State of California
AIR RESOURCES BOARD

Resolution 00-40

November 16, 2000

Agenda Item No.: 00-11-4

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the Board or ARB) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, sections 43018(a) and (b) of the Health and Safety Code direct the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state ambient air quality standards at the earliest practicable date, and to take whatever actions are necessary, cost-effective, and technologically feasible to achieve, by December 31, 2000, specified reductions in the emissions of reactive organic gases, oxides of nitrogen (NOx), particulates, carbon monoxide (CO), and toxic air contaminants from vehicular sources;

WHEREAS, section 43018(c) of the Health and Safety Code provides that in carrying out section 43018, the Board shall adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including but not limited to specification of vehicular fuel composition;

WHEREAS, Health and Safety Code section 43013 authorizes the Board to adopt and implement motor vehicle fuel specifications for the control of air contaminants and sources of air pollution which the Board has found necessary, cost-effective, and technologically feasible to carry out the purposes of Division 26 of the Health and Safety Code;

WHEREAS, the ARB administers the Phase 2 California reformulated gasoline (CaRFG2) regulations, which became applicable March 1, 1996 and currently include the following elements:

> Standards for eight gasoline properties – summertime Reid Vapor Pressure (RVP), T50 (50 percent distillation temperature), T90 (90 percent distillation temperature), and aromatic hydrocarbon, benzene, sulfur, olefin, and oxygen contents;

Establishment of an absolute "cap" limit for each specification, applicable throughout the gasoline distribution system;

Establishment of additional, more stringent "refinery" limits applicable to gasoline when it is initially supplied from the production or import facility for all specifications but RVP, and provisions authorizing compliance through a form of averaging T50, T90, and sulfur, aromatic hydrocarbon, benzene and olefin contents;

An alternative compliance mechanism under which a producer or importer may use the CaRFG2 Predictive Model to identify alternative flat and averaging refinery limits, up to the cap limits, that will result in essentially no increase in emissions of exhaust hydrocarbons, NOx, and potency weighted toxics (benzene, 1,3-butadiene, acetaldehyde and formaldehyde); the CaRFG2 Predictive Model consists of mathematical equations, based on 18 vehicle emissions test programs, that predict the changes in exhaust hydrocarbons, NOx, and potency weighted toxics resulting from different gasoline formulations;

In the case of oxygen content, a requirement that CaRFG2 sold throughout the distribution system in Los Angeles, Orange, Riverside, San Bernardino, Ventura and Imperial Counties during specified winter months must contain at least 1.8 percent by weight (wt.%) oxygen, in order to reduce emissions of CO during the season of highest CO concentrations in areas where the CO ambient air quality standards have not yet been attained; during the rest of the year and in the remainder of the state, CaRFG2 being supplied from a production or import facility is subject to an oxygen content refinery limit of 1.8 to 2.2 wt.%, but the producer or importer may use the CaRFG2 Predictive Model to reduce oxygen content to as low as 0.0 wt.%, or raise it as high as 3.5 wt.%; and

A mechanism allowing a refiner to ship a non-oxygenated gasoline blend – called "California reformulated gasoline blendstock for oxygenate blending," or "CARBOB" – from the refinery without complying with the CaRFG standards if it is specially formulated to be combined with oxygenate "downstream" from the refinery and the resulting blend will meet all of the CaRFG standards; this allows entities adding oxygenate downstream from the refinery to take advantage of the contribution it can make to complying with the CaRFG standards, particularly by diluting the concentration of compounds like benzene;

WHEREAS, virtually all current California gasoline is subject to alternative refinery flat or averaging limits designated by the producer or importer using the CaRFG2 Predictive Model;

WHEREAS, pursuant to federal Clean Air Act section 211(k), the U.S. Environmental Protection Agency (U.S. EPA) administers federal reformulated gasoline (RFG) regulations that apply – along with the CaRFG2 regulations – to the 70 percent of California gasoline that is sold in the greater Los Angeles, San Diego and Sacramento

areas; these regulations require a year-round oxygen content of 2.0 wt.% or 2.1 wt.% on average, and are expected to also apply in the San Joaquin Valley area starting some time in 2001;

