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ELECTRIC VEHICLE INDUSTRIAL NEWS INSIDE & OUTSIDE OF CHINA

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--CHINA E-VEHICLE Talked to Mr. Patrick Davin of Vmoto

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SOME AFTERTHOUGHTS OF EUROPEAN MANAGEMENT

CHINA E-VEHICLE recently interviewed Mr. Patrick Davin, President of Strategic Business Development of Vmoto, and the interview is published in this issue. Prior to this, I made a thorough study of this company's history and current market development, I am deeply impressed by this company after that. Vmoto is established by Patrick Davin in 2000, who is an Australian. Now it has elected as one of the top five players globally in the electric motorcycle and scooter industry in 2012 by the internationally authoritative market research institute Pike Research. Patrick told me Vmoto's biggest advantage is its European management and Made-in-China cost competitiveness.

A big section of its senior staff are from Honda Sundiro, which is Honda's biggest OEM company in China and has huge market share in China's motorcycle market. This at least has promised a high-quality management team in the beginning. Meanwhile, most of the people of the top management are from Europe, they are much more familiar with the European market comparing to many Chinese companies, and they understand the culture, people's consuming psychology, and sensitive to the latest trend and market direction in those countries. These advantages benefit them a lot when they make the production plan and marketing strategy. The European management also guarantee the strict quality control and emphasis on the independent R&D, besides these, they spent lot of time on accumulation of the market information and the market data analysis, which is sadly ignored by many Chinese e-vehicle companies or incapable to do it. The proper distribution network and after service spots are continuously creating a reliable reputation for the brand in Europe. To sum it up, this brand and its markets are taken care of properly by this team.

Many Chinese companies always like ask "which country is a better market?" My answer from my true heart may disappoint most of them, my answer is all the countries are good markets, the key point is how to properly develop the product for the right market. Patrick told me they had sold their e-scooters to South Africa and they were excited about the market.

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CONTENTS

CHINAE-VEHICLE
www.chinae-vehicle.com

Forefront 8

Report 20

CONTENTS

CHINA EV ELECTRIC VEHICLE www.chinaev-vehicle.com

Electric A.M.B 36

Test Riding 102

Observation 108

Electric Car Rentals on the Way in Jiading District

Shanghai, China--Shanghai's primary auto manufacturing base and the Jiading district government plan to launch an electric car rental service in the district next year.

The planned service, which will operate as a pilot program, could offer commuters a more convenient and environmentally friendly transportation option, but an industry analyst cautioned that most local consumers have not warmed up to electric vehicles.

The service will provide 100 electric cars at rental stations located at some local government offices, universities, residential compounds, office buildings, shopping malls and metro stations in Jiading district, said Cao Yue, an engineer with Shanghai International Automobile City, which will operate the service.

Jiading has already been outfitted with 387 charging poles for electric vehicles, Cao said.

The service will rent vehicles on both a short-term and long-term basis. "Short-term customers are commuters who do not have easy access to nearby locations," Cao said. "The government and companies may rent cars on a long-term basis."

Cao pointed out short-term rentals allow many customers to use the

same car in a single day, which could free up parking space and reduce energy consumption.

However, the immaturity of the industry may put off consumers, said Chen Wenkai, president of Gasgoo.com, an automobile news and information website. "Compared with regular automobiles, electric cars remain in a nascent stage of development and are less reliable. Most people don't know a lot about them. What if the car runs out of electricity halfway to your destination and you do not know how to deal with it?" Chen told the Global Times.

Chen said the service will be more appealing to companies and government agencies than individual consumers.

Cao said the service will help promote electric vehicles to the public.

Layoffs Reported at Mission Motors

U.S.A.--Asphalt & Rubber has gotten word that Mission Motors has let go of a significant portion of its staff, both on the engineering and non-engineering sides of the San Francisco based startup. With the layoffs presumably the result of a lack of funding, the news comes interestingly just a few months after the departure of Mission's Chief Financial Officer, Chris Moe, who made his return back to Vectrix in July of this year. The bulk loss of its workforce is certain to be a blow to Mission Motors, which according to our sources, still has a core team in place to continue basic business operations. Making the switch from being an electric motorcycle company to supplying electric drive components to OEMs in Q1 2010, it wouldn't surprise us if some of the now former Mission Motors employees found their way into other electric motorcycle manufacturers, and now the news paints an interesting picture for the future of the Mission R electric superbike.

One of the assets in Mission's arsenal of interesting products is of course the race-winning and journalist-humbling Mission R electric motorcycle. With Mission casually floating the idea that it would entertain licensing the design to a third party, Mission might be more amenable to inking a licensing/acquisition deal, and an interested party could now acquire more than just a motorcycle.

With two factions existing within Mission Motors when it came to selling electric motorcycles or OEM parts, time will have to tell as to whether this news opens or closes the future of the publicly well-received Mission R.

From what we understand, a number of Mission's pro-motorcycle group are now officially free agents in the marketplace, so it will be interesting to see where they land in the industry once the dust settles.

Researchers Show Feasibility of Lithium-Metal Free Anode for Lithium-Air Batteries

U.S.A.--Researchers from the University of Rome Sapienza (Italy), Argonne National Laboratory (United States), and Hanyang University (South Korea) have shown that the construction of lithium-air batteries without lithium metal is possible. A lithiated silicon-carbon anode can be used instead. As is the case with many new technologies, there are drawbacks to this one.

Two drawbacks are that such batteries have a lower capacity and a lower voltage than normal lithium-air batteries. However, the new battery is safer and has a greater energy density than lithium-ion batteries.

Lithium-air batteries are being sought by multiple organizations, including IBM, due to the fact that they have the potential to store a stunning 11,140 Wh/kg.

This means that a 24 kWh battery (same size as the Nissan Leaf battery) would weigh only 2.1 kg, or 4.7 pounds! A safe and affordable prototype of such a battery would certainly turn EV research upside down, because battery weight is one of the greatest issues facing EVs today. It would translate into longer driving range, higher performance, and higher efficiency.

Notably, the multiple hundreds of pounds that EV batteries usually weigh shorten vehicle range and slow them down, both very significantly. Smaller, more powerful batteries could really boost the EV revolution forward.

KLD Energy and Cenntro Group to Develop 4-Wheel EVs with KLD Drive System

U.S.A.--KLD Energy Technologies, a developer of high-performance electric motor technology, and Cenntro Group Limited, a developer of diesel and LPG powertrains for industrial, agricultural, transportation and construction equipment worldwide, entered into a relationship jointly to develop 4-wheel electric vehicles which will incorporate KLD's electric vehicle drive system technologies.

Some of the first systems planned to go into the market will be the Utility Electric Vehicle (UEV), an off-road and on-road work and maintenance vehicle; the Neighborhood Electric Vehicle (NEV), a low-speed vehicle; and the Intra-city Logistic Vehicle (ILV), a compact delivery vehicle similar to those used by major overnight delivery services.

The initial focus is on the US, Europe and China, with the electric vehicle market in China expected to be among the fastest growing in the world.

KLD's system comprises the motor, battery pack and controller. KLD and Samsung SDI recently entered into a cooperative relationship jointly to develop battery systems which will incorporate Samsung SDI's lithium-ion battery cells and KLD's electric vehicle drive technologies.

Cenntro Group Limited owns a number of operations in China and the United States including Zenith Power Products, LLC and Xinchang Cenntro Machinery Co., Ltd. and is a major shareholder of Sinomachinery Group Limited. This group of companies design, manufacture and market diesel, gasoline and liquid propane engines, transmission systems and integrated power solutions.

Hero Group Ties up with Canadian Firm for Electric Bike Batteries

Chennai, India--Hero Eco Ltd, part of the Hero group, has tied up with Electrovaya of Canada, under which the Canadian company will “work with Hero Eco to implement lithium ion-powered electric bikes for Hero’s markets in worldwide.”

Hero Eco – the umbrella entity that includes Hero Electric, Hero Exports, Hero Cycles, Mediva, Winn and Hero Ecotech – recently expanded its operations in Europe and North America through its overseas acquisition.

As a result of this acquisition, Hero will now market lithium ion powered electric bikes in less price-sensitive markets of Europe and North America, expanding its market reach to 22 countries.

“Hero's expansion into Europe fits well with Electrovaya's recent acquisition of Miljobil Grenland in Europe. Miljobil is a lithium ion battery pack integrator, which was earlier part of Tata Motors,” says a press release from Electravaya.

The Government's recent EV policy calls for a Rs 23,000-crore plan to promote the production of electric (EV) and hybrid vehicles over the next eight years, and set a sales target of 6 million units by 2020.

The policy includes aspects such as incentives to customers, charging infrastructure, research and development funding and creation of EV zones.

Electrovaya Inc. designs, develops and manufactures proprietary Lithium Ion batteries, battery systems, and battery-related products for the clean electric transportation, utility scale energy storage and smart grid power, consumer and healthcare markets.

Founded in 1996 and headquartered in Ontario, Canada, Electrovaya has production facilities in Canada, the US and Europe.

Tesla Store Officially Opened in Canada

Canada--It is now official, Tesla’s first Canadian store is open. Tesla Motors opened its first "new design" retail store in Toronto, Canada on Nov. 16.

The company's new store is located in Toronto’s Yorkdale Shopping Centre, a mall known for its higher end stores.

According to Tesla, the store features interactive displays and design studios where customers can design their own Tesla Model S on a large touchscreen. They can then view the result on an 85-inch video wall in the back of the store.

Tesla’s own Elon Musk explained the reasons behind the company’s store strategy. "We are very excited to bring our new, interactive store design to Toronto," said George Blankenship, vice president of worldwide sales and ownership experience. "Our approach continues to be focused on informing as many people as possible about EVs, our company, and the advanced technology behind Model S. Customers in our store are invited to ask questions and engage with informative product specialists to learn more about the many advantages of driving an electric car. We know we've done our job when every customer leaves smiling."

Tesla says it is reinventing the car-buying experience by placing its stores and showrooms in high foot-traffic locations like Yorkdale Shopping Centre. Tesla Yorkdale is one of 10 new locations Tesla has opened this Fall.

By the end of 2012, Tesla says it will have 24 locations in North America and 34 worldwide; Tesla will continue to expand its retail network into 2013.

TOSHIBA

Leading Innovation

Toshiba Launches EV Li-ion Battery Monitor Chipset

Japan--Batteries for plug-in cars may soon be controlled by Toshiba electronics.

This is the case given that Toshiba Corporation has just recently announced it will launch a lithium-ion battery monitor chipset for such automotive applications.

Toshiba explained the battery monitor IC integrated into the chipset is the industry's first to be able to manage up to 16 cells per IC, allowing for a reduction of components and the development of simple, low-cost battery monitoring systems.

The chipset, which integrates a battery monitor IC (TB9141FG), and microcontroller (TMPM358FDTFG), detects the remaining charge level and equalizes it among cells (cell balancing) and can also detect abnormal battery status. Toshiba says it is an ideal choice that delivers enhanced battery management technology which is required for hybrid electric vehicles (HEVs) and electric vehicles (EVs).

The TB9141FG uses a 96-volt (high-voltage) process and realizes monitoring of a 16-cell li-ion battery with a single IC. The TB9141FG is able to communicate in a noisy environment, using differential signaling in a daisy chain communication link between two or more TB9141FGs, an important feature for automotive applications.

The TMPM358FDTFG is a 32-bit RISC microcontroller built around an ARM CortexTM-M32 core and is compliant with functional safety standards (IEC61508 / ISO26262). The device achieves a battery monitor system with low power consumption, due to its back up RAM function, sleep function3 and Toshiba's original low power technologies.

Toshiba will provide a reference model mounting the TB9141FG and the TMPM358FDTFG and a software library to be compliant with functional safety standards. It will allow customers to easily create their own battery monitor system.

Toshiba is promoting the battery monitor chipset business and developing products that meet all functional requirements in a market that is expected by the company to grow with increasing demand for HEVs and EVs. The company targets a 25% market share by FY2017.

Toshiba expects sample and reference model shipments of this chipset will start in February and March 2013 respectively. Mass production will start in April 2014.

Bigfoot Monster Truck Goes Electric

U.S.A.--The monster truck is one of the most decadent representation of combustion vehicles, an oversized and over-powered 4x4 destroying junk cars in a loud way.

Also we have been surprised to discover that a company had thought about developing an electric BigFoot, the first of its kind.

Supported by many sponsors, BigFoot4x4 based in St Louis, Missouri, teamed-up with a battery manufacturer who supplied 30 batteries that produce 360Volts power allowing to power the electric motor developing 1080nm of torque (800 ft/lbs) for 20 minutes (without power loss) according to the first tests.

The BIGFOOT # 20 is also eight nitrogen shock absorbers and 1.68meters tires mounted on 25-inch wheels ...Behind the wheel for this world premiere Jim Kramer (a legend in the discipline) compresses without difficulty two Ford Taurus.

The first public demonstrations of the electric monster truck are expected in 2013 after a new series of tests.

Ideal Invests in New Polish Facility

Kutno, Poland--Ideal Bike Corporation has moved to a new factory in Kutno, Poland recently which is located only a few kilometers from the ‘old’ facility. Ideal is to concentrate its electric bike production for Europe here.

Ideal Bike Corp. invested in its new Polish facility as its owns the grounds and buildings contrary to the old factory which was rented. Ideal Poland produces about 100,000 bikes per year and is the smallest of the in total three production plants the company operates. Its facility in Taiwan produces about 220,000 units this year while the 2012 production in China will total about 650,000 units. Total 2012 production of Ideal Bike Corp. stands at close to one million units.

E-bikes fitted with the Bosch drive systems

Ideal’s new Polish facility will in particular focus on the assembly of e-bikes fitted with the Bosch drive systems. The Taiwan based bike maker will also house its EN testing facility here.

2013 Kymco Shows the Candy Electric Scooter

Italy--More and more electric vehicles surface, and that's good, because we all hope the prices will start to become more affordable once a fierce competition will be afoot and the markets will be flooded with EVs.

Kymco makes no exception and shows the Candy electric scooter at the 2012 EICMA. While this scooter comes with no design frills, it's clearly oriented toward functionality and ease of use.

The Kymco Candy sports a Lithium-Ion battery powering a 2 HP engine, seemingly enough for cruising around the city for shopping or going to work. The scooter weighs in at a very nifty 75 kg (165 lbs) and this adds to the convenience and maneuverability side.

The max range offered by the Kymco Candy is 60 km (37mi) on a charge and that's so much more than most people do in one single day. A 4-hour charging time means you can leave it plugged in overnight, even if you're late at home, and have it fully charged in the morning. If the price, yet unknown, will also be as nice as the machine is, we can expect to see a lot of these in Europe's cities in 2013.

Slowdown in Lead-acid Battery due to Depressed Production and Sales of E-bike in the Busy Season

China--Due to the dissatisfactory production and sales of electric bicycle in the busy season, growth rate of lead-acid battery slowed down. According to relevant data, 15,754,000 KVAH batteries were produced in China in September, up 5.1% month on month and 36.6% year on year; the cumulative production of batteries was 128,000,000 KVAH in January-September, increasing by nearly 3 times.

Seen from the situation of this year, storage battery production has continued the descending trend after reaching the peak in June this year. The production of lead-acid battery was 16,832,200 KVAH in June, down slightly in July and August month on month and up slightly in September. The overall operating rate of lead-acid battery enterprises was 64.32% in June, and reached 60.6% in September after the month-on-month decline in successive three months.

The continuous decline in lead-acid battery production since June this year was impacted by two factors:

Firstly, the sluggish electric bicycle market in the busy season encumbered the orders of power-type lead-acid battery. Summer is the traditional busy season for electric bicycles in former years, but the busy season was a flash in the pan in June this year. The orders of power batteries declined since July and the pressure of supply exceeding demand was prominent, leading to the prevalent “price war” in power lead-acid market. The price difference between first-line brands and second- and third-line brands has been narrowed to less than RMB50/per battery pack. As a result, power-type lead-acid battery enterprises generally control production and reduce inventory.

Secondly, the decline in output of Japanese automobiles led to the decrease of lead-acid battery yield. Sales volume of Japanese automobiles has taken a nose dive since July this year due to the impact of Diaoyu Island event. According to the statistical data of China Association of Automobiles Manufacturers, sales of Japanese passenger cars dropped from 259,400 in June to 160,000 in September, down nearly 40%. Some Japanese automobile production lines have even stopped production, so the demand for supporting lead-acid batteries decreased, affecting the output of related enterprises.

In addition, the production status of fixed-type battery enterprises is unsound. Some enterprises show that the output of fixed-type lead-acid batteries has been encumbered since August this year due to export downturn.

Bosch Presents Intuvia Computer and 400 Wh Battery

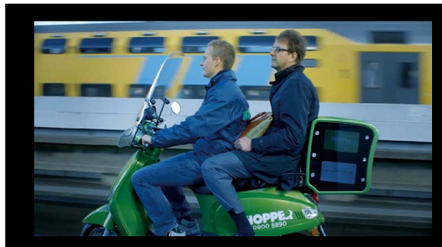
Reutlingen, Germany --Bosch’s presence on the bicycle market entered a new phase with the introduction of the new Intuvia on-board computer and a 400 Wh battery.

The so called PowerPack 400 offers 30% more operating range than its predecessor the PowerPack 300. Still it is equally compact and weighs 2.6 kilogram, just over the PowerPack 300.

The battery is available fixed either to the frame or to the rear carrier and can be charged in three and a half hours. Using the new, quiet battery charger, 80% capacity is reached in two and a half hours.

Intuvia is the next generation of e-bike on-board computer controls. As the name indicates, the “ignition key” to Bosch e-bike electric propulsion is intuitive to use and gives the user easy access to a range of information and functions.

Using the Intuvia control unit, which is attached separately to the handlebar, five assistance modes are available: Eco, Tour, Sport, Turbo, Off.



Hopper Launches Electric-Scooter Taxi Service in Amsterdam

Amsterdam, The Netherlands-- From 1 October, after five years of preparation, Hopper will be the new way for commuters and Amsterdam citizens to move around the city. On chauffeur-driven electric scooters, for a fixed rate of €2.50 a ride, customers are taken to their final destination. The project is a private-public cooperation with the City of Amsterdam, NS and the Ministry of Infrastructure & Environment and helps solve metropolitan transportation problems.

In its initial phase, the service will operate within the city centre (ring S100), branching out to the Pijp, RAI Station and the Zuidas business district. Hopper will be operational on weekdays from 8.00 to 20.00. Customers can book a Hopper by means of an app, telephone number 0900-8890 or via the website www.myhopper.nl. The scooters that Hopper operates have been converted for transportation purposes, to provide extra comfort and safety. For example, the saddle was extended, steps were mounted on the backside of the scooter and the box on the rear can act as a back support.

Ruben Beugels, initiator of Hopper Netherlands: "The preparations for the roll-out of Hopper to Rotterdam, The Hague and Utrecht have now been launched".

8,000 Renault Twizy Units Recalled

France-- The Renault Twizy is currently one of the most successful selling plug-in electric cars. Bubbly, cute, practical and cost effective, the car has won the consumers heart, as well as taking a little bit of banter from the average motor enthusiast – pick on something your own size, guys!!

However, a bit of bad news for Renault and Twizy owners, as they've announced a recall of 8,000 units due to braking issues. Due to manufacturing problems, the brake fluid will slowly leak from the car eventually causing problems and slower brake reaction. The Renault Twizy uses a non-assisted braking system and and requires the user to press the pedal pretty hard to actually achieve the maximum stopping power, this was brought to attention after several complaints from Twizy owners. Effected models have been produced between January 27th 2012 and May 1st 2012.

2013 Vectrix VX-1 Li Electric Scooter Shows Up in Germany

Germany-- Here's a nice though short ad for the 2013 Vectrix VX-1 Li+ electric scooter cruissing through Berlin, Germany.

The Vectrix VX-1 Li and Li+ scooters come with a twist on the top-notch parts side, as they're loaded with components one usually expects to see in expensive machines: Marzocchi forks and Sachs adjustable rear shocks, and Brembo disc brakes for both front and rear wheels.

Now, it's more than obvious that we're dealing with high-end machinery, and the price tags are howing this: $11,995 (€9,380) for the Li and $13,995 (€10,945) for the Li+. The difference comes from the battery packs, like the "+" indicates: the Li comes with a LiFeP04 30Ah 3.7 kWh battery, while the Li+ shows a 42 Ah, 5.4 kWh one.

