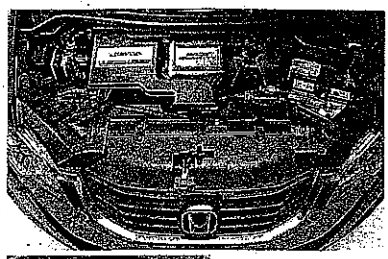
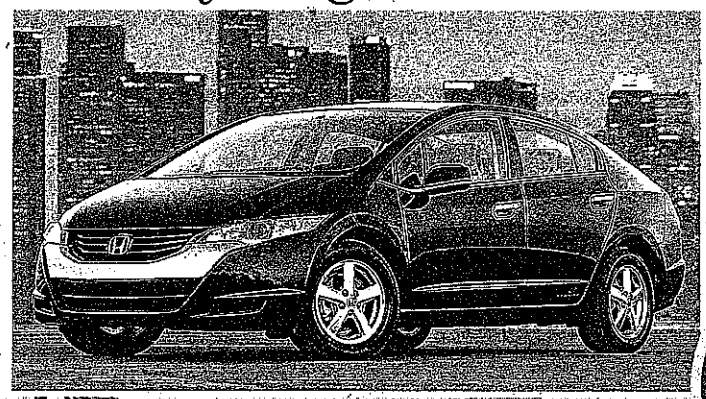
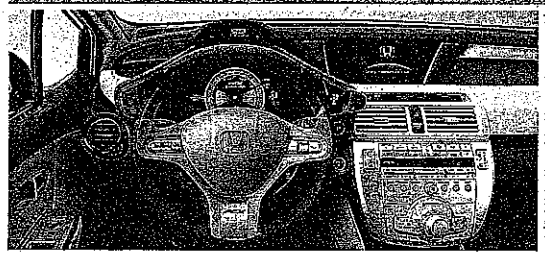
The Driver's Seat | *Jeff Sabatini*

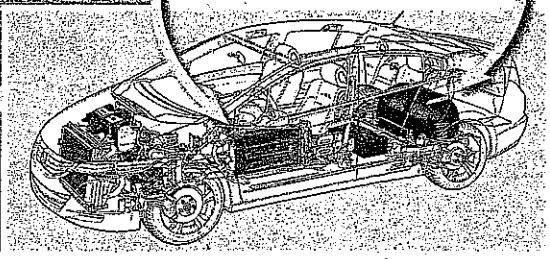
Honda Sees a Hydrogen Future



Honda's FCX Clarity, due out next summer in small numbers, uses a hydrogen fuel cell to generate power for its electric drive motor. Gauges (left) include power output in kilowatts.







Fuel Cell Stack
Chemical reaction converts hydrogen and oxygen into electricity; water and air are the only byproducts.

Hydrogen Tank
Holds enough to travel about 270 miles, getting the gasoline equivalent of 68 mpg.

HONDA FCX CLARITY

AS A RULE, I don't write reviews of cars I have driven only 22 miles. But rules are made to be broken, particularly in the case of Honda's hydrogen-fuel-cell FCX Clarity. Like any alternative-fuel vehicle, it comes with more caveats than cupholders, but the bottom line is that this is a true zero-emission vehicle, yet it looks, operates and drives like anything else on the road. There is simply no more realistic a peek into the possibly green future of the automobile, not the theoretical Chevrolet Volt from General Motors, nor the electric Tesla billionaire-toy, and not even the Holy Green Grail of the plug-in Prius.

The chief factor separating the FCX Clarity from the rest of these publicity seekers is that ostensibly the average consumer will be able to buy one soon. Honda says it will begin leasing the sedan in the Los Angeles area next summer, though the company has yet to say how many will be available or how it plans to decide who gets one. Initially, production is expected to be extremely limited; so far, Honda has leased only three of its first-generation FCX fuel-cell cars to consumers. One limiting factor is there are only five public hydrogen filling stations in the L.A. area.

Since the $600-per-month lease doesn't begin to reflect the true cost of the new model—the hydrogen fuel cell stack is extremely expensive—Honda will lose a lot of money on each car it builds. If this makes the FCX Clarity seem more like another public-relations stunt, or simply something less of a "real" car, consider that Honda developed an entirely new vehicle architecture and even engineered it to be built on a conventional assembly line. That means that save for its ultra-expensive power plant, the FCX Clarity could be produced right alongside the Civic.

