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January 20, 2012

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

Dear Mr. Goldstene:

SCAQMD Staff Comments to the
Proposed "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles and Proposed 2012 Amendments to the California Zero Emission Vehicle Regulation

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to provide comments to the California Air Resources Board (CARB) staff Proposed "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles and Proposed 2012 Amendments to the California Zero Emission Vehicle Regulation (Advanced Clean Car Program). The proposed "Advanced Clean Car Program" provides a framework for the production of ever cleaner vehicles needed to help meet clean air standards and climate change goals in California. Given the severity of the air quality problem in the South Coast Air Basin and more stringent federal clean air standards, the SCAQMD staff believes that CARB should take this opportunity to lay the foundation for a strong set of regulations that will ensure that light- and medium-duty vehicles do their fair share in

meeting air quality standards. In our joint document, "Powering the Future", we share the vision of having zero emission mobile source technologies as the "end game" that provide for economic growth in a sustainable manner. We believe that the "Advanced Clean Car Program" can serve as the starting point in meeting this vision.

As you are aware, the South Coast Air Basin must attain the federal 8-hour ozone air quality standard by 2024. The 2007 Air Quality Management Plan for the South Coast Air Basin and the 2007 California State Implementation Plan include emission reductions placed in the Section 182(e)(5) "black box". The black box measures must be quantified by 2020 under federal law. The adoption of the proposed "Advanced Clean Car Program" can play a significant role in quantifying the black box. As such, the SCAQMD staff has several comments and recommended enhancements to the proposed "Advanced Clean Car Program". In addition, these recommendations are summarized in Attachment 1.

Overall Comments

SCAQMD staff strongly believes that the proposed LEV III program and the ZEV amendments are closely interrelated. Having additional ZEVs as early as possible not only reduces greenhouse gas emissions but also provides additional criteria pollutant emission reductions. As such, the SCAQMD staff urges CARB to begin discussions on incentive mechanisms that will bring ZEVs and other near-zero emission vehicles into the market as early as possible. Such discussions could be part of the discussions on the Carl Moyer and AB 118 programs. In addition, consumer outreach and promotion of ZEVs and other near-zero emission vehicles must be a top priority for CARB in order to ensure a strong market penetration. CARB needs to closely monitor the sales of ZEVs and make necessary revisions to ensure that the full emission reduction benefits are achieved.

Relative to early credits manufacturers can generate and use in later years, the SCAQMD staff believes that these credits play an important role to incentivize manufacturers to produce cleaner cars and light-duty trucks. However, CARB needs to carefully monitor the amount of credits generated and their use in producing vehicles that do not necessarily meet applicable criteria pollutant or greenhouse gas standards.

We are supportive of CARB's intent to work with the U.S. Environmental Protection Agency (EPA) in developing evaporative emission leak standards and test procedures. A recent U.S. EPA study found that in-use evaporative emissions were significantly higher than certification levels. We are concerned that significant gains from the proposed LEV III evaporative emission standards could be lost through excess in-use emissions. It is imperative that a leak test procedure and emission standards be developed that can be applied during certification and to the in-use fleet.

The following comments are specific to the proposed LEV III program and the proposed amendments to the ZEV Regulation.

Proposed LEV III Program

Proposed Combined NMOG+NOx Tailpipe Emission Standards

The SCAQMD staff supports cleaner tailpipe and evaporative emissions standards for light- and medium-duty vehicles and trucks. Our analysis of the proposed NMOG+NOx tailpipe emissions standards indicate that the proposed standards could be accelerated and provide for earlier introduction of cleaner vehicles. The proposed standards are not technology forcing for diesel-powered passenger cars, based on current NOx and hydrocarbon certification levels of these vehicles, except in the outer years of the proposed phase-in schedule. This situation may result in the unintended consequence of facilitating increased market penetration of diesel vehicles with corresponding additional NOx emissions. For example, if 20 percent of all passenger cars and light-duty trucks sold are diesel vehicles through the proposed phase-in time period, foregone NOx emission reductions could amount to approximately 2 tons per day in 2025 in the South Coast Air Basin. Therefore, **SCAQMD staff strongly recommends the implementation of a NOx capping standard for diesel-powered light-duty vehicles and medium-duty vehicles, to be equal to half of the proposed NMOG + NOx fleet average standard.** This would allow substantial lead time for diesel vehicle manufacturers to develop requisite technology, and at the same time provide a level playing field approach relative to corresponding gasoline vehicles since the natural split between NMOG and NOx emissions for gasoline vehicles is about 50/50.

