State of California
Air Resources Board

BOARD ITEM SUMMARY

ITEM # 07-10-1: Health Update: Health Effects Associated with Traffic-Related Air Pollution

STAFF RECOMMENDATION:
Informational Item.

DISCUSSION:
The ARB staff provides the Board with regular updates on recent research findings on the health effects of air pollution. Earlier this year, staff gave an overview of traffic-related pollutants and health effects found in infants and children. This month, staff will present recently published research on the effects of living near traffic on the severity of asthma among adults and seniors living in Los Angeles and San Diego counties.

SUMMARY OF AGENDA ITEM:
Health effects from traffic-related pollution have recently received much media attention and the subject is an important research priority at ARB. The focus of this presentation will be on adults with asthma. The effect of traffic-related pollutants on the health of susceptible populations is a recognized concern, and this research provides evidence of serious health consequences. The investigators examined the severity of asthma symptoms among 1,800 adult asthmatics living in Los Angeles and San Diego counties and found that those living in areas of heavy traffic were more likely to have poorly controlled asthma than those living in areas with lighter traffic. These results provide insight into poorly controlled asthma among adults: a complication of asthma that is not well understood and difficult to treat. Staff will also present findings from several new studies of adults and seniors which show associations between traffic-related pollution and other health outcomes. The findings from these studies indicate the importance of continuing to consider traffic pollution exposures in future research, public health and regulatory efforts from the ARB.

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BOARD ITEM SUMMARY

ITEM # 07-10-2: Public Meeting to Consider Approval of Additions to the List of Early Action Measures to Reduce Greenhouse Gas (GHG) Emissions under the California Global Warming Solutions Act of 2006 and a Discussion of Concepts for Promoting and Recognizing Voluntary Early Actions

STAFF RECOMMENDATION:
Staff recommends that the Board approve the revised list of 44 total early actions to reduce GHG emissions, including the six new proposed discrete early action measures and the five new proposed early actions. These measures would be added to the list of early actions previously approved by the Board on June 21, 2007.

DISCUSSION:
The California Global Warming Solutions Act of 2006 (AB 32), mandates that ARB identify a list of "discrete early action greenhouse gas reduction measures" by June 30, 2007 (Health and Safety Code section 38560(a)). Once on the list, these measures are to be developed into individual regulatory proposals to be adopted by the Board, and made enforceable by January 1, 2010.

In June 2007 the Board directed staff to pursue 37 early actions for reducing greenhouse gas (GHG) emissions under AB 32. Three of these 37 strategies met the definition of discrete early action measures. These are:

1) low carbon fuel standard;
2) restrictions on high global warming potential motor vehicle refrigerants; and
3) landfill methane capture.

The Board also directed staff to further evaluate early action recommendations made at the June 2007 meeting by the AB 32 Environmental Justice Advisory Committee (EJAC), the California Air Pollution Control Officers Association (CAPCOA), and the South Coast Air Quality Management District (SCAQMD), and to report back to the Board within six months. The Board also expressed the general desire to try to pursue greater GHG emissions reductions in California in the near-term.

ARB staff has examined a broad spectrum of potential near-term mitigation measures against the criteria established in AB 32, coordinated with other state agencies, gathered inputs from a wide range of stakeholders, and held three public workshops and one international technology symposium. The result of this process is staff's recommendations included in the draft report to the Board entitled "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration." The draft report takes into

consideration comments from the EJAC, CAPCOA, SCAQMD, other state agencies, and the staff from the Climate Action Team. The draft report was released for public review and comment on September 7, 2007 and a public meeting was held on September 17, 2007. The report was modified and re-released in final form prior to the October 2007 Board hearing.

In the staff report, staff identified six additional strategies that meet the criteria of discrete early actions, resulting in a total of nine proposed discrete early action strategies. These strategies have significant potential for climate benefit and meet the legal definition of "discrete early action greenhouse gas reduction measures" specified in AB 32. These additional measures consist of:

1. Sulfur hexafluoride (SF_6) reduction in the non-electric sector;
2. Reduction of high global warming potential greenhouse gases in consumer products;
3. SmartWay truck efficiency;
4. Tire inflation program;
5. Reduce perfluorocarbons (PFCs) in the semiconductor industry; and
6. Green ports.

