California Environmental Protection Agency

# Air Resources Board

## PUBLIC MEETING AGENDA

**LOCATION:**

South Coast Air Quality Management District Office
Auditorium
21865 Copley Drive
Diamond Bar, California 91765-4182

This facility is accessible by public transit. For transit information, call: (800) 743-3463, http://www.foothilltransit.org! (This facility is accessible to persons with disabilities.)

## September 25.2008
## 9:00 a.m.

**08-8-1: Health Update: Indoor Chemicals Linked to Respiratory and Allergic Effects in Children**

*Staff will update the Board on the findings of recent studies investigating the relationship between chemicals typically found in indoor environments and the development of asthma and allergies in children. The studies looked at children exposed to volatile organic compounds, plasticizers, and formaldehyde. Most found associations between higher concentrations of these chemicals and the development of asthma, lower respiratory conditions, and allergies, and they suggest that these chemicals may be significant risk factors for respiratory and allergic effects in children.*

**08-8-2: Public Meeting to Update the Board on the Air Monitoring Efforts in the Port Communities of Southern Los Angeles County**

A *brief overview of Air Resources Board's (ARB) Harbor Communities Monitoring Study and the preliminary results will be presented. This field study featured* a *number of non-traditional monitoring techniques to characterize the intra-community variations in air quality in the greater Wilmington area, which has* a *variety of significant pollutant sources. The results from this study and on-going measurements by the South Coast Air Quality Management District and the Ports of Long Beach and Los Angeles will allow ARB staff to better evaluate the primary causes of air quality impacts.*

**08-8-3: Public Hearing to Consider Regulations for Portable Outboard Marine Tanks and Components**

*ARB staff has proposed* a *regulation to control reactive organic compounds (RaG) from portable outboard marine tanks and components. This proposed regulation would require permeation and evaporative technologies that are currently available and cost effective. This proposed regUlation would reduce 2020 emissions by* 3.2 *tons per day and result in* a *net cost savings of $0.31 per pound of RaG reduced.*

**08-8-4: Presentation on the South Coast Air Quality Management District's (SCAQMD) Climate Change Programs**

*Barry R. Wallerstein, Executive Officer, will present information on SCAQMD's climate change activities, including* a *Climate Change Policy, development of the SoCal Climate Solutions Exchange to encourage voluntary greenhouse gas reductions, modification of annual emissions reporting software to include greenhouse gas reporting, and development of an interim CEQA greenhouse gas significance threshold.*

**08-8-5:** **Public Meeting to Consider the Adoption of Greenhouse Gas Reporting and Project Protocols for Local Government Operations, Urban Forestry, and Livestock Manure Digesters**

*Staff will discuss the development of three greenhouse gas reporting and project protocols and ask the Board to adopt them for use in voluntary actions. The protocols are for Local Government Operations, Urban Forestry, and Livestock Manure Digesters. These protocols were developed in coordination with the California Climate Action Registry (CCAR). Staff will present a status on other protocols being developed, including the update of the Forest protocols.*

**08-8-7:** **Public Hearing to Consider the Adoption of Proposed AB 118 Air Quality Guidelines for the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle and Technology Program**

*The California Alternative and Renewable Fuel, Vehicle Techno{ogy, Clean Air, and Carbon Reduction Act of 2007 (AB 118) requires ARB to develop guidelines for both the Alternative and Renewable Fuel and Vehicle Technology Program and the Air Quality Improvement Program to ensure that both programs do not adversely impact air quality. Staff will present these guidelines for the Board's approval.*

**CLOSED SESSION - LITIGATION**

*The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending litigation:*

*Central Valley Chrysler-Jeep, Inc. et a/. v. Goldstene, US. District Court (E.D. Cal. - Fresno), No. 1:04-CV-06663-AWI-GWA.*

*Fresno Dodge, Inc. et a/. v. California Air Resources Board et a/., Superior Court of California (Fresno County),* Case *No. 04CE CG03498.*

*General Motors Corp. et a/. v. California Air Resources Board et a/., Superior Court of California (Fresno County),* Case *No. 05CE CG02787.*

*State of California by and through Arnold Schwarzenegger, the California Air Resources Board, and the Attorney General v. US. Environmental Protection Agency, and Stephen L. Johnson, Administrator, U.S. Court of Appeals, District of Columbia Circuit,* Case *No. 08-1178, filed May 5,2008.*

*Green Mountain Chrys/er-Plymouth-Dodge-Jeep, et a/. v. Crombie, 508 F.Supp.2d 295, US. District Court Vermont (2007), appeal to US. Court of Appeals, Second Circuit, Docket Nos. 07-4342-cv(L) and 07-4360-cv(CON).*

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST.

*Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.*

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD.

*Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.*

THE AGENDA ITEMS LISTED ABOVE MAY BE CONSIDERED IN A DIFFERENT ORDER AT THE BOARD MEETING.

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:
http://www.arb.ca.gov/lispub/comm/bclist.php

IF YOU HAVE ANY QUESTIONS, (916) 322-5594
PLEASE CONTACT THE CLERK OF THE BOARD FAX: (916) 322-3928
1001 I Street, 23rd Floor, Sacramento, CA 95814 ARB Homepage: www.arb.ca.gov

To *request special accommodation or language needs, please contact the following:*

- For individuals with sensory disabilities, this document and other related material can be made available in Braille, large print, audiocassette or computer disk. For assistance, please contact ARB's Reasonable Accommodation/Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711 to place your request for disability services, or go to http://www.arb.ca.gov/html/ada/ada.htm.

- If you are a person with limited English and would like to request interpreter services to be available at the meeting, please contact ARB's Bilingual Manager at (916) 323-7053, or go to http://www.arb.ca.gov/as/eeo/languageaccess.htm

California Environmental Protection Agency

# Air Resources Board

PUBLIC MEETING AGENDA

## INDEX

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## September 25, 2008
## 9:00 a.m.

# TITLE 13. CALIFORNIA AIR RESOURCES BOARD

## NOTICE OF PUBLIC HEARING TO CONSIDER REGULATIONS FOR PORTABLE OUTBOARD MARINE TANKS AND COMPONENTS

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of regulations and test procedures for portable outboard marine tanks and components.

DATE: September 25,2008

TIME: 9:00 a.m.

PLACE: South Coast Air Quality Management District
Auditorium
21865 E. Copley Dr.
Diamond Bar, CA 91765

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., September 25,2008, and will continue at 8:30 a.m., September 26,2008. This item may not be considered until September 26, 2008. Please consult the agenda for the meeting, which will be available at least 10 days before September 25, 2008, to determine the day on which this item will be considered.

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049. TIYITDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

## INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

**Sections Affected:** Proposed new sections to title 13, California Code of Regulations, Chapter 9, and Article 6.5 sections 2468, 2468.1, 2468.2, 2468.3, 2468.4, 2468.5, 2468.6,2468.7,2468.8,2468.9 and 2468.10. Proposed adoption of the incorporated documents: "CP-510 Certification Procedure for Portable Outboard Marine Tanks and Components", "TP-511 Diurnal Rate from Portable Outboard Marine Tanks", and "TP-512 Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs."

Staff is proposing to add new sections to title 13 that will enable the control of emissions from portable outboard marine tanks and components (OMT). The OMTs are gasoline tanks with a capacity of 30 gallons or less and the accompanying. fuel hoses, primer bulbs and tank caps used on various size boats. For small and medium size boats the gasoline tanks and engines are portable to facilitate transportation, maintenance and

storage. Portable outboard engines do not have a fuel pump so the primer bulb is used to prime (transfer gasoline from the tank to the engine through the fuel hose) the engine to ensure it will start. After the engine is running the operating cycle continues the flow of gasoline.

The proposed regulation would require performance standards that limit emissions from tanks to be no more than 2.5 grams per meter squared per day *(g/m$^2$/day),* emissions from fuel hoses and primer bulbs to no more than 15 *g/m$^2$/day,* and caps to be self sealing. Staff is proposing that all new OMT tanks and components be subject to the proposed performance standards starting in January 2010 for hoses and caps and starting in January 2011 for tanks and primer bulbs.

The ARB staff estimates that with the approval of the proposal, ROG emissions will be reduced by 4.2 tons per day (tpd) by the year 2020. These emission reductions result from reducing emissions from diurnal emissions, leaks from tanks, and permeation emissions from hoses and primer bulbs.

Under the proposed regulation, consumers will save about 4.6 gallons of gasoline per tank. At a cost of $3.50 per gallon of gasoline the fuel lost costs consumers over $16 per tank per year. Statewide, over the 18 years estimated for the entire population of OMTs to be replaced (often called the lifetime of the regulation) this amounts to about $32 million in cost saving.

The total cost from the proposed regulation will be about $4.5 million including costs associated with the proposed certification program and new test procedures. The net cost savings is approximately $27.5 million. With nearly 90 million pounds of ROG reduced over the useful life of OMTs the cost savings is approximately $0.30 per pound of ROG reduced.

## COMPARABLE FEDERAL REGULATIONS

The US Environmental Protection Agency (U.S.EPA) is in the final stages of promulgating requirements to control emissions from Marine Spark Ignited and Small Spark Ignited Engines, Vessels, and Equipment. The U.S. EPA is expected to adopt the requirements this summer. The OMT requirements promulgated by EPA are expected to be the same with similar implementation dates, as ARB's proposed regulatory action.

## AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The Board staff has prepared a Staff Report: Initial Statement of Reasons (IS0R) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The ISOR also includes the Performance Standards, and Test Procedures for Portable Outboard Marine Tanks and Components.

Copies of the ISOR and the full text of the proposed reguiatory language, may be accessed on ARB's web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on September 25, 2008.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on ARB's web site listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact, Mr. LaMar Mitchell, by phone at (916) 445-9371 or by email at lmitchel@arb.ca.gov or Mr. Dennis Goodenow, by phone at (916) 322-2886 or by email atdgoodeno@arb.ca.gov.

Further, the agency representative and designated back-up contact persons to who non-substantive inquiries concerning the proposed administrative action may be directed are Lori Andreoni, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-4011, or Trini Balcazar, Regulations Coordinator, (916) 445-9564. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB Internet site for this rulemaking at www.arb.ca.gov/regact/2008/omt2008/omt2008.htm

**COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED**

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any state agency or in federal funding to the stafe, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary cost or savings to state or local agencies.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting

businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action would affect small businesses.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

**SUBMITTAL OF COMMENTS**

Interested members of the public may present comments relating to this matter orally or in writing at the hearing, and in writing or bye-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon, September 24,2008,** and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 I Street, 23rd Floor
Sacramento, CA 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Govt. Code Section 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g. your address, phone, email, etc.) become part of the public record and can be released to the public upon request. Additionally, this information may become available via Google, Yahoo, and any other search engines.

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so

that ARB staff and Board Members have time to fully consider each comment. The board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

**STATUTORY AUTHORITY AND REFERENCES**

This regulatory action is proposed under that authority granted in sections 39600, 39601,43013,43018, and 43101 of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange Gounty Pollution Control District,* 14 Cal.3d 411, 121 Cal. Rptr. 249 (1975). The action is proposed to implement, interpret and make specific sections 39000,39001,39003, 39500, 39515, 39516,41511,43000,43013,43016,43017, and 43018 of the Health and Safety Code, and *Western Oil and* Gas *Ass'n.* V. *Orange County Pollution Control District,14* Cal.3d 411, 121 Cal.Rptr. 249 (1975).

**HEARING PROCEDURES .**

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the pUblic hearing, the Board may adopt the regulatory language as originally proposed, or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The Public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental *Services* Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene
Executive Officer

Date: July 29, 2008

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs see our Web -site at www.arb.ca.gov.*

# California Environmental Protection Agency

# Air Resources Board

STAFF REPORT
INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

PUBLIC HEARING TO CONSIDER ADOPTION OF REGULATION FOR THE CERTIFICATION, PERFORMANCE STANDARDS, AND TEST PROCEDURES FOR PORTABLEOUTBOARD MARINE TANKS AND COMPONENTS

Date of Release: August 8, 2008.

Scheduled for Consideration: September 25,2008

Location:
South Coast Air Quality Management District
Auditorium
21865 Copley Drive
Diamond Bar, California 91765-4182

Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

STAFF REPORT
INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

PUBLIC HEARING TO CONSIDER

# ADOPTION OF REGULATION FOR THE CERTIFICATION, PERFORMANCE STANDARDS, AND TEST PROCEDURES FOR PORTABLE OUTBOARD MARINE TANKS AND COMPONENTS

Prepared by:

LaMar Mitchell
and
Joseph J. Fischer

Monitoring and Laboratory Division

Reviewed by:

William V. Loscutoff, Chief, Monitoring and Laboratory Division
Manjit Ahuja, Chief, Evaporative Controls and Certification Branch
Dennis Goodenow, Manager, Regulation Development Section
Aron Livingston, Senior Staff Counsel

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# EXECUTIVE SUMMARY

The Air Resources Board (ARB) staff is proposing a regulation to control Reactive Organic Gases (ROG) from portable outboard marine tanks and components (OMT). This proposed regulation has been developed using the principle of technology transfer. It requires permeation and evaporative technologies that are currently available, cost effective, and have already been applied to reduce various sources of gasoline vapor emissions including portable fuel containers (PFC) and small off-road engines and equipment (SORE).

OMTs are gasoline tanks with a capacity of 30 gallons or less and the accompanying fuel hoses, primer bulbs and tank caps used on various size boats. For small and medium size boats the gasoline tanks and engines are portable to facilitate transportation, maintenance and storage. Portable outboard engines do not have a fuel pump so the primer bulb is used to prime (transfer gasoline from the tank to the engine through the fuel hose) the engine to ensure it will start. After the engine is running the operating cycle continues the flow of gasoline.

Staff estimates the combined annual average fuel losses from diurnal emissions, leaks from tanks, and permeation emissions from hoses and primer bulbs amount to about 4.6 gallons of gasoline per tank. At a cost of $3.50 per gallon of gasoline the fuel lost costs consumers over $16 per tank per year. Statewide, over the 18 years estimated for the entire population of OMTs to be replaced (often called the lifetime of the regulation) this amounts to about $32 million. The proposed regulation would reduce 2020 emissions by 4.2 tons per day (tpd) of ROG from the expected 200,000 OMTs in California and result in an overall reduction of approximately 90 million pounds of ROG. This would result in a cost savings of about $0.30 per pound of ROG reduced.

The proposed performance standards are the same as those being considered by EPA for their OMT rule and are similar to ARB requirements for PFC and SORE equipment. This similarity in proposed performance standards will achieve consistency between the different source categories (PFC and SORE) within the State and between State and federal requirements if the federal requirements are adopted. Staff worked with representatives of tank and fuel hose manufacturers to develop the proposed performance standards. ARB staff proposes emissions from tanks be limited to 2.5 grams per meter squared per day *(g/m$^2$/day),* emissions from fuel hoses and primer bulbs be limited to 15 *g/m$^2$/day,* and caps to be self sealing.

Staff is proposing that all new OMT tanks and components be subject to the proposed performance standards starting in January 2010 for hoses and caps and starting in January 2011 for tanks and primer bulbs.

The Staff proposed regulation includes a new certification procedure, CP-510, *Certification Procedure for Portable Outboard Marine Tanks and Components* which establishes:

- Diurnal loss control performance standards for portable outboard marine tanks;
- Permeation loss control performance standards for portable outboard marine tank fuel hoses and primer bulbs; and
- Performance standard for portable outboard marine tank caps to be considered self sealing.

The proposed certification for OMTs relies on the adoption of two new test procedures to evaluate conformance with the proposed performance standards:

- TP-511, *Diurnal Rate from Portable Outboard Marine Tanks; and*
- TP-512, *Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs.*

These new test procedures will ensure the OMTs meet the proposed performance standards required by the proposed regulation.

ARB staff conducted four public workshops for stakeholders to address technical and policy issues. These workshops were held between January 2007, and April 2008. In working with the various stakeholders ARB staff believes that all issues raised during the public workshop process have been resolved.

ARB staff evaluates climate change considerations. ROGs can absorb infrared radiation, and the more complex a ROG,the greater its ability to absorb infrared radiation and contribute to global warming. Unlike oxides of nitrogen, ROGs generally do not initiate climate responses of the opposite sign (Le., they are generally net warmers). However, ROGs have the added complication that there are many different types with different behavior in the atmosphere, making quantifying their warming impact difficult. RaGs influence climate through indirect effects via their production of organic aerosols and their involvement in photochemistry (Le., production of ozone, and in prolonging the life of methane in the atmosphere, although the effect varies depending on local air quality). Typically, the indirect effect is the dominant path by which ROG contribute to global warming. Overall, strategies for reducing ROG emissions are beneficial from a climate change perspective. The Intergovernmental Panel on Climate Change has provided global warming potentials for a relative small set of ROG species, so it is not possible to quantify this benefit.

# II INTRODUCTION AND BACKGROUND

## A) Introduction

This section of the staff report summarizes the legal authority, gasoline vapor control strategy, provides an overview of OMTs, includes a discussion of the OMT proposed regulation, and describes the public participation process.

## B) Legal Authority

### 1) State Law

In 1988, the California legislature enacted the California Clean Air Act (CCM), which declared that attainment of State Ambient Air Quality Standards is necessary to promote and protect public health, particularly the health of children, older people, and those with respiratory diseases. The legislature also directed that these State Ambient Air Quality Standards be attained by the earliest practicable date.

California law, including the California Clean Air Act as codified in the Health and Safety Code (HSC) Sections 43013 and 43018, grants the ARB authority to regulate off-road mobile sources of emissions and fuels. Such sources include outboard engines, personal watercraft, all-terrain vehicles, off-road motorcycles and small off-road engines and equipment. Outboard engines use OMTs to supply fuel for operation. ARB is therefore authorized to regulate OMT emissions both as an off-road mobile source and as an emission source associated with .motor vehicle fuel.

### 2) Federal Requirements

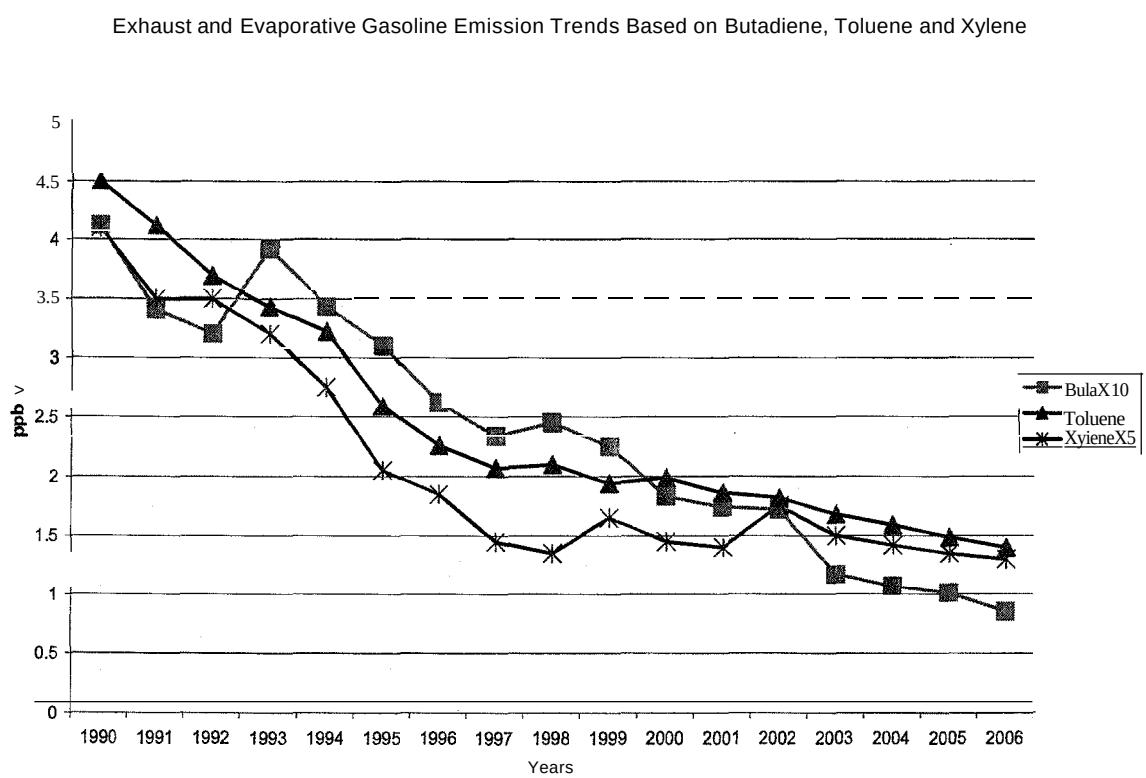
The US Environmental Protection Agency (EPA) is in the process of promulgating requirements to control emissions from Marine Spark Ignited and Small Spark Ignited Engines, Vessels, and Equipment. The EPA plans to adopt the requirements this summer. The requirements planned by EPA are expected to be the same with similar implementation dates to the ARB staff proposed OMT regulation. A separate California regulation is needed in case federal rule promulgation is delayed and to ensure California can implement its more robust enforcement program for this emission source category.

## C) Gasoline Vapor Control Strategy

The ARB has been actively engaged in the control of evaporative gasoline emissions since 1975 when the Board adopted the first certification and test procedures for vapor recovery systems installed on gasoline dispensing facilities (GOF). Since then the Board has adopted requirements controlling evaporative gasoline emissions for other emission categories such as PFCs, SORE, enhanced vapor recovery (EVR), and above ground storage tanks (AST).

The Board has also been aggressively controlling exhaust emissions from internal combustion engines since its formation in 1968. Using 1,3-butadiene, toluene, and xylene trends in the ambient air as indicators of the success of the program, it is shown (Figure 11-1) that recent air concentrations of 1,3-butadiene have fallen to about 20 percent of the 1990 levels. As expected, toluene and xylene, also indicators of auto exhaust emissions have also been reduced. It is generally agreed that 1,3-butadiene is solely the result of the combustion process, whereas toluene and xylene are found in both exhaust and in gasoline vapors. An examination of the Figure shows that concentrations of 1,3-butadiene, have continued to drop after 2002, but the decline in toluene concentrations has slowed. Also, the Figure shows that the concentrations of xylene have been flat since 1998. This strongly suggests that evaporative gasoline emissions are not being controlled as effectively as corresponding exhaust emissions.

**Figure 11-1 Exhaust and Evaporative Gasoline Emission Trends Based on Ambient Concentration** Data




Starting in 1999, the ARB adopted several regulations to further reduce emissions from evaporative sources. These regulations include PFC, EVR, SORE, and AST. These categories are shown as Completed Regulations in Table 11-1. To continue to reduce evaporative emissions, ARB staff is looking to

identify additional emission source categories and transfer control technology where applicable. These are shown as Prospective Regulations in Table 11-1. The ARB staff is currently working to develop emission inventories and regulations for these sources. These source categories will be presented to the Board for consideration in coming years.

**Table 11-1 Completed and Prospective ARB Gasoline Vapor Control Regulations - Off-road Engines and Fuel Containers/Dispensers**

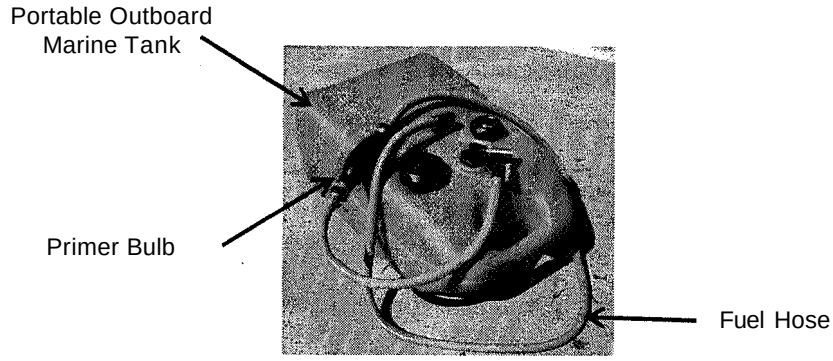
| Completed and Prospective Regulations | | | | |
|---|---|---|---|---|
| Name of Regulation | Adoption Yr | Implementation Yr | Uncontrolled Emissions (tpd) | Emission Reductions (tpd) |
| Completed Regulations | | | | |
| Portable Fuel Container (PFC) Original Reg | 1999 | 2001 | 101 | 70 |
| Enhanced Vapor Recovery (EVR) USTs | 2000 | 2005-2009 | 53 | 25 |
| Small Off Road Engines (SORE) | 2003 | 2006 | 58 | 32 |
| PFC Amendments | 2005 | 2007 | 32 | 18 |
| EVR for ASTs | 2006 | 2008 | 4 | 1-2 |
| Subtotal | | | | 146 |
| Prospective Regulations | | | | |
| Portable Outboard Marine Tanks and Components (OMT) | 2008 | 2011 | 5.6 | 4.2 |
| GDF Hose Permeation | 2008 | 2009-2013 | 2 | 1.5 |
| Pleasure Craft (Spark Ignited Personal Watercraft and Marine Vessels) | 2009 | 2011 | 42 | 37 |
| Off-Highway Recreational Vehicles (Off-Road Motorcycles.lA1V) | 2009 | 2012 | 13 | 9 |
| RV Fueling Stations | 2009 | 2012 | tbd* | tbd* |
| Portable Fuelina Stations | 2009 | 2012 | tbd* | tbd* |
| Mobile Fuelers | 2010 | 2013 | tbd* | tbd* |
| TrucklTrailer Auxiliarv Fuel Tanks | 2011 | 2013 | tbd* | tbd* |
| Subtotal | | | | 52 |
| Total | | | | 198 |

* tbd =to be determmed

## D) OMT Overview

OMTs are made of either high-density polyethylene (HOPE or plastic) or metal and are sold in a variety of shapes and sizes typically less than 30 gallons capacity. OMTs are used to store and supply fuel to outboard marine engines including small fishing boats, houseboats, and inflatable watercraft. Figure 11-2 shows a typical portable outboard marine tank, fuel hose and primer bulb.

**Figure II - 2 Portable Outboard Marine Tank, Fuel Hose and Primer Bulb**




Gasoline vapor emissions from OMTs result from permeation through plastic or rubber materials or in the form of evaporation through openings and connections. Even though the emissions from a single OMT are small, over 200,000 OMTs are estimated to be in use in California in 2010 and are calculated to emit approximately 4.6 tpd of ROG. In 2020 with about five percent fewer OMTs, due to changes in market conditions, the uncontrolled emissions are expected to be approximately 5.6 tpd of ROG. This increase is due largely to the greater number of higher emitting plastic tanks compared to metal tanks.

## E) Applicability of Proposed Regulation

The proposed regulation will require all new OMT tanks and components sold in California to certify to proposed performance standards that will be similar across emission categories within the State (Appendix A). Under the proposal, ARB will issue an executive order, pursuant to Certification Procedure CP-510 (Appendix B) certifying portable outboard marine tanks, portable outboard marine tank fuel hoses, portable outboard marine tank primer bulbs, and portable outboard marine tank self sealing caps as meeting the proposed performance standards according to Test Procedures TP-511 (Appendix C) and TP-512 (Appendix D). These certifications become mandatory beginning in 2010 for fuel hoses and self sealing caps and in 2011 for tanks and primer bulbs. The proposed regulation would allow manufacturers to use the EPA proposed steady state test procedure as proof that their tanks meet the proposed performance standards and could therefore be certified for sale in California without additional testing. Additionally, the proposed regulation allows manufacturers to provide testing data verifying compliance with the performance standards for other ARB programs, such as SORE, in order to receive certification for their OMT products.

## F) Public Process

ARB staff has conducted four public workshops for stakeholders to address technical and policy issues and define regulatory development timelines since January 2007. The dates and locations of workshops are listed in Table 11-2.

**Table 11-2 Workshop Meetings**

| DATE | [redacted] |
|---|---|
| January 24, 2007 | Sacramento |
| April 24, 2007 | Sacramento |
| January 30, 2008 | Sacramento |
| April 10, 2008 | Sacramento |

Staff established the OMT web site (http://www.arb.ca.gov/consprod/fuel-containers/omt/omt.htm ) providing stakeholders with information regarding the OMT program as well as updates of the proposed regulation. All persons on the e-mail list serve are notified whenever new information is posted on the OMT web site. Workshop presentations and associated documents are posted on the web site prior to the workshop date. Interested stakeholders participated in the workshops in person or via conference call.

# III NEED FOR OMT RULEMAKING

## A) Introduction

This section of the staff report discusses the reasons and justification for the proposed regulation, including the State Implementation Plan, consistency with other State and EPA requirements, and climate change issues.

## B) State Implementation Plan

All areas that are designated non-attainment for the National Ambient Air Quality Standards are required by the federal Clean Air Act to submit a State Implementation Plan (SIP) containing strategies to improve air quality and achieve the National Ambient Air Quality Standards. In 2007, ARB adopted the California comprehensive SIP for ozone. The 2007 SIP includes State measures to control exhaust and evaporative emissions from off-road mobile sources. Reductions in exhaust and evaporative emissions from recreational boats and off-road recreational vehicles are prominent in the 2007 SIP strategy for off-road sources. The 2007 SIP State strategy proposes to set standards where there are none and make standards more stringent where controls are not adequately stringent. Off-road sources used mainly for recreational purposes during the summer ozone season are large emission contributors targeted in the 2007 SIP. In particular, the 2007 SIP proposes to set evaporative standards for many gasoline-fueled off-road sources. The 2007 SIP strategy identifies portable fuel tanks used on outboard recreational boats, refueling tanks mounted on pickups and large recreational vehicles, and fueling hoses as targets for establishing evaporative standards and evaporative emission reductions.

## C) Consistency with PFC, SORE and EPA Requirements

The current diurnal and permeation requirements for tanks and fuel hoses included in the PFC and SORE rules are not applicable to OMTs even though the

use of the components is similar. The manufacturers of tanks and fuel hoses for PFC and SORE tanks and fuel hoses are the same manufacturers of OMT tanks and components. To obtain additional emission reductions, staff is proposing to apply similar diurnal and permeation requirements from the PFC, SORE and EPA rules to OMTs.

### D) Climate Change Considerations

ROGs can absorb infrared radiation, and the more complex a ROG, the greater its ability to absorb infrared radiation and contribute to global warming (Collins, 2002). Unlike oxides of nitrogen, ROGs generally do not initiate climate responses of the opposite sign (Le., they are generally net warmers). However, ROGs have the added complication that there are many different types with different behavior in the atmosphere, making quantifying their warming impact difficult. ROGs influence climate through indirect effects via their production of organic aerosols and their involvement in photochemistry (Le., production of ozone, and in prolonging the life of methane in the atmosphere, although the effect varies depending on local air quality). Typically, the indirect effect is the dominant path by which ROG contribute to global warming. Overall, strategies for reducing ROG emissions are beneficial from a climate change perspective. The Intergovernmental Panel on Climate Change (2007) has provided global warming potentials for a relative small set of ROG species, so it is not possible to quantify this benefit.

## IV SUMMARY OF PROPOSAL

### A) Introduction

This section of the staff report discusses the development of the emission inventory for OMTs which constitutes the basis for the proposed performance standards, the standards as proposed, the availability of technology to meet proposed performance standards, and new certification and test procedures.

The central element of the proposed regulation is to transfer similar performance standards that are currently used in California for two categories (PFC and SORE) to a new source category to reduce emissions due to permeation and evaporation.

### B) Emission Inventory

ARB staff sponsored a Statewide phone survey conducted by California State University, Sacramento to obtain information from consumers concerning their experiences using OMTs, as well as to obtain information relating to the number of OMTs used in California. The survey results were delivered to staff in March 2007 and provided valuable insight about the OMT population' (Appendix E). Based on the survey parameters, a conservative estimate of the Statewide

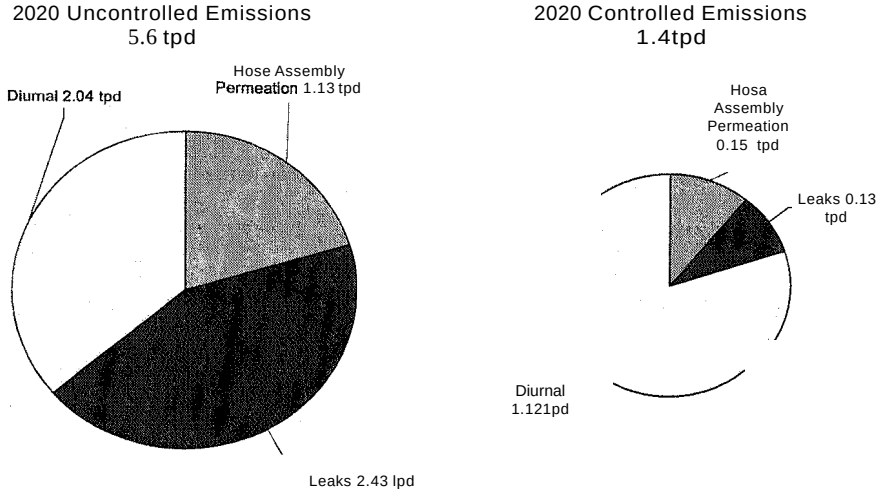
population is 200,000 OMTs. Also, survey parameters suggest there may be as many as an additional 100,000 OMTs Statewide.

Staff conducted testing on OMTs and components and determined the emission rates for the components. The term "diurnal emissions" refers to the total permeation and evaporative emission losses that result from subjecting a container filled with gasoline to a required daily rise and fall in summer temperature, simulated under laboratory conditions. Diurnal emissions may be the result of permeation through plastic and rubber materials and evaporation through fittings and openings. Diurnal emissions from tanks ranged from over 2 grams per day (g/d) to more than 6 g/d depending on the fuel used. This is roughly equivalent to a range of over 85 grams per square meter per day ($g/m^2/d$) to nearly 390 $g/m^2/d$ where $m^2$ refers to the interior surface area of the part being tested. Appendix F summarizes the test results. The testing showed that diurnal emissions are significant and provide the basis for the emissions inventory and the proposed regulation to control diurnal emissions.

Hose and primer bulb permeation emission losses refers to the emission losses that result from fuel hoses and primer bulbs full of gasoline and subject to a steady state temperature. To evaluate the extent of permeation emission losses from this category, staff subjected samples of available existing fuel hoses and primer bulbs to a steady state temperature in the laboratory. These testing results are also summarized in Appendix F. Permeation losses averaged nearly 8 g/d which is roughly equivalent to 120 $g/m^2/d$. The testing showed that like diurnal emissions, permeation emission losses are a significant contributor to ROG emissions, and provides further information for the development of the emission inventory and the basis for the proposed regulation to control permeation emissions.

Using the current inventory of OMT tanks and components and applying the emission rates developed through testing, staff estimates the uncontrolled ROG emissions for 2010 are approximately 4.6 tpd and if left uncontrolled 2020 emissions would be 5.6 tpd instead of the controlled 1.4 tpd for a typical summer day. Figure IV-1 compares the 2020 uncontrolled emissions to the 2020 controlled emissions.

Figure IV - 1 Uncontrolled Emissions vs. Controlled Emissions in 2020




## C) Proposed Performance Standards

### 1) Diurnal Performance Standards

Proposed performance standards to control diurnal emissions for new OMTs begin January 1, 2010. The proposed regulation requires the manufacturers of gasoline tanks used for portable outboard marine engines to manufacture OMT tanks using similar technologies now required in other source categories such as PFCs and SORE. The proposed performance standards require the following for OMTs:

(i) By January 1, 2010, the use of a self-sealing cap that will automatically seal up to a minimum of 5 psig; and,

(Ii) By January 1, 2011, diurnal emissions not to exceed 1.5 *g/m$^2$/d.*

### 2) Permeation Performance Standards

Proposed performance standards to control permeation emissions for new OMT fuel hoses and primer bulbs begin January 1, 2010. The proposed regulation requires the manufacturers of fuel hoses used for portable outboard marine engines to manufacture OMT fuel hoses using similar technologies now required in other source categories such as PFCs and SORE. Primer bulbs, used to start the fuel flowing from the tank to the engine will be reqUired to meet the same proposed permeation performance standards as fuel hoses. The proposed performance standards require the following:

(I) By January 1, 2010, permeation emissions from fuel hoses not to exceed 15 *g/m$^2$/d;* and,

**(ii)** By January 1,2011, permeation emissions from primer bulbs not to exceed 15 $g/m^2/d$.

## D) Availability of Technology

The proposed regulation has been developed using the principle of technology transfer. The proposed performance standards rely on technologies that are currently required in two programs, PFCs and SORE, in California. It is reasonable to expect manufacturers of OMT tanks, hoses, and primer bulbs to use existing technology to comply with the proposed performance standards.

