

## What sort of electric car should I buy?

There are really only two sensible designs of electric car you should consider: fully electric and plug-in hybrid. The reason is simple - if you can only use petrol to charge your car, what have you gained except a more expensive car? Unfortunately the car industry uses "smoke and mirrors" to try and convince you to buy their car and doesn't want to change too much.

All types of electric car work best if you can plug in at home although charging at work or near your home is a second option. Fully electric cars have far fewer moving parts so should be more reliable and cheaper to maintain, and the lower price of fuel and free car tax helps with overall costs. A couple of years ago, range was a problem but now there are many cars with a range of 200 to 300 miles or more and they can be charged reasonably quickly using public fast chargers. I would certainly not wish to drive further than this without a break.

Hybrid cars come in a variety of formats but there is really only one sensible format described by some manufacturers as a plug-in electric car with range extender. This means that the electric motor is the only way to drive the wheels and the petrol engine is only used to charge the battery, and you can still charge by plugging in when available. This is the simplest design and the best use of a petrol engine as it does not need to be so big and can operate at its most efficient speed all the time. With a petrol engine less than a quarter of the size of a normal car engine, you could still drive one of these indefinitely, stopping only to fill up with petrol. For shorter journeys you could drive without ever buying petrol at all.

I know of two designs of hybrid which make no sense to me - the self charging hybrid and the type which can only use electric power at low speeds. There seems little point making an electric car which you can't plug in to charge the battery. The second type has basically two engines to drive the wheels with the petrol engine needing a standard size (ie big) engine and a gearbox making it the most complex and inefficient design you could imagine.

In the future, plug-in hybrids may be replaced by hydrogen cars, though these are really electric cars using hydrogen to store the energy instead of batteries. They are likely to be more expensive to run and they will not be sustainable until we start making hydrogen from renewable electricity, but you will be able to fill up quickly like petrol cars. Making hydrogen from methane is less green than burning gas to generate electricity.

What are the for and against points for an electric car?

**Against:** is the high capital cost, although this will come down as more are made, but it is also offset by the lower running costs. Another problem is the lack of charging infrastructure and again this will improve with time, but for now the ZapMap app is the way to plan where to charge up. Aim for somewhere where there are more than two charging points to give yourself a good chance of finding a vacant one.

**For:** apart from the low emissions and the ability to use renewable energy, is the reduced noise, smooth acceleration and instant power, plus the regenerative braking which reduces brake pad wear and increases efficiency. Most people who have driven an electric car don't want to switch back.

**Red herrings:** Batteries need to be replaced after a few years - wrong! Batteries are guaranteed for 5, 7 or more years and expected to last much longer. They are modular, so if there is a problem, only one module can be replaced. They can also be repurposed for less demanding applications as their performance deteriorates. For a full list of red herrings, go to:  
[www.gov.uk/government/publications/common-misconceptions-about-electric-vehicles](http://www.gov.uk/government/publications/common-misconceptions-about-electric-vehicles)