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Geneva Motor Show

GM unveils lithium-ion hybrid system

Sharon Terlep / The Detroit News

and make it available in a wide range of cars and trucks around the world.

GM CEO Rick Wagoner unveiled the new hybrid system today at the Geneva motor show.

"This reflects another important step to make hybrid technology more affordable to a wide variety of consumers," Wagoner said today at the show. "In order to have a real impact in reducing oil consumption, oil imports, and CO2 emissions, advanced technologies must be affordable enough to drive high-volume [applications](#)."

The automaker is trying to challenge Toyota Motor Corp.'s domination of world's hybrid market. Where Toyota has a mass-selling smash hit in the Prius sedan, GM thinks it can win hybrid buyers with a system capable of driving all sorts of vehicles, from four-cylinder coupes to European diesels.

GM's new hybrids also will mark the automaker's first use of lithium-ion batteries, in place of the current nickel metal hydride battery. The world's automakers are racing to develop lithium-ion technology as a longer-lasting alternative to today's batteries.

"We took the same (hybrid) system and put it on steroids," said Steve Poulos, GM's hybrid powertrain chief engineer. "We just upped the voltage, upped the power, but kept the same basic architecture on the engine, the same type of arrangement."

GM plans to sell the new hybrids in North America in 2010. The company thinks it can hit 100,000 annual sales once the vehicles are fully launched.

Alone, the new system would bolster fuel economy by roughly one to two miles per gallon, Poulos said, but when mated with other advancements in fuel-saving technology, GM said it believes the next hybrids would deliver a more significant improvement.

The vehicles, however, will also perform better and be available in a wider variety, which will be key to their appeal to consumers, he said.

GM's current base hybrid system is available only in the Saturn Vue SUV and the Saturn Aura and Chevrolet Malibu sedans.

Another hybrid option, known as the two-mode system, provides a more dramatic improvement in fuel economy but is also more costly. It's being rolled out now in larger trucks and SUVs.

Toyota sold more than 180,000 Prius sedans last year. GM, meanwhile, sold about 8,000 hybrid Vues and Auras. Ford Motor Corp. sold 21,400 hybrid Escape SUVs and Honda Motor Co. sold 36,000 hybrid Accord and Civic cars.

Japan-based Hitachi Limited will get the first supply contract for the batteries, Wagoner said today.

Poulos said the new system will be three times more powerful than today's hybrids when the lithium-ion battery is mated with an improved regenerative braking system, which captures energy that would otherwise be lost as the vehicle slows. The battery also will provide power to help with acceleration, so the vehicle uses less fuel to speed up.

GM says the vehicles will be priced roughly the same as the current generation. The hybrid Vue sells for about \$26,000 and the hybrid Malibu and Aura go for \$22,800.

GM also wants to use a lithium-ion battery to power the Chevrolet Volt, the electric car it's racing to develop by a self-imposed 2010 deadline. The batteries being used in next generation hybrids have little in common with the cells that would drive the Volt, the automaker said.