V814640

BEFORE THE
ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C.

COMMISSION APPROVED

| | |
|---|---|
| Certification Program for Trading and/or Banking of Oxides of Nitrogen and Diesel Particulate Emission Credits for Heavy Duty Engines | 40 CFR Part 86<br>[AMS-FRL-3107-6] |

# COMMENTS OF THE BUREAUS OF COMPETITION, CONSUMER PROTECTION, AND ECONOMICS OF THE FEDERAL TRADE COMMISSION

Washington, D.C. 20580
February 23, 1987

* These comments represent the views of the FTC's Bureaus of Competition, Consumer Protection, and Economics and do not necessarily reflect the views of the FTC or any individual Commissioner. The Commission has, however, voted to authorize submission of these comments.

## I. INTRODUCTION

The staff of the Federal Trade Commission (FTC) submits the following comments in response to the proposal of the Environmental Protection Agency (EPA) to establish a certification program for the trading and/or banking of emissions credits for heavy duty engines. In making this choice, we recommend that the EPA take into account the procompetitive effects of allowing the broadest possible averaging and trading across engine classes.

On March 15, 1985, the EPA issued a final rule promulgating revised standards for oxides of nitrogen (NOx) emissions from heavy duty engines. It also established standards for emissions of particulate matter from diesel engines.[1] The EPA is now considering the most economical means of attaining those standards. It has solicited comments on a proposal to allow firms to average NOx and particulate matter emissions across their engine production, to trade emissions credits between firms, and/or to bank emissions credits for use in later years in order to reduce the cost to society of meeting the standards while still achieving the regulatory objectives.[2]

The strictest possible regulatory environment would require every engine of each manufacturer produced in each model year to meet the standards for NOx and particulate emissions. The EPA could, however, establish a less restrictive alternative regulatory scheme involving averaging, trading, and/or banking, while still achieving the desired pollution reduction. Intrafirm averaging would permit a firm to produce some engines that exceed the emissions standards provided that it also produces engines that are below

---

[1] 50 F.R. 10606, March 15, 1985.

[2] 51 F.R. 40986 (November 12, 1986), 51 F.R. 31959 (September 8, 1986).

the standards and that the average level of emissions does not exceed the standards. Interfirm trading would permit firms to earn credits for engines producing less than the standard levels of emissions; these credits could then be sold to manufacturers whose engines exceed the emissions standards. Banking would permit the averaging of emissions across model years. To further increase the number of options, these regulatory approaches may be applied to any of several different categories of engines. Averaging, trading or banking could take place only within subclasses of engines (i.e., heavy duty gasoline, light heavy duty diesel, medium heavy duty diesel, and heavy heavy duty diesel), across combinations of subclasses (e.g., all heavy duty diesel engines), or across all heavy duty engines. The EPA is considering all of these alternatives.[3]

## II. FEDERAL TRADE COMMISSION EXPERIENCE

The FTC is an independent regulatory agency charged with the responsibility for fostering competition and safeguarding the interests of consumers. In discharging that responsibility the FTC staff appears before regulatory agencies at the federal, state and local level to suggest the most competitive and efficient methods of achieving regulatory policy goals consistent with consumer welfare interests. These comments will therefore address (and be limited to) the competitive and consumer issues raised by the EPA's proposal.

The FTC staff has studied and commented upon similar innovative proposals for regulatory flexibility. For example, comments have been made

---

[3] Since the EPA has not conducted an in-depth study of the effects of banking, we will not discuss the issues raised by the banking of emissions credits.

to the Federal Aviation Administration concerning the auctioning of airport landing slots,[4] to the National Highway Traffic Safety Administration on Corporate Average Fuel Economy Standards,[5] and to the Federal Communications Commission concerning the auctioning of the radio spectrum.[6]

## III. THE ECONOMIC BENEFITS OF AVERAGING AND TRADING EMISSIONS CREDITS

The EPA has the responsibility to ensure that pollution from various sources does not exceed the levels set by Congress. There are several ways in which these legislatively-determined levels can be achieved, however, and each method will result in different costs to society.