Proposed PM Emissions Standards

The proposed Advanced Clean Cars Program includes more stringent PM emission standards for light- and medium-duty vehicles. The proposal allows a five-year lead time and five-year phase-in of a PM emission standard, 0.003 g/mi, in order to allow manufacturers time to further develop gasoline direct injection engines, anticipated to be used to meet the proposed greenhouse gas requirements. It should be noted that current technology gasoline vehicles already meet the proposed 0.003 g/mi PM emission level according to CARB staff analysis. Since more stringent greenhouse gas levels can be met through a combination of strategies in the near-term, SCAQMD staff strongly recommends that CARB follow the more historically traditional approach for lead time and phase-in of more stringent emission standards (especially in this case since the proposed standard is already achievable by current technology vehicles) to allow a three-year lead time and a three-year phase-in (i.e., phase-in the 0.003 g/mi PM standard from 2015 to 2017). In addition, CARB staff is proposing an even tighter PM exhaust standard for these vehicle classes of 0.001 g/mi, to be phase-in from 2025 to 2028. Similar to the preceding recommendation, **SCAQMD staff urges CARB to implement a three-year lead time and three-year phase-in subsequent to full implementation of the 2017 recommended end date for the 0.003 g/mi PM standard. Specifically, the 0.001 g/mi PM standards should be implemented from 2020 to 2022.**

Medium-Duty Emission Standards and Phase-In

SCAQMD staff is concerned about the proposed medium-duty emission standards and phase-in schedule. The phase-in schedule allows a four-year lead time and a seven-year phase-in. Again, these timeframes are above and beyond the time periods CARB has historically allowed for compliance with technology forcing standards. SCAQMD staff recommends a three-year lead time and three-year phase-in, corresponding to an implementation timeframe between 2015 and 2017. In addition, SCAQMD staff believes that the medium-duty vehicle emissions standards can be stronger than the standards proposed by CARB staff. Based on certification data for current gasoline-powered medium-duty vehicles, these vehicles can meet the SULEV170 requirement, specified for 90 percent of the medium-duty vehicle sales in the 8,500 to 10,000 lbs weight class for the last model year (2022) of the proposed phase-in schedule. Similarly, we believe that current gasoline-powered medium-duty vehicle technology would carry across for the 10,001 to 14,000 lbs. weight class as well. Therefore, **we recommend that the proposed NMOG + NOx emission standards for medium-duty vehicles be tightened by 50 percent to truly implement technology forcing emission standards for medium-duty vehicles.**

Greenhouse Gas Emission Standards and Credit Provisions

When CARB and the U.S. EPA released the Technical Assessment Report that served the basis of the federal proposed rulemaking for 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions, there was recognition that fleet average emission reduction improvements could be as much as 6% per year. This would be technologically achievable according to CARB's analysis. We estimate that it would also be cost effective. Considering that in CARB's evaluation a price of $4 per gallon of gasoline was projected between 2015 and 2030 to calculate vehicle operating costs, SCAQMD staff believes this is a conservative estimate and actual fuel prices will most likely be higher. Thus, the savings in vehicle operating costs from the greenhouse gas portion of the LEV III regulation are understated in the Initial Statement of Reasoning (ISOR) for the proposed regulation. Besides the additional benefits of further reducing greenhouse gases, stronger greenhouse gas emission standards will provide co-benefits in reducing criteria emissions when technology based engine controls are implemented. Although, CARB and U.S. EPA have reached agreement on an overall 5% per year improvement, the SCAQMD staff believes that CARB can still establish a 6 % per year improvement rate at this time. Such a rate could take the form of an "optional" standard to further incentivize the early commercialization of cleaner vehicles (since the rate of performance is translated into a g/mile standard). This is similar to the optional NMHC+NOx exhaust standards CARB established for heavy-duty vehicles prior to the implementation of the 2007 exhaust emissions standard. **As such, we urge CARB to propose an optional emissions standard for greenhouse gas emissions as part of the 15-day process.**

A significant concern is that emission reductions gained through the proposed LEV III regulation may be largely offset by a national consumer trend of purchasing larger, heavier vehicles. A Massachusetts Institute of Technology study (Knittel, *American*

Economic Review 2012, 101(December 2011): 3368–3399) spotlights this trend and attributes it to the weak improvement in overall fuel economy, despite the large technological gains. Corporate Average Fuel Economy (CAFE) standards increased substantially for passenger vehicles from 1978 to 1990, but the shift from passenger cars to light-duty trucks and sport utility vehicles resulted in a stagnant sales-weighted CAFE standard. Additionally, we are concerned that the travel provision, which provides an option for fleet averaging emissions across some states, could exacerbate this problem for the South Coast Air Basin. To mitigate the impact of the consumer trend, **we would urge limiting the credit trading between vehicle categories for both criteria and greenhouse gas emissions in the proposed LEV III regulation**. This could be done through annual or periodic adjustments based on the prior year's vehicle sales. Regardless, at a minimum, the impacts of credit use needs to be closely monitored and reported to the CARB Board.

