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A Clean Air Option: Cash for Clunkers

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Summary

The Clean Air Act Amendments of 1990 encourage states to pursue market-based approaches to improve air quality.[1] An Accelerated Vehicle Retirement (AVR) program, commonly referred to as Cash for Clunkers, is designed to provide an economic incentive for the owners of highly polluting vehicles to retire their automobiles permanently from use and to provide greater flexibility for private industry to reduce emissions by sponsoring such a program. As an alternative to retiring vehicles, some programs also may offer to pay for repairing certain automobiles to comply with a state's emissions standards.

A small number of states have tested AVR programs or are developing ones for future use. This report includes information on completed pilot projects in California, Colorado, Delaware, and Illinois and on the current status of AVR programs in California, Illinois, Texas, and Virginia. Other states may be considering AVR programs. So far, states have implemented these programs on a small scale as an experiment to assess their ability to reduce emissions.

AVR programs could benefit private industry, state governments, and the public by providing a potentially more economical and flexible approach to improving air quality. However, implementing an AVR program can be controversial. Automobile collectors and the automobile repair industry frequently oppose retiring vehicles. Misunderstandings over the voluntary nature of these programs have contributed to other opposition. AVR programs encourage owners to voluntarily retire highly polluting vehicles from use but do *not* require owners to do so.

Background

The objective of an AVR program is to provide an economic incentive for owners of highly polluting vehicles to retire their automobiles permanently from use or to repair them to comply with a state's emissions standards and to provide private industry with greater

[1] 42 U.S.C. 7410. State Implementation Plans for National Primary and Secondary Ambient Air Quality Standards.

flexibility and a more cost-effective option in meeting emissions requirements. Private corporations may earn pollution credits for contributing funding to a program to purchase eligible vehicles.[2] A state or a sponsoring corporation would offer to purchase a highly polluting vehicle from the owner at a fixed price. If the owner agrees to sell the vehicle, a program would permanently remove it from the road by scrapping it and recycling the metal. Some programs also may offer to pay the owner for repairing a vehicle so that it complies with the state's emissions standards.

The extent to which a state or a sponsoring corporation may be involved in implementing an AVR program can vary widely. Some states may entirely administer a program and limit a sponsoring corporation's involvement to funding the purchase of eligible vehicles. Other states may limit their involvement to awarding pollution credits and require a sponsoring corporation to assume a primary role in administering and funding a program. AVR programs also are not limited to a single corporate sponsor; multiple corporations may collaborate to fund a program jointly to earn pollution credits.

In February 1993, the Environmental Protection Agency (EPA) issued guidelines to assist states in developing an AVR program and in estimating the amount of the pollution credit to award to a sponsoring corporation.[3] These guidelines are not exhaustive, and states have the flexibility to tailor a program to address local interests and the needs of participating corporations. However, if a state includes an AVR program in its State Implementation Plan (SIP) to meet federal air quality standards, the EPA would review the proposal for the program.[4]

Proponents argue that AVR programs could provide states with another option to meet federal air quality standards, allow private industry greater flexibility in meeting emissions requirements, and offer the public an economic incentive to improve air quality. However, implementing an AVR program is potentially controversial. Automobile collectors are concerned that a program may scrap vintage vehicles, and the automobile repair industry argues that retiring vehicles may reduce the parts supply for older automobiles and decrease the demand for repairs. Programs can address these concerns by restricting vintage vehicles from eligibility, allowing the public to purchase parts before scrapping vehicles, and including an option to repair certain vehicles. Some also argue that retiring the oldest vehicles could reduce the public's access to the most affordable automobiles. Misunderstandings about the voluntary nature of these programs have caused some to claim that state governments may confiscate and scrap a highly polluting

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[2] A private corporation may earn a pollution credit by reducing emissions from sources other than its own and apply the credit to ease emissions requirements on its stationary sources such as smokestacks. For example, contributing funding to an AVR program may be more economically attractive than modifying a stationary source to pollute less.

[3] 58 *Federal Register* 11111, February 23, 1993.

[4] The Clean Air Act requires each state to submit a State Implementation Plan to define its strategy for achieving or maintaining National Ambient Air Quality Standards (NAAQS). States have the flexibility to develop a variety of measures to improve air quality. The EPA reviews each state's plan to evaluate whether it will meet NAAQS and may reject or revise either the entire plan or specific measures that fail to reduce emissions sufficiently to meet these standards. A state may suffer penalties, such as a reduction in federal highway funding, if it does not alter its plan according to EPA's revisions.

vehicle without the owner's consent. AVR programs encourage owners of highly polluting vehicles to voluntarily retire their automobiles from use but do *not* require owners to do so.