If approved by the Board, each of these six strategies will be developed following the traditional regulatory process, including public comment, and is expected to come back for formal consideration by the Board in early 2009.

After the review and analysis of measures proposed by stakeholders, ARB staff recommends increasing the entire list of early actions from 37 to 44 measures. Cumulatively, all 44 measures have the potential to deliver greenhouse gas emission reductions on the order of at least 42 million metric tons of CO_2 equivalents ($MMTCO_2E$) by the year 2020. It is anticipated that these measures will be initiated as both regulatory and non-regulatory items that will come before the Board for formal action prior to the close of 2012.

SUMMARY AND IMPACTS:

The six discrete early actions proposed by ARB staff as well as the original three discrete early actions, and the 35 early actions identified in the staff report could reduce GHG emissions on the order of 42 $MMTCO_2E$ by 2020 relative to projected levels. Existing ARB regulations will contribute an additional 30 $MMTCO_2E$ (e.g., AB 1493 and the diesel program). The Climate Action Team has identified measures to be implemented by other agencies that account for a cumulative reduction of approximately 68 $MMTCO_2E$. Cumulatively, these measures represent a significant advancement towards the 2020 GHG emission reduction goal of AB 32. The remaining reductions to meet the 2020 target will be identified by the Scoping Plan to be considered the Board in late 2008.

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BOARD ITEM SUMMARY

ITEM # 07-10-3: Public Meeting to Consider Proposed Adoption of California Climate Action Registry Forestry Greenhouse Gas Protocols for Voluntary Purposes

STAFF RECOMMENDATION:
Adopt the California Climate Action Registry (CCAR) Forestry Greenhouse Gas Accounting Protocols for voluntary purposes.

DISCUSSION:
ARB staff is recommending that the Board adopt CCAR forestry protocols. Adoption is a non-regulatory action which serves as an official recognition of a technically sound approach for carbon accounting in forest projects. Adoption of these protocols does not mean that new accounting mechanisms or additional protocols will not continue to be developed in the future, but rather it is the first step in a longer-term process to promote sound forest projects that reduce greenhouse gases (GHG). Staff will also describe a process to move forward to address other forest project types.

AB32 (Nunez 2006) directs ARB to adopt regulations and take other actions in furtherance of reducing statewide GHG levels to 1990 levels by 2020. One of the most important steps in affecting carbon reductions in the State is accurate carbon stock accounting. The forestry sector possesses a large potential for yielding carbon reductions due to its role in sequestering carbon. Monitoring and documenting forest carbon reductions and emissions requires accurate measurements of carbon pools in projects designed to increase forest carbon stocks.

CCAR was mandated to develop forest protocols by SB812 (Sher 2002). This bill required CCAR to develop a GHG accounting framework for the forest sector in a manner that creates benefits for the climate while also benefiting the local environment (e.g., California's native forests, biodiversity, water quality and species habitat).

The forest protocols have been through a four-year, multi-stakeholder public process. Development and drafting lasted over a year and a half. The protocols were then reviewed by the Registry's Technical Advisory Committee and over 50 external experts, representing the forest industry, government agencies and academia. The protocols were supported by the Board of Forestry in August 2004 and adopted by the CCAR Board in June of 2005. AB32 requires ARB to use CCAR protocols where appropriate and to the maximum extent feasible.

While Board Adoption of the forestry protocols for voluntary purposes will constitute the Board's endorsement of a set of forest carbon accounting principles, it will also send a positive signal to entities considering projects using these protocols.

SUMMARY AND IMPACTS:

Board adoption of the CCAR voluntary protocols is the first step in a longer-term, multi-phase effort to address the role of voluntary reductions in ARB's climate change program. The forest protocols provide project proponents with technically sound tools for carbon accounting for forests. Adoption of the protocols by ARB will signal the importance of voluntary reductions and provide some level of certainty for projects moving forward.

