, *Regulations to Control Greenhouse Gases: Final Statement of Reasons*, August 4, 2005, p. 123, http://www.arb.ca.gov/regact/grnhsgas/fsor.pdf.
[16] NHTSA, *Final Regulatory Impact Analysis: Corporate Average Fuel Economy for MY 2011 Passenger Cars and Light Trucks*, March 2009, pp. I-1-2.
[17] NRC, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*, 2002, p. 111, http://books.nap.edu/openbook.php?record_id=10172&page=111.
[18] Paul Roberts, "Bad Sports: Or how we learned to stop worrying and love the SUV," *Harper's Magazine*, April 1, 2001, http://www.stayfreemagazine.org/suv/harpers.html.
[19] CARB, *Regulations to Control Greenhouse Gases: Final Statement of Reasons*, Table II-1, p. 8.
[20] National Automobile Dealers Association, *Patchwork Proven: Why a Single National Fuel Economy Standard Is Better for America than a Patchwork of State Regulation*, January 2009, http://www.nada.org/NR/rdonlyres/DBCC625E-2E8E-4291-8B23-B94C92AFF7C4/0/patchworkproven.pdf.
[21] Edmund G. Brown, Jr., Office of the Attorney General, State of California, *Myth: "But It Is Too Hard," Claims the Auto Industry*, http://www.ag.ca.gov/globalwarming/myths/too_hard.php.