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California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; Notice

ENVIRONMENTAL PROTECTION AGENCY

[FRL–8927–2]

California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles

SUMMARY: The Environmental Protection Agency (EPA) is granting the California Air Resources Board's (CARB's) request for a waiver of Clean Air Act preemption to enforce its greenhouse gas emission standards for model year 2009 and later new motor vehicles. This decision is under section 209(b) of the Clean Air Act (the ''Act''), as amended. This decision withdraws and replaces EPA's prior denial of the CARB's December 21, 2005 waiver request, which was published in the **Federal Register** on March 6, 2008.

DATES: Petitions for review must be filed by September 8, 2009.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2006–0173. All documents and public comments in the docket are listed on the *www.regulations.gov* Web site. Publicly available docket materials are available either electronically through *www.regulations.gov* or in hard copy at the Air and Radiation Docket in the EPA Headquarters Library, EPA West Building, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding holidays. The telephone number for the Reading Room is (202) 566–1744. The Air and Radiation Docket and Information Center's Web site is *http://www.epa.gov/oar/docket.html.* The electronic mail (e-mail) address for the Air and Radiation Docket is: *a-and-r-Docket@epa.gov,* the telephone number is (202) 566–1742 and the fax number is (202) 566–9744.

FOR FURTHER INFORMATION CONTACT: Specific questions may be addressed to David Dickinson, Office of Transportation and Air Quality, Compliance and Innovative Strategies Division (6405J–NLD), EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460, telephone: (202) 343–9256, e-mail: *Dickinson.David@epa.gov.*

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I. Executive Summary

Today, I, as Administrator of the Environmental Protection Agency, am granting California's request for a waiver of Clean Air Act preemption for California's greenhouse gas emission standards for 2009 and later model years of new motor vehicles, adopted by the California Air Resources Board on September 24, 2004. This decision withdraws and replaces EPA's previous March 6, 2008 Denial of California's waiver request.

In the March 6, 2008 Denial, EPA determined that one of the three criteria for denial of a waiver had been met, namely, that California did not need its

State standards to meet compelling and extraordinary conditions. I have reconsidered that determination, which was based on an interpretation of section 209(b)(1) of the Clean Air Act that I now reject. Based on a review of the statutory language, legislative history, and the comments received, I am returning to EPA's traditional interpretation of this provision. Applying EPA's traditional interpretation I have determined that the waiver should not be denied under this criterion. Since the March 6, 2008 Denial did not evaluate or make any determinations concerning either of the other two waiver criteria, I have evaluated those criteria and determined that the waiver should not be denied under either of them. This includes careful consideration of all of the evidence presented concerning technological feasibility of the model year 2009 and later model year standards, considering lead time and the cost of implementation.

The legal framework for this decision stems from the waiver provision first adopted by Congress in 1967, and later modified in 1977. Congress established that there would be only two programs for control of emissions from new motor vehicles—EPA emission standards adopted under the Clean Air Act and California emission standards adopted under its state law. Congress accomplished this by preempting all state and local governments from adopting or enforcing emission standards for new motor vehicles, while at the same time providing that California could receive a waiver of preemption for its emission standards and enforcement procedures. This struck an important balance that protected manufacturers from multiple and different state emission standards, and preserved a pivotal role for California in the control of emissions from new motor vehicles. Congress recognized that California could serve as a pioneer and a laboratory for the nation in setting new motor vehicle emission standards. Congress intentionally structured this waiver provision to restrict and limit EPA's ability to deny a waiver, and did this to ensure that California had broad discretion in selecting the means it determined best to protect the health and welfare of its citizens. Section 209(b) specifies that EPA must grant California a waiver if California determines that its standards are, in the aggregate, at least as protective of the public health and welfare as applicable Federal standards. EPA may deny a waiver only if it makes at least one of three findings specified under the Clean Air Act (including whether California's ''protectiveness finding'' noted above is arbitrary and capricious). Therefore, EPA's role upon receiving a request for waiver of preemption from California is to determine whether it is appropriate to make any of the three findings specified by the Clean Air Act and if the Agency cannot make at least one of the three findings then the waiver must be granted. The three waiver criteria are properly seen as criteria for a denial—EPA must grant the waiver unless at least one of three criteria for a denial is met. This is different from most waiver situations before the Agency, where EPA typically determines whether it is appropriate to make certain findings necessary for granting a waiver, and if the findings are not made then a waiver is denied. This reversal of the normal statutory structure embodies and is consistent with the congressional intent of providing deference to California to maintain its own new motor vehicle emissions program.

The three criteria for denial of a waiver are: First, whether California's determination that its standards are, in the aggregate, at least as protective as applicable Federal standards is arbitrary and capricious (Section 209(b)(1)(A)); second, whether California has a need for such standards to meet compelling and extraordinary conditions (Section 209(b)(1)(B)); and third, whether California's standards are consistent with Section 202(a) of the Act (Section 209(b)(1)(C)). EPA has consistently interpreted the waiver provision as placing the burden on the opponents of a waiver to demonstrate that one of the criteria for a denial has been met. In this context, since 1970, EPA has recognized its limited discretion in reviewing California waiver requests. EPA has granted over 50 waivers of preemption and has only fully denied one waiver request, the decision under reconsideration here.

In this case, California first requested that EPA waive preemption for its new motor vehicle greenhouse gas emission standards on December 21, 2005. EPA did not begin its formal consideration of the waiver request until after the *Massachusetts* v. *EPA* decision in April 2007, in which the Supreme Court determined that greenhouse gases are air pollutants within that term's meaning in the Clean Air Act. On March 6, 2008, after an administrative process that included two public hearings and a written comment period, EPA published its final decision denying California's request. EPA's waiver denial was based on the second waiver criterion, with EPA determining that California did not need its greenhouse gas standards to meet compelling and extraordinary conditions. EPA did not address the other two waiver criteria.

The reconsideration process started early this year. On January 21, 2009, California Governor Schwarzenegger sent a letter to President Obama, and the California Air Resources Board sent a letter to Administrator-designee Jackson, requesting the Agency reconsider the prior denial. After reviewing CARB's reconsideration request and the concerns raised by many different parties, EPA found that there were significant issues regarding the Agency's denial of the waiver. The denial was a substantial departure from EPA's longstanding interpretation of the Clean Air Act's waiver provision and EPA's history of granting waivers to California for its new motor vehicle emissions program. Many different parties, including California, states that have adopted or are interested in adopting California's standards, members of Congress, scientists, and other stakeholders, had expressed similar concerns about the denial of the waiver. Based on this, EPA believed there was merit to reconsidering its decision denying California's waiver request and on February 12, 2009, EPA published a **Federal Register** notice announcing its reconsideration of California's greenhouse gas waiver request. EPA held a public hearing on March 5, 2009, and received written comments through April 6, 2009.

EPA received substantial comment on each of the three waiver criteria. The entire administrative process in consideration of California's request provided the Agency with extensive legal argument and evidence, including oral testimony from three public hearings and nearly 500,000 written comments. This material has been substantive and invaluable in the Agency's review. EPA has received extensive comments from many states; federal, state and local officials; industry; environmental groups; scientists; and other stakeholders. The vast majority of comments EPA received were in support of the waiver.

After a thorough evaluation of the record, I am withdrawing EPA's March 6, 2008 Denial and have determined that the most appropriate action in response to California's greenhouse gas waiver request is to grant that request. I have determined that the waiver opponents have not met their burden of proof in order for me to deny the waiver under any of the three criteria in section 209(b)(1). The findings I have made concerning each of the criteria are summarized below.

Concerning the criterion with respect to the protectiveness of California's standards in the aggregate, I find that the opponents of the waiver have not met their burden to demonstrate that California's determination was arbitrary and capricious. This evaluation can properly by made in situations where EPA has not issued its own standards, and this finding is appropriate whether or not comparison is made to EPA's current emissions standards or the National Highway Transportation Safety Administration's (NHTSA's) fuel economy standards, and whether or not it includes an evaluation of the real-world in-use effect of California's greenhouse gas standards on its broader motor vehicle program.

With respect to the criterion concerning the need for California's state standards to meet compelling and extraordinary conditions, I have found that the March 6, 2008 Denial was based on an inappropriate interpretation of the waiver provision. The March 6, 2008 Denial determined that Congress intended to allow California to promulgate only those state standards that address pollution problems that are local or regional, and this provision was not intended to allow California to promulgate state standards designed to address global climate change problems. In the alternative, EPA found that the effects of climate change in California are not compelling and extraordinary compared to the effects in the rest of the country.

The text of section 209(b) and the legislative history, when viewed together, lead me to reject the interpretation adopted in the March 6, 2008 Denial, and to apply the traditional interpretation to the evaluation of California's greenhouse gas standards for motor vehicles. If California needs a separate motor vehicle program to address the kinds of compelling and extraordinary conditions discussed in the traditional interpretation, then Congress intended that California could have such a program. Congress also intentionally provided California the broadest possible discretion in adopting the kind of standards in its motor vehicle program that California determines are appropriate to address air pollution problems and protect the health and welfare of its citizens. The better interpretation of the text and legislative history of this provision is that Congress did not use this criterion to limit California's discretion to a certain category of air pollution problems, to the exclusion of others.

Under that interpretation, I cannot find that opponents of the waiver have demonstrated that California does not need its state standards to meet compelling and extraordinary conditions. The opponents of the waiver have not adequately demonstrated that California no longer has a need for its motor vehicle emissions program. I have also determined that even under the interpretation announced in the March 6, 2008 Denial, opponents of the waiver have not demonstrated that California does not need its greenhouse gas emission standards to meet compelling and extraordinary conditions. In addition, I have interpreted the ''compelling and extraordinary conditions'' criterion to not properly include a consideration of whether the impacts from climate change are compelling and extraordinary in California. Nevertheless, I have evaluated the comments received and evidence in the record and have determined that the opponents of the waiver have not met their burden in demonstrating why evidence such as the impacts of climate change on existing ozone conditions in California along with the cumulative impacts identified by proponents of the waiver (*e.g.,* impacts on snow melt and water resources and agricultural water supply, wildfires, coastal habitats, ecosystems, etc.) is not compelling and extraordinary.

Concerning the criterion with respect to consistency of the greenhouse gas emission standards with section 202(a), EPA has reviewed extensive comments and records received from California and from the regulated community concerning the kinds of technology needed to comply with California's standards, including costs and lead time, as well as evidence concerning the current compliance status of manufacturers. In light of the previous waiver denial, EPA specifically asked for comment on how lead time should be evaluated as part of the Agency's reconsideration. Based on all of that information, I cannot find that opponents of the waiver have demonstrated that the greenhouse gas emission standards are inconsistent with section 202(a). While I believe that a grant of the waiver for model year 2009 would not be a retroactive change in the law, to limit any potential concerns that have been raised by the manufacturers over their potential reliance upon EPA's previous waiver denial, my decision provides that CARB may not hold a manufacturer liable or responsible for any noncompliance civil penalty action caused by emission debits generated by a manufacturer for the 2009 model year.

EPA finds that those opposing the waiver request have not met the burden of demonstrating that California's regulations do not satisfy the statutory criteria of section 209(b). For this reason, I am granting California's waiver request to enforce its greenhouse gas motor vehicle emission regulations.

II. Background

A. California's Greenhouse Gas Program for New Motor Vehicles

As further explained below, CARB has adopted amendments to title 13, California Code of Regulations (CCR), sections 1900 and 1961, and established standards to regulate greenhouse gas (GHG) emissions from new passenger cars, light-duty trucks and medium-duty vehicles in a new section 1961.1.

California's GHG standards are included as part of its second generation low-emission vehicle program known as LEV II. EPA previously issued a waiver for the LEV II program and also issued a waiver for CARB's zero-emission vehicle program (known as ZEV) through the 2011 model year (MY).[1] By Resolution 04–28, CARB approved the GHG standards for motor vehicles on September 24, 2004, and California's Office of Administrative Law approved the regulations on September 15, 2005.[2]

CARB's regulation covers large-volume motor vehicle manufacturers beginning in the 2009 model year, and intermediate and small manufacturers beginning in the 2016 model year and controls greenhouse gas emissions from two categories of new motor vehicles—passenger cars and the lightest trucks (PC and LDT1) and heavier light-duty trucks and medium-duty passenger vehicles (LDT2 and MDPV). The regulations add four new greenhouse gas air contaminants (carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons (HFCs)) to California's existing regulations for criteria and criteria-precursor pollutants and air toxic contaminants. There are separate fleet average emission standards for the two vehicle size categories and within each category the sales-weighted average of a manufacturer's vehicles is required to comply with the standard. The regulations establish a manufacturer declining fleet average emission standard for these gases (expressed as grams of carbon dioxide equivalent per mile (''gpm'')), with separate standards for each of the two categories of passenger vehicles noted above. CARB places the declining standards into two phases: near-term standards phased in

[1] 68 FR 19811 (April 22, 2003) and 71 FR 78190 (December 26, 2006).

[2] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.2.

from the 2009 through 2012 model years, and mid-term standards, phased in from the 2013 through 2016 model years. Manufacturers may receive credits for meeting the standards before model year 2009, for surpassing the standards in later model years, and for selling alternative fuel vehicles. These credits may be banked for later use, transferred between vehicle categories, or sold to another manufacturer. If a manufacturer fails to meet the standard in a particular model year, it will begin to accrue debits. At that point it will have five years to make up for the debits, either by generating credits, or by purchasing credits from another manufacturer.

B. EPA's Consideration of CARB's Request

By letter dated December 21, 2005, CARB submitted a request (''Waiver Request'') seeking a waiver of Section 209(a)'s prohibition for its motor vehicle GHG standards.[3] On February 21, 2007, EPA notified the Executive Officer of CARB that the timing of EPA's consideration of the GHG waiver request was related to the then-pending *Massachusetts* v. *EPA* case before the United States Supreme Court. EPA stated that the decision in that case could potentially be relevant to issues EPA might address in the context of the GHG waiver proceeding. The Supreme Court issued its *Massachusetts* v. *EPA* decision on April 2, 2007, finding that greenhouse gases are air pollutants under the Clean Air Act, and that EPA is required to decide the pending rulemaking petition under section 202(a) of the Act, based on the statutory criteria of whether, in the Administrator's judgment, emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare.[4]

On April 30, 2007, a **Federal Register** notice was published announcing an opportunity for hearing and comment on CARB's request.[5] EPA subsequently held two public hearings on May 22, 2007, in Washington, DC, and on May 30, 2007, in Sacramento, CA. The written comment period closed on June 15, 2007. On several occasions, EPA received requests to extend or re-open the comment period; however, the Agency did not extend the June 15, 2007 deadline. The Agency instead indicated that consistent with past waiver practice it would continue, as appropriate, to communicate with stakeholders and evaluate any comments submitted after the close of the comment period to the extent practicable. By letter dated December 19, 2007, EPA notified California Governor Schwarzenegger that EPA would be denying the waiver. On March 6, 2008, EPA published its decision denying California's waiver request (March 6, 2008 Denial).[6]

EPA's March 6, 2008 Denial was based on a finding that California did not need its GHG standards for new motor vehicles to meet compelling and extraordinary conditions. Because this finding was sufficient to deny California's waiver request, the Administrator found it unnecessary to determine whether the criteria for denial of a waiver under sections 209(b)(1)(A) and (C) had been met.

On January 21, 2009, CARB submitted a request for EPA to reconsider its March 6, 2008 Denial (''Reconsideration Request'').[7] CARB's Reconsideration Request stated its belief that EPA has the inherent authority to reconsider its previous waiver denial and EPA should do so in order to restore the Agency's interpretations and applications of the Clean Air Act to continue California's longstanding leadership role in setting emission standards. Specifically, CARB noted several bases for the reconsideration centered on EPA's misinterpretation of the Clean Air Act to set new flawed tests and misapplication of facts to those tests.

President Obama issued a Presidential Memorandum to the Administrator of the Environmental Protection Agency on January 26, 2009, stating that ''In order to ensure that the EPA carries out its responsibilities for improving air quality, you are hereby requested to assess whether the EPA's decision to deny a waiver based on California's application was appropriate in light of the Clean Air Act. I further request that, based on that assessment, the EPA initiate any appropriate action.'' [8]

Subsequently, EPA published a **Federal Register** notice on February 12, 2009, which responded to CARB's reconsideration request and announced that EPA would fully review and reconsider its March 6, 2008 Denial.[9] The February 12, 2009 notice specifically sought comment on: any new or additional information regarding the three section 209(b) waiver criteria; whether EPA's interpretation and application of section 209(b)(1)(B) in the March 6, 2008 Denial was appropriate; and, the effect of the waiver denial on whether CARB's GHG standards are consistent with section 202(a), including lead time. After holding a public hearing on March 5, 2009, the written comment period closed on April 6, 2009.

III. Analysis of Preemption Under Section 209(a) of the Clean Air Act

A. Clean Air Act Preemption Provisions

Section 209(a) of the Act provides:

> No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.[10]

Section 209(b)(1) of the Act requires the Administrator, after an opportunity for public hearing, to waive application of the prohibitions of section 209(a) for any State that has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor engines prior to March 30, 1966, if the State determines that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.[11] However, no such waiver shall be granted by the Administrator if she finds that: (A) The protectiveness determination of the State is arbitrary and capricious; (B) the State does not need such State standards to meet compelling and extraordinary conditions; or (C) such State standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act. In previous waiver decisions, EPA has stated that Congress intended EPA's review of California's decision-making be narrow. This has led EPA to reject arguments that are not specified in the statute as grounds for denying a waiver:

[3] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.

[4] *Massachusetts* v. *EPA,* 549 U.S. 497, 127 S. Ct. 1438 (2007). On April 24, 2009, EPA issued ''Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act'' at 74 FR 18885 (April 24, 2009).

[5] 72 FR 21260 (April 30, 2007).

[6] 73 FR 12156 (March 6, 2008). The State of California brought litigation against EPA in the United States Court of Appeals, DC Circuit. This litigation is held in abeyance pending further order of the court. (February 25, 2009).

[7] California Air Resources Board, EPA–HQ–OAR–2006–0173–7044.

[8] 74 FR 4905 (January 28, 2009).

[9] 74 FR 7040 (February 12, 2009).

[10] Clean Air Act section 209(a).

[11] California is the only State which meets section 209(b)(1)'s requirement for obtaining a waiver. *See* S. Rep. No. 90–403 at 632 (1967).

The law makes it clear that the waiver requests cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209, so long as the California requirement is consistent with section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution in California.[12]

Thus, my consideration of all the evidence submitted concerning a waiver decision is circumscribed by its relevance to those questions that I may consider under section 209(b).

B. Deference to California

In previous waiver decisions, EPA has recognized that the intent of Congress in creating a limited review based on the section 209(b)(1) criteria was to ensure that the federal government did not second-guess the wisdom of state policy. This has led EPA to state:

It is worth noting * * * I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to ''catch up'' to some degree with newly promulgated standards. Such an approach * * * may be attended with costs, in the shaped of reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, I believe I am required to give very substantial deference to California's judgments on this score.[13]

EPA has stated that the text, structure, and history of the California waiver provision clearly indicate both a congressional intent and appropriate EPA practice of leaving the decision on ''ambiguous and controversial matters of public policy'' to California's judgment.[14]

The House Committee Report explained as part of the 1977 amendments to the Clean Air Act, where Congress had the opportunity to restrict the waiver provision, it elected instead to explain California's flexibility to adopt a complete program of motor vehicle emission controls. The amendment is intended to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, *i.e.,* to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.[15]

C. Burden of Proof

In *Motor and Equip. Mfrs Assoc.* v. *EPA,* 627 F.2d 1095 (DC Cir. 1979) (*MEMA I*), the U.S. Court of Appeals stated that the Administrator's role in a section 209 proceeding is to:

consider all evidence that passes the threshold test of materiality and * * * thereafter assess such material evidence against a standard of proof to determine whether the parties favoring a denial of the waiver have shown that the factual circumstances exist in which Congress intended a denial of the waiver.[16]

The court in *MEMA I* considered the standards of proof under section 209 for the two findings necessary to grant a waiver for an ''accompanying enforcement procedure'' (as opposed to the standards themselves): (1) Protectiveness in the aggregate and (2) consistency with section 202(a) findings. The court instructed that ''the standard of proof must take account of the nature of the risk of error involved in any given decision, and it therefore varies with the finding involved. We need not decide how this standard operates in every waiver decision.'' [17]

The court upheld the Administrator's position that, to deny a waiver, there must be 'clear and compelling evidence' to show that proposed procedures undermine the protectiveness of California's standards.[18] The court noted that this standard of proof also accords with the congressional intent to provide California with the broadest possible discretion in setting regulations it finds protective of the public health and welfare.[19]

With respect to the consistency finding, the court did not articulate a standard of proof applicable to all proceedings, but found that the opponents of the waiver were unable to meet their burden of proof even if the standard were a mere preponderance of the evidence. Although *MEMA I* did not explicitly consider the standards of proof under section 209 concerning a waiver request for ''standards,'' as compared to accompanying enforcement procedures, there is nothing in the opinion to suggest that the court's analysis would not apply with equal force to such determinations. EPA's past waiver decisions have consistently made clear that: ''[E]ven in the two areas concededly reserved for Federal judgment by this legislation—the existence of compelling and extraordinary' conditions and whether the standards are technologically feasible—Congress intended that the standards of EPA review of the State decision to be a narrow one.'' [20]

Finally, opponents of the waiver bear the burden of showing that the criteria for a denial of California's waiver request has been met. As found in *MEMA I,* this obligation rests firmly with opponents of the waiver in a section 209 proceeding, holding that: ''[t]he language of the statute and it's legislative history indicate that California's regulations, and California's determinations that they must comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them. California must present its regulations and findings at the hearing and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.'' [21]

The Administrator's burden, on the other hand, is to make a reasonable evaluation of the information in the record in coming to the waiver decision. As the court in *MEMA I* stated, ''Here, too, if the Administrator ignores evidence demonstrating that the waiver should not be granted, or if he seeks to overcome that evidence with unsupported assumptions of his own, he runs the risk of having his waiver decision set aside as 'arbitrary and capricious.' '' [22] Therefore, the Administrator's burden is to act ''reasonably.'' [23]

EPA received comment suggesting that the burden of proof upon reconsideration of EPA's March 6, 2008 Denial should be reversed and placed on California.[24] It is not clear whether

[12] 36 FR 17458 (Aug. 31, 1971). Note that the more stringent standard expressed here, in 1971, was superseded by the 1977 amendments to section 209, which established that California must determine that its standards are, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.

[13] 40 FR 23103–23104; *see also* LEV I Decision Document at 64.

[14] 40 FR 23104; 58 FR 4166.

[15] *MEMA I,* 627 F.2d at 1110 (citing H.R. Rep. No. 294, 95 Cong., 1st Sess. 301–02 (1977).

[16] *MEMA I,* 627 F.2d at 1122.

[17] *Id.*

[18] *Id.*

[19] *Id.*

[20] *See, e.g.,* 40 FR 21102–103 (May 28, 1975).

[21] *MEMA I,* 627 F.2d at 1121.

[22] *Id.* at 1126.

[23] *Id.* at 1126.

[24] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 6–7.

the commenter is also suggesting that the entire burden of proof now shifts to California in that ''[s]uch an allocation of the burden of proof ensures that decisions in which EPA has invested time and resources are not lightly overturned, and that those decisions enjoy the finality to which they are entitled.'' Moreover, the commenter suggests that EPA carries a separate responsibility, in order to reverse its prior decision, to explain why its first decision on the waiver request is no longer the correct one. The commenter cites several cases for the proposition that ''[A]n agency changing its course * * * is obligated to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance'' and that an agency must offer sufficient explanation to ensure the court that it is not ''repudiating precedent to conform with shifting political mood.'' [25]

EPA believes that, regardless of the previous waiver denial, once California makes its protectiveness determination the burden of proof falls on the opponents of the waiver. This burden is inherent in the statutory requirement that EPA grant the waiver unless it makes one of the specific negative findings in section 209(b)(1).[26] This is consistent with the legislative history, which indicates that Congress intended a narrow review by EPA and to preserve the broadest possible discretion for California.[27]

As EPA explained in the previous waiver denial, the Agency did not address the section 209(b)(1)(A) and (C) criteria in its decision; therefore EPA is not in a position of reversing any interpretations or evidentiary findings. As further discussed in section VI, although commenters argue various adverse effects of the prior waiver denial on lead time, the burden remains on the opponents of the waiver to demonstrate why California's GHG standards are not consistent with section 202(a). With regard to section 209(b)(1)(B) and EPA's prior waiver denial, EPA has provided a reasoned analysis and explanation for any reversal of positions taken in this new decision. In the context of this reasoned explanation, EPA believes it is only required to demonstrate that it is aware that it is changing positions and that there are good reasons for the change in position.[28] As discussed above, the burden of proof under section 209(b)(1)(B) still falls on those who wish EPA to deny the waiver, based on the statutory structure of section 209(b)(1) and the legislative history. This requirement is not disturbed by EPA's initial denial.

IV. California's Protectiveness Determination

Section 209(b)(1)(A) of the Act requires EPA to deny a waiver if the Administrator finds that California was arbitrary and capricious in its determination that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. EPA recognizes that the phrase ''States standards'' means the entire California new motor vehicle emissions program. Therefore, as explained below, when evaluating California's protectiveness determination, EPA compares the California-to-Federal standards. That comparison is undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA have previously found were not arbitrary and capricious.[29]

Traditionally, EPA has evaluated the stringency of California's standards relative to comparable EPA emission standards.[30] That evaluation follows the instruction of section 209(b)(2), which states: ''If each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of [209(b)(1)].''

To review California's protectiveness determination in light of section 209(b)(2), EPA conducts its own analysis of the newly adopted California standards to comparable applicable Federal standards. Reviewing that comparison quantitatively answers whether the new standards are more or less protective than the Federal standards. That comparison of the newly adopted California standards to the comparable applicable Federal standards is conducted in light of prior waiver determinations. That is, the California-to-Federal analysis is undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA has not found arbitrary and capricious.[31]

A finding that California's determination was arbitrary and capricious under section 209(b)(1)(A) must be based upon '''clear and compelling evidence' to show that proposed [standards] undermine the protectiveness of California's standards.'' [32] Even if EPA's own analysis of comparable protectiveness or that suggested by a commenter might diverge from California's protectiveness finding, that is not a sufficient basis on its own for EPA to make a section 209(b)(1)(A) finding that California's protectiveness finding is arbitrary and capricious.[33]

California made a protectiveness determination with regard to its greenhouse gas regulations in Resolution 04–28, adopted by the California Air Resources Board on September 23, 2004.[34] Included in that Resolution were several bases to support

[25] *Id.*

[26] *MEMA I,* 627 F.2d at 1121.

[27] *MEMA I,* 627 F.2d at 1110–11, citing H.R. Rep. No. 294, 95th Cong., 1st Sess. 301–02 (1977).

[28] *Federal Communications Commission* v. *Fox Television Stations, Inc.,* 129 S.Ct. 1800, 1809 (2009).

[29] In situations where there are no Federal standards directly comparable to the specific California standards under review, the analysis then occurs against the backdrop of previous waivers which determined that the California program was at least as protective of the federal program ((LEV II + ZEV) + GHG). See 71 FR 78190 (December 28, 2006), Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006).

[30] 36 FR 17458 (Aug. 31, 1971). (''The law makes it clear that the waiver requests cannot be denied unless the specific finding designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209, so long as the California requirement is consistent with section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution in California.''). The ''more stringent'' standard expressed here in 1971 was superseded by the 1977 amendments to section 209, which established that California's standards must be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. The stringency standard remains, though, in section 209(b)(2).

[31] In situations where there are no Federal standards directly comparable to the specific California standards under review, the analysis then occurs against the backdrop of previous waivers which determined that the California program was at least as protective of the federal program ((LEV II + ZEV) + GHG). See 71 FR 78190 (December 28, 2006), Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006).

[32] *MEMA I,* 627 F.2d at 1122.

[33] ''Once California has come forward with a finding that the procedures it seeks to adopt will not undermine the protectiveness of its standards, parties opposing the waiver request must show that this finding is unreasonable.'' *MEMA I,* 627 F.2d at 1124.

[34] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.107, ''Resolution 04–28, State of California, Air Resources Board, September 23, 2004'' (''BE IT FURTHER RESOLVED that the Board hereby determines that the regulations approved herein will not cause California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.'').