Translating the batteries' energy in range on a charge, the Li offers 40-60 miles (64-96 km), while the bigger version will cover 55 to 85 miles (88-136 km), depending on the riding speed. Both machines come with a top speed of 68 mph (110 km/h) and can accelerate from nil to 50 mlh (80 km/h) in about 6 seconds.

Given the easy recharging using casual 110V/ 200V outlets, the Vectrix VX-1 Li/Li+ can be fully recharged pretty much anywhere during 3-4 or 4-6 hours, respectively. The Li and Li+ are available in White, Black and Silver.

OPERATION REPORT ON

E-bike Industry in the First Half of 2012

It is learned that the development of electric vehicle industry steps into the stage of stable growth in 2012. Analysis on the operation situation of the first half of 2012 shows that the industry still presented a market development trend of high fluctuation. At this stage, it is more difficult for the overall scale of the industry to rise and gradual decline in the industry has even become the major trend at present due to the impact of internal and external factors.

Seen from the constitutive property of market growth, the probability of considerable rise in the total volume has reduced, but not excluding the factors that can drive the total volume to rise. On the premise of stable total volume, rise of companies' sales volume has transited from growth dividends brought by rise of total volume to structural growth brought by market competition, causing that the gap among brands is further widened. It can be seen from the operation data in the first half of 2012 that first-line brands and some leaders in the second-line camp still realized sales volume growth against the market trend. In terms of brand development trend, the multi-oligarch competition pattern of the industry is emerging, which will also accelerate the process of industrial reshuffle to a certain extent.

There was no obvious change in the market in July compared with the first half of 2012. The sales volume even dropped all the way and the market suffered slump to varying degrees. With the arrival of the busy season, enterprises input their major efforts to drive terminal competition of the market as sales in busy season will perhaps affect the pace of the industry development of the whole year to a certain extent. Gratifyingly, electric vehicle brands and products further tend to consumer groups with the further improvement of brand integration. They also begin to really enter the social consumption field, becoming an important force to drive domestic demand and promote consumption.

Macro-economic Environment

The national economic operation was stable in the first half of 2012 but the economic growth rate slowed down slightly. According to the data issued by the State Statistics Bureau, the GDP was RMB22, 709,800,000,000 in the first half of 2012, up 7.8% year on year calculated according to comparable price. The GDP increased by 8.1% in the first quarter and 7.6% in the second quarter. In terms of industry, primary industry increased by RMB1,747,100,000,000, up 4.3% year on year; second industry increased by RMB11,095,000,000,000, up 8.3% year on year and tertiary industry grew by 9,867,700,000,000, up 7.7% year on year. The GDP increased by 1.8% month on month in the second quarter.

Besides steady growth of national economy, consumer price rose by 3.3%, with the growth rate down 0.5 percentage points from

the first quarter and down 2.1 percentage points year on year. The steady national economic operation situation has something to do with a series of positive and steady macro-control and monetary policies. For domestic medium- and small-sized companies, the policy of money squeeze has led to certain difficulty in capital turnover for enterprises with relatively weak capital strength, and some enterprises in electric bicycle industry are also affected to certain extent. On the whole, electric bicycle manufacturers are not fundamentally affected and their capital operation is sound.

Policy Factor

The development of electric vehicle is still market-driven in 2012 and the fact that the electric vehicle standard failed to be issued timely does not have substantial effect on electric vehicle production. It is learned that electric vehicle related departments are actively reporting related documents on electric vehicle standard setting to the State and it is estimated optimistically that preliminary approval can be obtained at the end of this year. The contraction between the serious lag of electric vehicle standard and the rapid market development is becoming increasingly fierce. What consumers demand are no longer electric bicycles with just riding function more than a decade ago. New vehicle types and new demands have promoted the rapid development of electric vehicle and especially in recent years, electric vehicle manufacturers' active expansion in functionality, safety and stability of the products have made electric vehicle become an important traffic tool to change common people's trip and life.

Of course, regional policies also have certain effect on the development of electric vehicles in some regions besides industrial policies. Local traffic laws to control and restrict electric vehicles have restricted and affected the development of electric vehicle in the local area, but seen from the national overall trend, the current policy environment has not caused fundamental obstacle to the development of electric vehicle industry, but worries and difficulties in the development of enterprises due to uncertainty of policy factors cannot be excluded.

Raw Material Market

Key raw materials that affect electric vehicle manufacturing costs did not have great fluctuation in the first half of 2012, and presented a basic situation of stable operation and the price fluctuation curve presented a steadily rising pattern year on year. However, electric vehicle key parts have still suffered great fluctuation since the first half of this year, which has even triggered forced intervention of related supervision departments. This has something to do with the prices of raw materials, but is more closely related to competition among enterprises.

For example, the price of battery presented a V-type structure in the first half of 2012. The battery price stood high after January, but dropped sharply April. A round of price reduction led by large enterprises swept the entire industry and many enterprises even suffered deficit in the low-price operation. This price reduction disturbance came to a conclusion in June. Price competition among battery enterprises affected the complete vehicle price to a certain extent in the first half of 2012. Battery parts price also presents the market competition pattern of combination of market and regulation and control. The oligarch competition pattern in electric vehicle key parts is forming or has been formed, starting to exert leading influence and effect on the industry operation.

Micro Operation Features

The entire market sales volume declined by nearly 15% and the total shipments were less than 7 million.

The overall sales volume of electric vehicle market did not realize the established goal of year-on-year growth in the first half of 2012, but saw a year-on-year decline of 15% with total shipments of less than 7,000,000. This is related to the overall development stage of the industry. After years of industry development, electric vehicle industry has transited to the stage of high fluctuation after the period of stable growth. Compared with the former stage in terms of sales development characteristics, slight decline in sales volume conforms to the law of development of the industry. Traditional channels tend to be saturated for the current electric vehicle industry, and especially the saturation of the purchasing power in prefecture-level cities and countries has led to the stagflation in the total sales of the industry. However, township market has not been intensively developed so sales cannot be released effectively. Seen from the law of development of the industry, gradual sales fluctuation has not changed the overall development trend of the industry. In the predictable coming years, electric vehicle sales volume will perhaps realize substantial growth and the industrial scale will be further driven and released.

Analysis on the monthly evolution in the first half of 2012, the market grew slowly during January to March and saw the first small peak in March, but in April, the market dropped sharply, which recovered slightly in May, but declined again in June. The market lacked staying power in the first half of 2012 and various sales regions suffered sluggish to varying degrees. Due to the impact of other unfavorable factors including policy, the sales volume in local regions was even down 60%.

The development pace of large enterprises dominated the market.

The most significant feature of the overall market development in the first half of 2012 was that the pace of large enterprises increasingly led the development pace of the overall industry. First-line camp represented by Aima, Yadea and Xinri realized growth in sales volume to different extents, with an average growth rate of over 20%, exceeding the industry development speed. A series of measures taken by large enterprises had more and more influence on the competition strategies of other brands in terminal, channel, product and brand, etc.

Market pace refers to the change and representation of the market in each development link. In the first half of 2012, the pace of market change was closely related with the development pace of large enterprises, for example, large enterprises' new product launching time, channel promotion mode and brand competition strategy making had more and more influence on the final performance of the market in these aspects. More and more second-line and third-line brands had to follow these strategies.

Previously, enterprises gave more consideration to the exertion and balance of their own advantages and disadvantages in competition, but now they need to learn more about the change and trends of competition strategies of large enterprises as theses new trends affect not only the market competition trend in local areas, but even affect the development direction of the entire industry.

Specifically, the new round of price competition quickly swept the entire industry in the first half of 2012, so to judge the competition strategies of large enterprises in advance and take preventive measures as soon as possible becomes the crux to reduce loss.

Brand Pattern

Sales volumes of all the first-line brands rose with the year-on-year growth rates rising slightly.

The market performance of first-line camp was optimistic as their sales volumes all rose and some brands even realized substantial growth compared with the same period of the previous years. The position of leading brands in the first-line camp represented by Aima, Yadea, Xinri and Luyuan was furthered established and at the same time, challengers to the first-line brands represented by BYVIN, Tailg and Lima also had excellent performance in the first half of 2012.

Leaders including Aima, Yadea, Xinri and Luyuan had their own characteristics in the first half

of 2012. Aima achieved significant effect in several major aspects including brand construction, terminal building and product making and further strode forward fashion and technology in brand leading. Yadea was quite unique in Olympic brand marketing, happiness action and Li-ion battery, becoming one of the brands with close combination of Olympic marketing and brand. In addition, it integrated happiness into its brand connotation and initiated the model of value marketing. Xinri conducted a series of work concentrated on “novelty”. It firstly conducted overall upgrade in brand image and the new Xinri image is more technology-oriented and modern. It also pushed forward the large terminal activity—“Novelty in China” by integrating brand connotation and terminal activities tightly and passing on its new brand appeal. The 15th anniversary ceremony and the new micro-film marketing mode have brought new marketing mode to the industry.

Second-line and third-line brands camps suffered decline to varying degrees except for the slight rise of some brands.

Leaders of the second-line camp represented by Fushida, Greenhorse, Opai, Lvjia and Really Love and challengers of the second-line camp represented by Phoenix, Slane and Oasis rose steadily in terms of operation status in the first half of 2012. Third-line brands all suffered decline to different extents except some brands.

The sales volume of Fushida and Lvjia, as the leaders of second-line camp, rose somewhat in the first half of 2012, but the growth rate dropped slightly compared with that of the first-line camp. However, the overall performance of second-line and third-line camps was unsound and some third-class brands even saw sharp decline in sales volume. Of course, there were also some brands with stable market performance relying on their advantages in product, brand and region, etc., for example, Slane, Oasis and Phoenix became the representative brands of new categories.

Gap among enterprises has been further widened and the pattern of multi-oligarch emerged preliminarily.

With the further promotion of brand concentration degree, gap among brands is being further widened. It can be seen from the data of 2011 that the total sales volume of the top three brands exceeded 25% of the total industry scale. In the situation of sharp market change in the first half of 2012, the market share of first-line brands still kept rising, but the overall sales volume presented a declining trend. It is preliminarily judged that the market concentration of the top three brands exceeded 30% in the first half of 2012, which indicates the arrival of industry multi-oligarch competition. Seen from the current trend, this competition pattern will exist for a certain period of time and can hardly be reversed. What’s more, the market share of oligarchs will continue to rise.

In case of no backfire (leading enterprises committing no mistake or bumble), it is estimated that the market share of the top 7 enterprises will exceed 45% in 2012 and the market share of the top 5 enterprises will exceed 45% in 2013 and that of the top 3 enterprises will exceed 30%. When reaching this percentage, the whole industry will enter the third stage—industry cluster stage, i.e., the oligarch stage that we must face. Judging from the current industry development trend, the market share of the top three enterprises will even surpass 30% in 2012 and such an oligarch pattern will arrive at least one year in advance.

Marketing characteristics

Thematic marketing in combination with brand characteristics has become the mainstream of marketing, but promotion is still an important competition means to drive sales volume in a short term. With the development of electric vehicle industry brand marketing, the marketing in combination with brand characteristics and brand theme is perhaps becoming a mainstream trend. Mainstream brands have successively abandoned the previous market promotion simply focused on promotion, and transited to the thematic marketing in combination with brand characteristics.

Product Trend

Subdivision of consumption market brings the diversified development pattern of product structure and product R & D tends to be consumer group-oriented.

Through development in the past few years, electric vehicle presents a diversified development pattern in product category and has also sub-divides different levels in product style and function, which is related to subdivision of consumer groups.

The characteristics and favors of electric vehicle consumer groups are quite different. Consumer groups of different ages, professions, regions and genders have substantially different demands for products. Since the first half of this year, various large brands have conducted product positioning and development in combination with consumer properties and different aesthetic sentiments of different consumer groups.

The sense of sci.-tech. and fashion displayed by the brand-new featured product “Keku” launched by Aima in the first half of 2012, and the value innovation of the bionic series product “Panda” launched by Yadea reflect that enterprises combine the core values of products and the core features and properties of brands in product positioning and product style, which will further evolve to a core product development trend of the overall industry.

Channel Characteristics

Township market will perhaps become the sally port in driving the sales volume of the whole market, but the current market space hasn't been fully released.

The electric vehicle channel continued to penetrate in the first half of 2012 and has developed into the three-type four-level channel structure with countries as the main force at present. The first-layer urban consumption channel has presented the situation of saturation and the channel consumption growth points concentrate on secondary purchase and redemption. Although there is still certain room for growth in countries, the main regional market-county market has become the scramble focus for enterprises so the competition is fierce. In this way, many brands continue to move their market focus down to towns and villages. In addition, township market is also the key sally port to drive the absolute increase of the whole market seen from the future development direction of the industry. Despite huge space, township market hasn't been effectively released judging from the current trend of channel evolution. Sales outlets in towns and villages are quite dispersed, which brings difficulty to outlet management. This is also a problem that enterprises and channel agents should solve urgently at present.

Price Trend

Affected by price competition, price still presents a year-on-year decrease trend and the profit margin is furthered compressed.

Price competition of the industry was still fierce in some places in the first half of 2012. Impacted by price competition, the overall selling price presented a trend of decline. Seen from the industry chain links, the price of parts fluctuated greatly last year, but this round of price fluctuation was caused by market competition rather than the simple impact of raw material price. Complete vehicle enterprises reduce their prices to different extents in order to drive sales. Although channel selling price varies with different regions, it presented a declining trend on the whole.

Taking into consideration various links of the industry chain, decline in product price has been the main trend since the first half of 2012, which led to further compressed profit margin. In terms of channel, gross profit margin of dealers has dropped from 10% to 5%-8%. In addition, net profit margin of dealers has further decreased due to the impact of external pressure such as storefront rents. Some dealers have even quitted from the industry competition as they can hardly maintain the operation status of high costs.

Future Trend

Due to limited promoting effect of the traditional busy season on sales volume, the market can hardly have a major favorable turn in the second half of 2012.

With the coming of the traditional busy season for electric vehicle, many factories have focused their next goal on drive and digestion of market sales in the busy season. However, the promoting effect of the busy season on sales in 2012 is still limited seen from the current industry trend, and it is not likely for the peak sales volume in the busy season like industry peak.

In terms of the overall sales volume, the overall market sales volume can hardly have a major favorable turn in 2012 except for all the uncontrollable factors, but not excluding the possibility of growth against the market trend for some brands. To seize the market development pace is still the theme of enterprise development in the second half of 2012 and the industry will gradually present the market competition pattern of large brands, large supporting and large channel.

The electric vehicle market structure tends to be more balanced and the busy season characteristics of the industry will further fade.

The consumption structure of electric vehicle market has seen fundamental change compared with the preceding years and the market structure tends to be balanced. In the traditional mature market, the popular consumption of electric vehicle is no longer the behavior of mainstream purchase crowds, replaced by redemption groups based on rational demands. Although the consumption structure focused on popularization is still the mainstream, the market consumption ability is still limited, which can hardly support the burst of huge market demand in the busy season.

The following work focus will shift somewhat. Enterprises will make greater efforts to find out the reason for the busy season, seek more supporting points and establish more systematic marketing mode to drive the market sales. Even so, the market structure of continuous fade of the busy season can hardly be changed.

The market development pattern for 2012 has been basically shaped so enterprises should give more consideration to the structure and form of market development in 2013 and in the future.

The market development has gone half a year of 2012, but the mainstream market pattern has been basically formed and there won't be much change in the major factors that influence the change of industry pattern. Currently, enterprises and dealers should give more consideration to the change of electric vehicle market competition environment in 2013 and in the future, as well as the opportunities and challenges brought by these changes, thus seeking more accurate market positioning and larger development space in the process of future industry competition and development. CHINAE-VEHICLE

Vmoto, A PERFECT COMBINATION OF EUROPEAN MANAGEMENT AND CHINESE COST

CHINA E-VEHICLE Talked to Mr. Patrick Davin of Vmoto

By Zoe Fu

Background: Vmoto is a very special company in the global e–vehicle industry. Firstly, it is headquartered in Australia, we figure that there are not many people who know the e–vehicle industry in Australia; secondly, it finds a special market niche in the delivery business and their products have been warmly welcomed by many post offices in some European countries. Mr. Patrick Davin founded the brand 13 years ago in Australia, and it has been grown so fast in the past 13 years, Vmoto is elected as one of the top five players globally in the electric motorcycle and scooter industry in 2012 by the internationally authoritative market research institute Pike Research. At present, Vmoto has transferred all the production facilities in Nanjing China, but at the same time, it is still implementing the European management standard. In this interview, its founder Mr. Davin will share with us his successful experiences in the past, and he will also tell us something about the “European management and Chinese cost”.

CHINA E-VEHICLE: Good morning Mr. Davin, thank you very much for accepting CHINA E-VEHICLE’s interview. Would you please tell us a bit the history of VMOTO? You are from Australia and started the e-scooter business years ago, I think many people will feel a bit curious about it, at least I have never heard that there are many e-scooters in Australia.

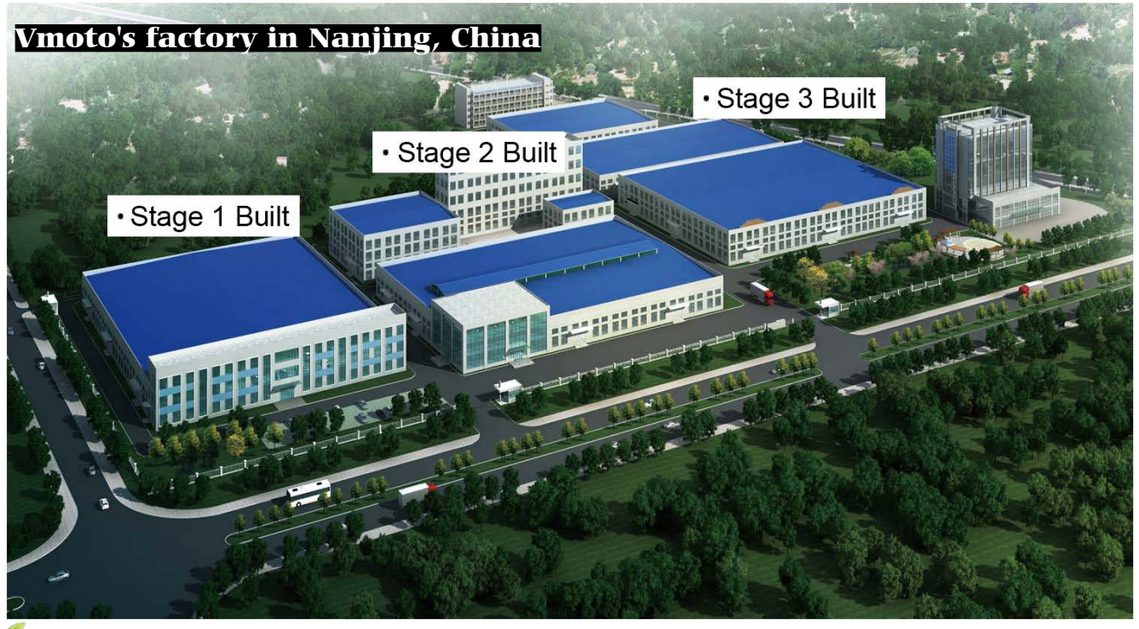
Patrick Davin: Vmoto was founded by myself in Australia in the year 2000. It was primarily set to develop and sell high quality petrol scooters in Australia and New Zealand. Later we changed from Petrol to Electric. We have listed on the Australian Stock exchange in 2006 and London Stock exchange this year. Although we are a company listed in Australia and the market for E scooters in Australia is small we have now established a global distribution base with our products being produced in our own factory in Nanjing. We are number one in distribution and supply of first world high quality electric scooters on a world basis.

Report

CHINA E-VEHICLE: How many employees are working for Vmoto for the time being? What is the percentage of the engineering people in the whole staff? How about the yearly production capacity?
Patrick Davin: We have around 400 employees directly and indirectly working for Vmoto. With about 280 at our factory in Nanjing. We have around 30 engineers in the company. Our actual production capacity in terms of production space is up to 450000 units. Our current capacity and planning for 2013 is around 45000 units increasing to 100000 in 2014.

