

**Testimony of  
Roland J. Hwang  
Vehicles Policy Director and Vehicle Technology Expert  
Natural Resources Defense Council**

**California State Motor Vehicle Pollution Control Standards Request, Greenhouse Gas Regulations; Reconsideration of Previous Denial of a Waiver of Preemption**

**U.S. Environmental Protection Agency  
Docket ID No. EPA-HQ-OAR-2006-0173  
March 5, 2009**

Thank you for the opportunity to testify today in favor of California's request for a waiver of preemption under Section 209(b) of the Clean Air Act for amendments to the state's motor vehicle emission standards covering greenhouse gas emissions. I am the vehicles policy director and a vehicle technology expert for the Natural Resources Defense Council's Air and Energy Program. I represent NRDC and its 1.2 million members and activists in support of California's effort to set standards for global warming pollution from new cars and light trucks sold in that state starting in model year 2009.

As Mr. David Doniger, policy director and senior attorney at the NRDC's Climate Center, previously noted in his testimony this morning, NRDC's legal conclusion, supported by our technical analysis, is simple and direct: EPA has only one choice – it must grant California's waiver request and without delay.

In my testimony, I will supplement Mr. Doniger's testimony by presenting our technical responses to the relevant questions posed by the EPA in its hearing notice, 73 Fed. Reg. 7040. I will address both the original question noticed before the March 6, 2008 denial, whether "California's standards and accompanying enforcement procedures are consistent with Section 202(a) of the Clean Air Act", as well as the new question posed by EPA in its most recent notice, "the effect of the March 6, 2008 waiver denial on whether California's GHG standards are consistent with section 202(a) of the Act, including lead time". Based on my analysis of recent trends in fuel and vehicles markets, my conclusions are as follows:

First, we strongly concur with the California Air Resources Board staff's assessment, as well as other experts, that California's GHG standards are technically feasible and cost-effective, and therefore consistent with section 202(a) of the Act. In fact, developments since the previous waiver hearing in May 2007 serve to further strengthen the case that the program is cost-effective and technically feasible. The most important of these developments are higher oil prices, market shift to cleaner cars, and the passage of new federal fuel economy standards.

Second, in regards to lead time, our analysis shows that the there is no impact of the March 6, 2008 waiver denial on the technical feasibility of implementing the program

starting in MY2009 and there is no basis for delaying the program. The reason for this is the same as stated above – high fuel prices and new federal fuel economy standards – have resulted in the automakers building vehicles and selling a product mix that already allows them to comply with the California GHG standards in MY2009 to 2011. In fact, the industry as a whole will likely exceed the program’s requirements in the first two years, allowing them to bank credits for future compliance.

It is important to note that while fuel price and fuel economy regulatory trends enable the auto industry to be well positioned to also meet the MY2012 to 2016 standards, these trends are not sufficient by themselves to ensure compliance with California’s GHG standards. California still requires the waiver to ensure the automakers will deliver the level of GHG performance required by California’s program. We also note that our analysis strongly indicates that the auto industry is also able to comply with the program in the 13 other states with California’s Clean Car program for MY2009 to 2016,<sup>1</sup> although we note that such an assessment is beyond the scope of the California waiver proceeding under Section 209(b) of the Clean Air Act.

I will not repeat my previous testimony from May 2007 since it is already part of the record for reconsideration and instead will focus on new information that reinforce our previous technical conclusions.

## **1. Developments since 2004 Reinforce the Program’s Technical Feasibility and Cost Effectiveness**

CARB staff made a compelling demonstration when the board adopted the program in 2004 that the standards are technically feasible, cost-effective and can be implemented and enforced for the entire model year 2009 to 2016 period. Key developments since 2004 in fuel prices and federal fuel economy regulations have only reinforced the technical basis for approving the waiver request.

### **1.1 Higher Gasoline Prices Make California’s Standards Even More Cost-Effective**

Fuel prices have undergone a dramatic and permanent structural shift since 2004. CARB’s 2004 analysis assumed gasoline would cost \$1.74/gallon and about \$25/barrel of oil for the next 15 years. Despite the recent decline due to the global recession, oil prices are expected to rebound to over \$100 barrel over the next several years. This is because of oil market fundamentals: the era of cheap, easily accessible oil is over. The world’s remaining reserves are expensive to extract and are mostly in volatile, unstable regions of the world. Most experts agree, including those at the US DOE as well as GM, the demand rebounds, so will oil prices, with GM estimating national gasoline prices of \$4/gallon by 2014.

