State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS

PROPOSAL TO CONSIDER REQUIRING CERTAIN FEDERAL LIGHT- AND MEDIUM VEHICLES TO CERTIFY IN CALIFORNIA, AND THE ADOPTION OF EXHAUST EMISSION STANDARDS FOR HEAVY-DUTY GASOLINE VEHICLES AND ENGINES

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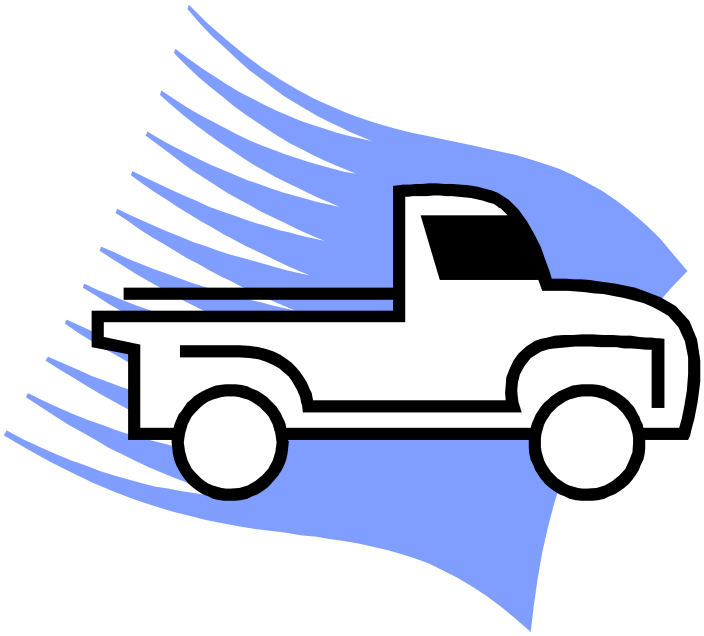

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EXECUTIVE SUMMARY

In 1998 California adopted the second phase of its Low-Emission Vehicle program (LEV II) for light- and medium-duty vehicles. In 1999 the United States Environmental Protection Agency (U.S. EPA) followed suit and adopted new emission standards for light- and medium-duty passenger cars and trucks (Tier 2 standards) that mirror the California standards. Earlier this year, U.S. EPA also adopted more stringent standards for heavy-duty gasoline engines. The purpose of this rulemaking is to incorporate portions of the recently promulgated federal programs into California's exhaust emission standards for light-, medium-, and heavy-duty vehicles and engines to ensure that California continues to receive only the cleanest vehicles available in every vehicle category.

Proposal for Light- and Medium-Duty Vehicles. While the California LEV II standards are generally more stringent than the comparable federal requirements, there are some features of the Tier 2 program that could result in manufacturers certifying certain vehicle models to a more stringent federal exhaust emission standard than is required in California. This can occur, for example, because LEV II program flexibilities built into the phase-in years (2004 through 2006) for heavier light trucks do not require full implementation until 2007. Thus, it is expected that manufacturers will certify some of these vehicles to a cleaner intermediate federal standard before all California vehicles in the category must meet the LEV II standards in 2007. In addition, U.S. EPA does not require each larger sport utility vehicle model to meet the same emission standards as passenger vehicles, as is the case in California. Rather, U.S. EPA allows sport utility vehicles to certify to higher emission standards if manufacturers offset them with other vehicles that are much cleaner. Some of the vehicles providing the offset might be cleaner than required in California. Thus staff is proposing a requirement that if a manufacturer certifies a cleaner federal vehicle model and offers an equivalent model in California, the California model must be certified to the same federal exhaust emission standards.

Proposal for Heavy-Duty Gasoline Engines. The standards being proposed for heavy-duty gasoline engines are intended to align with the recently promulgated federal standards. Although the current California standard (2.5 grams per brake horsepower-hour (g/bhp-hr)) is more stringent than the current federal requirement (4.0 g/bhp-hr), U.S. EPA has recently adopted an even more stringent standard of 1.0 g/bhp-hr effective with the 2005 model year. Staff is proposing to harmonize with the recently promulgated federal standards for heavy-duty Otto-cycle engines. This will allow manufacturers to make one vehicle that meets both California and federal standards.

