



Zenn swaps motors in latest electric cars

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Zenn Motor plans to release a new line of cars in a few weeks that will run on more powerful AC motors--but consumers will have to wait for vehicles that feature new energy technology.

To date, Toronto-based [Zenn](#) has inserted DC motors into its cars. A DC motor can provide a lot of torque at low speeds, but it begins to decline fairly rapidly as the engine runs at higher rpms (revolutions per minute), said Zenn CEO Ian Clifford. The amount of torque an engine can produce directly relates to its performance, so the more torque, the more performance.

In an AC motor, torque doesn't decline in the same manner. "In a city like San Francisco, you can accelerate into a hill and keep your speed," Clifford said.

The new cars also go farther. The older DC motor-powered cars can go about 30 to 35 miles on a charge, he said, while the news ones with AC motors will go 40 to 50 miles. Zenn also made the roof black on the new cars for a touch of style. The cars now look more like Mini Coopers.

Rival [Miles Automotive](#) already sells low-speed, limited-range electric car with AC motors.



While a 50-mile range is probably too low for a regular consumer car, it works in the niche market that Zenn mines. Zenn's cars are low-speed electric vehicles. That is, they contain governors that limit the speed to 25 miles per hour, tops. Universities and military bases buy them to replace the diesel-burning maintenance and grounds-keeping trucks. (The Department of Defense, in fact, has a mandate to increase its purchases of low-speed vehicles.)

Although you can't take them on freeways, low-speed vehicles are legal on city streets, so you can use them for beer runs to the convenience stores; retirement communities are a target market.

Washington state and Montana, ever the rebels, have passed laws allowing these cars to crank it up to 35 miles per hour, but Zenn for the moment is sticking to the federal standard.

Approximately 20,000 to 40,000 low-speed vehicles are shipped a year, Clifford estimated. Competitors in the market include Miles (check out a [test drive of a Miles car here](#)) and Zap. A few dealerships in California (Davis, Berkeley) have Zenns on the lot.

Zenn's new cars run on an EV31A-A Discover lead acid battery pack, which was an upgrade from earlier models.

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The company hasn't released pricing on the new cars, but the current vehicles sell for between \$12,700 and \$17,000.

Zenn plans to produce freeway-legal cars, but is waiting to get energy storage units from EESstor. The somewhat secretive EESstor says it has an ultracapacitor that can power an electric car better (and farther) than a lithium-ion battery pack. EESstor has several partisans and detractors, but few have seen the company's technology up close.

Although EESstor has had to delay its energy storage units, Zenn expects to start receiving some this year. An investor in the company, Zenn has the right to obtain the first units from EESstor. Lockheed Martin has signed a development deal with EESstor as well and is expected to receive prototypes late in 2008.

"They are pretty bullish about delivering product to us in 2008," Clifford said.

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