California's protectiveness determination. Most generally, CARB made a broad finding that observed and projected changes in California's climate are likely to have a significant adverse impact on public health and welfare in California, and that California is attempting to address those impacts by regulating in a field for which there are no comparable federal regulations.[35] CARB also found that its greenhouse gas standards will increase the health and welfare benefits from its broader motor vehicle emissions program by directly reducing upstream emissions of criteria pollutants from decreased fuel consumption.[36] Beyond that analysis of the new regulations' impact on its broader program, CARB projected consumer response to the greenhouse gas regulations. With respect to consumer shifts due to a potential ''scrappage effect'' (the impact of increased vehicle price on fleet age) and ''rebound effect'' (the impact of lower operating costs on vehicle miles travelled), CARB found minor impacts—but net reductions—on criteria pollutant emissions.[37] Further, even assuming larger shifts in consumer demand attributable to the greenhouse gas emission standards, CARB found that the result remains a net reduction in both greenhouse gas emissions and criteria pollutant emissions.[38] That is, CARB found that the addition of its greenhouse gas emission standards to its larger motor vehicle emissions program (LEV II), which generally aligns with the federal motor vehicle emissions program (Tier II), renders the whole program to be more protective of public health and welfare. CARB noted that EPA has already determined that California was not arbitrary and capricious in its determination that the pre-existing California standards for light-duty vehicles and trucks, known as LEV II, is at least as protective as comparable Federal standards, the Tier II standards.[39] Implicit in California's greenhouse gas protectiveness determination, then, is that the inclusion of greenhouse gas standards into California's existing motor vehicle emissions program will not cause California's program to be less protective than the federal program.

A. What Are ''Applicable Federal Standards''?

EPA has received comments suggesting that the section 209(b)(1)(A) comparison to ''applicable Federal standards'' should include corporate average fuel economy (CAFE) standards promulgated, or that in the future may be promulgated, by the National Highway Traffic Safety Administration under the Energy Policy and Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 (EISA).[40] That suggestion departs from EPA's traditional analysis. EPA has always interpreted ''applicable Federal standards'' as limiting EPA's inquiry to motor vehicle emission standards established by EPA under the Clean Air Act. After a thorough examination of the text and legislative history of the section 209(b) waiver provision, EPA has determined that it should continue to interpret ''applicable Federal standards'' to mean motor vehicle emission standards established by EPA under the Clean Air Act that apply to the same cars and the same air pollutants or group of air pollutants as considered in California's aggregate protectiveness finding. Additionally, EPA has determined that even if it were appropriate to take NHTSA's fuel economy standards into account as ''applicable Federal standards,'' the waiver opponents have not met their burden of proof to demonstrate that California's protectiveness determination was arbitrary and capricious. No waiver opponent has demonstrated that existing or proposed fuel economy standards are more stringent or more protective of the public health and welfare than California's greenhouse gas emission standards.

1. Are ''Applicable Federal Standards'' Limited to Clean Air Act Emission Standards or Do They Include NHTSA's Fuel Economy Standards?

Section 209(b)(1)(A) requires EPA to evaluate whether California's determination regarding the comparative level of protectiveness of its standards of the public health and welfare was ''arbitrary and capricious.'' California's standards act to improve air quality, and thus benefit the public health and welfare, by establishing limits for emissions of air pollutants from new motor vehicles and new motor vehicle engines. California is then required to compare these new motor vehicle standards in the aggregate to ''applicable Federal standards'' to determine the relative protectiveness of California's standards. Depending on whether the waiver is granted or denied, vehicle manufacturers will either have to meet California standards for those new vehicles subject to its standards and EPA standards for others, or EPA standards for all of the new vehicles.

The most straightforward reading of the comparison called for by the statute, between California and Federal standards, is an ''apples to apples'' comparison. California has standards that apply to new motor vehicles and the standards set limits for emissions of air pollutants. California would then compare its standards to the same kind of Federal standard—Federal standards that apply to the same new motor vehicles and also set limits for emissions of air pollutants. The term ''applicable'' has to refer to what the Federal standards apply to, and the most straightforward meaning is that they apply in the same way that the

[35] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.107 at 9 (''Over the last hundred years, average temperatures in California have increased 0.7% F, sea levels have risen by three to eight inches, and spring run-off has decreased 12 percent. These observed and future changes are likely to have significant adverse effects on California's water resources, many ecological systems, as well as on human health and the economy. The signs of a global warming trend continue to become more evident and much of the scientific debate is now focused on expected rates at which future changes will occur.''); California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.107 at 13 (''There are no comparable federal regulations that specifically require the control of greenhouse gas emissions from motor vehicles.'').

[36] ''The establishment of greenhouse gas emission standards will result in a reduction in upstream emissions (emission due to the production and transportation of the fuel used by the vehicle) of greenhouse gas, criteria and toxic pollutants due to reduced fuel usage.'' EPA–HQ–OAR–2006–0173–0010.107 at 8.

[37] ''Supplemental analysis of the potential response of consumers (consumer response) to the regulations was performed as part of the staff evaluation. The evaluation of consumer response indicates that the impact of vehicle price increases on fleet turnover (changes to the average age of the motor vehicle fleet) as well as the impacts of lower operating costs on vehicle miles traveled (rebound effect) by consumers have minor impacts (less than one percent of the passenger vehicle emissions inventory) on criteria pollutant emissions.'' EPA–HQ–OAR–2006–0173–0010.107 at 12.

[38] ''Taking into account the penetration of 2009 and later vehicles meeting the new standard, the proposed regulation will reduce greenhouse gas emission by an estimated 87,700 CO_2-equivelent tons per day statewide in 2020 and by 155,200 CO_2-equivelent tons per day in 2030. This translates into an 18 percent overall reduction in greenhouse gas emissions from the light duty fleet in 2020 and a 27 percent overall reduction in 2030; Taking into account the penetration of 2009 and later vehicles meeting the new standard, the proposed regulation will reduce upstream emissions of non-methane organic gases (NMOG) by 4.6 tons per day statewide in 2020 and 7.9 tons per day statewide in 2030, and will reduce upstream emissions of NO_X by 1.4 tons per day statewide in 2020 and 2.3 tons per day statewide in 2030. The regulation will provide a criteria pollutant benefit even taking into account possible pollutant increases due to consumer response.'' EPA–HQ–OAR–2006–0173–0010.107 at 15.

[39] 68 FR 19811 (April 22, 2003), Decision Document for Waiver of Federal Preemption for Low Emission Vehicle Amendments (LEV II) (April 11, 2003).

[40] Association of International Automobile Manufacturers, Inc., EPA–HQ–OAR–2006–1073–9005 at 13–14; Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 16–23.

California standards apply, by setting limits on emissions of air pollutants from specified new motor vehicles. ''[A]pplicable Federal standards'' would be standards that impose a requirement on new motor vehicles and that directly establishes limits on emissions of air pollutants, as do the California standards. The ''applicable'' Federal standards are those set by EPA that directly apply by regulation to the same vehicles and, like the California regulations, set limits for the same air pollutants.

This is a straightforward and logical approach that provides clear guidance for California on what standards to compare. It avoids an open-ended inquiry into what other potential Federal standards might regulate different vehicles or regulate different aspects of the vehicles than emissions, and instead focuses the comparison on a clearly-defined and identifiable set of Federal standards that are parallel to the California standards at issue.

This interpretation also ties the comparison to the only Federal standards that are affected by the results of the comparison. If the California comparison shows it is more protective and the waiver is granted, the California standards would apply to the vehicles under section 209(b) and compliance with the California's standards will be deemed to mean compliance with the EPA standards under section 209(b)(3). If the California comparison is arbitrary and capricious and a waiver is denied, then EPA's Federal emission standards apply to those vehicles and California's standards do not. The applicability of emission standards under section 209(b) that results from the waiver decision is parallel to and fully consistent with the comparison made between the California and applicable Federal standards.

EPA has always limited its interpretation of the section 209(b) waiver provision to the scope of section 209(a)'s preemption.[41] Section 209(a) creates the explicit preemption of state emission standards, and at the same time leaves EPA to set federal emission standards, under the authority of section 202(a). Within the context of section 209, and the preemption of 209(a), section 209(b)'s waiver provision allows California the ability to set its own emission standards. Notably, section 209(b) merely gives back to California what was taken away by section 209(a)—the ability to adopt and enforce its own state emission standards. This interaction between sections 209(a) and 209(b) supports interpreting the ''applicable Federal standards'' mentioned in section 209(b)(1)(A) to mean the same types of emission standards as the emission standards that are actually set by California are preempted under section 209(a), and are the subject of a waiver request under section 209(b).

Additionally, EPA's construction of ''applicable Federal standards'' provides a single, consistent usage of that phrase in the context of the section 209(b) waiver provision. In section 209(b), the phrase ''applicable Federal standards'' appears three times. The first two instances appear in sections 209(b)(1) and 209(b)(2) and pertain to EPA's review of California's protectiveness determination and the relative stringency of California's standards, as has been discussed above. The third instance occurs in section 209(b)(3) and specifically contemplates treatment of waived California standards for the purpose of Clean Air Act compliance. Section 209(b)(3) states: ''in the case of any new motor vehicle or new motor vehicle engine to which State standards apply pursuant to a waiver granted under paragraph (1), compliance with such State standards shall be treated as compliance with applicable Federal standards *for purposes of this title.''* (Emphasis added) The reference to Title II of the Clean Air Act in section 209(b)(3) is further reason to limit the construction of ''applicable Federal standards'' to comparable Clean Air Act emission standards in sections 209(b)(1) and 209(b)(2). All three occurrences of ''applicable Federal standards'' in section 209(b) are then given the same meaning, in a context where all three occurrences function interactively to allow California to enforce its own emission standards.

The textual structure and legislative history of the waiver provision also support EPA's interpretation of ''applicable Federal standards.'' The structure of section 209(b) is notable in its focus on limiting the ability of EPA to deny a waiver and preserving ''the broadest possible discretion'' for California to construct its motor vehicle program as it deems appropriate to protect its public health and welfare.[42] Where, as in this case, California's emission standards are specified in terms of direct regulation of emissions from new motor vehicles, it is most clearly reasonable for EPA to limit its review under this criterion to those federal standards that likewise set limits for the same air pollutant emissions from the same motor vehicles. This is consistent with Congress' intent to provide California the broadest discretion and avoids limiting California's authority and frustrating this congressional intent.[43] EPA, thus, has determined it is reasonable to interpret ''applicable Federal standards'' to mean those EPA standards under the Clean Air Act that apply in the same manner as the California emission standards, regulating emissions of air pollutants from new motor vehicles.[44] Under this approach, any EPA standard that, like California's standards, sets limits for motor vehicle emissions could be considered an ''applicable Federal standard'' for the purpose of California's protectiveness determination.[45]

Applying this interpretation, Federal fuel economy standards issued by NHTSA would not be considered ''applicable Federal standards'' for purposes of this waiver criterion. In contrast to standards set limits for emissions from new motor vehicles, corporate average fuel economy (CAFE) standards set limits on fuel efficiency, to reduce fuel consumption. In contrast to EPA's and California's emission standards, which typically establish grams per mile (''gpm'') levels of acceptable pollutant emissions, CAFE standards establish ''miles per gallon'' (''mpg'') levels of acceptable fuel efficiency. Standards that set limits for emission levels and standards that set limits for fuel efficiency apply different legal requirements. The two kinds of standards can overlap significantly, in that the technology used to increase fuel efficiency will also lead to reductions in emissions of one of the GHGs—CO_2—

[41] ''The legislative history of section 209 supports the Administrator's interpretation that the waiver provision is coextensive with the preemption provision, thereby permitting the Administrator to consider waiving preemption of California's entire program of emissions control.'' *MEMA I,* 627 F.2d 1095, 1108.

[42] H.R. Rep. No. 294, 95th Cong., 1st Sess. 301–302 (1977); *MEMA I,* 627 F. 2d at 1110–11.

[43] *See MEMA I,* 627 F. 2d at 1111.

[44] *Entergy Corp.* v. *Riverkeeper, Inc.,* 129 S.Ct. 1498 (2009) (''That view governs if it is a reasonable interpretation of the statute—not necessarily the only possible interpretation, nor even the interpretation deemed *most* reasonable by the courts. *Chevron U.S.A. Inc.* v. *Natural Resources Defense Council, Inc.,* 467 U.S. 837, 8430844 (1984).'').

[45] In this waiver there are no EPA or other Federal standards that have been identified that explicitly and directly regulate emissions of GHGs from new motor vehicles. While emission standards promulgated by EPA have always been treated as applicable Federal standards because they explicitly regulate the same vehicles and air pollutants, there is the possibility that another Federal agency could have a standard that also directly and explicitly regulates emissions from some new motor vehicles. EPA is not aware of any such circumstances at this time, but reserves the right to consider in the future whether such a non-EPA Federal standard would be considered an ''applicable Federal standards'' for the purpose of a CAA waiver determination.

but they are not the same legal requirements and the regulations do not apply in the same manner.[46] Fuel economy standards do impact the levels of one GHG—CO_2—that is emitted from motor vehicles. But fuel economy standards do not set limits on emission levels of CO_2 or any other air pollutant, as do California's standards. Lacking that kind of regulation of emissions of an air pollutant, fuel economy standards are not ''applicable Federal standards.''

The difference between emission standards and fuel economy standards is highlighted by comparing the two sets of standards at issue here. California's greenhouse gas emission standards establish allowable grams per mile (''gpm'') levels for greenhouse gas emissions, including tailpipe emissions of carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) as well as emissions of CO_2 and hydrofluorocarbons (HFCs) related to operation of the air conditioning system. By regulating emissions of four different greenhouse gas pollutants, the standards do more than reduce tailpipe CO_2 emissions resulting from fuel combustion. They do not directly equate to miles per gallon fuel economy reductions. Fuel economy standards, on the other hand, directly control miles per gallon (''mpg'') fuel economy levels. CO_2 reductions will occur, but they are an expected indirect effect of improved fuel economy standards because the same technology that improves fuel economy effectively reduces CO_2 emissions.

There is no doubt that a CAFE standard would clearly produce companion reductions in CO_2 as fuel economy improves, given the technology used to improve fuel economy. However, for the reasons described above EPA believes the better interpretation of section 209(b)(1)(A) is to look at whether the Federal standard is applicable to the same vehicles and air pollutants as the California standards, by considering whether they directly regulate the same vehicles and air pollutants. It is clear that a CAFE standard does not meet this test. While there is a large but non-identical overlap in effect between a CAFE standard and a GHG emission standard with respect to emissions of CO_2, the CAFE standards do not set limits on emissions of CO_2 or any other GHG. There also remain important areas where there is no overlap at all with the California standards, including the regulation of greenhouse gas pollutants other than CO_2. Instead of making an exception to its interpretation of ''applicable Federal standards'' for NHTSA's CAFE fuel economy standards, EPA believes it is more appropriate to apply its traditional interpretation, for all of the reasons discussed above. Therefore, EPA has determined that NHTSA's CAFE standards are not ''applicable Federal standards'' for purposes of this waiver criterion.

2. If EPA Did Consider CAFE Standards as ''Applicable Federal Standards,'' Are the CAFE Standards More Stringent Than California's Greenhouse Gas Emission Standards?

Even if EPA were to take fuel economy standards into consideration as ''applicable Federal standards,'' opponents of the waiver have not met their burden of proof to demonstrate that California's protectiveness determination was arbitrary and capricious. No waiver opponent has demonstrated that existing CAFE standards are more stringent or more protective of the public health and welfare than California's greenhouse gas emission standards.

EPA has consistently stated in prior waiver determinations that California's protectiveness determination must consider the ''applicable Federal standards'' in existence at the time of EPA's waiver decision.[47] Standards in existence at the time of a waiver decision have only included finalized emission standards that EPA has promulgated through its rulemaking process and pursuant to its Clean Air Act authority.

Applying that approach here, if EPA were to take NHTSA's fuel economy standards into account when reviewing California's protectiveness determination, our inquiry would be limited to those final fuel economy standards that are currently in existence at the time of the waiver decision. Although NHTSA is required by the EISA to promulgate more stringent fuel economy standards in the future, the only final fuel economy standard under EISA that is currently in existence is that for the 2011 model year.[48] Additionally, although EPA and the Department of Transportation (DOT) have issued a notice of intent to engage in a joint rulemaking, with NHTSA issuing fuel economy standards under the EISA for the 2012 through 2016 model years and EPA issuing greenhouse gas standards under the CAA for those same model years, those standards are neither proposed nor final at this time.[49] To consider CAFE standards that have been proposed or those standards that may be proposed would be speculative about what standards will be adopted, and EPA has consistently found it inappropriate to engage in that speculation with respect to either EPA's or California's future standards in prior waiver decisions.

Further, it is reasonable to limit our consideration of ''applicable Federal standards'' to those final standards that are in existence, in light of the range of options that remain for California and EPA after a decision on this waiver. If federal greenhouse gas standards are promulgated in the future, and if such standards bring this determination into question, then EPA can revisit this decision at that time. The legislative history of section 209(b) makes clear that Congress considered section 209(b) as including the authority for EPA to withdraw a waiver if circumstances occur in the future that would make this appropriate: ''Implicit in this provision is the right of the [Administrator] to withdraw the waiver at any time [if] after notice and an opportunity for public hearing he finds that the State of California no longer complies with the conditions of the waiver.[50] EPA need not decide now what action might be authorized or appropriate under section 209(b) if EPA adopts greenhouse gas emission standards in the future, as that is best decided when EPA takes such action. Additionally, the possibility that CARB may revise its standards is always present. Such a revision would be considered by EPA in a future waiver proceeding. EPA would then determine whether those changes are within-the-scope of its prior waiver or if a new, full waiver determination would need to be made, as would be required if California

[46] The Supreme Court acknowledged this ''overlap'' between fuel economy and emission standards in *Massachusetts* v. *EPA,* 127 S. Ct. at 1438. (''[T]hat DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's 'health' and 'welfare.' 42 U.S.C. 7521(a)(1), a statutory obligation wholly independent of DOT's mandate to promote energy efficiency. *See* Energy Policy and Conservation Act, section 2(5), 89 Stat. 874, 42 U.S.C. 6201(5). The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.'')

[47] See *e.g.,* Authorization of California's Under 25 Horsepower Utility Lawn and Garden Equipment Engine Exhaust Emission Standards (ULGE) (July 5, 1995) at 18. (''CARB's protectiveness determination must be judged on the standards that are in existence at the time EPA makes it authorization determination. However, as CARB correctly states, until EPA's rules become final no changed circumstances exist that affect CARB's protectiveness determination, and that it would be premature to make a protectiveness comparison with non-finalized federal standards.'')

[48] 74 FR 14196 (March 30, 2009).

[49] 74 FR 24007 (May 22, 2009).

[50] S. Rep. No. 403, 90th Cong. 1st Sess. (1967), at 33–34.

decided to increase the stringency of its greenhouse gas standards.

California's greenhouse gas emission standards begin with the 2009 model year and increase in stringency through the 2016 model year. For that same time period, fuel economy standards only exist for the 2009 through 2011 model years. An appropriate comparison between California's greenhouse gas standards and NHTSA's fuel economy standards, then, would compare California's standards for the 2009 and later model years to NHTSA's fuel economy standards for the 2009 through 2011 model years.

In his December 19, 2007 letter notifying California Governor Schwarzenegger that California's waiver request would be denied, former EPA Administrator Johnson stated that the EISA ''establishes an aggressive standard of 35 miles per gallon for all 50 states, as opposed to the 33.8 miles per gallon in California and a patchwork of other states.'' California prepared and documented a technical evaluation comparing federal fuel economy standards to its own standards.[51] Accounting for the differences between the two sets of standards, CARB attempted an ''apples to apples'' comparison of the standards and made several assumptions to that end. For its own standards, CARB assumed its current greenhouse gas regulations—at issue here—were in effect for the 2009 through 2016 model years and that those standards increased in stringency for the 2016 through 2020 model years (its ''Pavley 2'' standards that are not at issue in this waiver proceeding). Because EISA does not set standards, but directs NHTSA to issue standards that increase fuel economy to a minimum of 35 miles per gallon by the 2020 model year, CARB projected that the new CAFE standards would proportionally increase by 3.44 percent each year after the 2011 model year. Also, because EISA allows a fuel economy credit up to 1.2 miles per gallon for use of flexible fuel vehicles (FFVs) that can operate on high-blend ethanol, such as E85, based on manufacturer statements that they would produce large numbers of FFVs, CARB assumed maximum use of that credit. CARB also took into account differences in fleet mix in California and the other 49 states. To compare this range of years of the California greenhouse gas emission standards to the corresponding range of years of EISA fuel economy standards, CARB translated the miles per gallon standards from EISA into greenhouse gas emission rates. The rates of greenhouse gas emission reduction from each set of standards were then compared from 2009 through 2020.[52] CARB found that in California in 2016, its greenhouse gas emission standards would achieve 51.9 million metric tons of greenhouse gas emission reductions compared to 23.7 million metric tons from federal fuel economy standards. By 2020, CARB found 100.5 million metric tons of greenhouse gas emission reductions from its standards compared to 59.5 million metric tons of greenhouse gas emission reductions from the federal fuel economy standards.[53] Both sets of reductions follow a similar pattern because both sets of standards are relatively similar in stringency in the near-term (2009–2011), with California's standards ramping up in the mid-term (2012–2016), just as the proposed EISA standards begin to increase their stringency. While both sets of standards gain stringency in the long-term (2016 and beyond), California found that its standards are more stringent sooner and in the long-term and, furthermore, that its standards are more protective of its public health and welfare because they achieve greater greenhouse gas reductions.

EPA notes that this comparison requires speculation regarding what final CAFE standards will be promulgated by NHTSA for the 2012–2020 model years, and what final GHG standards may be promulgated by CARB for the 2017–2020 model years. If the comparison were truly between final, promulgated standards of California GHG-to-CAFE, it would compare California standards for the 2009 through 2016 model years to the lone NHTSA fuel economy standard for the 2011 model year, and the preexisting standards for the 2009–2010 model years. This highlights that the appropriate approach is to compare standards that are final as of the time of the waiver decision. However, California's approach indicates that its standards are more stringent than federal CAFE standards even if CAFE standards increased in the 2012 through 2016 model years. Therefore, this approach also would indicate that California's standards, reviewing only those standards that are final at this time, are more stringent in the aggregate.

No commenter has presented evidence that questions CARB's claim that its greenhouse gas emission standards are more stringent than EISA. Most commenters opposing the waiver do not focus on the comparative stringency of the two sets of standards, but instead focus on EISA's mandate for more stringent fuel economy standards as undermining the currency of California's protectiveness determination or California's ''need'' for its greenhouse gas emission standards. For example, AIAM has argued that the increased stringency of CAFE standards due to the EISA removes the basis for California's protectiveness determination.[54] Similarly, the Alliance argues that ''CARB erred in a fundamental way when it chose to ignore the impact of the federal CAFE standards generally and EISA's passage in specific on California's outdated protectiveness determination.''[55] These arguments assume that CAFE standards are ''applicable Federal standards'' and that non-final standards may be taken into consideration at the time of a waiver determination. As explained in detail above, those assumptions are not consistent with EPA's interpretation of the section 209(b)(1)(A) criterion. Notably though, neither argument presents a factually-based analysis of the stringency of California's greenhouse gas emission standards as compared to existing fuel economy standards that undermines California's protectiveness determination.[56] Such an

[51] California Air Resources Board, Comparison of Greenhouse Gas Reductions for the United States and Canada under U.S. CAFE Standards and California Air Resources Board Greenhouse Gas Regulations, February 25, 2008, available at *http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf.*

[52] The 2009 through 2020 model year standards are not a straightforward comparison of California's greenhouse gas standards to EISA standards because the years do not align. The California greenhouse gas standards at issue, here, are for the 2009 and later model years, whereas EISA was enacted in 2007 and mandates standards to reach 35 miles per gallon by the 2020 mode year, but as of yet have only been promulgated for the 2011 model year. The 2009 and 2010 MY federal fuel economy standards were pre-EISA standards. Neither California nor NHTSA has yet promulgated standards for the 2017–2020 model years: California greenhouse gas standards for those years are currently proposed in California (as ''Pavley 2'' standards), as are all the EISA standards from the 2012 through 2015 model years.

[53] California Air Resources Board, Comparison of Greenhouse Gas Reductions for the United States and Canada under U.S. CAFE Standards and California Air Resources Board Greenhouse Gas Regulations, (February 25, 2008), at 13–14.

[54] Association of International Automobile Manufacturers, Inc., EPA–HQ–OAR–2006–0173–9005 at 13–14.

[55] Alliance of Automobile Manufacturers, EPA, HQ–OAR–2006–0173–8994 at 20.

[56] The Alliance's comments received April 6, 2009 state: ''It should be noted that * * * it is also true that the fuel economy improvements required by the California GHG standards are more stringent, overall, for the industry than the CAFE standards in many jurisdictions in which the state GHG standards would apply compared to the CAFE standards. CARB does not disagree with this point. See CARB, Comparison of Greenhouse Gas Reductions for the United States and Canada Under U.S. CAFE Standards and California's Air Resources

Continued

analysis would be necessary for EPA to make a section 209(b)(1)(A) finding, if EPA were to depart from its traditional review of California's protectiveness determination and interpret ''applicable Federal standards'' to include NHTSA's fuel economy standards. As noted below, the Alliance points to an analysis of the relative stringency of the two sets of standards to find that: ''the combined vehicle-fuel program created by the EISA would result in greater life-cycle GHG reductions than the state standards that are the subject of this proceeding by the end of the decade.'' That analysis, however, is flawed for the purpose of this waiver consideration because it speculates as to NHTSA standards that are not yet finalized, or even proposed. Additionally, it infers that California's standards are more protective until 2017.[57]

Based on the above, and recognizing that federal fuel economy standards are not ''applicable Federal standards,'' EPA notes that even if the stringency of CAFE standards are considered in context of the section 209(b)(1)(A) waiver criterion, the opponents of the waiver have not presented sufficient evidence to show that California's protectiveness determination is arbitrary and capricious. No commenter has shown that California's determination was arbitrary and capricious in finding that NHTSA's fuel economy standards are not in the aggregate more protective of human health and welfare than California's greenhouse gas standards, whether one considers just the CARB and NHTSA standards that are currently finalized, or one considers possible future standards that either agency might adopt.

B. How Does EPA Evaluate Impacts on Other States?

Several comments have suggested that EPA should consider the impacts of California's greenhouse gas standards on other states.[58] At present time, thirteen other states and the District of Columbia have already adopted California's greenhouse gas emission standards pursuant to section 177 of the Act.[59] These comments raise two objections concerning other states adoption of California's greenhouse gas emission standards. First, these comments suggest that state-by-state compliance with each state's adopted set of California standards presents an unworkable compliance ''patchwork'' for automobile manufacturers.[60] Second, and related, the comments suggest that enforcement of California's greenhouse gas standards in other states will lead to ''environmental disbenefits'' in those states.[61] EPA takes no position on the merits of either argument because these arguments are outside the scope of our section 209(b)(1) waiver criteria. EPA's evaluation of California's waiver request is limited to the State of California.[62] To the extent that these comments raise issues regarding the environmental impacts of consumer shifts within California they are evaluated below.

C. Is California's Protectiveness Determination Arbitrary and Capricious?

1. Based on EPA's Traditional Analysis, Is California's Protectiveness Determination Arbitrary and Capricious?

As described above, EPA's traditional analysis has been to evaluate California's protectiveness determination by comparing the new California standards to applicable EPA emission standards for the same pollutants.[63] In the context of greenhouse gas emissions this analysis is simple. EPA has already determined that California was not arbitrary and capricious in its determination that the pre-existing California standards for light-duty vehicles and trucks, known as LEV II, is at least as protective as comparable Federal standards, known as the Tier II standards.[64] In the context of the ZEV proceeding, EPA conducted its traditional analysis to compare California's newly enacted ZEV standards to a similar lack of applicable Federal standards. At that time, California found, and EPA deemed reasonable, that the addition of the ZEV standards did not render California's LEV II program, for which a waiver had previously been granted, less protective than the Federal Tier II program. In addressing the Alliance's petition for reconsideration with respect to this issue, EPA stated that ''the words 'standards' and 'in the aggregate' in section 209(b)(1)(A) * * * . at minimum, include all the standards relating to the control of emissions for a category of vehicles (*e.g.* passenger cars, etc.) subject to CARB regulation, particularly where the standards are designed to respond to the same type of pollution.''[65]

California's greenhouse gas standards are also an addition to its existing LEV II program. Since the greenhouse gas standards add onto California standards that have already been determined to be as least as protective, and since there are no applicable federal greenhouse gas emission standards, the point of comparison, here, is between California's greenhouse gas standards and an absence of EPA greenhouse gas emission standards. Comparing an absence of EPA greenhouse gas emission standards to the enacted set of California greenhouse gas emission standards provides a clearly rational basis for California's determination that the California greenhouse gas emission program will be more protective of human health and welfare than non-existent applicable federal standards. California directly addressed this traditional analysis in its finding that ''[t]here are no comparable federal regulations that specifically require the control of greenhouse gas emissions from motor vehicles.''[66]

EPA received comments suggesting that this type of traditional comparison is inappropriate, even ''impossible,'' in

Board Greenhouse Gas Regulations: An Enhanced Assessment, at 8 (February 25, 2008).'' Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 20, note 4.