CHINA E-VEHICLE: Would you please tell us more about Vmoto's new facility in Nanjing?
Patrick Davin: The Nanjing Facility was built by us in 2008 on land we purchased in Nanjing. It has three stages 1, 2 and 3. One and two are now build and operational. The stage 3 land has been purchased and we will assess if we need stage 3 depending on how the electric scooter markets develop in the future. We have 5 production lines with stage 1 being for Export quality scooters and stage 2 being for china domestic scooter production.

CHINA E-VEHICLE: What is the sales number in 2011 and the growth rate comparing to 2010? How is the growth this year comparing to the same period of 2012?
Patrick Davin: Sales growth is solid and growing despite the world economic slow down. Sales in 2011 are around 6000 units all for export. Sales in 2012 will be 7500 for export and 6000 for domestic. Production for 2013 is forecast at 12000 for export and 30000 for domestic. Domestic sales in China are increasing rapidly. We are also seeing good growth in USA, South America, SE Asia and Africa.



CHINA E-VEHICLE: Which countries has Vmoto sold the e-scooters to? Have you established subsidiary companies or offices in other countries? Which areas are the major markets at present? How do you take care of the after service?
Patrick Davin: We have offices worldwide with a large distribution center in Barcelona, a marketing office in Stockholm and offices in Australia and Nanjing. We are selling into over 26 countries with nearly 30 distributors.

CHINA E-VEHICLE: How many brands do you have? Do they have their own specific special market niche respectively?
Patrick Davin: We only have the one brand Vmoto however we also own Emax which is our wholly subsidiary. We market through Vmoto, Vmoto Powered by Emax. Emax and Vmoto are one in the same. The only difference is that when we bought Emax they had already and established name in some markets so we made the commercial decision not to change the name in these markets. We also OEM for a number of other brands whoever I am not at liberty to mention those bands here.

CHINA E-VEHICLE: Vmoto has be known as a key player in the global e-scooter market and it is listed as one of the Top 5 performers globally in the electric motorcycle and scooter industry together with Honda, KTM and some others, what is the core competitiveness of Vmoto e-scooters compared to the others? Would you please explain what the core value of the European management is? Is it working well here on the land of China given the difference of the culture and education background?

e-max
e-max ev's Germany

Patrick Davin: We have a number of Advantages.
a. We have a good mix of Western and Chinese management. With many of our senior people coming from Honda Sundiro and scooter manufacture background.
b. Geographically we are located where we have a huge advantage to our competitors. With our factory in China, we are placed in the middle of the world's most advanced area in terms of electric scooters. With easy access to experienced staff at good value, parts for examples batteries etc. and our own facility designed and built by us. The Asia market for electric scooters is also the fastest and largest and we are ready to service it.
c. When we acquired Emax we already have 10 years of product development in the electric scooter industry that backed by solid German engineering and R&D. We have over 13 individual patents awarded to date with more pending.
d. We have a distribution center in Europe so orders for Europe can be handled quickly and effectively.
There is some advantage in the European management team mainly dealing with customers and being able to understand the customer need one European to another. However the Chinese engineers in Vmoto team are very experienced in most cases more than the Europeans and we get first class results from them. All in all we have a great mix of both Chinese and European.

CHINA E-VEHICLE: The cost in China is increasing these years, and both the labor cost and the purchasing cost are much higher than before, how do you access the impact to Vmoto from the cost rise?

Patrick Davin: Yes costs are rising and the Chinese currency is strengthening. This will affect us. However it will also affect our competitors in China. Cost will have to drive up a lot before we have to worry about being less competitive on a world stage we don't see this as an issue in the medium term. Clearly China will continue to have cost increases and one day will have to compete on an equal playing field as other world manufactures. This is when the quality manufactures will survive and thrive. Vmoto is a quality manufacturer.

CHINA E-VEHICLE: What is the market niche of Vmoto e-scooters? How is the pricing positioning comparing to other brands? Have you developed certain models for certain markets?

Patrick Davin: Vmoto is a mid priced scooter. We penetrate the markets because of our quality not because of the price and also because we have a good marketing team. We see the markets growth initially coming from fleet and delivery e-scooters and have concentrated hard on this. The B2B market is our current source of growth and why are numbers are good and increasing. We are however seeing signs now of an increasing awareness in the B2C market and expect growth to come in this area in 2014 and 2015 in particular. Our delivery scooters are some of the most advanced in the world and as such we have a whos, whos list of customers including, Spanish and Danish Post , TNT Couriers Italy , Eon Electric to mention a few.

CHINA E-VEHICLE: Would you please introduce our readers several new models and tell us the fresh spots of them? (please prepare some pictures for the new models)

Patrick Davin: We are developing 3 new models for 2013 however I cannot provide you with the details as they are private.

CHINA E-VEHICLE: E-bike is starting to be popular in Europe in the past years, but the sales of e-scooters is a bit slow according to the figures released by some European associations and media, what is the reason behind this phenomenon? How do you access the e-scooter market there?

Patrick Davin: As we all know the world has experienced huge economic slowdown in the last 2 years. We believe it is at its worst now and we go into a slow recovery from 2013 onwards. E-Bikes have been a relatively easy sell as they are cheap and easy to ride and license etc. As previously mentioned we see our market as mainly B2B for now however as people get used to the electric bikes and then become aware of their limitations, speed, range etc. we believe some of them want to upgrade their e-bike to electric scooter and some of them one day then on to an electric car. It's a natural process.

CHINA E-VEHICLE: CHINA E-VEHICLE attended the Interbike in September, one the biggest difference from last year is the apparent growth of the e-vehicle exhibitors, and many people are saying that Americans are starting to accepting e-scooters, how is Vmoto's market in USA and what is your expectation to this market?

Patrick Davin: America is a large market for most products and the e scooter will be no exception. It has in recent times been hit terribly by the GFC however we believe is slowly improving. We currently manufacture on an OEM basis for the biggest supplier of electric scooters in the USA and hopefully this relationship will continue for some time. We still believe the US as an important market however the culture of the US is the motor car and even petrol scooters have never been big sellers there. We don't see this culture changing over night. We will continue to work with are OEM people in the USA but will concentrate more on the SE Asian and Chinese markets as this is where we see the real growth in the immediate term.

CHINA E-VEHICLE: Southern American countries are huge market for motorcycles at present, such as Brazil and Columbia, what is your thought about the market chances for e-scooters over there?

Patrick Davin: We see South America and Brazil as particularly important and have been working on this market for some time. For us we see this market as only being achievable with a strong local partner. As such we will have spent the last 12 months seeking this company out. I can't provide details at this time however Vmoto is about to take a very serious step towards developing these markets soon. Watch this space!!

CHINA E-VEHICLE: Vmoto is actually the only brand I know which has sales in Africa, and do you have an office in South Africa? Would you please tell us some market information there?

Patrick Davin: We don't have an office in Africa but are working with South Africa post and some distributors there. We see it as a small but important market and are very excited to be there.

CHINA E-VEHICLE: Besides the high-quality e-scooters, does Vmoto also produce other types of vehicles?

Patrick Davin: For now we are sticking to E scooters. We see this market has huge growth potential and we have our hands full to keep up with it. We are looking at the small electric car and 4 wheel market closely and may at some time in the future look at developing something along those lines.

CHINA E-VEHICLE: 2012 is approaching its end soon, please tell me something about your expectation for Vmoto in 2013.

Patrick Davin: Well in 2013 let's hope the GFC improved and things start get back to normal economically after a pretty hard 2011 and 12. Our efforts in 2013 will be to really target at the Chinese market as their appetite for quality scooters is now increasing and also work on bringing costs down so we can be more competitive in the various markets. We see lithium prices coming down soon and this will have a great affect on the affordability of first world electric scooters. We have new models and new markets coming on line in 2013 and myself at everyone in the Vmoto team can't wait for 2013 to start. A very exciting year ahead.

CHINAE-VEHICLE

We really appreciate Patrick's honest interview and the detailed analysis of the markets, and also thank Ivan Teo for his kind assistance during the process to have it successfully completed. CHINA E-VEHICLE presents the best wishes for Vmoto and hope it will get huge success in 2013 and more and more achievements in the coming years!

Over 6,000 Plug-In Sales Lead October Alt-Fuel Sales Rise

We'd say that the U.S. plug-in vehicle market's starting to fire on all cylinders, but then again, cylinders pretty much defeat the purpose, don't they?

Monthly-record sales of the Chevrolet Volt extended-range plug-in and the second-best month ever for the Nissan Leaf all-electric helped spur October alt-fuel vehicle sales to a 76 percent jump over 2011 figures.

Plug-in vehicle sales totaled 6,784 units, the third-consecutive monthly record.

Plug-in vehicle sales totaled 6,784 units, the third-consecutive monthly record. General Motors moved 2,961 Volts, while Nissan sold 1,579 Leafs, which trailed only June 2011's 1,708 units sold in the ranking of top US monthly sales. Ford moved a monthly-record 118 Focus Electrics, while the U.S. automaker recorded its first sales of its C-Max Energy Plug-in Hybrid, tallying 144 units last month. Mitsubishi maintained its low-volume pace with 30 units sold of the i EV.

Overall, automakers sold more than 46,000 alt-fuel vehicles, exceeding the necessary pace for U.S. annual alt-fuel sales to surpass 500,000 units for the first time ever.

Toyota continued as alpha dog, boosting sales by 70 percent compared to 2011.

Toyota continued as alpha dog, boosting sales by 70 percent compared to 2011 to 24,065 units. The Japanese automaker moved 16,774 Prius hybrids, including 3,328 Prius C compacts, 2,768 Prius V wagons and 1,889 Prius Plug-in Hybrids. Toyota also sold 2,986 Camry Hybrids, while the automaker's Lexus badge boosted hybrid sales by 46 percent from a year earlier to 3,792 units.

Along with record Volt sales, GM more than tripled year-earlier alt-fuel sales to 5,710 units, including more than 2,500 of its mild-hybrid Buick LaCrosse, Buick Regal and Chevrolet Malibu eAssist models.

And Ford continued to close the year-to-date gap from 2011's alt-fuel totals by more than doubling October sales to 4,727 units. Most notably, Ford's C-Max Hybrid wagon, which was launched to compete with the Prius V, beat the latter model's October sales with 3,035 units sold. And while Ford Escape Hybrid sales virtually disappeared (the discontinued model sold nine units last month), Ford Fusion Hybrid sales rose 12 percent from a year earlier to 956 units, while Lincoln MKZ Hybrid sales were little-changed from a year earlier at 465 vehicles.

German-made diesel models also enjoyed sales increases as US consumers looked to cut back on fuel consumption. Volkswagen diesel sales jumped 43 percent from a year earlier to 8,235 units, while sales of Audi diesels rose 18 percent to 581 vehicles. And Porsche increased its hybrid sales total by 27 percent to 154 units.

In fact, the only automaker to experience an alt-fuel drop from a year earlier was Honda.

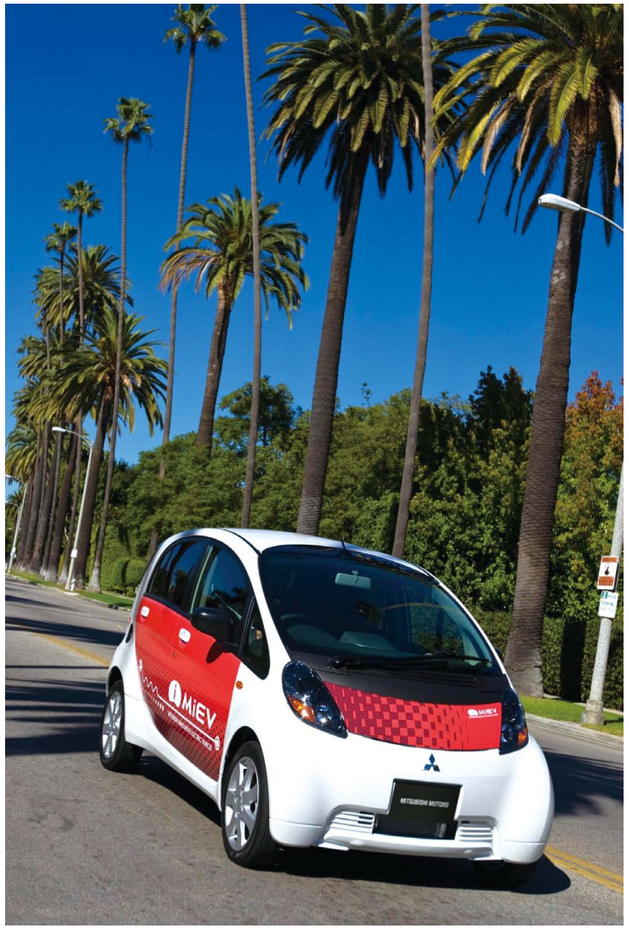
In fact, the only automaker to experience an alt-fuel drop from a year earlier was Honda, whose 966 units sold marked a 23 percent drop. Civic Hybrid sales were little-changed from a year earlier at 453 units, but CR-Z sales were down 16 percent from a year earlier and the Insight plunged 49 percent to 251 units. Still, Honda's October lag was narrower than its year-to-date alt-fuel sales drop of 46 percent.

Looking at 2012 alt-fuel sales through October, automakers have sold more than 446,000 vehicles, up 67 percent from a year earlier. CHINAE-VEHICLE

Electric

U.S. Alt Fuel Vehicle Sales

BRAND/COMPANY	Vol%	12-Oct	11-Oct	Vol%	YTD2012	YTD2011
Ford Motor Co.						
Ford Escape Hybrid	-98.43%	9	573	-81.53%	1,455	7,878
Ford Fusion Hybrid	11.55%	956	857	-4.07%	9,022	9,405
Lincoln MKZ Hybrid	-2.52%	465	477	13.13%	5,464	4,830
Ford Focus Electric	na	118	0	na	346	0
Ford C-Max Hybrid	na	3,035	0	na	4,004	0
Ford C-Max Energi PHEV	na	144	0	na	144	0
FORD MOTOR CO. TOTAL	147.88%	4,727	1,907	-7.59%	20,435	22,113
Volkswagen						
Volkswagen Diesels	43.32%	8,235	5,746	32.45%	75,799	57,227
General Motors						
Buick LaCrosse eAssist	229.29%	978	297	2640.05%	10,467	382
Buick Regal eAssist	28600.00%	287	1	217100.00%	2,172	1
Chevrolet Malibu eAssist	na	1,266	0	na	14,237	0
Chevrolet Volt	167.24%	2,961	1,108	285.95%	19,309	5,003
Other hybrids (SUVs, pickups)	54.61%	218	141	-24.88%	1,966	2,617
GM TOTAL	269.10%	5,710	1,547	501.66%	48,151	8,003
Nissan North America						
Nissan Leaf	85.98%	1579	849	-15.62%	6,791	8,048
Audi						
A3 TDI	58.38%	293	185	10.50%	3,453	3,125
Q7 TDI	-5.57%	288	305	-15.32%	2,587	3,055
AUDI DIESEL TOTAL	18.57%	581	490	-2.27%	6,040	6,180



Toyota Motor Co.						
Toyota Prius Liftback	-11.24%	8,788	9,901	22.20%	126,046	103,144
Toyota Prius C	na	3,328	0	na	29,458	0
Toyota Prius V	150.14%	2,769	1,107	3060.52%	34,987	1,107
Toyota Prius Plug-in Hybrid	na	1,889	0	na	9,623	0
Toyota Prius (total)	52.38%	16,774	11,008	91.95%	200,114	104,251
Toyota Camry Hybrid	796.70%	2,986	333	455.03%	37,265	6,714
Toyota Highlander Hybrid	94.98%	466	239	32.31%	4,848	3,664
Toyota RAV4 EV	na	47	0	na	108	0
Lexus Hybrids	45.62%	3,792	2,604	37.04%	29,608	21,605
TOYOTA MOTOR CO. TOTAL	69.66%	24,065	14,184	99.61%	271,943	136,234
Mitsubishi						
Mitsubishi i	na	30	0	na	469	0
Porsche Cayenne S Hybrid	-0.93%	106	107	-24.41%	988	1,307
Porsche Panamera Hybrid	242.86%	48	14	3164.29%	457	14
PORSCHE TOTAL	27.27%	154	121	9.39%	1,445	1,321
American Honda						
Honda Civic Hybrid	-5.63%	453	480	68.20%	6,114	3,635
Honda CR-Z	-15.57%	244	289	-64.58%	3,705	10,461
Honda FCX Clarity	100.00%	2	1	150.00%	5	2
Honda Insight	-48.98%	251	492	-62.45%	5,298	14,110
Honda Fit EV	na	16	0	na	48	0
AMERICAN HONDA TOTAL	-23.45%	966	1,262	-46.22%	15,170	28,208
TOTAL (EST.)	76.38%	46,047	26,106	66.92%	446,243	267,334
PLUG-INS (EST.)	246.65%	6,784	1,957	182.26%	36,838	13,051

Source: http://green.autoblog.com

Honda Reveals Micro Commuter

Electric Car Prototype

Honda recently revealed this tiny concept car that is appropriately named the Micro Commuter Prototype. It's designed to fit new Japanese rules that create a class of car that bridges the gap between motorcycles and automobiles.

Honda previously unveiled a version of the Micro Commuter at the Tokyo Motor Show earlier this year, but that was a fanciful show car with a yoke instead of a real steering wheel. The Micro Commuter we saw in Japan looks much closer to a production-intent vehicle.

The car consists of a chassis that integrates a lithium-ion battery, 15-kW electric motor, and all the car's suspension components. Various different body types can be bolted on top of that chassis, from the hatchback seen here to convertibles and even small pickup trucks. Honda says the Micro Commuter could manage a top speed of 50 mph and a driving range of 37 miles before it needs a three-hour charge. The teensy car measures just 98.4 inches long and 49.2 inches wide, and is said to weigh less than 880 pounds.

Although the Micro Commuter has its own instrument cluster, a special dashboard dock lets owners slide their own tablet commuter in place and use special Honda software that provides navigation, a backup camera, and more. Solar panels on the roof charge the tablet computer and other accessories, but are not yet able to charge the battery.

Honda showed this prototype with a centrally mounted driver's seat and two small rear child's seats. Although the proposed Japanese laws for this vehicle class stipulate a maximum of two adult passengers, Honda has interpreted this to also include one adult and two children. After all, notes an engineer, it's far safer than the Japanese families who precariously transport two children on a bicycle. For those who want to follow the letter of the law, a full-size single rear seat can be installed instead.

Honda plans to start demonstrating the Micro Commuter on public roads in Japan next year. The company also hopes the car could sell in Europe, but admits that such a small and impractical vehicle has no real chance of success in the U.S. CHINAE-VEHICLE

Source: Honda

Mercedes-Benz Ener-G-Force

Concept is a G-Class for the Future

Is it possible that the Mercedes-Benz G-Class will still be around in 2025? A cool design study from Mercedes-Benz demonstrates how the genes of the classic off-roader from 1979 may still assert themselves far into the future. It is based on the concept of a future police car developed for the Los Angeles Design Challenge.

The Los Angeles Design Challenge 2012 looks far ahead with a quest for the "Highway Patrol Vehicle 2025". Law enforcement will have to prepare for even more crowded roads with electronically monitored and guided traffic, a much larger population and changes in human behavior. People will still feel young and active even later in life. Outdoor activities will dominate leisure, as will the desire for freedom and adventure. The new times will also call for new police vehicles. They must be able to reach any place conceivable quickly and reliably – even far away from any pavement. And they must do so in an exceptionally environmentally friendly way using alternative energy sources. Enhanced green-car characteristics and off-road capabilities will be among the fundamental virtues of a police car in 2025.

As an environmentally friendly SUV, the Ener-G-Force, which Mercedes-Benz is presenting in Los Angeles as a design study, meets these requirements and would be fully capable of supporting police and emergency services in every corner of the world. Gorden Wagener, Director of Design at Mercedes-Benz Cars: "The Ener-G-Force is the vision of an off-roader that, while reflecting tomorrow's adventures, also invokes the genes of the Mercedes-Benz off-road icon, the G-Class. Modern and cool, it could also be a clue about a new beginning for the off-road design idiom of Mercedes-Benz".