Emission Impact. This proposal will reduce emissions by assuring that cleaner light- or medium-duty federal vehicles with equivalent California models will be sold in California. The emissions benefit from adoption of the federal heavy-duty gasoline standards will also reduce emissions.

I. INTRODUCTION

Since adoption of California's second generation Low-Emission Vehicle (LEV II) program in 1998, the federal government has adopted stringent exhaust emission standards that affect the entire vehicle fleet, ranging from passenger cars and light- and medium-duty vehicles to heavy-duty gasoline and diesel vehicles and engines. The federal standards affecting light- and medium-duty vehicles (passenger cars, light trucks and sport utility vehicles) are set forth in a portion of the federal Tier 2 standards. This staff report contains proposals to modify the LEV II standards to take advantage of some elements of the Tier 2 program where they would be beneficial to California. U.S. EPA also finalized the heavy-duty Otto-cycle (gasoline) standards earlier this year. Staff proposes that the federal standards for this category of vehicles and engines be incorporated into the California program.

The proposed regulations affecting light- and medium-duty vehicles will be reviewed first followed by a discussion of the proposed heavy-duty amendments.

II. PROPOSED LIGHT- AND MEDIUM-DUTY AMENDMENTS

A. Background

The Air Resources Board (ARB or Board) adopted the second phase of its Low-Emission Vehicle program (LEV II) in November 1998. These regulations are a continuation of the Low Emission Vehicle (LEV I) program originally adopted in 1990. Both the LEV I and LEV II regulations include three primary elements: (1) tiers of exhaust emission standards for increasingly more stringent categories of low-emission vehicles, (2) a mechanism requiring each manufacturer to phase-in a progressively cleaner mix of vehicles from year to year with the option of credit banking and trading, and (3) a requirement that a specified percentage of passenger cars and lighter light-duty trucks be ZEVs, vehicles with no emissions.

The LEV I program established four low-emission vehicle categories to which a car or light truck could be certified: Transitional Low-Emission Vehicle (TLEV), Low-Emission Vehicle (LEV), Ultra Low-Emission Vehicle (ULEV) and ZEV. The medium-duty vehicle categories are LEV, ULEV, Super Ultra Low-Emission Vehicle (SULEV) and ZEV. Vehicles could also be certified to the preexisting "Tier 1" exhaust emission standards. Each low-emission vehicle category has a progressively more stringent standard for exhaust emissions of nonmethane organic gas (NMOG), a precursor of ozone pollution. For example, passenger car LEVs and ULEVs have to meet standards for NMOG that are respectively about one-third and one-sixth of the corresponding 1994 Tier 1 standard. The identical LEV and ULEV standard for oxides of nitrogen (NOx) represents a 50% reduction from the 1994 Tier 1 NOx standard.

All cars have been subject to the same low-emission vehicle standards, regardless of weight. However, heavier light-duty trucks and medium-duty vehicles

were allowed to have greater emissions for a given low-emission vehicle category. There were two weight categories for light-duty trucks (LDT1 and LDT2) and four weight categories for medium-duty vehicles (MDV2, MDV3, MDV4 and MDV5).

Under LEV I, each year a manufacturer may produce cars and LDT1s certified to any combination of emission categories – TLEV, LEV, etc. – as long as its full model line meets the annual NMOG fleet average requirement. The required fleet average NMOG emissions level starts at the Tier 1 level for the 1994 model year. It then becomes incrementally more stringent through the 2003 model year, when the level for cars and LDT1s was derived from a potential mix of 75% LEVs, 15% ULEVs and 10% ZEVs. The heavier light trucks in the LDT2 category are subject to numerically higher fleet average NMOG emissions requirements reflecting the numerically higher TLEV, LEV and ULEV standards and the absence of a ZEV requirement for these vehicles. Medium-duty vehicles have separate requirements based on a percent phase-in schedule.

Whereas the LEV I program set forth increasingly stringent vehicle tailpipe emission standards from 1994 through 2003, LEV II continued that trend by setting even more stringent emission requirements for 2004 through 2010. The State Implementation Plan (SIP) for California was adopted by the Board in 1994 and contains California's blueprint for achieving healthful air quality in California by 2010. The LEV II program was adopted with the intent of satisfying the requirements of measure M2 of the SIP and a significant portion of the SIP's so-called "black box" by achieving a 57 ton per day reduction in ozone precursors in the South Coast Air Basin by 2010.