[57] *Id.*

[58] Association of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–7176.11, p. 1–2, 24–25; National Automobile Dealers Association, EPA–HQ–OAR–2006–0173–7176.1, EPA–HQ–OAR–2006–0173–8956; NERA Economic Consulting and Sierra Research, EPA–HQ–OAR–2006–0173–9053.1.

[59] New York (6 NY Code, Rules & Regs., Part 218–8.3), Massachusetts (310 Code of Mass. Regs. 7.40(2)(a)(6)), Maryland (Code of Md. Regs. § 26.11.34), Vermont (Vt Air Poll. Ctrl Regs., Subchapter XI, 5–1106(a)(5)), Maine (06 Code of Maine Rules § 127), Connecticut (Conn. Admin. Code § 22a–174–36b), Arizona (18 A.A.C. 2), New Jersey (NJ Admin. Code §§ 7:27–29.13), New Mexico (20 NM Admin. Code, Chapter 2, Part 88), Oregon (Or. Admin. Rules § 340–257), Pennsylvania (36 Pa.B. 7424), Rhode Island (RI Air Poll. Ctrl Reg. 37.2.3), Washington (Wash. Admin. Code § 173.423–090(2), and Washington, DC (DC Law 17–0151) have adopted California's greenhouse gas emission standards. *See also http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm.* Four more states, including Florida, Colorado, Utah, and Montana are poised to adopt the standards.

[60] National Automobile Dealers Association, EPA–HQ–OAR–2006–0173–7176.1, EPA–HQ–OAR–2006–0173–8956.

[61] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 22.

[62] These states and the District of Columbia have acted pursuant to section 177 of the Clean Air Act, which is not relevant to this proceeding, and that any issues commenters have regarding section 177 and state compliance with that statutory provision, is not appropriate for this proceeding. EPA notes that the language of section 209(b(1) refers to the ''State'' in several instances but in no instance does it refer to ''states'' or other areas of the country.

[63] See CAA section 209(b)(2).

[64] 71 FR 78190 (December 28, 2006) and Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006); 68 FR 19811 (April 22, 2003) and Decision Document for Waiver of Federal Preemption for Low Emission Vehicle Amendments (LEV II)(April 11, 2003).

[65] EPA's August 13, 2008 Response to Petition for Administrative Reconsideration of EPA's ZEV Waiver Decision (through the 2011 Model Year) published on December 28, 2006, at 3.

[66] Id. at 13.

the absence of Federal greenhouse gas emission standards.[67] Such an argument is contrary to legislative intent and EPA's practice.[68] This is not the first time that California has enacted emission standards in the absence of Federal standards; in fact, California's pioneering role in setting mobile source emission standards is one reason the waiver provision exists.[69] Given that section 209(b)(1) is designed to allow California to have standards more stringent than Federal standards, it would make little sense to use this provision to prevent California from having such standards where the Federal government has not yet acted. Moreover, in prior decisions EPA has found that such protectiveness determinations by California in the absence of Federal standards were reasonable.[70] Indeed, California standards may be most clearly ''at least as protective'' when they are compared to the absence of Federal emission standards. This commenter further points to the ''tremendous level of current federal activity'' as the primary reason why ''it is impossible for EPA to evaluate how the GHG Regulations will compare with federal regulation in this field.'' While EPA has announced its intention to propose greenhouse gas emission standards, EPA has consistently stated that CARB's protectiveness determination must consider the Federal standards in existence at the time of EPA's waiver decision.[71]

Furthermore, waiting for future federal regulation would be contrary to the purpose of the section 209(b) waiver provision—effectively stalling California's ability to enforce its own program. CARB's protectiveness determination was made on September 23, 2004, at which time there were no federal greenhouse gas standards. CARB's determination, then, correctly compared its standards to the absence of federal emission standards. Since that time, there has been no relevant intervening ''applicable Federal standard.''[72] Although AIAM points to the *Massachusetts* v. *EPA* decision and Executive Order 13,432, neither of those documents, nor any subsequent actions by the Federal government,[73] constitute final EPA regulation of greenhouse gas emissions for new motor vehicles that could be used as a comparable standard in this waiver proceeding.[74] The current lack of federal greenhouse gas emission standards maintains the factual basis for CARB's September 23, 2004 protectiveness determination. As noted above, if and when greenhouse gas standards are promulgated by EPA in the future, and if such standards bring this determination into question, then EPA can revisit this waiver decision at that time. Accordingly, applying its traditional comparative analysis, opponents of the waiver have not shown flaw or lack of reason in California's protectiveness determination; and we cannot find that California's protectiveness determination is arbitrary and capricious.

2. Is California's Protectiveness Determination Arbitrary and Capricious Based on the Real-World In-Use Effects of California's Greenhouse Gas Standards?

EPA received comments suggesting the need for and appropriateness of applying an alternative interpretation of section 209(b)(1)(A), based on an inquiry into the in-use effect of inclusion of greenhouse gas standards upon the broader motor vehicle emissions program.[75] EPA does not take a position as to the validity of the suggestion that the type of numerical analysis discussed above is insufficient. Noting the legislative history and text of section 209(b)(2), EPA would need a concrete factual basis to examine the in-use effect of California's greenhouse gas standards on its broader LEV II program as compared to the Federal Tier II program. We need not take a position on that matter because to the extent that the in-use effects of the greenhouse gas standards are considered, the waiver opponents do not meet their burden to show that CARB's analysis of the effects is unreasonable.

These comments suggest that consumer effects will cause California's broader LEV II motor vehicle emissions program to be less protective than the Federal Tier II emissions program.[76] In support of this analysis, the Alliance commissioned a study from Sierra Research, NERA Economic Consulting, and Air Improvement Resource, Inc. entitled ''Effectiveness of the California Light Duty Vehicle Regulations as Compared to Federal Regulations,'' which was submitted to EPA on June 15, 2007 (''June 2007 AIR/NERA/Sierra Study'').[77] CARB specifically responded to the June 2007 Study in comments it submitted to the docket on July 24, 2007 (''CARB's July Comments'').[78] Next, the Alliance submitted a response to California's response prepared by NERA Economic Consulting and Sierra Research (''October 2007 NERA/Sierra Study'').[79] Most recently, the Alliance submitted another study produced by NERA Economic Consulting and Sierra Research entitled ''Impacts of the California Greenhouse Gas Emission Standards on Motor Vehicle Sales'' (''April 2009 NERA/Sierra Study'').[80] On this issue, the Alliance also refers to a study published by the Society of Automotive Engineers entitled ''Evaluation of California Greenhouse Gas Standards and Federal Independence and Security Act—Part 2: CO_2 and GHG Impacts'' (''SAE Study'').[81] At the same time, Air Improvement Resource, Inc. has independently submitted comments which include its ''Evaluation of California Greenhouse Gas Standards and Federal Energy Independence and Security Act'' (''March 2009 AIR Study'').[82]

The Alliance has raised this issue before, in its request for reconsideration of EPA's waiver for California's ZEV

[67] Alliance of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1455 at 3; Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1297 at 2, 5–7, 11–12; National Automobile Dealers Association, EPA–HQ–OAR–0173–1671 at 3.

[68] The waiver provision allows California to ''act as a testing agent for various types of control and the country as a whole will be a beneficiary of this research'' (113 Cong. Rec. 32478 [1967]); ''act as a laboratory for innovation'' (*MEMA I* at 1095). *See* Decision Document for Authorization of State Standards for Utility Lawn and Garden Equipment (ULGE) (July 5, 1995).

[69] California first began regulating motor vehicle emissions in 1957, nearly a decade before Congress enacted the Motor Vehicle Air Pollution Control Act of 1965, which enabled a federal program.

[70] See *e.g.,* Authorization of California's Under 25 Horsepower Utility Lawn and Garden Equipment Engine Exhaust Emission Standards (ULGE) (July 5, 1995).

[71] *Id.* at 18.

[72] See section IV.A., regarding ''applicable Federal standards.''

[73] The Alliance similarly argues that EISA's mandate for reformed CAFE standards renders California's protectiveness determination ''obsolete'' or ''stale.'' Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 21.

[74] Likewise, EPA and DOT's ''Notice of Upcoming Joint Rulemaking To Establish Vehicle GHG Emissions and CAFE Standards'' does not include any final standards which EPA can take into account as an ''applicable Federal standards.''74 FR 24007 (May 22, 2009).

[75] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1297 at 5–12, and EPA–HQ–OAR–2006–0173–8994 at 22.

[76] *Id.*

[77] Sierra Research, Inc., EPA–HQ–OAR–2006–0173–1447, 1447.1–.5.

[78] California Air Resources Board, EPA–HQ–OAR–2006–0173–3601.

[79] NERA Economic Consulting, Inc. and Sierra Research, EPA–HQ–OAR–2006–0173–3651.

[80] NERA Economic Consulting and Sierra Research, EPA–HQ–OAR–2006–0173–9053.

[81] Thomas L. Darlington and Dennis F. Kahlbaum, Evaluation of California Greenhouse Gas Standards and Federal Independence and Security Act—Part 2: CO_2 and GHG Impacts, SAE Paper No. 2008–01–1853 (2008), Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994 at 20, note 44.

[82] Air Improvement Resources, Inc., EPA–HQ–OAR–2006–0173–13662.

standards.[83] In that reconsideration, the Alliance referred to the same June 2007 AIR/NERA/Sierra Study, saying that the California program, as a whole, was not at least as protective of public health and welfare as comparable federal standards. EPA denied the Alliance's request, in particular because the June 2007 AIR/NERA/Sierra Study was produced under the assumption that California's ZEV standards would be in effect until at least 2020 and that California's greenhouse gas standards would also be in effect. As EPA had only granted the ZEV waiver through the 2011 model year and had not granted the greenhouse gas waiver, EPA found that the study was not based upon the proper assumptions for comparing California's standards to federal standards. EPA stated at that time: ''[T]o the extent that the real-world emission effects of CARB's ZEV program (aggregated with its LEV II standards) are relevant, if at all, the Alliance fails to submit sufficiently focused information regarding these programs and their associated effect on emissions. Thus, no basis exists to reconsider EPA's December 2006 waiver decision based on the NERA/Sierra/Air report.'' [84]

In evaluating its greenhouse gas standards, California's protectiveness determination went beyond a simple numerical comparison of its greenhouse gas standards to non-existent federal greenhouse gas standards. Its protectiveness determination was also based upon its own analysis of the impact of its greenhouse gas standards on its larger program. California found that its new greenhouse gas standards would yield not only reductions in greenhouse gas emissions but also a net reduction in criteria pollutant emissions.[85] Therefore, to the extent this analysis is even relevant for an EPA waiver review opponents must present ''clear and compelling'' evidence challenging the reasonableness of this determination and California's analysis.

The June 2007 AIR/NERA/Sierra Study prepared for the Alliance presents a finding that its results ''indicate that the California Program, in the aggregate, is less protective of public health than the Federal Program with respect to emissions of ozone precursors and several other criteria pollutants.'' The study undertook consumer choice modeling to evaluate the effect of the California greenhouse gas emission standards on the new motor vehicle fleet and vehicle miles travelled (VMT) and compare those effects with fleet and VMT conditions were the Federal Program in effect in California. Its results showed that compliance with the California greenhouse gas standards would raise the cost of new motor vehicles in California, which would then lead to higher new vehicle prices, decreased new vehicle sales, increased retention of used vehicles (''scrappage effect''), increased fuel economy which would lead to increased VMT (''rebound effect''), and, finally, increased emissions of ozone precursors and several other criteria air pollutants.

On July 24, 2007, CARB submitted a response to comments received by EPA which specifically addressed the June 2007 AIR/NERA/Sierra Study.[86] First, CARB insisted that such a study should have been presented for consideration during California's rulemaking process and not later during EPA's consideration of California's waiver request. Second, CARB substantively responded to the June 2007 AIR/NERA/Sierra Study and claimed that its protectiveness determination was proper. In sum, CARB objected that the June 2007 AIR/NERA/Sierra Study is inappropriate because it is not focused on the relative stringency of emission standards, but instead presents ''a series of speculative events driven by disputed and unsupported compliance costs that would supposedly result—contrary to experience with previous reduction and automotive regulatory measures—in a substantial reduction in new motor vehicle sales (fleet turnover); and * * * Californians' theoretical desire to drive even more miles than already projected to reach increasingly distant destinations in the face of increasing traffic congestion (rebound effect).'' [87] CARB further critiqued several points of AIR/NERA/Sierra's analysis, including what it viewed as ''grossly overstated * * * highly speculative cost estimates,'' modeling errors, lack of methodological detail, and faulty assumptions. CARB asserted that its staff reviewed similar analyses and had provided its own analyses that are ''more reasonable and historically reliable'' and ''lead to dramatically different outputs.''

NERA/Sierra responded to that critique on October 29, 2007.[88] That document includes specific responses to criticisms raised by CARB and generally defends the integrity of its analyses. NERA/Sierra affirmed its conclusions that CARB's protectiveness determination is not fully supported because it understates or ignores costs, does not consider the combined effects of the ZEV mandate and GHG requirements, and does not assure compliance through technological implementation. As to the specific modeling issues raised by CARB, NERA/Sierra maintained the correctness of its modeling assumptions and estimations with regard to technology cost, fleet turnover, rebound effect, and pollutant emission effect.

NERA/Sierra also submitted an additional study on April 6, 2009, presenting many of the same methodological assertions noted above. Notably, though, this study is less methodologically clear: It does not quantify scrappage or its effects on emissions, assumes technology is applied only to meet federal CAFE

[83] Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006) and EPA's August 13, 2008 Response to Petition for Administrative Reconsideration of EPA's ZEV Waiver Decision (through the 2011 Model Year) published on December 28, 2006.

[84] EPA's August 13, 2008 Response to Petition for Administrative Reconsideration of EPA's ZEV Waiver Decision (through the 2011 Model Year) published on December 28, 2006, at 17–18. That denial further opined: ''In light of the language of section 209(b)(1)(A) and associated legislative history, it may only be necessary to examine the applicable emission limits in determining California's ability to set more stringent standards and pursue pioneering efforts (which may or may not lead to higher costs and associated fleet turnover concerns) under section 209(b)(1)(A). Given the legislative history * * * . EPA would need a concrete basis to examine the ''real world'' or in-use effect of California's standards in comparison to applicable federal standards (in this case, a comparison of LEV II + ZEV versus Tier 2). To require CARB to justify its standards and policy goals within the context of the protectiveness criteria based on waiver opponents' complicated and controversial models that apply assumptions that are themselves controversial, and where there are no corresponding federal standards, raises questions about whether demanding this type of review conflicts with Congress' intent to allow California 'the broadest possible discretion' in fashioning its own motor vehicle program without EPA second-guessing California's policy choices.'' Id. at 12.

[85] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.107 at 15 (''Taking into account the penetration of 2009 and later vehicles meeting the new standard, the proposed regulation will reduce greenhouse gas emission by an estimated 87,700 CO_2-equivelent tons per day statewide in 2020 and by 155,200 CO_2-equivelent tons per day in 2030. This translates into an 18 percent overall reduction in greenhouse gas emissions from the light duty fleet in 2020 and a 27 percent overall reduction in 2030; Taking into account the penetration of 2009 and later vehicles meeting the new standard, the proposed regulation will reduce upstream emissions of non-methane organic gases (NMOG) by 4.6 tons per day statewide in 2020 and 7.9 tons per day statewide in 2030, and will reduce upstream emissions of NO_X by 1.4 tons per day statewide in 2020 and 2.3 tons per day statewide in 2030. The regulation will provide a criteria pollutant benefit even taking into account possible pollutant increases due to consumer response.'').

[86] California Air Resources Board, EPA–HQ–OAR–2006–0173–3601.

[87] California Air Resources Board, EPA–HQ–OAR–2006–0173–3601 at 8.

[88] NERA Economic Consulting, Inc. and Sierra Research, EPA–HQ–OAR–2006–0173–3651.

standards (and not beyond that level of stringency), and assumes that further compliance is achieved through fleet mix changes combined with restrictions on vehicle availability. It is not clear whether and how ZEV program requirements are included in this study. Most importantly, though, the April 2009 NERA/Sierra Study is outside the scope of this proceeding; it presents ''the effects on motor vehicle sales of the California Standards, assuming that they are implemented in the 13 states that have adopted California's standards.'' [89] That is, the April 2009 NERA/Sierra Study seeks to present the effect of California's greenhouse gas standards on new motor vehicle sales in those 13 states. This is inappropriate because the waiver inquiry is limited to the State of California (as noted above) and, even if this study had been limited to California, it would still be inadequate because it does not connect its findings with regard to depressed vehicle sales to increased criteria pollutant emissions.

Air Improvement Resources, Inc. (''AIR''), who had originally participated in the June 2007 AIR/NERA/Sierra Study but submitted comment independently on April 6, 2009, evaluated California's greenhouse gas standards as compared to EISA ''standards.'' As noted above, this evaluation is not relevant to EPA's section 209(b)(1)(A) inquiry because EISA ''standards'' are not ''applicable Federal standards'' for the purpose of our waiver inquiry. Nor have any fuel economy standards been promulgated beyond the 2011 model year. Those underlying inadequacies render this study unpersuasive, if not entirely irrelevant. However, it is interesting to note that the primary finding of this study is that ''the California program has lower GHG emissions until about 2016–2018.'' [90] AIR also included as an attachment an SAE Paper evaluating impacts on new vehicle fuel economy from California's greenhouse gas standards and EISA ''standards.'' The finding of this paper is that California's greenhouse gas standards will lead to higher fuel economy than EISA ''standards'' until the 2017 model year.[91] The findings of both reports are based on inconsistent assumptions that California's greenhouse gas standards will not become more stringent after the 2016 model year, (because this waiver request ends with the 2016 model year standards) but the federal fuel economy standards will become more stringent even though there are not yet any federal fuel economy standards past the 2011 model year. As stated above, EPA is not including fuel economy standards in its consideration of ''applicable Federal standards.'' But, even if EPA were to engage in that analysis, it can only consider standards in existence at the time of a waiver decision, as stated above. Since no federal fuel economy standards exist yet beyond the 2011 model year, EPA will not make predictions about later year fuel economy standards in order to take them into account here.

As discussed below, EPA has evaluated both sets of analyses (from CARB and NERA/Sierra) and makes note of the following with regard to (1) fleet turnover/delayed scrappage, (2) the rebound effect, and (3) upstream emissions impacts.[92]

a. Fleet Turnover/Delayed Scrappage

The Alliance argues that California's greenhouse gas standards will cause delayed fleet turnover and, thus, increase criteria air pollutant emissions. Delayed fleet turnover results when the prices of new vehicles increase, causing prices of existing vehicles to increase as well. A consumer's decision to scrap an existing vehicle depends upon the trade-off between the value of existing vehicle in its working condition and its scrappage value. Rising prices of existing vehicles lead some consumers to decide to delay scrapping their vehicles. An older vehicle stock on the road results in an increase in criteria air pollution.

In conducting its analysis on consumer behavior impacts in its June 2007 study, NERA/Sierra/AIR evaluated the combined impacts of the California greenhouse gas emission standards and the Zero Emission Vehicle (''ZEV'') rules. It is difficult to discern the total cost per vehicle over various model years of the greenhouse gas versus the ZEV portion of the rules and, therefore, determine how much of the consumer behavior impacts are appropriately attributable to the greenhouse gas standards. Thus, it is difficult to undertake a direct comparison of the NERA/Sierra/Air and CARB studies. According to NERA/Sierra/AIR, as a result of price increases associated with the greenhouse gas and ZEV rules in 2020, they project that new vehicle sales in California will fall by approximately 130,000 vehicles. In addition, the number of vehicles in the fleet prior to the effective date of the ZEV and GHG regulations (*i.e.,* pre-2009 model year vehicles) is more than 250,000 greater in 2020 than would otherwise be the case under a federal program.

CARB, on the other hand, only looks at the economic impacts of the California greenhouse gas standards, independent of the ZEV requirements. Without the ZEV requirements, CARB estimates that California's greenhouse gas standards will result in an increase in new vehicle prices of approximately $1,000 per vehicle (*i.e.,* $1,064 for passenger vehicles, small trucks and sport utility vehicles (SUVs) and $1,029 for certain medium-duty trucks/SUVs).[93] Using a consumer choice model, CARBITS, CARB estimated new vehicle sales from California standards would increase in the near-term, resulting in accelerated fleet turnover, but see declines in fleet turnover in the longer-term, with a loss of vehicle sales of roughly 97,000 in 2020. By 2020, CARB estimates that lost vehicle sales would lead to delayed fleet turnover. The potential increase in ozone precursor emission in California in out years (*i.e.,* 2020) from delayed fleet turnover is about 2.5 tons/day. CARB estimates that those ''disbenefits'' of fleet turnover delay are more than offset by faster turnover in the early years of the California standard and reductions in emissions associated with fuel production. The more recent April 2009 NERA/Sierra study projects the impacts of the California GHG standards on new motor vehicle sales in the thirteen states that have adopted the California standards. Since the study only examines the impacts on new vehicle sales, it does not provide estimates of ozone precursor impacts of California standards.

b. The ''Rebound Effect''

The Alliance contends that criteria air pollutant emissions will increase due to

[89] NERA Economic Consulting and Sierra Research, EPA–HQ–OAR–2006–0173–9053 at E–1.

[90] Air Improvement Resources, Inc., EPA–HQ–OAR–2006–0173–13662 at 2. Yet this analysis presumes the promulgation of fuel economy standards that have not yet been promulgated and does not accordingly presume the promulgation of further greenhouse gas standards by California, despite the fact that the Pavley law in California makes such further standards a significant possibility.

[91] Air Improvement Resources, Inc., EPA–HQ–OAR–2006–0173–13662.

[92] EPA's role in reviewing California's waiver request is limited to finding whether opponents have shown that California's protectiveness determination is arbitrary and capricious. In making its protectiveness determination, CARB included these analyses and the studies noted above have included similar analyses based on diverging assumptions. EPA has evaluated these analyses to demonstrate that CARB's protectiveness determination was not arbitrary and capricious. This evaluation is separate and distinct from any analysis that EPA would conduct in promulgating its own regulation. Nothing in this evaluation should be construed as an endorsement of CARB's or any other analysis or any particular assumption they rely upon.

[93] California Air Resources Board, EPA–HQ–OAR–2006–0173.0010.116.

the so-called vehicle ''rebound effect.'' The rebound effect for vehicle fuel economy is defined as the increase in vehicle travel resulting from a decrease in the fuel cost per vehicle miles as a consequence of an increase in fuel economy. It is projected that increasing fuel efficiency lowers the effective cost of driving to the consumer, which results in an increase in vehicle usage (holding all other factors constant). NERA developed their own econometric estimate of the California rebound effect—17%—based on California vehicle inspection data from 1983–2003. In addition, NERA re-estimated a CARB-sponsored study on the rebound effect by Small & Van Dender and NERA found the long-run rebound effect in California to be roughly 13%.

In contrast, CARB used two types of analysis to evaluate the impact of the proposed regulations on changes in vehicle miles traveled: Econometric work by Small and Van Dender and travel demand modeling (Southern California Association of Governor's (SCAG)). The study by Small & Van Dender allowed the rebound effect to vary based on changes in income and congestion. In addition, the Small & Van Dender study also analyzed the impact of higher vehicle costs on VMT. Based on the econometric modeling, projected California incomes and transportation conditions, Small and Van Dender estimated a dynamic rebound effect of approximately 3% for the State of California in 2020. A major difference between the NERA and Small and Van Dender study was the way nominal income was converted to real income. NERA tried to approximate state cost of living adjustments, but had to modify metropolitan cost of living adjustments; Small and Van Dender used the national consumer price index. Based on the difference in income calculation, NERA found that income was no longer statistically significant in explaining changes in the rebound effect. Therefore, they removed this term from their model. California also used the Southern California Association of Governor's (SCAG) travel demand model to project changes in demand travel based on declining vehicle operating costs in the context of the transportation system in the L.A. South Coast Air Basin. In contrast to the econometric study, the travel demand modeling takes into account the available transportation infrastructure. CARB examined the emission impacts of changes in both the amount and the speed of motor vehicle travel, relative to the cost of gasoline per mile traveled. Based on the vehicle classes affected by the proposed GHG regulation, the results from SCAG indicate an elasticity of VMT to fuel cost (*i.e.,* a rebound effect) of roughly 4 percent in 2020.

c. Upstream Emissions Impacts

California's greenhouse gas standards also will influence the amount of fuel going through the petroleum marketing and distribution infrastructure in California. This, in turn, will reduce the ''upstream'' criteria air pollutants from transportation, spills, and other events associated with the infrastructure. There were large differences between the CARB and NERA/Sierra estimates of upstream emissions. NERA, focusing on fuel delivery trucks and transit distances, characterized CARB's estimates as significantly flawed. However, both estimated upstream emission reductions of ROG and NO_X, with CARB estimating a 6 ton per day reduction and NERA estimating a 1.1–1.5 ton per day reduction. The table below presents the rivaling estimates presented by the CARB and NERA/Sierra analyses.

	CARB	NERA
Fleet Turnover/Scrappage Effect.	Accelerated fleet turnover in near-term; smaller delayed fleet turnover in out years (*e.g.,* 2020).	Delayed fleet turnover in near term; larger delayed fleet turnover in out years (*e.g.,* 2020).
Rebound Effect	3% in 2020	17% in 2003, 13% in 2007.
Upstream Emissions	6 tons/day reduction in ROG+NOx	1.1–1.5 tons/day reduction in ROG+NOx.

Additionally, as with our analysis of the AIR/NERA/Sierra analysis in the context of the ZEV waiver reconsideration, we note that the study included a presumption that the ZEV standards would be in effect until at least 2020, and that this assumption appears to have a significant effect on other assumptions in the analysis. However, EPA explicitly declined to approve its waiver for California's ZEV standards beyond the 2011 model year, based in part on concerns that echoed comments from the Alliance. This makes the AIR/NERA/Sierra analysis an insufficient analysis to base a denial of California's waiver request.

In evaluating the studies prepared by AIR/NERA/Sierra in light of California's protectiveness determination, EPA takes important note of CARB's response. As stated above, while CARB disagrees that these studies are properly before EPA in the waiver proceeding, it points out that even if it is proper for EPA to consider the AIR/NERA/Sierra studies, they do not provide a basis for finding that California's protectiveness determination was arbitrary and capricious. CARB maintains that the Alliance has made no attempt to show that CARB's analyses are irrational, which CARB states waiver opponents must make given the ''arbitrary and capricious'' standard.

EPA agrees that to make a section 209(b)(1)(A) finding, it is not enough for waiver opponents to provide competing analyses that they claim are based on a rational set of assumptions. Rather, they must show that California's analysis, or the assumptions California relied on to support its protectiveness determination were arbitrary and capricious. Competing analyses, each based on rational assumptions, are not sufficient to deny a waiver.[94]

As previously stated, EPA does not need to decide the validity of the suggestion that the traditional numerical analysis is insufficient and that EPA must also consider the in-use effects of the standards. Given the legislative history and text of section 209(b)(2), EPA would need a concrete factual basis to examine the in-use effect of California's greenhouse gas standards on its broader LEV II program as compared to the Federal Tier II program. We need not take a position on that matter because the waiver opponents do not meet their burden to show that CARB's analysis of the in-use effects is arbitrary and capricious.[95] Rather, they present

[94] EPA's August 13, 2008 Response to Petition for Administrative Reconsideration of EPA's ZEV Waiver Decision (through the 2011 Model Year) published on December 28, 2006, at 17, note 25.

[95] To the extent that an analysis of the in-use effects of California's greenhouse gas standards may be appropriate, then such analysis properly includes consideration of the upstream emission reduction impacts identified and linked to the standards. A holistic examination of the in-use effects of a regulation should naturally include those effects that have a plausible connection to the standards, including such consequences as indirect upstream emission reductions. The March 6, 2008 Denial stated that California may otherwise have independent authority to regulate stationary sources and therefore there was no basis to include emission reductions from such sources as part of a mobile source rulemaking. However, EPA believes that the issue under section 209(b)(1)(A) is whether

rivaling analyses—each making different assumptions so that the differences in findings can be reduced to differences in assumptions. EPA finds that the Alliance has not met its burden of proof that the greenhouse gas regulations undermine California's previous LEV II and ZEV protectiveness determinations or that California was arbitrary and capricious in its greenhouse gas protectiveness determination.

EPA, therefore, finds that opponents of the waiver have not presented clear and compelling evidence that CARB was arbitrary and capricious in finding that the real-world effect of its standards ''in the aggregate'' would not lead to greater emissions of pollutants than the federal program.

D. Section 209(b)(1)(A) Conclusion

Based on the record before me, I cannot find that CARB was arbitrary and capricious in its finding that the California motor vehicle emission standards including the greenhouse gas standards are, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.

