

COMMENT

Whither electric cars?

In a previous report I tried to show that the widespread use of electric cars, both battery-powered and so-called 'hybrid' types (i.e. vehicles utilizing an electric motor powered by a battery in town, and a combustion engine on open highways), would not reduce, but rather increase, air pollution, because the electricity required to run them would have to be generated by a large number of additional fossil-fuel burning power plants, with a lower total energy efficiency (de Sabata 1995).

Solar cars (i.e. vehicles powered by a battery charged by panels of photovoltaic cells fitted on the car's body, which exploit the sun radiation's energy) were shown to be a much better solution in theory, but their severe limitations make an extensive utilization any time soon extremely problematic. It was also pointed out that more could be obtained from shifting to lifestyles which were less environmentally demanding than current ones, and from the use of smaller, lighter, more efficient and less polluting fuel-burning cars.

At the time, all major car manufacturers were studying or experimenting with electrical 'concept cars', whose coming had been announced in the international press: General Motors' 'EVI' and 'Opel Corsa Selectra'; Ford's 'Connecta'; Chrysler's electric minivan; FIAT's 'Cinquecento Electra', 'Panda Electra', 'Ducato Electra', and 'Zero-Impact Car' or 'ZIC'; VOLVO's 'ECC'; Toyota's 'EV'; Honda's 'EV'; Renault's 'Twingo Electric' and 'Clio Electric'; and Peugeot's '106 Electric'.

A few towns and cities, mostly in Europe, were even introducing, or planning, small experimental fleets of electric cars, subsidized by utilities or local governments, for inexpensive rental to the public: amongst others, Mendrisio in Switzerland (Anon. 1996), La Rochelle in France (Mangano 1993), Turin and Leghorn in Italy (Gasperetti 1994).

California and other states of the USA had even mandated by law that given percentages of 'zero-emission vehicles' (or ZEVs), i.e. electric cars, should be on their road systems by certain established deadlines.

Researchers of the Massachusetts Institute of Technology (MIT) have now stated (De Neufville *et al.* 1996) that:

- current efforts to improve the performance of electric cars lack technical, environmental, and economic justification;
- the plan of the State of California to register 2% of ZEVs by 1998 would not improve the air quality, as the power on which those vehicles would run is to be generated by fossil-fuel-burning power plants;
- contrary to expectations, air pollution would increase, since the electric energy actually utilized to run the cars would be only 25% of the fuel energy;
- air pollution can be reduced more efficiently by adopting the new combustion engines now on the drawing boards, which are supposed to be more efficient and 'cleaner' than current types.

Virtually all of the above is in striking agreement with my earlier comment (de Sabata 1995), and may now result in electric cars being put essentially to rest, to the dismay of electric utilities and oil companies, whose vested interests stood only to gain from the introduction of ZEVs. Of course, a much bigger question remains unsolved: what are we going to do when fossil fuels are depleted?

References

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