Developing the emission requirements for the LEV II program was a challenge to ARB staff. One of the principal goals of the program was to ensure that the increasingly popular sport utility vehicles and pickup trucks that are being used primarily as passenger cars be required to meet the same emission requirements as passenger cars. Thus all former light-duty trucks, and all former medium-duty vehicles having a gross vehicle weight (GVW) of less than 8,500 pounds, will be subject to the LEV II passenger car exhaust emission standards. Only vehicles having a GVW of 8,500-14,000 pounds – the MDV4 and MDV5 categories – will remain as medium-duty vehicles. Another goal of the program was to dramatically reduce NOx emissions for all vehicles below 8,500 pounds to a level 75 percent below that allowed for passenger cars in the LEV I program. The LEV II standards for the various vehicle emissions categories are phased in during the 2004-2007 model years.

ARB staff worked with catalytic converter suppliers to obtain the best technology available to demonstrate that even the very large sport utility vehicles could indeed meet very stringent passenger vehicle standards that were being proposed under the LEV II program. The ARB staff conducted an extensive test program utilizing some of the largest Ford sport utility vehicles (the best emission performance of sport utility vehicles available in 1998) equipped with prototype catalytic converters and other

modifications to demonstrate that the emission standards being proposed were indeed feasible for all vehicles below 8,500 pounds GVW.

Subsequent to adoption of the LEV II program, ARB staff assisted the U.S. EPA in developing a similar program for federal vehicles that would achieve maximum emission reductions for vehicles in other states. ARB staff met with U.S. EPA staff to review the engineering approach taken in our test program, provide them with emission test data, loan them experimental catalysts, and provide other assistance. U.S. EPA staff demonstrated that emission levels adopted in LEV II could also be achieved cost-effectively on vehicles nationwide. The program that was subsequently adopted by the U.S. EPA is referred to as the Tier 2 standards.

B. Rationale for Current Proposal

While Tier 2 was patterned after the LEV II program, it contains some unique features and program elements that differ from the California program. Some of these include setting a NOx fleet average requirement rather than an NMOG fleet average requirement as in California, different rates of phasing-in new emission standards, allowing diesel sport utility vehicles and pick-up trucks to emit at higher emission levels than passenger vehicles as long as their emissions are offset by lower emissions from other vehicles, and not including a zero-emission vehicle requirement. The Tier 2 regulations establish 10 different emission standard “bins” for cars and light trucks that function in the same manner as the vehicle emission categories (e.g., LEV and ULEV) in the California program. The emission levels for some federal bins fall between those for California’s vehicle emission categories, and the least stringent bins allow emissions greater than is allowed for any California LEV II emission category.

The differences in the federal Tier 2 emission standards and compliance requirements could result in a higher-emitting model being produced for sale in California than is sold in other states. This could occur in two primary ways: 1) some of the vehicles that have been classified as medium-duty vehicles but will be light-duty trucks under LEV II are allowed to certify to a less stringent LEV I emission standard in California during model years 2004-2006 than is required under the federal Tier 2 standards; and 2) some cars may be certified federally to a more stringent standard than is required in California in order to provide offsets that allow sale of a much higher-emitting federal vehicle outside of California (e.g. a diesel SUV that cannot meet California’s uniformly stringent NOx emission standards).

The staff’s proposal would change the LEV II regulations to require that a manufacturer may not certify a California vehicle model to a California vehicle emissions category that is less stringent than the federal emissions bin to which an equivalent vehicle model has been federally certified. In such a circumstance, the manufacturer would instead have to market in the state the model certified to the federal exhaust emission standards. This will result in lower emissions in California. These situations and how the proposed amendments will result in lower emissions are discussed in more detail in the paragraphs that follow.

Differences in light truck standards: The California LEV II and federal Tier 2 regulations typically provide a phase-in of new emission standards so that not all models must be redesigned to comply with lower emission standards in a single model year. The vehicle manufacturers' lack of engineering and testing resources sufficient to redesign hundreds of models in one year provides the rationale for providing a multi-year phase-in of more stringent emission standards.

