

Slow ride

Efficient and environmentally friendly low-speed vehicles are becoming more popular, but Chinese manufacturers must prove they can cut costs without cutting corners by **Tom Pellman**



Jimmy Latham cuts a surprising figure at the vanguard of green transportation. President of WAR Construction and weekend hunting enthusiast, Latham purchased an all-electric Stalker 4x4 low-speed vehicle (LSV) one month ago, in the middle of turkey season.

"Hunting something like that, it's really nice to be able to get into the woods without making a lot of noise," he says. "I don't think there's anything exactly like it out there right now. It's really built for the serious hunter."

The Stalker 4x4, like an increasing number of LSVs now on the US market, was sourced from China. LSVs – electric vehicles including enclosed micro-cars akin to Smart cars, utility trucks, shuttles and other "street legal" golf cart-styled vehicles not allowed to drive faster than 40 kph – continue to carve out unexpected niches in the auto market. Their appeal is farther reaching than you might think, attracting enthusiasts as diverse as urban commuters, the military, environmentally-minded Europeans and American Midwesterners drawn in by a heck of a bargain.

Like the electric vehicle (EV) industry as a whole, worldwide inter-

est in LSVs has been driven by an increased interest in all things "green," while limited by power prices and technology costs. Proponents of LSVs, which typically go 100 km on a single charge and use about 10 times less energy than gas-powered cars while doing so, say they will always remain a cost-effective green vehicle, even as the price for full-speed EVs drops in the coming years.

Still, environmentalism is just one driver. Institutional "fleet" buyers like universities, airports, police departments and hospitals invest in LSVs over gas-powered vehicles less as a green choice than as a cost-saving measure. LSVs have long been popular in Europe, where drivers have been burdened with high gas prices for years. The US's retiring Baby Boomer generation has begun buying LSVs for use in massive planned retirement communities. In China, where the consumer market for LSVs is much less developed, industry insiders see a €3,700 low-speed electric car as an affordable everyday commuter car for the country's burgeoning auto-buying class.

"There are a lot of things pointing to the expansion of this market," says Marc Cesare, associate at >>

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GETTING PUMPED: Chinese consumers have plenty of reasons to buy low-speed electric vehicles

►► International Market Solutions, a management consulting firm that recently published a research report on the LSV market.

In the neighbourhood

While European companies are more likely to build their LSVs at home, China's manufacturing role in the American LSV market continues to grow.

"Chinese companies have been pretty big (in the US market), actually," says Cesare. "A lot of them have sourced complete vehicles or parts and then assembled them in the US."

In 2008, 5,000 LSVs were sold, though Cesare estimates demand for golf carts and LSVs for use in planned communities or on public roads (with a speed limit of 56 kph or less) was as high as 39,000 vehicles. The LSV, golf cart and utility vehicle industry as a whole stands to grow by about 11.5 percent annually over

the next few years, reaching €4 billion by 2012.

China's role as a major exporter of LSVs stems from the country's earlier development of electric bikes, scooters and golf carts. Michael Sikora, managing director of Shanghai-based Automotive Business Consulting, explained the progression.

"China's LSV industry emerged from the two-wheel (electric vehicle) industry, which started in 1991, with that year's Five-Year Plan. Ten years later, you've got the first electric scooters. Then, bigger tires and a longer range. Some of these companies took the next step, putting in four wheels and entered the golf cart industry. Then, others took the next step and said, 'Why not make electric vehicles for outside the golf course?'"

The breakneck speed of development in the country's conventional automotive industry has also had an impact. Though the battery pack

and drive train technology for LSVs and EVs is very different from internal combustion engines, many other components are interchangeable. A number of Chinese companies supplying chassis and other components for LSVs also export the exact same products to traditional gas-powered auto companies in different markets.

Out of the woodwork

Dan Russo, CEO of US independent EV company Green Go Tek, sources the chassis for his company's low-speed electric trucks and vans from Guangxi-based Wuling Automotive, while installing of the vehicles' drive train, transmission and battery system is done in the US. Russo gives two reasons for arranging his business this way. First of all, commercial LSV buyers in the US often have policies to "buy American" and Green Go Tek's manufacturing process allows the company to offer "52 percent

American content" in its vehicles.

Russo's second reason stems from a criticism of Chinese manufacturers that has also been leveled at the country's traditional carmakers – quality control.

"Wuling being part of General Motors makes them certainly more professional than some other (Chinese manufacturers)," Russo says. "'Made in China' has a very negative stigma. The first impression of Chinese products is shoddy quality, poor performance. And unfortunately, in the case of LSVs, 90 percent of the time it's true. There's a lot of garbage coming through."

Since the emergence of LSVs a few years ago, hundreds of Chinese LSV manufacturers have emerged from the woodwork, and from disparate backgrounds. Some originally manufactured traditional automobiles, power sports such as ATVs, go-karts, golf carts, or electric bikes and >>

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**DAN RUSSO
CEO, GREEN GO TEK**



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Hong Kong Event Overview

With China keen to encourage foreign investment, the government realizes that having a financial centre on the doorstep is an obvious asset. Hong Kong is steadily rising in the ranks of global financial centers, largely due to the positive outlook among investors regarding the Chinese economy. As business in China grows, companies both on the mainland and in Hong Kong will rely on offshore financial centers as a platform from which they can plan their investments, manage their tax exposure and open the door to new markets.

