



**Winston H. Hickox**  
*Agency Secretary*

# Air Resources Board

**Alan C. Lloyd, Ph.D.**  
**Chairman**

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**Gray Davis**  
*Governor*

TO: ALL MANUFACTURERS OF OFF-ROAD ENGINES  
ALL MANUFACTURERS OF OFF-ROAD EQUIPMENT  
ALL OTHER INTERESTED PARTIES

## Workshop Notice

### Off-Road Mobile Source Technology Review

#### Introduction

At the March and October 1998 public hearings, the Air Resources Board ("ARB" or "Board") requested that the staff prepare a review of technology development for the various off-road mobile sources. The review is tentatively scheduled to be presented to the Board in the autumn of 2000. At this time, staff has scheduled workshops to enable interested parties to present information relevant to that review.

The purpose of the technology review is to prepare for the Board an assessment of the next generation of control technologies for off-road engines and equipment. Specifically, the focus will be on technologies that can achieve or surpass the future emissions standards for the various off-road mobile source categories. Those source categories include small off-road engines, large spark-ignition engines, and compression-ignition engines. The future emissions standards for those categories are shown in Attachment A.

#### The Workshops

Times: Spark-Ignition Engine Technologies  
February 2, 2000  
13:00 - 16:30

Compression-Ignition Engine Technologies  
February 3, 2000  
09:00 - 12:00

Location: Air Resources Board  
Annex 4  
9530 Telstar Avenue  
El Monte, CA 91731

Format: There will be one workshop for spark-ignition engine control technologies and one for compression-ignition engine control technologies. The staff will provide only a very short introduction each day. The bulk of the workshops will consist of presentations by interested parties of technologies that could be used to reduce emissions from off-road engines, in the near or long term. The presentations are intended to provide solid information and data regarding specific technologies. The presentations should not consist of advertisements for the presenter's product or company. Topics of interest include, but are not limited to, catalysts, electronic controls, evaporative controls, and retrofit controls.

Time constraints may prohibit all those interested from presenting, but staff will review all submitted data. Staff will pre-select presenters based on how well the information provided in advance addresses the following issues:

- Emissions levels achievable
- Emissions durability
- Performance
- Cost
- Fuel economy
- How the technology helps achieve the near- or long-term objectives of the ARB's off-road control programs

The staff has sole and final discretion on selecting those who will make formal presentations at the workshop. However, anyone who wishes to make additional information in hard copy form available to the participants is welcome to do so.

#### Guidelines for Proposed Presentations

Staff would like to maximize the information presented at the workshop, and has therefore developed the following guidelines that all prospective presenters should follow:

- Presentations should be limited to technology and the related items noted above. In particular, discussion of the need for further emissions controls is unresponsive to the staff's task.

Presentations should be 10-15 minutes at most. If there is more information than can be presented in 10-15 minutes, be prepared to address only the major points, and supply additional material in hard copy.

The workshop is a public forum. Confidential material should be supplied only in writing, and should be marked as confidential. See Attachment B for more information regarding the ARB's treatment of confidential material.

Prospective presenters should provide copies of their presentations to staff no later than January 12, 2000. This will provide staff with time to review the presentations and select those that would be of most interest to the audience. Staff may also request that presenters provide additional information.

### Comments

The staff encourages comment on the information presented at the workshop; however, in the interest of time, staff may limit the time for questions and answers. Written comments should be submitted to the staff as soon as practicable. Comments will be most useful if they arrive prior to February 18, 2000. Comments will be subject to the attached confidentiality and public disclosure guidelines. Please identify any specific material that should be considered a trade secret.

Please direct all comments to Mr. Michael W. Carter, Chief, Emission Research and Regulatory Development Branch, 9528 Telstar Avenue, El Monte, California 91731. If you have questions, please call Ms. Jackie Lourenco, Manager, Off-Road Controls Section, at (626) 575-6676 or Mr. Scott Rowland, staff, at (626) 575-6683.

Sincerely,

Robert H. Cross, Chief  
Mobile Source Control Division

Attachments

Attachment A

Table 1  
 Future Off-Road Emissions Standards  
 (g/kW-hr)

Category	Power	Subcategory	Year	HC+NOx	CO	PM
Small Off-Road Engines	< 25 horsepower (<19 kW)	0-65 cc	2000+	72	536	2.0
		65-225 cc	2006+	16.1	549	---
		225 cc+	2002+	12.0	549	---
Large Spark-Ignition Engines	>25 horsepower (>19kw)	< 1.0 liter	2002+	12.0	549	---
		>1.0 liter	2004+	4.0	49.6	---
Compression-Ignition Engines <sup>1</sup>	kW<8	Tier 2	2005+	7.5	8.0	0.80
	8≤kW<19	Tier 2	2005+	7.5	6.6	0.80
	19≤kW<37	Tier 2	2004+	7.5	5.5	0.60
	37≤kW<75	Tier 3	2008+	4.7	5.0	0.40 <sup>2</sup>
	75≤kW<130	Tier 3	2007+	4.0	5.0	0.30 <sup>2</sup>
	130≤kW<225	Tier 3	2006+	4.0	3.5	0.20 <sup>2</sup>
	225≤kW<450	Tier 3	2006+	4.0	3.5	0.20 <sup>2</sup>
	450≤kW≤560	Tier 3	2006+	4.0	3.5	0.20 <sup>2</sup>
	kW>560	Tier 2	2006+	6.4	3.5	0.20

<sup>1</sup> Includes standards to be considered by the Board in January, 2000.

<sup>2</sup> Tier 2 PM standard; Tier 3 standard to be determined later.

## Attachment B

### Guidelines for Handling Confidential Material

In accordance with Title 17, California Code of Regulations (CCR), Sections 91000 to 91022, and the California Public Records Act (Government Code Sections 6250 et seq.), the information that a company provides to the Air Resources Board (ARB) may be released (1) to the public upon request, except trade secrets which are not emissions data or other information which is exempt from disclosure or the disclosure of which is prohibited by law, and (2) to the federal Environmental Protection Agency, which protects trade secrets as provided in Section 114(c) of the Clean Air Act and amendments thereto (42 USC 7401 et seq.) and in federal regulations, and (3) to other public agencies provided that those agencies preserve the protections afforded information which is identified as trade secret, or otherwise exempt from disclosure by law (Section 91000, Title 17, CCR and Health and Safety Code Section 39660(e)).

Trade secrets as defined in Government Code Section 6254.7 are not public records and therefore will not be released to the public. However, the California Public Records Act provides that air pollution emission data are always public records, even if the data come within the definition of trade secrets. On the other hand, the information used to calculate air pollution emissions may be withheld from the public if the information is a trade secret.

If any company believes that any of the information it may provide is a trade secret or otherwise exempt from disclosure under any other provision of law, it must identify it as such at the time of submission to the ARB and must provide the name, address, and telephone number of the individual to be consulted if the ARB receives a request for disclosure or seeks to disclose the data claimed to be confidential. The ARB may ask the company to provide documentation of its claim of trade secret or exemption at a later date. Data identified as confidential will not be disclosed unless the ARB determines, in accordance with the above referenced regulations, that the data do not qualify for a legal exemption from disclosure. The regulations establish substantial safeguards before any such disclosure.