The LEV II regulations require a phase-in of LEV II compliant cars and lighter light-duty truck models beginning in the 2004 model year. All models must be compliant with the LEV II requirements by 2007. However, the regulations do not require any current medium-duty vehicles in the MDV2 and MDV3 categories to comply with the LEV II passenger car standards until the 2007 model year. Because there are fewer models in this heavier category, staff concluded a mandatory phase-in of a specified percentage of models each year from 2004 to 2006 could eliminate flexibility that would benefit individual manufacturers. Staff expected, however, that some phase-in would occur naturally because of the engineering resource limitations mentioned above. During the 2004-2006 period, those models not certified to the LEV II standards remain subject to the LEV I standards.

In Tier 2, U.S. EPA chose to require a phase-in of the heavier light trucks. During the phase-in, which starts in the 2004 model year, any model not yet complying with the new Tier 2 standards must meet an interim NOx fleet average standard. This standard is more stringent than the California LEV I standard. Also, Tier 2 imposes a cap on NOx emissions from vehicles in this weight category that is more stringent than the LEV I NOx limits for vehicles in the current MDV3 category. Thus it is expected that in some instances during the 2004-2006 model years, manufacturers will market outside of California heavier light trucks that are cleaner than the equivalent models sold in California. The proposed changes to the LEV II regulations will prevent this from occurring by requiring manufacturers to sell the cleaner federal model in California.

Other cleaner federal vehicles: As noted above, the federal Tier 2 program has ten different standards categories ("emissions bins"), some of which allow much higher emissions than the California LEV program standards. The principal reason for this is U.S. EPA wanted to provide categories with NOx standards lax enough that diesel engines used in large pick-up trucks and SUVs could meet. The Board rejected higher emitting standards categories when it adopted the LEV II program in 1998. To sell a significant number of vehicles certified to the federal higher-emitting categories, a manufacturer must also sell vehicles certified to much lower standards, in order to comply with the NOx fleet average requirement. This could result in some cleaner models being sold outside of California, while a higher-emitting identical model is sold here. The cleaner federal model would not need to be sold in California because the higher emitting models it is offsetting federally can not be sold here, eliminating the need for offsets. To enable California to benefit from these lower emitting models, the proposed amendments would require manufacturers to offer for sale the cleanest model in California.

The Tier 2 regulations also establish a new vehicle category called “medium-duty passenger vehicle,” or MDPV, which is a complete vehicle (it comes directly from the factory fully assembled) and has a GVW between 8,500 and 10,000 pounds. This category was specifically designed by U.S. EPA to include the heaviest SUVs such as the Ford Excursion. The Tier 2 program groups these vehicles with the heavier light trucks and makes them subject to a stringent interim fleet average NOx standard starting in the 2004 model year. California has LEV II emission standards for these vehicles, but compliance is not required completely until the 2007 model year. Vehicles in the MDPV category would be subject to the proposed amendments, thus assuring that cleaner federal MDPVs are also marketed in California.

A summary of the original LEV I and LEV II programs and the federal Tier 2 program is contained in Appendix B to this Staff Report.

C. Summary Of Proposed Amendments

The amendments proposed by staff would be triggered whenever a manufacturer federally-certifies a 2004 or subsequent model-year passenger car, light-duty truck or medium-duty vehicle model to a federal Tier 2 emissions bin that is more stringent than an applicable California emissions category. In this circumstance, the equivalent model in California would have to be certified either to (i) the California standards for a vehicle emissions category that are at least as stringent as the standards for the corresponding federal emissions bin, or (ii) the federal exhaust emission standards to which the federal model is certified. However, where the federal exhaust emission standards for the particular emissions bin and the California standards for a vehicle emissions category are equally stringent, the California model could only be certified to either the California standards for that vehicle emissions category or more stringent California standards.

Model equivalency would be determined based on whether the federal vehicle is identical to the California model in the following respects:

(A) Vehicle manufacturer;
(B) Vehicle make and model;
(C) Cylinder block configuration (L-6, V-8, and so forth);
(D) Displacement;
(E) Combustion cycle; and
(F) Transmission class.

The new vehicle fleet composition is not expected to differ significantly between California and the rest of the nation and, furthermore, it is reasonable to assume that manufacturers will make few California specific models other than those used to satisfy the California ZEV requirements. Therefore, staff expects that under this proposal manufacturers will make available in California the same vehicle models offered nationwide that meet any cleaner standards required under Tier 2. California would accordingly receive the benefits from the cleanest vehicle models available.

