

A Clunker of a Climate Policy

The recent car-upgrade program is an example of how not to address CO₂ reduction prudently

BY JEFFREY D. SACHS



The Cash for Clunkers program offers a cautionary tale for the future of climate change control. The federal program paid individuals up to \$4,500 to replace their “clunker” automobiles with new, higher-mileage vehicles. Part of the purpose was to give a lift to the ailing auto industry. Another part, at least it was claimed, was to mitigate climate change by getting old high-carbon-emissions vehicles off the road. But billions of dollars were spent quickly without clear answers on what we were getting for our money.

The broad principle of climate change mitigation is to reduce greenhouse gas emissions, including carbon dioxide (CO₂) from the combustion of fossil fuels, to target levels at the minimum net cost to society. There are many ways to reduce emissions: drive more efficient or electrically powered vehicles; produce electricity with renewable energy sources; capture CO₂ from power plants and store it geologically; restart the nuclear power sector; weatherproof homes to reduce energy for heating and cooling.... The list is long, with different time horizons, costs and uncertainties.

Clearly, not every method of reducing emissions makes equal sense.

Consulting firm McKinsey & Company has recently published estimates of the abatement costs of various technologies (www.mckinsey.com/clientservice/ccsi/greenhousegas.asp). Highly efficient lighting, appliances and vehicles, along with better insulation and other technologies, can save more in energy costs during their lifetime than the upfront capital for installing them: they are *better than free* to society. Other options—notably, renewable energy sources, forest conservation programs and carbon capture and storage—tend to come in below \$60 per ton of avoided CO₂ emissions.

Some carbon-reduction ideas are so expensive they should play no part in the policy mix. Yet because lobbyists overrun our legislative processes, every climate idea will have its corporate backers, and lots of terrible ideas will no doubt be advocated.

Let's make a rough calculation of how much mitigation per dollar the Cash for Clunkers program really achieved. The typical trade-in was reportedly a 15.8-miles-per-gallon (mpg) vehicle for a 24.9-mpg vehicle. Assuming that the average vehicle is driven around 12,000 miles a year, the clunker annually required 759

gallons of gasoline compared with the new vehicle's 482 gallons. Because each gallon of burned gasoline produces 8.8 kilograms of CO₂, every car saving 278 gallons a year signifies a reduction of 2.4 metric tons of CO₂ a year.

Assuming that a clunker would have been driven on average another five years, the annual budget cost per car is \$900 (\$4,500 divided over five years, and ignoring the interest factor for simplicity). If we value gasoline pretax at roughly \$2 per gallon, we are saving around \$555 a year. The net annual cost of the CO₂ reduction is therefore \$345, or \$141 per ton of CO₂. Note that a full life-cycle analysis would also account for the CO₂ emitted in the production of the new car, which would modestly diminish the net CO₂ reduction and modestly *raise* its net unit cost.

This crude calculation is subject to many refinements but shows that Cash for Clunkers represented a very high cost per ton of CO₂ avoided. Countless ways to reduce CO₂ emissions are less expensive than smashing up autos five years before their natural demise.

We will blunder badly and repeatedly in climate change control unless we put some transparent control systems in place. We should rely heavily on price signals rather than one-by-one subsidized programs, except

for the subsidies needed to bring new technologies such as electric vehicles to the commercial phase. An economywide tax on each ton of CO₂ emissions, programmed to rise gradually over time at an appropriate social discount rate, would induce the marketplace to take actions that are less expensive per ton than the tax and to leave behind measures such as Cash for Clunkers or corn to ethanol. A carbon tax would be far more effective in this regard than the cumbersome cap-and-trade system proposed by the House of Representatives.

We'll need to spend trillions of dollars over time to save the planet from climate change. All the more reason not to let lobbyists make a financial game out of this deadly serious effort. ■

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