WHEREAS, in order to meet the federal and California requirements for the minimum oxygen content of gasoline, refiners have primarily used the oxygenate methyl tertiary butyl ether (MTBE); in 1998, over 90 percent of California gasoline was blended with MTBE;

WHEREAS, pursuant to "The MTBE Public Health and Environmental Protection Act of 1997" (Stats. 1997 ch. 816; SB 521, Mountjoy), the University of California prepared a report on the "Health and Environmental Assessment of MTBE" and presented it to the Governor on November 12, 1998;

WHEREAS, in response to this report and subsequent written comments and hearing testimony, on March 25, 1999, Governor Gray Davis issued Executive Order D-5-99, in which he found that, "on balance, there is significant risk to the environment from using MTBE in gasoline in California," primarily because of the environmental threat of MTBE contamination of groundwater and drinking water resulting from leaking underground fuel storage tanks;

WHEREAS, Executive Order D-5-99 included a direction to the California Energy Commission (CEC), in consultation with the ARB, to develop a timetable for the removal of MTBE from California gasoline not later than December 31, 2002, and included a direction to the ARB to adopt California Phase 3 Reformulated Gasoline (CaRFG3) regulations that will provide additional flexibility in lowering or removing oxygen and maintain current emissions and air quality benefits and allow compliance with the State Implementation Plan (SIP);

WHEREAS, Senate Bill 989 (Sher), signed by the Governor on October 10, 1999, (Stats. 1999, ch. 812) enacts new section 43013.1 of the Health and Safety Code, which requires the CEC to develop a timetable for the removal of MTBE from gasoline at the earliest possible date, and requires the ARB to ensure that the CaRFG3 regulations maintain or improve upon emissions and air quality benefits achieved by CaRFG2 as of January 1, 1999, and provide additional flexibility to reduce or remove oxygen from motor vehicle fuel;

WHEREAS, Senate Bill 529 (Bowen), also signed by the Governor on October 10, 1999, (Stats. 1999, ch. 812) prohibits the ARB from adopting any regulation that establishes a specification for motor vehicle fuel unless a multimedia assessment and review is conducted;

WHEREAS, California has requested that U.S. EPA waive application of the federal RFG year-round 2.0 wt.% minimum oxygen mandate, on the ground that the mandate prevents or interferes with attainment of the national ambient ozone standard in California because the mandate will preclude the production of nonoxygenated CaRFG3 which, on average, would result in lower NOx emissions than oxygenated CaRFG3;

WHEREAS, on June 28, 1999, the CEC determined that, to ensure adequate supply and availability of gasoline for California consumers, the timetable for removal of MTBE from California's gasoline should not be advanced earlier than the deadline of December 31, 2002;

WHEREAS, at a hearing on December 9, 1999, the Board approved the CaRFG3 amendments to the CaRFG regulations, including the following major elements:

A prohibition of the use of MTBE in gasoline starting December 31, 2002;

The adoption of CaRFG3 flat, averaging and cap limits for the eight properties regulated by the CaRFG2 program; these limits become applicable December 31, 2002, although there is a mechanism which allows refiners to produce gasoline subject to the CaRFG3 standards before that date;

A new CaRFG3 Predictive Model, which includes a new evaporative hydrocarbon emissions element that will allow an alternative RVP flat limit between 6.40 and 7.20 pounds per square inch (psi), when compared against a flat limit of 6.90 psi;

Elimination of quality audit requirements in the provisions pertaining to CARBOB; and

Small refiner CaRFG3 standards with less stringent flat limits for benzene and aromatics content, T50, and T90 for a qualifying small refiner who had produced CaRFG2 in 1998 and 1999; the refiner could only use the small refiner CaRFG3 standards, however, if it offsets the excess emissions with changes to its diesel fuel produced pursuant to a mechanism to be added to the ARB's regulation limiting the aromatic hydrocarbon content of California diesel fuel;

WHEREAS, the CaRFG3 amendments became operative on September 2, 2000;

WHEREAS, at the December 9, 1999, hearing the Board directed the Executive Officer to propose to the Board, for consideration by October 2000, appropriate further amendments to the CaRFG3 regulations to assure the practical and effective implementation of the provisions on CARBOB and imported gasoline, specifications for denatured ethanol for use in motor vehicles, and amendments to the ARB's diesel fuel regulations to incorporate a mechanism for calculating small refiner offsets;