In order to assist staff in administering these requirements, the manufacturer would be required, prior to vehicle certification, to submit information sufficient to enable the Executive Officer to determine whether there is a federally-certified vehicle model for the model year that is equivalent to the California model in question, based on the criteria set forth above. If the Executive Officer determines that there is an equivalent federal model, then the next step would be to compare the stringency of the federal and corresponding California exhaust emission standards. This is done by comparing the sum of the 100,000, 120,000 or 150,000 mile NMOG and NOx gram per mile emission standard values of the federal standard with that of the California 100,000, 120,000 or 150,000 mile NMOG plus NOx gram per mile standards.

For purposes of determining compliance with NMOG fleet average requirements, phase-in requirements, and calculating vehicle emission credits (VECs), California vehicles certified to the federal exhaust emission standards for a particular emissions bin would be considered to be certified to the next higher applicable Low Emission Vehicle standard category (based on the sum of the NMOG and NOx emission standards), where applicable. For example, a federal vehicle certified to a combined 0.110 gram per mile NMOG plus NOx standard would be considered to be certified to the LEV II program ULEV (0.125 g/mi NMOG + NOx) category, which is the next highest California emission category. Requiring certification to the next highest LEV program emission category rather than to the federal bin level incentivizes manufacturers to introduce new advanced technologies more rapidly in California. This is because the declining fleet average NMOG requires increasing numbers of ULEVs and SULEVs whereas the additional credits obtained by allowing the federal bin emission levels in the fleet average would allow manufacturers to delay introduction of ULEVs and SULEVs in California.

The manufacturer would have to provide evidence of federal exhaust emission certification, including compliance with the standards for the particular emissions bin, federal SFTP emissions, cold carbon monoxide (CO) emissions, and highway NOx emissions. Manufacturers would still be required to meet other applicable California emission and phase-in requirements such as applicable evaporative emissions standards, emission warranty, and California label requirements and would also be required to obtain a California Executive Order.

Staff is also proposing several minor amendments to the LEV II provisions to correct errors and update the certification language consistent with the Tier 2 requirements. For example, proposed amendments would eliminate unintended instances where requirements for small volume manufacturers are more stringent than those for other manufacturers. As with LEV I, small volume manufacturers would be allowed to delay implementation until the end of the phase-in years. These proposed amendments are described in Attachment C.

III. PROPOSED HEAVY-DUTY ENGINE AMENDMENTS

A. Background

On July 31, 2000, U.S. EPA adopted new regulations designed to reduce emissions of non-methane hydrocarbons (NMHC) and NOx from heavy-duty Otto-cycle (gasoline) engines (over 8,500 pounds GVW) from 4.0 grams per brake horsepower-hour (g/bhp-hr) to 1.0 g/bhp-hr. The regulations were published in the October 6, 2000 Federal Register (65 F.R. 59896). In its analysis, U.S. EPA estimates that the emission inventory for heavy-duty gasoline vehicles will increase by 43 percent and 14 percent nationwide for NOx and NMHC, respectively, between 2005 and 2030 if additional controls are not required. Although current California regulations are more stringent (2.5 g/bhp-hr) than the current federal standards, California would further benefit from the 1.0 g/bhp-hr standard adopted by U.S. EPA. Therefore, staff is proposing to harmonize California's regulations with the more stringent emission standards now being required for federally-certified vehicles and engines.

B. Description Of The Proposal

The U.S. EPA regulations are structured to reduce exhaust emissions from heavy-duty Otto-cycle engines and vehicles through adoption of new exhaust emission standards for both chassis- and engine-certified vehicles in this category, on-board diagnostic requirements (OBD) for vehicles 8,500 to 14,000 pounds GVW, and on-board refueling vapor recovery (ORVR) requirements. The only element of this federal rulemaking that staff is proposing be adopted for California is the exhaust NMHC + NOx standards for heavy-duty Otto-cycle engines above 8,500 pounds GVW. This is because California already has stringent exhaust emission standards for complete vehicles, and OBD II systems and ORVR controls are already required as well.