V. Does California Need Its Standards To Meet Compelling and Extraordinary Conditions?

Under section 209(b)(1)(B) of the Act, I cannot grant a waiver if I find that California ''does not need such State standards to meet compelling and extraordinary conditions.'' EPA has traditionally interpreted this provision as considering whether California needs a separate motor vehicle program to meet compelling and extraordinary conditions. However in the March 6, 2008 Denial, EPA limited this interpretation to California's motor vehicle standards that are designed to address local or regional air pollution problems. EPA determined that the traditional interpretation was not appropriate for standards designed to address a global air pollution problem and its effects and that it was appropriate to address such standards separately from the remainder of the program. EPA then proceeded to find that California did not need such standards to meet compelling and extraordinary conditions. The interpretation adopted in the March 6, 2008 Denial is now before me for reconsideration.

A. Basis of March 6, 2008 Denial

In the March 6, 2008 Denial, EPA provided its reasoning for changing its long-standing interpretation of this provision, as it pertains to California standards designed to address global air pollution. EPA described its long-standing interpretation in some detail, stating that:

> Under this approach EPA does not look at whether the specific standards at issue are needed to meet compelling and extraordinary conditions related to that air pollutant. For example, EPA reviewed this issue in detail with regard to particulate matter in a 1984 waiver decision.[96] In that waiver proceeding, California argued that EPA is restricted to considering whether California needs its own motor vehicle program to meet compelling and extraordinary conditions, and not whether any given standard is necessary to meet such conditions. Opponents of the waiver in that proceeding argued that EPA was to consider whether California needed these PM standards to meet compelling and extraordinary conditions related to PM air pollution.
>
> The Administrator agreed with California that it was appropriate to look at the program as a whole in determining compliance with section 209(b)(1)(B). One justification of the Administrator was that many of the concerns with regard to having separate state standards were based on the manufacturers' worries about having to meet more than one motor vehicle program in the country, but that once a separate California program was permitted, it should not be a greater administrative hindrance to have to meet further standards in California. The Administrator also justified this decision by noting that the language of the statute referred to ''such state standards,'' which referred back to the use of the same phrase in the criterion looking at the protectiveness of the standards in the aggregate. He also noted that the phrase referred to standards in the plural, not individual standards. He considered this interpretation to be consistent with the ability of California to have some standards that are less stringent than the federal standards, as long as, per section 209(b)(1)(A), in the aggregate its standards were at least as protective as the federal standards.
>
> The Administrator further stated that in the legislative history of section 209, the phrase ''compelling and extraordinary circumstances'' refers to ''certain general circumstances, unique to California, primarily responsible for causing its air pollution problem,'' like the numerous thermal inversions caused by its local geography and wind patterns. The Administrator also noted that Congress recognized ''the presence and growth of California's vehicle population, whose emissions were thought to be responsible for ninety percent of the air pollution in certain parts of California.'' [97] EPA reasoned that the term compelling and extraordinary conditions ''do not refer to the levels of pollution directly.'' Instead, the term refers primarily to the factors that tend to produce higher levels of pollution—''geographical and climatic conditions (like thermal inversions) that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems.'' [98]

The Administrator summarized that under this interpretation the question to be addressed in the second criterion is whether these ''fundamental conditions'' (*i.e.* the geographical and climate conditions and large motor vehicle population) that cause air pollution continued to exist, not whether the air pollution levels for PM were compelling and extraordinary, or the extent to which these specific PM standards will address the PM air pollution problem.[99]

However in the March 6, 2008 Denial, EPA limited this interpretation to California's motor vehicle standards that are designed to address local or regional air pollution problems. EPA determined that the traditional interpretation was not appropriate for standards designed to address a global air pollution problem and its effects.[100]

With respect to a global air pollution problem like elevated concentrations of greenhouse gases, EPA's March 6, 2008 Denial found that the text of section 209(b)(1)(B) was ambiguous and does not limit EPA to this prior interpretation. In addition, EPA noted that the legislative history supported a decision to ''examine the second criterion specifically in the context of global climate change.'' The legislative history:

> [I]ndicates that Congress was moved to allow waivers of preemption for California motor vehicle standards based on the particular effects of local conditions in California on the air pollution problems in California. Congress discussed ''the unique problems faced in California as a result of its climate and topography.'' H.R. Rep. No. 728, 90th Cong. 1st Sess., at 21 (1967). See also Statement of Cong. Holifield (CA), 113 Cong. Rec. 30942–43 (1967). Congress also noted the large effect of local vehicle pollution on such local problems. See, *e.g.,* Statement of Cong. Bell (CA) 113 Cong. Rec. 30946. In particular, Congress focused on California's

the indirect reductions of ozone pollutants from stationary sources created by the greenhouse gas emission standards for motor vehicles, can reasonably be considered by California in its determination that its standards are as protective of public health and welfare as applicable federal standards. Given that the effects are reasonably related to the regulations, if it is appropriate to consider in-use effects then it was not arbitrary and capricious for California to include such effects in this analysis.

[96] 49 FR 18887 (May 3, 1984).

[97] *Id.* at 18890.

[98] 73 FR 12156, 12159–60 (March 6, 2008).

[99] 73 FR at 12159–60.

[100] EPA recently reaffirmed that the traditional interpretation still applied for motor vehicle standards designed to address air pollution problems that are local or regional in nature. 71 FR 78190, 78192 (December 28, 2008); *see also* 71 FR 78190 and Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle Standards, at 34.

smog problem, which is especially affected by local conditions and local pollution. See Statement of Cong. Smith (CA) 113 Cong. Rec. 30940–41 (1967); Statement of Cong. Holifield (CA), id. at 30942. See also, *MEMA I,* 627 F. 2d 1095, 1109 (DC Cir., 1979) (noting the discussion of California's ''peculiar local conditions'' in the legislative history). Congress did not justify this provision based on pollution problems of a more national or global nature in justifying this provision.[101]

Relying on this, and without any further significant discussion of either congressional intent or how this new approach properly furthered the goals of section 209(b), EPA determined that it was appropriate to:

[R]eview California's GHG standards separately from the remainder of its motor vehicle emission control program for purposes of section 209(b)(1)(B). In this context it is appropriate to give meaning to this criterion by looking at whether the emissions from California motor vehicles, as well as the local climate and topography in California, are the fundamental causal factors for the air pollution problem—elevated concentrations of greenhouse gases—apart from the other parts of California's motor vehicle program, which are intended to remediate different air pollution concerns.

EPA then proceeded to apply this interpretation to the GHG standards at issue in this waiver proceeding, and found that California did not need the GHG standards under this interpretation. Having limited the meaning of this provision to situations where the air pollution problem was local or regional in nature, EPA found that California's greenhouse gas standards do not meet this criterion. EPA found that the elevated concentrations of greenhouse gases in California are similar to concentrations elsewhere in the world, and that local conditions in California such as the local topography and climate and the number of motor vehicles in California are not the determinant factors causing the elevated GHG concentrations found in California and elsewhere. Thus, the March 6, 2008 Denial found that California did not need its GHG standards to meet compelling and extraordinary conditions, and the waiver was denied.

EPA also considered an alternative interpretation, where EPA would consider ''the effects in California of this global air pollution problem in California in comparison to the rest of the country, again addressing the GHG standards separately from the rest of California's motor vehicle program.'' Under this alternative interpretation, EPA considered whether the impacts of global climate change in California were significant enough and different enough from the rest of the country such that California could be considered to need its greenhouse gas standards to meet compelling and extraordinary conditions. EPA determined that the waiver should be denied under this alternative interpretation as well.

B. Should EPA Review This Criterion Based on the Need for California's Motor Vehicle Program or the Need for the GHG Standards?

The essential first question to resolve in addressing whether California needs ''such State standards to meet compelling and extraordinary conditions'' is whether it is appropriate for EPA to evaluate this criterion based on California's need for its motor vehicle program as a whole, or to evaluate only the particular standards being addressed in this waiver proceeding.

1. Comments Supporting a Review of the Entire Program

In its initial waiver request, CARB restates its need for its own engine and vehicle programs to meet serious air pollution problems. It notes that the relevant inquiry is whether California needs its own emission control program as opposed to the need for any given standard as necessary to meet compelling and extraordinary conditions. CARB notes that in prior waivers the Administrator has determined that:

''[C]ompelling and extraordinary conditions'' does not refer to levels of pollution directly, but primarily to the factors that tend to produce them: geographical and climatic conditions that, when combined with large numbers and high concentrations of automobiles create serious air pollution problems.''

In its initial waiver request letter, CARB stated:

California, the South Coast and San Joaquin Air basins in particular, continues to experience some of the worst air quality in the nation. California's ongoing need for dramatic emission reductions generally and from passenger vehicles specifically is abundantly clear from its recent adoption of state implementation plans for the South Coast and other California air basins. The unique geographical and climatic conditions, and the tremendous growth in the vehicle population and use which moved Congress to authorize California to establish separate vehicle standards in 1967, still exist today.[102]

CARB notes that these conditions have not changed to warrant a change in confirmation by EPA and that the opponents of the waiver bear the burden on showing why California no longer has a compelling need, informed by its own circumstances and benefits that would accrue to it and other states.

EPA also received comment that the *Massachusetts* v. *EPA* holding suggests that EPA should treat greenhouse gases just like all other air pollutants when evaluating a section 209(b) waiver request for greenhouse gases. These comments suggest that once the Supreme Court clarified that greenhouse gases are Clean Air Act air pollutants, there was no room left to distinguish greenhouse gases from other air pollutants when evaluating waiver requests under section 209(b). These comments suggest that EPA ought not to treat elevated concentrations of greenhouse gases as an air pollution problem different from California's traditional air pollution problems. Likewise, the comments suggest, greenhouse gas pollutants should be treated just like other air pollutants which give rise to the need for California's motor vehicle emission program, and, therefore, be subject to EPA's traditional section 209(b)(1)(B) analysis.

Several commenters suggest that review of California's need for its motor vehicle emissions program as a whole is not only appropriate but is mandated by the statute.

2. Comments Supporting a Review of the GHG Standards Separately

Several commenters opposing the GHG waiver request have advocated that EPA should review California's GHG standards separately under the ''compelling and extraordinary conditions'' criterion. Essentially, this would require that EPA's determination be based on California's need for GHG standards in isolation of its need for its own motor vehicle emissions program.

These commenters state that the statute requires a linkage between the compelling and extraordinary conditions and the particular standards that California wishes to enforce, and that a set of standards that cannot be linked to the compelling and extraordinary conditions cannot be said to be needed to meet such conditions. The commenters note that the statute refers to ''standards''—not to a ''program''—and that such an approach would shield regulations that would not meet the criterion from any review simply by referring to other regulations that do meet the criterion. Moreover, they state that the need for such standards must be based on the particular characteristics (topography, photochemistry) that make California's conditions compelling and

[101] 73 FR at 12161.

[102] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 27.

extraordinary, whereas global climate change (and, thus, control of GHGs) is not related to such conditions.

Included among the comments suggesting that section 209(b) was intended to allow California to address local air pollution problems and not global environmental issues like climate change was an argument that the phrase ''need for such State standards to meet compelling and extraordinary conditions'' is unambiguous.[103] That lack of ambiguity, according to these comments, compels the conclusion that global warming is not the type of condition California was meant to address with its motor vehicle emissions program. These commenters further suggest that the intent of Congress was to allow California the ability to set its own standards to address the state's unique local air pollution problems and ''scientific evidence confirms that California's temperature trends are neither unique nor particularly distinct from those of at least a dozen other States.''

3. Decision

After reviewing the comments and the March 6, 2008 Denial, I believe the better approach is to review California's need for its new motor vehicle emissions program as a whole to meet compelling and extraordinary conditions, and not to apply this criterion to specific standards, or to limit it to standards designed to address only local or regional air pollution problems. The traditional approach to interpreting this provision is the best approach for considering a waiver for greenhouse standards, as well as a waiver for standards designed to address local or regional air pollution problems.[104] Therefore, I believe the interpretation that was applied in the March 6, 2008 Denial should be rejected and no longer be followed.

This traditional interpretation is the most straightforward reading of the text and legislative history of section 209(b). Congress decided in 1977 to allow California to promulgate individual standards that are not as stringent as comparable federal standards, as long as the standards are ''in the aggregate, at least as protective of public health and welfare as applicable federal standards.'' This decision by Congress requires EPA to allow California to promulgate individual standards that, in and of themselves, might not be considered needed to meet compelling and extraordinary circumstances, but are part of California's overall approach to reducing vehicle emissions to address air pollution problems.

EPA is to determine whether California's determination is arbitrary and capricious under section 209(b)(1)(A), and is to determine whether California does not need ''such State standards'' to meet compelling and extraordinary conditions. The natural reading of these provisions leads EPA to consider the same group of standards that California considered in making its protectiveness determination. While the words ''in the aggregate'' are not specifically applicable to section 209(b)(1)(B), it does refer to the need for ''such State standards,'' rather than ''each State standard'' or otherwise indicate a standard-by-standard analysis.

In addition, EPA's March 6, 2008 Denial determined that this provision was appropriately interpreted to consider California's standards as a group for standards designed to address local or regional air pollution problems, but should be interpreted in the opposite fashion for standards designed to address global air pollution problems. The text of the provision, however, draws no such distinction, and provides no indication other than Congress intended a single interpretation for this provision, not one that varied based on the kind of air pollution problem at issue.

The March 6, 2008 Denial considered the legislative history, and determined that Congress was motivated by concern over local conditions in California that lead to local or regional air pollution problems. From this, EPA determined that Congress intended to allow California to address these kinds of local or regional air pollution problems, but no others. In effect, EPA inferred from the discussion in the legislative history that Congress intended to limit California's authority in this way, and to prohibit a waiver for California standards aimed at global air pollution problems.

This ignores the main thrust of the text and legislative history of section 209(b), and improperly reads too much into an absence of discussion of global air pollution problems in the legislative history. The structure of section 209, both as adopted in 1967 and as amended in 1977, is notable in its focus on limiting the ability of EPA to deny a waiver, and thereby preserves discretion for California to construct its motor vehicle program as it deems appropriate to protect the health and welfare of its citizens. The legislative history indicates Congress quite intentionally restricted and limited EPA's review of California's standards, and its express legislative intent was to ''provide the broadest possible discretion [to California] in selecting the best means to protect the health of its citizens and the public welfare.''[105] The DC Circuit recognized that ''[t]he history of the congressional consideration of the California waiver provision, from its original enactment up through 1977, indicates that Congress intended the State to continue and expand its pioneering efforts at adopting and enforcing motor vehicle emission standards different from and in large measure more advanced than the corresponding federal program. In short, to act as a kind of laboratory for innovation. * * * For a court [to limit California's authority] despite the absence of such an indication would only frustrate the congressional intent.''[106]

In this context, it is fully consistent with the expressed intention of Congress to interpret section 209(b)(1)(B) the same way both for standards designed to address local and regional air pollution problems, and standards designed to address global air pollution problems. Congress intended to provide California the broadest possible discretion to develop its motor vehicle emissions program. Neither the text nor the legislative history of section 209(b) indicates that Congress intended to limit this broad discretion to a certain kind of air pollution problem, or to take away all discretion with respect to global air pollution problems.[107] In

[103] This comment, suggesting that the ''need for such State standards to meet compelling and extraordinary conditions,'' is made under Step 1 of the test established under *Chevron, USA., Inc.* v. *NRDC.*

[104] The traditional interpretation of section 209(b)(1)(B) is certainly not ''unambiguous precluded'' by the language of the statute. See *Entergy Corp.* v. *Riverkeeper, Inc.,* 129 S.Ct. 1498 (2009)(''That view governs if it is a reasonable interpretation of the statute—not necessarily the only possible interpretation, nor even the interpretation deemed most reasonable by the courts. *Chevron U.S.A. Inc.* v. *Natural Resources Defense Council, Inc.,* 467 U.S. 837, 843–844 (1984).'') (''It seems to us, therefore, that the phrase ''best available,'' even with the added specification ''for minimizing adverse environmental impact,'' does not unambiguously preclude cost-benefit analysis.''). *Carrow* v. *Merit Systems Protection Board,* 564 F.3d 1359 (Fed. Cir. 2009) (''[W]e are obligated to give controlling effect to [agency's] interpretation if it is reasonable and is not contrary to the unambiguously expressed intent of Congress'', citing *Entergy Corp.*).

[105] H.R. Rep. No. 294, 95th Cong., 1st Sess. 301–302 (1977). *See MEMA,* 627 F. 2d at 1110–11.

[106] *MEMA,* 627 F. 2d at 1111.

[107] This broad interpretation of section 209(b) is similar to the broad reading the Court provided to section 302(g) of the Clean Air Act when it held that the term ''air pollutant'' included greenhouse gases, rejecting among other things the argument that Congress limited the term to apply only to certain kinds of air pollution. *Massachusetts* v. *EPA,* 549 U.S. 497, 532 footnote 26.

addition, applying the traditional interpretation to greenhouse gas standards does not change the basic nature of the compromise established by Congress—California could act as the laboratory for the nation with respect to motor vehicle emission control, and manufacturers would continue to face just two sets of emissions standards—California's and EPA's.

This interpretation is directly in line with the purpose of Congress, as compared to the interpretation adopted in the March 6, 2008 Denial. The 2008 interpretation relied on the discussion in the legislative history of local conditions in California leading to air pollution problems like ozone. While this was properly read to support the view that this provision should be interpreted to address California's need for a motor vehicle program as a whole, the March 6, 2008 Denial went further and inferred that by discussing such local conditions, Congress also intended to limit California's discretion to only these kinds of local or regional air pollution problems. The March 6, 2008 Denial pointed to no particular language in the legislative history or the text of section 209(b) indicating such, instead, congressional intent to limit California's discretion was inferred from the discussion of local conditions. However, basing a limitation on such an inference is not appropriate given the express indication that Congress intended to provide California the ''broadest possible discretion'' in selecting the best means to protect the health of its citizens and the public welfare.

The text of section 209(b) and the legislative history, when viewed as a whole, leads me to conclude that the interpretation adopted in the March 6, 2008 Denial should be rejected. The better way to interpret this provision is to apply the traditional interpretation to the evaluation of California's greenhouse gas standards for motor vehicles. If California needs a separate motor vehicle program to address the kinds of compelling and extraordinary conditions discussed in the traditional interpretation, then Congress intended that California could have such a program. Congress also intentionally provided California the broadest possible discretion in adopting the kind of standards in its motor vehicle program that California determines are appropriate to address air pollution problems that exist in California, whether or not those problems are local or regional in nature, and to protect the health and welfare of its citizens. The better interpretation of the text and legislative history of this provision is that Congress did not intend this criterion to limit California's discretion to a certain category of air pollution problems, to the exclusion of others. In this context it is important to note that air pollution problems, including local or regional air pollution problems, do not occur in isolation. Ozone and PM air pollution, traditionally seen as local or regional air pollution problems, occur in a context that to some extent can involve long range transport of this air pollution or its precursors. This long-range or global aspect of ozone and PM can have an impact on local or regional levels, as part of the background in which the local or regional air pollution problem occurs. As discussed later, the effects of global concentrations of greenhouse gases can have an impact on local ozone levels. This context for air pollution problems supports the view that Congress did not draw such a line between the types of air pollution problems under this criterion, and that EPA should not implement this criterion in a narrow way restricting how California determines it should develop its motor vehicle program to protect the health and welfare of its citizens.[108]

This approach does not make section 209(b)(1)(B) a nullity, as some have suggested. EPA must still determine whether California does not need its motor vehicle program to meet the compelling and extraordinary conditions discussed in the legislative history. If that is the case, then a waiver would be denied on those grounds. As discussed below, that is not the case at this point, even though conditions in California may one day improve such that it no longer has the need for a separate motor vehicle program. The statute contemplates that such improvement is possible. In addition, the opponents of a waiver always have the ability to raise their legal, policy, and other concerns in the State administrative process, or through judicial review in State courts.

Congress, however, provided EPA a much more limited role under section 209(b) in considering objections raised by opponents of a waiver.

For these reasons, I believe that the better approach for analyzing the need for ''such State standards'' to meet ''compelling and extraordinary conditions'' is to review California's need for its program, as a whole, for the class or category of vehicles being regulated, as opposed to its need for individual standards.

Having adopted this interpretation of section 209(b)(1)(B), I apply it below to determine whether EPA can find that California does not need its motor vehicle program to meet compelling and extraordinary conditions. Given the basis for EPA's March 6, 2008 Denial and the considerable debate regarding the permissible interpretations of this provision, EPA has also evaluated this criterion reviewing the greenhouse gas standards separately—using the two interpretations discussed in the March 6, 2008 Denial. In either case, EPA also cannot deny California's request for a waiver based on a finding that California does not need such standards to meet compelling and extraordinary circumstances.

C. Does California Need Its Motor Vehicle Program To Meet Compelling and Extraordinary Conditions?

As discussed above, the better interpretation of this criterion, adopted herein, is the traditional approach of evaluating California's need for a separate program to meet compelling and extraordinary conditions. Applying this approach, with due deference to California, I cannot deny the waiver.

CARB has repeatedly demonstrated the need for its motor vehicle program to address compelling and extraordinary conditions in California. In its Waiver Request letter, CARB stated:

> California—the South Coast and San Joaquin Air basins in particular—continues to experience some of the worst air quality in the nation. California's ongoing need for dramatic emission reductions generally and from passenger vehicles specifically is abundantly clear from its recent adoption of state implementation plans for the South Coast and other California air basins.[109] The unique geographical and climatic conditions, and the tremendous growth in the vehicle population and use which moved Congress to

[108] *See Massachusetts* v. *EPA,* ''While the Congresses that drafted section 202(a)(1) might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render the Clean Air Act obsolete. The broad language of section 202(a)(1) reflects an intentional effort to confer the flexibility necessary to forestall such obsolescence. See *Pennsylvania Dept. of Corrections* v. *Yeskey,* 524 U.S. 206, 212 (1998) (''[T]he fact that a statute can be applied in situations not expressly anticipated by Congress does not demonstrate ambiguity. It demonstrates breadth'' (internal quotation marks omitted)). Because greenhouse gases fit well within the Clean Air Act's capacious definition of ''air pollutant,'' we hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.'' 549 U.S. 497 at 532.

[109] See *e.g.* Approval and Promulgation of State Implementation Plans; California—South Coast, 64 FR 1770, 1771 (January 12, 1999). See also 69 FR 23858, 23881–90 (April 30, 2004) (designating 15 areas in California as nonattainment for the federal 8-hour ozone national ambient air quality standard).

authorize California to establish separate vehicle standards in 1967, still exist today.[110]

CARB notes in its July 14, 2007 comments that it testified at EPA's earlier hearings on this waiver request that ''since nothing has changed in the few months since EPA last easily made this determination [regarding the need for the motor vehicle emission program] on December 28, 2006 (71 FR 78190), and since California still has the ''geographical and climatic conditions that, when combined with the large numbers and high concentrations of automobiles, create serious pollution problems,'' (49 FR at 18890 (citing legislative history)), this is the end of a proper and legal EPA analysis of the extraordinary and compelling conditions waiver prong.'' [111]

EPA has not received any adverse comments suggesting that California no longer needs a separate motor vehicle emissions program to address the various conditions that lead to serious and unique air pollution problems in California.

Based on the record, I am unable to identify any change in circumstances or any evidence to suggest that the conditions that Congress identified as giving rise to serious air quality problems in California no longer exist. Therefore, using the traditional approach of reviewing the need for a separate California program to meet compelling and extraordinary conditions, I cannot deny the waiver based on this criterion.

D. Does California Need Its Motor Vehicle GHG Standards To Meet Compelling and Extraordinary Conditions?

As discussed above, EPA has also evaluated this criterion under two alternative approaches, reviewing the greenhouse gas standards separately using the two interpretations discussed in the March 6, 2008 Denial. While recognizing that they are not the interpretations adopted here by EPA, this section discusses the Agency's consideration of these alternative interpretations.

1. Are California's GHG Standards Designed in Part To Address an Air Pollution Problem That Is Local or Regional in Nature?

In the March 6, 2008 Denial, EPA interpreted this criterion as calling for a review of California's GHG standards separately from the remainder of its motor vehicle emission control program. In that context, it was determined appropriate to look at whether the emissions from California motor vehicles, as well as the local climate and topography in California, are the fundamental causal factors for the air pollution problem of greenhouse gases. This interpretation limited the meaning of this provision to situations where the motor vehicle standards at issue were designed to address an air pollution problem that was local or regional in nature, such that the local conditions in California were the fundamental causes of the air pollution problem.

The March 6, 2008 Denial applied this interpretation by focusing on elevated concentrations of greenhouse gases as the air pollution—a global air pollution problem. The March 6, 2008 Denial rejected arguments that the GHG standards should also been seen as an ozone control strategy, on the grounds that even if elevated concentrations of greenhouse gases lead to climate changes that exacerbate ozone, the causes of elevated concentrations of greenhouse gases are not solely local to California but are global in nature.

This overly narrow view fails to consider that although the factors that cause ozone are primarily local in nature and that ozone is a local or regional air pollution problem, the impacts of global climate change can nevertheless exacerbate this local air pollution problem. Whether or not local conditions are the primary cause of elevated concentrations of greenhouse gases and climate change, California has made a case that its greenhouse gas standards are linked to amelioration of California's smog problems. Reducing ozone levels in California cities and agricultural areas is expected to become harder with advancing climate change. California and many other commenters note that ''California's high ozone levels—clearly a condition Congress considered—will be exacerbated by higher temperatures from global warming.'' [112] California also notes that there is general consensus that temperature increases from climate change will exacerbate the historic climate, topography, and population factors conducive to smog formation in California, which were the driving forces behind Congress' inclusion of the waiver provision in the Clean Air Act.[113] There is a logical link between the local air pollution problem of ozone and California's desire to reduce GHGs as one way to address the adverse impact that climate change may have on local ozone conditions.[114] Given the clear deference that Congress intended to provide California on the mechanisms it chooses to use to address its air pollution problems, it would be appropriate to consider its GHG standards as designed in part to help address a local air pollution problem, and, thus, a waiver should not be denied even under the narrow interpretation employed in the March 6, 2008 Denial.

2. Do the Impacts of Climate Change in California Support a Denial of the Waiver?

As part of EPA's March 6, 2008 Denial, EPA also considered an alternative interpretation for this criterion, where EPA would consider ''the effects in California of this global air pollution problem * * * in comparison to the rest of the country, again addressing the GHG standards separately from the rest of California's motor vehicle program.'' EPA considered evidence and arguments submitted by commenters concerning whether the impacts of global climate change in California were significant enough and different enough from the rest of the country such that California could be considered to need its greenhouse gas standards to meet compelling and extraordinary conditions.[115] EPA determined in the March 6, 2008 Denial that the waiver should be denied under this approach as well.

[110] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1, at 16.

[111] California Air Resources Board, EPA–HQ–OAR–2006–0173–1686 at 7.

[112] California submits evidence that at the national scale, using global to regional air quality models, various papers demonstrate that climate change alone can worsen summertime surface ozone pollution in polluted regions of the United States including one finding that ''climate change alone will increase summertime ozone in polluted regions by 1–10 ppb over the coming decades, with the largest effects in urban areas and during pollution episodes'' and therefore ''climate change will partly offset the benefit of the emissions reductions.'' See Jacob and Winner (2009), EPA–HQ–OAR–2006–0173–9010.4. CARB also cites the 2007 Interim Report of the U.S. EPA Global Change Research Program Assessment of the Impacts of Global Change on Regional U.S. Air Quality, a draft EPA study which concludes that climate change may significantly increase ground-level ozone in areas throughout the nation. See also EPA's final April 2009 ''Assessment of the Impacts of Global Climate Change on Regional U.S. Air Quality: A Synthesis of Climate Change Impacts on Ground-Level Ozone'' which states as one of its general findings: ''[W]hile these modeling studies cannot tell us what the future will hold, they demonstrate the potential for global climate change to make U.S. air quality management more difficult, and therefore future air quality management decisions should begin to account for the impacts of climate change.'' EPA–HQ–OAR–2006–0173–9006 at 7–9.

[113] *Id.*

[114] California also submits evidence that its GHG emission regulations would result in a slight reduction of ozone precursors. EPA–HQ–OAR–2006–0173–9006 at 10.

[115] 73 FR 12156, 12164.

As discussed above, this is not the interpretation that EPA now adopts. However, even if EPA were to examine the impacts of climate change in California under this interpretation, based on a review of all the evidence in the record, I cannot deny the waiver.

a. What Test Applies Under This Alternative Approach?

In the March 6, 2008 Denial, EPA found that legislative intent called for particular circumstances in California that are ''sufficiently different'' from the nation as a whole that justify separate standards in California.

