

**SUMMARY OF BOARD ITEM**

**ITEM # 02-8-3:** Public Meeting to Update the Board on the Status of the Off-Road Emission Control Programs for Spark-Ignition and Compression-Ignition Engines

**STAFF RECOMMENDATION:** This item is solely for information and thus no Board action is necessary.

**DISCUSSION:** As a result of federal and state regulations as well as other market forces, the state of emission control technology for off-road engines has progressed significantly in the last decade. Most recently, in 1998, 2000, and 2001 the Board adopted regulations for off-road spark-ignition engines and compression-ignition engines. The new regulations will significantly reduce the statewide hydrocarbon plus oxides of nitrogen emissions from off-road engines by 2010. In the past, periodic reviews of industry's progress, both in meeting current Air Resources Board (ARB) regulations and in striving to meet requirements with future effective dates, have helped the Board determine whether it needs to reevaluate regulatory requirements. During the off-road engine hearings the Board directed ARB staff to provide a status report on the available technology and manufacturers progress towards producing engines and equipment which meets current and future ARB emission standards.

To assess the status of implementation of the regulations, staff reviewed the available certification data and other information, and met with individual manufacturers and discussed their progress and plans in developing emission compliant engines and equipment. Staff also held a public workshop, in which various members of industry gave presentations regarding emission control technologies. In addition, staff met with manufacturers of various emission control technologies that could be used to meet the emission standards.

**SUMMARY AND IMPACTS:**

Staff learned that the production of engines in the 0-65 cubic centimeter displacement segment declined in 2000, at least partially as a result of the small engine regulation. However, manufacturers have indicated that the market will rebound as they develop more complying product. The 2001 production numbers confirm a rebound in this category. There has been relatively little effect from the regulation on production of engines greater than 65 cubic centimeters displacement. Implementation of emission standards for large spark-ignition engines began in 2001 and manufacturers have complied with the regulatory phase-in requirement and have certified additional 2002 model year large spark-ignition engines to California's standards. Based on the information provided, manufacturers are on track to meet current emission requirements, with many certifying engines well below the specified numerical emissions standards. Compliance with the recreational marine engine standards has been achieved through improved fueling and combustion techniques, and by transitioning from two-cycle to four-cycle engines. The cleanest recreational marine engines receive a three-star label to promote easy recognition by the public. Past and present emission standards for compression-ignition engines have been achieved mostly through modifications, such as improved fueling, turbocharging, and aftercooling. Upcoming amendments to the compression-ignition engine standards will mostly likely require the use of one or more methods of aftertreatment.

**CALIFORNIA AIR RESOURCES BOARD****NOTICE OF PUBLIC MEETING TO UPDATE THE BOARD ON THE STATUS OF THE OFF-ROAD EMISSION CONTROL PROGRAMS FOR SPARK-IGNITION AND COMPRESSION-IGNITION ENGINES**

The Air Resources Board (the "Board" or "ARB") will conduct a public meeting at the time and place noted below to consider ARB staff's update on the status of the off-road emission control programs for spark-ignition and compression-ignition engines. This item is informational only: no regulatory action will be taken.

DATE: October 24, 2002

TIME: 9:30 a.m.

PLACE: Air Resources Board  
Annex 4 Auditorium  
9530 Telstar Avenue  
El Monte, California 91731

This item will be considered at a two-day meeting of the Board, which will commence at 9:30 a.m., October 24, 2002, and will continue at 8:30 a.m., October 25, 2002, as necessary. This item may not be considered until October 25, 2002. Please consult the agenda for the meeting, which will be available at least 10 days before October 24, 2002, to determine the day on which this item will be considered.

This facility is accessible to persons with disabilities. If accommodation is needed, please contact ARB's Clerk of the Board at (916) 322-5594 by October 10, 2002, to ensure accommodation. Persons with hearing or speech impairments can contact us by using our Telephone Device for the Deaf (TDD) at (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

**Background**

As a result of federal and state regulations, as well as other market influences, emission control technology for off-road engines has significantly advanced over the last decade. In 1998, 2000, and 2001, the Board adopted more stringent requirements for off-road spark-ignition and compression-ignition engines. At these regulatory hearings, the Board directed staff to review the impact on industry from implementing various off-road emission standards and to identify emission control strategies that could be used on off-road mobile sources in the future. Previous reviews of industry's progress, both in meeting current ARB regulations and in striving to meet requirements with future effective dates, have provided the Board with information necessary to determine whether regulatory requirements should be reevaluated.