## E) New Certification and Test Procedures

### 1) CP- 510, Certification Procedure for Portable Outboard Marine Tanks and Components

The certification procedure, CP-510 (Appendix B) establishes the criteria and procedures used by ARB to evaluate and certify portable outboard marine tanks, portable outboard marine tank self sealing caps, portable outboard marine tank fuel hoses, and portable outboard marine tank primer bulbs manufactured for sale, advertised for sale, sold, or offered for sale in California or that are introduced, delivered or imported into California for introduction into commerce. An Executive Order will only be issued for a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that demonstrates compliance with all applicable certification requirements.

### 2) TP-511, Diurnal Rate from Portable Outboard Marine Tanks

This test procedure (Appendix C) is used by the ARB to determine the diurnal emission rate from portable outboard marine tanks as required in Certification Procedure CP-510. This test procedure is applicable in all cases where portable outboard marine tanks are subject to the maximum allowable diurnal emissions rate for portable outboard marine tanks that are manufactured for sale, advertised for sale, sold, or offered for sale in Califomia or that are introduced, delivered or imported into California for introduction into commerce.

### 3) TP-512, Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs

This test procedure (Appendix D) is used by the ARB to determine the permeation rate from portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs as required in Certification Procedure CP-510. This test procedure is applicable in all cases where portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs are subject to the maximum allowable permeation rates for portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs that

are manufactured for sale, advertised for sale, sold, or offered for sale in California or that are introduced, delivered or imported into California for introduction into commerce.

# V ENVIRONMENTAL AND ECONOMIC IMPACT

## A) Introduction

This section of the staff report discusses the environmental and economic impacts of the proposed regulation. The environmental impact includes the OMT population, baseline emissions and emission reductions. Economic impacts consider cost savings from preventing fuel losses due to the diurnal emission losses from tanks and permeation losses from hoses and bulbs, staff assumptions related to the costs of complying with the proposed performance standards, and cost effectiveness. The section also includes a discussion of the fiscal impacts to the State, and a discussion of environmental justice issues.

## B) Environmental Impact

### 1) OMT Population

ARB staff sponsored a Statewide phone survey conducted by California State University, Sacramento (CSUS) to obtain information from consumers concerning their experiences using OMTs, as well as to obtain information relating to the number of OMTs used in California. The survey results were provided to staff in March 2007 and made available to stakeholders. Based on the survey parameters, a conservative estimate of the Statewide population is 200,000 OMTs.

### 2) Baseline Emissions

The baseline OMT emissions were developed from the 2007 CSUS survey, Department of Motor Vehicle (DMV) registration data, test data, and data from manufacturers. Staff estimates there are about 4.6 tpd of ROG emissions from OMTs in California in 2010. Table V-1 summarizes the 2010 Statewide emissions from OMTs in their current configuration.

Table V-1 2010 Statewide OMT Emissions

| Emission Source | Emissions (tpd) |
|---|---|
| Diurnal Losses from Tanks | 1.70 |
| Permeation from Hoses and Bulbs | 1.18 |
| Leaks | 1.71 |
| Total OMT Emissions | 4.59 |

3) Emission Reductions

The Staff proposed regulation will reduce ROG emissions from OMT tanks and components by 4.2 tpd in 2020 compared to the uncontrolled emissions of 5.6 tpd. The 2020 controlled emissions are estimated to be 1.4 tpd of ROG. This is a reduction of about 75 percent. Slightly more emissions will be reduced when the total population of OMTs is fully replaced in 2028. Table V-2 summarizes the 2020 Statewide emissions from OMTs that are uncontrolled and controlled assuming 10 years of implementation.

Table V-2 2020 Statewide OMT Emissions

| Emission Source | Uncontrolled Emissions (tpd) | Controlled Emissions ftod) |
|---|---|---|
| Diurnal Losses from Tanks | 2.04 | 1.12 |
| Permeation from Hoses and Bulbs | 1.13 | 0.15 |
| Leaks | 4.43 | 0.13 |
| Total OMT Emissions | 5.60 | 1.40 |

## C) Economic Impact

1) Costs Savings from Preventing Fuel Losses

Staff estimates combined annual fuel losses from diurnal emissions, leaks from tanks, permeation emissions from hoses and primer bulbs account for about 4.6 gallons of gasoline per tank. At a cost of $3.50 per gallon this is a cost of about $16 per tank. With an estimated 200,000 uncontrolled OMTs statewide in 2010 this amounts to more than $3.2 million in costs from lost fuel. Over the expected 18 years needed to replace the population of uncontrolled OMTs, the cost savings from lost fuel is estimated at about $32 million (fewer uncontrolled tanks are replaced each year). The methodology used to estimate the cost savings associated with these recovered losses is detailed in Appendix G. Table V-3 summarizes the annual losses associated with tanks, hoses and bulbs.

Table V-3 Gallons of Gasoline Lost per Year

| Gallons of Gasoline Lost Per Component | |
|---|---|
| Tank | 3.29 |
| Cap | 0.26 |
| Hose | 0.68 |
| Bulb | 0.36 |
| Total | 4.59 |

2) Compliance Costs

The total cost from the proposed regulation is estimated to be $4.4 million. This includes the retail cost of making improvements to the OMTs sold in

California ($4.1 million), the cost of certifying under the provisions of the proposed regulation ($40,000), and the administrative cost to ARB (about $300,000). The methodology for estimating the compliance costs and savings is contained in Appendix H.

The combined retail cost increase per tank for compliance with the proposed performance standards is estimated to be $10. Table V-4 summarizes the projected retail cost increase per tank and component associated with compliance with the proposed performance standards.

**Table V-4 Projected Retail Cost Increase**

| Component | Retail Cost Increase | | |
|---|---|---|---|
| | Low | High | Average |
| Tank | $1.26 | $7.44 | $4.35 |
| Cap | $1.29 | * | $1.29 |
| Fuel Hose | $2.26 | * | $2.26 |
| Primer Bulb | $1.16 | $3.23 | $2.20 |
| | | Total | $10.10 |

* No range for costs were provided

Based on the projected number of tanks, caps, hoses and bulbs replaced over the expected useful life of the component, the Statewide retail cost of compliance is estimated to be about $4.1 million. Table V-5 summarizes the projected retail costs of compliance over the life of the component.

**Table V-5 Projected Component Lifetime Retail Cost**

| Component | Life Span | Number of Components | Cost per Component | Total Component Cost |
|---|---|---|---|---|
| Tank | 2011 - 2028 (18 years) | 384,809 | $4.35 | $1,673,918 |
| Cap | 2010 - 2027 (18 years) | 386,380 | $1.29 | $498,430 |
| Hose | 2010 - 2024 (15 years) | 444,826 | $2.26 | $1,005,308 |
| Bulb | 2011 -2025 (15 years) | 443,017 | $2.20 | $972,423 |
| | | | Total | $4,150,079 |

Certification costs of the proposed regulation are estimated to be $40,000. Certification costs include the cost to certify families of each tank and component for two to three manufacturers.

The State may incur administrative costs to include salary and benefits for additional Air Pollution Specialists to enforce the OMT proposed regulation. This administrative cost is estimated to be $300,000. Appendix I identifies the administrative costs.

3) Cost Effectiveness

ARB staff estimates that this proposed regulation will result in a reduction of approximately 90 million pounds of ROG and a cost savings of about $0.30 per pound of ROG reduced. The cost effectiveness analysis is based on the following items and is contained in Appendix J:

(i) Fuel savings based on a cost of $3.50 per gallon;
(ii) Cost of the proposed regulation which is based on the total number of OMT tanks and components sold; and,
(iii) Pounds of ROG reduced from the proposed performance standards over a period of time needed to replace the GMT population. Table V-6 summarizes the cost effectiveness of the proposed regulation.

Table V-6 Cost Effectiveness of Proposed Regulation

| Cost and Net Cost-Savings Over the Useful Life of OMTs | | | | |
|---|---|---|---|---|
| Regulation Cost | Cost Savings ($3.50/gal) | Net Cost Savinas | ROG Reduced (lbs) | Cost Savings *($/lb* ROG) |
| $4,487,429 | $31,965,889 | $27,478,460 | 89,887,014 | 0.31 |

## D) Fiscal Impacts

Staff does not expect the proposed regulation to impose an unreasonable cost burden on retail businesses located in California or on implementing government agencies. Manufacturers are located outside California and are currently providing components for other source categories that are compliant with similar performance standards.

1) Impacts on California Businesses

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 rule. The assessment shall include 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.

ARB staff finds that there are no significant economic impacts to business within California due to the proposed performance standards or implementation schedule. Businesses potentially affected by the proposed regulation include manufacturers of OMT tanks and components. The proposed regulation will impose additional certification costs on OMT tank and component manufacturers. The potential impact on a retail customer is an increase in the initial cost of the OMT tank and associated components

offset by a fuel savings over the life of the OMT. These costs are discussed in the compliance costs and savings. The proposed regulation, is not expected to have an adverse impact on the status of California businesses. Manufacturers of OMTs are located outside of the State and are expected to pass cost increases on to the consumer. The consumer will ultimately benefit from the fuel savings associated with reduced fuel losses.

### 2) Costs to State and Local Agencies

Section 11346.5 of the Government Code requires State agencies to estimate the cost or savings to any State, local agency and school district in accordance with instructions adopted by the Department of Finance. The estimate shall include any non-discretionary cost or savings to local agencies and the cost or savings in federal funding to the State.

There are no significant costs to any State, local agency or school district imposed by the proposed regulation. ARB staff did identify a potential cost to ARB related to additional positions that may be needed to enforce the regulation. Staff does not expect an adverse impact on other State or local agencies. The increase in the cost of OMTs to State and local agencies, like the California Department of Fish and Game or local law enforcement and rescue agencies will be offset by the fuel savings associated with new OMTs.

### 3) Economic Impacts of Alternatives

Health and Safety Code Section 57005 requires the ARB to perform an economic impact analysis of submitted alternatives to a proposed regulation before adopting any major rule. A major rule is defined as a rule that will have a potential cost to California bus'iness enterprises in an amount exceeding ten million dollars in any single year. This regulation does not exceed this threshold.

## E) Environmental Justice

State law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, rule, and policies (Senate Bill 115, Solis; Stats 1999, Ch. 690; Government Code § 65040.12(e)). The Board has established a framework for incorporating environmental justice into ARB programs consistent with the directives of State law.

The policies developed apply to all communities in California, but recognize that environmental justice issues have been raised more often in the context of low income and minority communities, which sometimes experience higher exposures to some pollutants as a result of the cumulative impacts of air pollution from multiple mobile, commercial, industrial, area wide, and other sources. Over the past twenty years, the ARB, local air districts, and federal air pollution control programs have made substantial progress towards improving the air quality in California. However, some communities continue to experience higher

exposures than others as a result of the cumulative impacts of air pollution from multiple mobile and stationary sources and thus may suffer a disproportionate level of adverse health effects. Since the same Ambient Air Quality Standards apply to all regions of the State, all communities, including environmental justice communities, will benefit from the air quality benefits associated with this proposal. Alternatives to the proposed recommendations, such as not implementing the proposal, would affect all communities throughout the State.

# VI ALTERNATIVES

## A) Introduction

In accordance with Government Code Section 11346.5, subdivision (a)(13), ARB must determine that no reasonable alternative it considered or that has otherwise been identified and brought to ARB's attention would be more effective in carrying out the purpose of the proposed regulation or would be as effective and less burdensome to affected private persons than the purposed regulation. This section of the staff report discusses alternatives to the proposed regulation.

No alternative proposed regulations were identified. The proposed regulation is designed to transfer exiting technologies to reduce ROGs from OMTs. In addition to the current proposed regulation staff evaluated the option of maintaining the status quo through no action.

## B) No Action

Because the EPA is in the process of implementing a similar control strategy with basically the same implementation dates it is possible that most of the emission reductions would occur if the ARB took no action. However, based on past experiences, control strategies for similar source categories without a California specific enforcement program have not resulted in the expected emission reductions. The proposed regulation would allow a California enforcement program that could sample and test for compliance to ensure the proposed performance standards are met. The no action alternative would result in no California enforcement program and would likely produce less improvement in air quality. Staff rejected this alternative as it does not ensure air quality benefits and does not address the existing problem.

# VII MAJOR ISSUES IDENTIFIED AND DISCUSSED

During the workshops, the proposed regulation and emission test results were presented to the stakeholders for review and comment. Staff accepted comments and recommendations from stakeholders, identified specific issues of concern and addressed the issues to the extent possible. Although the ARB staff believes there are no major issues left unresolved, the following list some of the issues discussed. For a complete list of issues and staff responses see Appendix K.

## A) Grandfathering of OMT Tanks and Components

Will the proposed regulation allow the sale of OMT tanks and components manufactured prior to the compliance dates?

Yes, *the proposed regulation applies to OMT tanks and components manufactured after the compliance dates* as *specified in the proposed regulation and therefore those OMT tanks and components manufactured prior to the compliance date would not be subject to the proposed performance standards.*

## B) Notification of Suppliers

The proposed regulation as presented at the April 10, 2008 workshop required the notification and consent of suppliers prior to use of their product in an OMT system. This seemed burdensome to some manufacturers.

*Staff responded by creating* a *definition* of *OMT system and requiring only* a *list* of *suppliers.*

## C) Compliance Dates

The proposed regulation as presented at the April 10, 2008 workshop included a compliance date for low permeation hoses of January 1, 2009 to be consistent with the EPA requirements. Manufacturers of fuel hoses were concerned that there was not enough time between adoption and the compliance deadline.

*Staff agreed and changed the compliance date for low permeation fuel hoses* to *January* 1, *2010.*

## D) ARB RFG III with 10 Percent Ethanol

If a manufacturer is certifying an OMT tank or component for California use, testing must be completed with CA reformulated gasoline III with 10 percent ethanol by volume (RFG III-E10). Some manufacturers expressed concern about the availability of this fuel and the reasonability of using this fuel.

*Staff has found that this fuel is easily obtainable throughout the US. As for the reasonability* of *using this fuel, staff makes the following observations:*

1) *RFG /I/-E10 is the most aggressive fuel in terms* of *permeation that is currently available. The current RFG* /1/ *requirements allows up to* a *maximum* of *10 percent ethanol by volume, although the average content is approximately* 8.1 *percent ethanol by volume. Demonstrating compliance with the requirements through testing with RFG /I/-E10 assures that the component will meet the permeation proposed performance standards while using* a *more aggressive fuel; and,*
2) *The ability to perform consistent compliance testing is dependent on the use* of *consistent parameters one* of *which is the use* of a *consistent fuel. Staff believes that consistent fuel is RFG /I/-E10.*

# VIII CONCLUSION AND RECOMMENDATION

## A) Introduction

This section of the staff report presents conclusions and recommendations consistent with the data and evidence presented throughout the staff report.

## B) Conclusions

The staff proposed regulation has been developed using the principle of technology transfer and will achieve ROG emission reductions through technologies that are technically feasible and cost effective. The emission reductions from portable outboard marine tanks and components are significant and rely on existing technologies that are readily available and transferable. OMTs are yet another source category in the gasoline transport, distribution and use chain that lends itself to cost effective controls. Staff believes that the proposed regulation is achievable using current permeation and evaporative control technology. Through an extensive public outreach effort, there are no remaining unresolved stakeholder issues. The proposed regulation will help the State make progress toward achieving the National and State Ambient Air Quality Standards.

## C) Recommendations

Staff recommends that the Board approve the proposed regulation to adopt Sections 2468 to 2468.10 of Title 13, California Code of Regulations; Certification Procedure 510, Certification Procedure for Portable Outboard Marine Tanks and Components; Test Procedure 511, Diurnal Rate from Portable Outboard Marine Tanks; and Test Procedure 512, Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs.

# IX REFERENCES

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72-FR-28098 Proposed Emission Standards for New Nonroad Spark-Ignition Engines, EqUipment, and Vessels

Society of Automotive Engineers (SAE), "Surface Vehicle Standard J1527 Marine Fuel Hoses", March 2004 Edi

# X APPENDICES

A) Proposed Regulation Order Portable Outboard Marine Tanks and Components

B) Certification Procedure for Portable Outboard Marine Tanks and Components

C) Portable Outboard Marine Tank Test Procedure: TP-511 Diurnal Rate from Portable Outboard Marine Tanks

D) Portable Outboard Marine Tank Test Procedure: TP-512 Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs

E) Analysis of the 2007 California Survey of Outboard and Sailboat Owners Regarding Use of Portable Outboard Marine Tanks

F) Portable Outboard Marine Tank and Component Test Results

G) Cost Savings

H) Costs of Proposed Regulation

I) Fiscal Impact on State Government

J) Economic and Fiscal Impact

K) Workshop Issues and Responses

# APPENDIX A

## PROPOSED REGULATION ORDER PORTABLE OUTBOARD MARINE TANKS AND COMPONENTS

DRAFT
Proposed Regulation Order
Portable Outboard Marine Tanks and Components

## Article 6.5 Portable Outboard Marine Tanks and Components

### 2468. Applicability

Except as provided in Section 2468.4, this article applies to any person who sells, supplies, offers for sale, advertises or manufactures for sale and use in California any of the following individually or all of the following as a complete system or any combination of the components: a portable outboard marine tank; a portable outboard marine tank cap; a portable outboard marine tank fuel hose; or a portable outboard marine tank primer bulb.

NOTE:
Authority cited: Sections 39600, 39601, 43013, 43018, and 43101, of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39003, 39500, 39515, 39516, 41511, 43000, 43013, 43016, 43017, and 43018, of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

### 2468.1. Certification and Compliance Performance Standards and Test Procedures for Portable Outboard Marine Tanks and Portable Outboard Marine Tank Self Sealing Caps

(a) Every portable outboard marine tank produced on or after January 1, 2011, and every portable outboard marine tank self-sealing cap produced on or after January 1,2010, that is manufactured for sale, advertised for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce must be certified under the procedures in this Section 2468.1.

(b) The criteria for obtaining certification, including all test procedures for determining certification and compliance with the standards applicable to portable outboard marine tank self-sealing caps or portable outboard marine tanks are set forth in "CP-510, Certification Procedure for Portable Outboard Marine Tanks and Components", adopted (INSERT DATE), as incorporated by reference herein.

(c) Compliance with the Performance Standards in this Section does not exempt portable outboard marine tanks or portable outboard marine tank self-sealing caps from compliance with other applicable federal and state statutes and regulations such as state fire codes, safety codes, and other safety regulations, nor will the Air Resources Board test for or determine compliance with such other statutes or regulations.

NOTE:
Authority cited: Sections 39600, 39601, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000,39001,39003,39500,39515,39516,41511, 43000, 43013,43016,43017 and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

2468.2. Certification and Compliance Performance Standards and Test Procedures for Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs

(a) Every portable outboard marine tank fuel hose produced on or after January 1, 2010, and every portable outboard marine tank primer bulb produced on or after January 1, 2011 that is manufactured for sale, advertised for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce must be certified under the procedures in this Section 2468.2.

(b) The criteria for obtaining certification, including all test procedures for determining certification and compliance with the standards applicable to portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs are set forth in "CP-510, Certification Procedure for Portable Outboard Marine Tanks and Components", adopted (INSERT DATE), as incorporated by reference herein.

(c) Compliance with the Performance Standards in this Section does not exempt portable marine tank fuel hoses or portable outboard marine tank primer bulbs from compliance with other applicable federal and state statutes and regulations such as state fire codes, safety codes, and other safety regulations, nor will the Air Resources Board test for or determine compliance with such other statutes or regulations.

NOTE:
Authority cited: Sections 39600,39601,43013,43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39003, 39500, 39515, 39516,41511,43000,43013,43016,43017 and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

2468.3 Prohibitions

(a) Except as provided in Sections 2468.4 or 2468.5, no person may manufacture for sale, advertise for sale, sell, or offer for sale in California, or introduce, deliver, or import into California a portable outboard marine tank, portable outboard marine tank self-sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that is subject to any of the standards in Section 2468.1 or Section 2468.2 and is either
(1) not certified under Section 2468.1 or Section 2468.2, as applicable; or
(2) certified under Section 2468.1 or Section 2468.2, as applicable but is not in compliance as determined through the applicable Performance Standard Test Procedures in Section 2468.8

(b) Every portable outboard marine tank, portable outboard marine tank self-sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb identified in (a) is a separate violation of this Article.

(c) The manufacturer of a portable outboard marine tank fuel hose, portable outboard marine tank self-sealing cap, portable outboard marine tank primer bulb or portable outboard marine tank that fails to meet one or more of the requirements in Section 2468.6 is subject to a separate violation of this Article for each failing unit produced.

NOTE:

Authority cited: Sections 39600, 39601, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000,39001,39003,39500,39515,39516,41511, 43000, 43013, 43016, 43017 and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975).

2468.4. **Exemptions**

(a) This article does not apply to any portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb manufactured and delivered to a California retail outlet prior to the dates governing the performance standards listed in "CP-51 0, Certification Procedure for Portable Outboard Marine Tanks and Components, adopted (INSERT DATE)."

(b) This article does not apply to a manufacturer or distributor who sells, supplies, or offers for sale in California a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that does not comply with the Performance Standards specified in Sections 2468.1 (a) or 2468.2 (a) as long as the manufacturer or distributor can demonstrate that: (1) the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb is intended for shipment and use outside of California; and (2) that the manufacturer or distributor has taken reasonable prudent precautions to assure that the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb is not distributed to or within California. The exemption in this subsection (b) does not apply to portable outboard marine tanks, portable outboard marine tank self sealing caps, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulbs that are sold, supplied, or offered for sale by any person to retail outlets in California.

NOTE:

Authority cited: Sections 39600,39601,43013,43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39003, 39500, 39515, 39516,41511,43000,43013,43016,43017 and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975).

2468.5. **Innovative Products**

(a) The Executive Officer may exempt a portable outboard marine tank, portable outboard mariAe tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb from one or more of the requirements of Section 2468.1 or 2468.2 if a manufacturer demonstrates by clear and convincing evidence that, due to the product's design, delivery system, or other factors, the use of the product will result in cumulative ROG emissions below the highest emitting representative portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb in its product category as determined from applicable testing.

(b) For the purposes of this Section, "representative tank" or "representative cap" or "representative fuel hose" or representative "primer bulb" means a portable outboard marine tank, portable outboard marine tank self sealing ca:p, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb, respectively, which at the time of application in subsection (c) of this Section, meets the Performance Standards specified in Sections 2468.1 (a) or Section 2468.2 (a) or the Certification Requirements specified in "CP-510, Certification Procedure for Portable Outboard Marine Tanks and Components (INSERT DATE)."

(c) A manufacturer (applicant) must apply in writing to the Executive Officer for an innovative product exemption claimed under subsection (a). The application must include the supporting documentation that quantifies the emissions from the innovative product, including the actual physical test procedures used to generate the data. In addition, the applicant must provide any information necessary to enable the Executive Officer to establish enforceable conditions for granting the exemption. All information including proprietary data submitted by a manufacturer pursuant to this section shall be handled in accordance with the procedures specified in Title 17, California Code of Regulations, Sections 91000-91022.

(d) Within 30 days of receipt of the exemption application the Executive Officer shall determine whether an application is complete as provided in section 60030(a), Title 17, California Code of Regulations.

(e) Within 90 days after an application has been deemed complete, the Executive Officer will determine whether, under what conditions, and to what extent, an exemption from the requirements of Sections 2468.1 or 2468.2 will be permitted. The applicant and the Executive Officer may mutually agree to a longer time period for reaching a decision. An applicant may submit additional supporting documentation before a decision has been reached. The Executive Officer will notify the applicant of the decision in writing and specify such terms and conditions that are necessary to ensure that emissions from use of the product will meet the emissions reductions specified in subsection (a), and that such emissions reductions can be enforced.

(f) In granting an innovative product exemption for a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb, the Executive Officer shall specify the test procedures for determining conformance to the conditions established. The test procedures may include criteria for reproducibility, accuracy, and laboratory procedures.

(g) For any portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb for which an innovative product exemption has been granted pursuant to this section, the manufacturer shall notify the Executive Officer in writing at least 30 days before the manufacturer changes a product's design, delivery system, or other factors that may affect the product's ROG emissions during recommended usage. The manufacturer must also notify the Executive Officer within 30 days after the manufacturer learns of any information that would alter the emissions estimates submitted to the Executive Officer in support of the exemption application.

(h) If the Performance Standards specified in Section 2468.1 or 2468.2 are amended for a product category, all innovative product exemptions granted for products in the product category, except as provided in this subsection (h), have no force and effect as of the effective date of the amended Performance Standards. This subsection (h) shall not apply to those innovative products which have RaG emissions less than the appropriate lowered RaG standard and for which a written notification of the product's emissions status versus the lowered RaG standard has been submitted to and approved by the Executive Officer at least 60 days before the effective date of such standard.

(i) If the Executive Officer believes that a portable outboard marine tank, cap, fuel hose, or primer bulb for which an exemption has been granted no longer meets the criteria for an innovative product specified in subsection (a), the Executive Officer may hold a public hearing in accordance with the procedures specified in Title 17, California Code of Regulations, Division 3, Chapter 1, SUbchapter 1.25, to determine if the exemption should be modified or revoked.

NOTE:
Authority cited: Sections 39600,39601,43013,43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39003, 39500, 39515, 39516,41511,43000,43013,43016,43017 and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975).

**2468.6. Administrative Requirements**

(a) Each manufacturer of a portable outboard marine tank fuel hose produced on or after January 1,2010 or portable outboard marine tank self sealing cap produced on or after January 1, 2010, or portable outboard marine tank or portable outboard marine tank primer bulb produced on or after January 1, 2011 SUbject to and complying with Section 2468.1 or 2468.2 must clearly display on each portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb:

(1) a date of manufacture or representative date;

(2) a representative code identifying the Executive Order Number issued by the Air Resources Board for the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb.

(b) Each manufacturer subject to subsection (a) must file an explanation of both the date code and representative code with the Executive Officer no later than the later of three months after the effective date of this article or within three months of production, and within three months after any change in coding.

NOTE:
Authority cited: Sections 39600, 39601, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975). Reference: Sections 39000,39001,39003,39500,39515,39516,41511, 43000, 43013, 43016, 43017

and 43018, Health and Safety Code; and *Western Oif and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

2468.7. Variances

(a) Any person or manufacturer who cannot comply with the requirements set forth in Section 2468.1 or Section 2468.2 due to extraordinary reasons beyond the person's reasonable control, may apply in writing to the Executive Officer for a variance. The variance application must set forth:

(1) the specific grounds upon which the variance is sought;

(2) the proposed date(s) by which compliance with the provisions of Section 2468.1 or Section 2468.2 will be achieved; and

(3) a compliance report reasonably detailing the method(s) by which compliance will be achieved.

(b) Upon receipt of a complete variance application containing the information required in subsection (a), the Executive Officer shall hold a public hearing to determine whether, under what conditions, and to what extent, a variance from the requirements in Section 2468.1 or Section 2468.2 is necessary and will be permitted. A hearing will be initiated no later than 75 days after receipt of a complete variance application. Notice of the time and place of the hearing must be sent to the applicant by certified mail not less than 30 days before the hearing. Notice of the hearing must also be submitted for publication in the California Regulatory Notice Register and sent to every person who requests such a notice, not less than 30 days before the hearing. The notice must state that the parties may, but need not, be represented by counsel at the hearing. At least 30 days before the hearing, the variance application. must be made available to the public for inspection. Interested members of the public must be allowed a reasonable opportunity to testify at the hearing and their testimony must be considered.

(c) No variance may be granted unless all of the following findings are made:

(1) that, due to reasons beyond the reasonable control of the applicant, required compliance with Section 2468.1 or Section 2468.2 would result in extraordinary economic hardship;

(2) that the public interest in mitigating the extraordinary hardship to the applicant by issuing the variance outweighs the public interest in avoiding any increased emissions of air contaminants that would result from issuing the variance; and

(3) that the compliance report proposed by the applicant can reasonably be implemented, and will achieve compliance as expeditiously as possible.

(d) Any variance order shall specify a final compliance date by which the requirements of Section 2468.1 or Section 2468.2 will be achieved. Any variance order shall contain a condition that specifies increments of progress necessary to assure timely compliance, and such other conditions that the Executive Officer, in consideration of the testimony received at the hearing, finds necessary to carry out the purposes of Division 26 of the Health and Safety Code.

*(e)* A variance shall cease to be effective upon failure of the party to whom the variance was granted to comply with any term or condition of the variance.

(f) Upon the application of any person, the Executive Officer may review, and for good cause, modify or revoke a variance from requirements of Section 2468.1 or Section 2468.2, after holding a public hearing in accordance with the provisions of subsection (b).

NOTE:
Authority cited: Sections 39600,39601,43013,43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975). Reference: Sections 39000,39001,39003,39500,39515,39516,41511, 43000, 43013, 43016, 43017 and 43018, Health and Safety Code; and *Western Oil and Gas* Ass'n. *Vv. Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

**2468.8. Performance Standard Test Procedures**

(a) Testing to determine compliance with Section 2468.1 (a) of this article shall be performed by using the following procedures:

(1) "CP-510, Certification Procedure for Portable Outboard Marine Tanks and Components," adopted (INSERT DATE), which is incorporated by reference herein.

(2) "Test Procedure 511, Diurnal Rate from Portable Outboard Marine Tanks", adopted (INSERT DATE) which is incorporated by reference herein.

(b) Testing to determine compliance with Section 2468.2 (a) of this article shall be performed by using the following procedures:

(1) "CP-510, Certification Procedure for Portable Outboard Marine Tanks and Components," adopted (INSERT DATE), which is incorporated by reference herein.

(2) "Test Procedure 512, Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs", adopted (INSERT DATE), which is incorporated by reference herein.

(c) Alternative methods that are shown to be accurate, precise, and appropriate may be used upon written approval of the Executive Officer.

(d) Test procedures referred to in this Article can be obtained from the California Air Resources Board, and may be available at http://www.arb.ca.gov/omtlomt.htm.

*NOTE:*
*Authority cited: Sections 39600,39601,43013,43018 and 43101, Health and Safety Code; and Western Oil and Gas Ass'n. Vv. Orange County Pollution Control District,* 14 *Cal.3d* 411, 121 *CalRptr.* 249 (1975). *Reference: Sections 39000,39001,39003,39500,39515,39516,41511, 43000, 43013, 43016, 43017 and 43018, Health and Safety Code; and Western Oil and Gas* Ass'n. *Vv. Orange County Pollution Control District,* 14 *Cal.3d* 411, 121 *CalRptr.* 249 (1975).

**2468.9. Enforcement**

(a) If the Executive Officer finds any manufacturer, distributor, or retailer manufacturing for sale, advertising for sale, selling, or offering for sale in the State of California a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that does not comply with the requirements set forth in this article, he or she may enjoin said manufacturer, distributor, or retailer from any further manufacture, advertisement, sales, offers for sale, or distribution of such noncompliant portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb in the State of California pursuant to Section 43017 of the Health and Safety Code. The Executive Officer may also assess penalties to the extent permissible under Part 5, Division 26 of the Health and Safety Code and revoke any Executive Order(s) issued for the non-compliant portable outboard marine tank, cap, fuel hose, or primer bulb.

(b) Before seeking remedial action against any manufacturer, distributor, or retailer the Executive Officer will consider any information provided by the manufacturer, distributor, or retailer.

NOTE:

Authority: Sections 39600,39601,43013,43018, and 43101, ofthe Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411,121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39003, 39500, 39515, 39516,41511,43000,43013,43016,43017, and 43018, of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

**2468.10. Definitions**

(a) The definitions in Section 1900(b), Title 13 of the California Code of Regulations apply with the following additions:

(1) "Above Deck Fuel Tank" has the same meaning as portable outboard marine tank..

(2) "Assembly Clamps" means a clamping device used to secure a fuel hose to a connector.

(3) "Automatically Closes 'and Seals" means contains fuel and fuel vapor with no measurable emission rate excluding emissions associated from wetted surfaces that occur only as a result from connecting or disconnecting components.

(4) "Component" means any device used in conjunction with a portable outboard marine tank to supply fuel to an outboard engine.

(5) "Connector" means any device used to connect fuel hose to an outboard engine and/or portable outboard marine tank.

(6) "Consumer" means the first person who in good faith purchases a new portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb for purposes other than resale, including but not limited to personal, family, household, or institutional use.

(7) "Distributor" means any person to whom a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb is sold or supplied for the purposes of resale or distribution in commerce. Manufacturers, retailers, and consumers are not distributors.

(8) "Diurnal Rate" means the process rate by which fuel molecules evaporate through openings and permeate through materials as measured using "Test Procedure 511, Diurnal Rate from Portable Outboard Marine Tanks".

(9) "Executive Officer" means the Executive Officer of the Air Resources Board, or his or her designee.

(10) "Fuel" means all fuels subject to any provision of Title 13, California Code of Regulations, Chapter 5, Standards for Motor Vehicle Fuels, Sections 2250 - 2298, except for Sections 2292.5,2292.6, and 2292.7.

(11) "Manufacturer" means any person who imports, manufactures, assembles, packages, repackages, or re-labels a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb.

(12) "Nominal Capacity" means the volume indicated by the portable outboard marine tank manufacturer that represents the maximum recommended filling level of a portable outboard marine tank.

(13) "Outboard Engine" means a spark-ignition marine engine that, when properly mounted on a marine watercraft in the position to operate, houses the engine and drive unit external to the hull of the marine watercraft.

(14) "Permeation Rate" means the process rate by which fuel molecules penetrate a material and migrate to ambient air as measured using "Test Procedure 512, Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Primer Bulbs".

(15) "Person" has the same meaning as defined in Health and Safety Code Section 39047.

(16) "Portable Outboard Marine Tank" means any container with a nominal capacity of thirty (30) gallons or less that is designed, used, sold, advertised or offered for sale for supplying fuel to an outboard engine. Portable outboard marine tanks do not include fuel tanks designed exclusively for permanent installation in a specific marine vessel.

(17) "Portable Outboard Marine Tank Cap" means a removable cap that allows for filling a portable outboard marine tank with fuel and may include a manually operated or automatic vent.

(18) "Portable Outboard Marine Tank Fuel Hose" means fuel hose used to transfer fuel from a portable outboard marine tank to an outboard engine.

(19) "Portable Outboard Marine Tank Primer Bulb" means a device used to siphon fuel from a portable outboard marine tank through a portable outboard marine tank fuel hose to an outboard engine.

(20) "Portable Outboard Marine Tank Self Sealing Cap" means a cap outfitted with a device that is actuated by positive or negative pressure without user intervention that contains fuel and fuel vapors inside a portable outboard marine tank during normal use.

(21) "Portable Outboard Marine Tank System" means any combination of portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose or portable outboard marine tank primer bulb sold as a complete package.

(22) "Product Category" means the applicable category that best describes the product with respect to its nominal capacity, material construction, and diurnal or permeation rate, as applicable, as determined by the Executive Officer at the time certification is requested.

(23) "Retailer" means any person who owns, leases, operates, controls, or supervises a retail outlet.

(24) "Retail Outlet" means any establishment at which a portable outboard marine tank, cap, fuel hose, or primer bulb are sold, supplied, or offered for sale.

(25) "ROG" (Reactive Organic Gas) means a reactive chemical gas, composed of hydrocarbons that may contribute to the formation of smog. ROG is sometimes referred to as Non-Methane Organic Compounds (NMOC's).

NOTE:

Authority: Sections 39600,39601,43013,43018, and 43101, of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001,39003,39500,39515,39516,41511,43000, 43013, 43016, 43017, and 43018, of the Health and Safety Code, and *Western Oil and Gas Ass'n.* V. *Orange County Pollution Control District,* 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

# APPENDIX B

# CERTIFICATION PROCEDURE FOR PORTABLE OUTBOARD MARINE TANKS AND COMPONENTS

California Environmental Protection Agency

# Air Resources Board

## DRAFT

**Certification Procedure for**
**Portable Outboard Marine Tanks and Components**

**CP-S10**

Adoption Date: [To be determined]

# Table of Contents

**California Environmental Protection Agency**
**Air Resources Board**

**DRAFT CP-510**

# Certification Procedure for Portable Outboard Marine Tanks and Components

The definitions in Section 2468.10, Title 13 of the California Code of Regulations (CCR) apply to this Certification Procedure. For purposes of this Procedure, the term "ARB" refers to the California Air Resources Board.