There are three compliance options in the federal rule that allow a manufacturer to select the best approach for its product line. Option 3 has been designated as the primary standard at 1.0 g/bhp-hr and is scheduled for introduction with the 2005 model year. The other two options allow manufacturers to delay compliance with this standard by certifying to an interim emission level earlier (either 2003 or 2004) than under Option 3 but at a less stringent level of 1.5 g/bhp-hr. Staff is proposing adoption of all of these options with a few minor adjustments.

Although the federal regulations treat all heavy-duty engines as one category over 8,500 pounds GVW, California has existing regulations that divide these engines into two categories – one for engines used in incomplete medium-duty gasoline vehicles 8,500 to 14,000 pounds GVW and another for engines used in all gasoline vehicles over 14,000 pounds GVW. The proposed federal standards would apply to both categories of engines for NMHC and NOx; however, staff is proposing that the existing medium-duty carbon monoxide (CO) standard of 14.4 g/bhp-hr for ULEVs be kept and is

proposing new standards (which are not required) for medium-duty SULEV engines of 0.5 g/bhp-hr NMHC + NOx; 7.2 g/bhp-hr CO; and 0.025 g/bhp-hr formaldehyde.

Staff also does not expect to see any major hurdles to achieving these requirements. It is expected that many of the technologies currently being used for light- and medium-duty gasoline vehicles will be the basis for achieving compliance with the standards. Technology changes expected to occur as a result of the new regulations include: improved durability catalysts with increased precious metal loading, optimization of the catalyst and fuel metering systems (including improved fuel injection and heated oxygen sensors), increased use of air injection and retarded spark timing to control cold start emissions, and improved exhaust gas recirculation for better NOx control.

U.S. EPA estimates that the purchase price of a heavy-duty Otto-cycle engine will increase by $256 for 2010 and subsequent model years due to the proposed regulations. However, staff does not anticipate increased costs to certify these vehicles for sale in California.

IV. AIR QUALITY, ENVIRONMENTAL AND ECONOMIC IMPACTS

A. Air Quality And Environmental Impacts

Staff anticipates that California will obtain emission benefits from the three elements of this proposal. First, when the air quality benefit of the LEV II program was estimated 1998, staff believed that the large number of engine families and vehicles in the medium-duty vehicle category (sport utility vehicles and large trucks) would cause manufacturers to phase-in some of these vehicles early. Given the large workload and limited engineering resources available to revise the numerous vehicle platforms in this category, staff believes this remains a reasonable assumption. However, due to flexibility in the LEV II program, manufacturers do not have to phase these vehicles into the LEV II requirements until 2007. Should manufacturers choose a more relaxed phase-in schedule, this proposal will ensure that California benefits by requiring the cleaner interim Tier 2 vehicles produced prior to 2007 to also be marketed here. Second, due to the built-in flexibility of the Tier 2 program, manufacturers may decide beyond 2007 to produce very clean passenger cars and light-duty trucks to offset their heavier sport utility vehicles and trucks meeting higher emission standards than permitted in California. Should this occur, California would benefit by requiring these cleaner light-duty vehicles to also be sold here. Third, the emission benefit realized by alignment with federal standards for heavy-duty Otto-cycle engines will be approximately one tpd reactive organic gas (ROG) plus NOx.

B. Economic Impact

The staff expects that the proposed amendments will not have a significant cost impact on directly affected persons or businesses. With regard to the LEV II amendments, the requirements would only apply to vehicles that have already been

certified to the federal standards; they accordingly do not independently require any California model to be certified to a new standard. Since the models will already have been federally-certified, the additional costs from marketing the vehicles should be minimal. With regard to the heavy-duty standards, U.S. EPA estimated that the new federal standards will result in a less than $300 cost increase for heavy-duty Otto-cycle engines by 2010. Since a manufacturer will already have to incur these costs for engines sold in the rest of the country, and there are significant costs incurred in certifying federal and California engines to different standards, adoption of the standards for California should not result in increased costs for manufacturers.

Since only those qualifying vehicles that have already been federally certified would be required to be sold in California, the technical feasibility and cost-effectiveness of these vehicles have already been demonstrated under the federal Tier 2 program and in the heavy-duty Otto-cycle rulemaking. In fact, U.S. EPA relied on much of the emission test data and cost information developed in support of the California LEV II program to demonstrate the technical feasibility and cost-effectiveness of the Tier 2 and heavy-duty standards. Except for some minor differences, the federal and California emission requirements are fairly well harmonized in the 2004 and beyond time frame. Therefore, staff believes that manufacturers would not incur any additional cost in making these vehicles available in California and there would be no noticeable impact in California employment, business status, and competitiveness.