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Conference agenda

08:45 – 09:15	Registration
09:15 – 09:30	Introduction
09:30 – 10:15	Session I: Tax Planning Strategies How do your offshore holding and financing structures affect your tax efficiency?
10:15 – 11:00	Session II: Transfer Pricing Why transfer pricing is relevant to offshore tax and business planning exercises and what are the solutions to manage transfer pricing risks and improve tax efficiency?
11:00 – 11:30	Coffee Break & Networking
11:30 – 12:15	Session III: Risk Management
12:15 – 12:45	Session IV: Panel Discussion Case Study Successful Offshore Examples
12:45 – 12:55	Closing Remarks
12:55 – 14:00	Full Buffet Lunch & Networking

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➤➤ scooters. The lure to jump into the LSV industry was a strong one – margins are typically much higher, while the technology needed is much more akin to golf carts than to full-speed vehicles.

"It's pretty easy (to move from golf cart manufacturing to LSVs)," says Cesare. "They don't have to make too many technological changes. Some companies have started with a micro-car design and built LSVs on that platform. I don't think it's much of a stretch."

Typically, LSVs have no gear shifts, no heating, cooling or need for power management systems – only an accelerator, brakes, steering wheel, four wheels and a battery that can be charged. In the US, LSVs are not required to undergo crash safety tests or even install seatbelts.

Cutting costs

Western LSV-makers have their own very real incentives to find the right business partners in China, even if it means having to wade through a long list of largely unreliable auto parts suppliers.

California-based EV-maker ZAP Automotive outsources much of its LSVs' heavy assembly line manufacturing to various Chinese suppliers, says director of communications,

Alex Campbell. He adds there were initial quality concerns over the "made in China" label, but sourcing from China is a near economic necessity for small, independent automakers with limited resources.

"It's too expensive for a small company to build a car in the US and make money doing it," he says. "In the 1990s, we were doing manufacturing in the US, and we found it was costing 10 to 15 times more to manufacture in the US than in China. That situation is now getting closer to equilibrium as costs in Asia have risen."

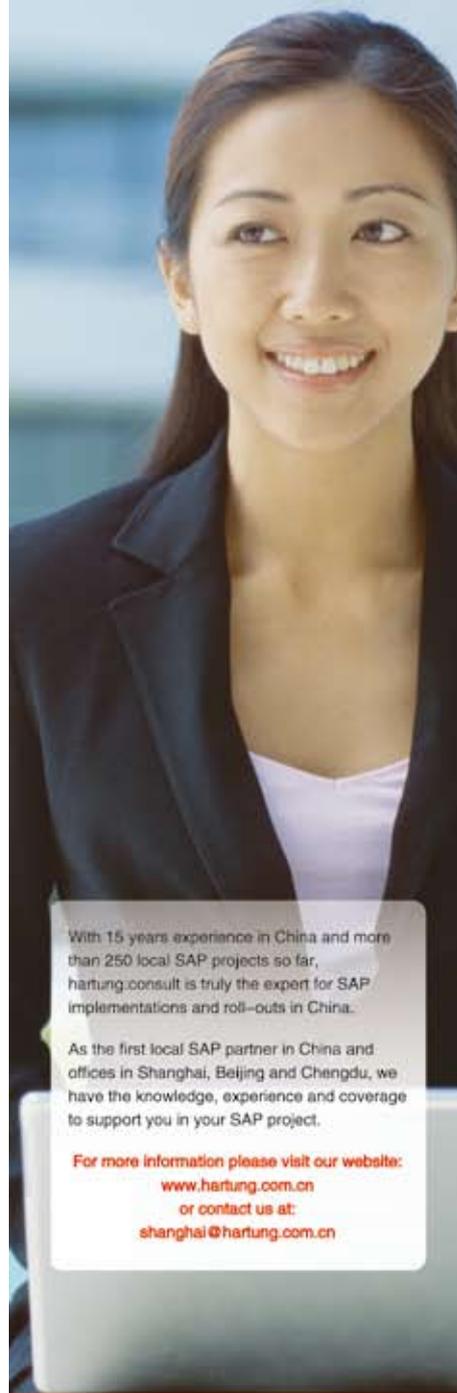
Indeed, rising manufacturing costs in China forced the company to raise the retail price on its three-wheel Xebra LSV from €7,300 to €9,150 in 2008, according to Campbell. As a result, the company stopped regular production of its Xebra sedan line in 2009, instead focusing on its electric XL trucks.

For other companies, 2009 marked a year full of other new influences in the market.

"Uncle Sam Will Pay for Your Golf Cart!" announced headlines across the country in the waning months of 2009. The US government's stimulus package included a federal tax credit for EVs, usually in the range of €2,900-4,400, depending on ➤➤

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MAKING TRACKS: Low-speed electric vehicles appeal to a wide range of consumers

►► battery size. Meanwhile, certain states such as Oklahoma offered an additional 50 percent tax credit on LSVs. The result? In 2009, buyers could walk into an Oklahoma LSV dealership and buy a €7,300 LSV for around €630 after tax credits.