## 1. GENERAL INFORMATION AND APPLICABILITY

This document specifies the criteria and procedures used by ARB to evaluate and certify portable outboard marine tanks, portable outboard marine tank self sealing caps, portable outboard marine tank fuel hoses, or portable outboard marine tank primer bulbs manufactured for sale, advertised for sale, sold, or offered for sale in California or that are introduced, delivered or imported into California for introduction into commerce. An Executive Order will only be issued for a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that demonstrates compliance with all applicable certification requirements.

### 1.1 Compliance with Other Applicable Codes and Regulations

Compliance with the Performance, Certification or Compliance Standards in this Section does not exempt portable outboard marine tanks, portable outboard marine tank self sealing caps, portable outboard marine tank fuel hoses, or portable outboard marine tank primer bulbs from compliance with other applicable federal and state statutes and regulations such as state fire codes, safety codes, and other safety regulations, nor will the Air Resources Board test for or determine compliance with such other statutes or regulations.

## 2. CERTIFICATION REQUIREMENTS

The application for certification shall include test results for each test specified in Air Resources Board "Test Procedure TP-511 Diurnal Rate from Portable Outboard Marine Tanks", adopted (DATE) and Air Resources Board Test Procedure TP-512 Permeation Rate From Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs", adopted (PATE) or comparable federal test results described in 72-FR-28098, adopted (DATE) which are incorporated by reference herein.

Testing for portable outboard marine tank certification shall be conducted using six (6) portable outboard marine tanks plus one (1) additional portable outboard marine tank for use as a trip blank of the same product family. Testing for portable

outboard marine tank fuel hose and portable outboard marine tank primer bulb certification shall be conducted using six (6) samples of portable outboard marine tank fuel hose and six (6) portable outboard marine tank primer bulbs of the same product family. An accredited independent test laboratory shall conduct all testing. For purposes of this requirement, an accredited independent test laboratory is one that is not owned, operated or affiliated with the applicant seeking an Executive Order. The performance requirements are included in Table 2.

2.1 Portable Outboard Marine Tanks

2.1.1 On or after January 1, 2011, portable outboard marine tanks with a rated capacity of thirty (30) gallons or less shall:

(a) Be equipped with a Portable Outboard Marine Tank Self Sealing Cap.
(b) Not include a Manual Vent.
(c) Not exceed an emission rate of 1.5 *grams/m$^2$/day* as demonstrated through Air Resources Board 'Test Procedure TP-511 Diurnal Rate from Portable Outboard Marine Tanks", adopted (DATE) or comparable federal test results described in 72-FR-28098, adopted (DATE).

2.2 Portable Outboard Marine Tank Fuel Hoses

2.2.1 On or after January 1,2010, portable outboard marine tank fuel hoses shall:

(a) Not exceed a permeation rate of 15 *grams/m$^2$/day* as demonstrated through Air Resources Board "Test Procedure TP-512 Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs", adopted (DATE) or comparable federal test results described in 72-FR-28098, adopted (DATE).

2.3 Portable Outboard Marine Tank Primer Bulbs

2.3.1 On or after January 1, 2011, portable outboard marine tank primer bulbs shall:

(a) Not exceed a permeation rate of 15 *grams/m$^2$/day* as demonstrated through Air Resources Board "Test Procedure TP-512 Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs", adopted (DATE) or comparable federal test results described in 72-FR-28098, adopted (DATE).

2.4 Portable Outboa'rd Marine Tank Self Sealing Caps

2.4.1 On or after January 1, 2010, portable oLJtboard marine tank self sealing

caps shall:

(a) Automatically close and seal up to a pressure of 5 psig.

2.5 **Warranty**

(a) An applicant seeking an Executive Order pursuant to this article must warrant its portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb as free from defects in materials and workmanship that cause such components to fail to conform to any of the certification and compliance standards for a period of one year from the date of sale.

(b) An applicant must supply a copy of the warranty language specified in section (a) above in the packaging for each portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb at the time of sale identifying the following minimum requirements:

(1) A statement of the terms and length of the warranty period;

(2) An unconditional statement that the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb is certified to California requirements; and

(3) A listing of the specific certification requirements or limitations to which it was certified.

2.6 **Operating and Maintenance Instructions**

All applicants shall submit a copy of the operating and maintenance instructions that shall be attached to each portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb at the time of purchase by a consumer.

**Table 2**
**Performance Requirements**

| **Portable** Outboard Marine **Tank** | | |
|---|---|---|
| **Performance Type** | **Requirement** | **Effective Date** |
| Self Sealing Cap | Automatically Closes and Seals | January 1, 2010 |
| Emission Rate | $\leq$ 1.5 *grams/m$^2$/day* | January 1, 2011 |
| Portable Outboard Marine Tank Fuel Hose & Portable Outboard Marine **Tank** Primer Bulb | | |
| **Performance Type** | **Requirement** | **Effective Date** |
| Fuel Hose Permeation Rate | $\leq$ 15 *grams/m$^2$/day* | January 1, 2010 |
| Primer Bulb Permeation Rate | $\leq$ 15 *grams/m$^2$/day* | January 1, 2011 |

3. **SUBMITTING AN APPLICATION**

An applicant shall submit the following information in its application for certification:

3.1 Model number(s) and size(s) of the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb for which certification is requested. The applicant shall supply test data that demonstrates the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb complies with each of the certification requirements identified in Section 2.

3.2 Engineering drawings of the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb detailing dimensions specific to each component. If more than one type or size of a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb is included in the application, separate dimensioned drawings are required.

3.3 A sample of the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb.

3.4 Test results obtained from Air Resources Board "Test Procedure TP-511, Diurnal Rate from Portable Outboard Marine Tanks", adopted (DATE) and test results obtained from Air Resources Board "Test Procedure TP-512, Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs", adopted (DATE) or comparable federal test results described in 72-FR-28098, adopted (DATE).

3.5 Any other test results or data that supports the requirements in Section 3.4 above that would assist in the determination of certification.

3.6 The language, symbols, or patterns that will be permanently embossed or printed on the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb. This shall include examples of date code wheels as well as other permanent markings and their locations on the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb. Once an executive order is issued, these permanent markings cannot be altered without first obtaining approval of the ARB Executive Officer.

3.7 The language or label(s) that may be affixed to the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb at the time of sale.

3.8 The manufacturer's recommended instructions, instruction decals, or other types of placards attached to the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb at the time of sale. Include examples of actual decals or placards if available, Proposed placards or decals are sufficient if actual samples are not available. Once an executive order is issued, these decals or placards cannot be altered without first obtaining the approval of the ARB Executive Officer.

3.9 The manufacturer's warranty(s) as defined in section 2.3.

3.10 A description of the materials used in the construction of the portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb. Material compositions of gaskets, O-rings and seals must be described.

3.11 If the applicant is not the manufacturer of all system components incorporated in a portable outboard marine tank system, then the applicant must provide a list identifying the manufacturer of each of the components in the system.

a) If the component(s) requested for inclusion in certification have not been previously incorporated into a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that has been issued an executive order pursuant to these procedures, each of the component(s) is subject to each of the application and test requirements specified in this CP-510.

4. APPLICATION REVIEW AND ACCEPTANCE

4.1 An application for certification shall be deemed complete after it is determined to contain all information required by this procedure. The application shall not be deemed complete until each of the requirements listed in this procedure has been submitted for approval.

4.2 The Executive Officer may find it necessary to request additional information of the applicant in order to complete the application and/or evaluate a specific portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb.

4.3 Applications will be processed in accordance with the procedures and time periods set forth in 17 CCR section 60030 et seq. The time periods may be extended by the Executive Officer as deemed reasonable.

4.4 The application shall be signed by the applicant or by their authorized delegate.

5. ENGINEERING EVALUATION

The ARB Executive Officer shall evaluate each application for certification of a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb to determine if the criteria for issuance of an executive order has been met.

5.1 Any portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb that does not comply with the requirements of this Certification Procedure shall be denied certification, and the application shall be returned to the applicant with reason(s) for denial. ARB will not evaluate an applicant's re-submittal of a portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb application for certification unless the applicant can demonstrate that it has addressed and/or corrected deficiencies identified by ARB during the initial evaluation. The applicant must supply written notification to the Executive Officer to identify the deficiency(s) and remedy(s).

5.2 The portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose, or portable outboard marine tank primer bulb certification requirements submitted by the applicant shall be reviewed to ensure they conform to the certification requirements in Section 2 of this Procedure.

5.3 The procedures for, and results of, any bench test or operational test results contained in the application shall be reviewed to determine if such procedures comply with the required test methodology, and to ensure that the results comply with the certification requirements described in this Procedure.

## 6. ALTERNATE TEST AND INSPECTION PROCEDURES

Test procedures other than those specified in this Certification Procedure may be used only if prior written approval is obtained from the Executive Officer. For purposes of this procedure, a test procedure is a methodology used to determine, with a high degree of accuracy, precision, and reproducibility, the value of a specified parameter. Once the test procedure is utilized to generate test data, the results are compared to the applicable certification requirements.

6.1 An applicant may request advance ARB Executive Officer approval to utilize an alternative test procedure. This request shall describe the proposed alternative test procedure, including equipment specifications necessary to conduct the test. If training is required to properly perform a test, a proposed training program shall be included.

6.2 The Executive Officer shall respond within sixty (60) days of receipt of a request and indicate that a formal response will be sent within one hundred twenty (120) days. This time period will allow for a detailed analysis of the proposed test procedure. If the Executive Officer determines that he or she cannot adequately evaluate the request within the specified time periods, he or she shall notify the applicant of said determination along with a projected date that a decision will be made.

6.3 All testing to determine the acceptability of the procedure shall be conducted by ARB staff, or by an independent test laboratory under the direction of ARB. Testing shall be conducted in accordance with good engineering judgement.

6.4 Test procedure approval shall be granted on a case-by-case basis, only after all necessary comparison testing has been conducted. Because of the evolving nature of technology and test procedures, such approval may not be granted in subsequent cases without a new request for approval and additional testing to determine equivalency.

6.5 Any approval to use alternate test procedures and the supporting evaluation test results shall be maintained by the Executive Officer.

# APPENDIX C

## PORTABLE OUTBOARD MARINE TANK TEST PROCEDURE: TP-511 DIURNAL RATE FROM PORTABLE OUTBOARD MARINE TANKS

**California Environmental Protection Agency**

# Air Resources Board

## Portable Outboard Marine Tank Test Procedure

**TP-S11**

## Diurnal Rate from Portable Outboard Marine Tanks

# DRAFT

Adoption Date: To Be Determined

**DRAFT 8/8/08**

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***DRAFT***

California Environmental Protection Agency
Air Resources Board

DRAFT TP-511

# Test Procedure for Determining Diurnal Emissions from Portable Outboard Marine Tanks

The definitions in Section 2468.10, Article 6, Chapter 9 of Title 13, California Code of Regulations (CCR) applies to this test procedure.

For the purpose of this procedure, the term "ARB" refers to the California Air Resources Board, and the term "Executive Officer" refers to the ARB Executive Officer or his or her authorized representative or designate.

## 1. APPLICABILITY

This test procedure is used by the ARB to determine the diurnal emission rate from portable outboard marine tanks as required in Certification Procedure CP-510. This test procedure is applicable in all cases where portable outboard marine tanks are subject to the maximum allowable diurnal emissions rate for portable outboard marine tanks that are manufactured for sale, *advertised* for sale, sold, or offered for sale in California or that are introduced, delivered or imported into California for introduction into commerce.

### 1.1 Compl with Other Applicable Codes and Regulations

Certification or approval by the Executive Officer does not exempt a portable outboard marine tank or its components from compliance with other applicable codes and regulations such as local, State or federal safety codes and regulations.

### 1.2 Safety

This test procedure *involves* the use of flammable materials and operations and should only be used by or under the supervision of those familiar and experienced in the use of such materials and operations. Appropriate safety precautions should be observed at all times while performing this test procedure.

## 2. PRINCIPLE AND SUMMARY OF TEST PROCEDURE

Diurnal emissions may result when a portable outboard marine tank is stored with fuel and subject to daily temperature fluctuations. These emissions may result from permeation or evaporation. This procedure specifies test fuel and requires preconditioning followed by a three (3) day test period. Testing shall be conducted

using a portable outboard marine tank self sealing cap and plugged connector.

## 3. BIASES AND INTERFERENCES

3.1 Moisture, temperature and pressure can bias mass measurements. A sealed trip blank shall be used to correct for atmospheric conditions.

3.2 Trip blanks and samples stored near high concentrations of hydrocarbon vapor may gain weight. Care shall be taken to purge the temperature enclosure at regular intervals to limit hydrocarbon vapor buildup.

3.3 Incorrectly installed components may bias the reported results.

3.4 Some electronic balances.are sensitive to the effects of small static charges. If small amounts of static electricity influence the balance, the portable outboard marine tank shall be statically discharged or the balance shall be shielded from the effects of static electricity.

## 4. SENSITIVITY AND RANGE

The range of measurement is approximately 1,000 to 100,000 grams depending on capacity and installed components. All measurements shall be conducted using an electronic top loading balance. This balance shall be capable of a maximum measurement of no less than 125% of the highest test weight. The balance shall have a minimum readability of 0.1 grams and minimum reproducibility of $\pm$ 0.2 grams.

## 5. EQUIPMENT

5.1 An electronic top loading balance that meets the requirements of Section 4.

5.2 NIST or NVLAP certified calibration weights. A sufficient number of weights to verify measurements at 80%, 100%, and 120% of the test weight.

5.3 A ventilated, variable temperature enclosure capable of controlling the internal air temperature to within +/_2°F of each measurement specified in Table 9.

5.4 Temperature instrument(s) capable of measuring air or surface temperature within the tolerances of those specified in Table 9.

5.5 A barometric pressure instrument capable of measuring atmospheric pressure at the location of the balance to within +/-0.02 inches of mercury.

5.6 A relative humidity instrument capable of measuring relative humidity percentage (%RH) at the location of the balance with a sensitivity of +/-2%RH.

5.7 Test Fuel: E-10 (90% fuel complying with California Phase 3 Reformulated

Gasoline requirements with 10% +/- 0.5% by *volume* Ethanol).

6. CALIBRATION PROCEDURE

6.1 All instruments and equipment used to conduct this procedure shall be calibrated per the manufacturer's specifications before testing.

6.2 The electronic balance shall be calibrated by a certified calibration company or agency within 12 months of testing.

6.3 During testing, the accuracy of the balance shall be verified with calibration weights at 80%, 100%, and 120% of the balance range. All verification readings shall be within +/-2% of the calibration weight mass. During test weigh-ins, no more than 25 measurements or 2 hours shall pass (whichever is earliest) without verifying the accuracy of the balance. Tare the balance and repeat the previous measurement if the zero reading drifts more than +/-0.1 grams.

7. PRECONDITIONING

Preconditioning is required to ensure the tank and components are permeating at a steady-state rate. Preconditioning may be conducted using one of two options; ambient conditions for at least 140 days or constant temperature for a minimum of 70 days in conjunction with pressure cycling and a weight loss correlation coefficient.

Option A: Ambient Preconditioning

7A.1 Identify the portable outboard marine tankwith a unique 10 number and record on the data sheet.

7A.2 Fill the tank to 50% (+/-1 %) of the rated capacity with test fuel as described in Section 5.7. Record the fuel type, amount dispensed, and start date on the data sheet. At no time during the remainder of testing shall the tank be emptied of test fuel for more than one hour.

7A.3 Install the self sealing cap and plug the fuel fitting.

7A.4 Check the leak tightness of the tank as specified in Section 8.

7A.5 Allow the tank to precondition at ambient conditions for a minimum of 140 days.

Option B: Constant Temperature Preconditioning

7B.1 Identify the portable outboard marine tank with a unique 10 number and record on the data sheet.

78.2 Install the self sealing cap.

78.3 Connect a pressure/vacuum source to the tank fuel pickup connection. Pressure cycle the tank between 2.0 psig and -0.5 psig (+/-0.10 psig). Repeat until at least 1,000 cycles are completed in 8 hours (+/-1 hour). Pressure cycling shall be performed in 82°F (+/-9°F) ambient air with compressed air at no less than 70°F. Pressure shall not be introduced using a modified fill cap.

78.4 Fill the tank to approximately 50% rated capacity with test fuel as described in Section 5.7. Record the fuel type, amount dispensed, and start date on the data sheet. At no time during the remainder of testing shall the tank be emptied of test fuel for more than one hour.

78.5 Check the leak tightness of the tank as specified in Section 8.

78.6 Obtain a second identical portable outboard marine tank for use as a trip blank. The trip blank shall remain empty and not have been previously exposed to fuel. Perform a leak check by pressurizing the trip blank to at least 5.0 psig and submerging in a water bath as specified in Section 8.2 to verify the absence of leaks.

78.7 Check the balance with calibration weights at 80%, 100%, and 120% of the balance range. See Section 5.2.

78.8 Ensure the exterior surfaces of the tanks are clean, dry, and free of dirt or debris. Carefully place on the balance. Record the weight, date, time, temperature, relative humidity and barometric pressure on the data sheet (see Figure 1). Repeat with the trip blank.

78.9 Confirm the balance has not deviated. Check the balance with calibration weights at 80%,100%, and 120% of the balance range. See Section 5.2.

78.10 Place the tank and trip blank into the temperature enclosure and acclimate at steady-state temperature of at least 104°F for a minimum of 70 days.

78.11 Ten days prior to the conclusion of preconditioning, weigh the portable outboard marine tank and trip blank once per 24-hour period as specified in Sections 78.6 through 78.8. Correct each measurement using the trip blank. Continue preconditioning until constant weight loss has been achieved. Constant weight loss is defined as the results of ten consecutive readings with a correlation coefficient of 95% or greater. See Section 10 for calculation.

8. LEAK CHECK

A leak check shall be performed to visually confirm leak integrity.

8.1 Perform a leak check by raising the ambient temperature at least 40°F for a minimum of two hours. This should expand the fuel vapor and the tank walls. If the tank does not expand, there may be a leak.

8.2 Submerge in a water bath large enough to cover the entire portable outboard marine tank to a depth of at least six (6) inches. Tilt the tank back and fourth while submerged to dislodge air from external cavities. Wait at least thirty (30) seconds. Any bubbles coming from the tank denotes a leak. Remove the tank from the water bath and dry off excess water from the exterior surfaces.

8.3 No repairs may be performed. Tanks with leaks shall be replaced and the failure documented on the data sheet.

9. DIURNAL TEST PROCEDURES

Diurnal testing requires the portable outboard marine tank to undergo three (3) consecutive diurnal temperature cycles as specified in Table 9. A trip blank shall be used to correct for changes in atmospheric conditions during the test period.

9.1 Perform a leak check on the preconditioned tank as specified in Section 8.

9.2 Obtain a second identical portable outboard marine tank for use as a trip blank. The trip blank shall remain empty and not have been previously exposed to fuel. Perform a leak check by pressurizing the trip blank to at least 5.0 psig and submerging in a water bath as specified in Sections 8.2 to verify the absence of leaks.

9.3 Clean the exterior surfaces of the tanks with Alconox™ or another hydrocarbon dissolving solution that effectively removes hydrocarbon residue from the outer surfaces of the portable outboard marine tank and trip blank. This step shall not be repeated for the remainder of testing. .

9.4 Place the portable outboard marine tank and trip blank into the temperature enclosure and acclimate at 65°F (+1-5°F) for a minimum of 6 to a maximum of 36 hours to eliminate temperature bias. At no time after the acclimation period shall the tank be removed from the 65°F steady-state temperature enclosure for more than 60 minutes or this Section 9.4 shall be repeated.

9.5 Check the balance with calibration weights at 80%,100%, and 120% of the balance range. See Section 5.2.

9.6 Weigh the portable outboard marine tank and trip blank and return to the temperature enclosure acclimated at 65°F to avoid temperature bias. Record the date, weight, time, temperature, relative humidity and barometric pressure on the data sheet.

9.7 Confirm the balance has not deviated. Check the balance with calibration weights at 80%,100%, and 120% of the balance range. See Section 5.2.

9.8 Begin the diurnal cycle as specified in Table 9. At the conclusion of the diurnal cycle, repeat Section 9.5 through 9.7

9.9 Repeat until three (3) consecutive diurnal cycles are completed. Care must be taken to avoid temperature bias. A minimum of 6 to a maximum of 36 hours between diurnal cycles is acceptable provided the tanks remain at 65°F steady-state conditions.

9.10 At the conclusion of diurnal testing, repeat the leak check as specified in Section 8 for the portable outboard marine tank. For the trip blank, repeat the leak check specified in Section 9.2.

9.11 Calculate the daily weight loss for each diurnal cycle using the trip blank as specified in Section 10. Record the diurnal emission rate on the data sheet using the highest recorded daily weight loss

Table 9
Diurnal Temperature Profile

| Hour | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (OF) | 65 | 66.5 | 72.7 | 80.2 | 86.2 | 90.7 | 94.6 | 98.1 | 101.1 | 103.5 | 104.9 | 105.1 | 104.2 |
| Hour | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | -- |
| (°F) | 101.1 | 95.4 | 88.9 | 84.4 | 80.8 | 77.7 | 75.4 | 72.0 | 70.0 | 68.2 | 66.5 | 65 | -- |

## 10. CALCULATING RESULTS

The diurnal emission rate is calculated by dividing the corrected daily weight loss by the portable outboard marine tank rated capacity. If constant elevated temperature was used for preconditioning, calculate the constant weigHt loss correlation coefficient as shown below.

**Weight Loss With Trip Blank**

$$L = W_i - C_T$$

Where:

$L$ = daily weight loss, with trip blank correction (grams/day)
$Wi$ = initial weight of sample portable outboard marine tank (grams)
$C_r$ = $W_f + Dr$ (trip blank correction) (grams)

Where:

$W_f$ = final weight (grams)
$Dr$ = $T_i - T_f$ (grams)

Where:

$T_i$ = trip blank weight at the start of the specified time period (grams)
$T_f$ = trip blank weight at the end of the specified time period (grams)

**Diurnal Emission Rate**

$$Orate = L/A$$

Where:

$Orate$ = the diurnal emission rate (grams/day/square meter)
$L$ = the corrected daily weight loss (grams/day)
A = inside surface area (square meters)

**Constant Weight Loss Correlation Coefficient**

Plot the cumulative daily weight loss (grams) against the sampling time (days). Perform a linear regression of ten (10) consecutive data points (spreadsheet or hand calculation) using the equation shown below. A correlation coefficient of 95% or greater shall demonstrate constant weight loss.

$$r = \frac{n\left(\sum XY\right) - \left(\sum X\right)\left(\sum Y\right)}{\sqrt{\left[n\sum X^2 - \left(\sum X\right)^2\right]\left[n\sum Y^2 - \left(\sum Y\right)^2\right]}}$$

Where:

$r$ = correlation coefficient
$n$ = number of samples (10)
X = day number (Le., 1-10)
Y = cumulative daily weight loss (grams)

## 11. RECORDING DATA

Record all data on a field data sheet. An example of a field data sheet is shown in Figure 1. Alternate test forms may be used provided they list the same minimum parameters as shown in Figure 1.

## 12. QUALITY ASSURANCE / QUALITY CONTROL

All data must be carefully recorded on the field data sheet during the test. Any unusual occurrences in the process operation, unusual test instrument readings or items that could possibly affect the test results should be noted on the data sheet. It is recommended that a checklist, in addition to the data sheet be used to assure all data needed for calculation or process information are obtained.

## 13. ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is obtained from the Executive Officer. In order to secure the Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating, to the Executive Officer's satisfaction, that the alternative test procedure is equivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only.

(2) Documentation of any such requests, equivalency demonstrations, and ARB approvals shall be maintained by the ARB and shall be made available upon request.

**Figure 1 - Data Sheet**

Test Company: Test Personnel: _

Sample ID #: Test Period Start: Test Period End: _

GMT Manufacturer: Model: Rated Capacity: (gal)

Balance Make/Model: Capacity/Resolution: Annual Calib. Date: _

Verification Weights: 80%: ___ 100%: ___ 120%: ___

---

**Preconditioning** Method: ___ Ambient ___ Elevated Temperate (check one)

Test Fuel Type: (attach specifications) Steady-State Temp.: (°F or °C)

Start Date: End Date: CC (Elevated Temp): %

---

**Diurnal Test Results** (attach test results with computations)

Day 1: Corrected Weight Loss: g/day Temp: Baro. Press: RH: __ __%

Day 2: Corrected Weight Loss: g/day Temp: Bara. Press: RH: __ __%

Day 3: Corrected Weight Loss: g/day Temp: Bara. Press: RH: __ __%

Diurnal Rate: g/gal/day

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**Documentation of Performance** (attach additional sheets if necessary)

Date: Comment (include "failures"):

_____ _____

_____ _____

_____ _____

# APPENDIX D

## PORTABLE OUTBOARD MARINE TANK TEST PROCEDURE: TP-512 PERMEATION RATE FROM PORTABLE OUTBOARD MARINE TANK FUEL HOSES AND PORTABLE OUTBOARD MARINE TANK PRIMER BULBS

California Environmental Protection Agency

# Air Resources Board

# DRAFT

## Portable Outboard Marine Tank Test Procedure

**TP-S12**

## Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Portable Outboard Marine Tank Primer Bulbs

Adoption Date: To be Determined

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California Environmental Protection Agency
Air Resources Board

DRAFT TP-S12

# Permeation Rate from Portable Outboard Marine Tank Fuel Hoses and Primer Bulbs

The definitions in Section 2468.10, Article 6, Chapter 9 of Title 13, California Code of Regulations (CCR) apply to this test procedure.

For the purpose of this procedure, the term "ARB" refers to the California Air Resources Board, and the term "Executive Officer" refers to the ARB Executive Officer or his or her authorized representative or designate.

## 1. APPLICABILITY

This test procedure is used by the ARB to determine the permeation rate from a portable outboard marine tank fuel hose and portable outboard marine tank primer bulb as required in Certification Procedure CP-510. This test procedure is applicable in all cases where portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs are subject to the maximum allowable permeation rates for portable outboard marine tank fuel hoses and portable outboard marine tank primer bulbs that are manufactured for sale, advertised for sale, sold, or offered for sale in California or that are introduced, delivered or imported into California for introduction into commerce.

### 1.1 Compliance with Other Applicable Codes and Regulations

Certification or approval by the Executive Officer does not exempt a portable outboard marine tank fuel hose or primer bulb from compliance with other applicable codes and regulations such as local, State or federal safety codes and regulations.

### 1.2 Safety

This test procedure involves the use of flammable materials and operations and should only be used by or under the supervision of those familiar and experienced in the use of such materials and operations. Appropriate safety precautions should be observed at all times while performing this test procedure.

## 2. PRINCIPLE AND SUMMARY OF TEST PROCEDURE

Permeation emissions may result if fuel penetrates the molecular structure of a material and migrates to ambient air. The resulting emissions can be observed by measuring daily weight loss. This procedure specifies test fuel and requires an eight (8) week preconditioning period followed by a fifteen (15) day test period. Measurements are

obtained using a top loading balance.

## 3. BIASES AND INTERFERENCES

3.1 Moisture, temperature and pressure can bias mass measurements. All data shall be recorded on the data sheet.

3.2 Samples stored near high concentrations of hydrocarbon vapor may gain weight. Care shall be taken to purge the temperature enclosure at regular intervals to limit hydrocarbon vapor buildup.

3.3 Incorrectly installed components may bias the reported results.

3.4 Some electronic balances are sensitive to the effects of small static charges. If small amounts of static electricity influence the balance, the portable outboard marine tank fuel hose assembly shall be statically discharged or the balance shall be shielded from the effects of static electricity.

## 4. SENSITIVITY AND RANGE

The range of measurements is approximately 200 to 3,000 grams depending on the installed components. All measurements shall be conducted using an electronic top loading balance capable of a maximum measurement of no less than 125% of the highest test weight and a minimum readability of 0.01 grams and minimum reproducibility of ± 0.02 grams.

## 5. EQUIPMENT

5.1 An electronic top loading balance that meets the requirements of Section 4.

5.2 National Institute of Standards and Technology (NIST) or National Voluntary Laboratory Accreditation Program (NVLAP) traceable calibration weights. A sufficient number of weights to verify measurements at 80%, 100%, and 120% of the balance range

5.3 A ventilated temperature enclosure capable of maintaining 73°F +/- 9°F.

5.4 A barometric pressure instrument capable of measuring atmospheric pressure at the location of the balance to within +/-0.02 inches of mercury.

5.5 A relative humidity measuring instrument capable of measuring relative humidity percentage (%RH) at the location of the balance with a sensitivity of +/-2%RH.

5.6 Test Fuel: E-10 (90% fuel complying with California Phase 3 Reformulated Gasoline requirements with 10% +/-/0.5% by volume Ethanol).

## 6. CALIBRATION PROCEDURE

6.1 All instruments and equipment used to conduct this procedure shall be calibrated per the manufacturer's specifications before testing.

6.2 The electronic balance shall be calibrated by a certified calibration company or agency within 12 months of testing.

6.3 During testing, the accuracy of the balance shall be verified with calibration weights at 80%, 100%, and 120% of the balance range before and after each set of test weighings. All verification readings shall be within +/-2% of the calibration weight mass. During test weigh-ins, no more than 25 measurements or 2 hours shall pass (whichever is earliest) without verifying the accuracy of the balance. Tare the balance and repeat the previous measurement if the zero reading drifts more than +/-0.01 grams.

## 7. TEST PROCEDURES

This procedure shall be used to calculate the permeation rate in order to demonstrate compliance with the maximum allowable permeation rate as specified in CP-510.

7.1 Identify the test component with a unique 10 number and record on the data sheet (see Figure 1).

7.2 Determine the inside surface area of component to the nearest square centimeter and record on the data sheet.

7.3 Install the component on a test can similar to the type described in SAE J1527.

7.4 Fill the test assembly (test can with component) with test fuel. Primer bulbs shall be actuated once per week during preconditioning and once per day during testing to ensure the inner cavity remains in contact with test fuel.

7.5 Precondition for 8 weeks at 73°F +/- 90F or 4 weeks at 110°F +/- 90F.

7.6 Acclimate the test assembly to 73°F +/- 4°F for a period of 6 to 36 hours prior to testing. At no time during the test period shall the test assembly be removed from this test temperature for more than 15 minutes.

7.7 Check the balance with calibration weights at 80%, 100%, and 120% of the balance range (see Section 5.2).

7.8 Carefully weigh the test assembly and record the weight, date, time, temperature, relative humidity (%), and barometric pressure on the data sheet.

7.9 Confirm that the balance has not deviated with calibration weights at 80%,100%, and 120% of the balance range. See Section 5.2.

7.10 After 24 hours (+/-30 minutes), repeat Sections 7.7 through 7.9.

7.11 Repeat Sections 7.7 through 7.10 for a minimum of 15 days or until a constant weight loss has been achieved, whichever is later. Constant weight loss is defined as the results of ten consecutive readings with a correlation coefficient of 95% or greater. See Section 8. .

## 8. CALCULATING RESULTS

### Inside Surface Area

The inside surface area of the fuel hose and primer bulb shall be converted to square meters as follows:

$$Am = A_{cm} / 10{,}000$$

Where:

| | | |
|---|---|---|
| $Am$ | = | inside surface area (square meters) |
| $A_{cm}$ | = | measured inside surface area (square centimeters) |
| 10,000 | = | number of square centimeters per square meter |

### Daily Weight Loss

The daily weight loss is calculated by subtracting the final weight from the initial weight:

$$W_{loss} = W_i - W_f$$

Where:

| | | |
|---|---|---|
| $W_{loss}$ | = | daily weight loss (grams/day) |
| $Wi$ | = | initial measured weight (grams) in a 24-hour period |
| $W_f$ | = | final measured weight (grams) for the same 24-hour period |

### Permeation Rate

$$p = W_{loss} / Am$$

Where:

| | | |
|---|---|---|
| $p$ | = | permeation rate (grams/day/square meters) |
| $W_{loss}$ | = | daily weight loss (grams/day) |
| $Am$ | = | inside surface area (square meters) |

**Constant Weight Loss Correlation Coefficient**

Plot the cumulative daily weight loss (grams) against the sampling time (days). Perform a linear regression of ten (10) consecutive data points (spreadsheet or hand calculation) using the equation shown below. A correlation coefficient of 95% or greater shall demonstrate constant weight loss.

$$r = \frac{n\left(\sum XY\right) - \left(\sum X\right)\left(\sum Y\right)}{\sqrt{\left[n\sum X^2 - \left(\sum X\right)^2\right]\left[n\sum Y^2 - \left(\sum Y\right)^2\right]}}$$

Where:

$r$ = correlation coefficient
$n$ = 'number of samples (10)
$X$ = day number (i.e., 1-10)
Y = cumulative daily weight loss (grams)

## 9. RECORDING DATA

Record all required data on a field data sheet. An example of a field data sheet is shown in Figure 1. Alternate test forms may be used provided they list the same minimum parameters as shown in Figure 1.

## 10. QUALITY ASSURANCE / QUALITY CONTROL

All certified fuel specifications and data accuracy verifications including, but not limited to, annual calibrations and daily calibration checks shall be submitted with the test data when requesting ARB certification. All data must be carefully recorded on the field data sheet during the test. Any unusual occurrences in the process operation, unusual test instrument readings, or items that could possibly affect the test results should be noted on the data sheet. It is recommended that a checklist, in addition to the data sheet be used to assure all data needed for calculation or process information are obtained.

## 11. ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is obtained from the Executive Officer. In order to secure the Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating, to the Executive Officer's satisfaction, that the alternative test procedure is eqUivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only and ARB approvals submitted with the affected test data.

(2) Documentation of any such requests, equivalency demonstrations, and ARB approvals shall be maintained by the ARB and shall be made available upon request.

## 12. REFERENCES

Society of Automotive Engineers (SAE), "Surface Vehicle Standard J1527 Marine Fuel Hoses", March 1, 2004 revision

**Figure 1 - Sample Data Sheet**

Test Company: Test Personnel:

Sample 10 #: Assembly Manufacturer:

Fuel Hose Class: Fuel Hose Internal Diameter:

Assembly Weight (dry): Assembly Length: Inside Surface Area:

Hose Connector Model(s): Primer Bulb Model:

Balance Make/Model: Capacity/Resolution: Annual Calib. Date:

---

**Test Start:**

Test Fuel Type: Test Fuel Weight:

Test Start, DatelTime: _____ Test End, DatelTime:

---

**Fuel Hose Assembly Permeation Results:** (attach additional sheets for 15 or more test days)

**Highest Daily Weight Loss:** (grams/day) **Permeation Rate:** (grams/day/sq. meter)

| | Weight | | | | | | Pre Run Calibration Check | | | Post Run Calibration Check | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dav | Initial | Final | Loss | Temp. | % R.H. | Bara. | 80% | 100% | 120% | 80% | 100% | 120% |
| 0 | | ----- | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | ----- | | | | | | | | | | | |

**Documentation of Performance** (attach additional sheets as necessary)

Date: Comment:

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# APPENDIX E

# ANALYSIS OF THE 2007 CALIFORNIA SURVEY OF OUTBOARD AND SAILBOAT OWNERS REGARDING USE OF PORTABLE OUTBOARD MARINE TANKS

# Appendix E

## ANALYSIS OF THE 2007 CALIFORNIA SURVEY OF OUTBOARD AND SAILBOAT OWNERS REGARDING USE OF PORTABLE OUTBOARD MARINE TANKS

Prepared for the California Air Resources Board
by the Institute for Social Research at
California State University, Sacramento

March 2007

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# Appendix E

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# Appendix E

## Section 1: Methodology

The Institute for Social Research (ISR) at California State University, Sacramento conducted a telephone survey of registered outboard and sailboat owners in order to provide the California Air Resources Board (ARB) with information about statewide use of portable outboard marine tanks (OMTs). The ARB provided the ISR with DMV registration records from the California Energy Commission (CEC) for January through April 2006. This database included all registrations (454,061) for outboard, sail only, and auxiliary and sail vessels. Table 1 describes the criteria used to define the study population from within this file. There were 289,133 registrations meeting these criteria (see Table 2). The study population includes current "household" registrations for outboard boats and for sailboats under 20 feet in length. Only vessels registered and located in California are included in the study population.