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BOARD ITEM SUMMARY

ITEM # 07-10-4: Public Meeting to Consider the San Joaquin Valley 2007 PM10 Maintenance Plan

STAFF RECOMMENDATION:
ARB staff recommends that the Board approve the San Joaquin Valley 2007 PM10 Maintenance Plan, including updated transportation conformity budgets, emission inventory, and maintenance demonstration as a revision to the California State Implementation Plan for submittal to the U.S Environmental Protection Agency (U.S. EPA). In addition, ARB staff recommends that the Board approve the District's redesignation request from nonattainment to attainment for the federal PM10 standard.

DISCUSSION:
The San Joaquin Valley Unified Air Pollution Control District (District or Valley) is designated as a serious nonattainment area for the federal PM10 air quality standard. In June 2003, the District adopted the 2003 PM10 Attainment Plan setting forth a control strategy for attaining the PM10 standard by December 31, 2010. The Valley's air quality has improved to the extent that the District now attains the PM10 standard, ahead of the 2010 attainment deadline.

In October 2006, U.S. EPA determined that the District had attained the PM10 standard based on 2003-2005 ambient monitoring data. In August 2007, U.S. EPA proposed to affirm its October 2006 determination of attainment based on evaluation of monitoring data collected through 2006. These U.S. EPA actions, however, do not constitute a formal redesignation of the District to attainment since a maintenance plan is required. The District prepared the 2007 PM10 Maintenance Plan to address this need and requests official redesignation to attainment for the PM10 standard. The District Governing Board adopted the 2007 PM10 Maintenance Plan on September 20, 2007.

During the development of the 2007 PM10 Maintenance Plan, the Valley transportation agencies provided updated transportation activity for use in calculating conformity budgets. This information was not available in time for the District to incorporate it into the adopted plan. ARB staff worked with the transportation agencies and the District to reflect the updated activity data in conformity budgets, and post the budgets for the required 30-day public review. In the Resolution approving the 2007 PM10 Maintenance Plan, the District recognized the need for technical refinements to the conformity budgets after adoption of the 2007 PM10 Maintenance Plan. ARB staff proposes ARB adoption of the updated transportation conformity budgets for the region.

SUMMARY AND IMPACTS:

ARB staff has determined that the 2007 PM10 Maintenance Plan provides for continued maintenance of the PM10 standard through 2020. The 2007 PM10 Maintenance Plan and redesignation request meets all applicable federal requirements.

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BOARD ITEM SUMMARY

ITEM # 07-10-5: Public Meeting to Consider Proposed Amendments to the Suggested Control Measure For Architectural Coatings

STAFF RECOMMENDATION:
The Air Resources Board (ARB or Board) staff recommends that the Board approve the proposed amendments to the Suggested Control Measure (SCM) for Architectural Coatings.

DISCUSSION:
Architectural coatings include a wide variety of paints and other coatings that are applied to stationary structures and their appurtenances. They include general use paints, such as flat and nonflat (glossy) paints, and a wide variety of specialty coatings, such as industrial maintenance coatings, wood coatings, roof coatings, rust preventative coatings, stains, and primers. The use of architectural coatings in California results in approximately 95 tons per day of VOC emissions, which contribute to the formation of ozone and particulate matter, two of California's most serious air quality problems.

Under California law, the primary authority for controlling emissions from architectural coatings is vested in the air pollution control and air quality management districts (districts). However, ARB often provides guidance and other assistance to the districts, including the development of model rules such as the SCM for architectural coatings. Currently, 20 of California's 35 districts have adopted architectural coatings rules based on the SCM that was approved by ARB in 2000. The Board's approval of the proposed amendments to the SCM will not impose binding requirements on any person or district. It will be up to each district to decide if adoption of the amended SCM as a district rule is needed to attain the state and federal ambient air quality standards within the district.

