

# HYBRID MOTOR VEHICLES:

## The Next Step in Eco-Friendly Automotive Technology

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"Automotive" – rather than "automobile" -- technology is the term which would better describe the utilization of a combined gasoline/electrical method of powering or propelling a motor vehicle – since this eco-friendly technology can be used to power a wide variety of motor vehicles from automobiles to SUVs to trucks.

### Currently, there are five different types of hybrid technology that can be utilized by motor vehicle makers:<sup>1</sup>

- With **Idle-off capability**, the engine is turned off "when the vehicle is stopped in traffic or at a light, and turns back when you move your foot from the brake to the gas pedal."
- With **Regenerative braking**, "the electric motor helps slow the car, and functions as a generator to convert some of the energy lost during braking into electricity (thereby recharging the vehicle's battery)."
- With **power assist and engine downsizing**, "the electric motor helps propel the car, in particular during acceleration. Because the motor and engine share the power load, the engine's size can be reduced, saving even more fuel."
- With **electric-only drive**, "the electric motor can power the vehicle by itself at low speeds and when first starting the car."
- With **extended battery-electric range**, "the car runs solely on electric power for 20 to 60 miles before engaging the gasoline engine. You have to recharge the car's battery by plugging it into an external electricity source."

According to the Union of Concerned Scientists, "'mild' hybrids such as Honda's Insight and Civic Hybrid employ the first three technologies above. 'Full' hybrids, including the Toyota Prius and Ford Escape Hybrid, go one step further and feature electric-only drive. 'Plug-in' hybrids that utilize all five technologies are not currently available as passenger vehicles."<sup>2</sup>

More details on buying hybrids can be found in the online article "Green Tips: How to Buy a Hybrid," by the Union of Concerned Scientists, which we've quoted in this article. For the macho-yet-environmentally-conscious driver, "muscle" hybrids are available

among the SUVs, such as the Toyota Highland Hybrid and the Lexus RX 400h.

Fran Sowa, of Beverly Unitarian Church (Chicago), couldn't be more pleased about her Toyota Prius: "I love the fact that my Prius is silent and I'm not burning gas at stop lights." And another Prius owner, Ellen LaRue, of First Unitarian Church (Hyde Park, Chicago) voiced similar sentiments: "I bought my Prius two years ago and would do so again in an instant."

"Full" and "plug-in" hybrids are the ultimate goals in hybrid technology. They will go a long way toward eliminating global dependence on fossil fuels and reducing global warming. This is doubtless the way to go for now, along with further development and utilization of mass transportation in this country and around the globe. Other alternatives – such as bio-fuel, methane gas, and hydrogen technology, etc. – are in the works. But for the foreseeable future, hybrid automotive technology should reduce harmful greenhouse gases while at the same time reducing our unhealthy dependence on fossil fuels whether from foreign or domestic sources.

1,2 "Green Tips – How to Buy a Hybrid," Union of Concerned Scientists