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The plot to kill the green machine

Not so long ago, electric-powered cars looked like the dream solution to climate change, pollution and global oil wars. But then the motoring industry and its political allies decided to run them off the road. Andrew Gumbel reports on the killing of a dream

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A decade ago, Chris Paine was just a guy who happened to love his electric car. He and about 800 other Californians made up the first wave of pioneer-consumers who leased battery-powered vehicles from General Motors, Ford, Toyota and a handful of other companies in the full expectation that this was the future.

The car companies, spurred on by tough Californian anti-pollution regulations, had been working on alternatives to the traditional internal combustion engine since about 1990, and several environmentally conscious Californian cities had joined in the effort by installing recharging stations at supermarkets and in car parks.

But then, as the new millennium arrived and US dependence on foreign oil became a hot political issue, something weird happened. The car companies who'd leased out electric vehicles began demanding them back. And they wouldn't take no for an answer.

Paine, an internet entrepreneur who had also dabbled in film-making, knew something was up when he took his General Motors EV1 to a specialist car dealership in Los Angeles for a routine tyre rotation in early 2003. When he called to see if his car was ready, he was told he was never going to see it again. "But there are two months left on the lease," he objected. The dealership told him that the vehicle had left the premises. When Paine asked where it was, they said, "We can't tell you." He then said, "What about all the stuff in my car? My gym bag?" He was told that they would try to locate his things. He asked if he couldn't simply pick up his belongings himself. No, came the response.

"I'd had an idea of making a film to show how cool the electric car was, especially since it was only available in California," Paine says. "Suddenly I realised - this story is way bigger than that."

Three years later he has finished his film, a startling documentary entitled *Who Killed the Electric Car?*, which manages to turn received wisdom about the EV almost entirely on its head, and, in a series of interviews with key players - designers, engineers, marketing specialists, politicians, industry regulators and consumer advocates - makes a powerful case that California's experiment with EVs was deliberately sabotaged, and ultimately strangled, by a coalition of oil companies and car companies, along with their political allies, for base motives of short-term profit.

In the official version, put out by General Motors and largely echoed in the Californian newspapers and television news broadcasts, the electric car failed to take off because it simply couldn't attract enough customers. The battery didn't give the car sufficient range for most people's needs, and took too long to recharge.

The potential drain on California's electricity supply was also a problem, at a time when the grid was severely overtaxed and, in 2001-2002, subject to shortages and blackouts. Both industry and environmental groups raised concerns about what they called the "long tailpipe" problem - the argument that, while the cars themselves did not produce emissions, coal-fired power stations and other electricity-generating plants did, making the whole exercise counterproductive.

Paine's film, due for release across the US at the end of June, expertly blows each of these assumptions out of the water. While it is true that the first EV batteries could be counted on to last only 60-80 miles, a second generation of nickel-metal hydride batteries came along as early as 1998 that could have boosted that range to 100-120 miles. By now, new lithium-ion batteries promise a range of up to 300 miles.

The "long tailpipe" theory, meanwhile, was contradicted by a 2001 study sponsored by the US Department of Energy showing that a switch to electric vehicles would result in a 35 per cent net reduction in greenhouse-gas

emissions. A 2004 study based on official Californian data suggested that the net reduction could be as high as 67 per cent.

The drain on the electricity grid, Paine argues, would be minimal since most people would charge cars overnight, when supply is plentiful and prices are cheaper. "The utility grid in the United States could charge 30-40 million cars every night," he says. "We're talking about energy that's just available and not being used."

The demand issue is perhaps the most intriguing. It is true that only about 800 electric vehicles were leased between 1996, when they first came on the market, and 2003, when they were unceremoniously yanked off again. But a lot of that had to do with the near-total absence of advertising. As Dave Freeman, a power-grid administrator, says in the film: "We never saw a TV ad with an electric car scampering up a hill with a good-looking man or woman draped around it. That's the way they sell cars."

A former GM employee and EV activist called Chelsea Sexton unearthed evidence that GM, contrary to its rhetoric about lack of demand, was sitting on a waiting-list of 4,000 interested customers. GM responded that really only about 50 of those 4,000 people were genuinely interested.