EPA received comment stating that there is no statutory foundation for a ''sufficiently different'' test. Commenters noted there is nothing in the term ''compelling and extraordinary conditions'' that requires a comparison to the rest of the country. Similarly, commenters point to EPA's 1984 PM waiver where EPA's Administrator found that ''there is no indication in the language of section 209 or the legislative history that California's pollution problem must be the worst in the country for a waiver to be granted.'' EPA also received comment that it was not reasonable for EPA to conclude that California does not face global warming impacts, including water supply, agricultural production, and wildfire seasonal impacts that present compelling and extraordinary conditions, since other states will face similar impacts. Under this rationale, since states other than California are also experiencing serious global warming impacts, California could never receive a waiver to combat climate change. Commenters find flaw in this rationale: similar impacts in other states have never before prevented California from receiving a waiver. Even though many states are faced with non-attainment ozone areas and smog problems similar to California, California has never had a waiver denied based on a finding under section 209(b)(1)(B) that it did not need its standards to meet compelling and extraordinary conditions. As such, EPA also received comment suggesting that the impacts of climate change should be reviewed within the State of California to determine their severity, and that such impacts need not be compared to impacts experienced or projected to occur elsewhere in the country.

Several commenters maintain that although the impacts of climate change in California may be compelling, they are not extraordinary when compared to the rest of the nation.[116] These commenters point to the record and the many submissions from other states, which recount the variety of impacts and risks of climate change in their respective states and claim that California is no different than any other state.

EPA does not need to resolve this issue. As discussed below, EPA has evaluated the evidence submitted concerning the observed and projected impacts of global climate change in California and other states and determined that even under the alternative approach used in the March 6, 2008 Denial, EPA cannot deny a waiver.

b. Would a Waiver Be Denied Under This Alternative Approach?

Commenters supporting the waiver maintain that California has clearly demonstrated that the impacts in California of global warming are ''compelling and extraordinary.'' Several commenters point to the impacts of global warming recited in EPA's March 6, 2008 initial denial as evidence that EPA committed an error in judgment by not finding that the extreme and various impacts of climate change in California are compelling and extraordinary in nature and that, further, California clearly satisfied the section 209(b)(1)(B) requirements.[117]

Commenters supporting the waiver, including California, have submitted an extensive array of reports and data outlining the risks and impacts of climate change on California. EPA received comment restating EPA's own statements from its March 6, 2008 Denial, including the following:

> California has the largest agricultural based economy (13% of the U.S. market value of agricultural products sold) which is heavily dependent on irrigation, has the nation's highest crop value and is the nation's leading dairy producer. There is improved information on how livestock productivity may be affected by thermal stress and through nutritional changes in forage caused by elevated CO_2 concentrations. In addition, wine is California's highest value agricultural product, and wine grapes are very sensitive to temperature changes. California has the largest state coast population, representing 25% of the U.S. oceanic coastal population. The conditions which create California's tropospheric ozone problems remain (*e.g.,* topography, regional meteorology, number of vehicles) and climate change is expected to exacerbate tropospheric ozone levels. California's water resources are already stressed due to demands from agricultural, industrial and municipal uses, and climate change is expected to introduce an additional stress to an already over-allocate system by increasing temperatures and by decreasing snowpack which is an important water source in spring and summer. California has the greatest variety of ecosystems in the U.S., and the second most threatened and endangered species (of plants and animals combined) and the most threatened and endangered animal species, representing about 21% of the U.S. total.

In addition, one commenter suggests that this summary of findings about California's special characteristics that differentiate the magnitude, intensity and range of impacts of climate change supports that assessment. Dr. Stephen Schneider of Stanford University stated that ''not only are California's conditions 'unique and arguably more severe' (*e.g.* temperature impacts from global warming are more certain for states like California) but also that no other state faces the combination of ozone exacerbation, wildfire emission's contributions, water system and coast system impacts and other impacts faced by California.'' [118] Conversely, opponents of the waiver do not contest California's claims that the impacts of climate change in California and elsewhere are substantial.[119] Instead,

[116] Association of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–9005. This comment notes the finding in *Massachusetts* v. *EPA* that the impacts of global warming are ''widely shared'' among the states.

[117] EPA has not received any comment suggesting EPA's prior inventory of evidentiary information is incorrect as set forth in its discussion of the ''Relationship of Impacts of Global Climate Change in California to the Rest of the Country'' at 73 FR 12156, 12163–12168. In addition, several new studies have been submitted to EPA, including: a recent report from the Pacific Institute examining the impacts that sea level rise would have on population, infrastructure, and property in California (this report uses projections of medium to medium-high greenhouse gas emissions scenarios indicating a 1.4 meter rise in the seal level by 2100 with 480,000 people at risk and $100 million in property at risk from a 100 year flood event); California's Climate Action Team Reports that emphasizes many of the points made in California's waiver request including the air quality impacts (''Climate change could slow progress toward attainment of health-based air quality standards and increase pollution control costs by increasing the potential for high ozone and high particulate days.'' The report itself synthesizes 37 recent reports that address a wide body of information on the range and gravity of the risks that climate change poses to California's citizens, natural resources, and economy); and the Public Policy Institute of California assessment of climate change on public health in California and cites number impacts including ''an increase in the frequency and severity of air pollution episodes'' and ''an increase in extreme heat events and associated increases in heat related morbidity and mortality.'' *See* Environmental Defense Fund, EPA–HQ–OAR–2006–0173–9025 at 15–18; *See also* California Air Resources Board, EPA–HQ–OAR–2006–0173–9006 at 7–16.

[118] Environmental Defense Fund, EPA–HQ–OAR–2006–0173–9025 at 11–12.

[119] The Association of International Automobile Manufacturers notes that although in the March 6, 2008 Denial, ''EPA found that there is ample evidence that global warming is 'compelling' in the

opponents of the waiver claim that the impacts in California are not unique or extraordinary. EPA received comment suggesting that the impacts of climate change in California are not sufficiently different from the nation as a whole to warrant a waiver.[120] Commenters note that the ''need'' requirement in section 209(b)(1)(B) authorizes the creation of regulatory standards specific to California only in cases where it is necessary to meet conditions unique to California. Commenters claim that California cannot meet this standard with respect to a global problem that does not affect California in a unique way as compared to other states. The commenters claim the impacts to coastline, ozone levels, and other impacts are not unique to California as they affect many other states as well.[121]

EPA notes that under this alternative approach the opponents of the waiver continue to bear the burden of proof to demonstrate their claims. Commenters opposing the waiver primarily focus and argue on one issue: Whether the effects of climate change in California are sufficiently different from the nation as a whole. Opponents of the waiver identify singular or multiple impacts in some other states but they largely submit conclusions—not factual evidence—as to why such adverse impacts demonstrate that California is not sufficiently different. On the other hand, California has identified a wide variety of impacts and potential impacts within California, which include exacerbation of tropospheric ozone, heat waves, sea level rise and salt water intrusion, an intensification of wildfires, disruption of water resources by, among other things, decreased snowpack levels, harm to high value agricultural production, harm to livestock production, and additional stresses to sensitive and endangered species and ecosystems. Opponents have not demonstrated that any other state, group of states, or area within the United States would face a similar or wider-range of vulnerabilities and risks. In addition, California has submitted information that climate change can impact ozone levels in California due to temperature exacerbation effects. Although other areas of the country are also projected to experience increases in temperatures which may also exacerbate local ozone levels, opponents of the waiver have not demonstrated that California's ozone levels should not be considered compelling and extraordinary conditions.

Under this alternative interpretation, the burden of proof is on the opponents of the waiver to demonstrate that the impacts of global climate change in California are either not significant enough or are not different enough from the rest of the country to be considered compelling and extraordinary conditions. The opponents of the waiver have focused their argument on the latter part of this interpretation, whether the impacts in California are sufficiently different from the rest of the country. Limiting evaluation to this issue, California has presented evidence of a wide variety of vulnerabilities, impacts and potential impacts within California, while the opponents have not demonstrated that any other state, group of states, or area within the United States would face a similar or wider-range of vulnerabilities and risks. Therefore, EPA believes that those opposing the waiver have not met their burden of proof to demonstrate that the conditions in California are not sufficiently different and that a waiver should be denied under this alternative approach.

It is important to note that nothing in this decision or this document should be construed as reflecting a judgment concerning the issues pending before EPA under section 202(a) of the Act—whether emissions of GHGs from new motor vehicles or engines cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. EPA recently proposed to make an affirmative finding under that statutory provision.[122] The issues involved in that proposal are separate and different from those involved in this decision on California's request for a waiver under section 209(b). Nothing in this decision should be construed as reflecting the Agency's judgment regarding any issue relevant to the determinations in the pending proposal under section 202(a). The statutory provisions and criteria are different, and the judgments called for under these provisions are very different in nature. For example, in evaluating the alternative section 209(b)(1)(B) interpretation, I am not evaluating how serious the impacts or potential impacts of global climate change are, either in California or the rest of the country, as the opponents of the waiver have not focused on that issue. My finding under this alternative interpretation is a narrow one, and is limited to finding that the opponents of the waiver have not met their burden of proof under this alternative interpretation of section 209(b) concerning how the impacts in California might differ from the rest of the country.

3. Must California's GHG Standards Achieve a Demonstrated Reduction in GHG Atmospheric Concentrations or Impacts Under Section 209(b)(1)(B)?

Regardless of whether EPA examines the need for California's motor vehicle emissions program or conversely the need just for the GHG emission standards, some commenters suggest

sense that it presents serious environmental issues, the agency correctly determined that it does not present an extraordinary condition in California.'' EPA–HQ–OAR–2006–0173–9005 at 9. EPA did receive comment from Air Improvement Resources (AIR) suggesting that it might be contesting whether positive feedback from CO_2 concentrations on temperature increases (as seen in the models and data submitted to EPA by proponents of the waiver) will be seen in certain geographic areas due to an increase in cloudiness. EPA–HQ–OAR–2006–0173–13662 at 5–6. However, in its same submission it also states that while it may be true that California's cities will be disproportionately affected by increased temperatures it is by no means clear that this will be true in the future. (See p. 7). As noted in the text, the burden of proof is on the opponents of the waiver to demonstrate that the effects of climate change are not compelling or serious. Such opponents have not clearly stated the basis for making such a determination nor countered the many studies and data submitted by California and other proponents of the waiver. For purposes of this waiver proceeding, EPA is not making its own judgment with regard to the issues under section 202(a).

[120] Association of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–9005 at 9, citing 73 FR 12168—''As the discussion above indicates, global climate change has affected, and is expected to affect, the nation, indeed the world, in ways very similar to the conditions noted in California * * * These identified impacts are found to affect other parts of the United States and therefore these effects are not sufficiently different compared to the nation as a whole. California's precipitation increases are not qualitatively different from changes in other areas. Rise in sea level in the coastal parts of the United States are projected to be severe, or more severe, particularly in consequences, in the Atlantic and Gulf Regions than in the Pacific regions, which includes California. Temperature increases have occurred in most parts of the United States, and while California's temperatures have increased by more than the national average, there are other places in the United States with higher or similar increases in temperature.''

[121] *Id.* at 9–10. The Association of International Automobile Manufacturers notes that comments submitted from States supporting the waiver include statements such as ''Connecticut faces loss of its shoreline and beaches, forest die offs, destruction of shell fisheries and marine resources, * * *'' ''Global warming is having a serious impact on New Jersey's public health and economy * * *'' ''Rhode Island * * * As the most densely populated State in the country, direct impacts due to climate change, such as heat wave, increased fire frequency, increased storm intensity resulting in beach erosion, loss of property, and loss of life—pose great concerns for us,'' and other concerns expressed by states such as Pennsylvania, Maryland, and New Mexico. See also Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1297 at 14–17 and EPA–HQ–OAR–2006–0173–0421–12 at 61–70 and General Motors Corporation, EPA–HQ–OAR–2006–0173–1596 at 6–8.

[122] See EPA's ''Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act'' at 74 FR 18886 (April 29, 2009).

that the GHG emission standards must be proven to have some mitigative effect in order for them to be needed. Some commenters suggest that to the extent that California's high ozone levels could be exacerbated by higher temperatures from global warming, there is no demonstration in the waiver record that implementation of the California GHG standards would have any perceptible impact on temperature trends in California. Opponents of the waiver have argued that California, therefore, cannot show that its GHG emission regulations will achieve a measurable and specific temperature reduction in California, and thereby mitigate the identified climate change impacts in California.[123] They maintain that California's GHG regulations will not be needed to meet a particular condition since there is no analysis suggesting that California's GHG standards will have any discernible impact on that condition or achieve any perceptible improvement in environmental conditions inside California. In terms of GHG concentrations in California's atmosphere, EPA received comment stating there is no offered proof that a reduction in GHG emissions from California vehicles would have any impact on GHG concentrations in California's atmosphere compared to the GHG concentration impacts already in the record.

In response, other commenters supporting the waiver assert that the efficacy of California's standards is not at issue in this proceeding. There is no requirement in section 209(b)(1)(B) that California prove a certain level of environmental benefit. They assert that is particularly true in this instance, where the actual and anticipated impacts of global warming are complex and historically unprecedented, and it is widely-recognized that a number of efforts by governments, private entities, and individuals globally will be required to mitigate climate change, as no single source of GHG emissions, whether from an entire state, sector of the nation's economy, or of individual countries, is completely dominant in terms of influencing atmospheric concentrations of GHGs. They claim that California need not show that the climate will in fact respond to its regulatory action; rather its obligation is to show a rational connection between the regulation it has promulgated and the problem it seeks to address.

As noted above, the Agency's inquiry under section 209(b)(1)(B) is whether California needs its own motor vehicle emission control program to meet compelling and extraordinary conditions. Under this criterion, EPA does not consider, for example, the extent to which specific PM standards will address the PM air pollution problem.[124] Under this approach, there is no need to delve into the extent to which the GHG standards at issue here would address climate change or ozone problems. That is an issue appropriately left to California's judgment.

Given the comments submitted, however, EPA has also considered an alternative interpretation, which would evaluate whether the program or standards has a rational relationship to contributing to amelioration of the air pollution problems in California. Even under this approach, EPA's inquiry would end there. California's policy judgment that an incremental, directional improvement will occur and is worth pursuing is entitled, in EPA's judgment, to great deference.[125] EPA's consistent view is that it should give deference to California's policy judgments, as it has in past waiver decisions, on California's choice of mechanism used to address air pollution problems. EPA does not second-guess the wisdom or efficacy of California's standards.[126] EPA has also considered this approach with respect to the specific GHG standards themselves, as well as California's motor vehicle emissions program.

After reviewing the arguments, I conclude that California has submitted evidence demonstrating not only the causal connection between higher temperatures from global warming and its general exacerbation of tropospheric ozone, but also the serious effects of that potential increase in ozone on the public health and welfare in California. EPA notes that several commenters have stated that while California's GHG regulations will provide only a small difference in temperatures and/or GHG concentrations, there clearly will be some reductions. These commenters note that given the numerous sources in California and around the world that contribute to GHG concentrations, no single regulation could on its own reduce GHG emissions to the levels necessary to reduce all concerns, but that every small reduction is helpful in reducing these concerns. As noted by the Supreme Court in *Massachusetts* v. *EPA,* while it is true that regulating motor vehicle GHG emissions will not by itself reverse global warming, a reduction in domestic automobile emissions would slow the pace of global emissions increase no matter what happens with regard to other emissions.[127] Moreover, there is some evidence in the record that proffers a specific level of reduction in temperature resulting from California's regulations.[128] EPA believes that under this alternative approach, opponents have not met their burden of demonstrating that California's motor vehicle program, or its GHG standards, does not have a rational relationship to contributing to amelioration of the air pollution problems in California.

E. Section 209(b)(1)(B) Conclusion

With respect to the need for California's state standards to meet compelling and extraordinary conditions, I have found that the March 6, 2008 Denial was based on a departure from the traditional interpretation of the waiver provision. An examination of the text of section 209(b) and the legislative history, when viewed together, lead to the conclusion that the best way to interpret this provision and the interpretation I adopt here, is to apply the traditional interpretation to the evaluation of California's greenhouse gas standards for motor vehicles. As such, if California needs a separate motor vehicle program to address the kinds of compelling and extraordinary conditions discussed in the traditional interpretation, then Congress intended that California could have such a program. The best interpretation of the text and legislative history of this provision is that Congress did not use this criterion to limit California's discretion to a certain category of air pollution problems, to the exclusion of others.

Under that interpretation, I cannot find that opponents of the waiver have demonstrated that California does not need its state standards to meet compelling and extraordinary conditions. The opponents of the waiver have not adequately demonstrated that

[123] However, the Alliance presented some evidence at the May 30, 2007 waiver hearing that some temperature reduction may be achieved, based on application of the Wigley equation. EPA–HQ–OAR–2006–0173–0421 at 71.

[124] 74 FR 12156, 12159–60 (March 6, 2008).

[125] *MEMA I* at 1110–11.

[126] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.

[127] *Massachusetts* v. *EPA,* 59 U.S. 497, 525–526 (2007).

[128] EPA also received comment during the second comment period indicating that a local decrease in GHGs can have a direct effect on reducing local ozone concentrations, as well as particulate matter concentrations, in California, before they mix with other greenhouse gases in the upper atmosphere. The comments that address Dr. Jacobson's testimony do not dispute these atmospheric reactions and the fact that they can increase local temperature which can increase ozone concentrations.

California no longer has a need for its motor vehicle emission program.

Separately, even applying the alternative interpretations set forth in the March 6, 2008 Denial, I cannot find that that the opponents of the waiver have demonstrated that California does not need its greenhouse gas emission standards to meet compelling and extraordinary conditions. Nor can I find that the opponents of the waiver have demonstrated that the impacts from climate change in California are not compelling and extraordinary.

Therefore, upon reconsideration of the March 6, 2008 Denial, I determine that I cannot deny the waiver request under section 209(b)(1)(B).

VI. Are the California GHG Standards Consistent With Section 202(a) of the Clean Air Act?

EPA has reviewed the information submitted to the record of this proceeding to determine whether the parties opposing this waiver request have met their burden to demonstrate that the GHG standards are not consistent with section 202(a). In its submissions, CARB has submitted information and argument that these GHG standards do provide regulated manufacturers with sufficient lead-time for the near term standards regardless of how it is measured and regardless of the waiver denial. For the mid-term standards, CARB has stated that initially, manufacturers can achieve compliance with credits from the near-term production, and subsequently can achieve compliance with refinements to existing technology and advanced technology combinations. The industry opponents of the waiver have submitted information and argument that there is insufficient leadtime for the CARB near-term standards because the already short time-frame for technology development was made even shorter by EPA's waiver denial. For the mid-term standards, the industry stated that it is likely that most large-volume manufacturers will be able to comply with the CARB standards only by ''mix-shifting'' their products to offer for sale more higher mileage vehicles to ensure meeting the CARB fleet average. The industry also submitted information and argument that the GHG standards will result in unsafe vehicles because vehicles meeting the standards will be lighter and more hazardous to occupants in accidents, and will be driven more because of higher fuel efficiency, so more accidents will occur. The industry argued that these complying vehicles are technologically infeasible because of the safety concerns. EPA's analysis of the consistency of the CARB standards with section 202(a) of the Act follows.

A. Historical Approach: The Standard of Review for Consistency With Section 202(a)

Under section 209(b)(1)(C), EPA must deny California's waiver request if the Agency finds that California standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act. The scope of EPA's review under this criterion is narrow. EPA has previously stated that the determination is limited to whether those opposed to the waiver have met their burden of establishing that California's standards are technologically infeasible, or that California's test procedures impose requirements inconsistent with the Federal test procedure.[129] Previous waivers of federal preemption have stated that California's standards are not consistent with section 202(a) if there is inadequate lead time to permit the development of technology necessary to meet those requirements, giving appropriate consideration to the cost of compliance within that time.[130] California's accompanying enforcement procedures would be inconsistent with section 202(a) if the Federal and California test procedures conflict, *i.e.,* if manufacturers would be unable to meet both the California and Federal test requirements with the same test vehicle.[131]

EPA does not believe that there is any reason to review these criteria any differently for EPA's evaluation of California's greenhouse gas waiver request. There is nothing inherently different about how GHG control technologies should be reviewed when making a determination about technological feasibility or consistency of test procedures.

In the GHG waiver proceeding, automobile industry opponents of the waiver have presented evidence for EPA's consideration which they believe will require EPA to make the finding of inconsistency with section 202(a), and therefore require EPA to deny this waiver. They believe this finding should be made on one or more grounds that there is inadequate lead time provided by the CARB standards. EPA's process for evaluating lead time is discussed immediately below. The industry opponents also raise arguments based on the cost of compliance with the standards, and claims of possible significant vehicle safety problems caused, at least indirectly, by compliance with the GHG standards, which will be discussed in other parts of this section.

Regarding lead time, EPA historically has relied on two decisions from the U.S. Court of Appeals for the DC Circuit for guidance regarding the lead time requirements of section 202(a). Section 202(a) provides that an emission standard 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. In *Natural Resources Defense Council* v. *EPA* (''*NRDC*''), 655 F.2d 318 (DC Cir. 1981), the court reviewed claims that EPA's particulate matter standards for diesel cars and light trucks were either too stringent or not stringent enough. In upholding the EPA standards, the court concluded:

> Given this time frame [a 1980 decision on 1985 model year standards]; we feel that there is *substantial room for deference* to the EPA's expertise in projecting the likely course of development. The essential question in this case is the pace of that development, and absent a revolution in the study of industry, defense of such a projection can never possess the inescapable logic of a mathematical deduction. We think that the EPA will have demonstrated the reasonableness of its basis for projection if it answers any theoretical objections to the [projected control technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available.[132]

Another key case addressing the lead time requirements of section 202(a) is *International Harvester* v. *Ruckelshaus* (''*International Harvester*''), 478 F 2.d 615 (DC Cir. 1979). In *International Harvester,* the court reviewed EPA's decision to deny applications by several automobile and truck manufacturers for a one-year suspension of the 1975 emission standards for light-duty vehicles. In the suspension proceeding, the manufacturers presented data which, on its face, showed little chance of compliance with the 1975 standards, but which, at the same time, contained many uncertainties and inconsistencies regarding test procedures and parameters. In a May 1972 decision, the Administrator applied an EPA

[129] *MEMA I,* 627 F.2d at 1126.

[130] See *e.g.,* 38 FR 30136 (November 1, 1973) and 40 FR 30311 (July 18, 1975).

[131] To be consistent, the California certification test procedures need not be identical to the Federal test procedures. California procedures would be inconsistent, however, if manufacturers would be unable to meet both the state and Federal requirements with the same test vehicle in the course of the same test. See, *e.g.,* 43 FR 32182, (July 25, 1978).

[132] *Natural Resources Defense Council* v. *EPA,* 655 F.2d 318, 331. (emphasis added)

methodology to the submitted data, and concluded that ''compliance with the 1975 standards by application of present technology can probably be achieved,'' and so denied the suspension applications.[133] In reviewing the Administrator's decision, the court found that the applicants had the burden of coming forward with data showing that they could not comply with the standards, and if they did, then EPA had the burden of demonstrating that the methodology it used to predict compliance was sufficiently reliable to permit a finding of technological feasibility. In that case, EPA failed to meet this burden.

With respect to lead time, the court in *NRDC* pointed out that the court in *International Harvester* ''probed deeply into the reliability of EPA's methodology'' because of the relatively short amount of lead time involved (a May 1972 decision regarding 1975 model year vehicles, which could be produced starting in early 1974), and because ''the hardship resulting if a suspension were mistakenly denied outweigh the risk of a suspension needlessly granted.'' [134] The *NRDC* court compared the suspension proceedings with the circumstances concerning the diesel standards before it: ''The present case is quite different; 'the base hour' for commencement of production is relatively distant, and until that time the probable effect of a relaxation of the standard would be to mitigate the consequences of any strictness in the final rule, not to create new hardships.'' [135] The *NRDC* court further noted that *International Harvester* did not involve EPA's predictions of future technological advances, but an evaluation of presently available technology.

EPA also evaluates CARB's request in light of congressional intent regarding the waiver program generally. This is consistent with the motivation behind section 209(b) to foster California's role as a laboratory for motor vehicle emission control, in order ''to continue the national benefits that might flow from allowing California to continue to act as a pioneer in this field.'' [136]

For these reasons, EPA believes that California must be given substantial deference when adopting motor vehicle emission standards which may require new and/or improved technology to meet challenging levels of compliance. This deference was discussed in an early waiver decision when EPA approved the waiver request for California's 1977 model year standards:

> Even on this issue of technological feasibility I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the Federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to 'catch up' to some degree with newly promulgated standards. Such an approach to automotive emission control might be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency, under the statutory scheme outlined above I believe I am required to give very substantial deference to California's judgment on that score.'' [137]

EPA has traditionally considered lead time as starting with the date that the rules are adopted and become effective under California state law—not from the subsequent date of a request for a waiver or the decision on a waiver.[138] This is consistent with the structure of section 209(b), where the waiver criteria are presumed to be met absent an affirmative finding that requires EPA to deny it, which gives EPA a limited scope of review and affords deference to California. At the time that California adopts its rules, manufacturers have clear knowledge and are fully on notice of California's requirements and the date when such requirements will be implemented. In this case, the CARB GHG regulations became final and effective in 2004. This was five years before the first phase of compliance (the 2009 model year) and eight years before compliance with the ''mid-term'' standards, which include the most stringent standards (model year 2016). Because of this large amount of lead time available to manufacturers under CARB's regulatory schedule, the approach described in *NRDC* is the most appropriate under the circumstances at issue here.

EPA notes, however, that manufacturers have disputed whether ample lead time exists. Because EPA initially denied this waiver request, manufacturers have asserted that the lead time should have ''tolled'' at the time of the denial, since California could not implement and enforce standards which had not received a waiver. This tolling issue is discussed below in section VI.F.1. Additionally, if the tolling might be considered to cause a reduction in lead time for the CARB near-term standards, it could be argued that the *International Harvester* approach, involving circumstances where the lead time is short, should apply. CARB, while maintaining that the *NRDC* approach is the correct measurement here, commented that even if *International Harvester* was the correct guide, ''we believe that a combination of manufacturers' statements and plans indicated that manufacturers are already in, or with minor changes can demonstrate compliance for the 2009 and 2010 model years.'' [139] Under *International Harvester,* the burden was on the industry to demonstrate that the evidence supported the grant of an extension, then, the burden shifted to EPA to demonstrate the reasonableness of its projection. As discussed below, the manufacturers have not met their burden to show that the California standards are not technologically feasible, considering the lead time provided and cost of compliance.

Under *NRDC,* when compliance with CARB standards is phased-in over a lengthy time period, the reasonableness of a projection of technological feasibility can be based on answering any theoretical objections to the projected control technology; identifying the major steps necessary in refinement of the technology; and offering plausible reasons for believing that each of those steps can be completed in the time available.[140] EPA's review of the evidence on the technological feasibility of GHG technologies follows.

B. CARB's Assessment of the State of Development of GHG Reduction Technology and Comments Supporting CARB's Assessment

1. Development of GHG Reduction Technology

Under the terms of Assembly Bill 1493, which is the legislation that directed CARB to establish greenhouse gas emission standards, the CARB staff was directed to set those standards in a manner that would ''achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles.'' CARB has

[133] *International Harvester* v. *Ruckelshaus,* 478 F.2d 615, 626.

[134] *NRDC,* 655 F.2d 318, 330.

[135] Id. The ''hardships'' referred to are hardships that would be created for manufacturers able to comply with the more stringent standards being relaxed late in the process.

[136] 40 FR 23102, 23103 (waiver decision citing views of Congressman Moss and Senator Murphy) (May 28, 1975).

[137] *Id.* at 23103.

[138] *See e.g.,* 59 FR 40625 (September 22, 1994).

[139] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006, at 23.

[140] *NRDC,* 655 F.2d 318, 331.

identified four basic areas of GHG reduction technology: (1) Engine, drivetrain and other vehicle modifications; (2) mobile air conditioning system modifications; (3) alternative fuel vehicles; and (4) exhaust catalyst improvements.