The logic for excluding registrations from the study population falls into two basic categories. Some registrations were excluded because the vessels are not likely to be in use in California and/or not likely to use OMTs. These include registrations that are not current, registrations for vessels located outside California, and registrations for sailboats over 20 feet in length.[1] Other registrations were excluded for methodological-rather than substantive-reasons. For example, including vessels located in California but registered out-of-state would have decreased the efficiency of the phone matches. In addition, including commercial and public agency registrations (many of which are registered owners of multiple boats) would have required a significantly different interviewing strategy than was used to contact households. This distinction becomes important when using survey data to estimate the number of portable outboard marine tanks used by vessels in California.

Table 1. Definition of the Study Population"

| Field # | Field Name | Eligible Codes | Vessels Registrations Included in Study Population | Vessel Registrations Excluded from Study Population |
|---|---|---|---|---|
| 1 | *RIO* County Code | 1-58 | Vessels registered in California | Vessels registered in an unknown county or out-of-state |
| 12 | Status Code | C | Currently registered vessels (expiration =12/31/07) | Vessels with expired registrations |
| 44 | Type License Code | V1 | Pleasure vessels | Livery, commercial and exempt vessels |
| 70 | Person/Entity Code | Not equal to C | Vessels registered to a household | Vessels registered to a school, business or club |
| 92 | Vessel Propulsion Code | 0, SorA | Vessels registered as outboard, sail only, auxiliary and sail | Vessels registered as hand propelled, inboard, jet, inboard/outboard, other or unknown |
| 93 | Vessel Length in Feet | Any, if vessel propulsion =0 | All outboards, regardless of length | Sail and auxiliary and sail vessels more than 20 feet in length |
| | | Less than or equal to 20, if vessel propulsion =SorA | Sail and auxiliary and sail vessels 20 feet or less in length | |
| 95 | Situs County Code | 1-58 | Vessels located in Califomia | Vessels located in an unknown county or out-of-state |

" Energy Commission output record fields and codes

1 Of the 131,014 "non-current" registrations, 113,077 were coded as not currently registered, 17,928 were coded as pending status, and nine were coded as prior history. Further investigation regarding the application of these codes is warranted. Vessels with registrations that are not current but may be in use could have expected OMT-use patterns comparable to the study population.

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Table 2. Number of Registrations Included in and Excluded from the Study Population

| | | Outboard | Sail Only | Auxiliary and Sail | Total |
|---|---|---|---|---|---|
| All registrations for outboard, sail only, and auxiliary and sail vessels | | 393,305 | 38,980 | 21,776 | 454,061 |
| Excluded from study population | Registrations that are not current | 113,277 | 12,047 | 5,690 | 131,014 |
| | Sailboats over 20 feet | 0 | 5,740 | 14,074 | 19,814 |
| | Vessels not registered and located in California | 1,899 | 169 | 18 | 2,086 |
| | Livery, commercial and exempt registrations | 5,099 | 879 | 18 | 5,996 |
| | Vessels registered to agencies, schools, businesses or clubs | 5,244 | 724 | 50 | 6,018 |
| Study population | | 267,786 | 19,421 | 1,926 | 289,133 |

Registration records contain the name and address of the registered owner, but do not contain a phone number. In order to conduct a household telephone survey, Scientific Telephone Samples (STS) matched the DMV registration data against an STS database and appended phone numbers for matching records. This was a new strategy, and lieu of information about the kind of match rate the database would yield, a larger-than-normal random sample of 65,000 records was drawn from the study population. The phone match rate was 38 percent, which produced 25,000 registration records with phone numbers.

It is not unusual for more than one boat to be registered to the same owner. Of the 25,000 registrations matched to phone numbers, 1,651 (or 6.6 percent) were matched to the same phone number. For these "multiple-boat" households, one boat was randomly selected for inclusion in the sample. This produced a sample of 24,148 records.[2] Because the primary unit of analysis for this study is the registered vessel- not the registered owner-respondents were directed to answer only in terms of the specific vessel selected for the study.

The analysis in this report is based on 1,683 telephone interviews conducted between January 25,2007 and February 7, 2007. The survey response rate was 64% (see Table 3). Most interviews (97%) were conducted with the registered owner of the boat. Three percent of the interviews were conducted with another person who uses the boat. Eighteen respondents who were not sure whether the boat uses an OMT were dropped from the analysis.

Table 3. Survey Response Rate

| | Percent | Number of cases |
|---|---|---|
| Complete interview | 64.2% | 1,701 |
| Partial interview | 1.3% | 35 |
| Refusal | 34.5% | 914 |
| Total | 100.0% | 2,650 |

Outboard boats were slightly under-represented among the survey respondents. The smallest and largest outboard boats were also somewhat under-represented. In order to adjust for any potential response bias, survey responses were weighted to adjust for these difference. Table 5 summarizes computation of weighting variable values.

Section 2 of this summary describes responses to survey questions. Section 3 provides estimates of the number of OMTs used with boats in the study population. A copy of the questionnaire is included at the end of this document.

2 In order to complete the desired number of interviews (a minimum of 1500) a random sample of approximately 30% (7,224 out of 24,148) were contacted.

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Table 4. Distribution of Study Population and Survey Respondents by Vessel Propulsion and County

| County where vessel is registered | Study Population | | | | | | | | Survey Respondents | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Outboard | | Sail Only | | Auxiliary and Sail | | Total | | Outboard | | Sail Only | | Auxiliary and Sail | | Total | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| Alameda | 7,825 | 2.9% | 799 | 4.1% | 74 | 3.8% | 8,698 | 3.0% | 37 | 2.4% | 12 | 8.1% | 0 | .0% | 49 | 2.9% |
| Alpine | 57 | .0% | 11 | .1% | 0 | .0% | 68 | .0% | 0 | – | 0 | – | 0 | – | 0 | – |
| Amador | 1,396 | .5% | 58 | .3% | 5 | .3% | 1,459 | .5% | 8 | .5% | 0 | – | 0 | – | 8 | .5% |
| Butte | 7,175 | 2.7% | 290 | 1.5% | 25 | 1.3% | 7,490 | 2.6% | 67 | 4.4% | 3 | 2.0% | 0 | – | 70 | 4.2% |
| Calaveras | 2,284 | .9% | 100 | .5% | 10 | .5% | 2,394 | .8% | 7 | .5% | 1 | .7% | 0 | – | 8 | .5% |
| Colusa | 677 | .3% | 25 | .1% | 4 | .2% | 706 | .2% | 1 | .1% | 0 | .0% | 0 | – | 1 | .1% |
| Contra Costa | 9,912 | 3.7% | 827 | 4.3% | 71 | 3.7% | 10,810 | 3.7% | 68 | 4.5% | 5 | 3.4% | 0 | – | 73 | 4.3% |
| Del Norte | 620 | .2% | 21 | .1% | 7 | .4% | 648 | .2% | 6 | .4% | 0 | – | 0 | – | 6 | .4% |
| El Dorado | 4,828 | 1.8% | 358 | 1.8% | 35 | 1.8% | 5,221 | 1.8% | 33 | 2.2% | 5 | 3.4% | 1 | 10.0% | 39 | 2.3% |
| Fresno | 8,635 | 3.2% | 396 | 2.0% | 33 | 1.7% | 9,064 | 3.1% | 49 | 3.2% | 3 | 2.0% | 0 | – | 52 | 3.1% |
| Glenn | 947 | .4% | 30 | .2% | 1 | .1% | 978 | .3% | 2 | .1% | 0 | – | 0 | – | 2 | .1% |
| Humboldt | 3,763 | 1.4% | 224 | 1.2% | 25 | 1.3% | 4,012 | 1.4% | 34 | 2.2% | 1 | .7% | 0 | – | 35 | 2.1% |
| Imperial | 785 | .3% | 20 | .1% | 1 | .1% | 806 | .3% | 2 | .1% | 0 | – | 0 | – | 2 | .1% |
| Inyo | 448 | .2% | 21 | .1% | 2 | .1% | 471 | .2% | 5 | .3% | 0 | – | 0 | – | 5 | .3% |
| Kem | 5,025 | 1.9% | 352 | 1.8% | 23 | 1.2% | 5,400 | 1.9% | 36 | 2.4% | 4 | 2.7% | 0 | – | 40 | 2.4% |
| Kings | 1,101 | .4% | 24 | .1% | 2 | .1% | 1,127 | .4% | 10 | .7% | 1 | .7% | 0 | – | 11 | .7% |
| Iake | 3,016 | 1.1% | 247 | 1.3% | 24 | 1.2% | 3,287 | 1.1% | 22 | 1.4% | 2 | 1.3% | 0 | – | 24 | 1.4% |
| Lassen | 1,439 | .5% | 50 | .3% | 4 | .2% | 1,493 | .5% | 8 | .5% | 0 | – | 0 | – | 8 | .5% |
| Ios Angeles | 25,968 | 9.7% | 2,259 | 11.6% | 260 | 13.5% | 28,487 | 9.9% | 101 | 6.6% | 17 | 11.4% | 1 | 10.0% | 119 | 7.1% |
| Madera | 2,405 | .9% | 82 | .4% | 6 | .3% | 2,493 | .9% | 17 | 1.1% | 0 | – | 0 | – | 17 | 1.0% |
| Marin | 2,822 | 1.1% | 422 | 2.2% | 54 | 2.8% | 3,298 | 1.1% | 19 | 1.2% | 4 | 2.7% | 0 | – | 23 | 1.4% |
| Mariposa | 635 | .2% | 29 | .1% | 4 | .2% | 668 | .2% | 7 | .5% | 0 | – | 0 | – | 7 | .4% |
| Mendocino | 2,097 | .8% | 164 | .8% | 15 | .8% | 2,276 | .8% | 19 | 1.2% | 1 | .7% | 1 | 10.0% | 21 | 1.2% |
| Mercad | 2,679 | 1.0% | 82 | .4% | 9 | .5% | 2,770 | 1.0% | 20 | 1.3% | 1 | .7% | 0 | – | 21 | 1.2% |
| Modoc | 459 | .2% | 8 | .0% | 2 | .1% | 469 | .2% | 3 | .2% | 0 | – | 0 | – | 3 | .2% |
| Mono | 351 | .1% | 27 | .1% | 6 | .3% | 384 | .1% | 1 | .1% | 0 | – | 0 | – | 1 | .1% |
| Monterey | 2,585 | 1.0% | 182 | .9% | 13 | .7% | 2,780 | 1.0% | 19 | 1.2% | 0 | – | 0 | – | 19 | 1.1% |
| Napa | 2,315 | .9% | 169 | .9% | 13 | .7% | 2,497 | .9% | 14 | .9% | 1 | .7% | 1 | 10.0% | 16 | 1.0% |
| Nevada | 3,751 | 1.4% | 372 | 1.9% | 30 | 1.6% | 4,153 | 1.4% | 30 | 2.0% | 2 | 1.3% | 0 | – | 32 | 1.9% |
| Orange | 15,076 | 5.6% | 1,363 | 7.0% | 173 | 9.0% | 16,612 | 5.7% | 64 | 4.2% | 6 | 4.0% | 0 | – | 70 | 4.2% |
| Placar | 6,953 | 2.6% | 384 | 2.0% | 38 | 2.0% | 7,375 | 2.6% | 44 | 2.9% | 2 | 1.3% | 0 | – | 46 | 2.7% |
| Plumas | 1,367 | .5% | 72 | .4% | 7 | .4% | 1,446 | .5% | 5 | .3% | 0 | – | 0 | – | 5 | .3% |
| Riverside | 9,845 | 3.7% | 514 | 2.6% | 57 | 3.0% | 10,416 | 3.6% | 31 | 2.0% | 5 | 3.4% | 1 | 10.0% | 37 | 2.2% |
| Sacramento | 16,690 | 6.2% | 822 | 4.2% | 82 | 4.3% | 17,594 | 6.1% | 95 | 6.2% | 6 | 4.0% | 0 | – | 101 | 6.0% |
| San Benito | 602 | .2% | 25 | .1% | 5 | .3% | 632 | .2% | 4 | .3% | 0 | – | 0 | – | 4 | .2% |
| San Bernardino | 9,072 | 3.4% | 599 | 3.1% | 69 | 3.6% | 9,740 | 3.4% | 29 | 1.9% | 2 | 1.3% | 0 | – | 31 | 1.8% |
| San Diego | 19,501 | 7.3% | 2,141 | 11.0% | 177 | 9.2% | 21,819 | 7.5% | 81 | 5.3% | 13 | 8.7% | 0 | – | 94 | 5.6% |
| San Francisco | 1,283 | .5% | 156 | .8% | 23 | 1.2% | 1,462 | .5% | 6 | .4% | 1 | .7% | 0 | – | 7 | .4% |
| San Joaquin | 8,734 | 3.3% | 292 | 1.5% | 33 | 1.7% | 9,059 | 3.1% | 36 | 2.4% | 3 | 2.0% | 0 | – | 39 | 2.3% |
| San Iuis Obispo | 4,010 | 1.5% | 447 | 2.3% | 48 | 2.5% | 4,505 | 1.6% | 30 | 2.0% | 4 | 2.7% | 1 | 10.0% | 35 | 2.1% |
| San Mateo | 3,872 | 1.4% | 487 | 2.5% | 41 | 2.1% | 4,400 | 1.5% | 28 | 1.8% | 6 | 4.0% | 0 | – | 34 | 2.0% |
| Santa Barbara | 3,012 | 1.1% | 357 | 1.8% | 26 | 1.3% | 3,395 | 1.2% | 14 | .9% | 1 | .7% | 0 | – | 15 | .9% |
| Santa Clara | 8,508 | 3.2% | 1,183 | 6.1% | 97 | 5.0% | 9,788 | 3.4% | 49 | 3.2% | 9 | 6.0% | 1 | 10.0% | 59 | 3.5% |
| Santa Cruz | 2,847 | 1.0% | 357 | 1.8% | 31 | 1.6% | 3,035 | 1.0% | 17 | 1.1% | 3 | 2.0% | 0 | – | 20 | 1.2% |
| Shasta | 7,852 | 2.9% | 233 | 1.2% | 29 | 1.5% | 8,114 | 2.8% | 69 | 4.5% | 2 | 1.3% | 1 | 10.0% | 72 | 4.3% |
| Sierra | 144 | .1% | 4 | .0% | 1 | .1% | 149 | .1% | 0 | – | 0 | – | 0 | – | 0 | – |
| Siskiyou | 2,346 | .9% | 82 | .4% | 8 | .4% | 2,436 | .8% | 16 | 1.0% | 0 | – | 0 | – | 16 | 1.0% |
| Solano | 4,808 | 1.8% | 181 | .9% | 24 | 1.2% | 5,013 | 1.7% | 36 | 2.4% | 4 | 2.7% | 0 | – | 40 | 2.4% |
| Sonoma | 6,809 | 2.5% | 586 | 3.0% | 63 | 3.3% | 7,458 | 2.6% | 61 | 4.0% | 7 | 4.7% | 1 | 10.0% | 69 | 4.1% |
| Stanislaus | 7,397 | 2.8% | 297 | 1.5% | 22 | 1.1% | 7,716 | 2.7% | 41 | 2.7% | 3 | 2.0% | 0 | – | 44 | 2.6% |
| Sutter | 2,523 | .9% | 64 | .3% | 4 | .2% | 2,591 | .9% | 14 | .9% | 0 | – | 0 | – | 14 | .8% |
| Tehama | 2,015 | .8% | 39 | .2% | 9 | .5% | 2,063 | .7% | 18 | 1.2% | 0 | – | 1 | 10.0% | 19 | 1.1% |
| Trinity | 840 | .3% | 27 | .1% | 5 | .3% | 872 | .3% | 5 | .3% | 0 | – | 0 | – | 5 | .3% |
| Tulare | 3,313 | 1.2% | 138 | .7% | 10 | .5% | 3,461 | 1.2% | 18 | 1.2% | 1 | .7% | 0 | – | 19 | 1.1% |
| Tuolumne | 2,263 | .8% | 154 | .8% | 7 | .4% | 2,424 | .8% | 7 | .5% | 2 | 1.3% | 0 | – | 9 | .5% |
| Ventura | 5,933 | 2.2% | 588 | 3.0% | 61 | 3.2% | 6,582 | 2.3% | 29 | 1.9% | 3 | 2.0% | 0 | – | 32 | 1.9% |
| Yolo | 2,395 | .9% | 158 | .8% | 14 | .7% | 2,567 | .9% | 18 | 1.2% | 3 | 2.0% | 0 | – | 21 | 1.2% |
| Yuba | 1,976 | .7% | 22 | .1% | 4 | .2% | 2,002 | .7% | 14 | .9% | 0 | – | 0 | – | 14 | .8% |
| Total | 267,786 | 100.0% | 19,421 | 100.0% | 1,926 | 100.0% | 289,133 | 100.0% | 1,524 | 100.0% | 149 | 100.0% | 10 | 100.0% | 1,683 | 100.0% |

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Table 5. Computation of Weights to Adjust for Vessel Propulsion and Length

| Propulsion | Length | Study Population | | Unweighted Survey Responses | | Difference" | Weight | Weighted Survey Responses | |
|---|---|---|---|---|---|---|---|---|---|
| | | Number | Percent | Number | Percent | | | Number | Percent |
| Outboard | Under 12 ~~feet~~ | 36,284 | 12.5% | 153 | 9.1% | -3.5% | 1.3804 | 211.2 | 12.5% |
| | 12 feet | 41,593 | 14.4% | 264 | 15.7% | 1.3% | .9170 | 242.1 | 14.4% |
| | 13 feet | 17,223 | 6.0% | 113 | 6.7% | .8% | .8876 | 100.3 | 6.0% |
| | 14 feet | 35,903 | 12.4% | 229 | 13.6% | 1.2% | .9127 | 209.0 | 12.4% |
| | 15 feet | 25,879 | 9.0% | 150 | 8.9% | .0% | 1.0040 | 150.6 | 8.9% |
| | 16 feet | 30,105 | 10.4% | 167 | 9.9% | -.5% | 1.0491 | 175.2 | 10.4% |
| | 17 feet | 24,220 | 8.4% | 155 | 9.2% | .8% | .9097 | 141.0 | 8.4% |
| | 18 feet | 17,720 | 6.1% | 99 | 5.9% | -.2% | 1.0414 | 103.1 | 6.1% |
| | 19-20 feet | 20,090 | 6.9% | 90 | 5.3% | -1.6% | 1.2989 | 116.9 | 6.9% |
| | Over 20 feet | 18,769 | 6.5% | 104 | 6.2% | -.3% | 1.0510 | 109.3 | 6.5% |
| Sail only | 20 feet or less | 19,421 | 6.7% | 149 | 8.9% | 2.1% | .7584 | 113.0 | 6.7% |
| Auxiliary & Sail | 20 feet or less | 1,926 | .7% | 10 | .6% | -.1% | 1.1200 | 11.2 | .7% |
| Total | | 289,133 | 100.0% | 1,683 | 100.0% | nfa | *nfa* | 1,682.9 | 100.0% |

" Difference between percent distribution for unweighted responses and study population.

# Appendix E

## Section 2: Summary of Survey Responses

Table 6. Type of Engine by Vessel Propulsion Categories

| | Percent | | | | Number of cases | | | |
|---|---|---|---|---|---|---|---|---|
| | Out-board | Sail Only | Auxil-iary & Sail | Total | Out-board | Sail Only | Auxil-iary & Sail | Total |
| One or more outboard engines[b] | 88.4% | 8.0% | 72.7% | 82.9% | 1,378 | 9 | 8 | 1,395 |
| Non-outboard engine[c] | 3.2% | 4.4% | -- | 3.3% | 50 | 5 | 0 | 55 |
| Electric outboard engine[d] | 1.0% | 1.8% | -- | 1.1% | 16 | 2 | 0 | 18 |
| No engine | 7.4% | 85.8% | 27.3% | 12.8% | 115 | 97 | 3 | 215 |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 1,559 | 113 | 11 | 1,683 |

- All tables in the remainder of this report summarize data weighted to adjust for vessel propulsion and vessel length. The weighting process produces fractions of cases. Due to rounding, the number of cases may not sum exactly to the total.

b Boats that use other types of engines in addition to an outboard engine are also counted in this category.

c For example, inboard, stern-drive, or jet engine.

For this analysis, "outboard engine" does not include electric outboard engines.

Table 7. Summary of Responses for Outboard Engine Powered Boats by Vessel Propulsion Categories

| | | Percent | | | | Number of cases | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Out-board | Sail Only | Auxil-iary & Sail | Total | Out-board | Sail Only | Auxil-iary & Sail | Total |
| Number of outboard engines used with boat | One | 95.0% | 100.0% | 100.0% | 95.1% | 1,309 | 9 | 8 | 1,326 |
| | Two | 4.9% | -- | -- | 4.8% | 67 | 0 | 0 | 67 |
| | Three | .1% | - | - | .1% | 2 | 0 | 0 | 2 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 1,378 | 9 | 8 | 1,395 |
| Horsepower for all outboard engines used with boat | 1-6 HP | 13.9% | 70.0% | 75.0% | 14.6% | 202 | 7 | 6 | 215 |
| | 7-15 HP | 25.0% | 20.0% | 12.5% | 24.9% | 363 | 2 | 1 | 366 |
| | 16-40 HP | 15.4% | -- | -- | 15.2% | 223 | 0 | 0 | 223 |
| | More than 40 HP | 40.6% | - | -- | 40.1% | 589 | 0 | 0 | 589 |
| | Don't know | 5.0% | 10.0% | 12.5% | 5.1% | 73 | 1 | 1 | 75 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 1,450 | 10 | 8 | 1,468 |
| Do 1-6 HP engines have built-in fuel tanks? | Yes | 43.3% | 71.4% | 20.0% | 43.7% | 88 | 5 | 1 | 94 |
| | No | 56.7% | 28.6% | 80.0% | 56.3% | 115 | 2 | 4 | 121 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 203 | 7 | 5 | 215 |
| Does boat use a factory installed tank that is integrated into the vessel? | Yes | 35.5% | 37.5% | 12.5% | 35.3% | 485 | 3 | 1 | 489 |
| | No | 63.0% | 62.5% | 87.5% | 63.2% | 862 | 5 | 7 | 874 |
| | Don't know | 1.5% | - | - | 1.5% | 21 | 0 | 0 | 21 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 1,368 | 8 | 8 | 1,384 |

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Table 8 Portable Outboard Marine Tank Use for Outboard Engine Powered Boats by Vessel Propulsion Categories

| | | Percent | | | | Number of cases | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Out-board | Sail Only | Auxil-iary & Sail | Total | Out-board | Sail Only | Auxil-iary& Sail | Total |
| Does boat use a portable outboard marine tank (OMT)? | Yes | 64.4% | 55.6% | 87.5% | 64.4% | 887 | 5 | 7 | 899 |
| | No | 35.6% | 44.4% | 12.5% | 35.6% | 491 | 4 | 1 | 496 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 1,378 | 9 | 8 | 1,395 |
| Number.of boats OMT is used with | One | 93.8% | 83.3% | 100.0% | 93.8% | 829 | 5 | 7 | 841 |
| | Two | 4.5% | -- | -- | 4.5% | 40 | 0 | 0 | 40 |
| | Three | 1.5% | -- | -- | 1.4% | 13 | 0 | 0 | 13 |
| | Four or more | .2% | 16.7% | -- | .3% | 2 | 1 | 0 | 3 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 884 | 6 | 7 | 897 |
| Is OMT used with any other type of equipment? | Yes | 2.6% | 16.7% | -- | 2.7% | 23 | 1 | 0 | 24 |
| | No | 97.4% | 83.3% | 100.0% | 97.3% | 858 | 5 | 7 | 870 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 881 | 6 | 7 | 894 |
| Number of OMTs used with boat | One | 73.4% | 66.7% | 100.0% | 73.5% | 647 | 4 | 7 | 658 |
| | Two | 23.5% | -- | -- | 23.1% | 207 | 0 | 0 | 207 |
| | Three | 2.6% | 33.3% | - | 2.8% | 23 | 2 | 0 | 25 |
| | Four | .6% | -- | -- | .6% | 5 | 0 | 0 | 5 |
| | Total | 100.0% | 100.0% | 100.0% | 100.0% | 882 | 6 | 7 | 895 |

Table 9. Material Type and Capacity for All Portable Outboard Marine Tanks Used with Boat

| | | Percent | Number of OMTs· |
|---|---|---|---|
| Material type for all OMTs used with boat | Metal | 55.0% | 585 |
| | Plastic | 45.0% | 479 |
| | Total | 100.0% | 1,064 |
| Capacity for all OMTs used with boat | 1-5 gallon | 49.4% | 525 |
| | 6 gallon | 40.5% | 430 |
| | 7-10 gallon | 5.7% | 60 |
| | 11-15 gallon | 2.9% | 31 |
| | More than 15 gallons | 1.6% | 17 |
| | Total | 100.0% | 1,064 |

• The unit of analysis for this table is OMTs (rather than boats). Information from respondents who were not sure about the OMT material type or capacity was excluded from this table.

Table 10. Capacity within Material Type for All Portable Outboard Marine Tanks Used with Boat

| | | Percent | Number ofOMTs· |
|---|---|---|---|
| All metal OMTs used with boat | 1-5 gallon | 28.0% | 298 |
| | 6 gallon | 22.7% | 242 |
| | 7-10 gallon | 2.7% | 28 |
| | 11-15 gallon | .8% | 9 |
| | More than 15 gallons | .7% | 8 |
| All plastic OMTs used with boat | 1-5 gallon | 21.4% | 227 |
| | 6 gallon | 17.7% | 188 |
| | 7-10 gallon | 3.0% | 32 |
| | 11-15 gallon | 2.0% | 22 |
| | More than 15 gallon | .9% | 9 |
| Total | | 100.0% | 1,064 |

a The unit of analysis for this table is OMTs (rather than boats)

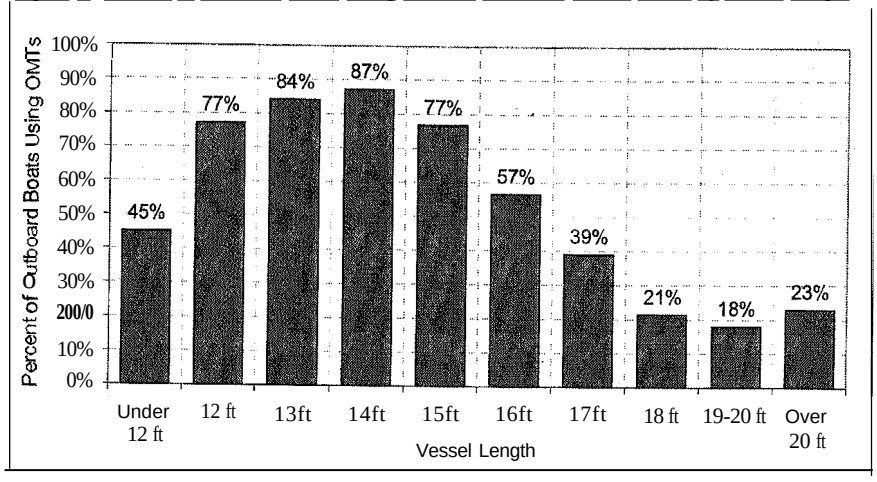
# Appendix E

Table 11. Outboard Engine and Portable Outboard Marine Tank Use for Outboard Boats by Vessel Length

| | Is boat powered by one or more outboard engines? | | | Does this boat use a portable fuel tank? (Asked only if boat is powered by outboard engine) | | | Percent of boats: | |
|---|---|---|---|---|---|---|---|---|
| | Yes | No | Total | Yes | No | Total | Powered by outboard engines | Using OMTs· |
| Under 12 feet | 159 | 52 | 211 | 95 | 63 | 158 | 75.4% | 45.0% |
| 12 feet | 205 | 37 | 242 | 187 | 18 | 205 | 84.7% | 77.3% |
| 13 feet | 93 | 7 | 100 | 84 | 9 | 93 | 93.0% | 84.0% |
| 14 feet | 193 | 16 | 209 | 182 | 11 | 193 | 92.3% | 87.1% |
| 15 feet | 138 | 13 | 151 | 116 | 21 | 137 | 91.4% | 76.8% |
| 16 feet | 168 | 7 | 175 | 99 | 69 | 168 | 96.0% | 56.6% |
| 17 feet | 128 | 13 | 141 | 55 | 73 | 128 | 90.8% | 39.0% |
| 18 feet | 94 | 9 | 103 | 22 | 72 | 94 | 91.3% | 21.4% |
| 19-20 feet | 110 | 6 | 116 | 21 | 90 | 111 | 94.8% | 18.1% |
| Over 20 feet | 90 | 19 | 109 | 25 | 65 | 90 | 82.6% | 22.9% |
| Total | 1,378 | 179 | 1,557 | 886 | 491 | 1,377 | 88.5% | 56.9% |

- Please note that these percentages describe the percent of *all* outboard boats that use OMTs-regardless of whether or not they are powered by an outboard engine. This differs from the percentages for outboard boats shown in Table 8, which describe the percent of outboard boats powered by an outboard engine that use OMTs.

Figure 1. Percent of Outboard Boats Using Portable Outboard Marine Tanks by Vessel Length



# Appendix E

Table 12. Portable Outboard Marine Tank and Fuel Hose Replacement

| | | Percent | Number of cases |
|---|---|---|---|
| OMT replacement | Have not replaced tank since owned boat | 82.8% | 730 |
| | Replaced every one to five years | 6.1% | 54 |
| | Replaced every six to ten years | 4.0% | 36 |
| | Replaced every 11 to 15 years | 2.7% | 24 |
| | Replaced less frequently than every 15 years | 4.3% | 38 |
| | Total | 100.0% | 882 |
| OMT fuel hose replacement | Have not replaced fuel hose since owned boat | 53.9% | 467 |
| | Repiaced every one to five years | 18.3% | 159 |
| | Replaced every six to ten years | 9.2% | 80 |
| | Replaced every 11 to 15 years | 8.2% | 71 |
| | Replaced less frequently than every 15 years | 10.3% | 89 |
| | Total | 100.0% | 866 |

Table 13. Portable Outboard Marine Tank Storage Characteristics

| | | Percent | Number of cases |
|---|---|---|---|
| Is the tank usually stored with fuel in it? | Yes | 56.7% | 504 |
| | No | 41.2% | 366 |
| | Don't know | 2.0% | 18 |
| | Total | 100.0% | 888 |
| Do you close the vent when the tank is stored? | Yes | 67.0% | 594 |
| | No | 22.4% | 198 |
| | Don't know | 8.2% | 72 |
| | Other[a] | 2.5% | 22 |
| | Total | 100.0% | 886 |

- Most respondents in the "other" category reported that the tank does not have a vent. Six respondents said they close the vent "sometimes" and one respondent had not used the tank yet.

Table 14. Portable Outboard Marine Tank Venting for Tanks Stored With and Without Fuel

| Do you close the vent when the tank is stored? | Is the tank usually stored with fuel in it? | | |
|---|---|---|---|
| | Yes | No | Don't know |
| Yes | 70.6% | 63.4% | 33.3% |
| No | 23.1% | 22.4% | 5.6% |
| Don't know | 3.2% | 13.1% | 50.0% |
| Other | 3.2% | 1.1% | 11.1% |
| Total | 100.0% | 100.0% | 100.0% |
| Number of cases | 504 | 366 | 18 |

# Appendix E

Table 15. Location of Boat and Portable Outboard Marine Tank Storage During Last Twelve Months

| | | Percent | Number of cases |
|---|---|---|---|
| Boat storage | Boat was stored in the same county in which it is registered for all of the last 12 months | 93.0% | 823 |
| | Boat was stored an another location for some or all of the last 12 months | 7.0% | 62 |
| | Total | 100.0% | 884 |
| OMTstorage | OMT was stored in the same county as boat | 98.7% | 870 |
| | OMT was not stored in the same county as boat | 1.3% | 11 |
| | Total | 100.0% | 881 |

Table 16. Respondent Age and Gender by Vessel Propulsion Categories

| | | Percent | | | Number of cases | | |
|---|---|---|---|---|---|---|---|
| | | Outboard | Sail" | Total | Outboard | Sail" | Total |
| Age | Under 18 | .4% | .8% | .4% | 6 | | 7 |
| | 18 to 24 | .8% | 1.6% | .8% | 12 | 2 | 14 |
| | 25 to 44 | 11.1% | 8.8% | 10.9% | 171 | 11 | 182 |
| | 45 to 64 | 48.9% | 53.6% | 49.3% | 754 | 67 | 821 |
| | 65 and older | 37.5% | 31.2% | 37.0% | 578 | 39 | 617 |
| | Declined | 1.4% | 4.0% | 1.6% | 21 | 5 | 26 |
| | Total | 100.0% | 100.0% | 100.0% | 1,542 | 125 | 1,667 |
| Gender | Male | 84.9% | 75.8% | 84.2% | 1,308 | 94 | 1,402 |
| | Female | 15.1% | 24.2% | 15.8% | 233 | 30 | 263 |
| | Total | 100.0% | 100.0% | 100.0% | 1,541 | 124 | 1,665 |

▪ Includes sail only and auxiliary and sail.

Table 17. Number of Years Respondent Has Owned Boat by Vessel Propulsion Categories·

| | Percent | | | Number of cases | | |
|---|---|---|---|---|---|---|
| | Outboard | Sail[b] | Total | Outboard | Sail[b] | Total |
| 3 years or less | 27.4% | 23.4% | 27.1% | 361 | 22 | 383 |
| 4-5 years | 14.6% | 16.0% | 14.7% | 192 | 15 | 207 |
| 6-10 years | 18.9% | 19.1% | 18.9% | 249 | 18 | 267 |
| 11-15 years | 18.1% | 16.0% | 18.0% | 239 | 15 | 254 |
| More than 15 years | 21.0% | 25.5% | 21.3% | 276 | 24 | 300 |
| Total | 100.0% | 100.0% | 100.0% | 1,317 | 94 | 1,411 |

" From DMV database (some registrations were missing this information).
Includes sail only and auxiliary and *sail!.*

# Appendix E

## Section 3: Estimates

Table 18. Mean Number of Portable Outboard Marine Tanks per Registered Vessel (N=1,623)

| | | Metal | Plastic | Total |
|---|---|---|---|---|
| Mean | 1-5 gallon | .184 | .140 | .324 |
| | 6 gallon | .149 | .116 | .265 |
| | 7-10 gallon | .017 | .020 | .037 |
| | 11-15 gallon | .005 | .013 | .019 |
| | Over 15 gallons | .005 | .006 | .011 |
| | Total | .360 | .295 | .655 |
| Standard Deviation | 1-5 gallon | .465 | .385 | .571 |
| | 6 gallon | .452 | .381 | .580 |
| | 7-10 gallon | .149 | .156 | .214 |
| | 11-15 gallon | .081 | .146 | .167 |
| | Over 15 gallons | .076 | .084 | .113 |
| | Total | .627 | .558 | .736 |

Table 19. Confidence Intervals for Mean Number of Portable Outboard Marine Tanks Per Registered Vessel

| | Metal | Plastic | Total |
|---|---|---|---|
| 1-5 gallon | .161 - .206 | .121 - .159 | .296 - .351 |
| 6 gallon | .126 - .170 | .098 - .135 | .236 - .293 |
| 7-10 gallon | .010 - .025 | .012 - .027 | .027 - .048 |
| 11-15 gallon | .001 - .009 | .006 - .021 | .011 - .027 |
| Over 15 gallons | .001 - .008 | .002 - .010 | .005 - .016 |
| Total | .329 - .390 | .268 - .322 | .619 - .691 |

a 95 percent confidence interval for mean.

