United States Environmental Protection Agency | Air and Radiation | EPA420-F-00-023 June 2000

Office of Transportation and Air Quality

# Regulatory Announcement

## Proposed Adjustment to Reformulated Gasoline VOC Standard

*The U.S. Environmental Protection Agency (EPA) is proposing to make it easier for oil refiners to use ethanol in cleaner-burning, reformulated gasoline (RFG), while maintaining the full air quality benefits of the program. This proposed rule will fully recognize the environmental benefits of ethanol and ensure that it will continue to play a significant role in the cleaner burning gasoline program.*

### Background

The Clean Air Act requires that cleaner-burning RFG contain two percent oxygen by weight. Ethanol has been used in reformulated gas since 1995. Oil refiners can choose which oxygenate to use to meet the law's requirements. There are two primary options: ethanol or MTBE.

If gasoline containing MTBE leaks or is spilled into the environment, it can enter the groundwater and render water supplies undrinkable due to taste and odor impacts. The Administration has called on Congress to pass legislation that will significantly reduce or eliminate the use of MTBE.

EPA's proposal grew out of the ethanol industry's request that EPA give ethanol blended RFG credit for the additional carbon monoxide (CO) reductions that occur from using ethanol. In response, EPA asked the

National Academy of Science (NAS) to study the impact of CO reductions on ozone formation. The NAS report last year concluded that the contribution of CO to ozone formation should be recognized as part of the air quality benefits of the RFG program.

The Administration supports the use of renewable fuels like ethanol, and recognizes the important role ethanol plays in our nation's energy security, agricultural, and environmental policy.

## EPA's Proposal

The use of ethanol in RFG is generally used at a volume that provides more oxygen in the fuel than other additives. The additional oxygen in the gasoline significantly reduces emissions of CO. Therefore, in exchange for greater CO benefits, EPA is proposing to provide refiners with more flexibility by adjusting the standards for volatile organic compound (VOC) in ethanol blended RFG. This proposed adjustment would make it more feasible for refiners to use ethanol in the RFG program.

## Reformulated Gasoline and Volatility

RFG is required to reduce VOCs, oxides of nitrogen (NOx), and air toxics. When ethanol is added to gasoline in the amount needed to satisfy the oxygen content requirement of the Clean Air Act, the volatility of gasoline (as measured by Reid Vapor Pressure or RVP) increases.

Because evaporation of gasoline contributes to air pollution, and gasoline with ethanol evaporates more than gasoline with other additives, refiners must reduce the volatility of the gasoline before adding ethanol in order to meet the VOC standards of RFG.

Since the higher oxygen content of the gasoline resulting from ethanol provides for greater reductions of CO than other additives, EPA is proposing to make an adjustment that will provide more flexibility to refiners. This flexibility allows a small increase in the volatility of the gasoline, while maintaining the benefits of RFG.

## Health and Environmental Benefits of RFG

The goal of the RFG program is to reduce emissions of the pollutants that contribute to ozone, or smog. Smog is formed when VOC, NOx, and

other pollutants such as CO react in the presence of sunlight. The RFG program sets acceptable levels for these pollutants that refiners must meet, regardless of the oxygenate they choose.

The clean air benefits of the RFG program are significant. The combined impact of both phases of the RFG program will reduce smog-forming pollutants by 105,000 tons annually. This is equivalent to eliminating the pollution from 16 million cars. The program also reduces toxic pollutants by 24,000 tons annually.

## Costs

EPA estimates that the second phase of RFG (required on June 1, 2000) will cost from 4 to 8 cents more per gallon to produce than conventional gasoline, which includes a one cent additional cost for the use of ethanol. Studies from Bonner and Moore Associates, and Oak Ridge National Laboratory confirm these estimates. Other studies, such as those performed by Cambridge Energy Research Associates, formed the basis of some of the above studies.

## Public Participation Opportunities

We welcome your comments on this proposed rule. For instructions on submitting written comments, please see the Federal Register notice. You may submit written comments to EPA up to 60 days after the proposed rule is published in the Federal Register. It is available from the EPA Air Docket by calling 202-260-7548; please refer to Docket No. A-99-32. In addition, you can access the proposed rule and related documents electronically on the Office of Transportation and Air Quality (OTAQ) Web site at:

http://www.epa.gov/otaq/rfg.htm

## For More Information

You can access documents on this proposed rule electronically on the OTAQ Web site given above, or by contacting Barry Garelick at:

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