



Highlights of [GAO-05-421](#), a report to congressional requesters

Why GAO Did This Study

The Clean Air Act, as amended, requires some areas with especially poor air quality to use a “special gasoline blend” designed to reduce emissions of volatile organic compounds (VOC) and nitrogen oxides (NOx) and requiring the use of an oxygenate such as ethanol. In less severely polluted areas, the Act allows states, with EPA approval, to require the use of other special blends as part of their effort to meet air quality standards.

GAO agreed to answer the following: (1) To what extent are special gasoline blends used in the United States and how, if at all, is this use expected to change in the future? (2) What effect has the use of these blends had on reducing vehicle emissions and improving overall air quality? (3) What is the effect of these blends on the gasoline supply? (4) How do these blends affect gasoline prices?

What GAO Recommends

GAO is making four recommendations to EPA, including: (1) that the agency, with the Department of Energy and others, develop a plan to balance the environmental benefits of using special fuels with the impacts of these fuels on the gasoline supply infrastructure and (2) if warranted, that EPA work with other agencies to identify what statutory or other changes are required to implement this plan and request those authorities from Congress. EPA declined to comment on the findings and recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-05-421.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jim Wells, 202-512-3841 or wellsj@gao.gov.

GASOLINE MARKETS

Special Gasoline Blends Reduce Emissions and Improve Air Quality, but Complicate Supply and Contribute to Higher Prices

What GAO Found

Although there is no consensus on the total number of gasoline blends used in the United States, GAO found 11 distinct special blends in use during the summer of 2004. Further, when different octane grades and other factors are considered, there were at least 45 different kinds of gasoline produced in the United States during all of 2004. The 11 special blends GAO found are often used in isolated pockets in metropolitan areas, while surrounding areas use conventional gasoline. The use of special blends may expand because a new federal standard for ozone may induce more states to apply to use them. To date, the Environmental Protection Agency (EPA) has generally approved such applications and does not have authority to deny an application to use a specific special blend as long as that blend meets criteria established in the Clean Air Act. EPA staff told us that there had been recent congressional debate regarding EPA’s authority with regard to approving special gasoline blends but that the bills had not passed.

EPA models show that use of special gasoline blends reduces vehicle emissions by varying degrees. California’s special blend reduces emissions the most—VOCs by 25-29 percent, NOx by 6 percent compared with conventional gasoline, while also reducing emissions of toxic chemicals. In contrast, the most common special gasoline blend (used largely in the Gulf Coast region) reduces VOCs by 12-16 percent and NOx by less than 1 percent compared with conventional gasoline. The extent of reductions remains uncertain, because they rely, at least in part, on data regarding how special blends affect emissions from older vehicles, and these estimates have not been comprehensively validated for newer vehicles and emissions controls. Regarding air quality, EPA and others have concluded that improvements are, in part, attributable to the use of special blends.

The proliferation of special gasoline blends has put stress on the gasoline supply system and raised costs, affecting operations at refineries, pipelines, and storage terminals. Once produced, different blends must be kept separate throughout shipping and delivery, reducing the capacity of pipelines and storage terminal facilities, which were originally designed to handle fewer products. This reduces efficiency and raises costs. In the past, local supply disruptions could be addressed quickly by bringing fuel from nearby locations; now however, because the use of these fuels are isolated, additional supplies of special blends may be hundreds of miles away.

GAO evaluated pretax wholesale gasoline price data for 100 cities and generally observed that the highest prices tended to be found in cities that use a special gasoline blend that is not widely available in the region, or that is significantly more costly to make than other blends. There is general consensus that increased complexity, and higher costs associated with supplying special blends, contribute to higher gasoline prices either because of more frequent or severe supply disruptions or because higher costs are likely passed on at least in part to consumers.