Table 20. Estimated Number of Portable Outboard Marine Tanks Used with Vessels in Study Population

| | Metal | Plastic | Total |
|---|---|---|---|
| 1-5 gallon | 53,200 | 40,479 | 93,679 |
| 6 gallon | 42,792 | 33,539 | 76,331 |
| 7-10 gallon | 4,915 | 5,783 | 10,698 |
| 11-15 gallon | 1,446 | 3,759 | 5,494 |
| Over 15 gallons | 1,446 | 1,735 | 3,180 |
| Total | 104,088 | 85,294 | 189,382 |

Table 21. Confidence Intervals for Estimated Number of Portable Outboard Marine Tanks Used with Vessels in Study Population

| | Metal | Plastic | Total |
|---|---|---|---|
| 1-5 gallon | 46,550 - 59,561 | 34,985 - 45,972 | 85,583 - 101,486 |
| 6 gallon | 36,431 - 49,153 | 28,335 - 39,033 | 68,235 - 84,716 |
| 7-10 gallon | 2,891 - 7,228 | 3,470 - 7,807 | 7,807 - 13,878 |
| 11-15 gallon | 289 - 2,602 | 1,735 - 6,072 | 3,180 - 7,807 |
| Over 15 gallons | 289 - 2,313 | 578 - 2,891 | 1,446 - 4,626 |
| Total | 95,125 - 112,762 | 77,488 - 93,101 | 178,973 - 199,791 |

# Appendix E

Table 22. Estimated Portable Outboard Marine Tank Use for Study Population Vessels and Excluded Comparable Registrations

| | | Outboard | Sail Only | Auxiliary and Sail | Total |
|---|---|---|---|---|---|
| Survey respondents | Percent using OMTs | 64.4% | 55.6% | 87.5% | 64.4% |
| | Mean number of OMTs per vessel | .699 | .074 | .556 | .655 |
| Vessels in study population | | 267,786 | 19,421 | 1,926 | 289,133 |
| Excluded "comparable" vessel registrations' | Registered outside California, but located inside California | 1,206 | 123 | 12 | 1,341 |
| | Livery vessel registrations | 2,632 | 147 | 3 | 2,782 |
| | Commercial vessel registrations | 740 | 2 | 0 | 742 |
| | Exempt (Youth Group) registrations | 169 | 230 | 11 | 410 |
| | Exempt (Government) registrations | 1,558 | 500 | 4 | 2,062 |
| | Vessels registered to agencies, schools, businesses or clubs | 5,244 | 724 | 50 | 6,018 |
| | Subtotal | 11,549 | 1,726 | 80 | 13,355 |
| Estimated number of vessels using OMTs | Study population | 172,454 | 10,798 | 1,685 | 186,202 |
| | Excluded comparable registrations | 7,438 | 960 | 70 | 8,601 |
| | Total | 179,892 | 11,758 | 1,755 | 194,803 |
| Estimated number of OMTs used with vessels | Study population | 187,182 | 1,437 | 1,071 | 189,382 |
| | Excluded comparable registrations | 8,073 | 128 | 44 | 8,748 |
| | Total | 195,255 | 1,565 | 1,115 | 198,130 |

[a] Vessels excluded from stUdy population with expected OMT usage comparable to study population. Non-household-vessel OMT use may be greater than household-vessel OMT use; assuming equal OMT use rates produces a conservative estimate of overall use.

# Appendix E

Telephone Survey Regarding Portable Outboard Marine Tank (OMT) Usage

Section 1: Introduction & Eligibility

Hello, my name is , and I'm calling from California State University, Sacramento. We are conducting a survey about outboard boats for the California Air Resources Board. I am calling about a <vessel length, builder and boat type> registered to <name of registered owner>.

01. Do you or someone in your household own or use this boat?
- 1 Yes
- 2 Yes, but this is not a good time to do the interview
- 3 No, do not have boat anymore (sold, gave away, etc)
- 4 No, owner has moved
- 5 No, wrong number, don't know anything about this boat
- 6 No, phone number was not residential
- 7 No boat owner/user is deceased
- 8 No, but they provide boat-owner's phone number

02. May I speak with the registered owner or person who would be most familiar with this boat?
- 1 Registered owner of boat is available and agrees to be interviewed
- 2 Another household member who also uses the boat is available and agrees to be interviewed
- 3 The appropriate person is not available

03. Is this boat powered by one or more outboard engines? (Interviewer note: Before recording "no" please be absolutely sure that this boat is never used with any outboard engines. An outboard engine is a detachable engine that hangs off the back of the boat and includes the engine, transmission and propeller.)
- 1 Yes *(skip to 04)*
- 2 No

03a. Does the boat have any kind of engine? Interviewer: record category that best describes boat:
- 1 Yes, it actually does have an outboard engine
- 2 Yes, it has an engine, but not an outboard engine *(skip to 026)*
- 3 No, it's a sailboat and does not have any engine at all *(skip to 026)*
- 4 No, it's another kind of boat (not a sailboat) and does not have any engine *(skip to 026)*
- 5 Other, describe: _____ *(skip to 026)*

04. How many outboard engines do you use with this boat? *(if 0, skip to 026, interviewer note: be sure to probe to include secondary motors for low speed trolling or fishing.)*

05. What horsepower is the engine?[3]
- 1 1-6
- 2 7-15 *(skip to 07)*
- 3 16-40 *(skip to 07)*
- 4 More than 40 *(skip to 07)*
- 5 Don't know *(skip to 07)*

06. Does this engine have its own built-in fuel tank?[3]
- 1 Yes
- 2 No

06a. Does the boat use a factory installed tank that is integrated into the vessel?
- 1 Yes
- 2 No
- 3 Don't know

[3] 05 and 06 are repeated for up to frve engines in the 1-6 HP category.

# Appendix E

**Section 2: Portable Outboard Marine Tank (OMT) Usage**

We are collecting information about portable outboard fuel tanks. The portable tanks connect to the engine with a rubber fuel line and may be removed from the boat for refueling or storage.

Q7. Does this boat use a portable fuel tank?
1 Yes
2 No *(skip to 026)*
3 Don't know *(skip to 019)*

*(Interviewer note: if a respondent is not sure whether the boat uses an OMT - or if they say no and you think they may be uncertain or may have misunderstood the question - you need to rephrase the question, including a description of the tanks: the tanks are red in color ("all red and all small") and made of plastic or metal. The tank connects to the engine with a fuel line that has a hand pump used to prime the engine.)*

Q8. Do you also use this tank with another boat or boats?
1 Yes
2 No *(skip to 09)*
3 Don't know *(skip to 09)*

*08a.* How many? _____

*09.* Do you also use this tank with any other type of equipment?
1 Yes
2 No
3 Don't know

Q10. How many portable tanks do you use with this boat?
1 1 portable tank
2 2 portable tanks
3 3 portable tanks
4 4 portable tanks
5 5 or more portable tanks

Q11. Is the tank made of metal or plastic?[4]
1 Metal
2 Plastic
3 Don't know

*012.* What size would you classify the tank?[4]
1 1-5 gallon
2 6 gallon
3 7-10 gallon
4 11-15 gallon
5 16+ gallon
6 Don't know
7 Other, please describe _

Q13. Since you have owned the boat, have you ever had to replace the tank? *(Interviewer note: by replace we mean buy a new tank.)*
1 Yes
2 No *(skip to 015)*
3 Don't know *(skip to 015)*

4 Q11 and Q12 are repeated for up to five tanks.

# Appendix E

014. How many times have you replaced the tank?
_____ times since you owned the boat

015. Since you have owned the boat, have you ever had to replace the fuel hose?
1 Yes
2 No *(skip to* Q17)
3 Don't know *(skip to* Q17)

016. How many times have you replaced the fuel hose?
times since owned the boat

017. Is the tank usually stored with fuel in it?
1 Yes
2 No
3 Don't know

018. Do you close the vent when the tank is stored?
1 Yes
2 No
3 Don't know
4 Other, please describe _____

**Section 3: Storage**

019. My records show this boat is registered in <county name>. Is this correct?
1 Yes *(skip* to 021)
2 No
3 Don't know what county boat is registered in *(skip* to 021)

020. What county is the boat currently registered in?

| | | |
|---|---|---|
| 1 Alameda | 21 Marin | 41 San Mateo |
| 2 Alpine | 22 Mariposa | 42 Santa Barbara |
| 3 Amador | 23 Mendocino | 43 Santa Clara |
| 4 Butte | 24 Merced | 44 Santa Cruz |
| 5 Calaveras | 25 Modoc | 45 Shasta |
| 6 Colusa | 26 Mono | 46 Sierra |
| 7 Contra Costa | 27 Monterey | 47 Siskiyou |
| 8 Del Norte | 28 Napa | 48 Solano |
| 9 El Dorado | 29 Nevada | 49 Sonoma |
| 10 Fresno | 30 Orange | 50 Stanislaus |
| 11 Glenn | 31 Placer | 51 Sutter |
| 12 Humboldt | 32 Plumas | 52 Tehama |
| 13 Imperial | 33 Riverside | 53 Trinity |
| 141nyo | 34 Sacramento | 54 Tulare |
| 15 Kern | 35 San Benito | 55 Tuolumne |
| 16 Kings | 36 San Bernardino | 56 Ventura |
| 17 Lake | 37 San Diego | 57 Yolo |
| 18 Lassen | 38 San Francisco | 58 Yuba |
| 19 Los Angeles | 39 San Joaquin | 59 Don't know county |
| 20 Madera | 40 San Luis Obispo | 60 Out of State |

Interviewer note: if respondent does not know county, ask for and record another other geographic identifier, including town, marina, or waterway (lake or river); if a river is provided as an identifier, probe to get something more specific because rivers may cross multiple county borders.

# Appendix E

Q21. During the last 12 months, when the boat was not in use, was the boat stored in <county name>?
1 Yes, above county for all of the last 12 months *(skip to 024)*
2 Yes, for some of the time
3 No, different county or counties *(skip to 023)*
4 Don't know county name *(Interviewer note: Probe to determine nearest city, town* or *Marina. Rivers and sometimes lakes-cross county boundaries.)*

Q22. How many months did you store the boat in <county name>?
____Months

Q23. What (other) counties was the boat stored in during the last 12 months?
County 1: How many months did you store the boat in this location? ___
County 2: How many months did you store the boat in this location? ___
County 3: How many months did you store the boat in this location? ___

Q24. When not in use, is the portable fuel tank stored in the same county as the boat?
1 Yes *(skip to 026)*
2 No .
3 Don't know if the tank is stored with the boat *(skip to 026)*

Q25. What counties was the portable fuel tank stored in during the last 12 months?
County 1: How many months did you store the tank in this location?_____
County 2: How many months did you store the tank in this location? _
County 3: How many months did you store the tank in this location?_____

**Section 4: Demographics**

Now I just have to ask two more questions that will be used to make sure we have representative information.

Q26. Which age bracket includes you?
1 Under 18
2 18 to 24
3 25 to 44
445to64
5 65 and older
6 Refused

Q27. What is your gender?
1 Male
2 Female

That is all the questions I have for you. Thank you for your time. If you are interested, you can visit the Air Resources Board online atwww.arb.ca.gov

# APPENDIX F

# PORTABLE OUTBOARD MARINE TANK AND COMPONENT TEST RESULTS

## E-10 Results

1. All data col/ected using winter temperature profile and specified test fuel.
2. Fill level may vary as specified.
3. Hose, Fitting, and ven! configuration may vary as specified.

| Gal. | Fuel | Fill Lvl /%) | Vent Pos. | Flttlna | 1/25/2007 | 1/26/2007 | Loss | 1/27/2007 | Loss | 1/2812007 | Loss | 1/29/2007 | Loss | 1/30/2007 | Loss | 1/31/2007 | Loss | Ava | glgal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | :-10 (E-10.4% | 50 | closed | n!a | 10,590.4 | 10,584,1 | 6.3 | 10,578.2 | 5.9 | 10.572.9 | 5.3 | 10,5682 | 4.7 | 10,562.8 | 5.4 | 10,557.9 | 4.9 | 5.4 | 0,9 |
| 6 | :-10 (E-10.4% | 100 | closed | nla | 18,950.9 | 18,944,3 | 6.6 | 18,938.2 | 6.1 | 18,932.6 | 5.6 | 18,927.5 | 5.1 | 18,921.4 | 6.1 | 18,916.0 | 5.4 | 5.8 | 1.0 |
| 3 | :-10 (E-10.4% | 90 | closed | Mercury | 10,132,1 | 10,128.0 | 4.1 | 10,124.7 | 3.3 | 10,120.9 | 3,8 | 10,118.1 | 2.8 | 10,114.4 | 3.7 | 10,111,3 | 3.1 | 3.5 | 1.2 |
| 3 | :-10 (E-10.4% | 50 | closed | Mercury | 6,472.3 | 6,469,3 | 3.0 | 6,466.4 | 2.9 | 6,463.4 | 3.0 | 6,461.0 | 2.4 | 6,458.0 | 3.0 | 6,455,5 | 2.5 | 2.8 | 0,9 |
| 3 | :-10 (E-10.4% | 50 | closed | Mercury | 6,525.5 | 6,522.0 | 3,5 | 6,518.8 | 3.2 | 6,515.7 | 3.1 | 6,513.1 | 2.6 | 6,509,9 | 3.2 | 6,507.2 | 2.7 | 3.1 | 1,0 |
| 6 | :-10 (E-10.4% | 50 | closed | universal | 10,904.8 | 10,898.9 | 5.9 | 10,893.7 | 5.2 | 10.888.3 | 5.4 | 10,883.4 | 4.9 | 10,878.8 | 4.6 | 10,874.2 | 4.6 | 5,1 | 0.8 |
| 3 | :-10 (E-10.4% | 50 | closed | Mercury | 5,544.6 | 5,538,5 | 6.1 | 5,533.9 | 4.6 | 5.528.7 | 5.2 | 5.524.6 | 4.1 | 5;520,6 | 4.0 | 5,517,8 | 3.0 | 4.5 | 1,5 |
| 3 | :-10 (E-10.4% | 100 | closed | Mercury | 9,886,3 | 9,682.4 | 3.9 | 9,678,7 | 3.7 | 9,675.0 | 3.7 | 9,671.6 | 3.4 | 9,668,0 | 3.6 | 9,664.5 | 3.5 | 3.6 | 1.2 |
| 3 | :-10 (E-10.4% | 90 | closed | Mercury | 9,612.8 | 9,608.8 | 4.0 | 9,605,1 | 3.7 | 9,601.4 | 3.7 | 9,598.0 | 3.4 | 9,594.2 | 3.8 | 9,590,9 | 3.3 | 3.6 | 1.2 |
| 6 | :-10 (E-10.4% | 50 | closed | Johnson | 12,404.9 | 12.403.8 | 1.1 | 12,403.4 | 0.4 | 12,402,7 | 0.7 | 12,402.3 | 0.4 | 12,401.8 | 0.5 | 12,401.5 | 0.3 | 0.6 | 0.1 |

| Gal. | Fue! | Fill Lvl 1%) | Vent Pos. | Flttlna | 39,107.0 | 39,108.0 | Loss | 39,109.0 | Loss | 1/28/2007 | Loss | 1/29/2007 | Loss | 1/30/2007 | loss | 1/31/2007 | Loss | Avg | g/gal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | :-10 (E-10.4% | 50 | auto close | plu9ged | 5,840,7 | 5,829.4 | 11.3 | 5,821.9 | 7.5 | 5,815.7 | 6.2 | 5,810.3 | 5.4 | 5,803.7 | 6.6 | 5,796.8 | 6.9 | 7.6 | 2.5 |
| 3 | :-10 (E-10.4% | 50 | auto close | plugged | 5,592.1 | 5.587.6 | 4.5 | 5,584.1 | 3.5 | 5,580.4 | 3.7 | 5,577.0 | 3.4 | 5,573.2 | 3.8 | 5,569.5 | 3.7 | 3.8 | 1.3 |
| 3 | :-10 (E-10.4% | 50 | auto close | plugged | 5,077.6 | 5,027.5 | 50.1 | 4,978.3 | 49.2 | 4,931.4 | 46.9 | 4,883.1 | 48.3 | 4,839.4 | 43.7 | 4,793.8 | 45.6 | 48.6 | 16.2 |
| 3 | :-10 (E-10.4% | 50 | auto close | plugged | 5,710.3 | 5,695.8 | 14.5 | 5.679,1 | 16.7 | 5,663.2 | 15.9 | 5,650.6 | 12.6 | 5.638.2 | 12.4 | 5,627.3 | 10,9 | 14.9 | 5.0 |

| Gal. | Fuel | Fill Lvi % | Vent Pos, | Fitting | 39,107.0 | 39,108.0 | Loss | 39,109.0 | Loss | 1/28/2007 | Loss | 1129/2007 | Loss | 1/30/2007 | Loss | 1/31/2007 | Loss | AV9 | glgal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | :-10 (E-10.4% | 50 | closed | universal | 6,442,8 | 6,431.4 | 11,4 | 6,421.6 | 9.8 | 6,412.7 | 8,9 | 6,404.7 | 8.0 | 6,396.9 | 7.8 | 6,389.7 | 7,2 | 9.5 | 3.2 |
| 3 | :-10 (E-10.4% | 50 | closed | Mercury | 6,404,4 | 6,399.9 | 4.5 | 6,395.9 | 4.0 | 5,391.7 | 4.2 | 6,387.7 | 4.0 | 6,383.6 | 4.1 | 6,379.4 | 4.2 | 4.2 | 1.4 |
| 3 | :-10 (E-10.4% | 50 | closed | Honda | 6,378.2 | 6,367.3 | 10.9 | 6,357.6 | 9.7 | 5,347.0 | 10.6 | 6,337.0 | 10.0 | 6,327.2 | 9.8 | 6,317,2 | 10.0 | 10,3 | 3.4 |
| 3 | :-10 (E-10.4% | 50 | closed | Johnson | 6,750.9 | 6,734.3 | 16.6 | 6,719.9 | 14.4 | 6,701.1 | 18.8 | 6,686.5 | 14.6 | 6.672.2 | 14.3 | 6,654.6 | 17.6 | 16.1 | 5.4 |
| 3 | :-10 (E-10.4% | 50 | closed | Suzuki | 6,430.9 | 6,424.6 | 6.3 | 6,419.0 | 5.6 | 6,414.2 | 4.8 | 6,409.1 | 5.1 | 6,404.6 | 4.5 | 6,399.6 | 5.0 | 5.4 | 1.8 |

# APPENDIX G

# COST SAVINGS

# Appendix· G
## Cost-Savings at $3.50 per gallon

| Year | Cost | Cost-savings at $3.50 per gallon | Discount factor | Present value of Cost Savings |
|---|---|---|---|---|
| 2011 | $ 4.35 | $ 11.52 | 1 | $ 11.52 |
| 2012 | | $ 11.52 | 0.952381 | $ 10.97 |
| 2013 | | $ 11.52 | 0.907029 | $ 10.44 |
| 2014 | | $ 11.52 | 0.863838 | $ 9.95 |
| 2015 | | $ 11.52 | 0.822702 | $ 9.47 |
| 2016 | | $ 11.52 | 0.783526 | $ 9.02 |
| 2017 | | $ 11.52 | 0.746215 | $ 8.59 |
| 2018 | | $ 11.52 | 0.710681 | $ 8.18 |
| 2019 | | $ 11.52 | 0.676839 | $ 7.79 |
| 2020 | | $ 11.52 | 0.644609 | $ 7.42 |
| '2021 | | $ 11.52 | 0.613913 | $ 7.07 |
| 2022 | | $ 11.52 | 0.584679 | $ 6.73 |
| 2023 | | $ 11.52 | 0.556837 | $ 6.41 |
| 2024 | | $ 11.52 | 0.530321 | $ 6.11 |
| 2025 | | $ 11.52 | 0.505068 | $ 5.82 |
| 2026 | | $ 11.52 | 0.481017 | $ 5.54 |
| 2027 | | $ 11.52 | 0.458112 | $ 5.28 |
| 2028 | | $ 11.52 | 0.436297 | $ 5.02 |
| 2029 | | $ 11.52 | 0.415521 | $ 4.78 |
| | | | | $ 146.12 |

Over the life of a fuel tank, a consumer saves $146.12 - $4.35 =$141.7
This is the average cost savings in gasoline over the life of a fuel tank.

*Subtotal Cost Savings*

| | | |
|---|---|---|
| | $ 146.12 | Cost-Savings |
| - | $ 4.35 | Costs |
| | $ 141.77 | Net Cost-Savings |

Overall Cost of Regulation

| | |
|---|---|
| $ 31,965,889 | Fuel Cost-Savings* |
| $ 4,487,429 | Cost of Regulation** |
| $ 27,478,461 | Net Cost-Savings |
| 89,887,014 | lbs RaG redcued |

*Cost Effectiveness:* *$0.31* *Cost-Savings lib ROG*

**Fuel Cost-Savings based on number of tanks replaced.*

***Cost of Regulation based on total components sold.*

# APPENDIX H

# COSTS OF PROPOSED REGULATION

# Appendix H
## Portable Outboard Marine Tanks
## Costs of Regulation

### Retail Cost Increase

| | Low | High | Average |
|---|---|---|---|
| Tank Cost Increase: | $ 1.26 | $ 7.44 | $ 4.35 |
| Cap Cost Increase: | $ 1.29 | | $ 1.29 |
| Hose 3/8" Cost Increase: | $ 2.26 | | $ 2.26 |
| Bulb Cost Increase: | $ 1.16 | | $ 2.20 |

### Component Costs

Tank Costs per Lifetime

$ 4.35 per tank
384,809 number tanks
$ 1,673,918 Total Cost

Timeframe: 2011 2028 (18 year useful life)
Total Tank per timeframe: 384,809
Average per year: 21,335

Cap Costs per Lifetime

$ 1.29 per cap
386,380 number caps
$ 498,430 Total Cost

Timeframe: 2010 2027 (18 year useful life)
Total per timeframe: 386,380
Average per year: 21,422

Hose Costs per Lifetime

$ 2.26 per hose
444,826 number hoses
$ 1,005,308 Total Cost

Timeframe: 2010 2024 (15 year useful life)
Total per timeframe: 444,826
Average per year: 29,655

Bulb Costs per Lifetime

$ 2.20 per bulb
443,017 number bulbs
$ 972,423 Total Cost

Timeframe: 2011 2025 (15 year useful life)
Total per timeframe: 443,017
Average per year: 29,475

*$ 4,150,079 Total Component* Costs

## Certification Costs

Tanks Certification Costs

| | | | | | | |
|---|---|---|---|---|---|---|
| $ | 4,000 | per certification | Timeframe: | 2011 | 2028 | (18 year useful life) |
| | 3 | # manufacturers | Average sold per year: | | 21,335 | |
| $ | 12,000 | Total Cost | Cert Cost per: | $ | 0.56 | tank |

Cap Certification Costs

| | | | | | | |
|---|---|---|---|---|---|---|
| $ | 4,000 | per certification | Timeframe: | 2010 | 2027 | (18 year useful life) |
| | 2 | # manufacturers | Average sold per year: | | 21,422 | |
| $ | 8,000 | Total Cost | Cert Cost per: | $ | 0.37 | cap |

Hose Certification Costs

| | | | | | | |
|---|---|---|---|---|---|---|
| $ | 4,000 | per certification | Timeframe: | 2009 | 2023 | (15 year useful life) |
| | 2 | # manufacturers | Average sold per year: | | 29,655 | |
| $ | 8,000 | Total Cost | Cert Cost per: | $ | 0.27 | hose |

**Bulb** Certification Costs

| | | | | | | |
|---|---|---|---|---|---|---|
| $ | 4,000 | per certification | Timeframe: | 2011 | 2025 | (15 year useful life) |
| | 3 | # manufacturers | Average sold per year: | | 29,475 | |
| $ | 12,000 | Total Cost | Cert Cost per: | $ | 0.41 | bulb |

*$40,000 Tota/Certification Costs*

## Administrative Costs

Enforcement and Testing

| | | |
|---|---|---|
| $ | 154,575 | Salary |
| $ | 55,671 | Benefits |
| $ | 87,104 | Standard OoeratinQ Costs |
| $ | 297,350 | Total Fiscal Impact |

*$ 297,350 Total Administrative Costs (State Fiscal Impact)*

# APPENDIX I

# FISCAL IMPACT ON STATE GOVERNMENT

# Fiscal Impact **on State Government**

## Fiscal Years: 2009-2010,2010-2011, and 2011-2012

## Narrative

The Air Resources Board (ARB) is proposing regulations for portable outboard marine tanks (OMTs) that improve air quality by reducing reactive organic gas (ROG) emissions by approximately 3.2 tons/day by 2020. To implement the program and achieve maximum air quality benefits, enforcement inspections are required to conduct outreach and eliminate non-compliant products from market.

The ARB Enforcement Division may require additional staff to implement the regulations beginning Fiscal Year (FY) 2009-2010. Staff costs (as shown in Table 1) are estimated to be $300,000 for Fiscal Year 2009-2010. Similar staff costs are expected for Fiscal Years 2010-2011 and 2011-2012. The fiscal impacts are a result of new OMTs and components becoming subject to regulations over a three-year time period at hundreds of retail and supply stores throughout the state.

Listed below is a schedule of duties and cost estimates based upon the Air Pollution Specialist classification. This schedule reflects duties related to planning, travel, and resulting litigation activities.

# Duties and Time Estimates for Enforcing the Proposed Portable Outboard Marine Tank Regulations

## Monthly Duties (hours/month)

Planning of Inspections (35 hours)

Identifying a geographical area to inspect
Identify retailers/locations that are desired to be inspected
Obtain maps and/or directions for each retailer
Travel arrangements -- airfare, rental car, lodging, travel expense claims.

Field Inspections (104 hours)

Travel - Air or automobile. This may include obtaining and returning a rental car and travel time to and from headquarters to the area of inspection.
Inspections of retailers
Inspection Reports/Field Notes
Shipment of samples to headquarters

Post-Field Inspection (52 hours)

Enter Inspection Reports into Database
Enter samples into logbook and assign unique sample numbers
Store samples in evidence locker (off-site)
Complete Travel Expense Claim for field inspections if needed.

Investigation (86 hours) -- If samples found to be in violation

Prepare and send letters to retailer and/or manufacturers for sales data, the cause of the violation, and other pertinent information.
Compile information received
Calculation extent of harm from violations
Schedule and prepare documents for an office conference with responsible party(s).
Offer a settlement amount if convinced violation(s) occurred.

Post-Investigative (52 hours)

Prepare settlement agreement and send to parties.
Receive signed settlement agreement and payment and enter into case file.
Deliver payment to the Office of Administration for deposit into the California Air Pollution Control Fund.

Refer Case to the Office of Legal Affairs (17 hours)

Prepare a summary of the case and a memo to the Office of legal Affairs (OIA) for referral.
Verify the case file is complete
Deliver case file to OIA

Total Hours (Monthly) - 346

# Estimated Person Year Costs

## Fiscal Years: 2009-2010, 2010-2011, and 2011-2012

Table 1 details the fiscal impacts resulting from the addition of two Air Pollution Specialists required to implement the proposed OMT regulations. The figures represent the person year costs based on the agency salary and budgeting requirements for fiscal years 2009-2010, 2010-2011, and 2011-2012.

Table 1
Personnel Costs

| | APS (2 PYs) |
|---|---|
| Personal Services | |
| Salary (Inc. Salary Savings) | $154,575 |
| Benefits (36.02%) | $55,671 |
| **Total Salaries & Benefits:** | **$210,246** |
| Standard Operating Costs: | $87,104 |
| Additional Costs to Consider: | |
| Consultant Services | |
| Equipment | |
| **Total Cost for 2 PYs:** | **$297,350** |

# APPENDIXJ

# ECONOMIC AND FISCAL IMPACT

# Appendix - J
# Portable Outboard Marine Tanks
# Economic & Fiscal Impact Summary

| | | Initial and Annual Ongoing Costs | | | | |
|---|---|---|---|---|---|---|
| Component | Sub-Category | Estimated Manufacturer Cost Increase | Estimated Retail Cost Increase (+29%) | Estimated Annual Sales | Initial Cost Range | Annual Ongoing Cost Range |
| Tank (6-gallon) | | | | | | |
| | EVOH | $6.00 | **$7.74** | 21,335 | ***$3,050,000*** | **$165,135** |
| | Xenoy | $6.00 | $7.74 | 21,335 | $0 | $165,135 |
| | Platelets | $5.90 | $7.61 | 21,335 | $0 | $162,383 |
| | Flourination | $5.77 | $7.44 | 21,335 | $0 | $158,735 |
| | Sulphonation | $0.98 | **$1.26** | 21,335 | ***$0.00*** | **$26,882** |
| Cap | | | | | | |
| | One Way Vent | $1.00 | $1.29 | 21,422 | $100,000 | $27,635 |
| Fuel Hose | | | | | | |
| | 7-feet, 3/8", multi-layer | $1.75 | $2.26 | 29,655 | $100,000 | $67,021 |
| Primer Bulb | | | | | | |
| | 100% FKM | $1.65 | $2.13 | 29,475 | **$100,000* | $62,782 |
| | Multi-layer | $0.90 | $1.16 | 29,475 | **$100,000* | $34,191 |
| | PBT-PC | $2.50 | $3.23 | 29,475 | $75,000 | $95,057 |

• *Estimated* cost *of tooling based on industry provided information. New machinery not required.*

| Costs and Net Cost-Savings Over Life of Regulation | | | | |
|---|---|---|---|---|
| **Cost of Regulation** | **Cost Savings *($3.50/gallon)*** | **Net Cost Savings** | **ROG Reduced (lbs)** | **Cost-Savings ($/lb ROG)** |
| **$4,487,429** | **$31,965,889** | **$27,478,461** | **89,887,014** | ***$0.31*** |

# APPENDIX K

# WORKSHOP ISSUES AND RESPONSES

# APPENDIX K

## OMT Workshop Issues And Responses

1. Does the Regulation allow grandfathering of tanks and components manufactured prior to compliance dates?

   - The Regulation prohibits any tank, hose or primer bulb produced after the prescribed dates to be sold in California.
   - This allows for any tank, hose, or primer bulb produced prior to the stated implementation dates to be sold after such dates. Manufacturers are expected to manage their production schedules to ensure no products are produced after the stated implementation dates.
   - ARB staff suggests changing the proposed implementation date for hoses to January 1,2010 to ensure adequate time for implementation.

2. How far down the supply chain does CP-510 Section 3.11 a & b require approvals?

   - ARB staff proposes to modify CP-510 tostate that only a list of suppliers is required.
   - A definition for portabie outboard marine tank system has also been provided in the regulation as follows:

     "Portable Outboard Marine Tank System" means any combination of portable outboard marine tank, portable outboard marine tank self sealing cap, portable outboard marine tank fuel hose or portable outboard marine tank primer bulb sold as a complete package.

3. Are the compliance dates reasonable?

   - ARB staff finds that the date included in the Draft Regulation for hoses provides insufficient time for implementation. Therefore, ARB staff proposes to change the Regulation to require the standards for hoses to be met no later than January 1, 2010.

4. Do the ARB test procedures take in to account the USCG safety requirements?

   - According to ABYC the USCG does not set fire and safety standards for tanks and components in non-permanent applications.

5. Is the ARB test fuel requirement of CA RFG III with 10% ethanol reasonable?

# APPENDIX K

- The ability to perform consistent compliance testing requires the use of a consistent fuel specification. That consistent fuel specification is CA RFG III with 10% ethanol.
- ARB staff research has found the fuel to be available.

6. **Will ARB accept other fuels such as Indolene clear or pump fuel for test results?**

- If the applicant is going to certify only in California, they will need to use CA RFG III with 10% ethanol and test according to TP-511 or TP-512.
- If the applicant is certifying with EPA or they have a product certified under another ARB program, for example SORE, the applicant may submit test results for that certification with their application for certification under the OMT program and we will accept those test results as specified in the Regulation.

7. **Will manufacturers be able to certify families of products?**

- Yes, the Regulation follows previous ARB certification programs and allows for product families to be certified.

8. **Does the ARB RegUlation allow self-sealing caps to exceed 5 psi?**

- CP-510 Section 2.4.1 (a) requires the cap to be self sealing up to 5 psi. There is nothing that requires the cap to vent after 5 psi. If the manufacturer wants to keep the cap sealed beyond 5 psi that is the manufacturer's decision.

9. **Identification requirements for hoses for MY 09 will be difficult to comply with because they are already in production.**

- ARB Staff proposes to defer the compliance date for portable outboard marine tank fuel hoses to January 1, 2010. This deferral should give manufacturers sufficient time to comply with identification requirements.

10. **The use of a manual vent is requested for portable outboard marine tanks as an additional safety feature for "extreme conditions" in addition to the self sealing cap.**

- ARB staff is proposing the use of a self sealing cap for all new portable outboard marine tanks beginning January 1, 2010. This self-sealing cap (see comment 8 above) will remain closed and sealed until a minimum of 5 psi in the tank has been reached. Staff does not see a need for a manually operated vent that has the potential to be left in an open position thereby allOWing evaporative emissions to the atmosphere.

**CALIFORNiA AIR RESOURCES BOARD**

**NOTICE OF PUBLIC MEETING TO CONSIDER THE ADOPTION OF GREENHOUSE GAS REPORTING AND PROJECT PROTOCOLS FOR LOCAL GOVERNMENT OPERATIONS, URBAN FORESTRY, AND LIVESTOCK MANURE DIGESTERS**

The Air Resources Board (the Board or ARB) will conduct a public meeting at the time and place noted below to consider the adoption of greenhouse gas reporting and project protocols for quantifying and reducing greenhouse gas. emissions from local government operations, urban forestry, and manure digesters.

DATE: September 25, 2008

TIME: 9:00 a.m.

PLACE: South Coast Air Quality Management District
Auditorium
21865 Copley Drive
Diamond Bar, California 91765

This item will be considered at one-day meeting of the Board, which will commence at 9:00 a.m., September 25,2008. Please consult the agenda for the meeting, which will be available at least ten days before September 25, 2008, to determine the order of agenda items.

For individuals with sensory disabilities, this document and other related material can be made available in Braille, large print, audiocassette or computer disk. For assistance, please contact ARB's Reasonable Accommodation/Disability Coordinator at (916)323-4916 by voice or through the California Relay Services at 711 to place your request for disability services, or go to http://www.arb.ca.gov/html/ada/ada.htm.

If you are a person with limited English and would like to request interpreter services to be available at the meeting, please contact ARB's Bilingual Manager at (916) 323-7053, or go to http://www.arb.ca.gov/as/eeo/languageaccess.htm

The California Global Warming Solutions Act of 2006 (AB 32) creates a comprehensive program to reduce greenhouse gas (GHG) emissions in California. AB 32 encourages voluntary efforts to reduce GHG emissions by California businesses and local governments. Under AB 32 Board adoption of methodologies for the quantification of voluntary GHG reductions is an action that is exempt from the formal rulemaking process.

During the Board meeting, ARB staff will propose the Board adopt three GHG protocols designed to assist local governments in quantifying their GHG emissions and assist businesses in quantifying GHG emission reduction projects. One protocol is for the accounting and reporting GHG emissions from local government operations. The second protocol is designed to quantify the GHG reductions associated with project

activities from urban forestry. The third protocol addresses the quantification of GHG reductions from projects involving livestock manure digesters. Finally, staff will also present a status on other protocols being developed, including the update of the forest GHG accounting and reduction protocols.

ARB staff will discuss the development of the three protocols, and how each of these protocols contributes to voluntary GHG reduction efforts. A staff report summarizing the major elements of each protocol, including an appendix of the protocols, will be available for review. Copies of the report may be-obtained from the Board's Public Information Office, 1001 "I" Street, 1$^{5t}$ Floor, Environmental Services Center, Sacramento, California 95814, (916) 322-2990.- The report may also be obtained from ARB's internet site at http://www.arb.ca.gov/cc/protocols/protocols.htm .

Interested members of the public may also present comments orally or in writing at the meeting, and in writing or bye-mail before the meeting. To be considered by the Board, written comments submissions not physically submitted at the meeting must be received no later than 12:00 noon, Wednesday, September 24, 2008, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.govllispub/comm/bclistphp

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Government Code section 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request Additionally, this information may become available via Google, Yahoo, and any other internet search engines.