WHEREAS, following a series of workshops, the staff has initially proposed follow-up amendments to the CaRFG3 amendments, including the following elements:

Specifications for denatured ethanol intended for use as an oxygenate in California gasoline, and specifications for denaturants used in such ethanol;

Establishment of a new "CARBOB Model" which refiners and importers could elect to use to set limits directly applicable to the CARBOB, eliminating the need to hand-blend the CARBOB with ethanol and test the blend in order to determine

compliance with the CaRFG standards that apply to gasoline being supplied from the production or import facility;

Cap limits for CARBOB that is downstream from the production or import facility;

Allowing exceptions under certain conditions of the prohibition of combining CARBOB with different kinds of CARBOB or with finished gasoline; these exceptions are designed to allow distributors to transition from one product to another if there is no overall adverse emission impact;

Adding a mechanism for a qualifying small refiner to select one of three options for producing diesel fuel in a manner that offsets the excess emissions from gasoline subject to the small refiner CaRFG3 standards in a particular year; and

Amendments that would make various other minor changes to the CaRFG regulations, including reducing the applied reproducibility of automated RVP test methods, clarifying the method for sampling gasoline, and correcting provisions on transitions to the winter oxygenates season for low-throughput stations;

WHEREAS, the California Environmental Quality Act and Board regulations require that an action not be adopted as proposed where it will have significant adverse environmental impacts if feasible alternatives or mitigation measures are available which would substantially reduce or avoid such impacts;

WHEREAS, the Board has considered the impact of the proposed amendments on the economy of the State;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of chapter 3.5 (commencing with section 11340), part 1, division 3, title 2 of the Government Code;

WHEREAS, at the hearing the staff has suggested several modifications to the originally proposed amendments; the modifications include:

Allowing proportionately less stringent standards for denaturants that are being added to ethanol at lower levels, and allowing denatured ethanol exceeding the default ethanol standards where it will be added to a "cleaner" CARBOB designed to be blended with such ethanol;

Updating the procedures for certified equivalent gasoline formulations based on motor vehicle emission testing to provide parallel mechanisms for demonstrating equivalency with the CaRFG2 and the CaRFG3 standards;

Revising the cap T50 limits for downstream CARBOB, and conforming the provisions on compliance handblending of downstream CARBOB so they conform to the provisions applicable at production and import facilities;

Deleting the requirement that producers sample and analyze each batch of CARBOB for all regulated properties, easing the requirements for tank transitions involving CARBOBs designed for different ethanol levels, and eliminating proposed provisions on transitioning from CARBOB to finished gasoline;

For a small refiner that has been shutdown since the start of the CaRFG2 requirements in March 1995, provisions allowing the refiner for the first two years of the CaRFG3 program to meet the CaRFG2 standards (without the use of MTBE) as long as the refiner offsets any adverse emissions with cleaner diesel fuel; and

Various other changes that fine-tune the proposed amendments;

WHEREAS, the Board finds that:

The amendments approved herein regarding standards for denatured ethanol and denatured ethanol will enhance the ability of refiners to produce gasoline meeting the CaRFG3 standards by assuring a supply of denatured ethanol with superior blending characteristics, while providing adequate flexibility to both ethanol producers and refiners;

The amendments approved herein pertaining to the CARBOB model are necessary and appropriate to help make it more practical for refiners to produce and distribute CARBOB, while assuring adequate tools for an effective enforcement program;

The amendments approved herein pertaining to transitioning storage tanks at terminals and bulk plants from one product to another will make it more practical for refiners and distributors to make such transitions where necessary;

The amendments approved herein regarding small refiners will assure that the small refiner provisions will not result in an increase in emissions;

The remaining amendments approved herein are necessary and appropriate to ensure enforceability while providing flexibility where possible;

The approved amendments, including the standards for denatured ethanol and denaturant, are technologically feasible; and

Since the standards for denatured ethanol intended for use as an additive in California gasoline, and the standards for denaturant, do not affect the CaRF2 or CaRFG3 standards for California gasoline, they do not constitute new or amended specifications for motor vehicle fuel;

