

ARE HYBRID CARS A SUCCESS?

Introduction

I have chosen to do my personal project about whether hybrid cars are a success because by 2040 all the cars on the road are going to be electric but I was wondering if hybrids were still going to be driven then as well.

Why were they made?

The first hybrid car wasn't the Toyota Prius nor was it invented in the 1990s or 2000s. In fact, it dates back to the early 20th century. Still, the first hybrid car was brought into existence for reasons that will be familiar to those living in the early 21st century: Internal combustion engines were producing too much foul-smelling pollution.

The first hybrid car was in part the brainchild of a Viennese coach builder named Jacob Lohner, who felt that fuel-driven cars were too noisy and smelly. To find a solution to this problem, Lohner turned to a young Austrian engineer named



Ferdinand Porsche. In 1896, when he was just 21 years old, Porsche had invented the electric wheel-hub motor, a battery-operated motor that actually fit inside the hub of a wheel. Lohner asked Porsche to combine his in-wheel motors with one of Lohner's coaches. The result was the Lohner-Porsche Elektromobil. This vehicle was first shown to the general public at the Paris Exposition of 1900.

What types are there?

There are three main types of hybrid vehicle; full hybrids, mild hybrids and plug-in hybrids. A full hybrid (FHEV) can run on just the combustion engine (i.e. diesel/petrol), the electric engine (i.e. power from batteries), or a combination. The Toyota Prius is the most commonly known example of this.

How do they work?

Hybrid electric vehicles are powered by an internal combustion engine and an electric motor, which uses energy stored in batteries. A full hybrid electric vehicle cannot be plugged in to charge the battery. Instead, the battery is charged through

regenerative braking and by the internal combustion engine. The extra power provided by the electric motor can potentially allow for a smaller engine. The battery can also power auxiliary loads and reduce engine idling when stopped. Together, these features result in better fuel economy without sacrificing performance.

Pros

- Improved fuel economy
- Hybrids improve fuel economy by around 20%-25%, saving considerably on day-to-day running costs.
- Reduction in CO2 emissions
- Hybrid vehicles are cleaner to run than conventional cars. Toyota claims their hybrids are up to 80% cleaner than petrol engines. Most new hybrid models also offer a zero-emission mode for short distances. During this time the car drives completely in electric mode, which saves on fuel and cuts all CO2 emissions.



City driving

In general, hybrid cars are great for city driving, as they're at their most efficient when regularly stopping and starting. For drivers in and around London, hybrids will also save you on the Congestion Charge. Hybrids with CO2 emissions of less than or equal to 75g/km and that meet Euro 5 emissions standards are eligible for a 100% discount. If you're driving in London daily, this will save you £11.50 per day with a potential annual saving of over £2,000.

Higher resale value

Hybrid versions of popular cars remain in high demand on the used car market. While it's more expensive to buy a high quality used hybrid car, you'll likely recoup a higher percentage of your investment when it's your turn to sell.

Cons

Performance

The majority of hybrid cars are built for economy, not speed. As such, acceleration tends to lag behind comparable petrol vehicles. To conserve weight, most hybrids don't have performance enhancements and the location of the battery can result in poor weight distribution. They are therefore not ideal for those looking for a slick, high-speed experience.

Price

A hybrid car is almost always going to cost more than a regular gas-only vehicle. Some are as much as 20% more expensive, which means you'll need to drive your hybrid for several thousand miles before you recuperate the cost you save on fuel.

Maintenance

Hybrid vehicles generally cost more to repair. Not all mechanics have the equipment and knowledge to fix them.

Long-distance driving

Hybrid cars are not well suited for regular long-distance driving. During motorway use, the hybrid systems add little to the efficiency of the engine and a clean diesel engine would likely be a better option.

Interviews

I interviewed three regular drivers to see what their views on hybrid cars were.

Q1 Would you buy a hybrid car?

1. No, because of the high price and they aren't very efficient.
2. No, because they aren't well priced
3. No, because it is cheaper to get an electric car and it is more efficient.

Q2 Do you think hybrid cars are popular?

1. Possibly because some people will think that hybrids are the next generation of cars



2. No because they are overpriced
3. Yes because lots of people have been buying them lately

Q3 Do you think hybrid cars are a success?

1. No but they could be if they lower the prices and make them more efficient
2. Yes because many people are buying them
3. No because the prices are too high and they aren't lowering them unlike electric cars.

What are the alternatives to hybrid cars?

Electric cars are a good alternative because they use electric power alone, there's no backup engine to help you out when the batteries run out of juice. But usually they have more room for batteries, since they don't have to make space for the gasoline engine. That means EVs offer a longer electric-only range than plug-in hybrids. Also, in recent years the price of electric cars have considerably dropped unlike hybrids.

Conclusion

In conclusion I don't think hybrid cars are a success. Not many people are buying them, there are more cons than pros which means most people won't buy one. I think car manufacturers should focus on improving the range of electric vehicles in order to reduce our reliance on non-renewable energy sources. I also think that car manufacturers should make their hybrid ranges cheaper.