The Board requests, but does not require, 30 copies of any written submission. Also, ARB requests that written and e-mail statements be filed at least ten days prior to the meeting so that ARB staff and Board members have time to fully consider each comment. Further inquiries regarding this matter should be directed Webster Tasat, Manager, Emission Inventory Analysis Section, 1001 I Street, Sacramento, California 95814, at (916) 323-4950.

Date: September 11, 2008

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene

# TITLE 13. CALIFORNIA AIR RESOURCES BOARD

## NOTICE OF PUBLIC HEARING TO CONSIDER THE ADOPTION OF PROPOSED AB 118 AIR QUALITY GUIDELINES FOR THE AIR QUALITY IMPROVEMENT PROGRAM AND THE ALTERNATIVE AND RENEWABLE FUEL AND VEHICLE AND TECHNOLOGY PROGRAM

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of a regulation that delineates air quality guidelines to ensure that the newly-established Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle Technology Program complement California's existing air quality programs.

DATE: September 25,2008

TIME: 9:00 a.m.

PLACE: South Coast Air Quality Management District
Auditorium
21865 E. Copley Drive
Diamond Bar, CA 91765-4182

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., September25, 2008, and may continue at 8:30 a.m., September 26,2008. This item may not be considered until September 26, 2008. Please consult the agenda for the meeting, which will be available at least ten days before September 25,2008, to determine the day on which this item will be considered.

If you have a disability-related,accommodation need, please go to http://www.arb.ca.gov/htmllada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049. TTYITDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed adoption of new sections 2340, 2341, 2342, 2343, 2344, 2345, of new Chapter 8.1 to title 13; California Code of Regulations.

Background:

On October 14,2007, Governor Schwarzenegger signed into State law the "California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 200T' (Assembly Bill 118, Statutes of 2007, Chapter 750). That law provides approximately $200 million in annual incentive funding to promote alternative fuel and

vehicle technologies in order to help meet California's air quality and climate change goals, advance California's leadership in clean technologies, and reduce the State's. demand for petroleum. Those incentive funds are generated from increases in the smog abatement, vehicle registration, and vessel registration fees.

Assembly Bill 118 specifies that such incentive funding will be administered under several new programs, including the Air Quality Improvement Program (AQIP), which will be administered by ARB, and the Alternative and Renewable Fuel and Vehicle Technology Program, which will be administered by the California Energy Resources Conservation and Development Commission (Energy Commission). Assembly Bill 118 includes a provision which directs ARB todevelop guidelines to ensure that both these programs complement California's existing air quality programs. The guidelines must ensure that the programs: (1) do not interfere with efforts to achieve and maintain ambient air quality standards and to reduce emissions of toxic.air contaminants; and (2) maintain or improve upon emission benefits in the State Implementation Plan and California's clean fuels regulations.

These new incentive programs will, in general, be conducted in a similar fashion as existing incentive programs. Individuals and businesses apply for funding through the administering agency. The administering agency, using specified criteria and an established process, evaluates the merits of each application and subsequently awards funds to the most promising projects. Individuals and businesses that choose to receive funding participate in incentive programs on a strictly voluntary basis.

Under the oversight of ARB, AQIP will award approximately $50 million per year through 2015 to a variety of project types specified in Assembly Bill 118, including off-road and on-road equipment, evaporative emission controls, hybrid technologies, lawn and garden equipment, research regarding the air quality impacts of alternative fuels and vehicles, and workforce training to reduce air pollutant emissions. AQIP will playa complementary role to existing ARB incentive programs, such as the Carl Moyer Memorial Air Quality Standards Attainment Program and the Goods Movement Emission Reduction Program, since it will be able to fund a broader variety of project· types, including emerging technologies.

Under the oversight of the Energy Commission, the Alternative and Renewable Fuel and Vehicle Technology Program will award approximately $120 million per year through 2015 to develop innovative technologies and alternative fuels and to deploy them into the marketplace. One focus of such efforts is to help attain California's greenhouse gas reduction goals. Eligible project types listed in the bill include: improvements to the characteristics of alternative and renewable low-carbon fuels, in-state production and infrastructure for alternative and renewable low-carbon fuels, improvements to light-duty, medium-duty, and heavy-duty vehicle technologies to lower greenhouse gas emissions, acceleration of the commercialization of vehicles and alternative and renewable fuels, related workforce training, and program promotion and education.

The bill also creates a third incentive program, the Enhanced Fleet Modernization Program, which will provide approximately $30 million in annual funding to expand the Bureau of Automotive Repair's existing voluntary retirement (car scrap) program, and will include high-emitting passenger cars and light-duty and medium-duty trucks. While the Bureau of Automotive Affairs will administer the car scrap program, ARB is required tO,establish the guidelines for its implementation.

ARB, the Energy Commission, and the Bureau of Automotive Repair are working in coordination to develop and implement the three incentive programs. The guidelines proposed here represent the first step in such a coordinated approach. In this step, ARB is directed by Assembly Bill 118 to establish guidelines to ensure that two of the new incentive programs-AQIP and the Alternative and Renewable Fuel and Vehicle Technology Prog'ram-complement existing air quality programs and fuels regulations. The proposed guidelines, known as the AB 118 Air Quality Guidelines (Guidelines), will be used as an initial screen in the process that the administering agencies will use to evaluate proposed projects for funding under those two programs. Air quality safeguards are already built into the existing car scrap program and will be carried fqrward into the expanded Enhanced Fleet Modernization Program.

Within a year, detailed and specific implementation gUidelines for each of the three incentive programs will be developed. The proposed Guidelines will help structure those future efforts. For AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program, those future guidelines will specify the rest of the process (after the screening process outlined in the proposed Guidelines) that the administering agencies will use to select the most promising eligible projects for funding. The Energy Commission plans to propose such additional guidelines for implementing the Alternative and Renewable Fuel and Vehicle Technology Program in the Fall of 2008. ARB plans to propose additional guidelines for implementing AQIP, along with guidelines for implementing the Enhanced Fleet Modernization Program in the Spring of 2009.

**Description of the Proposed Regulatory Action:**

As mentioned above, Assembly Bill 118 includes a provision (Health and Safety Code Section 44271(b» that directs ARB to develop guidelines that ensure that AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program complement existing air quality programs and fuels regulations. These Guidelines, currently proposed for Board approval, set standards that the funding agencies (Le., ARB and the Energy Commission) will use to initially evaluate potential projects for incentive funding under AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program. These Guidelines are designed to screen out those projects that would interfere with existing air quality programs. The pollutants that will be considered in evaluating potential projects include criteria pollutants (oxides of nitrogen, reactive organic gases, carbon monoxide, and particulate matter), toxic air contaminants (set forth in the California Code of Regulations sections 93000 and 93001), and greenhouse gases (such as carbon dioxide, methane, including those defined in AB 32).

Because Assembly Bill 118 is designed to improve, not merely maintain, air quality in California, these proposed Guidelines-which are narrowly designed to ensure that potential projects are not detrimental to air quality-represent the initial step in the process that funding agencies will use to select projects to receive incentive funding. In subsequent steps; each of the two funding agencies will further evaluate potential projects using additional guidelines that are currently under development, as mentioned above. Thus, the specific funding criteria, funding procedures, and their associated guidelines are outside the scope of the proposed Guidelines under current consideration at this hearing.

Assembly Bill 118 lists a wide range of project types that would be eligible for incentive funding, some of which do not have a direct air quality impact. Because of this, the proposed Guidelines clarify which project types would be required to undergo an air quality impact analysis. These project types include most vehicle and equipment projects, most fuel projects, including infrastructure, research projects that involve the construction of infrastructure that triggers permitting or licensing requirements, and research projects that supply fuel for sale. Projects that do not have a direct air quality impact, such as workplace training, research projects other than those types listed above, and certain demonstration projects, would be exemptfrom such an analysis.

The proposed Guidelines spell out procedures that the administering agencies will use to initially evaluate vehicle and equipment projects, fuel and infrastructure projects, and the localized impacts of potential projects. Using as a basic foundation the robust procedures employed in the well-established and successful Carl Moyer Memorial Air Quality Standards Attainment Program, the procedures laid out in the proposed Guidelines require the air quality impacts of each potential fuel or.vehicle technology project to be evaluated using a comparison of the proposed technology with the relevant "baseline" technology. The baseline technology is the conventional fuel or vehicle that the proposed technology would .replace. These comparisons incorporate tools and concepts behind the upcoming ARB low-carbon fuel standard to ensure consistency with that regulation. Generally, if a potential project results in emissions that are equal to or less than that of the baseline technology, it will pass that part of the analysis and may be eligible for further consideration for receiving incentive funding.

Some projects that result in minor criteria pollutant or toxic air contaminant increases relative to the baseline technology may still pass the screen if the project reduces other pollutants toa substantial degree, advances the goals of Assembly Bill 118, and the resultant pollutant trade-ofts are approved in a public process. As an additional safeguard, the proposed Guidelines require full mitigation of any such emission increases by concurrent emission reductions achieved by other projects receiving incentive funding within the same air basin.

The proposed evaluation procedures also require that funding agencies ensure that potential projects will comply with relevant air pollution requirements. Accordingly, the evaluation of fuel projects includes a check for consistency with any existing fuel

specifications that apply. Also, proposed projects that trigger existing permitting, licensing, or environmental review requirements must comply with such requirements and must commit to implement all air quality mitigation measures recommended and required by the applicable oversight agencies.

To ensure that Assembly Bill 118 is implemented in a manner that ensures the fair treatment of people of all races, cultures, and income levels, potential projects that trigger permitting, licensing, or environmental review requirements will only be approved for funding after a publically-noticed meeting; this will ensure that residents have the opportunity for input regarding projects that are being considered for funding in their community. Such projects will be included in an annual analysis to evaluate whether they are being located disproportionately in environmental justice areas.

## COMPARABLE FEDERAL REGULATIONS

There are no federal regulations comparableto the proposed Guidelines. The proposed Guidelines delineate the first phase in the process by which ARB and the Energy Commission will select projects to award public incentive funds. Participation by individuals and businesses in the incentive programs established by Assembly Bill 118 is strictly voluntary.

## AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The Board staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is titled, "Staff Report: Initial Statement of Reasons for Rulemaking - Proposed AB 118 Air Quality Guidelines for the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle Technology Program."

Copies of the ISOR and the full text of the proposed regulatory language may be accessed on the ARB web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990 ,at least45 days prior tothe scheduled hearing on September 25,2008.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB web site listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Ms. Johanna Levine, Air Pollution Specialist, at (916) 324-6971 or by email atjlevine@arb.ca.gov. or Mr. Andrew Panson, Staff Air Pollution Specialist, at (916) 323-2881 or by email atapanson@arb.ca.gov.

Further, the agency representative and designated back-up contact persons, to whom non-substantive Inquiries concerning the proposed administrative action may be directed, are Ms. Lori Andreoni, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-4011, or Ms. Amy Whiting, Regulations Coordinator, (916) 322-6533. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR, and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB web site for this rulemaking at www.arb.ca.gov/regact/2008/aqipfuels08/aqipfuels08.htm

**COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED**

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would create slight costs to ARB and the Energy Commission in the development and implementation of this regulation. Funding for these positions is included in the proposed California State budget for fiscal year 2008-2009. That notwithstanding, the proposed regulatory action would not create costs or savings to any other State agency, or in federal funding to the state, costs or mandate to any local agency or school district, whether or not reimbursable by the State pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary cost or savings to State or local agencies.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. AQIP and the Alternative and Renewable Fuel and Vehicle Technology Programs are voluntary and provide grants for clean fuels and technologies. Therefore, the Guidelines will not impose an economic cost on businesses.

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of

businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to Title 1, CCR, section 4, that the proposed regulatory action would not affect small businesses because participation in the affected incentive programs is strictly voluntary with respect to small businesses and there are no mandated requirements and no associated impacts.

The proposed regulation will not impose reporting requirements on private persons, businesses, or State agencies.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the board or that has otherwise been identified and brought to the attention of the board would be more effective in carrying out the purpose for which the action is proposed, or would be as effective and less burdensome to affected private persons than the proposed action.

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 submissions not physically submitted at the meeting must be received no later than 12:00 noon, Pacific Standard Time, September 24, 2008, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 958.14

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Government Code section 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request. Additionally, this information may become available via Google, Yahoo, and any other search engines.

The Board requests, but does not require, that 30 copies of any written statement be submitted and that all written statements be filed at least ten days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The Board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

Additionally, the Board requests, but does not require, that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

## STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under that authority granted in Health and Safety Code sections 39600, 39601, and 44271. This action is proposed to implement, interpret, and make specific sections 39600, 39601, and 44271.

## HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with non-substantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text, as modified, is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language, as modified, could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene
Executive Officer

Date: July 29, 2008

State of California
AIR RESOURCES BOARD

# STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

## PROPOSED AB 118 AIR QUALITY GUIDELINES FOR THE AIR QUALITY IMPROVEMENT PROGRAM AND THE ALTERNATIVE AND RENEWABLE FUEL AND VEHICLE TECHNOLOGY PROGRAM

Date of Release: August 8, 2008
Scheduled for Consideration: September 25, 2008

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## Executive Summary

In October 2007, Governor Schwarzenegger signed into law the *California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007* (Assembly Bill (AB) 118, Chapter 750, Statutes of 2007). The Act creates two new incentive programs to fund air quality and greenhouse gas improvement projects and develop and deploy technology and alternative and renewable fuels:

The Air Quality Improvement Program (AQIP) provides approximately $50 million in annual funding through 2015. The goal of the program is to fund air quality improvement projects related to fuel and vehicle technologies. These include vehicle and equipment projects which improve air quality as well as research on the air quality impacts of alternative fuels and advanced technology vehicles. The Air Resources Board (ARB) is responsible for administering this program.

The Alternative and Renewable Fuel and Vehicle Technology Program provides approximately $120 million in annual funding through 2015. The goal of the program to develop and deploy technology and alternative and renewable fuels in the marketplace to help attain California's climate change policies. The California Energy Commission (Energy Commission) is responsible for administering this program.

AB 118 includes a provision which directs ARB to develop guidelines to ensure that both these programs complement California's existing air quality programs. This provision is codified in Health and Safety Code (HSC) section 44271(b). The guidelines must ensure that the programs: (1) do not interfere with efforts to achieve and maintain ambient air quality standards and to reduce emissions of toxic air contaminants; (2) maintain or improve upon emission benefits in the State Implementation Plan and California's clean fuels regulations. The focus of staff's proposed regulation is Air Quality Guidelines to fulfill these requirements. The proposed regulation is the first step in the implementation of AB 118. Guidelines for the broader administration of AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program will be addressed in separate rulemakings and are beyond the scope of the current proposal.

### Summary of Proposal

The proposed AB 118 Air Quality Guidelines set standards that the funding agencies (ARB and the Energy Commission) will use to initially evaluate potential projects for incentive funding under AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program. The guidelines are designed to screen out projects that would interfere with existing air quality programs. Criteria pollutants, toxic air contaminants, and greenhouse gases will be considered in evaluating potential projects.

Because AB 118 is designed to improve, not merely maintain, air quality in California, these proposed guidelines - which are narrowly designed to ensure that potential projects are not detrimental to air quality - will be used as the initial step in the process that funding agencies will use to select projects to receive incentive funding. In

sUbsequent steps, each of the two funding agencies will conduct further evaluations of potential projects using additional gUidelines currently under development.

Because AS 118 lists a wide range of project types potentially eligible for funding - some of which do not have a direct air quality impact, the prOposed guidelines specify which project types would be required to undergo an air quality impact analysis. Project types that would trigger an air quality impact analysis include most vehicle and equipment projects, most fuel and infrastructure projects, research projects that involve the construction of infrastructure that triggers permitting or licensing requirements, and research projects that supply fuel for sale. Projects that do not have a direct air quality impact would be exempt from such an analysis. These include workplace training, research projects other than those types listed above, and certain demonstration projects.

The proposed guidelines spell out procedures for evaluating vehicle and equipment projects, evaluating fuel and infrastructure projects, and evaluating the localized impacts of potential projects. The proposed guidelines require the air quality impacts of each potential fuel or vehicle technology project to be evaluated using a comparison of the proposed technology with the relevant "baseline" technology. The baseline technology is the conventional fuel or vehicle that the proposed technology would replace. The analysis would incorporate the analytical tools and methodology which will be used to demonstrate compliance with ARB's low-carbon fuel standard (LCFS), currently under development and scheduled to be considered by the Board in December 2008. Generally, if the potential project results in emissions that are equal to or less than the baseline technology, it will pass that part of the analysis and may be eligible for further consideration for receiving incentive funding. Some projects that result in minor pollutant increases relative to the baseline technology may still pass the screen if the project reduces other pollutants to a substantial degree, advances the goals of AB 118, the resultant pollutant trade-offs are fully offset by other projects within the air basin, and the pollutant tradeoffs are vetted in a public process.

The evaluation procedures also require that funding agencies ensure that potential projects will comply with all applicable air pollution requirements. Accordingly, the evaluation of fuel projects includes a check for consistency with any existing fuel specifications that apply. Also, proposed projects that trigger existing permitting, licensing, or environmental review requirements must comply with such requirements and must commit to implement all air quality mitigation measures recommended by the applicable oversight agencies.

To ensure that AB 118 is implemented in a manner that ensures the fair treatment of people of all races, cultures, and income levels, potential projects that trigger permitting, licensing, or environmental review requirements will be included in an annual analysis to evaluate whether they are being located disproportionately in environmental justice areas. Such projects will only be approved for funding after a publically-noticed meeting; this will ensure that residents have the opportunity for input regarding projects that are being considered for funding in their community.

# I. Introduction

In October 2007, Governor Schwarzenegger signed into law the *California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007* (Act) (Assembly Bill (AB) 118, Statutes of 2007, Chapter 750). The Act creates two new incentive programs: the Air Quality Improvement Program (AQIP) and the Alternative and Renewable Fuel and Vehicle Technology Program. These programs are funded via increases to the smog abatement, vehicle registration, and vessel registration fees. These programs will fund air quality and greenhouse gas improvement projects and develop and deploy innovative technology and alternative and renewable fuels. The full text of AB 118 is provided in Appendix B.

Assembly Bill 118 includes a unique provision which directs the Air Resources Board (ARB or Board) to develop guidelines which ensure that both of these programs complement, and do not interfere with, California's existing air quality programs. This provision is codified in HSC section 44271 (b). Staff's proposed regulation, known as the A8 118 Air Quality Guidelines or the anti-backsliding guidelines, is limited in scope to fulfilling the requirements of HSC section 44271 (b). 'Guidelines for the broader administration of AQIP and the Alternative and Renewable Fuel and Vehicle Technology Program will be addressed in separate rulemakings and are not within the scope of the current proposal. However, both of these programs would use this regulation as a filter during the development of the programs and the evaluation of projects.

Assembly Bill 118 also creates a third new incentive program, the Enhanced Fleet Modernization Program, which expands the Bureau of Automotive Repair's (BAR's) voluntary retirement (car scrap) program for high emitting passenger cars and light- and medium-duty trucks. (See HSC section 44125.) Staff's proposal does not address the Enhanced Fleet Modernization Program. Guidelines for that program will be proposed in a separate rulemaking.

The remainder of this introductory chapter provides background on AQIP, the Alternative and Renewable Fuel and Vehicle Technology Program, and the statutory requirement for the proposed AB 118 Air Quality Guidelines.

## A. Air Quality Improvement Program (AQIP)

The AQIP provides approximately $50 million in annual funding through 2015. The goal of the program is to fund air quality improvement projects related to fuel and vehicle technologies. These include vehicle and equipment projects which improve air quality as well as research on the air quality impacts of alternative fuels and advanced technology vehicles. The ARB is responsible for administering this program.

Assembly Bill 118 lists eight broad project types which are eligible for AQIP funding:

- On- and off-road equipment projects.

- Projects to mitigate off-road gasoline exhaust and evaporative emissions.
- Research on the air quality impact of alternative fuels.
- University of California research to increase sustainable biofuels production and improve feedstock.
- Lawn and garden equipment replacement.
- Medium- and heavy-duty vehicle/equipment projects including lower emission school buses, electric or hybrid vehicles/equipment, and regional air quality programs iii the most impacted parts of California.
- Workforce training related to advanced technology to reduce air pollution.
- Projects to identify and reduce emissions from high-emitting light-duty vehicles.

The criteria which ARB shall use in evaluating potential projects include potential reduction of criteria or toxic air pollutants, cost-effectiveness, contribution to regional air quality improvement, and ability to promote the use of clean alternative fuels and vehicles technologies.

## B. Alternative and Renewable Fuel and Vehicle Technology Program

The Alternative and Renewable Fuel and Vehicle Technology Program provides approximately $120 million in annual funding through 2015. The goal of the program is to develop and deploy technology and alternative and renewable fuels in the marketplace to help attain California's climate change policies. The California Energy Commission (Energy Commission or CEC) is responsible for administering this program.

Assembly Bill 118 lists eleven broad project types which are eligible for funding:

- Alternative and renewable fuel projects to develop and improve alternative and renewable low-carbon fuels, including feedstock projects.
- Demonstration and deployment projects that optimize alternative and renewable fuels for existing and development of engine technologies.
- Projects to produce alternative and renewable low-carbon fuels in California.
- Projects to decrease the impact of alternative and renewable fuels' carbon footprint and increase sustainability.
- Alternative and renewable fuel infrastructure projects.
- Vehicle technology projects to improve fuel efficiency and lower greenhouse gas emissions.
- Projects to accelerate the commercialization of vehicles and alternative and renewable fuels.
- Retrofits for on- and off-road vehicles to improve fuel efficiencies.
- Infrastructure projects that promote alternative and renewable fuel infrastructure development.
- Workforce training related to alternative and renewable fuel and feedstock production.

- Block grants to not-for-profit technology consortia for education, promotion, and development of alternative and renewable fuels and vehicle technology centers.

Section 44272(b) of the HSC lists eleven criteria which the Energy Commission shall use in evaluating potential projects.

### C. AS 118 Air Quality Guidelines

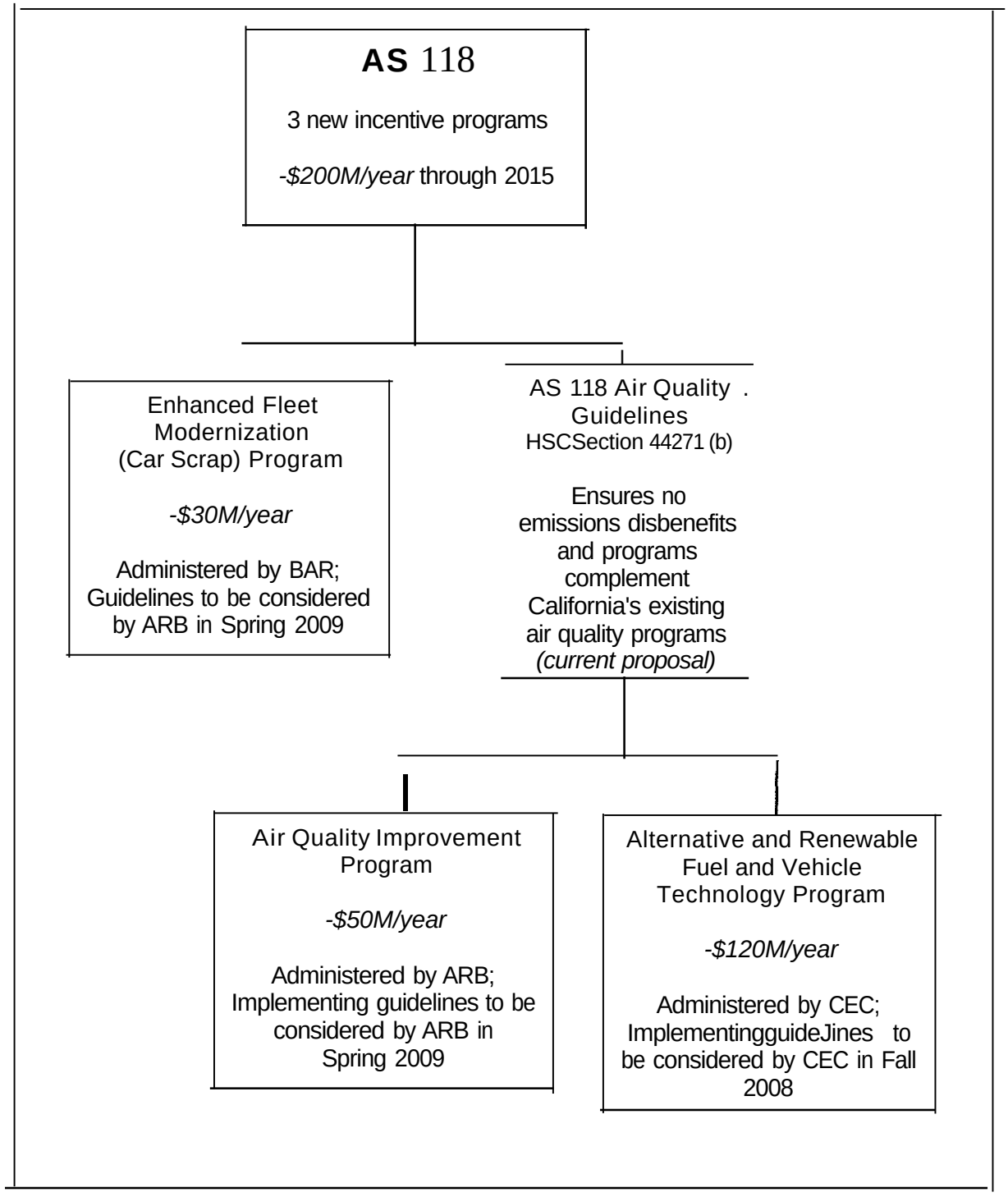
As'stated previously, AB 118 directs ARB to develop guidelines which ensure that the AQIP and Alternative and Renewable Fuel and Vehicle Technology Program complement, and do not interfere with, California's existing air quality programs. This requirement is specified in section 44271 (b) of the HSC:

> *The* state *board shall develop guidelines for both the Alternative and Renewable Fuel and Vehicle Technology Program and the Air Quality Improvement Program to ensure that programs meet both of the following requirements:*
>
> *(1) Activities undertaken pursuant to the programs complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.*
> *(2) Activities undertaken pursuant to the programs maintain or improve upon emission reductions and air quality benefits in the State Implementation Plan for Ozone, California Phase 2 Reformulated Gasoline standards, and diesel fuel regulations.*

Staff's proposed rulemaking would fulfill the statutory requirements. Guidelines for the broader administration of these programs will be addressed in separate rulemakings and are not within the scope of the current proposal.

The Energy Commission is expected to consider proposed guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program later in 2008, and ARB is expected to consider proposed AQIP guidelines in Spring 2009. A flow chart depicting how the various programs and requirements created by AB 118 fit together is shown in Figure 1.

Figure 1: AS 118 Programmatic Flow Chart



## II. Summary of Proposed Regulation

This chapter summarizes staff's proposal for guidelines to ensure that the Alternative and Renewable Fuel and Vehicle Technology Program and AQIP are implemented in a manner that complements, and does not interfere with, California's existing air quality programs. The proposed regulation would fulfill the requirements of HSC section 44271 (b). The proposed regulation, known as the AB 118 Air Quality Guidelines, would require that the funding agencies (ARB and the Energy Commission) evaluate potential projects prior to approval for funding. The proposed regulation provides minimum criteria that each funding agency must include in their program's funding selection process to ensure that no air quality disbenefit would result. The air quality analysis is one step in a two step process that the agencies will use to select projects to fund, serving as a statutorily required air quality backstop. Implementation of AB 118 is envisioned to improve, not merely maintain, air quality in California.

In the second step, the funding agencies would evaluate potential projects relative to the broader goals and criteria of AB 118, specified in HSC section 44272 for the Alternative and Renewable Fuel and Vehicle Technology Program and HSC section 44274 for AQIP. This second step of project evaluation is beyond the scope of this proposed regulation. The Energy Commission and ARB will specify the procedures for conducting the second step of project evaluation in two additional, separate rulemakings.

This chapter describes the requirements of the proposed regulation as well as staff's rationale for its proposal. The proposed regulation needs to be broad enough to cover a wide variety of project types and fuels in addition to being flexible enough to anticipate new technologies and fuels. Staff believes it is necessary for the regulation to use the latest evaluation tools that represent the current state-of-the-science and to be consistent with other ARB programs, but also recognize this is challenging since this field of science is rapidly evolving,

### A. Covered Pollutants and Tools for Air Quality Analysis

For the required air quality analysis, staff is proposing that the emissions of each potential fuel or vehicle technology project be compared to the emissions of a baseline fuel or vehicle technology. The baseline reflects the conventional fuel or vehicle technology that the funded project would replace. The potential project would be eligible for consideration if its emissions were less than or equal to that of the baseline fuel or technology. The proposal provides some provisions for minor pollutant trade offs that are offset by reductions from other projects as long as the project advances the goals of AB 118 and the trade offs are formally addressed in a public forum. (Program goals are specified in HSC section 44272(a) and (b) for the Alternative and Renewable Fuel and Vehicle Technology Program and HSC section 44274(a) and (b) for AQIP.)

### 1. Covered Pollutants

The air quality analysis would evaluate the following pollutants for each project:

- Criteria pollutants (Le. those that contribute to the formation of ozone and particulate matter (PM) air pollution, including hydrocarbons, oxides of nitrogen (NOx), and PM);
- Toxic air contaminant emissions, weighted by potency; and
- Greenhouse gases (GHGs).

As required by HSC section 44271 (b), the proposed AB 118 Air Quality Guidelines inclu,de criteria for assessing criteria pollutants and toxic air contaminants when evaluating projects. In addition, staff proposes including GHG emissions as a criterion for evaluating projects to ensure that projects funded under these programs complement and do not interfere with the state's efforts to meet its GHG reduction targets required by the California Global Warming Solutions Act of 2006 (AB 32) which set in statute the Governor's climate change goals [Gov 2005]. AB 118 states that one of the purposes of the Alternative and Renewable Fuel and Vehicle Technology Program is "to develop and deploy innovative technologies that transform California's fuels and vehicle types to help attain the state's climate change policies" (HSC section 44272(a». Furthermore, AB 118 requires that potential Alternative and Renewable Fuels and Vehicle Technology Program projects be evaluated based upon their consistency with existing and future state climate change policy and low-carbon fuel standards. Staff believes that incorporating GHG emissions into this regulation is both necessary and appropriate. It is ARB's policy to ensure that all its air quality programs are harmonized with efforts to reduce GHG emission reductions.

### 2. Tools for Air Quality Analysis

Staff proposes to require ARB and the Energy Commission to conduct evaluations that incorporate a full fuel cycle analysis to ensure that all potential air quality impacts are considered. The analysis would incorporate the same analytical tools which will be used to demonstrate compliance with ARB's low-carbonfuei standard (LCFS), currently under development and scheduled to be considered by the Board in December 2008. This would mean using the updated full fuel cycle methodology- California-specific Greenhouse gases, RegUlated Emissions and Energy use in Iransportation model (CA-GREET model) plus an analysis-of indirect land use impacts- that is part of the proposed LCFS. The GREET model was originally developed by Argonne National Laboratory to evaluate emission impacts of vehicle technologies and new transportation fuels and has been widely accepted. It has been customized with data inputs specific to California for use in ARB and Energy Commission programs.

One of the project evaluation criterion for the Alternative and Renewable Fuel and Vehicle Technology Program listed in HSC section 44272(b) is, "The project's consistency with existing and future state climate change policy and low-carbon fuel standards." Furthermore, a goal of AB 118 is to help attain California's climate change

goals, and the LCFS is one of the Board-approved 'early action measures to reduce GHG emissions [ARB 2007a, ARB 2007b, Gov 2007]. Staff believes it is necessary to use consistent technical tools and evaluation protocols for both the AB 118 incentive programs and the LCFS because of the close tie-in between the two programs. Significant research, inclUding two interagency agreements between ARB and UC Berkeley and UC Davis, has been invested to update the CA-GREET model and to develop an analysis of indirect land use impacts for use in the LCFS. ARB staff--believes it represents the current state-of-the-science, and therefore, the best technical tool to use for the analysis.

This proposed regulation would incorporate by reference the methodology and fuel evaluation processes being finalized as part of the LCFS regulation. When the Board considers the LCFS, it will also consider approving the methodology and fuel evaluation processes for use in the AB 118 Air Quality Guidelines. As part of the rulemaking for the LCFS, staff will propose revisions to section 2343(b) of this regulation to add specific reference to the appropriate sections of the LCFS. Consequently, this regulation is essentially being proposed to the Board in two parts. It will be fully approved once the Board adopts the proposed LCFS.

In the event that Board adoption of the LCFS is delayed, staff proposes that the technical analysis from the *Full Fuel Cycle Assessment: Well-to-Wheels Energy Inputs, Emissions, and Water Impacts,* that was prepared to support the December 2007 *State Alternative Fuels Plan,* be used as the backup tool for the AB 118 air quality analysis [CEC 2007 and CEC/ARB 2007]. The funding agencies will also consider to the extent possible the additional life cycle emission-related factors relevant in evaluating potential projects, but not quantifiable with this analytical tool, such as indirect land use impacts. These could include ARB staff proposals and analyses that become available as part of the LCFS regulatory development process.

The State Alternative Fuels Plan, required by AB 1007 (Chapter 371, Statutes of 2005), was adopted by both the Energy Commission and ARB. The technical analysis for the Plan was conducted using the GREET model, populated with the data available at the time. This model served as the starting point for the updates and improvements being incorporated to support the LCFS. The updated analytical tools for the LCFS will address land use impacts associated with fuel production pathways. Until the LCFS is adopted by ARB and legally effective, the GREET model from the *2007 State Alternative Fuels Plan* represents the current Board-approved tool for analyzing fuels on a full fuel cycle basis.

Staff believes this backup tool is necessary, on an interim basis, so the funding agencies can expend the AB 118 incentive funds appropriated by the Legislature in a timely manner and California can reap the resulting air quality and GHG emission benefits without undue delay. Staff anticipates the contingency, if needed, would only affect one fiscal year of funds.

At the pUblic workshops, some stakeholders expressed concern over linking the proposed air quality analysis to the LCFS because the Board has not yet adopted the standards. Staff believes it is critical to use consistent tools between these two programs. Furthermore, the updated CA-GREET model and indirect land use analysis, as adopted by the Board, will represent the state-of-the science and, therefore, the best analytical tool to use for the proposed air quality analysis. Although concerns were raised, no specific alternatives were proposed by stakeholders.

### B. Covered Projects

A wide range of project types are potentially eligible for funding under the provisions of AS 118. Project categories are summarized in Chapter I and listed in their entirety in HSC section 44272(c) for the Alternative and Renewable Fuel and Vehicle Technology Program and HSC section 44274(c) for AQIP. All potential projects considered for funding under each program would be subject to this regulation. However, some project types do not have a direct air quality impact. Staff is proposing to require the air quality analysis only for projects that may have a direct air quality impact. Those project types that do not have a direct air quality impact would be exempt from the analysis. These include:

- Workplace training.
- Research projects, excluding those which have an air quality impact as noted below.
- Demonstration projects of technologies not to be sold or leased and designed to evaluate air quality impact data. To qualify for this exemption, air quality impact data must be collected as part of the project and provided to the funding agency.

The analysis required by this regulation applies to the following types of projects:

- Vehicle and equipment projects (except for those covered by the demonstration project provision noted above).
- Fuel and infrastructure projects (except for those covered by the demonstration project provision noted above).,
- Research projects involving the construction of infrastructure that triggers existing permitting or licensing requirements or research projects involVing a fuel supply stage with the intent to sell the fuel.

### C. Air Quality Analysis Requirements

This section describes the proposed methodology and protocols for conducting the air quality analysis. It includes protocols for evaluating vehicle and equipment projects, protocols forevaluating fuels and infrastructure projects, and protocols for evaluating localized impacts.

### 1. Vehicle and Equipment Projects

The proposed regulation would require a two-step approach for evaluating the air quality impacts of potential vehicle and equipment projects: .

- Vehicle/Equipment Emissions Comparison.
- Full Fuel Cycle Analysis.