An obvious way of achieving these levels is to require that each engine sold produce no more than the standard level of emissions. However, this is likely to be a very costly means of meeting the Congressional standard. It fails to recognize that the cost of reducing emissions of pollutants is lower for some engines than for others. If society decided to reduce pollution by one unit, and took that unit from an engine with a low cost of pollutant abatement rather than from an engine with a high cost of abatement, the

---

[4] Comments of the Bureaus of Competition, Consumer Protection and Economics of the Federal Trade Commission on Slots Transfer Methods--Notice of Proposed Rulemaking, Before the Federal Aviation Administration, Department of Transportation, Washington, D.C., Docket No. 24105, Notice No. 84-6, 14 C.F.R. Part 93, July 25, 1984.

[5] Comments of the Bureaus of Competition, Economics and Consumer Protection of the Federal Trade Commission in Re: Passenger Automobile Average Fuel Economy Standards Model Year 1987-88, Before the National Highway Traffic Safety Administration, Docket No. FE-85-01, March 26, 1986.

[6] Comments of the Federal Trade Commission to Mark Fowler, Chairman, Federal Communications Commission, October 29, 1986.

total amount of pollution would still be reduced by the desired amount, but the cost to society of achieving this reduction would be less.

One way of reducing the societal cost of compliance would be to permit firms to average emissions over their entire production of engines. For any level of engine production, a firm will strive to achieve any given standard of emissions at the lowest possible cost. The minimum level of cost will be achieved when the marginal cost to the firm of reducing emissions by one unit is the same for all the engines it produces. If engine manufacturers are permitted to average the pollution over their entire production of engines or over a subset of their production, they will design their engines in such a way as to equalize the costs of additional units of pollution reduction for each engine and so minimize their total cost. As a result, any statutorily mandated reduction in total pollution can be achieved at lower cost to society with averaging than if standards were set for each individual engine.

A further reduction in cost can be achieved by allowing the averaging of engine emissions across firms. This could be done by giving credits to those firms whose engines emit less pollution than the standard, and allowing them to sell these credits to other firms whose engines exceed the standard. The trading of emissions credits in a competitive market would result in equalization of the marginal costs of pollution reduction across all producers, and a lower total cost to society of complying with the emissions standards than if interfirm trading were not permitted.

To put this point another way, in a system where trading is allowed the firms that can inexpensively reduce pollution will do so, and the firms

that cannot inexpensively reduce pollution will have an incentive and ability to buy credits rather than having to redesign their heavy duty engines at greater cost.

The potential benefits of averaging and trading are well illustrated in the analysis of these proposals done for the EPA by Sobotka & Co.[7] That study indicates that the pollution standards will be achieved at lowest cost to society by permitting the averaging and trading of credits over all heavy duty engine production.

While the Sobotka study indicates substantial gains to society from allowing the trading of emission credits, the FTC staff believes that it may understate the relative benefits of trading across all engines, as opposed to either intrafirm averaging or interfirm trading only within individual subclasses of heavy duty engines. The calculations in the Sobotka study are made on the assumption of that each firm will produce a fixed number of engines. The methodology therefore does not allow for competitive effects caused by the regulations, i.e., an increase or a decrease in the number of engines produced or in market shares. This causes the study to overlook two reasons why it could be important to permit averaging across broader classes of engines: (1) to avoid competitive problems in some highly concentrated subclasses; and (2) to prevent artificial incentives for mergers. These two points will be discussed in turn.

---

[7] Sobotka & Company, Inc., "Savings from the Application of Trading and Averaging to Heavy Duty Engine Regulation," August 25, 1986 (hereinafter "Sobotka study").

## IV. THE TRADING OF CREDITS ACROSS ALL ENGINES WILL HELP AVOID POTENTIAL COMPETITIVE PROBLEMS IN CERTAIN ENGINE SUBCLASSES

Trading credits across subclasses will reduce the risk of competitive harm. As the market share data in the Sobotka study shows, production of engines in certain subclasses is now highly concentrated. As a result, if trading is restricted to individual subclasses either the buyer or seller of credits will be in a position to exercise market power. For example, there are only three producers of heavy duty gasoline engines. If trading were limited to this subclass, there would of necessity be either a single seller (a monopolist) or a single buyer (a monopsonist) of credits.[8] This could cause competitive problems in the buying and selling of those credits.

