

Forum

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How effective is VET in fighting pollution?

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Special to The Courier-Journal

HOW MUCH is it worth to catch an over-polluting vehicle?



D.E. Schansberg

Vehicle emission testing is a topic that can arouse a lot of passion. For example, those who greatly value the environment are fond of most attempts to reduce pollution, while those who greatly value civil liberties worry about unwarranted invasions into their privacy. Others believe that this pollution-reducing effort is inefficient, imposing costs on them that are unnecessary and otherwise aggravating.

Economists are quick to note that unregulated markets do not deal effectively with pollution when property rights can't be easily established. In such cases, the behavior of individuals will impose negative costs on others — costs that the decision-makers are likely to ignore or downplay. In the case of air pollution — firms spewing waste from a smokestack or individuals pumping noxious gases from their cars, tailpipes — decision-makers are unlikely to naturally account for the costs they impose on society. As such, in theory, the government has a role in regulating the behavior of firms and individuals by limiting their pollution in some way.

That said, in practice, any given regulatory approach to reducing pollution may be ineffective or inefficient. Thus, people who are concerned about the environment and the economy must remain vigilant in regulating the actions of regulators.

What are the benefits and costs of vehicle emission testing as practiced in Jefferson County? Administrators of the VET program are naturally prone to emphasize its benefits — better air quality, improved health,



and so on. But what about the costs? The costs of the VET program to society are the resources used to fulfill its mandates. These include the direct cost of the test (\$11), the opportunity cost of one's time to take the test, and the costs of vehicle wear and tear and air pollution from taking the test.

Assuming an hour of time (valued at the average wage rates in Jefferson County) and seven miles of driving (valued at the IRS deduction for automobile depreciation), the cost of the VET program is over \$12.5 million for testing cars and light trucks. This translates to an average of \$360 in resources devoted to catching each "bad" vehicle. Moreover, the VET program causes tons of additional pollution each year as people drive to and from a VET center and idle their vehicles waiting for the test.

Whether the VET program is worth these costs is one question. But the VET program can also be modified to allow it to

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A recent protest of the Jefferson County vehicle-emission-testing program.

VET TESTING

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operate in contexts where it is effective and discontinued in contexts where it is inefficient. For example, in 1999, the VET program tested 121 cars and light trucks with a model year of 2000, but found none of them to be below standard. As such, testing those cars was bad for the environment and the economy — by definition — since there were no benefits, while the environment was harmed by additional emissions and the economy was harmed by subjecting 121 car-owners to a completely useless procedure.

Looking at cars and light trucks of model year 1998 or later, of the 36,116 tested, only about 50 failed. The cost to society of catching those 50 vehicles was over \$1.3 million — more than \$25,000 per bad car. To catch 0.1 percent of all over-polluters, we expended 10 percent of the resources devoted to VET testing. Moreover, it turns out that the pollution created by testing those 36,000 vehicles considerably

exceeds the marginal gains from improving the emissions of those 50 cars. In addition to the burden this imposes on individuals and on society, it is sad and ironic to think that VET testing, in some cases, actually harms the environment. One more example: Looking at model years 1995 and later, we expend about \$4.9 million (more than \$5,300 per car) to catch the 0.6 percent of the cars made in those years that are high-polluters. (The VET is 20 times more likely to catch a pre-1995 vehicle.) As a result, we devote 37 percent of our resources to catching only 2.5 percent of all bad cars.

So what should we do? Good people will disagree on the level of resources we should devote to catching over-polluters, but assuming for now that we keep the VET, a few conclusions seem clear. We should immediately stop testing cars manufactured within a year of the test date. And it seems likely that we should not test cars produced within four years of the test date. We could also consider biennial testing, which would diminish the program's effectiveness a bit, but also significantly reduce its costs.

Some people express concern about the equity of exempting certain (newer) vehicles. But older (pre-1981) vehicles are already judged by a more lenient standard and owners of newer cars

already pay a higher price for their cars, given their more advanced, pollution-abating technology. And since, for example, 1984 vehicles are 263 times more likely to fail as a 1998 or later model, why is it equitable to use a uniform test procedure on such vastly different cars? For the moment, assume that it is equitable that all owners should pay for the test, independent of the likelihood of their vehicle failing the test. It is still more efficient and more environmentally friendly to make the owners of newer cars pay for the test but exempt them from taking the test. Instead, one could simply tax them directly and use the money for a project that would be better for both the economy and the environment.

Note also that the Jefferson County VET program has been changed recently. Gov. Patton and the 2000 General Assembly acted to exempt motorcycles, private charter buses, pre-1968 vehicles, and commuters. Ironically, the first three categories are among the highest and most fre-

time, scheduled test.

Finally, although the VET program takes a lot of credit for reducing vehicle emissions, the primary cause is clearly the remarkable changes in the manufacturing design of vehicles. Emissions from new cars and light trucks have decreased by more than 90 percent since the late 1960s. In a word, VET program activity is not necessarily equivalent to a cost-effective or even a significant contribution to air quality.

It is common knowledge that a few vehicles produce a lot of smog. In principle, it would be most equitable and efficient if we could simply deal with the over-polluters without subjecting innocent drivers to a burdensome test. Fortunately, the technology now exists to approximate this through "mobile testing." This method uses a device which measures emissions from the roadside, much like a police officer measures speed with a radar gun. It has the advantage of being a random event — and it is far less expensive, averaging less

than \$1 per test to gather the data and enforce the standard. (There are some potential drawbacks, but they are not prohibitive.) While a radical departure from the status quo, the use of mobile testing would improve air quality at a lower cost to society.

There is one other significant factor. The EPA mandates that "non-attainment areas" like Jefferson County have a State Implementation Plan (SIP). More-

over, the EPA believes VET programs to be effective — at least in general. Thus, it is likely that governments will use them independent of whether they are actually effective. So policy makers have two goals: improving air quality efficiently and dealing with EPA constraints. Ironically, the latter may conflict with and be a higher priority than the former. That said, the EPA does allow flexibility in establishing SIPs and using VET programs. As such, our policy-makers should aggressively make the case that our current VET program does not reduce air pollution efficiently. The status quo falls too far short of the mark.

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quent over-polluters. Compared to 1998 and later model vehicles, motorcycles are 95 times more likely to fail, buses are 78 times more likely, and pre-1968 vehicles are 83 times more likely. If the goal is to help the environment and the economy, exempting these vehicles first is perverse.

All that said, there are reasons to be skeptical about the general effectiveness of a VET program. The most frequent measure of a VET program's accomplishments are calculations from the EPA's computer models of VET programs. However, the scientific literature has provided evidence that these models overestimate program effectiveness. Moreover, although repairs on so-called "super-emitters" are almost always effective, repairs on lower-emitters have mixed results. In addition, one should be concerned with tampering and other forms of fraud when using a one-