In general, the vehicle and equipment projects that will be under consideration for AB 118 funding are those that encourage the introduction of advanced technologies, modernize the fleet, or increase fuel efficiency. These projects, by their very nature, will improve air quality and/or reduce GHG emissions. Staff believes that the proposed air quality analysis requirements dovetails with the type of analysis the funding agencies will already be conducting in order to evaluate whether potential projects meet the broader goals of AB 118. The analysis for vehicle and equipment projects is described in greater detail below. Figure 2, at the end of this section, presents a flow chart summarizing the analysis.

#### a. Vehicle/Equipment Emission Comparison

The first step of the evaluation is a comparison of the tailpipe and evaporative emissions of baseline vehicles/equipment with those of the proposed vehicle/equipment. The methodology is similar to the procedure used in the Carl Moyer Memorial Air Quality Standards Attainment Program, a joint ARB/air district incentive program in operation since 1998 [ARB 2008]. This provision details the requirements for comparison of both certifiedlverified technologies as well as emerging technologies which have not been certified or verified.

Staff proposes to require that funded vehicles/equipment must have air pollutant emissions less than or equal to those of the vehicle/equipment being replaced to be eligible. Table 1 lists the required air quality analysis inputs to use when determining eligibility of typical types of vehicle/engine projects.

Table 1: Vehicle/Equipment Air Quality Analysis InDuts

| Proiect Type | Baseline Emissions | Replacement Emissions |
|---|---|---|
| New vehicle/equipment purchase[1] | Current model year emission factors | Emission factors of vehicle to be purchased |
| Vehicle/engine replacemenf or repower[3] | Emission factors of the vehicle being reolaced | Emission factors of vehicle to be ourchased |
| Vehicle retrofit" | Emission factors of the existing vehicle without retrofit | Emissions of vehicle with retrofit installed, based on retrofit verification |

New purchase means purchase of new advanced technology vehicle or eqUipment.
2VehicleJeguipment replacement refers to the replacement of an older vehicle or piece of equipment that still has remaining useful life with a newer, lower emitting vehicle or piece of equipment.
3Engine repower means the replacement of an existing engine with a new, lower emitting engine instead of rebuilding the existing engine to its original specifications.
4Retrofit means the installation of an emission control or fuel efficiency system on an existing engine or piece of equipment. Retrofits may also include fuel conversion systems.

The evaluation of vehicle/equipment tailpipe emissions applies only to pollutants for which the control technology has a certification or verification standard. If there is no certification/verification standard that applies to the control technology for a given' pollutant, the technology may still be funded. For example, a retrofit technology may only be verified for PM reductions but is not disqualified for funding because it has not been verified as a NOx or ROG emission reducing technology.

Emerging Technologies

Staff proposes to allow emerging technologies that have nof been certified or verified to be eligible for funding as long as a case-by-case evaluation demonstrates no emissions disbenefit. The evaluation may include, but is not limited to, the following documentation:

- test data;
- engineering specifications; and
- scientific studies on pollutant emissions for the emerging technology.

The documentation must be submitted by the project proponent to the funding agency and evaluated by the funding agency prior to funding. The project would only be eligible, if the funding agency concludes that the project would result in no air quality disbenefit based on the submitted documentation. The evaluation may be done in consultation with other entities with expertise in the technology.

One of the goals of AB 118is the development and deployment of innovative technologies, as noted in HSC sections 44272 and 44274. Thus, there is a role in these programs for emerging technologies which are not fully commercialized. These technologies may not yet be emission-certified or verified by ARB or the U.S. Environmental Protection Agency. The proposed flexibility is intended to allow funding for these emerging technologies while ensuring that the requirements of HSC section 44271 (b) are met. Staff believes that providing fleXibility to allow a case-by-case demonstration be submitted for supplemental evaluation strikes a proper balance. This balance is necessary to encourage and promote innovative technologies while providing the funding agencies a level of confidence that the projects would not result in an air quality disbenefit.

If the project meets the requirements of step 1, the evaluation proceeds to step 2. If the project does not meet the requirements of step 1, the project is not eligible for funding.

b. Full Fuel Cycle Analysis

The second step of the evaluation is a comparison of the proposed vehicle/equipment fuel pathway to the baseline vehicle/equipment fuel pathway using a full fuel cycle analysis. This step would ensure no disbenefits of GHGs, criteria pollutants, or toxic air contaminants from projects involving a switch in fuels. In order to maintain consistency

among ARB regulatory programs and to ensure that the best state-of-the-science is used in performing the evaluations, staff proposes that the full fuel cycle methodology including indirect land use currently under consideration as part of the LCFS be used in the evaluation. This comparison is only necessary for projects where the baseline and replacement vehicles use different fuels (i.e, cases where an alternatively fueled vehicle or piece of equipment is replacing a conventionally fueled one). The comparison is not required in cases where the baseline and replacement vehicles/equipment operate on the same fuel because the emissions upstream of the vehicle/equipment are identical and the tailpipe emissions are already addressed in step 1.

This evaluation includes a comparison of the GHG, criteria pollutant, and toxic air contaminant emissions of the proposed fuel to the baseline fuel. The fuel pathway of the proposed fuel for the new vehicle/equipment is compared to the baseline fuel for the calendar year at the time the project is evaluated. If the vehicle/equipment project has a single fuel pathway, the specifics of that single pathway must be used in the evaluation. If the vehicle/equipment project uses multiple fuel pathways, the average of the available fuel pathways may be used. The baseline fuel is determined by the defined reference fuels in the LCFS. GHG emissions shall be evaluated on total full fuel cycle emissions, or global scale emissions. However, criteria pollutant and toxic air contaminants emissions shall be evaluated based on fuel cycle emissions solely within California. This difference is based upon the global versus local nature of the pollutants.

In the event that Board adoption of the LCFS is delayed, staff proposes that the technical analysis from the *Full Fuel Cycle Assessment: Well-to-Whee/s Energy Inputs, Emissions, and Water Impacts,* that was prepared to support the December 2007 *State Alternative Fuels Plan,* be used as the backup tool for the AB 118 air quality analysis [CEC 2007 and CEC/ARB 2007]. A more detailed description of this tool may be found in section 11.A.2 of this staff report.

First, the proposed fuel is compared to the baseline fuel for GHG emissions. If the GHG emissions of the proposed fuel are greater than those of the baseline fuel, then the project is not eligible for funding. If the GHG emissions of the proposed fuel are equal to or less than the baseline fuel, then a second comparison is done on criteria pollutants and toxic air contaminants. If the criteria pollutant and toxic air contaminant emissions of the proposed fuel are equal to or less than the baseline fuel, then the project has passed step 2 and the evaluation is complete. If the criteria pollutant or toxic air contaminant emissions of the proposed fuel are greater than those of the baseline fuel, the funding agency may choose to either disqualify the potential project or conduct a supplemental-evaluation of the pollutant tradeoffs - that is, consider whether small increases in a pollutant are worth trading off for larger benefits in other pollutants as long as those small increases are fully offset by emission benefits from other funded projects.

Supplemental Evaluation of Pollutant Trade Offs

For the supplemental evaluation, the funding agency must complete an analysis demonstrating that the emission increases of criteria pollutant(s) or weighted toxic air contaminants would be fully offset by emission benefits associated with other projects funded within the same air basin during the same funding cycle. This would ensure the air quality benefits in the SIP are maintained, as required by the statute. If the emission increases can not be fUlly mitigated by other projects funded within the same air basin during the sameJunding cycle, then the project is not eligible for funding.

In addition, the funding agency is required to compare the total criteria pollutant and total weighted air toxic emissions occurring in California of the project fuel pathway against those of the baseline fuel pathway. A project could be funded if the total emissions of the project fuel 'pathway are less than or equal to those of the baseline fuel pathway.

These supplemental evaluations must be presented in a publicly noticed meeting. This meeting does not need to be exclusive to the discussion of this project, but may be a broader public workshop, meeting, or hearing the funding agency is conducting as part of its implementation of AS 118. At the meeting, the agency must present and invite comment on:

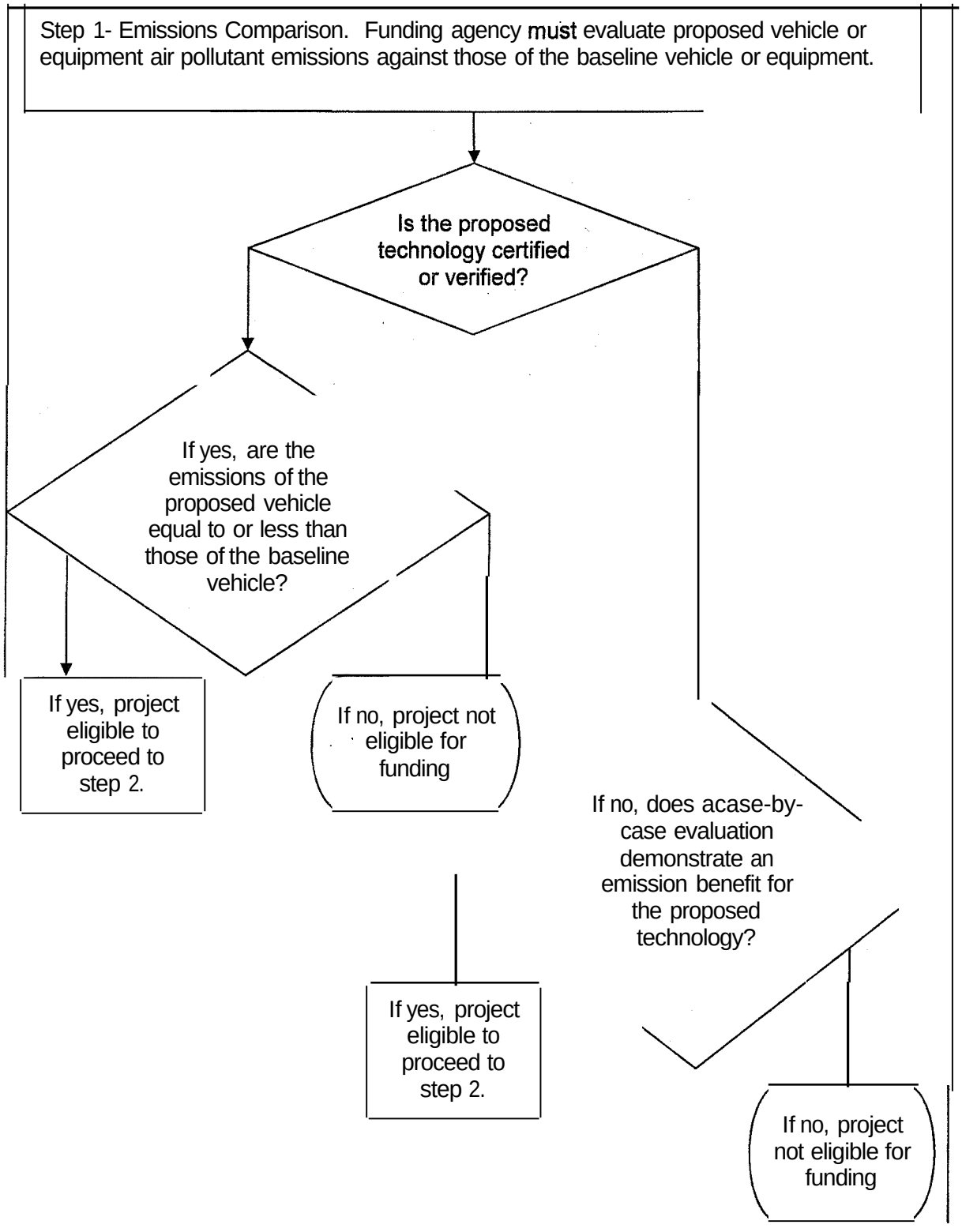
- A description of the technology,
- An analysis demonstrating that the emission increases are fully offset by emission benefits associated with other projects funded within the same air basin during the same funding cycle,
- An analysis of the pollutant tradeoffs, and
- An analysis of the role of the fuel/technology in achieving the state's climate change goals and the other objectives of AS 118.

Staff believes that some flexibility should be provided for pollutant trade offs as long as any disbenefits are fUlly offset by other projects since one of the goals of AS 118 is to fund innovative or technology-advancing projects. For example, depending upon the origin of the fuel, some alternative fuel projects may result in a slight increase in a criteria pollutant when evaluated on a full fuel cycle basis. However, the project may benefit public health and the environment through significant reductions in other pollutants or by acting as an important bridge towards even cleaner fuels or technologies in the future.

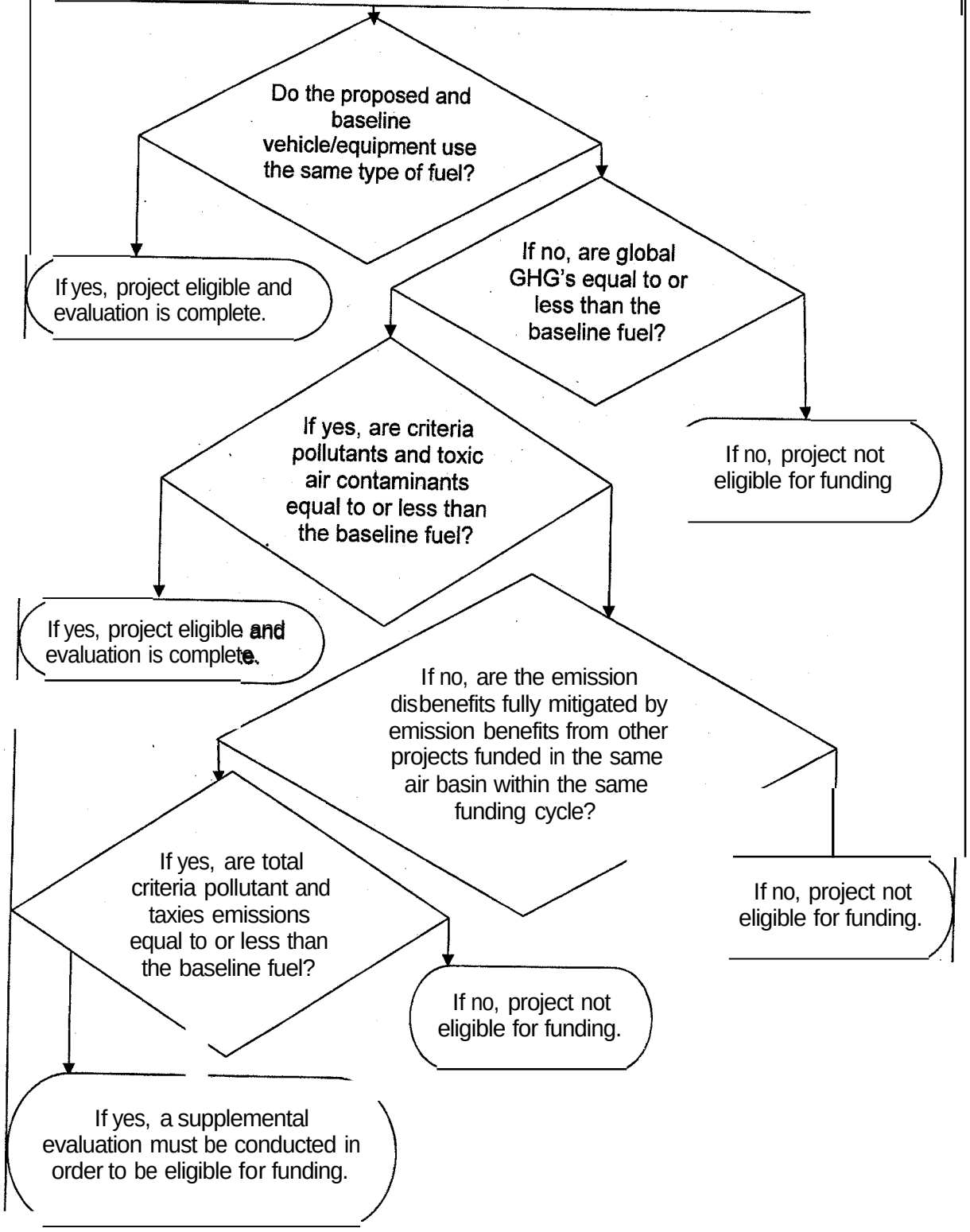
At the public workshops, some stakeholders commented that no pollutant tradeoffs should be allowed. However, staff believes the proposed approach provides the appropriate level of flexibility to effectively and efficiently spend program funds on projects that are consistent with the goals of AS 118 while ensuring the air quality benefits in the SIP are maintained.

If the project meets all the requirements discussed above, it is eligible for funding.

**Figure 2: AS 118Air Quality Guidelines Vehicle & Equipment-Project Evaluation**



Step 2- Full Fuel Cycle Analysis. Evaluate fuel using the full fuel cycle methodology and inputs from the LCFS. The evaluation compares the project fuel pathway against the baseline fuel. Global GHG's and in-state criteria pollutants and toxic air contaminants are evaluated on a full fuel cycle basis.



### 2. Fuel **and Infrastructure Projects**

The proposed regulation requires fuel and infrastructure projects to complete a three-step approach for evaluation:

- Full fuel cycle evaluation.
- Fuel Specifications.
- Compliance with applicable local, state, and federal environmental review requirements and evaluation of local health impacts.

The analysis for fuel and infrastructure projects is described in greater detail below. Figure 3, at the end of this section, presents a flow chart summarizing the analysis steps.

#### a. Full Fuel Cycle Evaluation

The first step compares the project fuel pathway to the baseline fuel pathway on a full fuel cycle basis. The full fuel cycle evaluation for fuel and infrastructure projects is similar to the full fuel cycle evaluation for vehicle/equipment projects. Refer to the Full Cycle Evaluation for vehicle/equipment projects for a more detailed discussion of this evaluation including the supplemental evaluation for pollutant trade offs.

#### b. Fuel Specifications

The second step requires that all fuels subject to fuel specifications comply with the applicable fuel specifications, if one exists. If no fuel specification exists, then compliance with a fuel specification is not required. This is a requirement of California's existing fuel regulations and does not impose a new requirement on proposed projects.

#### c. Compliance with applicable loca/,state, and federal environmental review and evaluation of local health impacts

The third step requires that the funding agencies ensure that all projects, including, but not limited to, vehicle/equipment projects that fund the development of in-state facilities that manufacture low-carbon and zero-emission vehicles and related technologies, comply with applicable local, state, and federal requirements for environmental review. This includes all applicable permitting or licensing, environmental review, emissions offsets, and mitigation strategy requirements as necessary under the Federal Clean Air Act, National Environmental Policy Act, California Clean Air Act, California Environmental Quality Act (CEQA), Air Toxics "Hot Spots" Information and Assessment Act, CEC regulations for licensing, and local rules and ordinances. Staff believes that these existing laws and regulations provide the appropriate safeguards to prevent pollutant increases.

The air quality impacts and mitigation strategies need to be resolved at the project level with the appropriate jurisdictional and regulatory authorities. The grantee is also

required to commit, in writing, to implementing all project air quality mitigation strategies recommended by the applicable oversight agencies. This requirement ensures that all reasonable and technically feasible strategies within a specified timeframe, as determined by the oversight agency, are adopted and implemented.

If a project initiates permitting, licensing, or environmental review requirements, then the funding agency must also incorporate an evaluation of local health impacts. The funding agencies must establish minimum requirements to ensure the equitable treatment of all Californians in selection of ARB and CEC projects consistent with state law defining environmental justice for projects that trigger this step. The projects and their aggregate impacts must be discussed and approved in a public meeting. The projects would also need to be included in an annual assessment to determine if these projects are disproportionately located in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations. This would complement the evaluation of each individual proposed project to ensure that the full suite of projects selected for funding each year do not, in aggregate, have a localized impact. Additional discussions on the requirements of existing environmental review regulations and the evaluation of local health impacts are discussed further in the next section.

If the fuel and infrastructure project meets the requirements discussed above, the project is eligible for funding.

### 3. Environmental Review and Local impacts

As mentioned above, funded projects are required to meet all applicable permitting or licensing, environmental review, emissions offsets, and mitigation requirements. This section is a more detailed discussion of the existing regulatory requirements and those additional requirements proposed by this regulation. Only certain projects will initiate permitting, licensing, or environmental review requirements. California's New Source Review (NSR) program is the primary mechanism for complying with these existing regulatory requirements and for ensuring new infrastructure projects result in no net increase in emissions and conform to the state's SIP. The NSR permit program is derived from the California .Clean Air Act. Each air district which does not attain federal air quality standards is required to include in its attainment plan, a stationary source control program designed to achieve no net increase in emissions of nonattainment pollutants or their precursors for all new or modified sources that exceed particular emission thresholds. In addition, most new and modified stationary sources are required to use Best Available Control Technology (BACT).

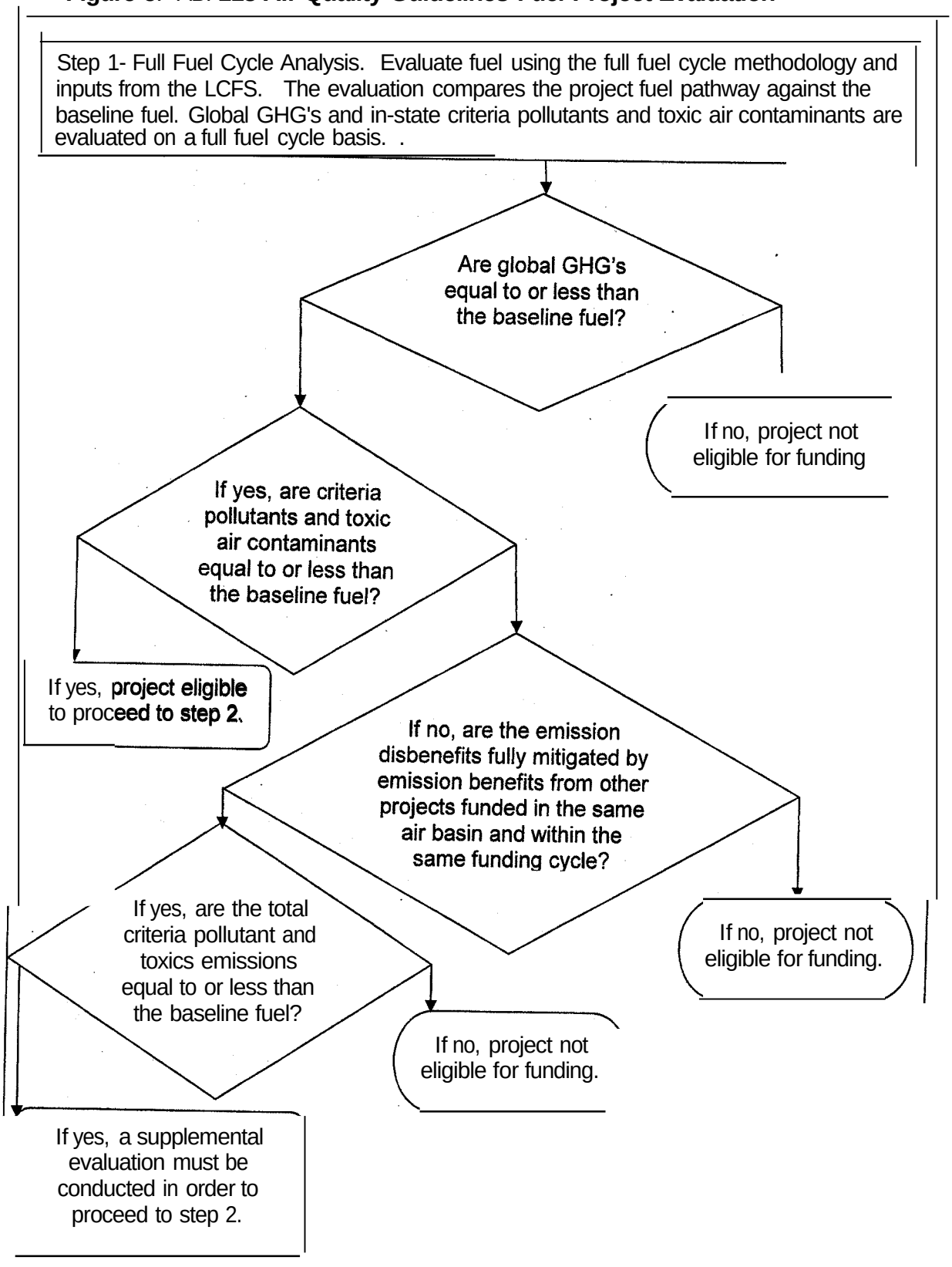
Each of the 35 air pollution control districts in California has its own NSR program and issues its own NSR permits to construct and operate. To do so, each district has adopted its own rules and regulations to comply with state and federal laws. Depending on the amount of air pollutant emissions that will be emitted from the source and the area designation for that pollutant, the new or modified source may be required to install

BACT. In addition, new and/or modified sources in California may be required, depending on the type and quantity of pollutants emitted, to mitigate or "offset" the increases in emissions that result after installation of BACT.

The Air Toxics "Hot Spots" Information and Assessment Act requires local air districts to prioritize facilities by high, intermediate, and low priority categories to determine which must perform a health risk assessment [AB 25881987]. Each district is responsible for establishing the prioritization score threshold at which facilities are required to prepare a health risk assessment. In establishing priorities for each facility, local air districts must consider the potency, toxicity, quantity, and volume of hazardous materials released from, the facility, the proximity of the facility to sensitive receptors, and any other factors that the district determines may indicate the facility may pose a significant risk. All facilities within the highest category must prepare a health risk assessment. In addition, each district may require facilities in the immediate and low priority categories to submit a health risk assessment. ARB's Air Quality and Land Use Handbook: A Community Health Perspective also provides additional guidance regarding steps local governments should take in their land use decisions to protect vulnerable populations, such as children, from being impacted by nearby sources of air pollution [ARB 2005].

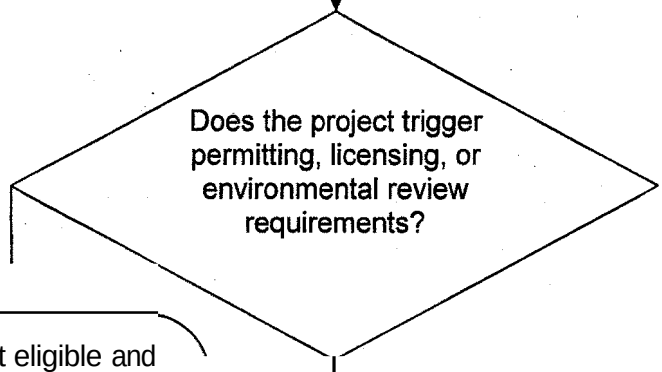
In addition to the existing environmental review requirements, staff is proposing' additional requirements for projects that trigger this review. Prior to receiving funding, the grantee would be required to commit in writing to implementing all project air quality mitigation strategies recommended and required by the applicable oversight agencies, The funding agencies shall include environmental justice criteria in the project selection process. Staff recognizes the need for the public to be informed regarding what projects are proposed for funding in their communities, and has proposed that an analysis be performed annually to evaluate whether the suite of projects funded each year is disproportionately located in environmental justice areas. In addition, ARB and CEC would be required to work in an open and transparent way by making program information publicly'accessible, working with interested stakeholders, and providing each year's environmental justice analysis in a public staff report prior to project approval by the funding agency. Staff believes that the existing environmental review programs combined with the requirements of this regulation provide the appropriate safeguards for preventing local impacts and pollutant increases.

**Figure** 3: AB. **118 Air Quality Guidelines Fuel Project Evaluation**



Step 2- Fuel Specifications. Funding agency must require compliance with the applicatble fuel specification, if one exists. If no fuel specification exists, then compliance with a fuel specification is not required.

Step 3. Funding agency must ensure compliance with applicable local, state, and federal requirements for permitting, licensing, or environmental review and implement recommended mitigation strategies (if applicable).




If no, project eligible and evaluation is complete.

If yes, the following requirements apply in order for the project to be eligible

1. Project must follow all applicable local, state, and federal permitting or licensing requirements.
2. Air quality impacts and mitigation strategies must be resolved at the project level with the entity with jurisdictional and regulatory authority.
3. Grantee must commit to implementing all recommended mitigation strategies.

If yes, local health impacts must be addressed as follows:

1. Project must be selected and approved for funding in a publicly noticed meeting.
2. Project must be included in a public staff report that analyzes if these projects are disproportionately located in environmental justice areas. This staff report must be completed each fiscal year

### D. Record Keeping Provisions

Staff is proposing that the funding agencies be required to keep records for each funded project to demonstrate compliance with the provisions of this proposed regulation. The records need to be retained for at least three years following the completion of the funded project. The records would be available to the public upon written request and must be made available to the requesting party within 30 days of receipt of such request.

### E. Reporting Requirements

Staff is not proposing reporting requirements as part of the regulation. The California Legislature is currently considering a bill, AB 109 (Núñez), which would require the Energy Commission and ARB each report biennially on projects funded under the Alternative and Renewable Fuel and Vehicle Technology Program and AQIP, respectively. Each report would include an assessment of the air quality benefits of funded projects. Staff believes these reports would serve to document that the provisions of the proposed regulation are being fulfilled by the funding agencies. Staff also believes it makes more sense that such an assessment be included as part of a broader evaluation of each program rather than in a separate report.

If AB 109 is not signed into law-in 2008 or does not ultimately include reporting requirements, staff will revisit this issue and propose amending the regulation to include a reporting requirement. Staff would propose such amendments in Spring 2009, at the same time that it is proposing AQIP implementation guidelines.

## III. Development of Proposed Regulation

This section describes public outreach conducted by ARB staff during development of the proposed regulation. ARB staff conducted two public workshops to discuss potential regulatory concepts and solicit public input. The first public workshop, held on April 2, 2008, was a kick-off workshop for the Alternative Technology and Renewable Fuel and Vehicle Technology Program, AQIP, and the Air Quality GUidelines. The workshop was held jointly by the ARB and the Energy Commission and included Commissioner James Boyd and ARB Executive Officer James Goldstene. At this workshop, ARB staff provided background information on the Air Quality Guidelines, discussed the proposed schedule for guideline development, and solicited public feedback on key questions to be addressed.

The second public workshop, held on June 20, 2008, was dedicated solely to development of these Air Quality Guidel.ines. At this workshop, staff solicited public input on specific proposed regulatory concepts, which were made publicly available five days prior to the workshop.

Staff encouraged stakeholders to provide verbal comments during, and written comments after, both workshops. Following the workshops, ARB staff considered the

comments received and incorporated suggestions, where appropriate, into the proposed regulation. Staff also indicated its willingness at the workshops to meet with stakeholders separately to discuss any issues or concerns regarding the AB 118 Air Quality Guideline development.

On June 18, 2008, ARB staff met with representatives from the American Lung Association of California and the Coalition for Clean Air to discuss Air Quality Guideline development. On July 9,2008 staff again met with representatives from the American Lung Association of California, the Coalition for Clean Air, the Union of Concerned Scientists, and the Center for Energy Efficiency and Renewable Technologies to discuss concerns raised at the June 20,2008 workshop. ARB staff has also met continually with Energy Commission staff for feedback regarding how regulatory concepts could impact implementation of the Alternative Technology and Renewable Fuel and Vehicle Technology Program.

Notice of the first public workshop was sent to list serves established for the Alternative Technology and Renewable Fuel and Vehicle Technology Program, the AQIP, and 13 additional ARB list serves to reach a broad audience. Notice of the second public workshop was sent to list serves for the AQIP and the Low Carbon Fuel Standard, as well as a general ARB list serve for mobile spurce issues (Mobile Source mailings). ARB also posted notice of the workshops on its AB 118 webpage (http://www.arb.ca.gov/msprog/aqip/agip.htm).

## IV. Environmental and Economic Impacts

The role of the proposed AB 118 Air Quality Guidelines is limited to ensuring that AQIP and Alternative and Renewable Fuel and Advanced Technology Program projects do not adversely impact air quality. The proposed guidelines provide ARB and the Energy Commission with the tools and methodology which each agency must use to evaluate the air quality impacts of projects considered for funding. However, the proposal does not address how ARB or the Energy Commission will develop and implement their respective programs to maximize program benefits and fulfill the program goals identified in AB 118. Separate regulations will be developed by each agency to further define the operation of the programs, eligible project types, and other program administrative and implementation parameters. Environmental and economic impacts associated with the implementation of AQIP and the Alternative and Renewable Fuel and Advanced Technology Program will be addressed in the staff reports which accompany these rulemakings. This section is therefore limited to addressing the environmental and economic impacts of the proposed AS 118 Air Quality Guidelines only.

### A. Air Quality Impacts

The proposed regulation will serve as a backstop, as required in the statute, to ensure the emission benefits of California's existing air quality are maintained or improved. The proposed AB 118 Air Quality Guidelines ensure projects funded pursuant to the AQIP

and Alternative and Renewable Fuel and Advanced Technology Program are fully evaluated with regard to potential full fuel cycle criteria pollutant, toxic air contaminants, and climate change emissions, and that negative impacts are mitigated, as appropriate, or that those projects are not funded. The regulation therefore has no negative air quality impact and, to the extent it eliminates funding eligibility for projects that increase emissions, it may provide air quality benefits. Implementation of AQIP and Alternative and Renewable Fuel and Advanced Technology Program will improve, not merely maintain, air quality in California, so the majority of the air quality benefits will accrue from the implementation of these programs.

### B. Economic Impacts

The AQIP and the Alternative and Renewable Fuel and Vehicle Technology Programs are voluntary and proVide grants for clean fuels and technologies. Therefore, the AB 118 Air Quality Guidelines will not impose an economic cost on businesses. Staff estimates a small cost to ARB and the Energy Commission to implement the proposed regulations. Funding for these positiqns is included in the proposed California state budget for fiscal year 2008-2009.

### C. Environmental Justice

The ARB is committed to ensuring the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. In 2001, the Board approved the *Policies and Actions for Environmental Justice,* which formally established a framework for incorporating Environmental Justice into the ARB's programs, consistent with the directives of State law. [ARB 2001]

Staff's proposal is consistent with these policies. Proposed provisions to address localized impacts and environmental justice are found in section 2343(c) of the proposed regulation and discussed in greater detail in chapter II.C.2.d and chapter II.C.3. The regulation would require funding agencies to set minimum requirements to ensure the equitable treatment of all Californians in selection of ARB and CEC projects consistent with state environ,mental justice policies for projects that trigger permitting, licensing, or environmental review requirements. The projects would have to be approved in a public meeting and included in an annual assessmentto determine if projects are disproportionately located in environmental justice areas.

Staff's proposed regulation sets the minimum requirements to ensure the equitable treatment of all Californians in selection of projects. Additional measures to address local impacts of proposed projects may be required during environmental review for infrastructure projects as required by local, state, or federal agencies. The funding agencies may also include additional elements in their respective programs to focus program benefits or direct funds to particular communities, and otherwise address environmental justice concerns.

## V. Alternatives

Staff has considered two alternatives to the Proposed Air Quality Guidelines. The first is to not adopt the proposed regulation. The second alternative is to defer adoption of the proposed regulation until the LCFS has been adopted. These alternatives are discussed below.

### Defer Adoption Until the LCFS Is Adopted

Another alternative would be to defer consideration of the current proposal until the LCFS has been adopted by the Board. Staff is proposing to link the AB 118 Air Quality Guidelines with the LCFS, currently under development and scheduled to be considered by the Board in December 2008. Staff's proposed air quality analysis would incorporate the same analytical tools which will be used to demonstrate compliance with the LCFS as discussed in Chapter 2. Staff's proposal also specifies alternate analytical tools to be used on an interim basis if adoption of the LCFS is delayed (Le. using the technical analysis from the *Full Fuel Cycle Assessment: Well-to-Wheels Energy Inputs, Emissions, and Water Impacts* [CEe 2007]. Some stakeholders have noted that this approach adds near-term uncertainty because the LCFS ha)s not yet been finalized. Although ARB received comments regarding uncertainty, no stakeholders suggested delaying Board consideration of this the guidelines as a solution.

Staff believes that it is important to move forward with implementation ofthe AQIP and Alternative and Renewable Fuels and Advanced Technology Programs without undue delay, so the funding agencies can expend the incentive funds appropriated by the Legislature in a timely manner and California can begin reaping the resulting air quality and GHG emission benefits. ARB staff coordinated *closely* with Energy Commission staff to set the timeline for development and Board consideration of the proposed AB 118 Air Quality Guidelines. Delaying the adoption of staff's proposal would have a negative impact on the Energy Commission's implementation schedule and *would* likely cause the Energy Commission to miss its *goal* of issuing its initial solicitation for projects in March 2009.

