

CNG TO H2

[#2 in a series]

HONDA'S DRIVE TOWARD CLEAN FUELS

HOW DRIVING ON NATURAL GAS TODAY WILL LEAD TO A HYDROGEN FUTURE

For years, thousands of Honda Civic GX drivers around the country have been paving the way to the future. It's not that they set out to do this. Rather, they've been going about their daily business while driving Honda's extraordinarily clean-running Civic GX natural gas vehicle as part of their company's fleet. It's a model that's found widespread use in fleets large and small, in government service and in the operations of independent entrepreneurs as well as the nation's top corporations. The reason is simple. The compressed natural gas (CNG) Civic GX does its job without compromise, bringing high levels of performance and utility to these fleets, all the while forwarding the concept that this can be done while greatly reducing emissions and operating in ways that lead to energy diversity.

Now, this popular alternative fuel vehicle is finding its way to consumers. After millions of miles in fleet service, there is no question that Honda's Civic GX is a vehicle that's right for the times, using technology that's ready for the future.

CIVIC GX LEADS THE PACK

A key piece of the enabling technology that makes the Civic GX a great consumer choice is Phill, FuelMaker Corporation's innovative home refueling appliance that's been developed in conjunction with Honda. Before Phill, natural gas vehicles in fleet service were filled at central fleet refueling sites or at public stations offering CNG dispensers. Because the public CNG refueling infrastructure is still limited, at-home refueling is a game-changing breakthrough that makes accessible natural gas refueling a convenient reality for everyone. Simply, it doesn't get easier or more convenient than parking your car in the garage at night and filling the tank as you sleep. Honda's vision — and the dynamic combination of the Civic GX and Phill — makes this reality possible.

Air quality regulators also acknowledge that home CNG refueling will drive greater consumer interest in natural gas vehicles. To help the process along, Southern California's South Coast Air Quality Management



Phill allows convenient refueling at home.

continued on next page...

continued from previous page...

District is providing financial incentives to help consumers with the purchase or lease of a Phill refueling appliance, matching existing incentives available from the state's Mobile Source Air Pollution Reduction Review Committee. Another important incentive provided by the state of California, and in some other states, is the ability for natural gas vehicles to be driven in the more free-flowing high-occupancy vehicle lanes found on many Interstates...with just a single person in the car. That benefit can save Civic GX drivers substantial commuting time in heavily-traveled urban areas.

The Civic is an ideal platform for bringing natural gas vehicles to the showroom. Now in its ninth year as America's best-selling compact-class car, this model has always offered Honda's core attributes – value, ergonomics, reliability – in an accessible and fun-to-drive package. The natural gas Civic GX version carries on this tradition, even as it brings groundbreaking levels of environmental compatibility and champions a proven alternative fuel with significant domestic availability. Bringing clean-burning natural gas vehicles to the highway also signals Honda's serious interest in another gaseous fuel: hydrogen.

GETTING COMFORTABLE WITH NEW FUELS

Even as Honda has been developing and selling low emission and high fuel economy gasoline vehicles, hybrids, and the natural gas Civic GX, hydrogen has been a constant focus. In fact, Honda has gone substantially past the testing stage over the past decade, building on the technologies developed in the company's other advanced technology vehicle programs to bring the hydrogen fuel cell Honda FCX to the highway. Like the Civic GX, the Honda FCX uses a gaseous fuel that's exceptionally clean and holds substantial potential as a motor fuel, addressing both environmental and energy diversity goals.

Also like the natural gas Civic GX, the FCX is no mere laboratory test or concept. It is a production vehicle that has received both California Air Resources Board and Environmental Protection Agency certification. As was the case in the very early years of the natural gas Civic program, the FCX is undergoing daily use with select fleet customers in several states, proving its durability in hot weather and cold, and under the stresses of real-world use in city and highway traffic. That the Civic GX went through this process – moving from prototype to assembly line production and from internal use to outside fleets and then consumer sales – is testament that Honda excels at taking highly-refined, environmentally positive vehicles from the idea stage to the street.

The Civic GX has blazed the trail for Honda's FCX in other ways. Some of the very same challenges faced by the natural gas Civic in its early years are being addressed by the FCX today. Refueling infrastructure is a great example. It requires a substantial investment to add compressed natural gas fueling to a gas station, even more so for hydrogen. Eventually, this will sort itself out as larger numbers of gaseous fuel vehicles create demand for public refueling outlets. In the meantime, a dual track simply makes sense. This second track for convenient gaseous refueling – through an at-home refueling appliance – makes just as much sense for hydrogen vehicles as it does for those running on CNG.

This is why Honda is not only working with energy companies in the quest to make public hydrogen fueling a reality, but also challenging its own engineers to bring convenient hydrogen refueling to the home. Like Phill, the Home Energy Station being co-developed by Honda and Plug Power could eventually provide this at-home hydrogen refueling capability, while additionally creating electricity from its natural gas-derived hydrogen to power a home. Plus, you get heat captured from the process! Several Home Energy Stations are now being tested, including one at Honda's headquarters in Torrance, California. The synergies between the gaseous fueled Civic GX and FCX are leading Honda toward pioneering the world's first retail consumer lease of a fuel cell car and the market introduction of hydrogen fuel cell vehicles, something we'll examine more in depth in our next installment.



Civic GX drives normally, but on CNG.



CNG and hydrogen refuel in similar ways.



FCX also drives normally, but on hydrogen.

For more information about the Civic GX, visit www.civicgx.com or call 1-800-33-HONDA.