The small glass areas make the police vehicle a safe cocoon for law enforcement officers who are faced with many dangers. Emergency lights integrated into the roof are impossible to ignore; the striking front leaves no doubt as to the commanding presence of the police, and the gigantic wheels guarantee the right-of-way even where no way exists.

Back from the future – clean concept for beyond tomorrow

Of course the concept of the Ener-G-Force for the Los Angeles Design Challenge is pure, rendered science fiction. However, the notion of designing tomorrow's off-roader intrigued the designers at the Mercedes-Benz Advanced Design Studio in Carlsbad, California to such an extent that they evolved

the vision of a police version into a civilian version and even built a 1:1-scale model. Like the "Highway Patrol Vehicle 2025", the shape of the civilian Ener-G-Force is modeled after the G-Class, the off-road icon whose continuous history goes all the way back to the 1970s and that to this very day still tackles the future as a stylistically and technologically advanced SUV.

Like the police version, the model of the civilian Ener-G-Force is unmistakably inspired by the G-Class, which has long been considered an automotive icon.However, it presents a radical reinterpretation of this classic that looks far into the future. Important genes such as proportions and design elements were completely redesigned and updated in a clean concept for beyond tomorrow. Ener-G-Force Designer Hubert Lee: "Of course we wanted to take a clear step forward, but we also wanted the G's characteristic features". The Ener-G-Forcehas a similar profile, however with a high shoulder line and scaled-down glass areas.

While the clear design idiom of the G-Class has remained, all surfaces are designed to express intensity and tension. The meticulously executed details are also a clear indication that the Ener-G-Force is the product of modern times. Like the G-Class, the Ener-G-Force sports a front with an expressive radiator grille that incorporates the headlamps. The LEDs in the headlamps form the shape of the letter 'G', which gives the Ener-G-Force a bold, dominating appearance. The front turn signals and running lights are mounted on top of the fenders, a trademark G-Class element.

The distinctive roof and the 3-panel greenhouse also echo fundamental genes of the classic G-Class from Mercedes-Benz, but represent a clear step forward.This is also evident in the large wheels, whose 20-inch rims give the Ener-G-Force a powerful, towering stance. The Ener-G-Force also plays on the utility factor in an entirely new way. For instance, the distinctive feature in the rear is a slightly off-center pull-out compartment whose cover occupies the traditional location of the spare wheel cover of the classic G-Class. This pull-out tool box can hold a wide variety of equipment that are quickly within reach without having to open the entire tailgate.

Bursting with energy

The Ener-G-Force stores recycled water in tanks on the roof, and transfers it to the "hydro-tech converter," where natural and renewable resources are converted into hydrogen for operating the fuel cells. The storage units for the electricity generated in this process are housed easily accessible in the striking side skirts. The Ener-G-Force emits nothing but water, has an operating range of about 500 miles and as a result truly is a green car. Four wheel-hub motors, whose output for each individual wheel is adapted precisely to the respective terrain by high-performance electronics, provide the pulling power. A "Terra-Scan" 360-degree topography scanner on the roof permanently scans the surroundings and uses the results to adjust the spring and damping rates as well as other suspension parameters for maximum traction on the respective surface, regardless of whether it is on- or off-road.

The strikingly styled side skirts house either the energy storage units or hot-swappable battery packs. Changes in the color of the illumination of the side skirts indicate the operating and charge status of the energy packs. A roof rack and additional lamps are integrated into the roof. The entire design appears to have been carved from a single piece. The overall presentation of the Ener-G-Force is clean – stylistically and functionally. CHINE VEHICLE

Source: Mercedes-Benz

Chevy Spark EV Unveiled, Priced Under $25K with Tax Incentives

Expected range among best in EV segment
Advanced, U.S.-built motor and drive unit deliver best-in-class acceleration
Two seven-inch, high-resolution LCD screens display key vehicle functions and infotainment
Initial markets include California, Oregon, Canada, South Korea and other global markets
Optional SAE Combo DC Fast Charging capability enables Spark EV to charge to 80 percent in 20 minutes

The 2014 Chevrolet Spark EV, introduced Nov 27th ahead of the Los Angeles International Auto Show, packs smart performance and connectivity technologies into an affordable five-door urban mini car designed to make the trip as electrifying as the destination. It will be priced under $25,000 with tax incentives.

With the Chevrolet Volt, Chevrolet accounts for more than 50 percent of all plug-in electric vehicle sales in the United States and Spark EV builds on Chevrolet's proven electric motor and battery development programs.

When it goes on sale next summer, the Spark EV is expected to have among the best EV battery range in its segment and be the first electric vehicle to offer SAE Combo DC Fast Charging capability, enabling the Spark EV to reach 80-percent battery charge in just 20 minutes.

"When you engineer a technology-filled, all-electric mini car that goes from zero-to-60 mph in less than eight seconds, customers won't miss the gas," said Mark Reuss, president, General Motors North America. "The Volt and now the Spark EV show that Chevrolet not only knows EVs better than anyone else, we also know how to help customers get the most out of their EV experience."

Inside the Spark EV, critical vehicle functions are clearly and intuitively displayed on one of the vehicle's two reconfigurable, high-resolution, seven-inch color LCD screens, including a confidence gauge that shows the expected driving range based on driving habits and other conditions.

Spark EV also will keep urban drivers musically connected with Chevrolet's exclusive MyLink radio that comes standard and safely brings smartphone-based infotainment – including apps for BringGo full-function navigation, TuneIn global internet radio, Pandora and Stitcher – into the vehicle. Apple's Siri will ride shotgun, for customers with compatible (4S and newer) iPhones.

In addition to previously announced markets including California and South Korea, Spark EV will also go on sale in participating dealerships throughout Oregon, Canada and other global markets. Spark EV will be eligible for coveted high-occupancy vehicle (HOV) lanes in California.

The soul of Spark EV

Spark EV is powered by an advanced electric motor and battery system. It consists of a GM-designed, coaxial drive unit and electric motor that together deliver 130 hp (110 kW) and 400 lb.-ft. (542 Nm) of torque for instant acceleration; and a more than 20-kWh lithium ion battery is expected to provide among the best EV range performance in its segment.

The drive unit and motor will be assembled of U.S. and globally sourced parts at GM's White Marsh, Md., manufacturing facility, and the first time a U.S. automaker has built both a complete electric motor and drive unit for a modern electric vehicle in the United States.

Spark EV's long-life battery is designed to be safe, durable and reliable, and is warranted for eight years or 100,000 miles. It consists of a 560-pound (254 kg) square lithium-ion battery pack with a volume of 133 liters, comprising 336 prismatic cells.

"The Spark EV battery has undergone more than 200,000 hours of testing in our global battery systems labs," said Pamela Fletcher, Chevrolet executive chief engineer of electrified vehicles. "It is extremely durable and has undergone the same abuse tolerance testing as the Volt battery."

Leading the charge

Spark EV is the first all-electric vehicle in North America to offer optional SAE Combo DC Fast Charge capability, which can charge the battery to 80 percent of capacity in about 20 minutes. A common on-board charging receptacle accommodates all three charging platforms – DC Fast Charge, AC 240V and AC 120V.

Using a dedicated 240V outlet, Spark EV recharges in less than seven hours. Owners can coordinate charging according to departure time or during off-peak electricity rates. They also can manage and monitor the vehicle remotely via computer at OnStar.com, or with a special Chevrolet Mobile App powered by OnStar Remote Link. The Spark EV comes with three years of standard OnStar service.

Energy-saving exterior; tech-filled interior

In developing the Spark EV, Chevrolet set out to help customers conserve as much total energy as possible to maximize battery range. One important way to achieve that is by improving the vehicle's aerodynamics. By evaluating every detail of the gasoline-powered Spark, designers and aerodynamic engineers added the equivalent of about 2.5 miles of real-world range.

Spark EV colors include Electric Blue, Black Granite, Summit White, Silver Ice and Titanium. Inside, designers sought to create a comfortable and spacious cockpit with noise-reduction features and a combination of bright accents in Electric Blue and chrome.

Founded in 1911 in Detroit, Chevrolet is now one of the world's largest car brands, doing business in more than 140 countries and selling more than 4 million cars and trucks a year. Chevrolet provides customers with fuel-efficient vehicles that feature spirited performance, expressive design, and high quality. More information on Chevrolet models can be found at www.chevrolet.com. CHINE-VEHICLE

Source: Chevrolet

GM Officially Unveils Sail Springo EV at China Auto Show

At the opening day of Auto Guangzhou 2012, Shanghai General Motors announced the launch of its first localized new energy vehicle, the Sail SPRINGO EV, which will be sold for RMB 258,000.

The Sail SPRINGO EV was developed by Shanghai GM and the Pan Asia Technical Automotive Center (PATAC), making it the first production electric vehicle created by a Chinese joint venture. The pure electric vehicle meets the highest global electric vehicle standards, using the latest industry battery and electric drive technology.

Targeting customers who are environmentally conscious, the high-performance electric vehicle reflects Shanghai GM's long-term commitment to produce vehicles that consume zero fuel and generate zero tailpipe emissions. A limited number will initially be sold starting in Shanghai as part of a trial program to enable Shanghai GM to better understand Chinese consumers' preferences and user habits for electric vehicles.

"Production of the Sail SPRINGO EV is an important milestone in Shanghai GM's 'Drive to Green' product strategy," said Shanghai GM President Ye Yongming. "It demonstrates Shanghai GM's success in the pursuit of electrification and other eco-friendly technologies for the benefit of our customers."

A Clean and Quiet Driving Experience

The Sail SPRINGO EV is well suited for urban environments. Its pure electric propulsion system delivers an exceptional driving experience that rivals traditional gasoline-powered vehicles. The vehicle's electric motor produces minimal sound, for a distinctly peaceful commute.

Based off a new electric vehicle architecture developed by

Shanghai GM in conjunction with PATAC, the Sail SPRINGO EV has an emissions-free propulsion system. Its permanent magnet electric motor is capable of producing 85 kW of power and up to 510 Nm of torque, allowing acceleration from 0 to 100 km/h from a standing start in just over 10 seconds. Pushing the Sport button provides a 20 percent boost in acceleration at the beginning and middle of the torque curve compared to pressing the accelerator in a gasoline-powered vehicle. The top speed is 130 km/h. Its stability during high-speed cruising and cornering is optimized by a new tailored full-frame chassis with an enhanced stabilizer bar and a finely tuned suspension.

Long Range and Low Energy Consumption

The Sail SPRINGO EV's battery and electric drive technology were developed based on the most advanced global electric vehicle standards for maximum energy efficiency. The result is an exceptionally long electric range of 130 km under a variety of road conditions and 200 km at a constant speed of 60 km/h, which is sufficient to meet the daily needs of most people living in urban areas.

The Sail SPRINGO EV consumes less than 15 kWh for every 100 km, which is less than most electric vehicles currently on the market. The Sail SPRINGO EV costs just RMB 4.6 per 100 km to drive when charged during lower-cost off-peak hours (between 10:00 p.m. and 6:00 a.m.).

The secret to its energy efficiency is a system that combines an advanced battery liquid cooling system, an innovative motor efficiency optimizer, a rechargeable energy storage system mated to a low gear design, and low-rolling resistance tires. More balanced power output with regenerative braking helps keep energy consumption at the lowest level.

A User-Friendly Experience

The Sail SPRINGO EV is environmental and user friendly, with a host of advanced vehicle telematics. It can be charged using a 3.3-kW charging station or a standard household outlet. It takes approximately seven hours for the battery to be fully charged using a dedicated 220V connection. There are three charging modes available: immediate charging, time delay charging, and time delay and rate charging. This enables customers to choose the charging option that fits their needs.

Vehicle charging can also be managed and monitored remotely using a smart phone mobile app provided by Shanghai OnStar. Owners can use the app to perform a range of functions remotely, such as starting the vehicle's heater or air conditioner. OnStar's service system also carries out remote

vehicle monitoring and analysis of other vehicle systems, and provides drivers with additional vehicle information such as tire pressure. If abnormal data is detected, the OnStar system will immediately contact the owner to provide safety information and instructions.

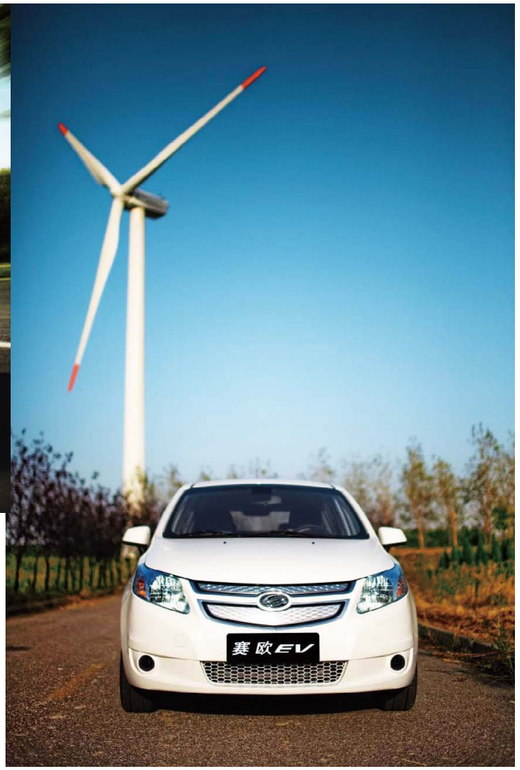
Yet another feature allows owners to check energy usage and remaining charge level with a touch of the Energy Leaf button. A color display, multimedia entertainment system and information display center with a 7-inch high-definition dual touchscreen offer drivers and passengers an easy-to-use interactive experience.

World-Class Safety Through Extensive Testing

A world-class safety design protects Sail SPRINGO EV occupants in the event of a collision. The vehicle passed an extensive array of more than 20 collision tests during its development to verify its safety.

Developed to meet the strictest global electric vehicle safety standards, the Sail SPRINGO EV fully complies with safety requirements for pure electric vehicles in China. Its newly designed front and rear anti-collision beams made from ultra-high strength steel and its strong and comprehensive body structure protect the battery pack in the event of a collision. The battery pack and powertrain have performed normally after rigorous testing in various conditions.

Qualification for Government Incentives and a Free License Plate in Shanghai



All of Shanghai GM's new energy vehicles, including the Sail SPRINGO EV, will be sold through an exclusive "Drive to Green" sales network. The first showroom is expected to open in the first half of 2013 in Shanghai. The exclusive sales and aftersales service network will be expanded to key new energy vehicle demo cities based on local market conditions and the development of the new energy vehicle industry and charging infrastructure.

Buyers of the Sail SPRINGO EV in Shanghai will enjoy incentives of up to RMB 60,000 from the central government and RMB 40,000 from the Shanghai government. In addition, the car will qualify for a free local Shanghai license plate exclusively for electric vehicles.

The Sail SPRINGO EV will come with a vehicle warranty of three years or 80,000 km, as well as a battery warranty of five years or 100,000 km. Until the "Drive to Green" sales network is established, Shanghai GM's Buick and Chevrolet service centers will provide Sail SPRINGO EV owners door-to-door service and exclusive steward service for a worry-free driving and maintenance experience. CHINAE-VEHICLE

Source: GM

All-new 2013 Fiat 500e Recharges EV Segment with Italian Style and Performance

All-new 2013 Fiat 500e electrifies the Cinquecento lineup with even more innovation and style, plus up to an estimated 116 miles per gallon equivalent (MPGe) city and 100 MPGe highway of pure battery-electric power and zero tailpipe emissions

Fiat 500e is designed to keep electric vehicle (EV) ownership simple with its familiar no-nonsense design, convenience features and intelligently integrated approach to battery-electric technology

More than 80 miles of estimated range, with city driving range typically greater than 100 miles

World-class handling and braking for an EV that adds to the FIAT brand's lineup of vehicles with highly engaging driving dynamics

Arriving in the second quarter of 2013 to FIAT Studios in California

Designing city-friendly, environmentally responsible and fun-to-drive small cars is what the FIAT brand and its "Simply More" belief stand for. The all-new 2013 Fiat 500e electrifies the next chapter of the brand's legacy by embodying the FIAT brand's simple, purposeful and fun-to-drive values – through iconic style, engaging dynamics and an environmentally responsible zero-emissions design.

"The Fiat 500e changes the paradigm in an electric vehicle market that's quickly becoming crowded," said Tim Kuniskis, Head of FIAT Brand North America. "The Fiat 500e offers iconic Italian design and a great combination of performance and range, with battery technology that delivers consistent performance across all weather conditions."

Designed to be a no-compromise electric vehicle (EV), the 2013 Fiat 500e builds on the Cinquecento's successful small-car formula, while adding an all-new battery-electric powertrain that produces 111 horsepower (83 kW), recharges in less than 4 hours with its Level 2 (240 volt) on-board charging module (OBCM) and delivers more than 80 miles of estimated range, with city driving range typically exceeding 100 miles without any tailpipe emissions.

Making sure the all-new 2013 Fiat 500e delivers world-class EV handling and braking performance, engineers designed a new chassis and suspension for the new EV powertrain, while further solidifying the engaging European driving dynamics the FIAT brand and Cinquecento are known for.

The all-new Fiat 500e pushes its iconic Italian design forward with its wind-tunnel-sculpted shape and retro-futuristic dot-matrix styled cues for a cutting-edge look. To achieve a 13 percent improvement in aerodynamics (0.311 coefficient of drag (Cd) compared to the 2013 Fiat 500 Lounge's 0.359 Cd), the Fiat 500e features eight exterior enhancements and more than 140 hours of wind tunnel testing and refinement. The result is a purposeful design that enables this Cinquecento to achieve an additional five miles of range.

Inside, 2013 Fiat 500e fuses retro-futuristic design with unique EV technology elements for an environment comprised of simplicity with innovation. An all-new 7-inch thin-film transistor (TFT) instrument cluster displays full-color picture graphics to illustrate vehicle functions, charge levels and trip summary. In addition, a new TomTom Navigation unit enables the driver to view the vehicle's charge schedule, range, and power-flow gauges, and can even request nearby charging stations with real-time availability. Below its instrument panel bezel, the 2013 Fiat 500e also includes an all-new electronic shifter with easy-to-use push-button transmission mode selection. For added style, the interior environment is available in Nero (black) or exclusive Steam (white), highlighted by Electric Orange to bring even more design character to this Cinquecento.

Keeping passengers of the Fiat 500e connected to vehicle information is an all-new Fiat 500e Smartphone App (compatible with iPhone and Android) that enables real-time vehicle status, manages charging, tracks the driver's energy use, locates the vehicle and nearby charging stations, plans and sends routes to the vehicle and provides text-message alerts.

The all-new 2013 Fiat 500e arrives at FIAT Studios in California during the second quarter of 2013. CHINAE-VEHICLE

Source: www.sacbee.com

Electric

Hanebrink Hustler X5

Electric Street Bike

Capable of 80 MPH

Hanebrink has unveiled the Hustler X5 electric bike, a competition class street racer capable of speeds over 80 mph and with a range in excess of 200 miles.

In addition to providing excellent traction on slippery slopes and sandy dunes, the chunky tires of Hanebrink pedal-electric bikes have also become something of a trademark look for the company. Change is in the air though, as signified by the launch of a new website and the addition of a new model to the family. The Hustler X5 electric street bike has the look of a small motorcycle and is capable of speeds in excess of 80 mph (128 km/h), yet also sports some pedals hidden behind the removable lower portion of the fairing.

CEO and Hustler X5's designer Dan Hanebrink told us that his latest creation is "a very capable street electric two-wheeler, able to keep up with and ahead of normal car traffic on city streets and highways. Massive battery capacity, and advanced electronics allow the rider to select power modes for any jurisdiction or situation."

The 120-pound (54-kg) X5 has a dual suspension monocoque chassis with 6061-T6 aircraft-grade seamless aluminium tubing and a watertight sheet aluminium box section that houses the four Li-ion Nickel Manganese Cobalt liquid-cooled AllCell batteries.

Hanebrink says that the battery pack can provide a 200+ mile (321 km) range and a top speed of over 80 mph in competition mode. The battery packs and controllers are custom made to suit the needs of the individual customer.

The bike features a Crystalyte 5303 Mid Motor, 14-speed transmission, inverted triple clamp coil/hydraulic front forks with seven inches (177 mm) of travel and monocoque swing arm rear suspension with air adjustable hydraulic shocks. The bike's creator states that, "optional adjustable offset triple clamp forks allow the rider to adjust for corner entry reaction from very quick to very stable, or anywhere in between."