Developing a Program

States use a variety of titles to refer to an AVR program. The most common titles are Accelerated or Advanced Vehicle Retirement, Cash for Clunkers, Clean Cars, and Vehicle Scrappage programs. The following factors are integral to developing a program and determine how it functions:

Eligibility

The two most common methods to identify eligible vehicles are by model year and by emissions waivers. Selecting a vehicle by model year assumes that the oldest automobiles will be the highest polluters, but some argue that an older automobile that is well maintained may not necessarily be a high polluter. If a program uses the model year to determine whether a vehicle is eligible, the automobile must have been registered for recent use in the local area. Selecting waivered vehicles ensures that the program will identify high polluters. State inspection and maintenance (I&M) programs require a vehicle to meet mechanical or emissions requirements before registering it and granting a valid license tag for operation on public roads. The owners of vehicles that fail to meet requirements typically are allowed a grace period to make repairs necessary to correct any noted deficiencies. If the cost to repair the vehicle exceeds the limit established by the I&M program (generally less than $450), the owner usually receives a waiver to register the vehicle and obtain a license tag.

Purchase Price

A state or sponsoring corporation would offer a fixed price to purchase an eligible vehicle from the owner. If the price is too low, the program will not be able to attract enough vehicles to reduce emissions significantly. If the price is too high, the total cost of the program may exceed other options for reducing the same amount of overall emissions. A program may offer a single price or may use a scale of prices based on the model year. Purchase prices have ranged from $500 to $1,000 in past programs.

To Scrap or Repair

AVR programs retire purchased vehicles by scrapping them and recycling the metal, but repairing certain vehicles also can be effective in reducing emissions. Scrapping the oldest and most polluting vehicles may be more economical for a program because the repair cost may *exceed* the purchase price.

State Programs

Completed Pilot Projects

A few states have experimented with AVR programs on a small scale to test their ability to improve air quality. California, Colorado, Delaware, and Illinois have completed pilot projects and have conducted studies to estimate the impact of retiring and repairing vehicles on emissions levels. The most common method to estimate the amount of reduced emissions was to select a random sample of purchased vehicles and measure the exhaust at the tailpipe before scrapping or repairing them. Of these four states, Illinois was the only state to measure the tailpipe emissions of *each* purchased vehicle instead of using a random sample.

California.[5] In 1990, the Union Oil Company of California (Unocal) worked with the state's South Coast Air Quality Management District in the Los Angeles metropolitan area to implement the first AVR program, the *South Coast Recycled Auto Project (SCRAP)*. Vehicles older than the 1971 model year and that had been registered for use in the Los Angeles area for at least 6 months were eligible. Unocal purchased each eligible vehicle for $700 from the owner and then crushed the vehicles to recycle the metal. The program scrapped 8,376 vehicles and estimated that it reduced 12.8 million pounds of pollutants (including hydrocarbons, carbon monoxide, and nitrogen oxide).[6]

Colorado.[7] From December 1993 to April 1994, the state implemented a Total Clean Cars Program that included an AVR program in the Denver metropolitan area. Total Petroleum Inc. donated $500,000 to purchase eligible vehicles. The program identified eligible vehicles using emissions waivers and the state's Smoking Vehicles Hotline. It scrapped older vehicles that were not economically feasible to repair but repaired newer vehicles to meet state inspection standards. The purchase price for each scrapped vehicle was $1,000, and the program paid up to $500 to repair a vehicle. Before scrapping vehicles, the state notified the public through the Old Car Council to allow collectors to salvage parts. The program scrapped 271 vehicles and repaired 218. The state estimated that the program reduced 204.6 tons of carbon monoxide at a cost of $2,294 per ton and 41 tons of hydrocarbons at a cost of $11,438 per ton.

Delaware.[8] In 1992, the U.S. Generating Company, an independent electric power producer, and the Delaware Department of Transportation implemented an AVR program.

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[5] The Union Oil Company of California. *SCRAP: A Clean Air Initiative from Unocal*. 1991. Los Angeles, California. pp. 1-3.

[6] The Office of Technology Assessment analyzed the costs and benefits of a vehicle retirement program using data from this pilot project.

U.S. Congress. Office of Technology Assessment. *Retiring Old Cars: Programs to Save Gasoline and Reduce Emissions*, OTA-E-536. July 1992. Washington, DC. 30 p.

[7] Colorado Department of Public Health and Environment. *Review and Analysis of the Total Clean Cars Program*. December 1994. Denver, Colorado. pp. I1-I5.

[8] Resources for the Future. "Will Speeding the Retirement of Old Cars Improve Air Quality?" *Resources*. Spring 1994. Washington, DC. pp. 7-15.

Vehicles older than the 1980 model year or that had received emissions waivers were eligible. The program scrapped 60 waivered vehicles and 65 pre-1980 vehicles. The U.S. Generating Company purchased each vehicle from the owner for $500. Resources for the Future studied Delaware's program and estimated that it reduced hydrocarbons by 15 tons at a cost of $4,000 per ton for the waivered vehicles and at a slightly higher cost for the pre-1980 vehicles. The study compared this cost to the option of using reformulated gasoline to reduce hydrocarbons and estimated that the cost would have been $3,900 per ton, slightly less than the per vehicle cost of the AVR program.