A monopolist seller would have an incentive to restrict sales of emissions credits below the perfectly competitive level. This is so for two reasons. First, a monopolist can sell additional credits only by reducing the price it charges for those credits, while perfectly competitive sellers can sell additional credits without driving down the price. This negative impact of additional credit sales on the price received by a monopolist provides the monopolist with an incentive to sell fewer credits than would be desirable from the viewpoint of society.

Second, the monopolist is selling credits to firms that are direct competitors in the sale of engines. A higher price for credits would raise

---

[8] Since the number of credits sold by firms in the tradeable class must equal the number bought, there could not be three buyers or three sellers of credits.

the rivals' cost of producing engines, and so lead to lower output and higher prices in the engine market to the benefit of the credit seller.[9]

For similar reasons, a monopsonistic buyer of credits can buy additional credits only by paying a higher price for credits, while perfectly competitive buyers can purchase additional credits without driving up the price. This adverse impact of additional credit purchases on the price the monopsonist must pay for credits provides the monopsonist with an incentive to buy fewer credits at a lower price than would be efficient. Since credits are produced by producing engines, this decreases the number of engines produced and raises their prices, to the ultimate benefit of the monopsonistic credit purchaser.

Any reduction in output and higher prices caused by these unfavorable competitive effects of restrictions on trading are undesirable because they reduce consumer welfare. Furthermore, they may work against the goal of reducing pollution, since higher prices for new engines create an incentive to keep in service older engines with higher pollution levels.

This potential competitive problem can best be avoided by not restricting trading to specific subclasses. With unrestricted trading there would be 20 potential buyers or sellers in the markets for emissions credits, and so the ability of any one firm to exercise market power is reduced.

Of course, the potential competitive problem just discussed provides an argument for allowing trading across all classes of heavy duty engines rather than restricting it within narrow subclasses. This potential problem is not an argument for prohibiting trading altogether rather than allowing it within

---

[9] See S. Salop and D. Scheffman, "Raising Rivals' Costs," 73 American Economic Review, May 1983, 267.

subclasses. Even restricted trading that is below the perfectly competitive level is better than no trading at all.

## V. THE TRADING OF CREDITS WILL HELP DISCOURAGE INEFFICIENT MERGERS

As noted by the EPA staff,[10] trading is procompetitive in that it allows the benefits from averaging across different types of engines to be extended to firms with specialized production that would not be able to benefit from such averaging in the absence of trading. Trading, therefore, prevents the necessity of merging in order for firms with specialized production to get the benefit of averaging.

Trading might therefore prevent certain inefficient mergers. Suppose, for example, that there were two firms with different costs of emissions reduction under a regulatory system that permitted intrafirm averaging but not trading. If the two firms were to merge, they could reduce their joint costs by $10 million through averaging. Suppose, however, that diseconomies from the merger would offset $4 million of this gain. The firms would still merge, since merger would give them a net gain of $6 million. However, the firms could achieve the same $10 million of benefits if trading were possible, and could do so without suffering the $4 million in diseconomies. The trading approach would therefore be preferable as long as the transactions costs of emissions credit trading were less than $4 million, as they surely would be.

---

[10]"Issue Analysis: Trading and Banking of Heavy-Duty Engine NOx and Particulate Emissions Credits," Staff Report, Standards Development and Support Branch, Emission Control Technology Division, Office of Mobile Sources, Office of Air and Radiation, U.S. Environmental Protection Agency, May, 1986.

## VI. CONCLUSIONS

We believe that the unrestricted averaging and trading of emissions credits for all heavy duty engines is the most procompetitive means of attaining emissions reductions. The EPA should consider these procompetitive gains in determining the extent to which averaging and trading of emissions credits will be allowed.