SUMMARY AND IMPACTS:
Six districts have State Implementation Plans (SIPs) that require them to reduce VOC emissions from architectural coatings. The proposed amendments to the SCM would enable these districts to meet their SIP commitments and would reduce VOC emissions by 15 tons per day statewide (excluding the SCAQMD, which has already adopted lower VOC limits in its Rule 1113). The proposed amendments would lower VOC limits for 19 of the 42 architectural coating categories. The proposed effective date for the VOC limits is January 1, 2010, for all categories except rust preventative coatings and specialty primers,

sealers, and undercoaters. The proposed effective date for the VOC limits for rust preventative coatings and specialty primers, sealers, and undercoaters is January 1, 2012. Staff is proposing the continued use of mass-based VOC limits for architectural coatings, because it is an effective approach for achieving emission reductions and it can be easily enforced by districts. Staff will continue to evaluate the feasibility of implementing reactivity-based limits in the future to achieve further ozone reductions.

Staff analyzed the potential economic impacts for the proposed amendments to the SCM. The overall average cost-effectiveness is estimated to be $1.12 per pound of VOC reduced which compares favorably with the cost-effectiveness of similar regulations. The staff's analysis shows that affected businesses would be able to absorb the costs of the proposed amendments with no significant adverse impacts on their profitability.

Staff also analyzed the potential environmental impacts and determined that the proposed amendments to the SCM will not result in any adverse health, safety, or environmental impacts. A positive impact is expected as VOC emissions are reduced, thereby reducing health risks from public exposure to ozone and particulate matter.

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BOARD ITEM SUMMARY

ITEM # 07-10-6: **Public Meeting to Consider Adopting the Proposed Regulation for Commercial Harbor Craft**

STAFF RECOMMENDATION:
Approve the proposed regulation for commercial harbor craft.

DISCUSSION:
In September 2000, the California Air Resources Board (ARB) adopted a comprehensive Diesel Risk Reduction Plan (Plan), establishing a goal of reducing diesel particulate matter (PM) emissions and the associated health risk by 85 percent in 2020. This proposed regulation for commercial harbor craft engines is a step toward achieving the goals of the Plan. In addition to the diesel PM reductions, the proposed regulation would reduce ozone precursor emissions and would improve the air quality in neighborhoods near California ports and waterways.

In April 2006, the ARB adopted the Goods Movement Emission Reduction Plan (GMERP). The GMERP established goals for controlling emissions from commercial harbor craft of 30% by 2015 and 40% by 2020. This proposed regulation for commercial harbor craft engines achieves these goals through the accelerated replacement of unregulated and Tier 1 engines (i.e., engines subject to U.S. EPA Tier 1 standards for marine engines).

Diesel PM and oxides of nitrogen (NOx) emissions from the operation of diesel engines on commercial harbor craft are approximately 3 tons per day (tpd) and 73 tpd, respectively. The recent ARB exposure study for the ports of Los Angeles and Long Beach showed commercial harbor craft to be the third largest source of diesel PM emission contributing to the cancer risk at the ports.

The proposal was developed through workshops and focus meetings involving owners and operators of commercial harbor craft, industry associations, environmental organizations, and other parties interested in commercial harbor craft.

The proposed regulation requires in-use (existing) unregulated Tier 1 auxiliary and propulsion engines on ferries, excursion vessels, tugboats, and towboats to be replaced with engines meeting U.S. EPA Tier 2 or Tier 3 marine engine standards. The in-use engine compliance schedule is based on replacing the oldest, highest use engine first. The schedule for the South Coast Air Quality District (SCAQMD) is accelerated by two years. All new harbor craft would be

required to install the cleanest available engines. New ferries would have an additional requirement to install the best available control technology on propulsion engines to further reduce diesel PM and NOx emissions. Replacement engines for all in-use harbor craft would also be required to meet new engine standards current at the time of engine purchase. In addition, all commercial harbor craft vessels will be subject to monitoring (use of non-resettable hour meters), recordkeeping, and reporting provisions.