To accomplish the assessment mandated by AB 1493, CARB staff held several meetings and workshops in 2003 and 2004 on GHG vehicle technology. Those meetings brought together technology developers, researchers from the auto industry, vehicle component suppliers, academic participants, and vehicle simulation firms to discuss technologies and their potential to reduce climate change emissions from motor vehicles. CARB staff presented its preliminary findings in a draft technology and cost assessment and held a public workshop to receive comments in April 2004. Following that presentation, CARB issued a draft proposal on the methodology for developing the GHG standards and the preliminary standards themselves, in June 2004. A public workshop on this draft was held in July 2004. After considering all the comments from these sessions, CARB published its final staff proposal in the Staff Report: Initial Statement of Reasons (ISOR) in August 2004.[141]

The CARB vehicle technology results in the ISOR relied on an existing vehicle simulation study (discussed below), as well as other existing studies and research, rather than on any sort of primary development or engineering work. CARB staff acknowledged that ''because powertrain changes will be the focus for obtaining the reductions sought in this (GHG) rulemaking rather than aftertreatment technologies, staff could not reasonably build prototypes and test them in our laboratory. * * * Because building and testing prototypes is so expensive, and time consuming, even major automobile manufacturers rely on vehicle simulation firms to predict the performance of new technology either individually or in combination, and to assess their performance and emissions.'' [142] CARB further commented that the advantage of systems modeling ''is to allow a wide diversity of combinations of technologies to be modeled together and examine how they interact when simulating a vehicle operating on various driving cycles.'' [143]

The study forming the basis of the ISOR vehicle technology results was a comprehensive vehicle simulation modeling effort and a thorough cost analysis performed for the Northeast States Center for a Clean Air Future (NESCCAF), by the recognized expert companies AVL Powertrain Engineering, Martec, and Meszler Engineering Services.[144] CARB staff believed that ''the NESCAAF study is the most advanced and accurate evaluation of vehicle technologies that reduce greenhouse gas emissions yet performed.'' [145] Besides the NESCAAF study on vehicle technologies, CARB monitored a separate analysis of the GHG benefits of alternative fuel technologies, including upstream benefits and the cost associated with alternative fuel technologies, from work performed by TIAX, LLC. Finally, for air conditioning research, CARB staff met with various groups (including EPA) to develop its approach for reducing the emissions of air conditioning refrigerant and excess CO_2 emissions from air conditioning use.

After the release of the Initial Staff Report, CARB received comments on its evaluation of technological steps that could be taken to meet its GHG standards from parties who supported the CARB study, and from various industry parties who disagreed with many of the CARB conclusions. As part of its standard-setting process, CARB staff considered the comments from all parties on both sides, and responded to industry concerns in its Final Statement of Reasons (FSOR), published in August 2005.[146] CARB concluded that it had identified the necessary technology in existence at that time that could enable vehicles to meet the GHG standards; or specifically identified the projected control technologies; answered the industry objections regarding the technology; and has explained its reasons for believing that each of the steps can be completed in the time available.

2. Overview of Technologies and Their Projected Applications

The NESCAAF study identified technologies for reducing CO_2 emissions that were modeled both individually and in various technology combinations (or ''packages''). Because there were a multitude of technologies available for the CO_2 reductions, CARB realized that there needed to be engineering guidelines for choosing combinations that would be economical to the consumer. The guidelines tried to avoid combining technologies that tend to address the same categories of losses or technologies that may not complement one another from a drivability standpoint. Participants in the NESCAAF study and CARB staff then assembled a wide variety of combined technologies to evaluate through simulation modeling in order to identify those which would provide the greatest CO_2 reductions. In an effort to cover the full spectrum of CO_2 reductions that could be accomplished, CARB staff divided the results into two categories: near-term phase-in and mid-term phase-in applications. These translate to the following model year ranges: Near-term (2009–2012) and mid-term to fully phased-in (2013–2016).[147]

In the Initial Staff Report, CARB staff summarized the state of near-term technology for meeting its proposed CO_2 standards:

> The technologies explored (in the Initial Staff Report) are currently available on vehicles in various forms, or have been demonstrated by auto companies and/or vehicle suppliers in at least prototype form * * * There is near term, or off the shelf technology package in each of the vehicles classes evaluated (small and large car, minivan, small and large truck) that resulted in a reduction of CO_2 emissions of at least 15 to 20 percent from baseline values. In addition there is generally a near-term technology package in each of the vehicle classes that results in about a 25 percent CO_2 emission reduction.'' [148]

For engines, CO_2 is emitted with engine exhaust as a result of the combustion process. CARB projected that by 2009, reductions in engine CO_2 emissions would result from these primary technology drive-train changes which could be expected in all vehicle classes: Dual cam phasing, turbocharging with engine downsizing, automated manual transmissions, and

[141] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44.

[142] *Id.* at 43.

[143] *Id.* at 58.

[144] NESCCAF undertook this study ''to help define GHG—reducing motor vehicle technologies that are expected to be feasible, commercially available and cost effective in the 2009–2015 timeframe.'' It was ''inspired by the California's legislature's passage of Assembly Bill 1493 * * *'' and it related to the Northeast U.S. because ''the results presented in this report have significant implications for states in the Northeast and elsewhere that share California's commitment to reducing transportation related GHG emissions as part of a broader effort to address the risks posed by global climate change.'' Reducing Greenhouse Gas Emissions from Light-Duty Motor Vehicles, NESCCAF, p 1–1, September 2004.

[145] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44 at 44.

[146] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.116.

[147] The NESCAAF study had a different schedule: Near-term technologies (2009–2012), mid-term (2013–2015) and long term (2015 and later). California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 27.

[148] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44 at iii.

camless valve actuation.[149] CARB also described several other technology items that may not be present in most vehicles in the early years of the standards, but are expected to be used in later years as development continues. These include: Gasoline direct injection, engine friction reduction, aerodynamic drag and rolling resistance, more aggressive shift logic, and early torque converter lock-up. Finally, CARB staff identified two other technology choices that while offering real GHG reduction capability were not as cost effective as the other technologies, and, accordingly, were not projected to be applied in the near-term—these are hybridization and greater dieselization of the fleet.

For the later years of these standards, CARB stressed that its GHG regulations ''rely less on traditional technology-forcing than repackaging a combination of off-the-shelf technologies to meet the adopted standards.'' [150] The NESCAAF Report included, for each of the five vehicle categories, a table showing several promising technology packages, for each of the three time frames (near-, mid-, and long-term), their resulting CO_2 reductions, and expected costs.[151] Additionally, for the long-term phase of the standards (2015–2016), CARB projects that there will be increased market penetration of hybrid-electric vehicles and advanced multi-mode diesel vehicles.[152] In its December 2005 request letter, CARB discussed how improvements will occur, as it expects ''that a manufacturer would plan for a rollout of new technologies that would begin in 2009 and then build on the initial efforts with additional near and mid-term technologies that would be commensurate with previous investments.''[153]

For air conditioning systems, GHG emissions are either direct or indirect. Direct emissions are the result of normal leakage of the air conditioning refrigerant from the system over time, as well as leakages that occur because of vehicle accidents, poorly performed maintenance, or improper refrigerant recovery prior to vehicle scrappage. Air conditioning refrigerants used in vehicles today are typically a hydro-fluorocarbon (HFC), which is a very strong GHG. Indirect emissions are the additional CO_2 emissions from the engine which occur because of the added load on the engine from operation of the air conditioning system. CARB, using the modeling in the NESCAAF Report, projected that CO_2 equivalent reductions could result from these improvements in the air conditioning system: improved variable displacement compressor with revised controls, improved low-leak systems, and the use of an improved refrigerant.[154]

CARB notes that alternative fueled vehicles generally can help reduce GHG emissions by: (1) Direct reduction of GHG emissions because the alternative fuels will produce fewer GHG emissions, and (2) indirect reductions in GHG emissions because of the decreased upstream emissions. Upstream emissions are well-to-tank emissions, including the fuels' extraction, processing, distribution and marketing. The alternative fuels which result in GHG reductions are CNG, LPG, ethanol (including E85), electric, and hybrid-electric.

In its ISOR, CARB identified exhaust catalyst improvement as another technology area that could lead to GHG emission reductions, specifically the reduction of methane and nitrous oxide (N_2O). These gases are greenhouse gases just like CO_2, but their mass emissions from motor vehicles are very small compared to CO_2. CARB notes that ''although it is conceivable that these methane and N_2O emissions could be reduced by faster catalyst heating at vehicle start-up and enhanced catalysts systems with higher surface density or higher and/or revised catalyst loadings, staff is not aware of such efforts at this time (August 2004).'' [155] There were no further submissions to the record by CARB or any other party on this particular technology area.

3. CARB's Updates on Technological Development

At the time of the first set of EPA hearings on the CARB waiver request, in April 2007, CARB presented additional information to bolster its assertions on technological feasibility to highlight developments in GHG technology since CARB originally submitted its request to EPA in 2005. CARB summarized the recent developments and additional examples of real-life implementation of the technologies identified in its waiver request. In its comments following the April 2007 hearings, and its July 2007 letter responding to post-hearing comments, CARB offered additional information to bolster their GHG technology projections. Generally, CARB pointed to numerous instances in which many of the near-term and mid-term technologies have been applied in vehicles which have been produced in the years since 2004 (when the CARB standards became final) right up to mid-2007. For example, attached to additional comment letters it submitted to EPA's Docket in June and July 2007, CARB discussed the increased use of the GHG technologies discussed in the ISOR and provided summaries of GHG technology used in 2007 and 2008 model year vehicles showing increased use of all the near-term and mid-term technologies.[156] CARB also offered numerous examples, contained in manufacturer news releases and advertisements, and trade press stories, illustrating real-life adoption of the GHG technologies in both domestic and foreign manufacturers' vehicles.[157]

At its March 5, 2009 hearing following EPA's decision to reconsider its previous denial, CARB presented additional new information highlighting developments in GHG technology since the last opportunity to submit public comment on this issue. In addition, some environmental groups submitted testimony and comments in support of the CARB finding of technological feasibility of the GHG standards. This next section will summarize the technological feasibility information submitted by CARB and other parties. CARB noted that the manufacturers were employing the individual GHG-reducing technologies as well as the packages of those technologies CARB had projected as viable compliance pathways as early as 2004. CARB also noted that in addition to phasing-in technologies, as CARB had originally predicted, manufacturers were using other technologies that CARB did not rely on originally—including increased hybrid sales, downsized turbocharged engines in light truck lines, a large influx of diesel vehicle sales, and improved air conditioning systems. In some cases, the resulting reductions produced as much as 10% of the GHG reductions needed for manufacturers' fleet averages to meet the CARB standards.

CARB also cited to recent EPA studies on technological feasibility and costs for

[149] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44 at 59–60.

[150] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 34.

[151] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 27 and 35, and OAR–2006–0173–0010.44 at 59.

[152] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 27.

[153] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 35–36.

[154] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44 at 69–73, and EPA–HQ–OAR–2006–0173–0004.1 at 22–23.

[155] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.44 at 78–79.

[156] California Air Resources Board, EPA–HQ–OAR–2006–0173–1686, Attachments 84 and 85.

[157] California Air Resources Board, EPA–HQ–OAR–2006–0173–1686, Attachments 86 through 93 and 103, 104, 114, and California Air Resources Board, EPA–HQ–OAR–2006–0173–3601, Attachments 173–177.

GHG reductions in motor vehicles, conducted by EPA in 2007. These EPA reports were discussed in EPA's Advanced Notice of Proposed Rulemaking on Regulating Greenhouse Gas Emissions Under the Clean Air Act published on July 30, 2008.[158] The findings in these studies were very consistent with the technological feasibility, cost and lead time estimates from the CARB ISOR in 2004.

Three EPA studies were referenced by CARB. First, CARB discussed the June 2008 document ''Vehicle Technical Support Document: Evaluating Potential GHG Reduction Programs for Light-Duty Vehicles (Light-Duty Vehicle TSD).'' [159] The Light-Duty Vehicle TSD represented EPA's assessment during 2007 of how a light-duty vehicle program for GHG emission reductions under the Clean Air Act might be designed and implemented, with two program options: either (1) a fixed percentage reduction (4%) in CO_2 emissions per model year from 2011 to 2018, or (2) an annual reduction in CO_2 emissions per model year from 2011 to 2018, based on a model developed by the Department of Transportation's Volpe Center, establishing CO_2 emission standards, at the point the model projects maximum net benefits for those model years.[160] The Light-Duty Vehicle TSD collected information from a wide range of sources, including a 2002 National Academy of Sciences report, the 2004 NESCAAF report (also used by CARB), current technical literature, and information from vehicle manufacturers and automotive suppliers. CARB noted that the emission reduction potentials and costs in the EPA study were similar to the reduction potentials and costs estimated by CARB in its ISOR. In discussing the Light-duty TSD in the ANPRM, EPA also acknowledged that, based on enhancements to the Volpe Model later in 2007, the earlier EPA analysis ''tended to underestimate the benefits and/or overestimate the costs of light-duty vehicle CO_2 standards that could be established under the CAA.'' [161]

CARB also referenced the March 2008 ''EPA Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-duty Vehicle Carbon Dioxide Emissions.'' This report presented the EPA staff assessment of costs and effectiveness of over 40 CO_2 reduction technologies in the categories of engines, transmissions, hybrids, accessories and other technologies (*e.g.,* aerodynamic improvements). EPA noted that the majority of the technologies investigated are in production and available on current vehicles, either in the U.S., Europe or Japan. As part of that report, EPA worked with an internationally recognized automotive technology firm to perform a detailed vehicle simulation modeling study of the GHG reduction effectiveness of a number of advanced automotive technologies. As noted by CARB, the EPA Report obtained technology package reductions and cost estimates very similar to those in the CARB ISOR.[162] As in the earlier Light-Duty TSD, EPA noted that the estimates in this report are conservative because they rely on data sources from one to six years old and declared that the ''automotive industry is a technology-driven industry, and new technologies are developed and introduced quickly. A number of technologies which have only recently been introduced or will be within the next year are likely to see improvements in their effectiveness and cost reductions beyond what we estimate (in this report).'' [163]

Finally, CARB referenced an EPA staff technical memorandum ''Documentation of Updated Light-duty Vehicle GHG Scenarios,'' dated June 23, 2008.[164] This memorandum summarized the staff work to update the ''4% per year'' GHG reduction scenario that was first documented in the Light-duty Vehicle TSD, by addressing some of the deficiencies of the earlier study,[165] and was discussed in the ANPRM for GHG Standards. EPA once again noted that because the updated analysis did not address all the issues identified in the earlier TSD, it continued to believe that the results of this updated analysis are conservative, tending to overestimate the costs and/or underestimate the benefits. In its most recent comment, CARB noted that the EPA lead time estimates in EPA's ANPRM cite implementation rates supportive of CARB's estimates for implementing vehicle GHG reducing technologies.[166]

CARB summarizes the reports from EPA, NESCAAF and others by declaring that ''the technologies examined are well known and most are already being implemented on today's vehicles, while the others are simply advanced versions of conventional technologies that are already being demonstrated by vehicle manufacturers and component suppliers.'' [167] To bolster this statement, CARB submitted a list of Model Year 2009 vehicles which employ GHG reduction technologies, which shows a gradual phasing-in of these technologies across all manufacturers and all product lines. CARB also submitted a list showing 2009 Model Year vehicles that comply with the CARB GHG standards; the list shows significant numbers of 2009 passenger cars and light trucks meeting the 2012 and later standards, significantly ahead of the deadlines.

With respect to the overall technological feasibility of its GHG standards, CARB believes that it has reasonably projected technological feasibility, consistent with the approach employed in the *NRDC* decision, when manufacturers have several years of lead time before compliance. CARB notes that it ''either has demonstrated that the necessary technologies presently exist to meet the established standards or we have specifically identified the projected control technologies, answered objections raised by industry regarding those technologies, and explained why we believe that each of the steps can be completed in the time available.'' [168]

In support of its conclusion, CARB submitted for the record three analyses showing that the manufacturers are employing the GHG technologies at least as fast as CARB predicted, and certainly in time for compliance with the early model years. First, CARB did an ''industry-wide'' projection using manufacturers' 2009 sales projections and worst case CO_2 values per single test vehicle, and used the 2009 projected sales as unchanged for 2010 and 2011 model years.[169] The results of this analysis show industry-wide GHG

[158] Advanced Notice of Proposed Rulemaking, Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 FR 44354 (July 30, 2008).

[159] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.5.

[160] This approach uses a computer model developed by the Department of Transportation Volpe Center called the ''CAFE Effects and Compliance Model'' (''Volpe Model'').

[161] This EPA assessment of the Light-Duty Vehicle TSD was contained in the Advanced Notice of Proposed Rulemaking, Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 FR 44354, at 44444 (July 30, 2008).

[162] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006, at 21.

[163] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.6. at 1.

[164] California Air Resources Board, EPA–HQ–OAR–2007–0173–9019.7.

[165] For example, this updated analysis included factors such as consideration of multi-year planning cycles available to manufacturers, consideration of CO_2 trading between car and truck fleets within the same manufacturer, and inclusion of plug-in hybrids as a viable technology beginning in 2012. Advanced Notice of Proposed Rulemaking, Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 FR 44354, at 44444 (July 30, 2008).

[166] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006, at 21.

[167] *Id.*

[168] *Id.* at 23.

[169] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.12.

credits for 2009 and 2010 and a debit for 2011, but an overall credit for the three-year period. CARB noted that because this was done on a worst-case testing basis, it is likely that testing with additional vehicles in each test group would show even the debiting companies in compliance.[170]

Second, CARB looked at the compliance projection for the major domestic manufacturers (Ford, GM and Chrysler) for the 2009 and 2010 model years.[171] CARB used the actual 2009 model year registration data (from Polk) and, then, applied CO_2 emissions data by vehicle model obtained from EPA, selecting the highest CO_2 emissions data for those vehicle models with multiple engines. The results showed that for the 2009 model year, GM and Ford have ample compliance margins for both PC/LDT1 and LDT2/MDV, while Chrysler has a debit for its PC/LDT1 fleet, but a wide margin for its LDT2/MDV fleet. The overall net result is compliance for all three companies. For 2010, the three companies run debits for PC/LDT1 but have compliance margins for LDT2/MDV (a small margin for GM, and substantial margins for Ford and Chrysler). Again, based on the use of accumulated credits, these companies would comply with the model years analyzed.

Third, CARB focused on just GM for the 2009 model year, using a different technique than their study directly above.[172] CARB used certification data provided by GM, projected sales based on GM's latest manufacturer update to CARB, and CO_2 results provided by EPA. Then each GM certification test group was divided by GM into sales sub-groups, each having one or several vehicle models. For each sub-group, the CO_2 emissions of the highest emitting model were multiplied with the total number of vehicles in the subgroup to calculate the sub-group's GHG value. The GHG values from all sales subgroups in a test group were summed up to represent the sales group GHG value. For the 2009 model year, under this analysis, the GM PC/LDT1 fleet over-complies by 14 grams per mile and the LDT2/MDV fleet over-complied by 27 grams per mile, generating substantial credits for 2010 and beyond.

Additional support for 2009–2011 compliance was provided by the Natural Resources Defense Council. At EPA's March 5, 2009 waiver hearing, NRDC presented testimony regarding the technological feasibility of the GHG standards for the early years of compliance. NRDC performed its analysis by using EPA fuel economy trends data for MY 2008, which predicted a national average fuel economy level without CAFE credits for flexible fuel vehicles. NRDC then converted the miles per gallon numbers to CO_2 grams per mile levels using the California sales mix and the GHG conversion established by CARB. The result is that industry accrues substantial amount of credits in 2009 and 2010, and then runs a small deficit in 2011 that can be easily made up using banked credits from the first two years.[173]

Beyond submitting results from its own recent analyses, CARB submitted a very recent (March 2009) study by Energy & Environmental Analysis (EEA) entitled ''Automakers Ability to Comply with California GHG Standards Through 2012.'' [174] The EEA study notes that, if the California waiver is granted, manufacturers would be required to comply with standards for MY 2009 vehicles, which are already in production and being sold, and would have very little lead time to make changes for MY 2010 (which will start production in mid-calendar year 2009), and limited opportunity to make changes at this point for MY 2011 and 2012. EEA looked at the product plans for the ''Big Six'' manufacturers in the U.S. (GM, Ford, Chrysler, Toyota, Honda and Nissan) based on commercially available data, and from public information reported in the trade press, as well as the information submitted by the manufacturers to the Federal government in connection to the auto restructuring plans.[175] Generally, because of projected large sales of hybrids and to a lesser extent, sales of diesel vehicles, EEA projected that Toyota and Honda will meet California GHG standards through 2012, and that Nissan may have a shortfall in LDV/LDT1 for 2012, but will easily comply with LDT2/MDV in 2012, and will be able to meet the 2012 standards by trading between categories and using banked credits from prior years.

For the domestic manufacturers, EEA noted concerns about compliance with the California GHG standards, in part because these companies have Federal CAFE values which are significantly below the three Japanese companies, meaning that it will be harder for them to reach the target. Nevertheless, the EEA report noted that the product plans of these companies show the following industry-wide technology improvements coming on line in the next 4 to 5 years:

—Luxury vehicles adopting GDI across most product lines;
—4 valve OHC/DOHC engines with VVT replacing the few remaining 2-valve OHC 4 and 6 cylinder engines;
—6-speed transmissions replacing 4 or 5 speed units in most mass market vehicles
—Electric power steering replacing hydraulic units in compact and mid size cars;
—Cylinder cut-out applications to V–8 and some V–6 units;
—Variable valve lift used more widely by Japanese manufacturers;
—Introduction of several new diesel models and hybrid models by all manufacturers;
—Introduction of new small ''crossover'' SUV and car models that are one size class below the existing smallest models offered by the domestic manufacturers to compete with the Toyota Scion XD and XB models and the Honda Fit model.

To perform the GHG estimate, the EEA study used the actual fuel economy data by vehicle model for MY 2009, and used the product-plan based technology forecasts to derive fuel economy by model for MY 2010 through 2012. For sales numbers, EEA used 2008 sales data and sales for the first two months of 2009 both nationally and for California as sales indicators for the near term (MY 2009 and 2010). For 2011 and 2012, EEA used the sales forecast it had developed in the 2008 DOE study, which was a 15 million annual sales level of light duty vehicles nationally. The power train mix numbers (engine/transmission combinations) for all years were the 2008 numbers because this was the latest data available from the CAFE data base.

Using this approach, EEA found that all three domestic manufacturers are in

[170] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006 at 24.

[171] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.13. CARB limited this particular analysis to the domestic manufacturers because, in its assessment, ''the international auto companies are better positioned to comply and will unquestionably meet early model year standards.'' As summarized in the first (industry-wide) CARB analysis, although at least one international manufacturer (BMW) projected a slight debit for 2009, all the manufacturers were projected for overall compliance for the period 2009–2011.

[172] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.14.

[173] Natural Resources Defense Council, EPA–HQ–OAR–2006–0173–7176.13, at 5–6. The NRDC testimony also noted that developments in the period between the first waiver hearing (May 2007) and the new hearing strengthen the California case that the GHG standards are cost-effective and technically feasible—namely, higher gas prices, the market shift to cleaner cars and the passage of new Federal fuel economy standards.

[174] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.15.

[175] EEA completed a detailed study of product plans for the Big Six manufacturers for the U.S. Department of Energy in late 2008, and they used that study as a baseline for this report on California GHG compliance.

compliance with current and expected CAFE through 2012, with Chrysler lagging somewhat behind Ford and GM. EEA then translated these forecasts to GHG forecasts for the California vehicle class definitions, assuming no A/C improvement credits or alternative fuel credits, and no trading of credits between manufacturers, and predicted as follows:

—All manufacturers will comply with GHG requirements for 2009;
—GM and Chrysler will comply with GHG regulation in 2010 while Ford is on the edge of compliance. Ford can likely comply by either using banked credits from 2009 or with small adjustments to the power train and sales mix sold in California if necessary;
—Chrysler and GM may be able to meet 2011 GHG standards using banked credits from 2009 and 2010 and credit trading between classes. All three manufacturers could require additional efforts such as air conditioner improvements to comply with 2011 GHG requirements.
—Compliance with 2012 GHG requirements will be a challenge and may require credit trading and banked past and future credits over and above credits from air conditioner improvements and introduction of alternative fuel vehicles.
—The results appear to be very realistic based on the auto-manufacturers public statements of future fuel economy.[176]

Regarding the long-term (MY 2012 and later) outlook, CARB compared the restructuring plans submitted by the automakers to the arguments manufacturers made in this proceeding, regarding later model year feasibility. CARB stated that ''by 2015, even those manufacturers facing the most difficult challenge complying with California's standards have made statements that on their face show they plan to comply with the later model years standards, even before receiving additional credit for GHG reductions from air conditioning improvements and regardless of 2009 and 2010 credits carrying forward.'' [177] For example, CARB cited from the GM restructuring plan that the company stated that it will work to develop any changes needed to * * * meet such additional requirements as California's.[178] Further, at EPA's March 5, 2009 hearing, NRDC pointed out that the plans of both GM and Ford show MY 2012 fuel economy levels for cars and light trucks fleet average that come very close to allowing the automakers to comply with the GHG standards with little or no additional effort.[179] Additionally, CARB noted that Chrysler stated that, should this GHG waiver be granted, the company would try its best to comply using available technology; however, as a last resort it might restrict sales of certain vehicle models in California and other states adopting the California standards, out of necessity.[180] Finally, regarding Ford, NRDC stated in its testimony that Ford plans to improve the average fuel economy by 26 percent by 2012 and by 36 percent by 2015.[181]

4. Manufacturers' Comments on the Technological Feasibility of the GHG Standards

Manufacturers raised arguments regarding the feasibility of the CARB GHG standards both in the underlying rulemaking in California, and in the EPA waiver proceeding. In the CARB rulemaking, the manufacturers generally criticized some aspects of the CARB modeling work that substantiated CARB's conclusions on technological feasibility. For example, a manufacturer argued that CARB overestimated the emission reductions from the powertrain changes in many of the technology packages used in the modeling studies, such as the NESCAAF study. Because the studies assumed changes in the use of advanced transmissions and engines in such a magnitude to be unrealistic for the U.S. fleet, the manufacturer stated that the changes would require retooling of all U.S. driveline plants, perhaps more than once.[182] Manufacturers also argued that the modeling of technology packages risked ''double-counting'' emission benefits produced by the individual technologies, thus producing an unrealistic estimate of emission reductions.[183] CARB responded to these comments by stating that manufacturers were already planning to incorporate advanced transmissions and engine technologies in their vehicles, and that the gradual phase-in of the CARB standards allowed manufacturers to accomplish this during regular scheduled vehicle upgrades. CARB also noted that its modeling done by AVL specifically avoided double-counting (while some manufacturers' modeling did not).

Regarding the EPA waiver proceeding, while the manufacturers did take issue with some of the CARB modeling work during the CARB rulemaking, the manufacturers did not challenge CARB's general conclusions that the necessary technology presently exists to meet the near-term standards, that projected control technologies for future years have been identified, and that objections raised by industry have been answered. Rather, the industry offered an assessment that much of this technology is already at hand. At the first EPA hearing in March 2007, although no individual manufacturer presented testimony, the Alliance of Automobile Manufacturers discussed the progress of the industry in producing more fuel-efficient vehicles. The Alliance stated that ''every model available today is equipped with some kind of fuel efficient technology, including direct fuel injection, variable valve timing, continuously variable transmissions, cylinder deactivations, and more.'' [184] These technologies in the 2007 and 2008 MY vehicles are among those that CARB projected as being in use for the near-term GHG standards (see above discussion on ''Overview of Technologies and Their Projected Applications,'' section VI.B.2).

In comments sent to EPA after the March 2007 hearing, the industry commenters focused on whether there was adequate lead time to comply with the near-term standards, citing testimony from a CARB official (in the Vermont litigation) that some manufacturers may need up to six years to comply with the 2011 MY standards and up to 7 years to comply with the 2012 MY standards.[185] Also, the industry criticized CARB for not providing sufficient information on some technology issues for the EPA (or the public) to make an informed decision.[186] CARB responded to these

[176] California Air Resources Board, EPA–HQ–OAR–2006–0173–9019.15.

[177] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006, at 27.

[178] California Air Resources Board, EPA–HQ–OAR–2006–0173–9021.1, at 21.

[179] Natural Resources Defense Council, EPA–HQ–OAR–2006–0173–7176.13, at 4.

[180] California Air Resources Board, EPA–HQ–OAR–2006–0173–9020.2, at U116, and California Air Resources Board, EPA–HQ–OAR–2006–0173–9020.3, at 118–120.

[181] Natural Resources Defense Council, EPA–HQ–OAR–2006–0173–7176.13, at 4, citing from Ford Motor Company Business Plan, Submitted to the House Financial Services Committee, December 2, 2008.

[182] California Air Resources Board, EPA–HQ-OAR–2006–0173–0010.116, Comment 154 (at 107) and Comments 158–159(–115).

[183] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.116, Comment 162 at 117.

[184] Testimony of Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–0422, at 98.

[185] Association of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1455.2 at 11–12. The litigation in Vermont is *Green Mountain Chrysler-Plymouth Dodge-Jeep* v. *Crombie,* 508 F. Supp, 295 (D. Vt.).