WHEREAS, the Board further finds that:

The approved amendments other than those pertain to restarting small refineries will not have a significant adverse air quality or other environmental impact;

The staff's proposed modifications pertaining to restarting small refineries are not expected to result in an increase in emissions from motor vehicle fuel produced by the small refiner, because the modifications will require that the limited increase in emissions from the sale of gasoline meeting the CaRFG2 standards in place of the CaRFG3 standards must be fully offset by emission reductions from improvements in the quality of California motor vehicle diesel fuel sold by the small refiner; and

To the extent that any small refinery that might use the proposed regulatory modifications pertaining to restarting small refineries would be an existing facility, any adverse environmental impacts from operation of this facility would not result from the amendments approved herein; and

WHEREAS, the Board further finds that:

The regulations approved herein will have a minor, if any, impact on the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses with California, or the expansion of businesses currently doing business within California;

Most of the amendments approved herein and associated costs are designed to provide clarity and enhance the flexibility of the CaRFG3 regulations; no adverse economic effects are expected from the regulatory action approved herein; and

Since the approved amendments are not designed to reduce emissions, there is no cost-effectiveness value that can be assigned to the amendments *per se*; however, since the amendments provide additional flexibility to refiners and importers, they are expected to make the overall CaRFG3 regulations more cost-effective.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the amendments to sections 2260, 2261, 2262.1, 2262.3, 2262.5, 2263, 2264, 2265, 2266, 2266.5, 2270, 2272, 2273, 2282, 2296 and 2297, and adoption of section 2262.9, of title 13, California Code of Regulations, as set forth in Attachment A hereto, with the modifications to those sections set forth in Attachment C hereto; the Board also approves the new Procedures for Using the "California Model for California Reformulated Blendstock for Oxygenate Blending (CARBOB)" – incorporated by reference in section 2266.5(a) – as set forth in Attachment B hereto, with the modifications set forth in Attachment C, and approves the amendments to the "California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model" – incorporated by reference in section 2265(a) – as set forth in Attachment C hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer: (1) to incorporate into the approved regulations and incorporated documents the modifications described in Attachment C hereto and such other conforming modifications as may be appropriate; (2) to make the modified regulations and incorporated documents, with the modifications clearly indicated, available for public comment for a period of at least 15 days; (3) to consider any comments on the modifications received during the supplemental comment period; and then (4) consistent with this Resolution, either to adopt the regulations as made available with any appropriate additional nonsubstantial modifications, to make additional modifications available for public comment for an additional period of at least 15 days, or to present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Executive Officer is directed to prepare a supplemental written analysis of the environmental impacts expected to result from the proposed regulatory modifications pertaining to restarting small refineries, and to make the analysis available for a public comment period of at least 45 days in conjunction with the supplemental comment period on the modifications approved herein; the Executive Officer shall consider public comment on the supplemental analysis of environmental impacts and, prior to taking final action to adopt the modified regulatory proposal, shall approve written responses to the public comments, and make appropriate environmental findings based on the material in the record of the rulemaking; if the Executive Officer finds that adverse environmental impacts will result from the proposed regulatory modifications pertaining to restarting small refineries, he shall present those regulatory provisions to the Board for further consideration prior to their adoption.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to submit the ultimately adopted amendments to the U.S. EPA as a revision to the California SIP.

Rec'd By
Office of the Secretary
JUL - 9 2001
Resources Agency of California

I hereby certify that the above is a true and correct copy of Resolution 00-40, as adopted by the Air Resources Board.

Marie Kavan

Marie Kavan, Clerk of the Board

Resolution 00-40

November 16, 2000

Identification of Attachments to the Resolution

Attachment A: The Proposed Regulation Order attached as Appendix A to the Staff Report: Initial Statement of Reasons, release date September 29, 2000.

Attachment B: The "Procedures for Using the California Model for California Reformulated Gasoline Blendstocks for Oxygenate Blending (CARBOB)," attached as Appendix B to the Staff Report: Initial Statement of Reasons, release date September 29, 2000.

Attachment C: Staff's Suggested Changes to the Original Regulatory Proposal, dated November 16, 2000, and distributed at the November 16, 2000 hearing.