There's Avid hydraulic disc braking at the rear and Brembo four piston hydraulic disc brakes to the front, and the 20 x 8 x 8-inch rear wheel has a tubeless fat tire while the 120/80 x 14 front wheel gets a Moto GP tire.

"The aero design of the bodywork greatly benefit speed, range, safety, and comfort, and provides convenient compartments to carry needed items," claims Hanebrink. "The bike has operable pedals, and can be pedaled, with the belly pan of the fairing removed. Pedaling does, however, reduce the range and speed (efficiency) of the bike (in a pedaling position, the increased aero drag more than cancels out the benefit of pedaling)."

Despite the sharp-looking edges in the photo above, we're assured that there's no conflict between the rider's legs and the fairing when the lower part is detached with a coin (via six Dzus quarter-turn captive fasteners) and removed for pedal mode.

On the question of the X5's street legal status, Hanebrink told us that "the benefit of a legal electric bicycle is, of course, that it does not require registration, drivers license, or special motorcycle permit, etc. and can be operated where motorcycles are not permitted (National Forest, BLM land, and so on). The owner can register it as a motorcycle, if desired, and benefit from applicable tax rebates."

"There are two operating modes – Legal and Competition. The fact that a vehicle is capable of higher speeds does not in any way imply that the operator intends to break the law. Look at any car or motorcycle on the road today, some of which can exceed 200 mph. The rider may choose pedaling, or full fairing. Both are legal. The law does not require the rider to pedal, only that the pedals be operable."

Pricing starts at US$16,940 and customers ordering now can expect delivery by the end of March 2013. Each model is built in consultation with the buyer, where custom options like different colors and LED lighting/turn indicators can be selected.

Specifications:
Color: Black and White Standard, Custom Colors Available
Weight: 120lbs
Battery Pack: 4 Li-ion, N.M.C AllCell Batteries. 82 volt, 20amp Hour pack
Motor: Crystalyte 5303 Mid Motor
Gearing: 14 speed transmission
Tires: Tubeless 20" x 8" (50cm x 20cm)
Wheels: 120/80x14 front, 20x8x8 rear
Wheelbase: 133 cm - 52.5 inches
Frame: 6061- T6 Aircraft Seamless Aluminum Tubing. 4.5 lbs in weight.
Fork: Inverted coil hydraulic, with adjustable compression and rebound damping. 8" travel.
Brakes: Brembo four piston hydraulic disc, front. Avid hydraulic disc.
Additional Notes: 80+ mph (when in competition mode). Controller-LYEN , programmable to 100+AMP. Cycle analyst full instrument package. Aerodynamic design. Race spec. Moto GP front tire. Adjustable geometry fork crowns.

Source: www.gizmag.com

Best of 2012: Concept Electric Motorcycles

A motorbike costs less than a car and is easier to ride and park in the increasingly congested city roads. The leisure or lifestyle bike design is driven by speed, shape and cult appeal. The bike for the emerging markets has to emphasize economy and convenience of battery recharge. Innovative approaches to bike design for each market are emerging, as designers are looking beyond the shapes and forms followed so far for the petrol bike market. Some of the eye-catching e-bike designs of 2012 are reviewed below:

1.TVS Qube Hybrid Scooter

The TVS Qube has two sources of power, including a 100cc four-stroke engine and an electric hub motor. The rider has the option to choose from a range of modes, depending on his or her requirement. This hybrid system charges the battery (lithium ion) when the brakes are applied and utilizes this power whenever required, therefore making the most efficient use of the energy available. In addition, this two-wheeler conserves energy when the vehicle halts at a traffic signal or is in standstill condition by halting the power source.

The TVS Hybrid Scooter also has the options of Hybrid Economy Mode and Hybrid Power Mode. In the economy mode, the engine and electric motor run as per the programmed strategy while in the power mode, both engine and electric engage together for better acceleration. The Qube hybrid scooter planned to be massively marketed in 2013.

2.BRD RedShift MX Electric Scooter

The RedShift MX shares the 40hp, 5.2kWh drivetrain and monocoque aluminum chassis with the RedShift SM that was unveiled in San Francisco in August of 2011. It can get a top speed of 104Km/h. Full charge for the bike is 4.5hrs with 100V power and only 2hrs with 220V. The retail price for the bike is USD $14,995.

3.LEMev Stream Electric Scooter

LEMev Stream is an electric vehicle equivalent to a 125 cc scooter (but its acceleration is closer to the one of a 500cc as the 0 to 80kph is reached in just 6 seconds), its maximum speed is announced at 108kph. It uses a 4kWh LiFePO4 battery pack which makes the bike can offer 80km of range. The battery pack can be fully recharged in 5 hours on the 220V 10Amp and in only 2hrs on the 20Amp, the useful life of the battery is 2,000 charging cycles or 160,000 km. Regular sale price for the bike is 5,350€ (including VAT) which drops to 4,216€ with the subsidy of 25% from the Ministry of Industry's Plan Movele.

4.Brutus 2.0 Electric Motorcycle

Designed by Bell, the most striking thing about Brutus is its eco-friendly credentials apart from the speed and looks. The new model sees 153 volt/4.9kWh Lithium Polymer battery packs that replace the earlier sealed lead acid outing which allows the bike to get a top speed of 160.93 km/h and run up to 100 miles on a single recharge. If with minimal maintenance, the bike can be last up to 50,000 miles. Different from the original Brutus electric motorcycle's front, the new version is full of HID and LED lighting, with the headlight area gaining a small fairing. Besides, Brutus 2.0 has twin 6 piston dual Galfer rotor brakes at the front and dual piston caliper single Galfer rotor brake at the rear.

5.ZECOO Electric Maxi-Scooters

Designed by Kota Nezu of Znug, the ZecOO boasts 46ft.lbs of torque and tops out at around 75mph. The 28hp motor provides riders with a range of up to 85 miles and comes equipped with its own retractable plug for topping up. A full recharge need about five hours. Price for the ZecOO is $70,000.

6.Brammo Empulse R

Brammo Empulse R feature a drivetrain consisting of a 40 kW water-cooled permanent magnet AC motor generating 63 Nm of torque coupled to an IET 6-speed gearbox with multi-plate, hydraulic activated wet clutch. The Empulse R boasts a top speed of over 100 mph (160 km/h) and a range of up to 121 miles (195 km) for city driving. Power for both bikes are provided by a 10.2 kWh lithium-ion battery pack using nickel cobalt manganese (NMC) chemistry, with an on-board J1772, level II charging system recharging the battery in just 3.5 hours and every ten minutes of charge time providing five miles (8 km) of range. Complete level I charging take eight hours.

7.2012 Motoczysz E1pc

The 2012 Motoczysz E1pc most conspicuous changes are on the outside: it tackles the problem of wind resistance at high speeds by bringing on aerodynamic ducts and fins. Inside, torque looks to be down to 162 foot-pounds, but the equivalent to 200 horsepower (twice what we saw in 2010) should more than compensate -- and a much upgraded battery cooling system keep MotoCzysz' creation running at full bore for considerably longer before rider Michael Rutter has to back off the throttle.

8.BMW C Evolution Electric Scooter

Unlike most electric scooters, the C evolution was conceived as a "future-oriented vehicle" designed to commute around urban areas and city centers. BMW C evolution offers up 11 kW of continuous output and 35 kW of peak output. It has a top speed of nearly 75 miles per hour, and an estimated range of 62 miles due to its 8 kWh battery. Interestingly, BMW incorporates a J1772 charging port, the same as used in new electric cars. The C Evolution can be charged to full in three hours.

9.2013 Zero FX, Zero S, Zero DS, Zero XU and Zero MX

The Zero FX is a new model for 2013, replacing the Zero X. It is referred to by the company as a stealth fighter and has released the bike in two versions. The ZF 2.8 features a 27 HP motor and runs 21 miles on a single charge and the ZF 5.7 carries a 44 HP motor with a 43 mile range. They take just 3.7 and 7.4 hours to charge respectively and retail for $9,495-$11,990.

The 2013 Zero S and Zero DS starting with the S and DS models, both models integrated storage compartments to replace the traditional fuel tank. The saddle now forms into a two-tier design to accommodate both rider and pillion more comfortably. The seat height of the S is a reasonable 31.3 inches, vaulted up to 34.4 inches on the DS due to its long-travel suspension.

The S model with smaller ZF8.5 power pack retails for $13,995,

weighs 350 pounds and has an estimated range of 103 miles city, 53 highway and 70 combined. With the ZF11.4 power pack, price jumps to $15,995, weight to 382 pounds and mileage to 137 city, 70 highway, 93 combined. Though prices for S and DS models are the same, the latter sees slightly lower mileage figures due to the higher rolling resistance of its knobby tires and its taller aerodynamic profile. Owners of the 363-pound DS ZF8.5 can expect to see mileage figures around 95 city, 46 highway and 62 combined. ZF11.4 numbers come out to 126 city, 61 highway and 82 combined for the 395-pound motorcycle.

The 2013 Zero XU and Zero MX are available with either ZF2.8 or ZF5.7 power pack. The Zero XU's power output is 28 hp and 42 ft.-lbs and can range up to 76 miles and 38 miles on a single charge. Unlike the XU, the MX is allowed to tap into the 68 ft.-lbs. of torque available from either battery, with small and big batteries making 27 and 54 horses, respectively. In terms of weight, the MX with ZF2.8 battery pack weighs 223.0 pounds and moves to 265 pounds with ZF5.7 battery. Price for Zero XU and MX is $7995 - $10,490 and $9495 - $11,990 respectively.

10.Peugeot Onyx Plug-In Hybrid Scooter

Peugeot Onyx Plug-In Hybrid Scooter combines a 400cc internal combustion engine with an electric motor to drive the rear wheel. Due to its combined power of 45kW, it has a top speed of 150km/h (93.2mph) and sets itself apart with an above standard torque output of 58Nm permitting exceptional acceleration. During deceleration, it recovers energy which is stored in the lithium-ion batteries and delivered during acceleration. Consuming only 2 L/100 km (117.6mpg), it has a range of 30km (18.6miles) at 50km/h (31mph) in ZEV mode, but can cover a combined range of up to 500km (310miles). CHINAE-VEHICLE

Are Electric Bikes the Solution to Italy's Struggling Motorcycle Industry?

The two words flow together naturally to express passion, design and character in two-wheeled vehicles. The great Italian marques like Bimota, MV Agusta, Benelli, Moto Guzzi and Ducati produced character bikes, not commodities.

Italy has nearly always been the largest non-Asian motorcycle market in the world; back in the glory days building more than 450,000 units annually. But if you attended EICMA, the Europe's largest motorcycle show in Milan which held in the middle of Nov., you could find most people talked was about crisis, crisis, crisis – doom and gloom was everywhere.

With Italy and most of Europe in recession again, rumours of debt default and disintegration of the euro zone, the Italian motorcycle industry is suffering through yet another year of a double-digit sales decline. Factories have shut and production is down by about 200,000 units or nearly half.

Moto-Guzzi and Aprilia are now owned by the scooter giant Piaggio, makers of Vespa, and are both struggling. MV Augusta is back in Italian hands after a short period of being owned and neglected by Harley-Davidson. And the great Italian brand Ducati is now owned by the Volkswagen conglomerate.

Ducati, under German control, is doing well sales-wise in the upper, premium end of the motorcycle market. It's also big into merchandising – caps, T-shirts, jackets – in a string of one-design retail outlets that look a lot like Burger Kings. Following the example of Ferrari and Harley-Davidson, Ducati is trying to become a "brand."

The Italian motorcycle industry, now in the doldrums, has come to realize that's the way to go. Its slogan: "Italy: The world's favourite motorcycle brand." From fashion to exotic cars, Italian luxury brands have marketed themselves as the last word in elegance and exclusivity. Vespa has done it with scooters and now it's trying it with Moto Guzzi.

While motorcycle sales in Italy are a "crisis," bicycle sales are doing nicely as cities like Rome build more and more bicycle lanes and trails. The other growth area is electric scooters.

There are masses of gas-powered scooters in every Italian city, town and village. It makes great sense when gas is $2/litre and parking spaces are next to impossible to find. Now there appears to be a switch under way to cheap electric scooters. Even the police department in Rome has a few.

Italian car sales are dropping as fast as motorcycle sales, but sales of electric bikes, which don't require insurance, licence or gasoline, are on the rise. At the motorcycle show, there was a "green" zone that featured a test track for customers to try out electric bicycles and scooters. It was busy.

I'd guess that about 99 per cent of the motorcycles on display were gas-burning, but two electric bikes that stood out were from Brammo and BMW. Brammo, based in Oregon, builds all-electric motorcycles in Hungary and sells mainly online. Its main bike, the Empulse, has had excellent reviews in motorcycle magazines, which have reported that electric propulsion has real performance benefits over gas-powered. Comparing it favourably to Triumph triples and Suzuki and Kawasaki 650s, reviewers have found it handles beautifully, hits a 105 mph (169 km/h) top speed and has a realistic range of 75 miles (121 km).

BMW used the Milan show to once again show off its C Evolution electric scooter. It uses an electric motor and an eight-kilowatt battery pack to drive the rear wheel. BMW says that it can go 62 miles (100 km) on a full charge from a standard car charging station. The C Evolution has a top speed of 120 km/h (75 mph) and uses a similar anti-lock braking system as on its larger motorcycles. BMW is still testing the C Evolution and says it plans to offer a production version in the near future.

I consider any motorcycle to be "green" compared to a car. They require so much less fuel and occupy so little space on the road.

We'll see if Italian design, brand strength and innovation can get them back in the game as providers of urban transportation rather than exotic racers. CHINAE-VEHICLE

Source: www.theglobeandmail.com

CRP Energica Prototype Debuts at EICMA 2012

CRP Racing first revealed its Energica electric superbike concept at the epic 2011 edition of EICMA. Now, a year later, a prototype version is on display at that same venue with promises of a finished product in 2014 with sales in both the US and Europe. It should be worth the wait.

The Energica packs a 100-kW (134-horsepower) punch from an oil-cooled permanent magnet AC motor that sends its damage through a single-speed gearbox. No official performance testing has been done, but chief engineer Giampiero Testoni calculates it should swing up to 100 km/h (62 miles per hour) in about 3.3 seconds. Top speed is computer-limited to 220 km/h (134 mph).

The lithium battery nestled within the tubular trellis frame is said to hold 11.7 kW-hours of energy. That should be enough to propel the bike for 150 kilometers (93 miles) at 80 km/h (50 mph), though range will vary with terrain and by which throttle map you've selected by a switch on the left handlebar.

As much as possible, CRP has stuck with high-end Italian components – Brembo brakes, Marchesini wheels, Schedoni seat – but have managed to keep the price down to a relatively reasonable 18,000 Euros. The company says it will have a number of options available and also offers some amount of customization, so be prepared to pay a bit more.

Also, don't bet that the bike will look exactly like this prototype. While we suspect that it will have a lot in common, including the front fairing with its twin LED lights, we imagine there will be some further refinement before the final product emerges, perhaps at next years EICMA.

2014 CRP Energica Specification:

Motor: PMAC synchronous motor, permanent magnets, maps management system, oil cooled
Power: 100 kW
Top Speed: 220 km/h
Torque: 160 Nm
Range: 150 km
Power train efficiency: more or less 95%
Braking system: front: double monolitic caliper radial mount, 4 pistons; rear: 2 pistons caliper
Braking discs: front: double floating disc diam. 310 mm; rear: single disc diam. 220 mm
Wheels: front 3, 50” X 17”, rear 5, 50” X 17”
Tyres: front 120/70-17 rear 180/55-17
Rear monoshock absorber: full adjustable
Front fork: full adjustable: diam. 43 mm
Steering damper: Sachs
Throttle controls, handlebars and electric switches: Domino
Dashboard: Digital multi-function LCD
Lights: innovative 100% LED lights CHINAE-VEHICLE

Source: www.motorcycle-usa.com

ETRA: Safety Concerns for New E-Bike Type Approval

The European Parliament is about to vote the review of the type-approval. In a dramatic appeal to all MEP's, ETRA urges them not to vote article 2.2(g) of the compromise text. According to ETRA, this article is an open invitation for electric bicycle manufacturers to circumvent the type-approval procedure. ETRA issues a stark warning that article 2.2(g) will produce serious safety risks and put lives at risk.

The European Parliament and Council have reached a compromise on the Proposal for Regulation on the approval and market surveillance of two- or three-wheel vehicles and quadricycles. This compromise still needs to be formally debated and voted in Plenary. That is scheduled for Monday 19 and Tuesday 20 November.

In the run-up to the Plenary session, ETRA has made a dramatic appeal to all Members of the European Parliament not to vote article 2.2(g) of the proposal. That article stipulates that the Regulation does not apply to vehicles primarily intended for off-road use and designed to travel on unpaved surfaces.

According to ETRA, this article is a permit for manufacturers

of electric bicycles to circumvent type-approval and to put vehicles on the market with optimum functional danger levels rather than safety levels. ETRA also calls the article a permit for manufacturers to put vehicles on the market for irresponsible consumers who are only interested in speed and power output.

ETRA Secretary General Annick Roetynck further explains: "Manufacturers can very easily declare their electric bicycles vehicles primarily intended for off-road use and designed to travel on unpaved surfaces, since there are no criteria whatsoever set for labelling a vehicle as such." Designed to travel on unpaved surfaces has in this context no meaning whatsoever because even if they are designed for that purpose, there is no rule against use on public roads. For comparison, many a mountain bike is used on public roads though it is primarily intended for off-road use and designed to travel on unpaved surfaces.

Annick Roetynck continues: "If a manufacturer labels his electric bicycle as a vehicle primarily intended for off road use and designed to travel on unpaved surfaces then the vehicle is out of the type-approval and there are no other technical rules applying. There is only the General Product Safety Directive which obliges the manufacturer to put a safe product on the market. Furthermore, the owner of the above vehicle will be allowed to use the vehicle without any other obligations, i.e. helmet, insurance, driving licence, age limit … There is no speed limit by construction set for his vehicle, nor a motor output limit."

ETRA finds it very difficult to see the consistency in Commission,

Council and Parliament's position with reference to electric bicycles in this legislative dossier. One of ETRA's requests to the European authorities was to exclude pedal assisted electric bicycles with assistance up to 25 km/h from the type-approval, irrespective of their motor output level. The motor output has no effect on the speed since the motor automatically stops at 25 km/h, irrespective of that motor output. IMCO adopted the relevant amendment but it was subsequently deleted in the trialogue negotiations because Commission and Council feared the amendment would create a safety risk. In parallel, with article 2.2(g) Commission and Council proposed to exclude a category of vehicles, including electric bicycles, without any specification of speed and motor output limit!

ETRA is unequivocal about article 2.2(g): absolutely inconsistent, dangerous and irresponsible.

Warnings for this same article were issued by the motorcycle community. As a result, enduro, trial and heavy duty quads were explicitly re-included in the compromise text.

ETRA has been warning Commission, Council and Parliament about the fact that this article will be abused to avoid the type-approval procedure for electric bicycles since 2009 and has proposed an amendment to overcome the problem, but that was eventually totally ignored.

According to ETRA it is very likely that manufacturers of electric bicycles will use the way out of type-approval offered to them by article 2.2(g) because type-approval is an extremely complicated, expensive and inappropriate regulation since it is designed for conventional mopeds and motorcycles, not for electric bicycles.

The Commission and Council have systematically ignored ETRA's proposals aimed at developing appropriate and effective regulations for electric bicycles. Originally, the IMCO Committee

agreed with ETRA's proposals and included them through the necessary amendments in the van de Camp report. However all these amendments were deleted again from the compromise text agreed between Council, Commission and Parliament, the text to be discussed and voted in the next Plenary Session.

In a reaction on this compromise to Rapporteur van de Camp, his Shadow Rapporteurs and to the IMCO coordinators ETRA stated: "We are disillusioned beyond words to find that all amendments for the benefit of electric bicycles have been deleted from the compromise text. This is no less than dramatic for the electric bicycle sector in the European Union, since it means that a type-approval procedure, which is totally inappropriate and ineffective for electric bicycles, will continue to apply for at least another decade! This will very seriously obstruct the development of the European electric bicycle market."

