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The Inevitable Future of Automobile Transport

Smog is a common problem in many cities around the world and the exhaust fumes from motorised vehicles contribute greatly to this kind of pollution. To alleviate this problem, people are taking an interest in environmentally-friendlier means of transport, and amongst the offers on the market is the hybrid car.

Hybrid electric vehicles (HEVs) are powered by an internal combustion engine combined with a battery-powered electric motor. HEVs run on gasoline and don't need to be plugged in to recharge the battery. Because HEVs travel at least part of the time on battery power alone, they require fewer fill-ups and are more economical to run. Some HEVs achieve fuel economy of 4.7 to 5.8 liters per 100 km. They also produce lower levels of tailpipe and greenhouses gases (GHG) emissions than conventional vehicles.

Light-duty HEVs which are parallel hybrids meaning both the engine and electric motor are mechanically connected to the wheels, and either or both can propel the vehicle directly, depending on the power requirements and battery charge.

HEVs can be either mild or full hybrids. Full hybrids can run on battery power alone at idle or low speeds. When speeds increase, the gasoline engine works with the electric motor to provide power. Full hybrids are 25% to 40% more fuel efficient than comparable conventional vehicles.

Mild hybrids, also called “micro hybrids”, use a battery and electric motor to help power the vehicle. This allows the engine to shut off when the vehicle stops at traffic signals and in stop-and-go traffic, thus improving fuel economy. Mild hybrids cannot power the vehicle using electricity alone. These vehicles cost less than full hybrids, but they provide lower fuel economy.

Other types of plug-in hybrid electric vehicles (PHEVs) are powered by a combination of conventional or alternative fuel as well as electric power stored in a battery. During urban driving, most of a PHEV's power comes from stored electricity. For longer trips or periods of higher acceleration, the internal combustion engine is used, extending the PHEV's range beyond what the battery can provide alone.

PHEV batteries can be charged by plugging into an outside electric power source, by the internal combustion engine, and through regenerative braking. However, PHEVs don't have to be plugged in to be driven. They can be fueled solely with gasoline, like a conventional hybrid, although they will not achieve maximum range or fuel economy without charging.

The future of hybrid vehicles is inevitable as reduce the use of petroleum, produce lower air pollution and greenhouse gas emissions.