## Summary of Review

Staff will present to the Board its assessment of the current status of the off-road engine segment and the prospects for improvement in the near- and long-term. This presentation will cover the Small off-road engine, Large spark-ignition engine, Recreational marine, and Compression-ignition engine programs. As part of this effort, a public workshop was held in calendar year 2000, at which various members of industry gave presentations regarding emissions control technologies. To assess the status of implementation of the regulations, staff reviewed the available certification data and other information, and met with individual manufacturers and discussed their progress and plans in developing emission compliant engines and equipment. Staff also met with manufacturers of various emissions control technologies that could be used to meet the emissions standards.

Production of small off-road engines in the 0-65 cubic centimeters displacement segment declined in 2000, at least partially as a result of the small engine regulation. Manufacturers indicated that the market would rebound as they developed more complying product. The 2001 production numbers confirm a rebound in this category. There has been relatively little effect from the regulation on production of engines greater than 65 cubic centimeters displacement. Implementation of emission standards for large spark-ignition engines began in 2001 and manufacturers have complied with the regulatory phase-in requirement and have certified additional 2002 model year large-spark ignition engines to California's standards. Based on the information provided, manufacturers are on track for meeting current emissions requirements, with many certifying engines well below the specified numerical emissions standards. Compliance with the recreational marine standards has also been achieved through improved fueling and combustion techniques, and by transitioning from two-cycle to four-cycle engines. The cleanest recreational marine engines receive a three-star label to promote easy recognition by the public. Past and present emission standards for compression-ignition engines have been met mostly through engine modifications such as improved fueling and turbocharging, and with aftercooling. Upcoming amendments to the compression-ignition engine standards will most likely require the use of one or more methods of aftertreatment. More discussions with the industry are necessary prior to such regulatory activity.

## Availability of Documents and Agency Contact Person

Copies of the presentation prepared by staff may be obtained from Board's Public Information Office, 1001 "I" Street, 1<sup>st</sup> Floor, Environmental Services Center, Sacramento, CA 95814, (916) 322-2990. The presentation may also be obtained electronically from the ARB internet site  
<http://www.arb.ca.gov/msprog/offroad/techreview/techreview.htm>

To obtain these documents in an alternate format, please contact the Air Resources Board ADA Coordinator at (916) 323-4916, TDD (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

Further inquiries regarding this matter should be directed to Ms. Jackie Lourenco, Manager, Off-Road Controls Section, at (626) 575-6676, or at [jlourenc@arb.ca.gov](mailto:jlourenc@arb.ca.gov).

**Submittal of Comments**

Interested members of the public may also present comments orally or in writing at the meeting, and in writing or by e-mail before the meeting. To be considered by the Board, written comments not physically submitted at the meeting must be received **no later than 12:00 noon, October 23, 2002**, and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board  
Air Resources Board  
1001 "I" Street, 23<sup>rd</sup> Floor  
Sacramento, California 95814

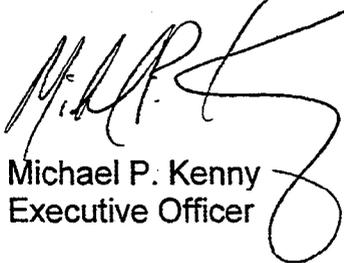
Electronic mail is to be sent to: [offroad@listserv.arb.ca.gov](mailto:offroad@listserv.arb.ca.gov) and received at the ARB **no later than 12:00 noon, October 23, 2002**.

Facsimile submissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at the ARB **no later than 12:00 noon, October 23, 2002**.

The Board requests, but does not require, 30 copies of any written submission. Also, the ARB requests that written and e-mail statements be filed at least 10 days prior to the meeting so that ARB staff and Board members have time to fully consider each comment.

No amendments to the various off-road regulations will be considered or adopted by the Board at this meeting.

CALIFORNIA AIR RESOURCES BOARD



Michael P. Kenny  
Executive Officer

Date: October 3, 2002