Proposed Amendments to the ZEV Regulation

We are supportive of CARB's proposed categorization and treatment of "Extended Battery Electric Vehicles" in the proposed ZEV amendments. This vehicle category is expected to play an important role in providing a bridge towards consumer acceptance and widespread commercialization of ZEVs.

In order to meet the federally mandated 8-hour ozone deadline by 2023, the 2007 AQMP called for the need for the rapid market penetration of the lowest-polluting on-road vehicles available today – Advanced Technology Partial Zero Emission Vehicles (ATPZEVs) and ZEVs to meet the "Black Box" commitments. ARB staff analysis of the proposed Advanced Clean Cars Program indicates that approximately 17 percent of the LDV fleet (roughly 1.7 million vehicles) will be ATPZEVs and ZEVs by 2020, which partially addresses the identified need for these vehicles to help meet the 2023 ozone deadline. We believe that this number can be increased through intensive outreach and incentives along with the enhancements recommended in this letter. However, we believe that greater penetration of ZEVs and ATPZEVs can occur if CARB requires additional sales of these advanced technology light-duty vehicles in the near-term.

SCAQMD staff believes that near term increases in the penetration of ATPZEVs and ZEVs can be accommodated through increased manufacturer incentives to facilitate their accelerated market introduction. CARB staff analysis as part of the proposed rulemaking indicates that the incremental costs of battery electric, plug-in hybrid electric, and fuel cell vehicles range from about $13,000 to $20,000 per vehicle. Although CARB has provided some incentives to address these higher incremental costs, such as the Clean Vehicle Rebate Program, CARB has decreased current incentive levels from $5,000 to $2,500 per vehicle, which will end in 2015. **SCAQMD staff recommends, therefore, that the state work with air districts to develop mechanisms that could significantly**

increase these incentive levels to facilitate the sales of these cleaner vehicles prior to 2023.

In conclusion, we urge the CARB Board to adopt the amendments with the SCAQMD staff's proposed enhancements to the Advanced Clean Car Program at its January 26, 2012 meeting. A summary of these recommendations is contained in Attachment 1. If you have any questions about these comments, please feel free to call me or Mr. Henry Hogo, Assistant Deputy Executive Officer – Mobile Source Division, Science and Technology Advancement, at 909-396-3184.

Sincerely,

Barry R. Wallerstein, D.Env.
Executive Officer

CSL:HH:DRS

ATTACHMENT 1

Summary of South Coast Air Quality Management District Staff's Recommendations on the "Advanced Clean Car" Program

The following summarizes the South Coast Air Quality Management District (SCAQMD) staff comments and recommendations on the "Advanced Clean Car" Program for the California Air Resources Board consideration on January 26-27, 2012. Please refer to the main body of the SCAQMD staff's comment letter for more detailed discussions of the recommendations.

General Recommendations

- Begin discussions on incentive mechanisms that will bring zero emission vehicles (ZEVs) and other near-zero emission vehicles into the market as early as possible.

- Closely monitor the sales of ZEVs and make necessary revisions to ensure that the full emission reduction benefits are achieved.

- Closely monitor the amount of credits generated and their use in producing vehicles that do not necessarily meet applicable criteria pollutant or greenhouse gas standards.

LEV III Program

- Implement a NOx cap standard for diesel-powered light-duty vehicles and medium-duty vehicles, to be equal to half of the proposed NMOG + NOx fleet average standards.

- Implement a three-year lead time and three-year phase-in subsequent to full implementation of the 2017 recommended end date for the 0.003 g/mi PM standard. Specifically, the 0.001 g/mi PM standards should be implemented from 2020 to 2022.

- Tighten the proposed NMOG + NOx emission standards for medium-duty vehicles by 50 percent to truly implement technology forcing emission standards for medium-duty vehicles.

- Propose an "optional" emissions standard for greenhouse gas emissions as part of the 15-day process to incentivize earlier introduction of cleaner vehicles (ZEVs,

near-ZEVs, and alternative fueled vehicles). (This is similar to the NMHC + NOx heavy-duty exhaust standards prior to 2007.)

- Limit credit trading between vehicle categories for both criteria and greenhouse gas emissions in the proposed LEV III regulation.

ZEV Amendments

- Work with air districts to develop mechanisms that could significantly increase these incentive levels to facilitate the sales of these cleaner vehicles prior to 2023.