#### ***1.1.1 Oil prices are expected to increase to over \$100 per barrel in next several years***

The most recent, official US forecast by the Energy Information Agency, AEO 2009, estimates \$108 per barrel by 2016.<sup>2</sup> GM in its restructuring plan, estimates an even higher prices, \$130/bbl starting in 2014, prices the company notes “are in line with, or somewhat higher than, external forecasts.”<sup>3</sup>

**Table 1. Oil and Gasoline Price Forecasts**

Calendar Year→	2009	2010	2011	2012	2013	2014	2015	2016
<b>EIA AEO 2009 (early release Dec 2008)</b>								
Imported Crude Oil (\$2007/bbl)	54.40	71.97	80.72	89.98	94.21	104.16	107.64	108.88
Gasoline, Pacific (\$2007/gal)*	2.41	2.72	2.96	3.13	3.22	3.43	3.52	3.55
<b>GM's 2009 to 2014 Restructuring Plan</b>								
Oil Price Forecast	53	68	87	98	113	130**		
Gasoline Prices (National)*	2.05	2.50	2.90	3.20	3.50	4.00		

\* California gasoline prices are typically higher than national prices so these prices should be increased to evaluate the cost-effectiveness of the California standards in the state. The EIA numbers are for the Pacific region so the prices include other Western states with lower average prices. The GM price forecast is for the entire US.

\*\* GM in its Plan that its long-term price view is \$130 per barrel and their product mix "reflects this level from 2014 onward,..." (page 11 of GM's 2009-14 Restructuring Plan, February 17, 2009).

### ***1.1.2 Higher oil prices result in California's program becoming even more cost-effective than in the original 2004 assessment due to higher fuel savings***

CARB's 2004 economic analysis in its Initial Statement of Reason (ISOR), at \$1.74/gallon, already showed that owners of vehicles that meet these standards will *save money* due to reduced fuel and maintenance costs. The savings are large enough so that the net costs of owning and operating compliant vehicles – initial vehicle costs reflected in lease payments plus life-time fuel savings – will actually go down. That is, it will be even cheaper to own and operate vehicles that meet the California standards than today's cars.

With today's prices and future projected prices, the cost savings will clearly be even greater and the program will be even more cost-effective than previously estimated. A recent study done for the Florida Department of Environmental Protection for their 2008 regulatory adoption proceedings estimated, at \$3.15/gallon gasoline – a price likely to be exceeded with the return of higher oil prices -- that drivers will save from \$1000 to \$2300 over a ten year vehicle life (or \$100 to \$230 per year).<sup>4</sup> Moreover, the slightly higher costs of the technology pay for itself in 1 to 3 years, depending on the vehicle type. Table 2 show the results for the net present value calculations from the more detailed document from the Florida study.<sup>5</sup>

**Table 2. 10-year NPV Cost Savings for California Clean Cars**

Vehicle Class	NPV	Payback Time
Small car	\$1079	3
Large Car	\$1579	1
Minivan	\$1445	2
Small Truck/SUV	\$2294	1
Large Truck/SUV	\$1595	2

Source: Florida Department of Environmental Protection.

## **1.2 Market shift to cleaner vehicles has the effect of reducing GHG emissions at zero regulatory cost**

Higher fuel prices have led to a rapid shift in market segments, in particular away from truck-based SUVs and towards crossover vehicles and smaller cars. The CARB 2004 technical analysis assumed continuation of the then-prevailing vehicle sales mix – the

distribution of vehicle sizes within the passenger car and light truck classes. Since then, due to changing consumer preferences, the sales mix has dramatically changed, resulting in lower fleetwide GHG emissions at no *regulatorily-driven* cost to the manufacturers.

Furthermore, the change in fleet mix, especially the switch from truck-based SUVs to car-based crossovers, reduces the cost of complying with more stringent standards because lighter, car-based vehicles have greater and more cost-effective potential for emission reductions.

