

# Hydrogen Powered Vehicles Commercially Ready Today

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## Driven Hard: Honda FCX Clarity

The Honda Clarity has been called the most important car to come along since Karl Benz emerged from his shed in the Motorwagen. But it may be more than that.

Let's forget, for a moment, that it is a car at all, and consider only the way it's powered, which is with a hydrogen fuel cell. The adoption of hydrogen where we once relied on the combustion of dead plants and animals, could represent the greatest shift in our attitude to energy since the Industrial Revolution. It would be accompanied by economic and political upheaval, and would probably change the balance of world power quite dramatically.

The reason it has appeared in a car is because the car is a perfect test of the viability of the hydrogen infrastructure. It's ubiquitous, everyday, totally familiar. It is also ready. The Clarity is a bit of a social experiment, but it does not feel like an experimental car. It works, it is easy to use, and it's not shadowed by [boffins](#) or people in protective clothing. I know because I went to L.A. to drive one for the telly show.

The thing I really like about this car of the future is that it's exactly like a car. It's quite a nice car, too: airy, well-made, reasonably quick, fabulously refined. It rides rather well, but for some reason the seats are edible.

At heart, the Clarity is simply an electric car, but there are two fundamental differences between it and the apologetic electric snot boxes we're used to. The first is the speed and ease with which it can be

refueled — it's an operation barely more complex and time-consuming than filling up the car you have now. Admittedly, hydrogen filling stations are a bit sparse at the moment, but remember: When Berta Benz set off from Mannheim to Pforzheim in her chap's new invention, there were no petrol stations. That didn't stop her, or us.

The second is the small matter of power. The fuel cell in the Clarity delivers 100kW, which translates to 135 hp in the electric motor. If you want to think of this in pure energy terms, 100kW is enough to supply half the houses on my street. So the Clarity performs just like, well, a four-door family Honda. There is no sense here that energy is something to be conserved and eked out, which is the mentality that suffuses battery-powered cars and, indeed, most thinking on "alternative" energy. Here, energy is something presumed to be in abundance, and therefore to be enjoyed.

And this brings us to the other complaint leveled at electric cars, namely that they will spell the end of driving enjoyment. I'm no longer sure. Internal combustion is marvelous, and largely because of its shortcomings; the fact that there are peaks and troughs in its delivery, that it needs to be mated to a gearbox to be accessible, that it sends vibrations through your hands and buttocks, and makes a noise. But a good electric car is thrilling for other reasons, such as the serenity of its progress, the refinement, the smoothness and the uncanny spaceship whine of its workings. Powering a car with an electric motor makes complete sense, because it's mechanically very simple. Everything just goes round and round, and there's none of that reciprocating stuff that makes life so difficult for engine designers. You sense this when driving the Clarity. It seems mechanically pure, and therefore exciting to experience.

The issue has always been the provision of electricity. The hydrogen answer is very elegant, and hydrogen is, in truth, simply a clever type of battery, a means of storing energy. If hydrogen were produced by a tidal turbine, this could be seen as a car powered by the moon.

This is not new science. Both the electric motor and the hydrogen fuel cell have been with us since the 19th century, and both are very well understood. They work, and their application in this car works. All that is required is the courage to embrace a new energy infrastructure. In kick-starting the debate with the Clarity, Honda may have produced the car of the century.