Europe Mirrors U.S. Debate on Car Exhaust

Paris. Anyone familiar with the U.S. debates in the early 1970's over how to reduce the environmental damage caused by automobile exhausts might be excused a sense of déjà vu in listening to the fierce controversy on these topics that has been taking place in Europe in recent months.

In the American case it was the state of California that forced the pace. Pressured by an increasingly militant environmentalist movement to take steps to reduce the problem of photochemical smog, California threatened to impose harsh new requirements on all cars entering the state. This swiftly prompted the federal government to introduce strict regulations at the national level.

In Europe, the driving seat has been occupied by West Germany, whose government has been facing a growing clamor for any action that can help limit the destruction of the German forests by acid rain and other atmospheric pollutants. The clamor is coming from all points on the political spectrum but perhaps most vociferously from the environmentalist party, the Greens.

Like those of California, Germany's first proposals were Draconian. Last year, the Minister of the Interior, Friedrich Zimmermann, announced that all cars driven on German roads would be required by the end of 1986 to meet the emission standards developed by the U.S. Environmental Protection Agency (EPA) for nitrogen oxides, hydrocarbons, and carbon monoxide.

Although no particular technology was specified, the short time scale available offered only one realistic solution: the retrofitting of U.S.-style catalytic converters to remove these pollutants from a vehicle's exhaust.

The rest of Europe, however, quickly cried "foul." Car companies such as Italy's Fiat, France's Renault, and Britain's British Leyland argued that although the $300 to $500 cost of a catalytic converter could be readily absorbed into the selling price of a large Audi or Mercedes—many of which had already been equipped in this way to meet the needs of the American market—adding the same costs to the middle-sized family cars that form the bulk of their output was entirely another matter.

These companies also took to their governments their claim that emission standards adopted by the EPA to meet American driving conditions were not necessarily the most appropriate for Europe, whether on the German autobahns, where there are no speed limits and average speeds are over 100 miles an hour, or the more limited confines of European cities.

The governments in turn referred the debate over emission controls to the Commission of the European Economic Community in Brussels, one of whose responsibilities is to harmonize environmental regulations across Europe in the interests of cross-border trade.

"We felt that the Germans were rushing too fast into it," says science attaché Steven Brown in the British embassy in Bonn. "In particular, we felt that they were not taking [into account] the international implications of their decisions."

The British government in particular soon became a champion of the view, widely backed in industry, that a more effective way of meeting the U.S.-level emissions being sought by the Germans was through the development of more efficient engines. It argued that raising the air/gasoline ratio from current levels of 15:1 to about 22:1 could meet the emission levels merely by adding $25 to $50 to the cost of a car and at the same time considerably increase its fuel efficiency.

Several companies have been working on this new technology for some time, but its development is still several years away. However, an immediate requirement for catalytic converters, they argued, would mean the diversion of large teams of research scientists away from what they considered this more rational solution.

Many long months of bargaining ensued. Germany insisted that it would introduce controls unilaterally if a satisfactory European policy was not found, while its Common Market partners were reluctant to be pushed by what French car makers described as a "German diktat" into measures that threatened to undermine still further their already weak automobile industries.

A compromise was eventually reached in Brussels on 21 March. Emission limits broadly in line with those currently enforced in the United States will be introduced first on cars with an engine size greater than 2 liters. The limits will have to be met by new models of such automobiles introduced after October 1988 and by older models sold after October 1989.

Smaller cars will be given longer in the hope that sufficient time will be allowed for the development of the lean-burn technology. Those between 1400 and 2000 cc, which make up 60 percent of the European market, will not be required to meet the new standards until October 1993. For those below this engine size, the final date will also be around this period, but the precise standards they are required to meet will be modified.

Equally important from the European industry's point of view, U.S. emission levels will not be adopted directly, as West Germany had originally been pushing for. Instead, a number of technical committees have been set up to produce within the next few months figures for emission limits that, while meeting the same environmental goals as the United States, have been adapted to European driving conditions.

One proposal already put forward by the European Commission, for example, would impose tighter restrictions on the emission of nitrous oxides, but increase the maximum limits permitted for hydrocarbons and carbon monoxide.

The compromise solution, like that simultaneously adopted to begin the elimination of lead from gasoline (*Science*, 5 April, p. 37), has been condemned as a sellout by opposition groups in Germany. The Greens, for example, issued a statement complaining that the result would be that no significant improvement in the acid rain problem could be expected until 1993 at the earliest. The European Environmental Bureau in Brussels complained similarly that the measures were "too late and too little."

Other European governments, however, feel they have brought the Germans' desire for rapid action to reduce emissions on to a more rational, scientific basis. "There was no disagreement on the principle; the question was how to do it," says Brown.—**DAVID DICKSON**