1. Legal requirement. Section 11346.3 of the Government Code requires State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulation. The assessment includes a consideration of the impact of the proposed regulation on California jobs, business expansion, elimination, or creation, and the ability of California business to compete.

State agencies are required to estimate the cost or savings to any state or local agency, and school districts. The estimate is to include any nondiscretionary cost or savings to local agencies and the cost or savings in federal funding to the state.

2. Affected businesses. Any business involved in manufacturing or purchasing passenger cars, light-duty trucks, medium-duty vehicles or heavy-duty engines or vehicles could be affected by the proposed amendments. There are 34 companies worldwide that manufacture California-certified light- and medium-duty vehicles and heavy-duty gasoline engines. Only one motor vehicle manufacturing plant is located in California, the NUMMI facility, which is a joint venture between GM and Toyota.

3. Potential impact on manufacturers and consumers. The proposed California requirements are not expected to impact automobile manufacturers significantly, since manufacturers are only being required to certify vehicles to standards that their federal vehicles will have already met. Manufacturers also experience some

economies when producing “50-state” vehicles. The impact on consumers is also expected to be minimal.

4. Potential impact on business competitiveness. The proposed amendments would have no adverse impact on the ability of California businesses to compete with businesses in other states because we are proposing to allow certain federal vehicles to be sold in California and to harmonize with the federal standards for heavy-duty engines. The requirements will also apply to manufacturers nationwide if the manufacturers sell vehicles in California.

5. Potential impact on employment. The proposed amendments are not expected to cause a noticeable change in California employment because all but a very small portion of automobile manufacturing is conducted in other states.

6. Potential impact on business creation, elimination or expansion. The proposed amendments are not expected to affect business creation, elimination or expansion.

7. Potential costs to local and state agencies. The proposed amendments are not expected to have a fiscal impact on state and local agencies or on funding to state agencies.

V. REGULATORY ALTERNATIVES

Staff considered the following regulatory alternatives to the proposed amendments.

1. Do not amend current California LEV program. The recently promulgated federal standards present California with the opportunity to help ensure achieving the full expected emission benefit of LEV II by requiring manufacturers to sell a federal vehicle in California, if it is cleaner than required by California. In the absence of a regulation, emission reductions would be lost. These are needed to help assure implementation of the California SIP. For heavy-duty vehicles, we would be losing emission benefit by not requiring the more stringent federal standard.

2. Adopt the federal program in its entirety. Many aspects of the California LEV regulations are more stringent than their federal counterpart. Examples include more stringent hydrocarbon exhaust emission requirements for all vehicle categories, more stringent evaporative emission standards, and the zero-emission vehicle program. Accordingly, adoption of the Tier 2 standards in place of the LEV II program would provide less emission benefit.

VI. STAFF RECOMMENDATION

For the reasons stated above, staff recommends that the Board adopt the proposals set forth in this staff report.

REFERENCES

1. Staff Report: Initial Statement of Reasons, “Proposed Amendments to California Exhaust and Evaporative Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles “LEV II” and Proposed Amendments to California Motor Vehicle Certification, Assembly Line and In-Use Test Requirements “CAP 2000”,” California Air Resources Board September 18, 1998,

2. Final Statement of Reasons, “”LEV II” and “CAP 2000” Amendments to the California Exhaust and Evaporative Emission Standards and Test Procedures for Passenger cars, Light-Duty Trucks and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles,” California Air Resources Board, September 1999.

3. Preamble and Final Rule, “Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements; Final Rule,” Federal Register, Vol. 65, No. 28, Thursday, February 10, 2000 pp 6698-6870.

4. Preamble and Final Rule, “Emissions Control, Air Pollution From 2004 and later Model year Heavy-Duty Highway Engines and vehicles; Light-Duty On-Board Diagnostics Requirements, Revision; Final Rule,” Federal Register, Vol. 65, No. 195, Friday, October 6, 2000 pp 59896-59978.