Illinois.[9] In 1993, the Illinois Environmental Protection Agency implemented an AVR program in the Chicago metropolitan area in cooperation with Abbott Labs, Amoco Oil, Clark Oil, Commonwealth Edison, Mobil Oil, Peoples Gas, and Unoven Oil. Vehicles older than the 1980 model year or that had received emissions waivers were eligible. The program purchased and scrapped 207 vehicles. The price paid for each vehicle ranged from $647 for a 1968 model year automobile to $902 for a 1979 model year automobile. The program estimated that it reduced 43.6 tons of hydrocarbons at a cost of $7,575 per ton and 7 tons of nitrogen oxide at a cost of $47,205 per ton. A survey of participants indicated that 1984 was the average model year for a vehicle that replaced a scrapped one.

Current Status

Of the following states, Texas and Virginia have designed AVR programs but are not operating them, and California and Illinois are developing large scale programs to implement in future years. Some small AVR programs currently are operating in California. Other states may be considering AVR programs, but telephone contacts with EPA and state officials did not identify any additional state programs.

California.[10] California's SIP includes a measure to develop an AVR program that would begin in 1999 and continue through 2010. From 1997 to early 1999, the state will conduct a pilot project to determine how to design the most effective program. Beginning in late 1999, the state plans to scrap 75,000 vehicles per year in the South Coast Air Basin through 2010. The California Air Resources Board (CARB) is developing regulations for the program and is conducting workshops with the public to address the interests of automobile collectors and the automobile repair industry. The state's air quality management districts currently are operating AVR programs, but the large scale program will incorporate them when it begins in 1999. Some have questioned whether scrapping 75,000 vehicles per year will achieve the program's goal of reducing 25 tons of pollutants per day. The CARB recently indicated that the program may need to scrap as many as 275,000 vehicles in 2010 to attain this goal. The Union of Concerned Scientists (UCS) estimates that the program would achieve only 40% of the projected reduction in emissions.[11]

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[9] Illinois Environmental Protection Agency. *Pilot Project for Vehicle Scrapping in Illinois: 1992 Cash for Illinois Clunkers*. May 1993. Springfield, Illinois. pp. 1-6

[10] Telephone interview with Krista Fregoso, California Environmental Protection Agency.

[11] California Environmental Protection Agency. *Inside CAL EPA*. July 12, 1996. Sacramento, California. pp. 6-7.

Illinois.[12] The Illinois Department of Environmental Protection is developing rules for an AVR program to implement in future years. The state considers its pilot project in 1993 to have been successful in reducing emissions and plans to implement its new program on a larger scale across the entire state. Some private corporations have expressed an interest in contributing funding to the future program to earn pollution credits.

Texas.[13] The state has an AVR program but is not operating it because private industry has not expressed an interest in contributing funding to a program to earn pollution credits. Under the current program, the state would use average emission estimates developed by the EPA for certain model years to evaluate the amount of a pollution credit, but the state is developing a new AVR program to replace the current one. The new program will provide revised procedures for identifying the most polluting vehicles and new methods for measuring the emissions reduced by scrapping each vehicle, instead of depending on EPA estimates.

Virginia.[14] In early 1996, the state passed a law to authorize the Virginia Department of Environmental Quality to participate in an AVR program with private industry to award pollution credits, but private corporations have yet to express an interest in sponsoring a program. The state would not provide funding for a program and would not regulate how the program would function. The state only would evaluate the level of emissions that are reduced from scrapping each vehicle to determine the amount of the pollution credit. The new law also includes provisions that address the interests of automobile collectors and the local automobile repair industry by requiring a sponsoring corporation to notify the public before scrapping vehicles that are collectible or that have parts for which there is a small supply. The public has up to 20 days to purchase either the entire vehicle or selected parts before the vehicle would be scrapped.

Conclusion

A few states have experimented with AVR programs on a small scale, but whether such programs would improve air quality on a large scale in other states is uncertain. AVR programs are potentially more effective in states with large metropolitan areas where automobile exhaust contributes significantly to air pollution and in states with heavy industry where there is a demand for pollution credits earned from funding a program. Texas and Virginia have developed AVR programs but not implemented them due to a lack of interest among local industry in sponsoring such programs. California and Illinois are planning to operate AVR programs over large areas of their states, but whether these programs will attract a sufficient number of vehicles to achieve air quality goals is unpredictable. If either of these programs retires as many vehicles as projected, they may encounter controversy from interests that oppose scrapping vehicles. The future of AVR programs will depend on whether private industry will seek to sponsor such programs to

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[12] Telephone interview with Gale Newton, Illinois Environmental Protection Agency.

[13] Telephone interview with Ruth Rieman, Texas Natural Resource Conservation Commission.

[14] Telephone interview with Jim Sydnor, Virginia Department of Environmental Quality.

earn pollution credits and whether less controversial or more cost-effective options are available to states to achieve or maintain federal air quality standards.