After watching the film, though, it is impossible to separate GM's response from the political context of the time. From 1990 on, the car companies had been bristling at the California Air Resources Board's stringent requirement - motivated by smog alerts and fears for public health in LA - that 10 per cent of vehicles on the state's roads needed to be emission-free by the year 2003. A major lobbying effort against the regulation was mounted. By 1996, the auto industry had talked the board into modifying its requirement so that the pace of production of zero-emission vehicles would be linked to demand.

In other words, car-makers and oil companies worried about the implications of EVs on their traditional revenue sources were handed a get-out clause: if they could show consumers weren't interested in the cars, they might not have to produce them.

And so it came to pass. Corporate interest in electric-car production dwindled to nothing. As John Wallace, formerly with Ford's electric-vehicle programme, says in the film: "We began to get the eerie feeling that we were going over a cliff." In April 2003, a watershed ruling by the California Air Resources Board let the car companies off the hook. They were still required to think about lowering emissions, but were given a new deadline of 2008 and a more flexible range of options, from petrol-electric hybrids to fuel-cell vehicles.

Immediately, GM and the other companies started pulling electric vehicles off the roads. They could do this because the cars had been leased rather than sold, and the leases were almost all set to expire within a year or two.

By July 2003, the EV drivers decided to stage a public protest. Designers, drivers, sympathetic politicians and others turned out in large numbers to a mock-funeral held at the Hollywood Forever Cemetery. An electric car was ceremonially draped in black crepe. Paul MacCready, a celebrated designer of aircraft and car engines who played a key role in the development of GM's EV1, laid a wreath.

The story, meanwhile, got weirder. In December 2004, Paine got a tip-off that GM was crushing the reclaimed EV1s at a facility in Arizona - obliterating evidence of the vehicles' very existence. Without even waiting for financial backing, he made an impulsive decision to rent a film crew and a helicopter and made an aerial reconnaissance of the facility where, sure enough, he saw the EV1s being flattened and loaded on to trucks for shredding.

Three months later, activists discovered that 78 EV1s were in storage at a GM facility in the LA suburb of Burbank. They staged a month-long vigil for the vehicles' survival. To challenge the company's line that nobody wanted them, they found buyers for every last one and offered a total of \$1.9m. The vehicles, however, ended up loaded on to trucks and removed, and several activists who tried to intervene ended up under arrest.

The passion of the electric-car enthusiasts does come across as a touch eccentric in the film. But the weirdness of the car companies' systematic destruction of their own fleets is even more striking. As Chelsea Sexton comments in the film: "There is no precedent for a car company rounding up every one of a particular kind of car and crushing them as if one of them might get away."

The film doesn't offer an easy answer to the question posed by its title, but rather considers a whole gallery of suspects - everyone from government and industry to consumers themselves. At a time when oil prices are soaring beyond \$70 a barrel, the question could not be more timely.

Paine argues: "If this car hadn't been dismantled by the oil companies, the car companies and the federal government, we would be up to about a million electrics on the road right now... Instead, we are in a crisis situation with no immediate options."

The alternative-fuel technology pushed hardest by the Bush administration has been hydrogen - something that is still years, if not decades, away from becoming a practical solution on a mass scale. Paine's film argues powerfully that hydrogen is in fact highly impractical and is being touted largely because it offers a key role to energy and fuel distribution companies.

Hybrid cars get a more sympathetic review, but are nevertheless mourned as something of a compromise solution. A new generation of so-called "plug-in" hybrids are perhaps the closest thing on the horizon to a revival of the dream of electric vehicles - they would have much larger batteries than the current generation of hybrids, so drivers could travel the first 30-35 miles entirely petrol-free and get around 80 miles per gallon thereafter.

Paine himself drives a hybrid, and has somehow also held on to a Toyota electric vehicle. Toyota offered its electric RAV4 for sale for a brief period, and activists snapped up all 300 on offer. It makes no noise and travels easily at 70 miles per hour. Naturally, Paine has a vanity plate. It reads: EV RIDER.

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