HYUNDAI·KIA MOTORS

March 25, 2008

Mr. James Goldstene
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95812-2815

Dear Mr. Goldstene:

Re: Hyundai Comments on the 2008 Proposed Amendments to the California Zero Emission Vehicle Program Regulations

On behalf of the Hyundai Motor Company, the Hyundai-Kia America Technical Center, Inc. ("Hyundai") submits the following comments in response to the February 8, 2008, California Air Resources Board (CARB) Staff Report and Initial Statement of Reasons for the "Proposed 2008 Amendments to the California Zero Emission Vehicle Regulation."

Hyundai commends CARB and staff efforts to refine the Zero Emission Vehicle (ZEV) program in order to maintain incentives for advanced technology implementation while providing manufacturers with necessary flexibility to ramp up development, production, and marketing of these technologies.

In recognition of the numerous challenges facing Large Volume Manufacturers (LVM) in initially meeting ZEV-related obligations, CARB has historically recognized the need for a significant transition period prior to initial compliance with ZEV requirements and has adjusted LVM-ZEV requirements to reduce burden as appropriate. Examples of these actions include: the extension of the original ZEV compliance period from 1998 to 2003 and then to 2005; the allowance of AT-PZEVs to meet a percentage of the pure ZEV requirement;

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and in later years, CARB's introduction of an Alternative Compliance Path to encourage fuel cell electric vehicle (FCEV) development through reduced overall ZEV burden, which is now proposed to end with model year 2012. CARB has also recognized the need for increased "gold credits" for LVMs in the earlier years of the program to reduce the compliance burden; existing LVMs were able to obtain 40 credits per FCEV for 2005 through 2008. The gold credit values will decrease substantially in 2009, although CARB is now proposing to slightly increase gold credit values over the existing values.

Hyundai believes that the flexibility provisions provided by CARB to facilitate compliance by the existing LVMs were necessary and appropriate steps for the ZEV program. As a result, we also firmly believe that flexibilities, limited in scope, are necessary and appropriate to enable a smooth transition for companies that are anticipated to attain LVM status. Therefore, Hyundai proposes four modifications to CARB's draft regulatory language which would provide transitioning companies a degree of flexibility in ramping up to meet full LVM obligations. We believe that, collectively, our comments to provide a greater opportunity for successful transitions by new LVMs is substantially smaller in scope than previous amendments allotted for the original LVMs, and it would maintain the technology and air quality goals that CARB is pursuing.

The four elements of the Hyundai proposal are as follows:

(1) **Phase-In for New LVMs:** We support the proposed phase-in for new LVMs and offer suggested modifications to require new LVMs to introduce specified numbers of ZEVs and/or enhanced advanced technology partial zero emission vehicles (Enhanced AT-PZEVs, i.e. hydrogen internal combustion engines or plug-in hybrid electric vehicles) during years 7-12 of the phase-in period, along with partial zero emission vehicles (PZEVs) and advanced technology partial zero emission vehicles (AT-PZEVs).

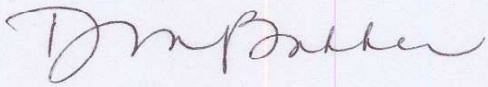
(2) **Travel Provisions:** We support the new and extended travel provisions for ZEVs and suggest that CARB consider extending travel provisions to Enhanced AT-PZEVs through 2017.

(3) **Credit Depreciation:** Hyundai requests that CARB delay ZEV and Enhanced AT-PZEV credit depreciation for Intermediate Volume Manufacturers (IVMs) that become LVMs until two years after the first ZEV must be introduced under LVM-ZEV requirements. Such a step would incentivize the early introduction of these vehicles by IVM.

(4) **Hybrid Electric Vehicle (HEV) Classifications**: Hyundai requests that CARB refine the AT-PZEV classifications to provide incentives for HEV performance that is not credited under the existing classifications.

Hyundai appreciates the opportunity to comment on the "Proposed 2008 Amendments to the California Zero Emission Vehicle Regulation". If there are any questions concerning these suggested changes, please feel free to contact me at 734-337-2340 or dbakker@hatci.com.

Sincerely,



Deborah Bakker
Senior Manager
Regulation and Certification Department

cc: Thomas Cackette, Chief Deputy Executive Officer of the Air Resources Board
Robert Cross, Chief, Mobile Source Control Division
Analisa Bevan, Chief, Sustainable Transportation Technology Branch
Mary Nichols, Chairman
Air Resource Board Members
Lori Andreoni, CARB Clerk

Enclosure: Hyundai Comments on the 2008 Proposed Amendments to the California Zero Emission Vehicle Program Regulations

Enclosure

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Hyundai Comments on the 2008 Proposed Amendments to the California Zero Emission Vehicle Program Regulations

(1) Phase-In for New LVM

Under the current ZEV program, when California sales of passenger cars and light duty trucks increase to a level above 60,000 units per year (averaged over the previous three year period), an IVM then becomes a LVM and must comply after six years with LVM requirements to sell pure ZEVs and AT-PZEVs in addition to PZEVs. In the February 2008 CARB proposal, an additional six year phase-in following the six years lead time is provided to help ease the burden associated with introduction of ZEV technologies [see §1962.1(b)(7)(A)].