[186] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–1297.2 at 35–36.

points, stating that the CARB official also testified that most of the CARB-identified technologies are already developed and required only a few years of lead time for implementation. Additionally, based on lead time beginning at the time of the final adoption of the standards by CARB (August 2005), CARB notes that the 6 or 7 year lead time for the 2011 and 2012 model years respectively is reasonable.[187] CARB also provided, in its June 2007 and July 2007 comments, information from the Vermont litigation where various manufacturers testified that they would be able to meet the early years of the California GHG standards.[188] Concerning the list of technical issues on which the industry claimed CARB had not provided enough information to allow public comment, CARB stated that these issues were among many issues previously addressed fully both in submissions to the Docket (primarily the CARB Final Statement of Reasons) as well as in the Federal litigation.[189]

Manufacturers also presented information on technological feasibility at EPA's March 5, 2009 hearing and the subsequent comment period. At the EPA hearing, the Alliance continued to acknowledge technological advances in GHG control. The Alliance stated that ''automakers have made major contributions into developing new fuel efficient technologies and the results are now coming to dealer showrooms. More than 50 technologies offered in vehicles today reduce emissions, increase mileage and allow vehicles to run on cleaner fuels.'' [190] Regarding technological feasibility for the early years (near-term), the industry trade groups generally argued that CARB relied on manufacturer credits for these years to provide a cushion for compliance in the later years, but that the several years of lead time required for mid-term compliance combined with uncertainty resulting from the EPA waiver denial makes even the near-term lead time inadequate.[191] CARB, in its testimony and subsequent comments, presented its new analyses of compliance (for the industry in general, and for GM) that showed industry compliance is likely if not certain for the 2009 through 2011 model years (see discussion above at section VI.B.3.). Additionally, if any individual manufacturers incur a debit in any model year, the CARB regulations provide the manufacturer up to five model years afterwards to make up the debit to avoid any noncompliance penalty.

Regarding the mid-term (2012–2016) model years of the GHG standards, the industry commenters have argued that the only means by which most large-volume manufacturers will be able to meet the CARB standards is by ''mix-shifting'' their product lines to offer for sale more higher mileage vehicles to ensure meeting the CARB fleet average.[192] The Alliance stated that ''it is simply too late for manufacturers to meet all the Pavley standards for future model years through the use of technologies, if for no other reason than because approximately 18 months of the product planning and development cycle was pretermitted while the waiver was denied (assuming for purposed of this analysis that a waiver would be granted in June 2009).'' [193] As discussed earlier, CARB responded to these arguments by noting that in the restructuring plans recently submitted to the government, the manufacturers have made statements demonstrating they plan to comply with the later model years of the CARB standards, even before receiving additional credit for GHG reductions from air conditioning improvements and regardless of 2009 and 2010 credits carrying forward. Regarding the manufacturers' mix-shifting argument, EPA notes that under the narrow standard of review applied to California's technological feasibility determinations, consistency with section 202(a) does not mean that all manufacturers will be able to sell all vehicle models in California and that a reduced product offering in California resulting from California emission standards is a policy decision left to the state.[194]

C. Technological Feasibility and the Cost of Compliance

1. Historical Approach

Congress has stated that the consistency requirement of section 202(a) relates to technological feasibility.[195] Section 202(a)(2) states, in part, that any regulation promulgated under its authority ''shall take effect after such period as the Administrator finds necessary to permit the development and application of the relevant technology, considering the cost of compliance within that time.'' Section 202(a) thus requires the Administrator to first review whether adequate technology already exists, or if it does not, whether there is adequate time to develop and apply the technology before the standards go into effect.

In *MEMA I,* the court addressed the cost of compliance issue at some length in reviewing a waiver decision. According to the court:

> Section 202's cost of compliance concern, juxtaposed as it is with the requirement that the Administrator provide the requisite lead time to allow technological developments, refers to the economic costs of motor vehicle emission standards and accompanying enforcement procedures. *See* S. Rep. No. 192, 89th Cong., 1st Sass. 5–8 (1965); H.R. Rep. No. 728 90th Cong., 1st Sass. 23 (1967), *reprinted in* U.S. Code Cong. & Admin. News 1967, p. 1938. It relates to the timing of a particular emission control regulation rather than to its social implications. Congress wanted to avoid undue economic disruption in the automotive manufacturing industry and also sought to avoid *doubling or tripling* the cost of motor vehicles to purchasers. It, therefore, requires that the emission control regulations be technologically feasible within economic parameters. Therein lies the intent of the cost of compliance requirement.[196]

Previous waiver decisions are fully consistent with *MEMA I,* which indicates that the cost of compliance must reach a very high level before the EPA can deny a waiver. Therefore, past decisions indicate that the costs must be excessive to find that California's standards are inconsistent with section 202(a).[197] It should be noted that, as with other issues related to the determination of consistency with

[187] California Air Resources Board, EPA–HQ–OAR–2006–0173–3601, at 26–27.

[188] CARB referenced the industry assessments of early model year compliance from the litigation in Vermont, *Green Mountain Chrysler-Plymouth Dodge-Jeep* v. *Crombie,* 508 F. Supp, 295 (D. Vt.), California Air Resources Board, EPA–HQ–OAR–2006–0173–1686 at 20–21, California Air Resources Board, EPA–HQ–OAR–2006–0173–3601, at 27–28.

[189] The list of issues and the CARB response are discussed in the CARB July 2007 letter. EPA–HQ–OAR–2006–0173–3601, at 26.

[190] Testimony of Association of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–7177, at 108.

[191] Association of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994.1, at 24–25; Association of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–9005.2 at 4.

[192] Regarding mix-shifting, the National Automobile Dealers Association also commented that this would be costly to dealers who would lose business due to the ''scrappage effect'' (see above pp 46–49), being forced to accept smaller vehicles regardless of local consumer demand, rationing of larger vehicles, and out-of state dealers unencumbered by CARB's regulations. National Automobile Dealers Association, EPA–HQ–OAR–2006–0173–8956.1, at 8–9.

[193] Association of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994.1 at 26.

[194] 40 FR 23102, 23103 (May 28, 1975).

[195] H.R. Rep. No. 95–294, 95th Cong., 1st Sess. 301 (1977).

[196] *MEMA I* at 1118 (emphasis added). *See also id.* at 1114 n. 40 (''[T]he 'cost of compliance' criterion relates to the timing of standards and procedures.'').

[197] *See, e.g.,* 47 FR 7306, 7309 (Feb. 18, 1982), 43 FR 25735 (Jun. 14, 1978), and 46 FR 26371, 26373 (May 12, 1981).

section 202(a), the burden of proof regarding the cost issue falls upon the opponents of the grant of the waiver.

Consistent with *MEMA I,* the Agency has evaluated costs in the waiver context by looking at the actual cost of compliance in the time provided by the regulation, not the regulation's cost-effectiveness. Cost-effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically, has deferred to these policy decisions. EPA has stated in this regard, ''the law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209 * * *'' [198] Thus, under the language of section 202(a)(2), EPA will look at the compliance costs for manufacturers in developing and applying the technology with the costs being broken down on a cost per vehicle or unit basis.

2. Technology Cost Information in This Proceeding

At the time of CARB's original waiver request, CARB presented the projected technology costs for the GHG vehicle standards based on cost estimates for necessary components provided by Martec, the company that did the modeling studies that produced the CARB technology assessment in its ISOR. The costs were calculated by applying a mark-up factor, determined by the Argonne National Laboratory, for the components needed for the vehicles. Additionally, CARB assumed an additional 30% discount for a limited number of components where unanticipated improvements in production processes or simplifications or consolidation in parts after additional further development would be likely.[199]

At that time, CARB stated that the average cost of control for near-term technology packages on PC/LDT1 category vehicles was estimated at $383 per vehicle, and for LDT2/MDV category vehicles was estimated at $327 per vehicle. Performing similar calculations for the mid-term technology packages, CARB put the estimates for PC/LDT1 at $1,115, and for LDT2/MDV at $1,341. CARB also presented information on the estimates of costs for the ''major 6'' manufacturers cost of compliance over the term of these standards. These figures ranged from $0 (for the three Japanese companies and GM) for the 2009 MY (*i.e.,* the fleets of these companies would comply with the 2009 standards with no changes) to the highest costs in the 2016 MY, with a $1,288–$1,341 range for the domestic manufacturers and a $272–$298 range for the Japanese manufacturers.

During the CARB GHG rulemaking, the manufacturers commented that CARB underestimated costs of individual technologies because CARB did not use the manufacturers' costs to individually develop each of the technologies, and CARB used a mark-up factor for final technology cost that was too low. The Alliance commissioned a study by Air Improvement Resources, NERA Economic Consulting, and Sierra Research (the above noted ''June 2007 AIR/NERA/Sierra Study'') that found the average vehicle cost increase to be about $3000, several times larger that the CARB estimates. In response, CARB provided a detailed critique of why the cost conclusions in this study were not reasonable. CARB found faulty technical analysis and inflated component costs.[200] In the time period since the CARB request, CARB has updated its technology cost estimates with new real-life information to show that manufacturers are continuing to implement the GHG technology packages and combinations CARB had identified at the outset—at costs in line with CARB's projections.[201]

EPA also received comments from the National Auto Dealers Association (NADA) and the National Association of Minority Automobile Dealers (NAMAD) concerning the costs of the CARB standards to its constituents, above the costs that GHG technology adds to the vehicle price to buyers. NADA notes that because of ''dire financial straits'' in the auto industry due to the economic recession, dealers are experiencing financial difficulties from vastly reduced vehicle sales (among other problems). NADA believes that if this waiver is granted, and the various other states which have adopted the GHG standards begin their own programs, the result will be a ''state-by-state patchwork approach to fuel economy that would fill their lots with more unsold vehicles.'' [202] NAMAD believes that ''dealer will lose sales if automakers have to ration delivery of large vehicles in CARB (Section 177) states to meet the fleet average, and * * * if dealers are forced to take delivery of more small cars that their customers don't want, dealers will be stuck paying the interest charges while these vehicles sit on their lots.'' [203] EPA notes the comments of NADA and NAMAD on this particular type of cost, but also notes that these comments are not relevant to the issue of whether the technology feasibility of the GHG standards are consistent with section 202(a). The comments regarding the ''patchwork'' of the GHG standards in other states are discussed below in section VII. B. 2.

3. Consistency of Certification Test Procedures

The enforcement procedures that accompany California's greenhouse gas standards would also be inconsistent with section 202(a) if the California test procedures impose testing requirements inconsistent with the Federal testing requirements. Such inconsistency means that manufacturers would be unable to meet both the California and the Federal test requirements with the same test vehicle.[204]

CARB stated in its December 2005 Waiver Request letter that there ''are no Federal test procedures that measure GHG for climate change purposes, [so] there are no potential inconsistencies precluding a manufacturer from using the same test vehicle to meet both Federal and California requirements'' and noted in its most recent (April 2009) comment letter that this was still true.[205]

EPA received no comments suggesting that CARB's GHG testing requirements pose a test procedure consistency problem with federal test procedures.

4. Safety Implications of the CARB GHG Standards

The industry raised a vehicle safety issue for consideration within the technological feasibility criterion. The industry has proffered the idea that the CARB GHG standards will result in the production of vehicles which will be unsafe for two reasons. First, they claim

[198] 36 FR 17158 (August 31, 1971). *See also* 40 FR 23102, 23104; 58 FR 4166 (January 7, 1993), LEV Waiver Decision Document at 20.

[199] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 40.

[200] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.116 at 141–155.

[201] California Air Resources Board, EPA–HQ–OAR–2006–0173–1686 at 19, and EPA–HQ–OAR–2006–0173–3601 at 28–29. CARB also notes that in the Green Mountain case, 508 F. Supp. 2d at 365–366, the Court found that the industry consultant's (T. Austin) baseline assumptions and resulting cost estimates—double that of defendants' expert—were unsupported by the evidence.

[202] National Automobile Dealers Association, EPA–HQ–OAR–2006–0173–8956.1 at 5–6.

[203] Testimony of National Association of Minority Automobile Dealers, EPA HQ–OAR–2006–0173–7177, at 126–127.

[204] *See, e.g.,* 43 FR 32182 (Jul. 25, 1978).

[205] California Air Resources Board, EPA–HQ–OAR–2006–0173–0004.1 at 42 and EPA–HQ–OAR–2006–0173–9006 at 29.

that many GHG-compliant vehicles will achieve compliance because they will be downsized, and will be inherently less safe in collisions. Second, they claim that because GHG-compliant vehicles will also have higher fuel economy than today's fleet, owners will drive more, and that additional VMT means more accidents will occur. The industry asserts that because the GHG standards will cause these problems, the resulting vehicles are technologically infeasible because of the safety concerns.

EPA takes safety into account in evaluating technology, feasibility and lead time of California emission standards. For example, when CARB in 1994 requested authorization for its original set of emission standards for small spark-ignition engines used in utility, lawn and garden equipment, the industry trade association raised safety concerns in the EPA authorization proceeding. The industry argued that compliance with the CARB standards would require the use of catalyst technology in equipment, and that current catalysts produced high exhaust and surface temperatures, and could also possibly cause sparking and flaming, so these safety issues must be addressed before this technology could become feasible, and the authorization should be denied on that basis. EPA examined these safety issues within the traditional consistency with section 202(a) criterion, with the requisite deference given to CARB and the burden placed on those arguing that safety concerns should give cause for EPA to deny the authorization. CARB responded to the industry objections by offering a detailed review of steps necessary to refine small engine catalyst technology to meet the standards while reducing the high temperature risks, as well as identifying some current small engines that met the standards without using a catalyst. After reviewing all relevant information from CARB and other commenters on the safety issues (and other technological feasibility issues) the Administrator stated he was ''unable to make the finding that the CARB Tier 2 standards are not technologically feasible within the available lead time.'' [206]

In the California GHG proceeding, CARB has responded to the industry safety arguments, both during the underlying California rulemaking and in comments submitted to EPA in this waiver proceeding. In summary, CARB rejected the industry arguments in several ways. First, it pointed out that under the terms of AB 1493, CARB is precluded from requiring vehicle down-weighting as a means of achieving compliance. Second, CARB has laid out a broad pathway of potential technologies for achieving compliance for all vehicle types, none of which require any weight reduction of vehicles. Third, CARB notes that an industry study (Sierra 2004) shows that weight reduction is far from cost-effective and therefore becomes an unlikely compliance option. Fourth, CARB submitted reports from experts that tend to dispute any safety impacts from the GHG standards by demonstrating that any weight reduction that may be made to comply with the GHG standards need not adversely affect vehicle safety. Finally, the opponents VMT safety theory is entirely based on their flawed rebound and fleet turnover arguments (discussed above in section IV.C.2).

Regarding the safety issue, EPA notes that CARB has provided considerable evidence that its GHG standards can be met without any increase in concern regarding vehicle safety. Even accepting the industry arguments regarding the safety implications of downsizing—which are disputed by CARB, particularly for downsizing of larger vehicles—EPA cannot make the finding that the CARB standards are technologically infeasible because manufacturers may choose to use a method of compliance that is not as safe as the methods CARB has identified, particularly where there are many business reasons for manufacturers not to choose such a method. The burden, here, is on manufacturers to demonstrate that safety concerns with the technology available for compliance were unavoidable and substantial and that manufacturers would have no reasonable technological option available to them in the lead time provided for compliance. Based on the entire record, they have not made such a demonstration. Beyond this limited type of review under section 209(b), EPA's proper role is to leave for California the judgment of what greenhouse standards are appropriate in light of safety concerns raised by manufacturers.

With regard to the claim that increased VMT will increase the number of accidents, this argument is not relevant to the safety of the vehicle but to an outcome based on the possible actions or changes of driving patterns of people who own these vehicles. This argument does not go to the technological feasibility of the vehicle itself. This is a public policy argument that is left for California's discretion but is not relevant to the narrow technological feasibility analysis authorized for EPA under section 209(b).

For these reasons, EPA finds that the industry opponents of this waiver request, with respect to the vehicle safety impact of the CARB GHG standards have not met their burden of proof for EPA to find that these standards are not consistent with section 202(a) of the Act.

E. Conclusion on Technological Feasibility

After its review of the information in this proceeding, EPA has determined that CARB has demonstrated a reasonable projection that compliance with its GHG standards is reasonable, based upon the current and future availability of the described technologies in the lead-time provided and considering the cost of compliance. The industry opponents have not met the burden of producing the evidence necessary for EPA to find that California's GHG standards are not consistent with section 202(a).

With regard to motor vehicles required to meet the near-term standards for the 2009 through 2011 model years, the CARB technical information presented in this record clearly indicates that these requirements are feasible. CARB has presented the case that the industry as a whole will be able to meet these standards for this period—for the 2009 and 2010 model years—with compliance with the standards including credit generation, and for the 2011 model year—with a carry-forward of credits earned in the 2009 and 2010 model years. Within the industry, several manufacturers are not expected to need credits to comply in the 2011 model year. Moreover, California has provided several technological avenues that are currently available for meeting the 2011 MY standards without the need for credits. Manufacturers have provided no evidence that these technologies cannot be applied to meet the 2009–2011 MY standards.

For the mid-term standards, 2012 MY and beyond, CARB again identified various and reasonable technological avenues that manufacturers could use to meet the mid-term standards. CARB initially presented that the continued use of technologies identified for the near-term along with more sophisticated technologies and the expected upswing in hybrid-electric and diesel vehicles would result in industry compliance for these years. In its June 2007 comments,

[206] Decision Document, Authorization of California's Under 25 Horsepower Utility Lawn and Garden Equipment Engine Exhaust Emission Standards (ULGE) (July 5, 1995), EPA Docket A–91–01 at 61–70.

CARB noted that it expected manufacturers to use combinations of the initially introduced technologies to meet the mid-term standards and cited several examples of this already happening in several manufacturers' products. CARB also noted that in 2007, manufacturers were aggressively introducing new hybrid vehicles well ahead of the mid-term standards. For the longer term, as noted earlier, CARB states that ''by 2015, even those manufacturers facing the most difficult challenge complying with California's standards have made statements that on their face show they plan to comply with the later model years of standards, even before receiving additional credit for GHG reductions from air conditioning improvements and regardless of 2009 and 2010 credits carrying forward.'' [207]

In its comment submitted after EPA's March 5, 2009 hearing, CARB summarized the industry discussion on technological feasibility as follows:

> In our July 24, 2007 comments CARB stated ''* * * not a single manufacturer from either the Alliance or AIAM has independently presented any substantive comment concerning the principal and proper focus of the (EPA) proceeding—the technological feasibility and lead time for those manufacturers to comply with the subject greenhouse gas standards.'' Document ID No. EPA–HQ–OAR–2006–0173.3601 at 26. That statement remains true today, and stands in stark contrast to the renewed demonstration CARB has made in this reconsideration proceeding.[208]

Regarding the lead time provided by California to meet the near-term and the mid-term and later standards, the commenters have not met their burden to show that the lead time is insufficient. California provided manufacturers 4–5 years before the near-term GHG standards would go into effect and 8–9 years before the later standards, giving substantial time for development of technologies to meet the standards. The industry commenters have not shown that this lead time was insufficient, both for the near-term GHG standards, that were based on technologies already known and developed, as well as for the mid-term GHG standards, where CARB provided a reasonable pathway to be followed—answering theoretical objections, identifying major steps needed to refine technology, and offering plausible reasons for predicting successful technologies.[209]

Regarding the cost component of the technological feasibility test, EPA believes that the opponents of the waiver have not met the burden of proof to show that the GHG standards are not technologically feasible because of excessive cost. The industry cost study (from Sierra Research) from the CARB rulemaking found an average vehicle cost increase of about $3,000 to comply with the CARB standards, an increase which CARB rebutted in detail, and which was also found not credible by the district court in the Vermont litigation. Alternatively, even if the industry estimates were closer to the mark than the CARB estimates, CARB points out that Congress was concerned with standards causing a *doubling or tripling* of vehicle costs (MEMA 627 F.2d at 1118), not the cost increases that CARB has projected (ranging from under $100 for some manufacturers in near-term to a maximum of $1,100 to $1,350 for vehicles in the 2016 MY).[210]

Therefore, for the above reasons, I am unable to find that the CARB GHG motor vehicle emission standards are not technologically feasible within the available lead-time giving consideration to the cost of compliance.

F. Other Issues Related to Consistency With Section 202(a)

1. Impact of EPA's March 6, 2008 Denial on Lead Time

In EPA's February 12, 2009 **Federal Register** notice, EPA specifically sought comment on the effect of the March 6, 2008 Denial on whether CARB's GHG standards are consistent with section 202(a), including lead time.

In comments submitted for this reconsideration, the industry commenters asserted that any lead time clock that may have been running should have stopped completely and immediately upon EPA's March 6, 2008 Denial. Both the Alliance of Automobile Manufacturers and the Association of International Automobile Manufacturers noted that even CARB officials testified that manufacturers should have started development of their 2010–2012 MY product lines at the time the final standards were finalized in the 2004–2005 time frame, and that there should be a presumption that the industry could and would stop ongoing development efforts when this waiver was denied.[211] In its comments, the Alliance noted that it should not be assumed that a ''retroactive'' waiver would impose no hardship because manufacturers are able to earn credits for sales for the 2009 and 2010 MYs in advance of any waiver grant. They claim that the regulated parties would have conducted their business differently if they knew in advance that these regulations would be enforced.[212]

On the other hand, CARB urges EPA to reject the argument that the March 6, 2008 Denial tolled the lead time countdown. CARB noted that it always maintained that it intended to enforce the GHG standards from their start point for the 2009 MY, discussed how it pursued promptly all available avenues to overturn the March 6, 2008 Denial, and noted that the denial was all but guaranteed to be revisited because its waiver request was supported by both candidates for President in 2008. Additionally, CARB argues that any period the March 6, 2008 Denial was in effect was not significant compared to the four to ten years of lead time available to the manufacturers, and that technological advancements continued to appear during the denial period.

The manufacturers argue that EPA's earlier denial was reasonably relied upon by manufacturers, that the denial tolled or suspended lead time and allowed them to stop working towards compliance, which affects the adequacy of the lead-time for California's standards. This amounts to an argument that they reasonably had the opportunity to stop work towards

[207] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006 at 27.

[208] California Air Resources Board, EPA–HQ–OAR–2006–0173–9006 at 29. CARB also noted, that in the final efforts to persuade EPA to deny this waiver, waiver opponents cited policy arguments against the waiver, such as the preference for a uniform national standard to avoid a ''patchwork'' of state regulations, rather than any attack on the technological feasibility of the standards.

[209] Regarding lead time, some industry comments suggest that EPA should count lead time from the time the waiver is granted. EPA, however, believes that lead time should run from the time the rule is adopted by California. As EPA made clear in its waiver decision for California's standards regulating medium-duty motor vehicles (59 FR 48625 (Sept. 22, 1994), Decision Document at 39–41), lead time should generally be measured from the point at which California adopts its regulations. At that point, the regulations, and their obligations on regulated parties, are clear. EPA measures lead time for its regulations from the time of promulgation, which is analogous to California's adoption of its regulations. EPA review of CARB waiver requests causes no more uncertainty than judicial review of EPA regulations. In addition, California and regulated parties do not know when EPA will make a final decision on a request for waiver of preemption, so California would have little ability to evaluate lead time at the time it adopts its standards if lead time were based on a future action by another entity the timing of which is uncertain. In any case, the commenters have not shown that the amount of lead time provided from the date of the waiver is insufficient.

[210] California Air Resources Board, EPA–HQ–OAR–2006–0173–0010.14 at 80–83 and, EPA–HQ–OAR–2006–0173–0004.1 at 39–40.

[211] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994.2 at 27, and, Alliance of International Automobile Manufacturers, EPA–HQ–OAR–2006–0173–9005.2 at 16, Note 4.

[212] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173–8994.2 at 23–25, *see also* National Automobile Dealers Association, EPA–HQ–OAR–2006–0173–8956.1, at 10–12.

compliance at that point if they chose. However it does not change the basic issue before EPA: whether the manufacturers, as opponents of the waiver, demonstrated that the standards are not consistent with section 202(a) because of inadequate lead time.

Based on a review of the entire record, and even assuming the reasonableness of the manufacturers' claim that they could have reasonably stopped work towards compliance upon the March 6, 2008 Denial, the industry commenters have not shown that the lead time provided under these circumstances was insufficient. This is particularly true regarding the near-term GHG standards, which were based on technologies already known and developed. But this is also true for the mid-term GHG standards, where CARB provided a reasonable pathway to be followed—answering theoretical objections, identifying major steps needed to refine technology, and offering plausible reasons for predicting successful technologies.[213] I believe that this is borne out by the evidence submitted to the record by CARB and the NRDC, which show industry-wide compliance with the near-term GHG standards and with future-term compliance attainable using technology developments as well as early credits. Manufacturers have not come forward with evidence to show that they cannot feasibly achieve the near-term or mid-term GHG standards, based on lead time. Although the industry trade association comments generally discussed manufacturers' reliance on the EPA waiver denial to suspend or stop planning for California compliance, no manufacturer came forward and asserted that it actually stopped planning. Whatever disruptions may or may not have occurred as a result of the denial, near-term standards have clearly been shown to be feasible and mid-term standards are clearly feasible given the lead time provided, even taking account of the denial.

Regarding implementation and enforcement by CARB for the 2009 MY, manufacturers claim that approving the waiver for that year would be a retroactive grant of a waiver and would be improper. However, approval of the waiver for the 2009 MY technically would not be a retroactive action. EPA would not be determining that past conduct was or was not lawful when it occurred in the past, or rewriting past legal obligations. The legal obligation at issue is still a future obligation—compliance with the annual fleet-averaging requirements for the 2009 MY standards by the end of 2009, based on sales throughout the year. The fact that some conduct which occurred in 2009 prior to the grant of the waiver is relevant to determining compliance with the 2009 MY obligation, after the end of the model year, does not by itself make the obligation to comply with the 2009 MY standards a retroactive legal obligation. In any case, even if a waiver for the 2009 MY was considered to impose retroactive obligations, EPA has the authority in an adjudication to take such action under appropriate circumstances.[214]

Under these circumstances, all of the evidence presented to date indicates that manufacturers will be in compliance with the 2009 standards. EPA is granting the waiver for 2009 and later years. However, out of an abundance of caution, and since any delay in granting this waiver stems from EPA's prior March 2008 Denial, EPA is imposing one specific limitation designed to ensure that CARB not hold a manufacturer liable or responsible for any noncompliance civil penalty action that could be caused by emission debits generated by a manufacturer for the 2009 model year. For the 2009 model year, CARB can fully implement and enforce its regulations, including implementation of CARB's Executive Orders for 2009 model year families issued both before and after the date of today's waiver, as described below. While debits from model year 2009 may offset credits generated in later years, and reduce the amount of credits available to a manufacturer, any debits from model year 2009 may not be used as a basis for holding a manufacturer in noncompliance and no civil penalties may be assessed based on such debits. Other than that restriction, CARB may fully implement and enforce, and manufacturers may use the GHG standards program as promulgated, such that CARB may implement certification for MY 2009 motor vehicles, and may grant manufacturers credits that can be used for future obligations. This restriction on handling of any possible debits appropriately limits any potential concern raised by manufacturers over their potential reliance upon EPA's previous waiver denial.

2. Endangerment of Public Health or Welfare

a. Is it Appropriate To Review Endangerment of Public Health or Welfare Under the ''Consistency With Section 202(a)'' Criterion?

EPA has traditionally stated that a state standard would be inconsistent with section 202(a) if there is inadequate lead time to permit the development of the necessary technology, given the cost of compliance within that time, or if the Federal and State test procedures impose inconsistent certification requirements.[215] The legislative history of this provision and judicial precedent indicate that technological feasibility in the lead time provided was intended to be the primary focus of this criterion.[216]

However, several industry commenters have suggested that in the context of this waiver, it is also appropriate for EPA to include endangerment to public health or welfare in its evaluation of consistency with section 202(a). They note the language in section 202(a)(1) of the Clean Air Act that requires the Administrator to promulgate standards ''applicable to the emission of any air pollutant * * * which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.''

While acknowledging the limits of EPA's traditional review under the ''consistency with section 202(a)'' criterion, they note that previous waivers have generally reviewed standards designed to reduce concentrations of air pollutants, like criteria air pollutants that EPA has listed under section 108 of the CAA, for which an endangerment finding required under section 202(a)(1) has already been made. Even standards regulating PM and formaldehyde, for which EPA has granted waivers, involved pollutants that had been identified by EPA, or by Congress in the Clean Air Act, as needing regulation. Thus, the question of endangerment was not in dispute in previous waivers. By contrast, EPA has not made any final decision regarding whether emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare (this two-part

[213] EPA notes here (again) that lead time begins when California promulgates its standards, not when the waiver is granted.

[214] *Securities and Exchange Commission* v. *Chenery Corp.,* 332 U.S. 194 at 203 (''That such action might have a retroactive effect was not necessarily fatal to its validity. Every case of first impression has a retroactive effect, whether the new principle is announced by a court or by an administrative agency. But such retroactivity must be balanced against the mischief of producing a result which is contrary to a statutory design or to legal and equitable principles. If that mischief is greater than the ill effect of the retroactive application of a new standard, it is not the type of retroactivity which is condemned by law.'').

[215] 68 FR 19811, 12 (April 22, 2003).