In Europe, where reduced fuel costs have long been an incentive for consumers, EU nations are scrambling to create a incentive programmes to make LSVs even more affordable.

The huge markdowns in the US have been an obvious boon for LSV makers. Annual sales of LSVs in the US soared from around 5,000 vehicles in 2008 to approximately 20,000 last year, a sales year that won't be matched until 2015, according to IMS research.

Kandi Technologies, the NASDAQ-listed Zhejiang-based maker of the Kandi Coco, cashed in on the rush. Kandi, whose primary business is manufacturing power sports and go-karts, took orders for 1,200 Kandi Cocos last year in Oklahoma alone,

after importing only 300 vehicles nationwide earlier in the year.

"If they can ramp up their production of electric vehicles to even 10,000 vehicles, in a very short time-frame that will become the majority of their business," says Robert Agriogianis, president of investor relations firm Focus Asia Partners, who represents Kandi in the US market.

Eye Kandi

Agriogianis, who himself drives a yellow convertible Kandi Coco, added that LSVs with a more micro-car-styling like the Coco have begun appealing to more mainstream customers, especially if the price is right.

"It sparks so much conversation that it can get annoying. You pull into a parking lot, and the second you get out of the car, there are three people standing there saying 'What's that? Where can you get it?' he says. "I don't think people look at electric vehicles as a replacement for their SUV. I think it's looked at as a second or third car. How are green are ►►

TWO-WHEEL APPEAL

While four-wheel low-speed electric vehicles (LSVs) remain rare on the streets of China's cities, their evolutionary cousin, electric bicycles (e-bikes) are now ubiquitous. In a recent article, the *Wall Street Journal* cites estimates that there are now 120 million e-bikes on China's roads, up from 50,000 only ten years ago. Last year, 20 million were produced.

After a few early failings in the 1970s and 1980s, China's e-bike development started gaining traction in the early 1990s with the government's Ninth Five-Year-Plan that prioritised electric transportation. Though there was indigenous e-bike technology being developed in China, California-based ZAP Automotive, which originally sold e-bike kits in the 1990s, moved into the China market during this time.

"It was a natural extension to move over there," says Alex Campbell, ZAP's head of communications. "We introduced some of the first electric bicycles in China."



ELECTRIFIED: Scooters and e-bikes hit the road

A prescient move, but it did not end in billions for the Santa Rosa company. After attempting to partner with a series of e-bike manufacturers, Campbell says it was difficult to find the right partner with the same standards of quality. Meanwhile, back in the US, a flood of cheap Chinese- and Taiwanese-made scooters and e-bikes

threatened the business they'd pioneered in the US.

Today, while ZAP has added LSVs to its product line, Chinese companies have whisked quickly and silently to the top of the e-bike industry. In 2006, there were 2,700 licensed e-bike manufacturers in China, including industry leaders Xinri and Yadea. While 90 percent of all e-bikes sales worldwide last year were in China, Southeast Asia and India are tapped as emerging markets.

In the US, where most of the 200,000 e-bikes sold last year were used for recreation rather than daily commuting, some say the country's reluctance to join the e-bike revolution may foreshadow events when four-wheel electric vehicles become mainstream.

"The Chinese have a hundred million people on electric bikes," Frank Jamerson, a former GM engineer turned electric-vehicle analyst told *Time* magazine last June. "That means a hundred million potential customers."



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"The market in the US for LSVs is a good market, but the market in China is off the charts"

**ROBERT AGRIOGIANIS
PRESIDENT, FOCUS ASIA
PARTNERS**

➤ you? Well, if (cars) are €30,000, you're probably not that green."

According to Star Electric Vehicles' vice president of sales and marketing, Joe Wallington, the future of the private on-road LSV market depends largely on infrastructure and government policy. Wallington, whose company manufactures LSVs in North Carolina from Chinese-made components, says allowing vehicles to go 56 kph (and travel in 472-kph zones) would really make them much more mainstream. So-called medium-speed vehicle (MSV) designation has been recognised in 10 states.

Home on the road

Wallington envisions an electric MSV commuter car that retains a significant cost advantage over full-speed highway-approved EVs. "We see the LSV and MSV markets coming together," he says. "Right now it's a relatively small market, but if MSV

designation gets recognised nationally, (the market) could explode into the hundreds of thousands."

Interestingly, this vision of mainstream electric urban commuter cars may be realised first in China where, despite manufacturing for the LSV industry, very few vehicles are currently consumed. Here, LSV designation is not 40 kph, but rather 70 kph, higher even than the US's MSV designation. Priced in the same range as the country's most economical gas-powered sedans, LSVs in China may even see further government subsidy programmes in the coming years.

Focus Asia's Agriogianis mentions a rumour for government subsidies of up to 75 percent on LSVs in China, which may ignite another 2009-type sales year for his client.

"The market in the US for LSVs is a good market, but the market in China is off the charts." ■

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