ETRA was informally told that the amendments for the benefit of electric bicycles were sacrificed for the sake of reaching a compromise. Commission and Council continued to oppose the amendments because they had concerns about the resulting safety aspects. ETRA's response to this: "We deeply regret that Council, Commission and Parliament have refused to accept our in-depth and repeated clarifications and reassurances on this issue. Instead, the incorrect, unfounded and inflammatory argumentation of the opponents to our proposals has prevailed. Ironically enough, the compromise text turns out no less than dramatic for the electric bicycle business because with article 2.2(g) it will without any doubt produce very serious safety risks. The fact that none of the opponents to our proposals have taken this risk into consideration nor acted upon, proves in our view their lack of understanding of the whole type-approval issue with reference to electric bicycles."

ETRA firmly believes that precisely the fact that the future type-approval procedure is not appropriate and effective for electric bicycles creates the risk that manufacturers will avoid the procedure on the basis of Article 2.2(g).

It is still possible to table amendments before Plenary, provided these amendments are supported by at least thirty MEPs or one political group. That is why ETRA has formulated two amendments aimed at remedying the problems resulting from the compromise text for electric bicycles. All MEPs have been urged to support the amendments.

The new type-approval procedure for electric bicycles will have to be implemented before the end of 2016. This leaves ETRA with 4 more years to obtain better regulations for electric bicycles should this ultimate effort before the vote in Plenary fail.

About ETRA:

ETRA is the European professional association for independent bicycle, moped and motorcycle retailers. ETRA's aim is to group these retailers in Europe and to defend and further their interests. ETRA represents some 7,000 companies (SMEs), which employ approximately 17,500 people in Belgium, the Czech Republic, Denmark, France, Germany, Ireland, the Netherlands and the United Kingdom.

Furthermore, ETRA has a large number of associated members in 7 EU member states (Belgium, Bulgaria, France, Germany, the Netherlands, UK and Sweden) as well as in 6 countries outside the EU, i.e. Canada, Korea, New Zealand, Switzerland, Taiwan and USA. These are international companies/organisations active in the twowheel field who believe in ETRA's work and who have therefore chosen to support that work through their membership. CHINAE-VEHICLE

Source: ETRA

2012 Newly Released
E-bike Review

About a decade ago, not many would have expected bicycles to be a rage in time, but with the rate at which fossil fuel sources are depleting today, we're left with no option but to head back to the bicycles. They're clean, don't require any visits to the gas station, are easy to maneuver in traffic congested streets and are far safer than their speedy counterparts. The only thing they lack is some speed that makes them a viable option for a daily commute to the office. Bike manufacturers are trying to make them fast and relaxing with the addition of electric motors, which gives bikes a respectable speed and adds a touch of comfort as well. Following list the 2012 newly launched e-bikes that can make the streets of the future green, silent and pedestrian friendly:

SM Electric bike

Designed by Facundo Mehrbald, the highlight of SM Electric bike is the use of alternate energy to drive its wheels. It incorporated a 24V 300 watts electric motor. The Lithium-Ion battery with a capacity of 12 a/h boosts the electric motor for its power. With an extra-ordinary design, this bike could reach a top speed of about 25 km/hr with a mileage range of about 40 km. The time required to recharge the battery pack takes about 3.5 to 6 hours.

M55 Terminus Airbrush, Biceps and Royal Edition E-Bike

The Airbrush edition has the option of being enhanced by an airbrush artist with a tagline, a name, a logo or a full-surface texture, depending on preference. M55's website notes, "with this edition, the Terminus becomes a 'white canvas' that is covered with our client's imagination". The Airbrush starts at € 28,888 ($38.500).

The Biceps is M55's patented single-arm front-suspension design built for smooth travel. It features a rigid CNC machined aluminum base reinforced with carbon fiber. This edition has a prime advantage with the elimination of brake-drive effect, enhancing safety while braking, especially on steep slopes. The Biceps edition starts at € 28,888 ($38.500).

The Royal edition features shining Swarovski crystals, gemstones of your choice (even diamonds) and gold or silver carbon textures. This edition starts at € 28,888 ($38.500).

Shadow Ebike 2.0

Designed and developed by Daymak Inc., the Shadow Ebike 2.0 featuring Bluetooth technology on Android phone systems. It is the first wireless ebike featuring wireless brakes, wireless throttle and a wireless pedal assist system. Added to that is also an integrated battery and motor design powered by the proprietary Daymak Drive™ technology, thus making the Shadow Ebike the most sophisticated electric bicycle on the market today.

EBCO Velosolex, Solexity and e-Solex Electric Bikes

Designed by Italian famous Pininfarina, all three models are all powered by SOLEX's own 250w brushless motors combined with high-capacity Lithium Polymer batteries.

Velosolex is a foldable bike that can be easily transported in a car boot, camper van, boat, elevator… just about anywhere you want to go! Very easy to handle, Velosolex is equipped with a power-assisted system reaching speeds up to 25 km/h and can go up to 50 km.

The Solexity is available in three colours. With a classic design reinvented, this electric assisted bike can reach speeds of up to 25 km/h and has autonomy up to 60 km.

The e-Solex is the classic motorized bike that can reach speeds up to 25 km/h or 35 km/h. The electric engine of this motorized bike is located in the rear wheel hub and provides autonomy up to 40 km.

Opel RAD e Concept pedelec

The RAD e’s pedelec propulsion system is based on a 250 watt electric motor and a lithium-ion battery. At an average speed of 20 kilometers an hour (12 mph) and depending on the electric assist and terrain, the e-bike achieves an electrically supported range of between 60 and 145 kilometers (37 to 90 miles). In a maximum time of two-and-a-half hours, the battery can be fully charged. The battery is compatible with the company's FlexFix bicycle carrying system for cars that could allow the RAD e to be charged in transit.

Peugeot 122 DL E-Bike

The Peugeot 122 DL concept from Peugeot Cycles was developed as an urban mobility solution for those seeking “convenience and security without compromising elegance.” The e-bike is touted as nimble and compact, featuring an aluminum frame, a wood seat and leather handles and eight-speed belt transmission, as well as 20-inch wheels and an integrated leather pouch with a mesh liner designed to transport modern essentials such as a laptop.

Specialized Turbo

Three years in development, the Turbo is Specialized's first production electric bike, has been designed specifically to be "the fastest and best e-bike ever". It is featuring a 250 watt rear hub motor, a 342Wh lithium-ion battery that's integrated into the down tube and is said to recharge in just two hours, and carbon fibre Magura MT series disc brakes with a regenerative charging feature. Its top speed can reach 45km/h (28mph). Price for the Specialized Turbo is €5,499.

Audi Worthersee E-bike

Designed and developed by German famous automaker, Audi, the Worthersee e-bike makes use of a lithium-ion battery pack for cyclists who need a little push every now and then. The lightweight CFRP frame and 26-inch tires add to pedal power, with the wheels featuring the Audi ultra blade style with broad, flat spokes. The 21-kg bike makes use of an electric motor that delivers a very impressive 2.3kW of power with a power-to-weight ratio of around 9 kg. The Worthersee can be operated through any one of the 5 modes ranging from Pure and Pedelec to e-Grip, Wheelie and Training. Pure sees the rider driving the bike only through pedal power while Pedelec assists the rider with the help of the motor. e-Grip lets a user rely solely on the electric motor; Wheelie sees the power flow being electronically controlled, and Training lets a user maintain constant power input.

Frog eBike 2012 Concept

The bike is designed by Frog designer Jin Seok Hwang with inspired by the heritage of motorcycle design (including frog's own 1985 frog FZ750 Rana concept). The feature about Hwang's design is the massive hole where an internal combustion engine would normally reside. That is no mistake, as Hwang is hoping to convey both a figurative and symbolic message about the transition from petroleum-based fuels to electrons. The bike's motor is in the rear wheel, while the batteries are housed in the bottom of the chassis.

BMW i Pedelec Concept

Like the BMW i3, the BMW i Pedelec Concept is a thoroughly high-tech form of personal transport, such as disc brakes at the front and rear, a three-speed gear hub integrated into the motor, a lightweight frame made from aluminum and carbon fibre, a torque electric motor complete with electronic management system and high-performance battery, and a clever folding mechanism – make this motor-assisted bicycle an extremely practical transportation solution.

The electric hub motor only provides the Pedelec's speed up to 25 km/h (16 mph). Depending on the nature of the route, rider's weight and degree of motor assistance utilised, a full battery charge will give a range of 25 – 40 kilometres (16 – 25 miles). Under braking and when riding downhill, the hub motor acts as a generator and supplies the battery with energy. It takes just four hours – or 1.5 hours on a quick charge – for the empty battery to be fully recharged, either from a domestic plug socket or inside the boot of the BMW i3 Concept.

Faraday Porteur Electric Bicycle

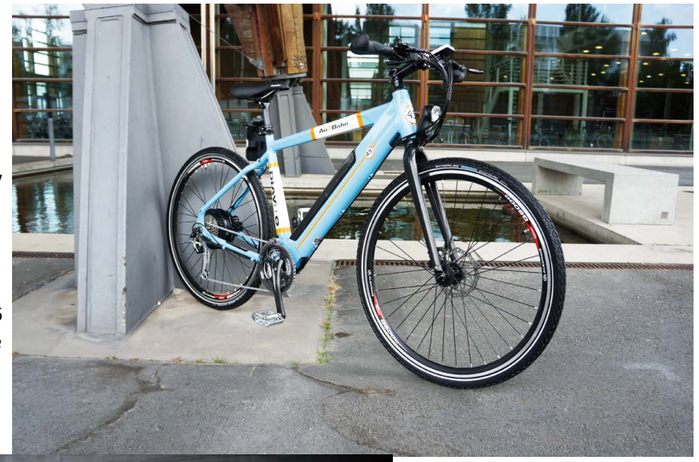
San Fransico-based faraday bicycles is a new company dedicated to transportation innovation and design. the 'faraday porteur' is their first production model. By implementing hidden state-of-the-art lithium batteries within the frame, the elegant and high-quality city bike becomes comfortable and effortless to ride. Its boost mode feature has an active pedal assist that can simplify the daily challenges of riding up steep slopes. Built-in sensors measure how much pedaling is being done, matching the foot stroke through an electric motor. The e-bike incorporates a quick-release front rack for storage or running errands as well as high powered front and rear LED lights for added safety during night riding. Its battery can be fully recharged in under an hour by plugging into any standard outlet, providing 10-15 miles (15-20 km) of pedaling assistance.

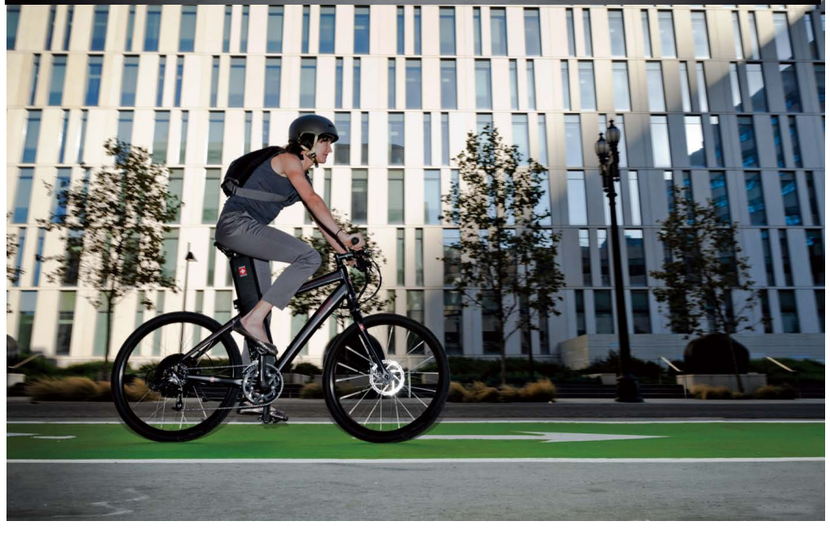
Mando Footloose Folding E-Bike

korean auto suppliers Mando Corp and Meister Inc collaborated with British designer Mark Sanders and Dutch e-bike expert Han Goes developed 'Mando Footloose', the world's first chainless folding electric bicycle. By combining a throttle drive with pedal-assisted technology, the bike can power up to 30 kilometers (18.6 miles) with the motor alone or pedal for more range. By directly transforming electricity via an alternator connected to the crank, power is generated directly from the user. The energy stored in a lithium-ion battery, which is then used to actuate the engine. Using an electronic control unit (ECU), the 'footloose' works with sensors and an automatic gear changer to monitor terrain and adjust the motor's output as necessary. It monitors the system for problems, which it displays via a handlebar-mounted human machine interface (HMI). The HMI also displays metrics like distance traveled, speed and amount of electricity produced. Being removable, the bike will not start when it is removed, creating an integrated anti-theft feature. When collapsed, the bicycle can be easily transported weighing just over 21 Kgs.

Protanium Diavelo Speed Bike

Developed by Protanium, the Diavelo is one of the lightest in its class. The electric bicycle has a 500 Watt high torque motor developed especially for this speed bike. The torque of the motor is enormous. The power is controlled from the handlebar using Protanium's removable display technology. The display not only functions as a control panel but also the key for the bike. The 36 Volt 11.6 Ah removable battery is mounted inside the frame. Total weight of the bike is 19, 5 kg.





eFlow Electric Bike

Designed by Swiss well-known designer Vincenz Droux, the eFlow electric bike won the prestigious Gold Award from German design group iF International at the Taipei Cycle Show earlier this year. The bike features a unique purpose built frame which integrates Currie's high capacity Samsung lithium manganese battery into the bike's seatpost for a sleek design that allows for convenient charging in or away from the E-bike, along with a 500W rear hub motor. The bike's slick design is matched by construction and components designed for a performance ride, including an RST monoshock, a 20-speed drivetrain, internal cable routings and Auriga E-Sub brakes, which have electronic sensors to cut power to the motor and activate regenerative braking to send power back to the battery . Retails price for the bike is $3,995. CHINAE-VEHICLE

MIFA Sells 70% More E-Bikes

- Revenue up 4.5% to EUR 97.6 million in the first nine months of 2012
- Integration of GRACE and Steppenwolf progressing as planned
- Annual revenue expected to double in the coming years

MIFA Mitteldeutsche Fahrradwerke AG (WKN A0B95Y, ISIN DE000A0B95Y8), Germany's largest bicycle manufacturer in terms of sales, increased its revenue to EUR 97.6 million in the first nine months of 2012, 4.5% up on the prior-year period.

The increased revenue was achieved with a lower number of sold bicycles; this was around 500,000 units, which is 17.7% down on the previous year figure (30 September 2011: 608,000 units). This development came on the back of MIFA substantially expanding sales of high value e-bikes as planned: At EUR 25.9 million, their share of total revenue stood at 26.5%, almost twice as high as in the prior-year period. The absolute number of e-bikes sold rose by almost 70% to around 42,000 (30 September 2011: 25,000 units) and therefore already clearly exceeded the sales for the entire 2011 year (27,000 units). With e-bikes, the company is able to achieve sales prices almost four times higher on average than those of conventional bicycles. Across the entire product range, the average price per bicycle was around 27% higher than in the previous year. The gross margin rose by 1.0 percent points to 32.6% (30 September 2011: 31.6%).

As expected, the earnings figures were impacted by extraordinary effects. On the one hand, these effects relate to the acquisitions made during the course of the year: In March 2012, MIFA acquired Berlin-based e-bike manufacturer GRACE and took over Munich-based bicycle producer Steppenwolf in August 2012. The production of both brands was completely transferred to Sangerhausen. In addition, MIFA developed a technologically outstanding production facility for its OEM customers, which is linked with a quality management system. Extraordinary expenses for these outlays totalled EUR 2.7 million. On the other hand, the up-listing into the Prime Standard from July 2012 also led to one-off costs of EUR 0.5 million.

Adjusted for these extraordinary factors, EBITDA came in at EUR 7.4 million and was therefore on a par with the previous year. This represents an adjusted EBITDA margin of 7.6% (30 September 2011: 8.0%). In addition, MIFA invested heavily during the reporting period, particularly in customer relations and the property rights of Steppenwolf as well as in other efficiency improvements at the fully automated wheel lacing facility. At EUR 2.4 million, the investments were almost four times higher than in the previous year (30 September 2011: EUR 0.6 million). Therefore, due to higher depreciation and amortisation, the adjusted EBIT figure of EUR 4.9 million is down on the previous year, with a margin of 5.0% (30 September 2011: 5.9%). The unadjusted EBIT figure came in at EUR 1.3 million. At EUR 1.8 million, the negative net financial result was somewhat higher than in the first three quarters of 2011. Net profit for the period was posted at EUR 2.5 million before extraordinary effects (30 September 2011: EUR 2.9 million).

Peter Wicht, Chief Executive Officer of MIFA, comments on the business development in the first nine months of 2012: “The substantial increase in revenue underlines that our strategy is working. We are systematically expanding sales of high quality e-bikes and bicycles for specialist retailers, but also maintaining our ‘bread and butter business’ with retailing as a strong basis. As part of this, revenue takes precedence over unit numbers. During the course of the year so far, we have set a number of milestones, which may result in extraordinary costs today, but will translate into a positive impact on revenue and income in the medium term: We have made two successful acquisitions in the premium segment, which have given us powerful brands and a broad sales network in specialist retailers as well as specialist know-how in marketing and development.” Orders from the automotive industry are also an important element in the MIFA strategy according to Michael Hecken, Head of Marketing and Strategy: “The facility which we developed this summer for the production of our premium e-bikes sets new standards in the bicycle industry. And it also opens up completely new opportunities – more and more industry customers are now approaching us with OEM orders.”

According to Peter Wicht, 2012 represents a clear watershed year for MIFA: “Over the first nine months of the year, we have completely realigned our business and in doing so have paved the way for sustainable and profitable growth in the years ahead.

Based on this, we are cautiously making a medium term forecast for the future – for the first time in MIFA’s recent history: We are aiming to double our annual revenue in the coming four to six years to EUR 200 million compared to 2011. On the back of this, we are striving to increase the EBIT margin to between 7% and 9%.” MIFA’s nine-month report will be published on 15 November 2012 on the MIFA website (www.mifa.de) in the “Investor Relations” section.

About the company:

MIFA Mitteldeutsche Fahrradwerke AG, which is based in Sangerhausen (Saxony-Anhalt / Germany), is Germany's largest bicycle manufacturer in terms of sales. The company produces bicycles from supplied components, whereby the focus lies on project-related order production for large retail chains. E-bikes have also been produced since 2011. MIFA also acquired the majority of Berlin-based e-bike manufacturer GRACE GmbH & Co. SG in March 2012, which mainly produces premiumsegment e-bikes. Among other customers, GRACE produces the e-bike for automotive manufacturer Daimler (for the smart brand). MIFA also acquired all of the significant assets of the Munich-based bicycle producer Steppenwolf in August 2012. Steppenwolf offers its bikes only through qualified independent bicycle dealers. Outside Germany, MIFA sells its bicycles mainly in Western Europe; in this context, both the operating business and administration and logistics are managed at the company's sole production location in Sangerhausen.

MIFA sold around 644,000 bicycles in 2011 (previous year: around 593,000). Thereby, the company generated EUR 100.5 million of sales revenue, representing a 31.4% increase compared to the previous year (EUR 76.5 million). With this revenue, the company achieved an operating profit (EBIT) of EUR 4.6 million (previous year: EUR 2.0 million), and a net income of EUR 2.0 million (previous year: EUR 0.3 million). Its shares are traded in the Prime Standard on the Frankfurt Stock Exchange since July 17, 2012. CHINAE-VEHICLE

Source: www.mifa.de

One Million E-Bikes on Dutch Roads

The e-bike boom in the Netherlands is often regarded as an outlook for other countries. By the end of this year the total fleet of e-bikes in the Netherlands will amount one million units. A milestone.

“The market for e-bikes keeps growing and growing”, said Otto van Boggelen of Fietsberaad, a think tank for cycling and cycling infrastructure. “Particularly for people over 46 years old the electric bike is a very popular means of transport and some 10% of the people in this group owns an e-bike.”

Some 5% of all bicycles in the Netherlands is an e-bike today. According to Fietsberaad it won’t be long before this percentage will rise to 20% and the e-bike ownership will be equally divided among younger people.