**1.2.1 GM and Ford Restructuring Plans Lower GHG Fleet Emissions**

This shift to cleaner vehicles is also demonstrated in the recent business plans submitted to Congress and the U.S. Treasury. These plans make it clear that GM and Ford are planning to significantly raise their fuel economy levels. The car and light truck fuel economy levels in Ford’s and GM’s business plans come very close to allowing the automakers to comply-with little or no additional effort-with the California program. For light trucks, Ford and GM exceed by a large margin the standard and can use credits to towards compliance in their car fleets. Again, since these are business plans are either market driven or driven primarily by federal fuel economy standards, the California program is resulting in *little or no additional regulatory cost* to these companies.

The automakers business plan fuel economy commitments are as follows:

- GM’s December 2, 2008 plan submitted to the Senate Banking Committee and the House of Representatives Financial Services Committee states that it will achieve 2012 fuel economy levels of 37.3 mpg and 27.5 miles per gallon (mpg) for their new car and light truck fleets, respectively.<sup>6</sup> On February 17, 2009, GM submitted a revised restructuring plan with a lower economy forecast, but still results in 38.6 mpg for cars and 27.6 mpg for their light truck fleet by model year 2015.<sup>7</sup>
- Ford’s plan states that, compared to its 2005 baseline, it will improve the average fuel economy of its fleet by 26 percent by 2012 and by 36 percent by 2015.<sup>8</sup>
- Chrysler also submitted a revised business plan that contains charts with their forecasted fuel economy levels which we plan to analyze in the near future.<sup>9</sup>

**Table 3. Estimated 2015 GHG Emission Rates Based on Restructuring Plan Submissions\***  
grams of CO<sub>2</sub>-eq/mile

Model Year	Ford		General Motors		California	
	PC	LDT	PC	LDT	PC	LDT
2015	230	306	230	327	213	341

\* NRDC analysis based on CARB methodology in February 25<sup>th</sup>, 2008 report. Assumes use of A/C credits, per CARB.

**1.3 Higher Federal Fuel Economy Standards Reduce Costs Attributable to California Standards**

Since the adoption of the California GHG standards in 2004, the NHSTA has used its statutory authority to raise CAFE standards for light trucks for MY2008 to 2011. The 2007 Energy Independence and Security Act (EISA) directed NHSTA to raise CAFE

standards to a combined fleet average of at least 35 mpg by model year 2020. The NHTSA has proposed rules for both passenger cars and light trucks for MY2011-15 that would raise the combined fleet fuel average to 31.6 mpg.<sup>10</sup> The Draft Final Rule that was never finalized by the previous administration contained a slightly higher combined fleet performance of 31.8 mpg.

Although greenhouse gas and fuel economy standards are clearly different and distinguishable programs, technology overlap does exist for some of the technologies.<sup>11</sup> In particular, key technologies listed in the CARB ISOR to comply with the GHG standards are also being forecast by the NHSTA staff as being adopted to meet higher fuel economy standards. Consequently the “baseline” vehicle technology characteristics that CARB developed for cost assessment purposes are obsolete and the additional technology required by the CARB standards is substantially less than what staff originally estimated. Such technologies include gasoline direct injection engines, variable valve timing, turbocharging, diesel engines, and advanced transmissions.

## **2. Automakers Can Comply with the Early Years of the California Standards (MY2009 to 2011)**

In regards to lead time, our analysis shows that there is no impact of the March 6, 2008 waiver denial on the technical feasibility of implementing the program starting in MY2009. Based on our analysis using EPA fuel economy trends data, we conclude that on an overall market basis, it is clear that the auto industry can comply with the California program in MY2009 to 2011. In fact, the auto industry will likely exceed the program’s requirements in the first two years, allowing them to bank credits for future compliance.

5 shows estimated fuel economy levels for MY2009 to 2011. We adopt the EPA data for MY2008 or the CAFE standard minus the FFV credits, whichever is higher. Using the California sales mix and the GHG conversion established by CARB, we convert the mpg levels to CO<sub>2</sub>-eq levels. As shown in Table 6, the auto industry as a whole accrues large amounts of credits in MY2009 to 2010 and then faces a modest deficit in MY2011 which can be easily made up through use of banked credits. To demonstrate feasibility, we use the industry average since any manufacturer that may face an individual deficit has the option to purchase credits from other companies.