We fully support providing a phase-in for IVMs that attain LVM status in order to allow a transition period for the new LVM companies as they ramp up their activities to meet the substantial new ZEV program requirements. The phase-in will also help to provide a level playing field for new LVM in comparison to past flexibilities offered to the existing LVMs. Nevertheless, to offer a fair balancing of the transitioning companies' need for this phase-in and to support the overall program goal to increase advanced technology availability, Hyundai also supports a modification to the phase-in whereby new LVMs must begin to introduce pure ZEVs and/or Enhanced AT-PZEVs during the phase-in period. Specifically, the language below suggests revised regulatory language for Years 7-12 of the phase-in:

> "If an intermediate volume manufacturer's average California production volume exceeds 60,000 units of new PCs, LDTs, and MDVs based on the average number of vehicle produced and delivered for sale for the three previous consecutive model years, the manufacturer shall no longer be treated as an intermediate volume manufacturers ~~and shall, beginning with the sixth model year after the last of the three consecutive model years~~. ***Beginning with the seventh model year after the last of the three consecutive model years, the manufacturer shall*** meet the ZEV requirements with ***a maximum of 75% percent*** PZEVs~~, of which at least one fourth would have to be AT PZEVs and shall~~, ***and 25% percent AT-PZEVs,***

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> ***whereby at least 0.3% of the AT-PZEV requirement must be met with ZEVs and/or Enhanced AT PZEVs.*** ***B***eginning with the ninth model year after the last of the three consecutive model years***, the manufacturer shall*** meet the ZEV regulation requirements with ***a maximum of 67% PZEVs***~~, of which at least one-third would have to be AT PZEVs~~ ***and 33% AT PZEVs, whereby at least 1.0% of the AT-PZEV requirement must be met with ZEVs and/or Enhanced AT PZEVs***. The manufacturer would comply with all ZEV requirements for large volume manufactures beginning with the twelfth model year after the last of the three consecutive model years." [§1962.1(b)(7)(A)]

Since a new LVM must ultimately produce and sell pure ZEVs to comply with full LVM-ZEV requirements, the suggested revisions to the phase-in schedule will expedite introduction of ZEVs and advanced technology vehicles providing additional air quality benefits and an opportunity for new LVM to transition more gradually into the ZEV market.

(2) Travel Provisions

Under the current ZEV program requirements, CARB allows manufacturers to develop a focused market for FCEV by allowing any FCEV that is placed in service in a Section 177 state to be counted toward meeting the CARB requirements, and vice versa. CARB refers to this allowance as "travel provisions," which were set to expire in 2011. In the February 2008 CARB proposal, new travel provisions for Types I, I.5, and II ZEVs are added through 2014, and the travel provisions for Types III and IV ZEVs are extended until 2017 [see §1962.1(d)(5)(E)].

Since CARB recognizes the benefit of introducing Enhanced AT-PZEVs to encourage technology and infrastructure development, we believe that the travel provision should also include Enhanced AT-PZEVs, which may be used to comply with designated percentages of pure ZEV requirements through 2017. This approach would help assure customer acceptance and the development of necessary infrastructure for Enhanced AT-PZEVs, and we therefore believe that this more flexible approach would be beneficial to the ZEV program.

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(3) Credit Depreciation

Under the current ZEV program, credits do not expire or depreciate. In the February 2008 CARB proposal, starting in 2009, gold credits would depreciate to silver plus, silver and/or bronze credits after two years.

Although IVMs are allowed to fulfill their ZEV requirements with 100% PZEVs, several IVMs participate in ZEV demonstration programs and earn gold credits. For instance, Hyundai has certified nine FCEVs to date which are in service through the California Fuel Cell Partnership and Department of Energy demonstration programs. The ability to generate and bank gold credits provides an incentive for IVMs to produce pure ZEVs in anticipation of future regulatory requirements. To incentivize further IVM introduction of ZEVs and/or Enhanced AT-PZEVs, Hyundai suggests that CARB modify the regulations to begin the depreciation of gold credits two years *after the first year that the new LVM is required to produce pure ZEVs* and/*or Enhanced AT-PZEV* (i.e. gold credits earned prior to Year 7 after becoming a LVM would depreciate in Year 9 after becoming a LVM).

(4) Hybrid Electric Vehicle (HEV) Classifications

Under the current ZEV program, CARB provides AT-PZEV credits based on performance criteria for five HEV types (A, B, C, D, and E). In the February 2008 CARB proposal, Type C HEV credits are extended through 2015, and a new Type F HEV requiring a minimum of 10 vehicle miles traveled (VMT) in an all electric mode is added beginning in model year 2009 [see §1962.1(c)(4)(B)(1)].

Hyundai believes that differences in performance between 10 kW and 50 kW motor output warrant a more refined HEV classification for this range of output for three primary reasons. First, a higher motor output increases the HEV's ability to operate in a zero emission mode, such as moving a vehicle from a stopped position with the engine off, providing air quality benefits. Second, an additional HEV classification between 10 and 50 kW closes the gap between differences in performance capabilities. Third, a mid-range motor output HEV classification would promote the advancement of technology necessary to commercialize FCEV and EV technologies. Finally, as a side note, enhanced motor power would also improve the vehicle's fuel efficiency. Therefore, Hyundai recommends the following addition to the regulations:

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HEV Classifications Beginning MY09					
HEV	**C**	**D**	**E**	~~E~~ **F**	~~F~~ **G**
Electric Drive System Peak Output	≥10 kW	≥10 kW	**≥30 kW**	≥ 50 kW	Zero Emission VMT allowance; ≥10 miles all-electric range
Traction Drive System Voltage	<60 volts	≥60 volts	**≥60 volts**	≥60 volts	≥60 volts
Traction Drive Boost	Yes	Yes	**Yes**	Yes	Yes
Regenerative Braking	Yes	Yes	**Yes**	Yes	Yes
Idle Start/Stop	Yes	Yes	**Yes**	Yes	Yes

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