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GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-257955

August 24, 1994

The Honorable Peter W. Barca
House of Representatives

Dear Mr. Barca:

This responds to your March 10, 1994, request that we provide you with information on a recent Environmental Protection Agency (EPA) requirement that trucks use low-sulphur diesel fuel instead of high-sulphur diesel fuel and on whether the requirement leads to a difference in fuel costs that affects the competitiveness of trucks with railroads, which were not covered by the new EPA requirement. In summary, as part of the Clean Air Act, EPA promulgated a requirement that low-sulphur diesel fuel be used on highways to comply with stricter emissions standards for diesel engines. Concerns were raised by the trucking industry that the expected price difference between low-sulphur and high-sulphur diesel fuel would cause trucking rates to increase and cause traffic to be diverted from trucks to rail. However, EPA proceeded with the requirement after finding in a number of studies that the use of low-sulphur fuel might increase engine life and that a small difference in fuel prices would not compromise the competitiveness of truck transportation.

In October 1993, the month that the new EPA requirement took effect, the price of highway diesel fuel, required to be low-sulphur, began to rise. In most areas of the country, the price per gallon of truck diesel fuel quickly rose approximately 11 percent, and in a few places the price rose considerably more. Factors that contributed to the sudden increase included the scarcity of the new low-sulphur fuel as refiners switched over to meet the new demand. This scarcity was exacerbated by a pipeline rupture in the Midwest and additional regulations imposed on fuel sold in California. However, since that time, the average price of highway diesel fuel, all of which is now low-sulphur, has decreased and has stabilized at approximately the same level as prior to the imposition of

the EPA requirement. Nevertheless, in March 1994 (the most recent date for which data are available), the price per gallon of low-sulphur diesel fuel averaged approximately 5.3 cents higher than the price of high-sulphur diesel fuel, still permitted for use by trains. The price difference has fluctuated, but there is some indication that the difference may be narrowing. Because fuel costs constitute about 8 percent of truck operating costs, a 5.3-cents-per-gallon price difference means that truck operating costs could be approximately 0.5 percent higher than they would have been had the truckers been allowed to continue using high-sulphur fuel. The impact on revenues and profits will depend on the truckers' ability to pass on these cost increases to shippers.

BACKGROUND

On August 21, 1990, EPA issued a final rule, under section 211 of the Clean Air Act, requiring that the sulphur content in diesel fuel used for highway transportation be reduced to 0.05 percent by weight and that diesel engine manufacturers adjust their engine production operations to comply with the new rule by October 1, 1993. The regulation was promulgated partly in response to concerns expressed by diesel engine manufacturers that sulphur in diesel fuel could either plug trap-oxidizers, devices needed to meet EPA's particulate standards for diesel-powered trucks built in 1994 and after, or generate significant sulfate particulate emissions that would put the engines in violation of the regulations for these emissions. The rule did not require any changes in the sulphur content of diesel fuel used by nonhighway modes of transportation such as rail or barge.

EPA studies of low-sulphur diesel fuel's effect on truck engines also revealed that in addition to reducing sulphur dioxide and sulphate particulate emissions, fuel with a sulphur content of 0.05 percent extended engine life by 30 percent. The cost of reducing the sulphur content to the 0.05-percent level was estimated to be 1.2 cents per gallon.

DIESEL FUEL MARKETERS EXPRESSED CONCERNS ABOUT THE EPA REQUIREMENT FOR DIESEL FUEL'S SULPHUR CONTENT

In preparing the final rule, EPA received comments expressing a wide variety of concerns, particularly with regard to expected market impacts (especially on small fuel marketers) resulting from the handling and sale of fuels

with differing sulphur content. Organizations such as the Petroleum Marketers Association of America (PMAA), Small Business Administration, and the Society of Independent Gasoline Marketers Associations recommended that all diesel fuel be subject to the new standard. The organizations noted that the impact of the new standards would fall more heavily on smaller fuel marketers and that the majority of the impact would result from the need to install new storage tanks to handle fuels with differing sulphur content. In addition, the American Trucking Associations expressed concern that a price differential between highway and nonhighway fuels would unfairly burden trucks and cause traffic to shift to rail because trains could continue to use less expensive high-sulphur diesel fuel.

PMAA also noted that supply shortages, in some cases at the regional level, of one or the other type of fuel might occur. Historically, shortages of diesel fuel of one type could be compensated for by using excess stocks of the other type. Large working inventories of both low- and high-sulphur fuels would be needed since shifting high-sulphur fuel, such as heating oil, to highway use would no longer be permissible, and shifting low-sulphur fuel to home heating would probably not be economical. PMAA also warned that many marketers would likely discontinue sales of one or the other type of diesel, which also could cause regional shortages.

EPA said that it elected not to establish a uniform standard for all diesel fuel.[1] However, the agency noted that there is no prohibition against nonhighway use of low-sulphur fuel. Low-sulphur fuel could be used for any application, and it was possible that the entire production of diesel fuel eventually might shift exclusively to low-sulphur.

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[1]EPA has authority under the Clean Air Act to regulate emissions from stationary sources of pollution such as residential and commercial heating furnaces, which use high-sulphur fuel. However, those sources burn fuel more efficiently, and particulate emissions, which the agency was targeting for control, are not as high as they are for mobile sources such as trucks. In addition, the agency did not want to shut the United States off from potential sources of fuel for heating purposes, such as Europe, during periods of peak demand. Currently, European suppliers cannot meet EPA's requirement for low-sulphur content.