[216] *MEMA III,* 142 F. 3d at 463; *Ford,* 606 F. 2d at 1296, n. 17, 1297; H.R.Rep, No. 728, 90th Cong, at 22–23.

test is hereafter referred to as ''endangerment''). This is a requirement for EPA to issue regulations under section 202(a).[217] Thus, the commenters state that there is an issue for review in this waiver under the consistency with section 202(a) criterion that was never relevant for EPA's review of previous waiver requests.

In contrast, CARB states that no new test of consistency with section 202(a) is warranted or permissible. CARB argues that precedent shows that nothing more than technological feasibility and test compatibility is required under section 209(b)(1)(C).

I find that in this instance, I do not need to resolve the issue of whether it is appropriate to address the issue of endangerment under the consistency with section 202(a) criterion of section 209(b). This is because in this instance, I find that even if the issue of endangerment is relevant to EPA's evaluation of consistency with section 202(a), those opposing the waiver have not met their burden of proving that California's regulations are inconsistent with section 202(a) based on that concern.

b. Parties Opposing the Waiver Have Not Met Their Burden of Showing Lack of Endangerment to Public Health or Welfare

As noted above, parties opposed to a waiver have the burden of proof to show that one of the findings under section 209(b)(1) should be made. To the extent that the two-part endangerment test is relevant to a determination of consistency with section 202(a), those opposing a waiver must affirmatively demonstrate that California's standards are inconsistent with this criterion. They have failed to do so in this instance.

Commenters who claim that EPA should deny the waiver generally base their claim on the fact that EPA has not yet determined whether greenhouse gas emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or promulgated greenhouse gas standards pursuant to section 202(a). They claim that unless and until EPA makes such a determination that authorizes regulation under section 202(a), EPA cannot grant a waiver to California. They also state that the fact that the current California waiver request pertains to global climate change emissions, rather than to conventional pollutants, means that EPA should not give California's waiver request a presumption of consistency under Section 209(b)(1)(C).

In contrast, commenters supporting the waiver request contend that EPA's lack of a determination on endangerment and lack of GHG emission regulations is not relevant to EPA's consideration of the waiver request. CARB notes in its comments that EPA may not find inconsistency on the ground that EPA must first make its own endangerment finding on GHG emissions before granting California's waiver request. CARB suggests that *Massachusetts* v. *EPA's* contemplation of coordinated activity at the federal level is entirely irrelevant to the waiver. CARB also provides significant discussion on this issue providing evidence that, according to CARB, shows that global climate change does endanger public health and welfare.

Manufacturer suggestions that EPA should deny California's request because it has not yet made a finding of endangerment mistake the burden of proof that opponents of a waiver are obliged to meet before EPA must deny a waiver. To deny a waiver based on section 209(b)(1)(C), EPA must find that California's standards ''are not consistent with section 202(a).'' It is not enough that EPA has not made a decision on the subject of whether GHG standards are authorized under section 202(a). To deny a waiver the Administrator must affirmatively find that the standards are inconsistent with section 202(a). The initial presumption of consistency is not dependent on the pollutants being regulated, as suggested by commenters—the presumption is provided for in the statute.[218] Regarding endangerment, therefore, I believe that, to the extent it is even an appropriate criterion under section 209(b)(1)(C), it would not be appropriate to deny a waiver request unless it is affirmatively demonstrated that the pollutants being regulated do not ''cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.''

To the extent endangerment is relevant to whether California's standards are consistent with section 202(a), this criterion should be narrowly interpreted and should require more than the fact that EPA has not yet made a final decision concerning endangerment. Denial of a waiver based on this issue should require either a previous determination by EPA on the merits that the endangerment test has not been met, or a demonstration in this proceeding by the opponents of the waiver that EPA could not find that the endangerment test is met. Lack of a final decision by EPA on this would not be sufficient to deny the waiver. Those opposing the waiver cannot simply point to an open question regarding the issue at hand—on the contrary, they must come forward with evidence demonstrating that California's standards are not consistent with section 202(a).[219]

In order to regulate emissions of a particular pollutant under section 202(a), EPA must review several issues, including whether the emissions of the pollutant from motor vehicles cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare, and whether the standards are technologically feasible within the lead time provided. EPA has to make such determinations as part of lawfully adopting GHG standards under section 202(a). However, lack of either kind of action by EPA is not by itself evidence that GHG standards are in fact inconsistent with section 202(a). The fact that EPA has not yet made either determination, in the context of its own rulemaking, is by itself not a basis to deny a waiver.

Congress understood that California may act a ''laboratory for innovation'' in the regulation of motor vehicles, and intended section 209 to allow such innovation.[220] Yet the ability of California to encourage such innovation would be greatly compromised if EPA were to determine that California could take no action under section 209 unless EPA had already made all of the necessary determinations regarding the consistency of its own standards in the context of its own regulation under section 202(a).

In similar instances where EPA reviewed California standards and EPA had not promulgated similar standards, EPA has determined that the absence of EPA standards does not by itself preclude a waiver or prevent its ability to review California's standards under section 209. Any comparisons necessary

[217] On April 24, 2009, EPA published a notice proposing to find that elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated endanger the public health and welfare of current and future generations and also proposing to find that emissions of carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons from new motor vehicles and new motor vehicle engines are contributing to this air pollution under section 202(a) of the Clean Air Act. 74 FR 18885, 18886.

[218] See *MEMA I,* 627 F. 2d at 1121 (''The language of the statute and its legislative history indicate that California's regulations, and California's determination to comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them.'').

[219] See *MEMA I,* 627 F. 2d at 1126.

[220] *See MEMA I,* 627 F. 2d at 1111.

under section 209 would simply take account of the absence of EPA regulations, *i.e.,* the comparison would be California standards to the absence of EPA standards. For example, under the similar procedures of section 209(e), EPA authorized California to enforce its standards on evaporative emissions for small nonroad engines despite the fact that EPA had not yet promulgated evaporative standards for such engines.[221] In any case, commenters' discussions of ''comparisons to federal standards'' in this context is more suited to review of section 209(b)(1)(A), which discusses comparisons between California and applicable federal standards. Section 209(b)(1)(C) concerns whether California standards are consistent with section 202(a). This criterion is not dependent on the existence of comparable federal standards.[222]

An additional reason for interpreting the waiver criterion this way, and not determining inconsistency with section 202(a) based on lack of an EPA final decision on an issue, is that EPA may always take action in the future that may impact the criteria for a waiver. For example, if in the future EPA promulgated standards that were more stringent than California's standards, this could implicate the ''protectiveness'' criterion of section 209(b)(1)(A). The possibility of such future events should not be used as a reason to deny a waiver now. Instead, the impact of a future EPA action should be considered if and when EPA takes action. Otherwise, the waiver could be denied now, even though in the future it could be determined that it should have been granted. This would tend to reverse the statutory presumption of the grant of waiver unless opponents demonstrate it should be denied for certain specific reasons. Instead, it would be denied because of some future possible action that may or may not occur, and may be delayed for an unspecified period of time. Basing a denial on the possibility of events that may happen in the future is not consistent with Congress' goal to preserve the broadest possible discretion to California. A more prudent approach is to take action based on the record at hand, with the possibility of reviewing such action in the future if facts change that merit such a review. As discussed above in section IV.C.1, EPA may withdraw a waiver in the future if circumstances make such action appropriate.

It is important to remember that the criterion being reviewed under section 209(b)(1)(C) is consistency with section 202(a) and not consistency with EPA standards. EPA has considerable deference within section 202(a) to promulgate the regulations it believes are most reasonable. The test for EPA under section 209(b)(1)(C) is not whether California standards are the same as the standards that EPA has promulgated or would promulgate under section 202(a), but whether the opponents of the waiver have met their burden to show, based on the record before the Agency, that the standards promulgated by California could not lawfully be promulgated in a manner consistent with section 202(a). As a prior Administrator has stated:

> I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to ''catch up'' to some degree with newly promulgated standards. Such an approach * * * may be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, I believe I am required to give very substantial deference to California's judgments on this score.[223]

In this case, opponents of the waiver have not met their burden of proving that EPA could not find that emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. To the contrary, while California and others have provided a great deal of evidence regarding the dangers posed by GHGs, opponents of the waiver have not provided significant evidence that emissions of GHGs from motor vehicles do not cause or contribute to air pollution that can reasonably be anticipated to endanger public health or welfare. The recent EPA proposal to find that elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger public health and welfare, and to find that emissions of carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons from new motor vehicles and new motor vehicle engines are contributing to this air pollution under section 202(a) of the Clean Air Act is further indication that opponents of the waiver did not meet their burden of proof on this issue.[224] Thus, I cannot find that those opposing the waiver have met their burden of proving that California's GHG standards are not consistent with section 202(a) for reasons of the endangerment test.[225]

G. Section 209(b)(1)(C) Conclusion

Based on its review of the information in the docket of this proceeding, I have determined that the opponents have not met their burden to demonstrate that the CARB GHG standards are not consistent with section 202(a). Therefore, I am unable to find that the CARB motor vehicle GHG emission standards are not consistent with section 202(a) of the Act.

VII. Additional Issues Raised

A. EPA's Administrative Process for Evaluating California's Waiver Request

1. Public Comment Process

Section 209(b)(1) states in part that ''The Administrator shall, after notice and opportunity for public hearing, waive application of this section * * *'' In response to this language, EPA has consistently announced in the **Federal Register** the opportunity for a public

[221] 71 FR 75536 (December 15, 2006).

[222] Commenter Alliance appears to put much weight on the existence of section 202(b)(3). That subsection was added in 1977 to ensure that where EPA provides a waiver for vehicle standards, vehicles meeting California standards can still receive a Federal certificate and be sold in California and other states where California standards are applicable. This was needed as some of the California standards may not individually be as stringent as federal standards, given the ''in the aggregate'' protectiveness provision. See discussion in *Ford* v. *EPA,* 606 F.2d 1293 (DC Cir. 1979). Without this provision, where more stringent individual federal standards applied, vehicles complying only with California standards could not receive a federal certificate of conformity. The language therefore is designed to deal with situations where federal standards exist, and may be more stringent than California's. It was not intended to add or imply any new substantive requirements regarding the existence of federal standards. Similarly, Alliance's reference to use of the word ''the'' in section 202(b)(2) is directed towards the first criterion of section 209(b), not the third. In any case, the argument raised could at most mean that section 209(b)(2) is not applicable to this waiver request. California does not rely on section 209(b)(2) in its request. Also, as noted above, EPA has long held that the absence of comparable federal standards would not automatically result in a denial of a waiver request under the ''in the aggregate'' criterion because EPA believes the appropriate comparison is between the protectiveness of the California standards as compared to the absence of the federal standards.

[223] 40 FR 23104.

[224] 74 FR 18885 (April 24, 2009).

[225] Some commenters have indicated that if EPA chooses not to deny the waiver based on lack of an endangerment finding, EPA should hold its decision in abeyance until it makes a finding. However, given the burden of proof on opponents of a waiver, and the lack of any significant evidence to the contrary in the record on this issue, I believe it is not appropriate to delay further a decision on this matter.

hearing for any waiver request received from CARB. As a general matter EPA has also offered an opportunity for written comment which has opened on the date of the **Federal Register** notice and closed on a date after the public hearing. As part of EPA's public hearings, the presiding officer has consistently stated that the hearing was being conducted in accordance with section 209(b) of the Clean Air Act and that any interested parties have the opportunity to present both oral testimony and written comments.

EPA has received comment suggesting that EPA has failed to provide any systematic procedure for commenters opposing the waiver to rebut the comments of those commenters supporting the waiver. Because opponents bear the burden of proof, this commenter believes that EPA should not treat the waiver proceeding like an informal rulemaking but instead clearly announce what evidence is admissible and applicable burdens of proof and evidentiary procedures, such as order of proof and argument that parties must follow.[226]

EPA's waiver proceedings and actions under section 209(b)(1) are informal adjudications. In a waiver proceeding, EPA receives a request from one entity (CARB) that is presenting an existing regulation established as a matter of California law. The request is for a waiver of preemption for that party, so it may adopt and enforce the specific regulations. In deciding this request, EPA interprets and applies the three specific criteria established by the Act, and under this provision EPA is required to grant the waiver unless EPA makes one of the three specified findings. EPA applies the pre-existing law, section 209(b), to a specific request covering a specific regulation or regulations, and applies the three statutory criteria to the facts of the specific request. The decision to grant or deny a waiver changes the legal rights of the party before EPA, California. If EPA grants the waiver, then CARB may enforce its state regulations. In that case, the rights and obligations of other parties, for example, the manufacturers, are affected by the operation of the state regulation that is no longer preempted. In addition, under a separate statutory provision, other States may then adopt and enforce California's' standards, under their state law. While these subsequent impacts clearly affect the legal rights and obligations of various parties, the only legal rights and obligations directly determined by EPA in the waiver proceeding are the rights of the State of California to adopt and enforce its state regulations. The other legal impacts flow from the operation of other laws, once the waiver is granted. Therefore EPA believes that its waiver proceedings and actions therein should be considered an informal adjudication rather than a rulemaking. EPA has been conducting its waiver proceedings in this manner for decades, and while Congress has amended provisions in section 209 on two separate occasions, Congress has not chosen to alter EPA's administrative requirements. Instead, Congress has expressed support for EPA's practice in applying and interpreting section 209(b).[227]

EPA disagrees with the suggestion that its waiver proceedings are governed by section 554 of the Administrative Procedure Act (APA) or any other provision of Title 5 of the United States Code, including sections 556, 557 and 558. Section 554 of the APA, regarding formal adjudications, only applies to adjudications required by statute to be determined on the record after an opportunity for an agency hearing. Section 209(b)(1) merely states that the Administrator shall provide notice and opportunity for a public hearing and does not include language stating that EPA's decision shall be on record after an opportunity for a hearing. Conversely, other provisions in the Clean Air Act, including section 205(c)(1) specifically state that EPA's actions shall be made on the record after opportunity for a hearing in accordance with sections 554 and 556 of title 5 of the United States Code. Section 205(c)(1) also requires the Administrator to issue reasonable rules for discovery and other procedures for hearings.

Any potential action on the waiver request is not subject to the requirements of APA section 558(c). Any potential action by EPA would not constitute granting a ''license'' to California. The fundamental purpose of section 209(b) is to waive application of the preemption set forth in section 209(a) of the Act, and is not a formal approval of the type contemplated in the APA. As noted previously, CARB must merely submit its regulations to EPA with a finding that its standards, in the aggregate, are as protective of public health and welfare as applicable federal standards. Unlike a license or permit applicant, the burden of proof is on the opponents of the waiver and EPA must make an affirmative finding of one of the three waiver criteria in order to deny California's waiver request. On the face of the Act, what California receives from EPA is a waiver, not a license or permit.

Contrary to commenter's claim, APA section 558 does not require the ''adversary process'' described in sections 556 and 557 for this action. APA section 558 requires the agency to ''complete proceedings required to be conducted in accordance with sections 556 and 557 of [the APA] *or* other proceedings required by law.'' 5 U.S.C. 558(c) (emphasis added). By complying with the procedural requirements of section 209(b) of the Act, EPA is complying with both the CAA and any relevant standards set in the APA.

Regardless, the approval provision in APA section 558 was not meant to establish additional procedural requirements beyond those required by law. Instead, the goal of the approval provision of the section is to ensure ''that an agency shall hear and decide licensing proceedings as quickly as possible.'' Attorney General's Manual of the APA (1947), 89. *Horn Farms* is not applicable to this situation, as the dicta statement regarding APA section 558 applied only to section 558's provisions regarding revoking a previously granted license, which is not at issue here.

EPA believes that only those actions or sections of the Clean Air Act that specifically reference section 554 or otherwise state that EPA's decision must be determined on the record after an opportunity for a hearing are subject to the formal adjudication requirements of the Administrative Procedure Act. EPA nevertheless, as part of good administrative practice, provides every interested party the opportunity to present oral testimony and provide written comment based on a **Federal Register** notice that clearly sets out the criteria by which EPA will evaluate CARB's waiver requests. EPA believes all commenters, including opponents of the waiver, have had ample opportunity to comment and meet their applicable burdens of proof. Opponents of CARB's GHG regulations and of its waiver request have had ample opportunity to present their viewpoints during the course of CARB's rulemaking and EPA's waiver proceeding. First, as noted in the March 6, 2008 Denial, in response to several requests to extend the comment period during EPA's initial consideration of CARB's waiver request EPA indicated that consistent with past waiver practice, it would continue, as appropriate, to communicate with any

[226] Alliance of Automobile Manufacturers, EPA–HQ–OAR–2006–0173.8994 at C–2 through C–4.

[227] The Committee on Interstate and Foreign Commerce that drafted the amendments to section 209 in 1977 stated that the amendment was ''intended to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, *i.e.,* to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.'' (H.R. Rep. No. 294 301–302 (1977)).

stakeholders in the waiver process after the comment period ended and that it would continue to evaluate any comments submitted after the close of the comment period to the extent practicable.[228] EPA did not receive any request to extend the written comment period during the reconsideration of CARB's request. Opponents have also had the opportunity to submit lengthy comments during two separate comment periods (one of which occurred well after CARB had submitted all of their initial comments) and to testify at three separate public hearings. The regulated industry has in its possession, along with CARB, the necessary information to adequately comment on whether the GHG emission standards are technologically feasible and also what CARB has said about the protectiveness of its standards from both CARB's rulemaking phase and from earlier comments. Opponents have the same access to the necessary information in order to formulate comments in regard to the second waiver criterion at section 209(b)(1)(B).

2. EPA's Reconsideration Process

Upon receiving CARB's January 21, 2009 request for reconsideration of the March 6, 2008 waiver Denial, EPA published a notice on February 12, 2008 notifying the public that EPA was reconsidering its March 6, 2008 Denial, and was providing an additional hearing and the opportunity to submit comment on all issues relevant to the waiver, including inviting comment on certain specific criteria and questions.

EPA received comment suggesting that the February 12, 2009 notice failed to inform the public of relevant issues and contained misleading statements and, therefore, the Agency must issue a new notice before proceeding with any reconsideration of the denial.[229] This commenter notes the EPA fails to discuss the legal standards EPA believes it must meet to justify reconsideration of a major policy action including the legal standards EPA believes governs how it is to reopen a previously decided matter. EPA believes this commenter fundamentally misunderstands the purpose of the February 12, 2009 notice. EPA's February 12, 2009 notice did not constitute a final decision to change the Agency's position with regard to California's greenhouse gas waiver request, and did not implicate any arguable requirement to supply a justification for changing previous interpretations of law or evidentiary findings. The Agency set forth sufficient reason for initiating a reconsideration process, and is under no obligation to provide anything further in the Notice announcing the process. EPA clearly set forth the criteria and issues it would review in the notice for reconsideration, which covered all of the issues relevant under section 209(b). It was unnecessary to provide any further justification for its reconsideration beyond that which was supplied in the notice. Commenters have failed to disclose that any procedural error by EPA prejudiced them in any way, or that EPA's February 12, 2009 notice limited their ability to fully comment on any of the issues relevant to California's request for a waiver.

3. Is a Waiver Required Before California or Section 177 States Adopt California's Motor Vehicle Emission Standards?

_____Several commenters have suggested that section 209(a), which provides that no ''political subdivision shall adopt or enforce any standard,'' should be read to mean that neither California nor any Section 177 state may ''adopt'' a motor vehicle emission emissions regulation before EPA grants a waiver. Since lead time is an issue under section 209(b)(1)(C), see section VI, EPA believes it appropriate to clarify this issue especially since EPA has previously stated that lead time runs from the date of adoption of the regulation. Similarly, because of the number of states that have already adopted CARB's GHG emission standards EPA believes it appropriate to clarify this issue for purposes of section 177 as well.

EPA believes that section 209(b) on its face provides the necessary clarification as to whether California should adopt its regulations before or after receiving a waiver from EPA. Section 209(b)(1) clearly envisions EPA commencing a waiver process after California has submitted standards that have been adopted. Section 209(b)(1) states in part ''The Administrator shall, after notice and opportunity for public hearing waive application of this section to any State which *has adopted* standards * * *'' (Emphasis added). It would be illogical, if not impossible, for EPA to analyze the criteria in section 209(b) if it does not have a final regulation upon which to do the analysis. It would not be appropriate for EPA to analyze non-final documents that may or may not become final and that may or may not be revised prior to becoming final. Similarly, the courts have long interpreted the Clean Air Act to authorize pre-waiver adoption of California standards by an opt-in state.[230]

B. Scope of EPA's Waiver Review

1. Relevance of the Energy Policy and Conservation Act (EPCA) to the Waiver Decision

In EPA's initial **Federal Register** notice of California's request for a waiver, we requested comment on whether the Energy Policy and Conservation Act (EPCA) fuel economy provisions are relevant to EPA's consideration of the request and to California's authority to implement its vehicle GHG regulations.[231]

EPA received many comments regarding EPCA and its effect, or lack thereof, on this proceeding. Several commenters stated that the provisions of EPCA are not relevant to EPA's waiver determination. They note that the language of section 209(b) limits the authority of EPA to deny a waiver to three criteria and does not reference inconsistency with EPCA (or with any other statute, other than section 202(a) of the Clean Air Act) as a basis for denial. One commenter noted that EPCA was already in existence when Congress strengthened California's authority to adopt motor vehicle emission standards, and Congress indicated no intent to limit such authority based on EPCA. Some commenters noted the Supreme Court decision in *Massachusetts* v. *EPA,* which stated that EPCA does not license EPA to shirk its environmental responsibilities under the Clean Air Act.

Several commenters also provided arguments regarding their view that California's GHG standards were consistent with the provisions of EPCA.

Other commenters stated that California's standards violate EPCA. Several of these commenters noted that EPA and court precedent regarding section 209(b) indicate that EPA cannot rule on EPCA preemption under section 209(b). However, the commenters state that if EPA does consider EPCA-related issues in this waiver proceeding, it must rule that California's standards violate EPCA. One commenter states that recent court cases have created confusion regarding the scope and effect of EPA waivers. The commenters state that if EPA decides not to address the issue of EPCA preemption in this proceeding, it

[228] 73 FR 12156, 12157 (March 6, 2008).

[229] Utility Air Regulatory Group, EPA–HQ–OAR–2006–0173–8690 at 2–5.

[230] *See Motor Vehicle Manufacturers Association* v. *New York Dept. of Environmental Conservation,* 17 F.3d 521, 533–34 (2d Cir. 1994)—''[T]he plain language of 177, coupled with common sense,'' leads to the conclusion that other states 'may adopt the [California] standards prior to the EPA's having granted a waiver, so long as [the state] makes no attempt to enforce the plan prior to the time when the waiver is actually granted.''

[231] 72 FR 12261.

needs to explicitly state that it is not addressing the issue of express preemption under EPCA or conflict with EPCA, and that those issues are best left to the courts.

As EPA has stated on numerous occasions, section 209(b) of the Clean Air Act limits our authority to deny California's requests for waivers to the three criteria therein, and EPA has refrained from denying California's requests for waivers based on any other criteria. As EPA noted in its initial decision denying California's waiver request, the decision was ''based solely on the criteria in section 209(b) of the Clean Air Act and this decision does not attempt to interpret or apply EPCA or any other statutory provision.'' [232] Where the Court of Appeals for the District of Columbia Circuit has reviewed EPA decisions declining to deny waiver requests based on criteria not found in section 209(b), the court has upheld and agreed with EPA's determination.[233]

As many of the commenters note, evaluation of whether California's GHG standards are preempted, either explicitly or implicitly, under EPCA, is not among the criteria listed under section 209(b). EPA may only deny waiver requests based on the criteria in section 209(b), and inconsistency with EPCA is not one of those criteria. In considering California's request for a waiver, I therefore have not considered whether California's standards are preempted under EPCA. As in the March 2008 decision, the decision on whether to grant the waiver is based solely on the criteria in section 209(b) of the Clean Air Act and this decision does not attempt to interpret or apply EPCA or any other statutory provision. EPA takes no position regarding whether or not California's GHG standards are preempted under EPCA.

2. Do California's GHG Emission Standards Create an Impermissible ''Patchwork''?

Under section 177 of the Act, other states may adopt California new motor vehicle emission standards under certain conditions. In this waiver proceeding EPA received comment suggesting that sections 202(a), 209(a) and 177 of the Act establish a regulatory framework designed to foster a national marketplace for vehicles while recognizing California's ability to establish its own program which can be adopted by other states. EPCA however, sets a single national fuel economy standard and is designed to prevent a fracturing of the marketplace into individual state programs. Commenters argue that manufacturers will have at least 15 different fleets they will have to balance for purposes of fuel economy and greenhouse gas emissions flowing from the fleet-average emission requirements of each state. Manufacturers also are concerned that there are significant differences between manufacturers' fleets in California and those in individual section 177 states creating unnecessary compliance burdens. The commenters suggest that the federal government should establish a single, national program for regulation of vehicle greenhouse gas standards and fuel economy.

EPA also received comment stating that to the extent the auto industry is arguing that a patchwork is created because of differences between fleet composition in different states, that argument lacks merit and is irrelevant to this waiver proceeding. Citing an EPA waiver decision from 1971, this commenter notes that claims such as the patchwork issue are not appropriate in a waiver proceeding since EPA's consideration of evidence submitted during a waiver proceeding is limited by its relevance to the three waiver criteria EPA must consider under section 209. This has led EPA to previously reject arguments that are not specified in the statute as grounds for denying a waiver.[234]

Similar to EPA's response to the EPCA claims noted above, EPA may only deny waiver requests based on the criteria in section 209(b). The actions of other states relating to the adoption of the California GHG emission standards is not a factor I may consider under section 209(b). The actions of such states are authorized under a separate section of the Act, section 177, and must conform to the requirements of that section, including identicality. Section 209(b) does not authorize me in reviewing a waiver request to consider the impact of actions or potential actions taken by other states under section 177 of the Act.[235] I therefore will not consider this claim in determining whether to grant California's waiver request.

It is important to note that on May 19, 2009, EPA and the Department of Transportation (DOT) issued a ''Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards'' announcing EPA and DOT's intent to work in coordination to propose standards for control of emissions of greenhouse gases and for fuel economy, respectively. If proposed and finalized, these standards would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles (light-duty vehicles) built in model years 2012 through 2016. EPA believes that if these standards are ultimately adopted, they would represent a harmonized and consistent national policy pursuant to the separate statutory frameworks under which EPA and DOT operate.

3. What Impact Does Granting California a Waiver for Its GHG Emission Standards Have on PSD Requirements for GHGs?

Several commenters suggest that there would be a major consequence if an EPA waiver were to trigger other requirements under the Act, including Prevention of Significant Deterioration (PSD) requirements, and should it grant the waiver, EPA should state clearly that the waiver does not render GHGs ''subject to regulation'' under the Act. EPA also received comment suggesting that the question of when and how GHGs should be addressed in the PSD program or otherwise regulated under the Act should instead be addressed in separate proceedings dedicated to evaluating the complicated issues and impacts associated with those issues.

EPA agrees that these issues are not relevant to the waiver decision criteria, and are most appropriately addressed in a separate forum. EPA is not addressing these issues in today's decision.

VIII. Decision

After review of the information submitted by CARB and other parties to this Docket, I find that those opposing the waiver request have not met the burden of demonstrating that California's regulations do not satisfy any of the three statutory criteria of section 209(b). For this reason, I am granting California's waiver request to enforce its motor vehicle GHG emission regulations.

My decision will affect not only persons in California but also persons outside the State who would need to comply with California's GHG emission regulations. For this reason, I hereby determine and find that this is a final action of national applicability.

Under section 307(b)(1) of the Act, judicial review of this final action may be sought only in the United States Court of Appeals for the District of Columbia Circuit. Petitions for review must be filed by September 8, 2009.

[232] 74 FR at 12159.

[233] *See Motor and Equipment Manufacturers Ass'n* v. *Nichols,* 142 F.3d 449, 462–63, 466–67 (DC Cir. 1998), *Motor and Equipment Manufacturers Ass'n* v. *EPA,* 627 F.2d 1095, 1111, 1114–20 (DC Cir. 1979).

[234] 36 FR 17458 (August 31, 1971).

[235] 43 FR 1829, 1833 (January 12, 1978), LEV I waiver decision document at 185–186.

Under section 307(b)(2) of the Act, judicial review of this final action may not be obtained in subsequent enforcement proceedings.

As with past waiver decisions, this action is not a rule as defined by Executive Order 12866. Therefore, it is exempt from review by the Office of Management and Budget as required for rules and regulations by Executive Order 12866.

In addition, this action is not a rule as defined in the Regulatory Flexibility Act, 5 U.S.C. 601(2). Therefore, EPA has not prepared a supporting regulatory flexibility analysis addressing the impact of this action on small business entities.

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, does not apply because this action is not a rule, for purposes of 5 U.S.C. 804(3).

Dated: June 30, 2009.

Lisa P. Jackson,

Administrator.

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