SUMMARY AND IMPACTS:

ARB staff estimates that, with the implementation of the rule, diesel PM and NOx emissions and associated health impacts will be reduced by 40 to 50 percent by 2015 and 60 to 70 percent by 2025, compared to a 2004 baseline. The SCAQMD accelerated schedule would provide early diesel PM and NOx and benefits with an estimated 35 percent reduction in diesel PM emissions and nearly 30 percent reduction in NOx emissions, due to the regulation, compared to uncontrolled emissions in 2014.

The cost-effectiveness of the proposed regulation is estimated to be about $30 per pound of diesel PM reduced considering only the benefits of reducing diesel PM. Because the regulation will also reduce NOx emissions, half of the cost of compliance could be attributed to these benefits, resulting in cost effectiveness values of approximately $15 per pound of diesel PM and $1 per pound of NOx reduced.

The proposed regulation will result in significant reductions in exposure and potential cancer risks to residents that live near ports and California waterways. Based on an analysis of the population impacted by a risk of 10 in a million, the population impacted by that risk would be reduced from 1.7 million persons, in 2004, down to 0.6 million persons by 2020 due to reductions from the proposed regulation as well as other factors.

Further, the proposed regulation will result in significant reductions in exposure and potential non-cancer health effects. ARB staff estimates that approximately 310 premature deaths statewide will be avoided by the year 2025 due to the implementation of the regulation, which will also yield numerous other non-cancer health benefits. These benefits are estimated to represent a savings that ARB staff estimates to range from $1.3 billion to $2.0 billion, using standard U.S. EPA methodology.

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BOARD ITEM SUMMARY

ITEM # 07-10-7: Public Hearing to Consider Amendments to Regulations Regarding New Aftermarket and Used Catalytic Converters Offered for Sale and Use in California

STAFF RECOMMENDATION:
Staff recommends that the Board adopt the proposed amendments to California's requirements and evaluation procedures for new aftermarket catalytic converters and used original equipment catalytic converters offered for sale in California. The requirements are contained in Title 13, California Code of Regulations, section 2222 and the evaluation procedures incorporated by reference therein. The amendments would increase the stringency of the emission performance and durability requirements applicable to new aftermarket catalytic converters, and would improve other aspects of ARB's converter evaluation procedures. An amendment to sunset provisions permitting the sale of used original equipment catalytic converters is also included in the staff's proposal. The amendments applicable to new aftermarket catalytic converters would become effective on January 1, 2009 and the amendments eliminating the current provisions allowing the sale of used catalytic converters would take effect on July 1, 2008 or 30 days after the amendments are filed with the Secretary of State's office, whichever date is later.

DISCUSSION:
The ARB's current regulations allow the sale and use of new aftermarket catalytic converters and used original equipment converters if they comply with established performance criteria and other requirements. The purpose of these regulations is to provide for the availability of replacement catalytic converters that are less expensive than original equipment designs. The performance requirements for these aftermarket converters balance the continued need to control emissions from older in-use vehicles with the fact that many vehicles needing a new catalyst have a limited amount of life remaining and a correspondingly low market value.

The ARB's current new aftermarket catalytic converter requirements were established in 1988. They specify that aftermarket converters must meet fixed minimum conversion efficiencies through 25,000 miles of use. However, significant advances in the performance and durability of original equipment catalytic converters have occurred since 1988, as manufacturers have worked to comply with the more stringent emission standards that were established through ARB's low emission vehicle (LEV I and LEV II) requirements. Aftermarket converters meeting the existing requirements are not capable of sufficiently reducing engine-out emissions of vehicles certified to the low emission requirements to enable them to meet certification standards. Therefore, improvements to the performance requirements for new aftermarket catalytic converters

are needed to keep pace with the lower vehicle emission standards and technological advances in the design and production of new aftermarket catalytic converters.

