



Roger Parks was one of the first to purchase a hybrid for personal use at Aberdeen Proving Ground.

Personal Transportation Goes Green: Hybrid Vehicles

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A growing dependence on foreign oil and a pattern of environmental degradation have led the government, industry, small businesses, and consumers to look for new transportation options. Hybrid vehicles, one option, have two major advantages over traditional vehicles. They are fuel-efficient and have extremely low emission rates.

A hybrid vehicle combines two or more sources of power. Currently, three hybrid models are available in the United States, with several more, including an SUV and pickup truck, poised to enter the market in the next two years. Hybrids combine combustion and electric engines and can easily compete with traditional vehicles in performance, appearance, cost, and customer satisfaction.

Hybrids average at least 50 miles per gallon of gasoline by switching between their electric and combustion engines, depending on driving conditions. For example when the combustion engine is not needed for power at a red light, it shuts off and power is drawn from the battery, thereby conserving fuel. The electric engine often works simultaneously with the combustion engine, further cutting on gas consumption.

Hybrid vehicles emit significantly fewer pollutants than traditional vehicles, which release high levels of nitrogen oxides, volatile organic compounds, and particulate matter into the air. These emissions contribute to ground level ozone and global warming. A well-designed hybrid can reduce smog pollution by 90% or more compared with the rates for the cleanest conventional vehicles on the road.

Roger Parks, a Directorate of Installation Operations employee, purchased a hybrid last year for personal use and has since logged 25,000 miles. Parks said, "It was the draw of the new technology and the environmental benefits that first prompted me to investigate hybrids." When asked if his new hybrid vehicle meets all of his driving needs, Parks said, "I've been completely satisfied with my decision to buy a hybrid."

Unlike an electric car, a hybrid does not need to be plugged in to recharge its battery. Instead, regenerative braking recovers energy and stores it in the battery, unlike the traditional car in which braking dissipates the energy as heat.

Although hybrids cost a few thousand dollars more than comparable traditional the cost can be offset by reduced gas consumption and federal and state tax incentives. The maximum federal deduction per hybrid vehicle in 2003 is \$2,000. Each year through 2006 the maximum deduction will be reduced by \$500. The Maryland Clean Energy Incentive Act offers an excise tax exemption of up to \$1,500 for qualifying hybrid electric vehicles. The state incentive will be available only through July 1, 2004.

Hybrid vehicle sales are expected to increase steadily over the next two years, with every major manufacturer having a hybrid model scheduled for release by 2005. As more model options become available and gas prices increase, the hybrid vehicle will become more attractive. This and the high customer satisfaction rate indicate that hybrids are here to stay.