More kilometers

“It is striking to see that people ride more kilometers on an e-bike than on standard bicycles. The difference is more than ten kilometers a week on the average.” People up to 46 years old ride 31.3 kilometers with an e-bike a week compared to 20.7 on a bicycle without support. In the 46 – 60 category the same comparison shows respectively 30.9 and 17.3 kilometers. The category over 65 years rides the most with 31.4 kilometers per week, while those on a regular bike ride just 15 kilometers.

Safety problems

According to the latest inquiries by the VeiligheidNL (Safety NL) there is no difference in safety risks between e-bikes and standard bicycles. In the Netherlands 8,800 e-bikers end up in a hospital after an accident per year. “This number might very look high but taken the number of e-bikes on the road it is limited only”, said one of the researchers of VeiligheidNL. “It is remarkable to see that the e-bike riders don’t end up in hospital with more serious injuries compared to other cyclists after an accident.”

Rising sales

The latest statistics of the Dutch market researcher GfK Retail and Technology Benelux, indicate that the e-bike sale is still growing in the Netherlands. While the total bicycle market is in a depressed mood, the number of e-bikes sold last September increased by 5% compared with September 2011. The average price declined by 6%. CHINAE-VEHICLE Source: www.bike-eu.com

250 Watt Hub Motor E–Bike; Is It Enough?

250 watt motors are the most used motor on commercially available electric bikes. They are popular in Europe (and Asia) where in many countries there is a 250 watt power limit on E-bikes. Because millions of these 250 watt motors have been made for the European and Asian market, the cost to buy them from the factories in China is low, but at the same time it is a motor that is proven to be reliable and efficient.

The wholesale price from China for a geared hub motor is around $60 before shipping. In comparison, a larger 600 watt geared hub motor such as the BMC will cost $250 wholesale from China. An ultra-affordable 250 watt motor makes it possible for an E-bike manufacturer to sell a decent (but low powered) electric bike, and still make a nice profit.

The 250 watt hub motor comes very close to being a perfect piece of E-bike technology, cool looking, lightweight, reliable, and cheap. It could have been the very best way to make a bicycle into an electric bike. However….the only caveat is the simple question…is 250 watts enough? If 250 watts is enough for you, then this might be the ideal power plant for your E-bike.

Small is good

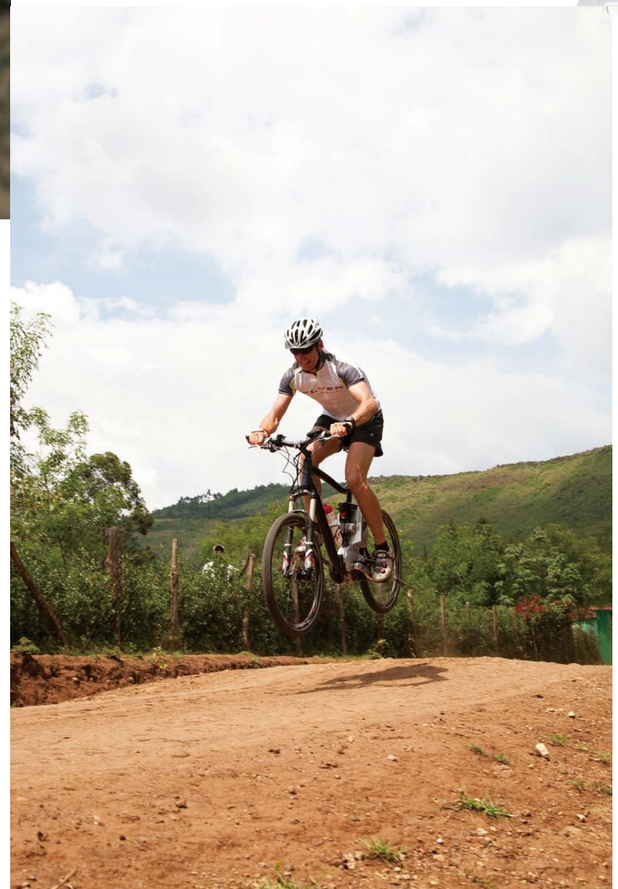
When it comes to computers, phones and hub motors, small and lightweight is good. As electric bike technology has improved over the years, engineers have figured out how to make a smaller and lighter hub motor. The 250 watt hub motor is an evolution of hub motor technology, it would in fact be a perfect electric bike solution if it was possible to pump more power through it reliably.

Quietness and Ride Quality

250 watt hub motors make very little noise…just a barely audible hum. Because they are almost silent they are like a magic carpet ride. Because they are so small (and not powerful) the power will come on smoothly.

What does a 250 watt hub motor consist of?

Most 250 watt motors are geared hub motors, meaning they have a planetary gear reduction so that the motor spins at an optimal RPM. This makes the motor more efficient than a simpler direct drive hub motor. At 250 watts, the planetary gears means a more torquey and more efficient motor. Power to weight, the geared hub motor is much better than a direct drive hub motor. Although a few companies make a 250 watt direct drive motor (such as Bionx's 250 watt motor, the same motor that goes on the Smart Bike), we strongly suggest that if you buy a bike with this size of motor that you opt for the geared hub motor which is lighter, smaller and more efficient than its direct drive counterpart. Like most hub motors of today, most of the 250 watt motors currently on the marketplace use highly efficient brushless motors.

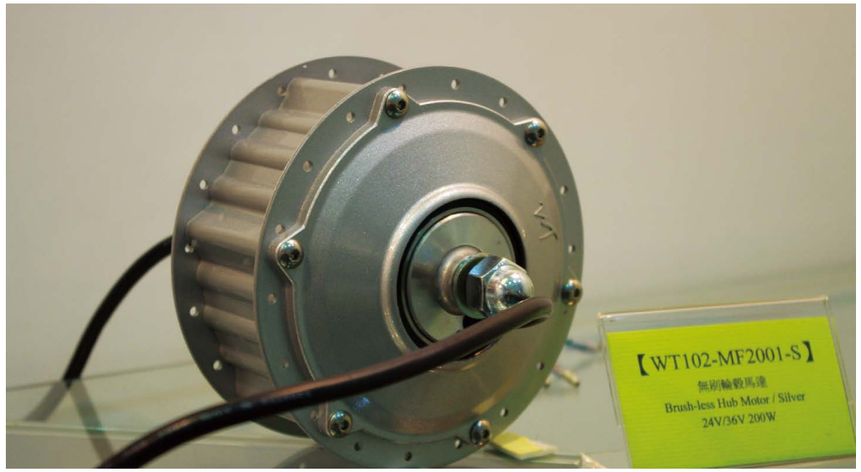


Advantages of 250 watt motor

Lightweight (6 pounds) The biggest advantage of these 250 watt motors is they add very little weight to your bike. 6 pounds is the same as a Kryptonite U-Lock. To compare, a Crystalyte hub motor tips the scale at 15 pounds. Weight in the wheel that you can really feel. Even a pound less makes a big difference in the feel of the bike.
Stealth looking. You can't beat a 250 watt hub motor for stealthiness. Even when installed on the front hub they are hard to identify. They look almost the size of a standard wheel hub. In the rear wheel they hide perfectly behind the rear sprocket and disc brake.
Free wheeling. Geared hub motor free wheel just like a regular bike (but no possibility of regenerative braking).
Easily fits on front or rear hub. Because 250 watt motors are so small, they can easily be mounted in the front or rear wheel. Because they put out so little power, you don't have to worry as much about this puny motor snapping drop outs like you do on the more powerful set ups.
More range. 250 watts is an extremeley efficient wattage to operate at, and forces the rider to provide input. Therefore 250 watt bikes will get a long way per battery charge.
Super reliable. Because 250 watt motors have been mass produced and tested on a mass market, they are super reliable. And should give you years of trouble free use. If one breaks no problem, they are cheap to replace.
Cheap purchase price

when is 250 watts enough?

Let's say you do all your riding on a paved flat beach trail. And in beach tradition you like to cruise while sipping your virgin piña colada with plenty of your own pedal input, so you are getting exercise…a 250 watt motor might just be your cup of tea. Let's say you ride on hilly terrain but just



want a boost to smooth those hills out, and you don't mind pedaling hard up these hills and providing plenty of your own pedal input...250 watts might be all you need.

Also the less you weigh, the more likely a 250 watt motor will fit you. If you are thinking of giving your 90 pound 10 year old an electric bike for Christmas, 250 watts is plenty of power. For a 300 pound rider, you really need to look at 600 watt motors and beyond.

A 250 watt motor and hills

where you will feel the deficiency of a 250 watt motor is when traversing hills, especially off road. Hub motors are generally inefficient when climbing because they are usually geared for flats. When you hit a hill, that 250 watt motor is really going to have to work to pull you up, and if you part and vigorously pedal-assist it, you can easily burn that little motor out. Generally since efficiency is so important when limited to 250 watts, if you have a hilly commute it is better to with a 250 watt mid drive which are extremely efficient and great hill climbers despite their minimal power output. (You can climb in your bike's granny gears)

250 watt motors are less reliable than larger motors

Because 250 watt motors are so small they tend to be more fragile than the bigger and heavier higher wattage hub motors. Also most people ride 250 watt motors at full throttle all the time, whereas with larger motors you can ride them at half throttle which is easier on the motor.

A 250 watt motor is not more efficient than a larger hub motor

Let's compare a 250 watt motor with a 500 watt motor. If you limit the 500 watt motor to 250 watts you will not see any difference in efficiency. This means a 500 watt motor can serve as both a 250 watt bike and a 500 watt bike depending on your needs and wants. Most electric bikes have some kind of efficiency mode where power is limited, so that you can switch to half power with the flick of a switch.

250 watts forces you to be a miser

When the maximum wattage you can burn is 250 watts you will naturally be super efficient, since at 250 watts you will rarely find yourself in situation where you have too much power. For most situations, 250 watts is "just enough" to travel at a moderate pace. Without the temptation of having extra power on tap, you will always use a maximum 250 watts....turning you into an electric power miser whether you want to be or not. It's hard to get in trouble when riding with only 250 watts on tap.

250 watt bike means smaller battery pack

A 250 watt motor allows manufacturers to offer a smaller battery pack and get away with it. A great example of this is the Faraday electric bike which as you can see uses a 250 watt geared hub motor in the front, hidden behind the front disc brake. This bike has a meager 110 watt-hour battery. Can you see where it is hidden? The battery pack is actually built into the frame tubes of the bike. If you put a 600 watt hour motor on it you would only get a pathetic 10 minutes of wide open throttle before the battery died. With a 250 watt motor, the Faraday is able to get an acceptable 25 minutes of wide open throttle before the battery dies.

250 watt bike gets you into shape

250 watt bikes means less cheating and more exercising. Many times when you have plenty of power on tap you end up being lazy and

using more of that power than you really need. A 250 watt just give you enough power to help you up the hills, speed you up on the flats and keeps you totally honest.

250 watt bike in the USA?

The real problem with a 250 watt powered bike in the USA is that you are allowed to ride up to 750 watts legally in the USA...why settle for a bike that was built to adhere to European standards? You can always have a switch on your throttle which limits your bike to 250 watts and be just as efficient as the smaller hub motor...why not have the option for 500 watts or 750 watts when you want it? 250 watts is not enough to give you serious help up a hill, where 750 watts is. Even on the flats, you will be hardpressed to get to 20-MPH on a 250 watt bike without pedaling hard.

DIY 250 watt conversion

250 watt bikes are super easy and cheap to build. You don't need to stress as much about torque arms etc, because 250 watts is not strong enough to snap most drop outs. You don't need as big as a battery, even a 250 watt hour battery will keep you moving at full throttle for an hour.

Types of 25o watt motors

There are 3 main manufacturers of 250 watt hub motors at this moment. Bionx, Bafang, and Cute. To read about these 3 motors read our story here.

250 watt motors and E-bike manufacturers

Many major manufacturers are opting to use the 250 watt motor for upcoming bikes that otherwise would be pretty exciting. The list of bikes included the Smart Electric Bike, the Specialized Turbo, the Faraday electric bike, and the Grace E-bike. These manufacturers have decided that 250 watts is enough.

So is 250 watts enough?

I really believe that 250 watts is not enough power for most consumers in the USA. It is refreshing that electric bike manufactures in the USA such as Currie, Pedego and Stromer are offering 500+ watt bikes in their product lines. You might think a 250 watt hub motor is enough, but once you test ride both a 250 watt bike and a 500 watt bike together, it is hard to settle for the measly 250 watt hub motor. However, if you really are the type who will never need more than 250 watts, its hard to beat the stealthiness of a 250 watt hub motor bike. CHINAE-VEHICLE

Source: www.electricbike.com

5 Easy Ways to Increase Your E-bike Range Up To 50%

1) Learn throttle-feathering. This is a simple, easy-to-learn technique that requires an e-bike twist throttle, so the first step is to swap your thumb throttle for a good quality twist (such as a Magura) unless you're already set up with one. Prius drivers often talk about a "pulse-and-glide" technique they use to maximize fuel economy, and throttle-feathering is close to an e-bike equivalent of that. The idea is to give the motor the least power needed for whatever terrain demands you're encountering, and to step up your pedaling accordingly. I almost always lock my e-bike into full throttle on steeper climbs but on all other terrain. it's more a matter of delicately signaling your input demands with a very light touch on the throttle. Often on hub motor rides, it takes just a tiny bit of power (100W) to put the bike in freewheel mode on the flats. On graduated climbs, it's often the case that the milder uphills can be easily spun up at 50% power levels as long as the rider is willing to put in some pedal effort. Remember, most e-bikes are designed as human-electric motor hybrids, and nothing will kill your range quicker than sitting on your battery without pedaling on hills.

2) Lose the cruise (control). This was a revelation to me about five years ago when I started playing with range-maximizing techniques on my Tidalforce S750X, a 1000W+ rear hub-powered bike that can eat up the amphours like nobody's business, especially if you're a power hog like I used to be. What I discovered is that using the cruise control on anything other than climbs (where I use it as a full throttle lock) is extremely wasteful. On the flats and mild grades it is far more efficient to manually manage your power using throttle-feathering and the like. Most cruise controls are not smart enough to give you anything but full bursts of power until your preset speed is reached. It is much better to manually call for, say, 600W of assist on a slight upgrade with a slight twist of the wrist than to lock the cruise into an arbitrary speed and let the controller do the power management. Trust me, the human touch is superior, and will make you a much more efficient rider.

3) Be sure you're not a victim of brake rub, and keep your tire pressure up. This may seem almost too obvious to mention but the fact is that a lot of cyclists ride with either their brake pads set too tight and/or with slightly out-of-true wheels, either of which can put a big drag on efficiency due to the friction of the brake pads against the rim. I like to set my pads with plenty of play but it's important to still retain the ability to stop quickly in an emergency. It's a good idea to have your local bike shop do a brake and wheel inspection at the beginning of riding season, or after any kind of crash or serious pothole encounter. Be sure to ask the mechanic to set the brake pads on the loose side.

4) Learn to love coasting—and pedaling on the flats. Very minor downgrades are a great place to economize your e-power and stretch your range. I especially like to coast after a climb to give both battery and body a chance to recover. Remember, every mile you coast is a free extra mile of range, or more, if you have regen. Pedaling with tailwinds on the flats will also bank you added mileage, and of course coasting downhill is a no-brainer. Very minor power feeds of 200-300W on flat dirt roads or blacktop accompanied by vigorous pedaling can get you up to 3 miles per amphour or better, more than double what I normally see with more aggressive e-demand.

5) Get yourself a good onride volt/amp meter and learn how to use it. I have an early version of Justin's great Cycle Analyst and can't say enough good things about it. It is a superb diagnostic tool as well as a wonderful help in learning how to manage your power and extend your range. It's also the ultimate geek e-bike tool, and you will impress your friends with your knowledge of all things battery-related once you've lived with it for a couple seasons.
The Cycle Analyst has saved my battery pack from almost certain premature demise on several occasions when a sudden drop in voltage signaled either a bad cell or loose connector on one of my subpacks. In all cases I've been able to stop in time and do a quick roadside fix with just wire strippers and electrical tape. For trying to manage your range on those longer daytours where every watthour counts, these meters are invaluable aids. And Justin's latest version is better yet (see our review on it here), and really functions as a very smart controller and battery monitor.

CHINAE-VEHICLE

Source: www.electricbike.com

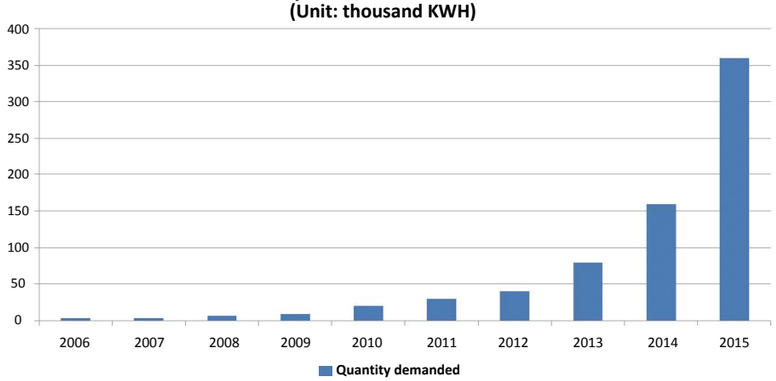
Secondary Charging Battery for EV Entering the Era of Lithium Battery

It is learned that the demand for lithium battery of lithium battery bicycles was 234,000KWH in 2011, which is estimated to be 414,000KWH in 2012 as per the calculation that each electric bicycle adopts a 36V10AH Li-ion battery.

Chargeable Li-ion battery contains no polluting metals, such as cadmium, lead and other harmful heavy metals, enjoying inborn advantage in environmental protection. It also has the advantages of long cycle life, low self-discharge rate and no memory effect. In recent years, sales volume of Li-ion battery maintains a rapidly growing trend and the market share of Li-ion battery is soaring compared with other secondary batteries including lead-acid battery, NI-MH battery and nickel-cadmium battery.

In 2011, the sales volume of Li-ion battery in China exceeded that of lead-acid battery for the first time and approached to 3 billion ones with about 140,000,000KWH, also leading China's secondary charging battery to enter the era of Li-ion battery.

Lithium Battery Demand Statistic of China's E-bike (Unit: thousand KWH)



Data source: Gaogong Li-ion Battery Industry Research Institute

Overview of Li-ion battery Industry Chain

The upstream of Li-ion battery industry is Li-ion battery materials, including anode material, cathode material, electrolyte, septum, conductive additives and adhesive; the midstream is mainly various battery manufacturers and battery assembly enterprises while the downstream is mainly Li-ion battery supporting application fields including various kinds of digital products, electric tools and EV industry. In addition, a complete Li-ion battery chain should also include the Li-ion battery ore resources and Li-ion battery recycling.

The major four materials (anode and cathode materials, electrolyte and septum) in the upstream account for different percentages of Li-ion battery costs. Anode material accounts for about 35% and currently, the main anode materials include lithium cobalt oxide, lithium manganate, ternary materials (lithium cobalt manganese) and lithium iron phosphate. Lithium cobalt oxide has the largest sales volume. If calculated in sales weight, lithium cobalt oxide accounted for nearly 40% market share of the Li-ion battery anode materials in 2011.

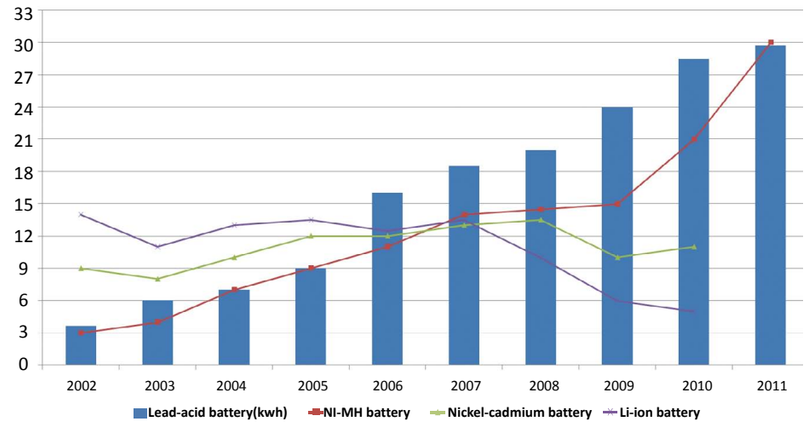
Market Pattern of Li-ion Battery Industry

Li-ion batteries are mainly produced in China, Japan and South Korea globally. According to the calculation of production value, South Korea accounts for 38% of the global Li-ion battery share, Japan accounts for 35% and China 25%. Li-ion battery production value of the three countries account for 98% of the global market. The global Li-ion battery market scale was about RMB70 billion in 2011, which is estimated to increase to RMB13.5 billion in 2015.