The ARB's current provisions allow the sale of used original equipment catalytic converters if such converters are individually screened to determine their performance. Used converters are not required to meet the criteria applicable to new converters, such as emissions performance, durability demonstration, and warranty requirements. Staff believes it is only appropriate to allow the continued use and sale of used converters that can demonstrate emissions performance comparable to the proposed requirements for new aftermarket catalysts, but staff is not aware of any economically feasible screening tests. Staff is therefore proposing to phase out the current provisions allowing the sale and use of used converters.

The proposed amendments are summarized below:

1. More Stringent New Aftermarket Converter Performance Requirements

The current evaluation procedures require new aftermarket catalytic converters to be at least 70 percent efficient in converting hydrocarbons (HC) and carbon monoxide (CO) emissions in the exhaust stream, and 60 percent efficient for reducing oxides of nitrogen (NOx) pollutants, for a period of 25,000 miles. The amendments proposed by staff would replace these requirements based on converter efficiency with performance standards based on reducing engine out emissions to levels that would allow in-use vehicles equipped with such catalysts to comply with certification emission standards.

2. Increased Durability Requirements

The staff is proposing to increase the durability period for new aftermarket catalytic converters from 25,000 miles to 5 years or 50,000 miles, whichever first occurs.

3. OBD II Compatibility Demonstration

1996 and newer model year vehicles are equipped with on-board diagnostic systems (known as OBD II systems) that monitor the performance of the catalytic converter(s) as the vehicle is driven. The proposed amendments would require manufacturers to demonstrate that their aftermarket catalytic converter designs are OBD II compatible for these vehicles (i.e., the aftermarket converter manufacturer must demonstrate that its converters are designed such that vehicle OBD II systems will be able to differentiate between a properly operating and a deteriorated aftermarket converter).

4. Other Evaluation Procedure Improvements

The staff is proposing several additional amendments to ARB's evaluation procedures for new aftermarket catalytic converters to ensure that the components perform as expected in-use. The amendments include: a requirement that manufacturers monitor and report warranty claims on an on-going basis to enable early detection of systematic

converter defects, quality control procedures that govern the converter manufacturing process, and improved converter labeling provisions to ensure that replacement converters are being installed in the specific vehicle models for which ARB approval has been granted.

5. Sunsetting Provisions Permitting the Sale of Used Catalytic Converters

The staff is also proposing to sunset existing provisions permitting the sale of used original equipment catalytic converters. Staff believes it is only appropriate to allow the continued use and sale of used converters that can demonstrate emissions performance comparable to the proposed requirements for new aftermarket catalysts, but staff is not aware of any economically feasible screening tests. Leaving the existing used converter provisions unchanged, or proposing performance requirements for used converters that are only somewhat more stringent than the current requirements would create an inequity in the requirements between new and used converters, and could also undermine the benefits of the proposed new catalytic converter requirements. Increasing the screening requirements to test used converters would not be economically feasible for the foreseeable future and might mislead the public that a used converter business is economically feasible in California. Therefore, staff is proposing to phase out the current provisions allowing the sale and use of used converters.

SUMMARY AND IMPACTS:

The staff estimates that the more stringent performance and durability requirements for new aftermarket catalytic converters would reduce in-use emissions of hydrocarbons and oxides of nitrogen from the California fleet by 36 tons per day, statewide, by 2012. The proposed amendments would also ensure that OBD II systems on 1996 and newer vehicles continue to work as intended when aftermarket catalytic converters are installed.

The proposed amendments would increase the average price of a new aftermarket catalytic converter by an estimated $200. However, when considering the increased durability of the converters meeting the proposed requirements, the cost increase amortized over the expected life of the converters would amount to 10 to 28 cents per 100 miles of vehicle operation.

The proposal would negatively impact companies that sell used catalytic converters in California by eliminating their market for used catalytic converters in California. The sale of used converters would still be legal in other states under federal regulation. Eliminating the availability of used catalytic converters could also impact owners of low volume vehicle models for which new aftermarket catalytic converters may not be offered. Such vehicle owners may have no practical option except to purchase an original equipment converter if a replacement is needed.