EPA also rejected the argument that the difference between highway and nonhighway fuels would upset the competitive balance between truck and rail transportation. The agency found no evidence that a small difference in fuel prices would make truck transportation significantly less competitive with other modes. More importantly, EPA found that in many instances rail and water transport were not reasonable alternatives for truck transportation.

DIESEL FUEL PRICES INCREASED AS THE EPA RULE TOOK EFFECT, BUT HAVE SINCE DECLINED AND STABILIZED

According to a weekly survey of truck diesel fuel prices conducted by the Interstate Commerce Commission (ICC), the broad national average retail price of diesel fuel before October 1993 was approximately $1.14 to $1.15 per gallon, including taxes. However, in October 1993, as the EPA rule went into effect, the price per gallon of diesel fuel, all of which was then required to be low-sulphur, rose within a month to an average of nearly $1.28, and in some places considerably more.

A number of factors contributed to the sharp increase. As retailers tried to comply with the new rules and obtain scarce supplies of the new fuel, prices began to vary widely across the country. Spot shortages occurred as low-sulphur fuel transport was affected by Missouri River flood damage to a pipeline that normally moves more than 300,000 barrels of diesel fuel and other refined products daily from the U.S. Gulf Coast to the Midwest. As a result, average retail prices per gallon for low-sulphur fuel rose to $1.34 in the Chicago area. In addition, some of the worst shortages and highest prices, on average $1.47 per gallon, occurred in California, when additional concurrent state-mandated environmental requirements were imposed.

However, by the end of December 1993, the ICC survey price of low-sulphur diesel fuel dropped to about $1.10 per gallon and has since stabilized at around $1.14 to $1.15 per gallon--the average price of the high-sulphur diesel fuel, formerly used by trucks, that prevailed through 1992 and most of 1993. In addition, the pipeline has been returned to service, stocks of diesel fuel have been replenished, and refiners have found and are employing less expensive methods to lower the sulphur content of diesel fuel to acceptable levels.

LOW-SULPHUR FUEL IS MORE EXPENSIVE THAN HIGH-SULPHUR FUEL, BUT IMPACTS ON THE TRUCKING INDUSTRY ARE NOT YET CLEAR

Concurrently with the October 1993 EPA regulation banning high-sulphur diesel fuel for highway use, the Energy Information Administration (EIA), within the Department of Energy, began tracking, on a monthly basis, diesel fuel prices by sulphur content and sales type for its Petroleum Marketing Monthly publication. As reported there, the average wholesale price per gallon, excluding taxes, of low-sulphur fuel for the 6-month period of October 1993 to March 1994, the most recent period for which data are available, was 66.2 cents, and the average price for high-sulphur fuel was 60.9 cents per gallon.[2] The price difference between the two fuels narrowed between October 1993 and March 1994, and the average difference was 5.3 cents. As refiners find less expensive ways to remove the sulphur from fuel, over time the price difference is expected to narrow further.

According to a Bureau of the Census survey of the trucking industry's operating expenses, fuel costs are approximately 8 percent of total operating costs. Based on the current average difference of 5.3 cents per gallon between high-sulphur and low-sulphur fuels, truck operating costs could be approximately 0.5 percent higher than they would have been had trucks continued to use high-sulphur diesel fuel. This could represent an increase in operating costs of about $500 million annually for the trucking industry.

The impact on the trucking industry's profits will depend on the ability of truckers to pass on the higher fuel costs to shippers. The ability to do so depends on the responsiveness of shippers' demand to changes in truck rates. Because truck transport costs are usually a

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[2]EIA began to collect data on diesel fuel prices by sulphur content and sales type, excluding taxes, in October 1993, but in June 1994 a new survey of diesel fuel prices also conducted by EIA replaced the ICC survey of fuel prices. The new EIA survey will continue to include taxes as the ICC survey did, but EIA will incorporate other changes over time, such as expanding the survey base and providing weekly regional averages besides a national average. The difference between the wholesale prices cited above and the $1.14 to $1.15 that truckers pay at the pump is due largely to federal and state taxes.

relatively small fraction of a shipper's total costs, transport cost increases can usually be passed on to shippers. Higher truck rates could result in some traffic shifting to railroads, but for much truck traffic, rail is not a feasible alternative.

With only 6 months of data on fuel prices available since the imposition of the EPA requirement, it is too early to measure the impact of the fuel cost difference on the competitiveness of the trucking industry vis-à-vis the railroads. Also, it remains to be seen if the expected increase in engine life from the use of low-sulphur fuel will offset some of the increase in fuel costs and how much of the fuel cost increase can be passed on to shippers.

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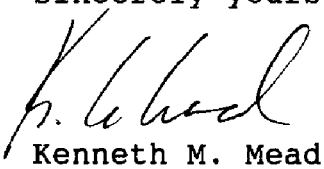
We appreciate the opportunity to assist you in providing information on this important issue. If you have any further questions, please do not hesitate to contact me on (202) 512-2834.

Sincerely yours,



Kenneth M. Mead
Director, Transportation Issues

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