## VI. Conclusions and Recommendations

Staffs proposed AB 118 Air Quality Guidelines would fulfill the requirements of HSC section 44271 (b), which directs ARB to develop guidelines to ensure that the Alternative and Renewable Fuel and Vehicle Technology Program and *AQ/P* complement, and do not interfere with, California's existing air quality programs. This regulation will serve as a backstop, as required in statute. Implementation of AB 118 is envisioned to improve, not merely maintain, air quality in California. Staff recommends the Board adopt the proposed regulation.

## VII. **References**

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Gov 2005: Governor's Executive Order'S-03-05: Greenhouse Gas Reduction Goals, June 1,2005. [http://gov.ca.gov/executive-order/18611J

Gov 2007: Governor's Executive Order S-01-07: Low-Carbon Fuel Standard, January 18, 2007. [http://www.arb.ca.gov/fuels/lcfs/eos0107.pdt]

Appendix A

**Proposed Regulation Order**

PROPOSED REGULATION ORDER

Regulation for the AS 118 Air Quality Guidelines for the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle Technology Program

Adopt new sections 2340, 2341, 2342, 2343, 2344, and 2345, title 13, chapter 8.1, California Code of Regulations (CCR) to read as follows:

(Note: The entire text of sections 2340 through 2345 is new language.)

Chapter 8.1. AS 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the Air Quality Improvement Program

§ 2340. Purpose

The purpose of this regulation is to fulfill the requirements of the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (Assembly Bill 118 Statutes of 2007, Chapter 750; Health and Safety Code sections 44270-44274) section 44271 (b). Health and Safety Code (HSC) section 44271(b) requires the Air Resources Board (ARB or Board) to develop guidelines which ensure that both the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle Technology Program comp'lement, and do not interfere with, California's existing air quality programs and maintain or improve upon the emission benefits achieved through these programs.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

§ 2341. Applicability

This regulatipn applies to the Air Resources Board and the California Energy Commission (Energy Commission or CEC) for the evaluation of projects funded under the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle Technology Program, respectively. Except for the following projects, the requirements set forth in section 2343 of the regulation must be completed for all projects prior to approval for funding:

(a) Workplace training.

(b) Research projects that do not:
  (1) Involve a fuel supply stage with the intent to sell the fuel.
  (2) Involve construction that initiates permitting or licensing requirements established under local, state, or federal law.

(c) Demonstration projects that meet all of the following requirements:

(1) Projects designed to develop, test, or evaluate technologies for advancement to market.
(2) Technologies that are not sold or leased.
(3) Projects designed to collect data or evaluate air quality impacts where the data or evaluations are provided to the funding agency.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

§ 2342. Definitions

(a) ***"ARB"*** means the California Air Resources Board.

(b) *"Baseline fuel or vehicle technology"* means the conventional fuel or vehicle technology that the funded project would replace.

(c) *"Criteria pollutants"* means air pollutants that contribute to the formation of ozone and particulate matter (PM), including hydrocarbons, carbon monoxide (CO), oxides of nitrogen (NOx), and PM.

(d) *"Emerging technology"* means a technology that has not been certified or verified by the ARB.

(e) *'IEnergy Commission or CEC"* means the California Energy Commission.

(f) *"Fuel projects"* means a project that involves one of the following fuel supply stages: feed stock production, fuel production, bulk fuel transportation, bulk receiving, bulk storage, bulk distribution, bulk terminal storage, or fuel dispensing infrastructure. This includes, but is not limited to, production, infrastructure, transport, and storage of hydrogen and electricity.

(g) *"Full Fuel Cycle"* means an evaluation and comparison of the full environmental and health impacts of each step in the life cycle of a fuel, including, but not limited to, all of the following:
(1) Feedstock production, extraction, transport, and storage.
(2) Fuel production, distribution, transport, and storage.
(3) Vehicle operation, inclUding refueling, combustion, conversion, permeation, and evaporation.

(h) *"Funding agency"* means the ARB or the Energy Commission.

(i) *"Grantee"* means the party with which the funding agency signs a funding agreement.

(j) *I'Greenhouse gases (GHG's)"* mean carbon dioxide (C02), methane (CH4), nitrous oxide (N20), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and

perfluorocarbons (PFCs) as defined in Subchapter 10, Article 1, title 17, California Code of Regulations.

(k) *"Infrastructure"* means the facilities or installations needed for the function of the fuel supply system.

*(l)* *llLow Carbon Fuel Standard (LCFS)"* means regulations adopted by the ARB pursuant to Governor Executive Order S-01-07. This standard will be established to achieve at least a ten percent reduction in the carbon intensity of California's transportation fuels by 2020 to help achieve the statewide greenhouse gas emissions limit required by Assembly Bill 32 (Statutes of 2006, Chapter 488).

(m) *llNew vehicle/equipment purchase"* means the purchase of new advanced technology vehicle or equipment.

(n) *llproject fuel"* means the alternative or renewable fuel for which the project proponent is requesting funding.

*(0)* *IITotal weighted toxic air contaminants"* means the combined total of toxic air contaminants weighted by their aggregate cancer potency.

(p) *llToxic air contamilJant"* means an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.

(q) *llVehicle/equipment replacement"* means the replacement of an older, operational vehicle or piece of equipment that still has remaining useful life with a newer, lower-emitting vehicle or piece of equipment.

(r) *llVehicle/equipment repower"* means the replacement of an existing engine in a vehicle/equipment with a new, engine instead of rebuilding the existing engine to its original specifications or configuration.

(s) *llVehicle/equipment retrofit"* means the installation of an emission control, fuel efficiency system, or fuel conversion system on an existing engine or piece of equipment.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

§ 2343. Requirements

Except as provided in section 2341 (a) through (c) above, the following requirements are applicable to all projects:

(a) Local, State, and Federal Laws

Projects must be in compliance with all local, state, and federal laws, ordinances, and regulations in order to be eligible for funding.

(b) Full Fuel Cycle Analysis

Projects must be evaluated using the current,' and as amended periodically thereafter, ARB full fuel cycle methodology including indirect land use set forth in the ARB's LCFS[1] regulations, 13 California Code of Regulations section XXX, [date]. Vehicle and equipment projects where the replacement vehicle/equipment uses the same fuel as the baseline vehicle/equipment are not subject to this requirement. Eligibility of a project must be determined using the followin"g process:

(1) Emissions Determination- Full fuel cycle emissidns for both the project fuel and baseline fuel must be determined pursuant to the full fuel cycle methodology including indirect land use methodology as adopted by the ARB as part of the LCFS. Full fuel cycle emissions must be determined for GHG's, criteria pollutants, and total weighted toxic air contaminants.

(A) The funding agency must use the fuel pathway specific to the project if a single fuel pathway is applicable.

(B) The funding agency must use the average of the fuel pathways available for the project if multiple fuel pathways are applicable.

(C) The funding agency must use the baseline fuel pathway adopted by the ARB with the LCFS for the calendar year that applies to the project to evaluate the baseline fuel.

(2) Emissions Evaluation- The following criteria must be used for evaluating project emissions using the full fuel cycle analysis:

(A) Comparison of GHG emissions-

The total full fuel cycle and indirect land use GHG emissions of the project fuel pathway must be less than or equal to those of the baseline fuel pathway to be eligible for funding.

(B) Comparison of criteria pollutants and air toxic emissions-

If emissions of one or more criteria pollutants or total weighted toxic air contaminants occurring in California from the project fuel pathway are greater than the baseline fuel pathway, then the funding agency must choose one of the two following options:

1. The funding agency may choose to not fund the project, or "
2. The funding agency may choose to conduct a supplemental evaluation to weigh the potential merits of the project. The supplemental evaluation must include all of the following:

[1] The LCFS is being considered for adoption by the ARB at a future Board hearing. The provision in section 2343(f) shall apply until the LCFS has been adopted by the ARB and is legally effective. When the LCFS is adopted, ARB shall add the cite and date of adoption to this regulation and will delete section 2343(f).

a. The emission disbenefits of the criteria pollutant(s) or toxic air contaminants must be fully mitigated by emission benefits of the identical criteria pollutant(s) or toxic air contaminants from other concurrently funded projects in the same air basin within the same funding cycle to be eligible for funding.
b. The total criteria pollutant emissions and total weighted toxic air contaminant emissions occurring in California from the project fuel pathway must be less than or equal to the baseline fuel pathway to be eligible for funding.
c. The supplemental evaluation must be published for review and comment by the public at least 10 calendar days prior to being presented in a publicly noticed meeting. The supplemental evaluation must be made available, at a minimum, through the funding agency's website. The meeting must include a discussion of the pollutant trade offs of the proposed project including any potential health impacts, a description of the proposed fuel/technology, an analysis demonstrating that the emission increases are fully mitigated in accordance with section 2343(b)(2)(B)2.a., the project's role in furthering the objectives of HSC sections 44270 through 44274, and how the proposed project supports the State of California's climate change goals.

(c) Permitting, licensing, and environmental review

Projects that require licensing, permitting, environmental review, or other entitlement or precondition if use from local, state, or federal entities are subject to the requirements set forth herein:

(1) Projects must comply with all applicable licensing, permitting, conditional use, environmental review, emission offsets, and mitigation strategy requirements that may be required under local, state, or federal law including; but not limited to, the federal Clean Air Act (42 United States Code section 7401 et seq.), National Environmental Policy Act of 1969 (42 United States Code section 4321 et seq.), California Clean Air Act of 1988 (Statutes of 1988, Chapter 1568, HSC section 39000 et seq.), Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Statutes of 1987, Chapter 1252, HSC section 44300 et seq.), California Environmental Quality Act (CEQA)(Statutes of 1970, Chapter 1433, Public Resources Code sections 21000-21178) and CEQA Guidelines (Title 14 California Code of Regulations section 15000 et seq.), CEC Regulations (Title 20 California Code of Regulations, Division 2, Chapter 5, section 1701 et seq.), and local rules or ordinances.

(2) For each project, all identified air quality impacts and mitigation strategies must be determined at the project level with the governmental entities that have regulatory or other jurisdiction over the project pursuant to local, state, and federal laws, ordinances, and regulations.

(3) The grantee must commit in the funding agreement with the funding agency to implementing all air pollution mitigation strategies, if any, recommended or required by the applicable jurisdictional and regulatory entities.

(4) All mitigation commitments must be set forth in writing prior to the grantee receiving the first funding allocation.

(5) Documentation of required mitigation must be maintained by the funding agency for any project selected for funding. The funding agency must monitor the status of all required mitigation through completion of the project and maintain records according to the provisions set forth in section 2344.

(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must include criteria for environmental justice review in its project selection process. The criteria must be consistent with state law defining environmental justice (Government Code section 65040. 12(c», and, at a minimum, include the following:

(A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 10 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.

(8) Projects must be selected and approved for funding in a publicly noticed meeting.

(d) **Specific Requirements for Vehicle and Equipment Projects**

Tailpipe emissions for vehicle and equipment projects must be evaluated in accordance with the following requirements:

(1) **Emissions Evaluation**

The replacement vehicle/equipment tailpipe emissions must be equal to or less than those of the baseline vehicle/equipment for each pollutant for which the technology has an emission or verification standard in order to be eligible for funding.

(2) Determination of **Vehicle/Equipment Emissions**

(A) Emissions must be determined using the appropriate tailpipe emissions analysis inputs set forth in Table 1.

**Table 1: Vehicle/E ui ment Tail i e Emissions Anal sis In uts**

| Project Type | Baseline Emissions | Re lacement Emissions |
|---|---|---|
| New vehicle/equipment urchase | Current vehicle/equipment model year 'emission factors | Emission factors of vehicle/equipment to be urchased |
| Vehicle/equipment replacement or En ine re ower | Emission factors of the vehicle/equipment or engine bein re laced | Emission factors of ' vehicle/equipment or en ine to be urchased |
| Vehicle retrofit | Emission factors of the existing vehicle/equipment without retrofit | Emissions of vehicle/equipment with retrofit installed, based on retrofit verification . |

(B) Technologies that have not been certified or verified at the time of project evaluation may be considered for funding in accordance with the provisions set forth in (3) below.

(3) **Emerging technologies**

Emerging technologies shall be eligible for funding on a case-by-case basis. A case-by-case evaluation consists of the following steps and criteria:

(A) The project applicant must document in writing to the funding agency that the technology has no emissions disbenefit when compared to the baseline vehicle/equipment.

(B) The documentation may include, but is not limited to, test data, engineering specifications, or scientific studies relating to the technology being funded.

(C) The funding agency must evaluate the documentation to ensure that it presents evidence that the technology results in no air quality disbenefit in emissions of criteria pollutants, toxic air contaminants, or greenhouse gases (GHG). The funding agency may consult with other entities in this evaluation.

*(e)* **Specific requirements for fuel projects**

All fuel projects must comply with applicable fuel specifications and future, new fuel specifications set forth in Title 13, California Code of Regulations, Division 3, Chapter 5, Article 1, Subarticle 2 and Article 3. Fuels with no fuel specification are exempt from this provision.

(f) **Special provision for LCFS**

Until the LCFS is adopted by the ARB and is legally effective, the full fuel cycle analysis conducted in section 2343(b) must be conducted using the August 2007 Full Fuel Cycle Assessment: Well-to-Wheels Energy Inputs, Emissions, and Water Impacts, CEC- 600-2007-004-REV, that was prepared to support the December 2007 State Alternative Fuels Plan, CEC-600-2007-011-CMF, adopted by the ARB on November 15; 2007, Resolution 07-51.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

§ 2344. Record keeping

The funding agency must maintain records for all funded projects. Records must document the reason for exemption from the provisions in section 2343 or compliance with the provisions in section 2343, decisions made on evaluation inputs, and methodology used. These records must be made available to the requesting party within 30 calendar days of agency receipt of the written request and must be retained for a minimum of three years from completion of the funded project.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

§ 2345. Severability

Each part of this article shall be deemed severable, and in the event that any provision of this article is held to be invalid, the remainder of this article shall continue in full force and effect.

NOTE: Authority cited: 39600, 39601, and 44271, Health and Safety Code. Reference cited: 39600, 39601, and 44271, Health and Safety Code.

# Appendix B

## Assembly Bill No. 118 (Chapter 750, Statutes of 2007)

# Appendix 8

## Assembly Bill No. 118 (Chapter 750, Statutes of 2007)

## CHAPTER 750

An act to add Article 11 (commencing with Section 44125) to Chapter 5 of, to add Chapter 8.9 (commencing with Section 44270) to, Part 5 of Division 26 of, and to add and repeal 44060.5 of, the Health and Safety Code, and to add and repeal Sections 9250.1, 9261.1, and 9853.6 of the Vehicle Code, relating to air pollution.

[Approved by Governor October 14, 2007. Filed with Secretary of State October 14, 2007.]

### LEGISLATIVE COUNSEL'S DIGEST

AB 118, Nunez. Alternative fuels and vehicle technologies: funding programs.

(1) Existing law imposes various limitations on emissions of air.contaminants for the control of air pollution from vehicular and nonvehicular sources. Existing law generally designates the State Air Resources Board as the state agency with the primary responsibility for the control of vehicular air pollution. Under existing law, the State Energy Resources Conservation and Development Commission (Energy Commission), in conjunction with other state agencies, is required to develop and adopt a state plan to increase the use of alternative fuels, as defined.

Existing law establishes the Public Interest Research, Development, and Demonstration Fund in the State Treasury, and provides that the money collected by the public goods charge to support cost-effective energy efficiency and conservation activities, public interest research and development not adequately provided by competitive and regulated markets, be deposited in the fund for use by the Energy Commission to develop, implement, and administer the Public Interest Research, Development, and Demonstration Program to develop technologies to, improve environmental quality, enhance electrical system reliability, increase efficiency of energy-using technologies, lower electrical system costs, or provide other tangible benefits.

The bill would create the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the Energy Commission, to provide, upon appropriation by the Legislature, grants; loans, loan guarantees, revolving loans, or other appropriate measures, to public agencies, businesses and projects, public-private partnerships, vehicle and technology consortia, workforce training partnerships and collaboratives, fleet owners, consumers, recreational boaters, and academic institutions to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies.

The bill would create the Alternative and Renewable Fuel and Vehicle Technology Fund (Alternative Fund), and would require the Energy Commission to expend the moneys in the Alternative Fund, upon appropriation by the Legislature, to implement the Alternative and Renewable Fuel and Vehicle Technology Program. The

bill would require $10,000,000 to be transferred annually to the Alternative Fund from the Public Interest Research, Development, and Demonstration Fund. The bill would also create the Air Quality Improvement Program, to be administered by the State Air Resources Board, to fund air quality improvement projects, upon appropriation by the Legislature, relating to fuel and vehicle technologies. The bill would create the Air Quality Improvement Fund, and would require the state board to expend the moneys in that fund, upon appropriation by the Legislature, to implement the Air Quality Improvement Program.

(2) Existing law creates the High Polluter Repair or Removal Account in the Vehicle Inspection and Repair Fund, and makes moneys deposited in the account available, upon appropriation by the legislature, to the Department of Consumer Affairs and the state board to establish and implement a program for the repair or replacement of high polluters.

This bill would create an enhanced fleet modernization program for the retirement of high polluting vehicles to be administered by the Bureau of Automotive Repair pursuant to guidelines adopted by the state board. The bill would create the Enhanced Fleet Modernization Subaccount in the High Polluter Removal and Repair Account to establish and implement this enhanced program, upon appropriation by the Legislature.

(3) The bill, beginning July 1, 2008, until January 1, 2016, would increase vehicle registration fees from $31 to $34, vessel registration fees from $10 to $20 and from $20 to $40, as applicable, and specified service fees for identification plates from $15 to $20. The bill would require the additional revenue generated by those fee increases to be deposited in the Alternative and Renewable Fuel and Vehicle Technology Fund, the Air Quality Improvement Fund, and the Enhanced Fleet Modernization Subaccount, as provided.

The bill beginning July 1, 2008, until January 1,2016, would also increase smog abatementfees from $12 to $20, and would require 1/2 of the additional revenue generated by that fee increase to be deposited in the Air Quality Improvement Fund and the other 1/2 of that additional revenue to be deposited in the Alternative and Renewable Fuel and Vehicle Technology Fund.

*The people of the State of California do enact as follows:.*

SECTION 1. The Legislature finds and declares all of the folloWing:

(a) The California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code) requires California to reduce statewide greenhouse gas emissions to 1990 levels by 2020.

(b) The transportation sector is responsible for approximately 40 percent of statewide greenhouse gas emissions and significant. degradation of public health and environmental quality due to air and water pollution.

(c) The State Energy Resources Conservation and Development Commission (Energy Commission) in its Integrated Energy Policy Report recommends that alternative fuels comprise 20 percent of on-road motor vehicle fuels by 2020.

(d) The State Air Resources Board is currently developing a "low-carbon" fuel standard for transportation fuels to reduce the carbon intensity of transportation fuels by 10 percent by 2020.

(e) The Energy Commission will adopt a state alternative fuel implementation plan to increase the use of alternative transportation fuels by recommending policies and financial incentives, and identifying barriers to alternative fuel use.

(f) Investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases.

(g) Research, development, and commercialization of alternative fuels and vehicle technologies in California have the potential to strengthen California's economy by attracting and retaining clean technology businesses, stimulating high-quality job growth, and helping to reduce the state's vulnerability to petroleum price volatility. Research, development, demonstration, and deployment of alternative and renewable fuels and vehicle technologies will also result in new skill and occupational demands across California industries.

(h) This act will provide ongoing funding for alternative fuel and vehicle technology research, development, demonstration, and deployment in order to advance the state's leadership in clean technologies, achieve the state's petroleum reduction objectives and clean air and greenhouse gas emission reduction standards, develop public-private partnerships, and ensure a secure and reliable fuel supply.

(i) This act will ensure that research is conducted to evaluate the air quality impacts of alternative fuels and to establish clear criteria to prevent net increases in criteria air pollutants and air toxics.

(j) This act will be implemented in a manner to ensure the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.

(k) This act will provide funding consistent with the California Global Warming Solutions Act of 2006, the Integrated Energy Policy Report, the state alternative fuels plan adopted pursuant to Section 43866 of the Health and Safety Code, and other state goals and requirements.

SEC. 2. It is the intent of the Legislature to appropriate moneys from the Alternative and Renewable Fuel and Vehicle Technology Fund and the Air Quality Improvement Fund to the Department of Motor Vehicles to cover the administrative costs of implementing the fee increases created by this act.

SEC. 3. Section 44060.5 is added to the Health and Safety Code, to read:

44060.5. (a) Beginning July 1, 2008, the smog abatement fee described in Section 44060 shall be increased by eight dollars ($8).

(b) Revenues generated by the increase described in this section shall be distributed as follows:

(1) The revenues generated by four dollars ($4) shall be deposited in the Air Quality Improvement Fund created by Section 44274.5.

(2) The revenues generated by four dollars ($4) shall be deposited in the Alternative and Renewable Fuel and Vehicle Technology Fund created by Section 44273.

(c) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1,2016, deletes or extends that date.

SEC. 4. Article 11 (commencing with Section 44125) is added to Chapter 5 of Part 5 of Division 26 of the Health and Safety Code, to read:

Article 11. Enhanced Fleet Modernization Program

44125. (a) No later than JUly 1,2009, the state board, in consultation with the Bureau of Automotive Repair (BAR), shall adopt a program to commence on January 1, 2010, that allows for the voluntarily retirement of passenger vehicles and light-duty and medium-duty trucks that are high polluters. The program shall be administered by the BAR pursuant to gUidelines adopted by the state board.

(b) The guidelines shall ensure all of the following:

(1) Vehicles retired pursuant to the program are permanently removed from operation and retired at a dismantler under contract with the BAR.

(2) Districts retain their authority to administer vehicle retirement programs otherwise authorized under law.

(3) The program is available for high polluting passenger vehicles and light-duty and medium-duty trucks that have been continuously registered in California for two years prior to acceptance into the program or otherwise proven to have been driven primarily in California for the last two years and have not been registered in any other state or country in the last two years.

(4) The program is focused where the greatest air quality impact can be identified.

(5) Compensation levels for retired vehicles are flexible, taking into account factors including, but not limited to, the age of the vehicle, the emission benefits of the vehicle's retirement, the emissions impact of any replacement vehicle, and the location of vehicles in areas ofthe state with the poorest air quality.

(6) Cost-effectiveness and impacts on disadvantaged and low-income populations are considered.

44126. The Enhanced Fleet Modernization Subaccount is hereby created in the High Polluter Removal and Repair Account. All moneys deposited in the subaccount shall be available to the department and the BAR, upon appropriation by the Legislature, to establish and implement the program created pursuant to this article.

SEC. 5. Chapter 8.9 (commencing with Section 44270) is added to Part 5 of Division 26 of the Health and Safety Code, to read:

CHAPTER 8.9. CALIFORNIA ALTERNATIVE AND RENEWABLE FUEL, VEHICLE TECHNOLOGY, CLEAN AIR, AND CARBON REDUCTION ACT OF 2007

44270. This chapter shall be known, and may be cited, as the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007.

44270.3. For the purposes of this chapter, the following terms have the following meanings:

(a) "Commission" means the State Energy Resources Conservation and Development Commission.

(b) "Full fuel-cycle assessment" or "life-cycle assessment" means evaluating and comparing the full environmental and health impacts of each step in the life cycle of a fuel, including, but not limited to, all of the following:

(1) Feedstock production, extraction, transport, and storage.

(2) Fuel production, distribution, transport, and storage.

(3) Vehicle operation, inclUding refueling, combustion, conversion, permeation, and evaporation.

(c) "Vehicle technology" means any vehicle, boat, off-road equipment, or locomotive, or component thereof, including its engine, propulsion system, transmission, or construction materials.

44271. (a) This chapter creates the Alternative and Renewable Fuel and Vehicle Technology Program, pursuant to Section 44272, to be administered by the commission, and the Air Quality Improvement Program, pursuant to Section 44274, to be administered by the state board. The commission and the state board shall do all of the following in fulfilling their responsibilities pursuant to their respective programs:

(1) Determine definitions of terms used in the provisions of this chapter.

(2) Establish sustainability goals to ensure that alternative and renewable fuel and vehicle deployment projects, on a full fuel-cycle assessment basis, will not adversely impact the state natural resources, especially state and federal lands.

(3) Identify revenue streams for the programs created pursuant to this chapter.

(4) Ensure that the results of the reductions in emissions or benefits can be measured and quantified.

(b) The state board shall develop guidelines for both the Alternative and Renewable Fuel and Vehicle Technology Program and the Air Quality Improvement Program to ensure that programs meet both of the following requirements:

(1) Activities undertaken pursuant to the programs complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.

(2) Activities undertaken pursuant to the programs maintain or improve upon emission reductions and air quality benefits in the State Implementation Plan for Ozone, California Phase 2 Reformulated Gasoline standards, and diesel fuel regulations.

(c) For the purposes of both of the programs created by this chapter, eligible projects do not include those required to be undertaken pursuant to state or federal law or district rules or regulations.

44271.5. (a) The commission shall create an advisory body to help develop an investment plan to determine priorities and opportunities for the Alternative and Renewable Fuel and Vehicle Technology Program created pursuant to this chapter. The advisory body shall be subject to the public meetings requirements of the Bagley-Keene Open Meeting Act (Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code). The investment plan shall describe how funding will complement existing public and private investments, including existing state programs that further the goals of this chapter. The plan shall be updated annually.

(b) Membership of the advisory body created pursuant to subdivision (a) shall include, but is not limited to, representatives of fuel and vehicle technology consortia, labor organizations, environmental organizations, community-based justice and public health organizations, recreational boaters, consumer advocates, academic institutions, workforce training groups, and private industry. The advisory body shall also include representatives from the Resources Agency, the Business, Transportation and Housing Agency, the Labor and Workforce Development Agency, and the California Environmental Protection Agency.

44272. (a) The Alternative and Renewable Fuel and Vehicle Technology Program is hereby created. The program shall be administered by the commission. The program shall provide, upon appropriation by the Legislature, grants, revolving loans, loan guarantees, loans, or other appropriate measures, to public agencies, vehicle and technology consortia, businesses and projects, public-private partnerships, workforce training partnerships and collaboratives, fleet owners, consumers, recreational boaters, and academic institutions to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies. The emphasis of this program shall be to develop and deploy technology and alternative and renewable fuels in the marketplace, without adopting anyone preferred fuel or technology.

(b) The commission shall provide preferences to those projects that maximize the goals of the Alternative and Renewable Fuel and Vehicle Technology Program created by Section 44272, based on the following criteria, as appropriate:

(1) The project's ability to provide a measurable transition from the nearly exclusive use of petroleum fuels to a diverse portfolio of viable alternative fuels that meet petroleum reduction and alternative fuel use goals.

(2) The project's consistency with existing and future state climate change policy and low-carbon fuel standards.

(3) The project's ability to reduce criteria air pollutants and air toxics and reduce or avoid multimedia environmental impacts.

(4) The project's ability to decrease, on a life-cycle basis, the emissions of water pollutants or any other substances known to damage human health or the environment, in comparison to the production and use of California Phase 2 Reformulated Gasoline or diesel fuel produced and sold pursuant to California diesel fuel regulations set forth in Article 2 (commencing with Section 2280) of Chapter 5 of Division 3 of Title 13 of the California Code of Regulations.

(5) The project does not adversely impact the sustainability of the state's natural resources, especially state and federal lands.

(6) The project provides nonstate matching funds.

(7) The project provides economic benefits for California by promoting California-based technology firms, jobs, and businesses.

(8) The project uses existing or proposed fueling infrastructure to maximize the outcome of the project.

(9) The project's ability to reduce on a fife-cycle assessment greenhouse gas emissions by at least 10 percent, and higher percentages in the future, from current reformulated gasoline and diesel fuel standards established by the state board.

(10) The project's use of alternative fuel blends of at least 20 percent, and higher blend ratios in the future, with a preference for projects with higher blends.

(11) The project drives new technology advancement for vehicles, vessels, engines, and other equipment, and promotes the deployment of that technology in the marketplace.

(c) All of the following shall be eligible for funding:

(1) Alternative and renewable fuel projects to develop and improve alternative and renewable low-carbon fuels, including electricity, ethanol, dimethyl ether, renewable diesel, natural gas, hydrogen, and biomethane, among others, and their feedstocks that have high potential for long-term or short-term commercialization, including projects that lead to sustainable feedstocks.

(2) Demonstration and deployment projects that optimize alternative and renewable fuels for existing and developing engine technologies.

(3) Projects to produce alternative and renewable low-carbon fuels in California.

(4) Projects to decrease the overall impact of an alternative and renewable fuel's life-cycle carbon footprint and increase sustainabi/ity.

(5) Alternative and renewable fuel infrastructure, fueling stations, and equipment. The preference in paragraph (10) of subdivision (b) shall not apply to these projects.

(6) Projects to develop and improve light-, medium-, and heavy-duty vehicle technologies that provide for better fuel efficiency and lower greenhouse gas emissions, alternative fuel usage and storage, or emission reductions, including propulsion systems, advanced internal combustion engines with a 40 percent or better efficiency level over the current marketstandard, light-weight materials, energy storage, control systems and system integration, physical measurement and metering systems and software, development of design standards and testing and certification protocols, battery recycling and reuse, engine and fuel optimization electronic and electrified components, hybrid technology, plug-in hybrid technology, fuel cell technology, and conversions of hybrid technology to plug-in technology through the installation of safety certified supplemental battery modules.

(7) Programs and projects that accelerate the commercialization of vehicles and alternative and renewable fuels including buy-down programs through near-market and market-path deployments, advanced technology warranty or replacement insurance, development of market niches, and supply-chain development.

(8) Programs and projects to retrofit medium- and heavy-duty on-road and nonroad vehicle fleets with technologies that create higher fuel efficiencies, including

alternative and renewable fuel vehicles and technologies, idle management technology, and aerodynamic retrofits that decrease fuel consumption.

(9) Infrastructure projects that promote alternative and renewable fuel infrastructure development connected with existing fleets, public transit, and existing transportation corridors, including physical measurement or metering equipment and truck stop electrification.

(10) Workforce training programs related to alternative and renewable fuel feedstock production and extraction, renewable fuel production, distribution, transport, and storage, high-performance and low-emission vehicle technology and high tower electronics, automotive computer systems, mass transit fleet conversion, servicing, and maintenance, and other sectors or occupations related to the purposes of this chapter.

(11) Block grants administered by not-for-profit technology consortia for multiple projects, education and program promotion within California, and development of alternative and renewable fuel and vehicle technology centers.

(d) The same requirements in Section 25620.5 of the Public Resources Code shall apply to awards made on a single source basis or a sole sources basis.

44273. (a) The Alternative and Renewable Fuel and Vehicle Technology Fund is hereby created in the State Treasury, to be administered by the commission. The moneys in the fund, upon appropriation by the Legislature, shall be expended by the commission to implement the Alternative and Renewable Fuel and Vehicle Technology Program in accordance with this chapter.

(b) Notwithstanding any other provision of law, the sum of ten million dollars ($10,000,000) shall be transferred annually from the Public Interest Research, Development, and Demonstration Fund created by Section 384 of the Public Utilities Code to the Alternative and Renewable Fuel and Vehicle Technology Fund. Prior to the award of any funds from this source, the commission shall make a determination that the proposed project will provide benefits to electric or natural gas ratepayers based upon the commission's adopted criteria.'

44274. (a) The Air Quality Improvement Program is hereby created. The program shall be .administered by the state board, in consultation with the districts. The purpose of the program shall be to fund, upon appropriation by the Legislature, air quality improvement projects relating to fuel and vehicle technologies. The primary purpose of the program shall be to fund projects to reduce criteria air pollutants, improve air quality, and provide funding for research to determine and improve the air quality impacts of alternative transportation fuels and vehicles, vessels, and equipment technologies.

(b) Projects proposed for funding pursuant to subdivision (a) shall be evaluated based on their proposed or potential reduction of criteria or toxic air pollutants, cost-effectiveness, contribution to regional air quality improvement, and ability to promote the use of clean alternative fuels and vehicle technologies as determined by the state board, in coordination with the 'commission.

(c) The program shall be limited to competitive grants. Projects to be funded include the following:

.(1) On- and off-road equipment projects that are cost effective.

(2) Projects that provide mitigation for off-road gasoline exhaust and evaporative emissions.

(3) Projects that provide research to determiriethe air quality impacts of alternative fuels and projects that study the life-cycle impacts of alternative fuels and conventional fuels, the emissions of biofuel and advanced reformulated gasoline mixes, and air pollution improvements and control technologies for use with alternative fuels and vehicles.

(4) Projects that augment the University of California's agricultural experiment station and cooperative extension programs for research to increase sustainable biofuels production and improve the collection of biomass feedstock.

(5) Incentives for small off-road equipment replacement to encourage consumers to replace internal combustion engine lawn and garden equipment.

(6) Incentives for medium- and heavy-duty vehicles and equipment mitigation, inclUding all of the following:

(A) Lower emission schoolbus programs.

(B) Electric, hybrid, and plug-in hybrid on- and off-road medium- and heavy-duty equipment.

(C) Regional air quality improvement and attainment programs implemented by the state or districts in the most impacted regions of the state.

(7) Workforce training initiatives related to advanced energy technology designed to reduce air pollution, including state-of-the-art equipment and goods, and new processes and systems. Workforce training initiatives funded shall be broad-based partnerships that leverage other public and private job training programs and resources-. These partnerships may include, though are not limited to, employers, labor unions, labor-management partnerships, community organizations, workforce investment boards, postsecondary education providers including community colleges, and economic development agencies.

(8) Incentives to identify and reduce emissions from high emitting light-duty vehicles.

44274.5. The Air Quality Improvement Fund is hereby created in the State Treasury, to be administered by the state board. The moneys in the Air Quality Improvement Fund, upon appropriation by the Legislature, shall be expended by the state board in accordance with this chapter to implement the Air Quality Improvement Program. The Legislature may transfer moneys from the fund to the Carl Moyer Memorial Air Quality Standards Attainment Trust Fund.

SEC. 6. Section 9250.1 is added to the Vehicle Code, to read:

9250.1. (a) Beginning July 1, 2008, the fee described in Section 9250 shall be increased by three dollars ($3).

(b) Two dollars ($2) of the increase shall be deposited into the Alternative and Renewable Fuel and Vehicle Technology Fund created by Section 44273 of the Health and Safety Code, and one dollar ($1) shall be deposited into the Enhanced Fleet Modernization Subaccount created by Section 44126 of the Health and Safety Code.

(c) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1,2016, deletes or extends that date.

SEC. 7. Section 9261.1 is added to the Vehicle Code, to read:

9261.1. (a) Beginning July 1, 2008, the fee described in Section 9261, as adjusted pursuant to Section 1678, shall be increased by five dollars ($5).

(b) Two dollars and 50 cents ($2.50) of the increase shall be deposited into the Alternative and 'Renewable Fuel and Vehicle Technology Fund created by Section 44273 of the Health and Safety Code, and two dollars and fifty cents ($2.50) shall be deposited into the Air Quality Improvement Fund created by Section 44274.5 of the Health and Safety Code.

(c) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1,2016, deletes or extends that date.

SEC. 8. Section 9853.6 is added to the Vehicle Code, to read:

9853.6. (a) (1) Beginning July 1,2008, the fee described in paragraph (1) of subdivision (b) of Section 9853 shall be increased by ten dollars ($10).

(2) Five dollars ($5) of the increase shall be deposited into the Alternatiye and Renewable Fuel and Vehicle Technology Fund created by Section 44273 of the Health and Safety Code and five dollars ($5) shall be deposited into the Air Quality Improvement Fund created by Section 44274.5 of the Health and Safety Code.

(b) (1) Beginning July 1, 2008, the fee described in paragraph (2) of subdivision (b) of Section 9853 shall be increased by twenty dollars ($20).

(2) Ten dollars ($10) of the increase shall be deposited into the Alternative and Renewable Fuel and Vehicle Technology Fund created by Section 44273 of the Health and Safety Code and ten dollars ($10) shall be deposited into the Air Quality Improvement Fund created by Section 44274.5 of the Health and Safety Code.

(b) This section shall remain in effect only until January 1,2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1,2016, deletes or extends that date.

SEC. 9. The provisions of this act are severable. If any provision of this act or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.