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Why-brid?

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Let's talk a bit about hybrid vehicles, shall we?

Why are hybrids bad?

Well, hybrids aren't bad. They are hugely better than most of the cars of the 1970's and 1980's, which were generally less safe, less reliable, and less fuel-efficient than today's hybrids. Note that I don't say less "environmentally-friendly," as I'm not as confident that's true.

First of all, for very few people (people with very old cars, cars without catalytic converters, or cars that have been poorly maintained) does buying a new car benefit the environment more than simply continuing to drive and properly maintain cars already on the road. This holds true whether the new car is a hybrid or not. Simply put, buying a new car is rarely a good decision when the buyer's car is in good working order - most cars designed in the last decade will run for years with only routine maintenance and diligent owners.

Second, hybrids are not an example of cradle-to-cradle engineering. People should not be rewarded for buying hybrids. In fact, they should be forced to pay the end-of-lifecycle disposal costs for the batteries and electronics, which represent hundreds of kilos of non-recyclable materials that are not part of well-designed, conventional automobiles. During the life cycle of a hybrid, battery packs and cells fail and need to be replaced (many of the battery cell technologies involved being expensive, impracticable, or impossible to recycle). Compare this to an Audi A2, a car designed a decade ago - but, nevertheless, designed so that the vast majority of its parts are recyclable. Over 18,000 Audi A2's are still on the road in the United Kingdom, this affordable German car achieving 94 miles per gallon (imp.) and having a smaller environmental impact at the end of its life (note that the Audi A2 also arguably had a lower environmental impact during its life, with the turbodiesel Audi A2 1.2 TDI having the lowest emissions of any car in the world at the time, including hybrids, emitting just 81 grams of CO2 for every kilometer traveled).

Why do hybrids burn gasoline?

If you still like the concept of hybrids, one of the least smart decisions in hybrid design is the use of gasoline. Diesel hybrids would make far more sense, for many reasons, one being that diesel engines have the low-range torque needed to quickly charge batteries while offering good performance. Electric motors have essentially infinite torque at very low RPM, so they would be a good compliment to gasoline engines for acceleration, but few hybrids use this combination to full effect, having been optimised primarily around highway commuting and maximising fuel economy.

The other reason hybrids don't burn gasoline stems from a peculiar facet of their oriental ancestry. Two of the best early hybrid systems, the commercially-successful Toyota Prius (as of this article, worldwide Prius sales total about two million units) and less-successful Honda Insight, were designed with the Japanese market in mind. In August of 1999, around the time Toyota made its major hybrid investment in the second-generation Prius, the No Diesel Vehicle Campaign began in Tokyo. By October of 2003, diesel vehicle controls were implemented throughout Tokyo. Likely unwilling to have their green "halo" cars undrivable in Tokyo, auto executives at Japanese firms selected less-suitable gasoline engines for hybrid models.

The last reason hybrids burn gasoline is a policy failure on the part of the U.S. and certain other governments in regulating the quality of diesel fuel. While it is not difficult (in investment, time, or energy expenditure) to refine Middle Eastern sweet crude into low-sulphur diesel, refining other fossil fuel sources into low-sulphur diesel fuel is difficult. The U.S. elected to maintain a lower standard for diesel fuel quality than European and other markets. This led to a variety of very good vehicles, such as the Volkswagen V10 TDI and Mercedes-Benz E320 CDI, being temporarily removed from the U.S. market in the mid-2000's (both cars mentioned had only been available in 45 states due to regulations in California, New York, Maryland, Massachusetts, and Vermont, but not due to fuel quality).

Range and Duty Cycle Differences

The other problem with hybrids is that design goals differ from market to market. An ordinary commute in the American midwest is a distance more appropriate for a weekend roadtrip in much of continental Europe. Hence, a Prius optimised around a Bay Area stop-and-go ninety-minute commute will not be well-suited to autobahn commutes. Similarly, much could be done to improve a hybrid's performance even between the average motorist's use on the M25 versus the A25 (England versus Germany, for those readers not in Europe). The regional popularity of certain vehicle choices today has less and less to do with unfortunate factors like nationalism and more to do with utilitarian considerations like regional suitability. If you do elect to purchase a hybrid, purchase one designed for the types of journeys you ordinarily undertake. Oddly, people put great consideration into this when considering the prospect of electric cars ("An electric car just won't have enough range for my commute...") but put little thought into whether the hybrid they're considering is really optimised for their usage pattern.

Fashion Fail

Lastly, I'll discuss what strikes me as the most disturbing piece of the hybrid story: that hybrids tend to be a prop for people I'll generously label other-pleasing, attention-starved fashion victims. I spoke with a former Honda employee who mentioned the company had looked into, in the design process of the new Honda Insight (a hybrid), why people had not bought more Honda Civic Hybrids relative to the Toyota Prius (the Honda Civic Hybrid trails the Toyota Prius in sales figures). The Honda Civic Hybrid is a very good car (I've driven one) and, in many ways, more practical than the Prius. Both are hybrids. The Honda Civic Hybrid is more affordable. The current-generation Honda Civic Hybrid has a fuel economy of 62 miles per gallon versus the Prius's 76 miles per gallon (both ratings being imp. gal. and extra urban). While this difference in fuel economy might appear compelling at first, it would take several years of driving 8,000 miles per year at today's price of approximately 140p per litre to make up the cost difference between the Civic and the Prius. Dealer coverage and service availability are similar between the two cars in most regions. But Honda's research allegedly found that people bought the Prius because it was "clear to their friends that they were driving a hybrid."

Conclusion

So, if you're willing to pay more to drive a vehicle that is, in many ways, inferior to ordinary automobiles and arguably more harmful to the environment for the sake of making a fashion statement, buy a hybrid. Be sure you choose an unusual-looking one. Should you choose a more pedestrian design, I can imagine the thought process that might keep your fashion-conscious yuppie mind awake at night: "Imagine if my neighbours mistook me for driving a mere prole Civic! How did they not notice that I was single-handedly saving the world today by being the lone occupant of a Japanese economy car flying down the expressway whilst carrying no less than one-hundred-and-thirty-two nickel-medal hydride batteries?!"

Or, you could avoid these sleepless nights, consider buying something else - for instance, a very good turbodiesel that gets nearly equally good real-world fuel economy when compared to hybrids.

Or, even better, don't buy a car at all, and simply maintain the one you currently own; if it is a late model in good repair, it will likely provide you with years more transportation and enjoyment.

In the end, life is short, and you should do (and drive) what makes you happy. But, to be truly happy, you should also be honest with yourself. Why does the prospect of owning a hybrid make you feel good? If you've read this article and the answer is that you believe you're helping the environment, then I probably won't be able to convince you otherwise. If the answer is that you get tremendous utility from feeling good about bystanders who don't know you're helping the environment when you're actually not, then I understand as an economist... but shake my head in disbelief as a fellow earthling.

Disclosure: The author has owned a wide variety of vehicles and is an unapologetic fan of the Audi A2, but currently owns none of the vehicles mentioned in this article. As of the time of this article's publication, the author owns shares in Toyota Motor Co. (NYSE: TM, LSE: TYT).

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