**Table 5. Estimated Average Fuel Economy Levels in California**

Miles per gallon

Model Year→	2008*	2009	2010	2011
PC	30.3	30.3	30.3	30.3
LDT	22.5	22.5	22.5	23.8
Combined**	27.4	27.4	27.4	28.0

\* National average fuel economy levels without CAFE credits for FFVs (Source: US EPA, *Light-Duty Automotive Technology and Fuel-Economy Trends: 1975 Through 2008*, EPA420-R-08-015, September 2008, Appendix Table A-6). We assume that the comparable fleet is at least as fuel efficient in California. Given California's higher than national fuel prices and more than proportional share of hybrids, it's likely our average fuel economy level is higher than the national average.

\*\* Based on the California sales split of 70% PC/T1 and 30% T2 used in CARB February 25<sup>th</sup>, 2008 study.

**Table 6. Estimated GHG Emission Levels and Credits**

CO<sub>2</sub>-eq/mile

Model Year→	2009	2010	2011
CA GHG Combined Fleet Standards**	360	338	304
CA Fleet, CO <sub>2</sub> -eq emissions as measured under CA GHG Std program*	320	320	314
CO <sub>2</sub> -eq/mile credits accrued per vehicle sold	40	18	-10

\* NRDC estimate based on CARB February 25<sup>th</sup>, 2008 study methodology, including the use of A/C credits.

\*\*\* CARB February 25<sup>th</sup>, 2008, Table 4.

## Conclusion

EPA has only one choice – to grant California's waiver request without delay. There is no technical basis to deny the waiver under Section 209(b)(1)(C) as inconsistent with Section 202(a).

For more information, contact

Roland Hwang  
[rhwang@nrdc.org](mailto:rhwang@nrdc.org)  
(415) 857-6100

or

David Doniger  
[ddoniger@nrdc.org](mailto:ddoniger@nrdc.org)  
(202) 289-2403

<sup>1</sup> This is because the California fleet likely has the highest fraction of PC/T1s of all the 177 states. The higher fraction effectively results in a stricter combined fleet average target.

<sup>2</sup> Energy Information Agency, *Annual Energy Outlook 2009*, US DOE.

<sup>3</sup> General Motors Corporation, 2009-2014 Restructuring Plan, February 17, 2009.

<sup>4</sup> [http://www.dep.state.fl.us/Air/rules/ghg/california/62-285\\_qa\\_proposed.pdf](http://www.dep.state.fl.us/Air/rules/ghg/california/62-285_qa_proposed.pdf)

<sup>5</sup> [http://www.dep.state.fl.us/Air/rules/ghg/california/62-285\\_qa\\_proposed.pdf](http://www.dep.state.fl.us/Air/rules/ghg/california/62-285_qa_proposed.pdf)

<sup>6</sup> See Table 7 of General Motors Corporation, *Restructuring Plan for Long-term Viability*, Submitted to Senate Banking Committee & House of Representatives Financial Services Committee, December 2, 2008. GM has since stated that the 2012 values are more appropriately viewed as *calendar year* 2012, and corresponds to a *model year* 2013.

<sup>7</sup> General Motors Corporation, 2009-2014 Restructuring Plan, February 17, 2009.

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<sup>8</sup> See page 14 of Ford Motor Company, *Ford Motor Company Business Plan*, Submitted to the House Financial Services Committee, December 2, 2008.

<sup>9</sup> Chrysler, *Chrysler Restructuring Plan for Long-term Viability*, February 17, 2009.

<sup>10</sup> National Highway Traffic and Safety Administration, *Corporate Average Fuel Economy for MY 2011-15 for Passenger Cars and Light Trucks*, NPRM, April 2008.

<sup>11</sup> This is analogous to the overlap that currently exists for CAA regulations to control criteria pollutants, namely NMOG, NO<sub>x</sub> and CO, and for fuel economy technologies. That is, the electronic fuel injection and oxygen sensors developed to more precisely control combustion and reduce products of incomplete combustion and NO<sub>x</sub> formation, are also technologies that have enhanced fuel economy.