

demand for increased fuel economy. They stated further that automobile buyers are rational and informed and that vehicle producers effectively respond to the extent of their preferences for fuel economy.

The Mercatus Center commented that NHTSA's analysis should include the foregone benefit to consumers from being unable to choose attributes they would prefer in a vehicle, *e.g.*, a 6.0L engine in instead of a 5.3L engine.

Lutter and Kravitz stated that NHTSA's analysis incorrectly assumes that consumers have inadequate information about vehicle fuel economy, and that they are unable to value correctly the future fuel savings resulting from improved fuel economy and as a consequence vehicle manufacturers supply inadequate levels of fuel economy. Public Citizen argued that there is no validity to the "consumer choice" argument made by manufacturers because vehicle offerings are driven, not by consumer choice, but by manufacturers' advertising.

Many commenters asserted that NHTSA had made a determination that there is a market failure in the provision of vehicle fuel efficiency. In the NPRM, the agency did not make any such determination. NHTSA noted a paradox that cost-saving technologies appeared to be penetrating the market to only a limited extent and therefore sought public comment on possible sources of market failure.

First, on the supply side of the vehicle market, it is well known that the light truck market is concentrated in three large producers who account for roughly 75 percent of market share, although there are a number of smaller producers that account for the remaining 25 percent. As several commenters noted, there is substantial evidence of competition among producers in the light truck market and indications that the three large producers are under increasing competition from the smaller producers. Under these circumstances, NHTSA maintains its previous statement that there is only a "remote" possibility that a supply side failure in the marketplace accounts for the limited market penetration of cost-saving, fuel-saving technologies.

Second, commenters discussed whether there could be a failure on the demand side of the market for fuel economy, rooted perhaps in the way that consumers perceive the private benefits of enhanced fuel economy and incorporate that information in their purchasing decisions. Several commenters noted that consumers are provided clear and substantial information about the fuel efficiency

ratings of different vehicles, including information about the operating expenses associated with these fuel efficiency ratings. However, the argument for demand side failure may have less to do with the absence of consumer information about fuel efficiency than with the overall complexity of the vehicle-purchasing decision, the number of other factors of greater salience to consumers, the temporal aspects of ownership and resale, and the difficulty of weighing fuel efficiency differences against other (especially nonmonetary) attributes of vehicles. Rational consumers, cognizant of decision making costs, may use simplified decision rules when purchasing vehicles that give limited, diminished or no weight to fuel economy differences—at least when projected fuel prices are relatively low. The agency does not know whether this demand-side argument is true and did not receive much comment that supports or refutes it. The agency believes the plausibility of this argument is less remote than the supply-side argument but still quite speculative. Regardless of how consumers perceive fuel economy benefits when they make purchasing decisions, it is clear that consumers will experience the benefits of cost-saving technologies when they operate their vehicles—assuming the engineering-economics information underlying the NAS Report is accurate.

C. Environmental

1. Foreign/Domestic Refining Split

General Motors disputed the agency's assumption that 45 percent of the reduction in fuel will come from domestic refineries and 55 percent will come from imported finished gasoline. General Motors stated that it believes that a 2000 Energy Information Administration's (EIA) study is the source of this estimate and that the study merely states that 55 percent of U.S. petroleum needs are imported (in the form of crude and refined products) and that the other 45 percent are met from domestic sources. General Motors claimed that there is little evidence that these same proportions apply to reductions in fuel use and that U.S. refinery emissions are just as likely to remain the same as the baseline under the proposed standard and should not be credited against the rebound effect without substantiation. After considering a variety of data sources, we have decided to use a 50/50 split to account for reductions in refining.

2. Use of the GREET Model/Value of Emissions per Ton

General Motors stated that NHTSA's benefits model incorrectly used emission factors from the "Greenhouse Gases and Regulated Emissions in Transportation" (GREET) model for refinery emissions. According to General Motors, NHTSA incorrectly included extraction emission factors in its analysis. General Motors calculated a reduced total societal benefit for three years of \$3,000,000 based on this error.

We agree with General Motors that we did not appropriately account for emissions reductions likely to result from gasoline savings. But we disagree with the contention that emissions attributable to petroleum extraction would be unaffected. Accordingly, we separated emission factors to account for different states in the petroleum cycle.

3. Greenhouse Gas Emissions for Carbon

Environmental Defense requested that NHTSA place a value on the benefit of avoided greenhouse gas emissions, while also noting: "the magnitude of the global warming externality is admittedly difficult to estimate." The value of avoiding greenhouse gas emissions is not quantifiable at this time. However, our analysis in the Environmental Assessment indicates that the established standards will result in an estimated 9.4 million metric tons of avoided greenhouse gas emissions over the 25-year lifetime of the vehicles (measured in terms of carbon equivalents).

D. Additional Comments

1. Limited-Line Light Truck Manufacturers

Porsche AG, Porsche North America, Inc. (Porsche) urged NHTSA to establish a separate standard or standards for limited-line truck manufacturers, possibly using a graduated standard based on the number of light truck models offered. According to Porsche, smaller manufacturers are penalized because they do not sell small economy vehicles that are capable of producing offsetting credits.

Limited-line manufacturers, according to Porsche, must struggle to meet CAFE because of their limited resources and a limited truck line that does not allow them to average their fleet fuel economy. Therefore, if their vehicle line does not meet the current standard, they must pay penalties or incur disproportionate costs in attempting to meet the applicable standard.

With an annual worldwide production of more than 10,000