The heart of the car is its "V-Flow" fuel-cell stack. Honda says this improves upon past designs, in part because of a vertical layout that helps boost efficiency and power output. The setup also allowed the unit to be shrunk in size and weight so that it fits within the center tunnel between the seats.

The fuel cell produces electricity through a chemical reaction between hydrogen gas and the oxygen found in ambient air, emitting water and air as its only byproducts. A 134-horsepower electric motor drives the front wheels of the car, drawing electricity from the fuel cell as well as a supplemental lithium-ion battery pack. This motor also serves as the generator for the car's regenerative braking system, which recharges the battery pack under deceleration.

The battery and a single hydrogen tank are stored under and behind the rear seats. Honda says the FCX Clarity can reach a top speed of 100 mph, and drivers can expect to get 270 miles from a full tank. The company says fuel economy is estimated at the equivalent of 68 miles per gallon of gasoline, based on the energy content of hydrogen vs. gas.

Outside of the power train, the rest of the package is fairly conventional—the car even starts with the turn of a regular key. Some of the gauges, however, are a bit different. What looks like a tachometer actually shows power output in kilowatts rather than engine revolutions per minute. And there are two fuel meters, one for the hydrogen tank and another for the battery.

But this is minor stuff in a car that looks and feels like it could be the new Accord—except the FCX Clarity isn't so ugly. While similar in size to Honda's best-selling sedan, the fuel-cell car's compact electric motor allowed the front end and hood to be smaller, which in turn gave Honda's stylists the ability to craft a sleek profile. Save for its maroon color (the only one available), it's a great looking car that draws on other Hondas for styling inspiration, from the Civic to the discontinued Insight hybrid.

This is about what you'd expect from a company whose Civic Hybrid resembles every other Civic sedan—and as a consequence, a company that's getting its butt kicked in the green PR battle not only by Toyota but GM, too. Devoid of the latter maker's too-obvious "green" logos, you'd never guess what the FCX Clarity is if you didn't know already. You can even make a case that Toyota's Prius is a more adventurous car—it's certainly weirder looking.

The understatement of the FCX Clarity's design extended to the driving experience during my brief, Honda-organized test; a run-through that proved less exciting than my anticipation of it. The car accelerates adequately, though its performance is equivalent to a four-cylinder model, not a V6. Without the shift points of a conventional transmission, the power delivery is seamless, but the whine of the electric motor at peak power output can be annoying, even if you're not someone who's fallen in love with the roar of an internal combustion engine at wide-open throttle.

The regenerative braking system is similar to what you'd find in many hybrids, except that without the engine-braking effect of a piston motor, the last few feet of deceleration require a more forceful stab on the brake pedal. If you've ever driven a car without power brakes, that's what it feels like. The FCX Clarity seems to ride and handle well, which isn't surprising given that it has a conventional suspension and the curb weight is a somewhat reasonable 3,582 pounds (about 135 pounds more than a similarly equipped Accord). The biggest objection I have to the FCX Clarity is that it's only a four-seater—its high center tunnel precludes a bench seat in the back.

Of course, there are more substantial arguments that can be made against the FCX Clarity, and hydrogen fuel-cell vehicles in general. The most damning is that since it takes energy to create hydrogen, a zero-emissions car is only as green as the source of that energy. I'm not going to wade into the argument over the viability of producing hydrogen through renewable means, but it clearly isn't being done today. Besides, my more immediate concern is with the devil I know, the auto industry, whose track record with green cars is dismal.

Driving the FCX Clarity through downtown Santa Monica, Calif., it was hard to miss the "Electric Vehicle Recharging Station" signs, a reminder of the last path car makers led us down in pursuit of zero emissions. That is, before they started canceling their electric-car programs and crushing the vehicles.

Honda would like us to believe that it didn't kill its own electric car as much as reinvent it as today's FCX Clarity, which is somewhat ironic, as questions about the infrastructure to support these hydrogen-fueled cars seem like déjà vu from the electric-vehicle era at the end of the last decade. While this certainly foments suspicion, it also fosters hope that someday soon one of the car makers is going to figure out this alternative fuel thing. At least Honda still seems to be trying.

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See a slideshow of the Honda FCX Clarity at WSJ.com/OnlineToday. Email Jeff at JeffSabatini@wsj.com.