Currently, consumer electronics products are still the main application market for Li-ion battery, in which, laptop and mobile phones account for 40% and 80% of the Li-ion battery application market respectively. In 2011, the market scale of consumer Li-ion battery market was about RMB56 billion and grows by 10% every year. However, the market of power Li-ion battery market driven by investment and policy is not satisfactory as the downstream application market demand is lower than the anticipation and is mainly depend on government subsidy and government orders.

Gaogong Li-ion Battery Industry Research Institute predicts that power Li-ion battery market and consumer Li-ion battery market will reach RMB35 billion and 75 billion respectively in 2014.

Sales Volume Summary of China's Secondary Battery During 2002-2011



Data source: Gaogong Li-ion Battery Industry Research Institute

Li-ion Battery Bicycles Growing Rapidly

In recent years, the gradual emergence of power Li-ion battery is mainly driven by the development prospect of electric bicycles and electric cars. Currently, the domestic annual output of domestic electric bicycles have exceeded 30 million, but the power driven battery is still lead-acid battery and bicycles adopting Li-ion battery only increased from 1.4% in 2010 to 2.1% in 2011. According to preliminary statistics, the output of Li-ion battery bicycles was 650,000 in 2011, growing by 54.2% over 402,000 of the same period of 2010. With the gradual increase of Li-ion battery bicycles, the market opportunity has also become the focus of attention for Li-ion battery enterprises.

Gaogong Li-ion Battery Industry Research Institute estimates that the demand for lithium battery of lithium battery bicycles was 234,000KWH in 2011, which is estimated to be 414,000KWH in 2012 as per the calculation that each electric bicycle adopts a 36V10AH Li-ion battery.

Broad Prospects for EV

Data of Gaogong Li-ion Battery Industry Research Institute show that sales volume of green car was 8,159 in 2011, up 60.36% year on year, including 2,580 HEVs and 5,579 PEVs. In terms of classification, sedans accounted for 61%, passenger cars 28% and others 11%.

China's green car market will enter the stage of rapid development from 2012 with the sales volume estimated to reach 18,000. The sales volume of green car is estimated to reach 300,000 in 2015.

Many countries have brought green car into the highlight of future promotion. With the continuous improvement and cost reduction of power Li-ion battery and especially the improvement of safety, the development of Li-ion battery will undoubtedly have broad prospects in the field of power. CHINAE-VEHICLE

Nuvinci Banks on U.S. E-Bike Upswing

Al Nordin is convinced it's only a matter of time before the market for electric bikes in North America develops into a thriving category. And as the president of Nuvinci's bike division, he has been positioning the company for the past eight years to be ready for the inevitable.

"It's happening," Nordin said. "Our goal is to be there early and after and not be late to the game."

Nordin is here in Taichung talking to product managers about Harmony, an auto-shifting system that works in concert with the company's N360 hub. Harmony, which is in production now, operates through a speed sensor that sends signals to a sealed motor unit based on rider pedal cadence. With the smooth turning continuously variable planetary (CVP) hub, the set is an ideal combination for electric bikes, which riders often tend to forget to shift, Nordin said.

Since Eurobike, Nuvinci has signed up about 30 OEMs to spec Harmony on 2014 model year e-bikes, including a few European brands that plan to enter the U.S. market. Nuvinci also works closely with other suppliers like Gates Carbon Drive, Bosch and FSA to incorporate their products with Harmony and N360. Gates' belt drive and Bosch's popular mid-motor e-bike drive system are natural partners for Nuvinci's setup, as is FSA's Patterson sealed front derailleur.

Nuvinci also plans to sell Harmony retrofit kits through its dealer network, as well as offer pre-laced wheelsets with the N360 hub. Nuvinci is also working to adapt its system to the new generation of so-called speed pedelecs hitting the market in Europe. Those e-bikes generally offer up to 45 kilometer per hour pedal assistance powered by a 500-watt motor, however, the Nuvinci hub is currently covered under warranty for motors up to 300 watts.

Eight years after first hitting the market under parent company Fallbrook Technology, Nuvinci has steadily inched its way into the market as a viable competitor among internal gear hub suppliers with spec on 200 bike models globally. It's lower priced than Rohloff or Alfine 11, but is a premium product that is typically seen on commuter bikes retailing at $800 and higher. At 2.4 kilograms (5 pounds) and a few hundred grams more than Shimano's Nexus 8, the hub isn't for weight weenies, but "we're not in the gram game," Nordin notes. Nordin said the two-wheeled division is self-sufficient, profitable and takes up about 20 percent of company resources. It doubled its business last year and is on track for record growth this year, Nordin added.

Fallbrook has multiple financial investors, including private equity and the 100 original angel investors, but no one entity holds a majority share. It recently licensed its CVP technology to automotive manufacturers Allison and Dana for use in next-generation transmissions designed to increase fuel efficiency, reduce emissions and improve vehicle performance. CHINAE-VEHICLE

Source: Bicycle Retailer

Minimizing Flat Tires on an E-bike

Flat tires are the bane of the electric bike rider. If you ride an ebike and feel you are getting more than your fair share of flat tires, don't worry, you're not alone, and there are several ways to help minimize punctures.

Ever wonder why your electric bike gets more flat tires than your normal bike? Here are some answers:

Extra weight. Ebikes in general are usually 2-3X's the weight of many road bikes, which means a lot of extra stress on your tires.
On ebikes equipped with rear hub motors and rear rack-mounted batteries, rear tires are often overloaded and thus more susceptible to flats. Heavier hub motors can make bike wheels like lead weights, which are not as good at absorbing shocks as regular wheels, making flats more likely.
Most ebikes are made with cheap rims, cheap tires, and cheap inner tubes.
Upgrading your wheels, or at least your tires, can often help.
When riding your ebike at high speeds you may feel impervious to the road, and pay less attention to road debris.
Your ebike probably sees a lot more miles than your pedal bike, ergo the increased chance of a flat.
Separately, flat tires can be an extra hassle on an ebike versus a regular bike for these reasons:
E-bikes are heavy and harder to flip upside down, balance, etc. to change a flat
E-bikes often contain external battery packs that may need to be unloaded before changing a flat.
When the tire on a hub motor wheel goes flat, it usually requires taking the entire wheel and motor assembly off the bike to fix, which often means carrying extra tools–or being stranded out on the road.

Here are some tips for people who ride hub motor bikes to prevent against hub motor wheel tire flats:

Always ride with rim tape
Inspect tires regularly and replace them when worn
Run thorn resistant high quality inner tubes
Run thorn resistant high quality tires
Check your tire pressure regularly. This will help avoid flats and improve your efficiency Consider adding Slime to your inner tubes or installing inner tubes made by Slime
consider using tire liners...they are heavy...but remember weight is not an issue with an electric bike.
If your tires are chronically flat, consider running Bell No-Mor flats, or Serenity Hutchinson inner tubes, which is a solid rubber inner tube which will never go flat.
Carry plenty of co2 cartridges, as well as a spare tube. These handy little canisters of compressed air can save the day when the worst happens and you need to replace an inner tube out on the road quickly and efficiently. CHINAE-VEHICLE Source: www.electricbike.com

K2 Reports Sufficient Li-Ion Cell Inventory and Manufacturing Capacity in Response to Recent Competitor Bankruptcy Filings

Responding quickly to recent uncertainties in the Li-Ion battery market, K2 Energy Solutions, Inc., a leading developer and manufacturer of proprietary rechargeable lithium iron phosphate-based energy and power cells and battery systems, hastened to assure industry stakeholders and end users that it has both the current inventory and manufacturing capacity to fill any supply-side shortages caused by the recent spate of cell-manufacturer bankruptcies and shutdowns.

"Financial uncertainty is bad news for any industry, but it is even more disruptive in emerging technology markets like electric vehicles and advanced energy storage," said K2 CEO Johnnie Stoker. "Our primary goal right now is to assure our current customers and new customers transitioning to K2 that we have the capability to keep them up and running now and into the future."

According to Mark Stoker, VP of Sales, at K2 we made a conscious decision to "diversify and standardize our product lines to focus on markets where our batteries offer great cycle life, safety, weight and total cost of ownership advantages to our customers instead of relying on extremely aggressive predictions on the growth of the electric car market." The decision to not "put all our proverbial eggs in the trunk of an electric car was largely responsible for the company's present ability to handle essentially any industry-wide supply contingency," Mr. Stoker commented.

"When other companies went virtually 'all in' on electric vehicles, we decided to focus significant R&D efforts on pioneering new applications for our proprietary chemical and structural technologies," Mark Stoker said. "This allowed us to rather quickly develop, market, and begin earning a profit on such innovative products as Zero-Idle systems, Uninterrupted Power Systems, military command and control power supply solutions, and medical equipment power packs while continuing to develop our robust EV and PHEV type solutions through programs like the USABC."

With companies like A123 Systems, Ener1, and Valence in Chapter 11 and International Battery shuttering its factories and liquidating its assets, K2 appears to be the only major manufacturer of advanced lithium iron phosphate (LFP) batteries that is on firm financial footing and operating at a profit. A profit in large part earned through K2's strict adherence to its core principles of bringing the advantages of K2 lithium-ion technology to legacy products as well as developing new markets.

"K2's R&D advances with lithium-ion drop-in lead-acid replacement battery modules will revolutionize the battery market in industrial and consumer products like back-up power, uninterruptable power supplies and motor start applications," Mark Stoker said. "Typically one-third the weight and up to 50% smaller than the batteries they're replacing, they have up to ten times the total life cycle, are heavy-metal free, offer a significantly lower cost of total ownership and a better ROI despite a somewhat higher initial cost. Our recent discoveries along with increased volumes will further lower the costs and increase available stored energy while maintaining safety which will make the LFP value proposition for many applications, including electric vehicles, very compelling."

About K2 Energy Solutions, Inc.:

K2 Energy Solutions, Inc. is a leading developer and manufacturer of advanced lithium-ion batteries, cells, packs, modules and systems for a broad range of mobile and fixed energy storage applications. Our customers include electric vehicle makers, utility companies, medical equipment makers, industrial equipment manufacturers and government agencies, among others opting for the safe, clean, cost effective and reliable alternatives to current battery technologies. The company is a privately funded corporation formed and headquartered in Henderson, Nev., with manufacturing and assembly capabilities in the US, Europe and Asia. For more information please visit www.k2energysolutions.com

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Source: www.prnewswire.com

Clean Republic Hill Topper

E–Bike Kit Review

The Clean Republic Hill Topper electric bike kit has been on my list of kits to review because it is a simple and economical way to turn a conventional bike into an e-bike.

In this review I will cover the Hill Topper e-bike kit specifications, the installation experience, what the ride is like, range test results, pros, cons and ultimately who this e-bike kit is for.

Clean Republic Hill Topper Electric Bike Kit Specifications

Speed: 15 mph.

Range: Please see battery options below.

Motor: 8Fun 250W, 24v planetary geared front hub, brush-less BLDC PWM, 210rpm, weighs 6 lb. 36 Hole for spokes. Motor is sealed, rain and mud-proof. Disc brake mount optional (uses your own disc rotor).

Spokes: Two cross lacing pattern, steel 13 gauge (2.3mm) spokes.

Rim: Alexrims, Alex101, Sturdy single-wall alloy mountain bike rim. Available in 700c, 26" and 24" sizes.

Tire: Raised center black urban, 1.75", 40-65 PSI.

Battery Options:

-10 mile sealed lead-acid (SLA), 24v 8Ah weighs 11 lb., 4 hour recharge rate, 400 cycle life
-10 mile lithium ion, 24V 4.4Ah weighs 2.3 lb., 500 cycle life
-20-mile lithium ion, 24V 10Ah lithium weighs 4.5 lbs, 6 hour recharge rate, 500 cycle life
-40-mile lithium ion, 24V 20Ah Made-In-USA deluxe lithium weighs 6 lbs, 500 cycle life

Battery bag & casing: Tough 1050 denier ballistic-grade nylon weatherproof cargo bag with 3 heavy duty straps. Rugged internal aluminum shock and weatherproof case.

Regulator: Included and internally pre-wired into all battery packs. 24v, 7A rated current, 15A max current, 20.5v low-voltage battery protection shutoff, Pulse Width Modulation (PWM), advanced TDR motor position sensing.

Charger: runs on 120-240 volts, 50/60 Hz., Output: Lithium charger: 29 v, SLA charger: 27v. Smart auto-shutoff functions, over-charging protection.

Throttle: On/off switch with Velcro strap attachment to handlebars.

Warranty: Standard 1-year warranty on ALL parts. "If you have any quality issue with any electric bike kit component we'll replace it at no extra charge." Additional 2 year warranty coverage available.

Pricing:
-$399 for 10 mile standard sealed lead acid battery option + shipping.
-$499 for 10 mile Sprinter lithium ion battery option+ shipping.
-$795 for 20 mile lithium ion battery option+ shipping.
-$1295 for 40 mile lithium ion battery option+ shipping.
-There is also the option of the "Pro Pack" which is the Hill Topper without the complete wheel. These Pro Packs are generally $100 less than the Hill Topper kit. They are intended for bike shops or

DIYers who want to build the motor into their own wheel.

Installing the Clean Republic Hill Topper electric bike kit:

One of the unique features of this electric bike kit is how easy it is to install (or uninstall) on your bike.

IMPORTANT NOTE: You need to check with Clean Republic to make sure the fork on your bike will work with their kit. The FAQ page on their website has more info on this: http://www.electric-bike-kit.com/.

Once the Hill Topper kit arrived I installed it on the "Fixie" style bike

from Critical Cycles that I have been testing for review. Overall the installation experience was pretty smooth. I had to move a spacer from one side of the hub to the other to get the motor to fit in the fork. If you have a similar situation make sure you contact Clean Republic for the proper way to do this.

There is a motor wire connector that makes it very easy to install or remove the wheel from the bike.

Included in the Hill Topper kit was the Axle Release levers. These are quick release levers that can be added to a traditional threaded axle. They replace the typical axle nuts and allow you to remove the wheel without tools. They installed easily on the Hill Topper and they worked well to secure the wheel and release it quickly.

The kit is controlled by a simple on/off switch that is attached with a Velcro strap to the handlebar grip. I positioned the on/off button under the grip so that I could use my index finger to turn the kit on while still maintaining a secure grip on the handlebars.

When charging the lead acid battery pack you need to make sure that the on/off switch on the battery is in the "on" position. In case you don't know the "I" is on and the "O" is off.

Plugging in the charger requires that you disconnect the battery from the bike wiring and plug in the charger.

The charger is pretty small and light! You can easily take it with you for charging on the go.

What is the ride like with the Hill Topper kit?

The Hill Topper is meant to assist you in getting over that tough hill! Please note the "assist" part. It is not meant to help you "fly" over the hill!

With that said it really does add a nice assist to your bike to help you when you need it. The idea with this simple and minimalist electric bike kit is that it will help you when you really need it, with the simple push of the button throttle.

Since the Hill Topper uses a 24V battery and a 250 watt geared front hub motor, it is not a super powerful kit, but it has enough assist to help pull you up the hill (some hills in San Francisco, California may still be pretty tough!). The beauty of the 250 watt motor is that it "sips" energy from the battery pack.

If you have a fairly small range that you need for your commute (10 miles) then you could use the SLA pack or the new lithium ion Sprinter pack that is very small and light (2.3 lb.). Tip: You could buy an extra charger to have at work for charging for the ride home, instead of buying a bigger battery (which can cost a lot more than an extra charger). Clean Republic also offers 20 mile and 40 mile lithium ion battery packs as well.

The cool thing about geared hub motors is that they "freewheel" when they are not in use, so there is no resistance from the motor when it is not engaged. Direct drive motors tend to have a little resistance from their magnets when not in use, so it makes unassisted pedaling a little tougher.

Clean Republic has an informative video on the best riding techniques to get the most range from their kit, which also can extend the overall life of the battery, provided it is charged up regularly. These proper riding techniques apply to any type of kit or complete e-bike.

The Hill Topper is a nice assist kit. I found that it really did make climbing hills much more enjoyable! It also works well as a way to maintain a higher speed on the flat areas (while pedaling) to overcome a headwind. It also works well to help you accelerate through a crowded intersection quickly. For best energy usage, you should avoid using the assist from a total stop.

Actual Ride Test Results

Max Speed: Clean Republic claims the top speed is 15mph but the kit that I was using maxed out at about 18mph. That could be because I used the 700c wheel size.

Range: From the GPS info that I recorded, the bike traveled 10.2 miles and did a total elevation gain/loss of around 900 ft. Considering that I weight 190 lbs and I pedaled lightly, the 24 Volt 8.8 ah battery pack (192 Watt Hours) lived up to its claim of 10 real world miles.

Please keep in mind that if you pedal more, weight less than me, ride slower and/or you use the bike in terrain that is not as hilly you will get more range. These results are from tough testing.

Weight: The standard kit with the lead acid battery adds about 17 lb. to your bike. The weight distribution is pretty good on the Hill Topper. Since it is a front hub motor, it is generally a good idea to place the battery near the center or back end of the bike.

I used the straps on the bag to place it behind the seat and it worked pretty well. The weight is a little higher than optimal but it is not bad. You can also mount it on the top tube and seat tube, but from my experience, the bag was not as secure in this location.

Pros

Simple kit: The simplicity of the Hill Topper is definitely a highlight of this kit. The installation is pretty straight forward and it can be easily removed if you decided you only want to use it for certain rides (for example carrying cargo) or switching the kit between bikes. The ability to remove the kit quickly is made much easier with the Axle Release quick releases for the front wheel!

The on/off button control may seem overly simplistic but I found it to be a nice way to add the assist only when needed. Please note that there is no modulation to the power. It is either on or off, but it does seem to "ease" into the assist so that it is not an abrupt power feeling.

Economical: The Hill Topper that I tested was the lead acid battery option and the complete kit costs $399. That is a great price for anyone wanting to add electric assist to their bike!

Since the Hill Topper was installed on the Critical Cycles fixie style bike, the total price for this e-bike was in the $650 range; pretty impressive!

Upgrade-ability: The standard Hill Topper kit comes with the 10 mile lead acid battery which can be a great starter kit, especially if that is all the range you need. You could start out with 10 mile pack and see how that works for your routes. If you need a bigger battery (or extra battery) you could always buy one later. Clean Republic does offer 20 mile and 40 mile lithium ion packs if you need more range.

Another range tip: You could bring the battery and charger with you into the office or coffee shop for charging. The lead acid battery charger is small and light!

Cons

Lead Acid Battery: What makes the standard Hill Topper kit so economical is the lead acid battery. There are always compromises when you go with a lower price point, i.e. you get what you pay for.

Lead acid batteries are heavy! The Hill Topper lead acid is 11lb. for 10 miles of range. Their "Sprinter" lithium ion battery is 2.3 lb. for what they claim is a 10 mile range battery but is adds $100 to the kit price. Seems like it might be worth the extra $100! With the weight and size of the lead acid battery, the battery bag flops around a bit when the straps loosen up after a ride or two. It would be nice if the bag straps were a little more secure.

Along those same lines it would be nice if Clean Republic offered a battery lock box accessory to prevent battery theft. It can be a little cumbersome to take the battery on and off the bike when you park your bike somewhere. According to Clean Republic, they may offer a lock box or other attachment in the future.

Lead acid batteries also need a little TLC compared to lithium ion batteries. Make sure you top off the lead acid battery as much as possible and try not to drain it completely. By taking care of your battery you will get more life out of it.

With the lead acid version of the kit you need to remember to charge the battery while the switch is in the "on" position. I forgot to do this on a few occasions and it was a bummer to charge the battery for a few hours and then realize that it did not charge! After using this kit for a while it will probably become second nature to make sure the switch is on.

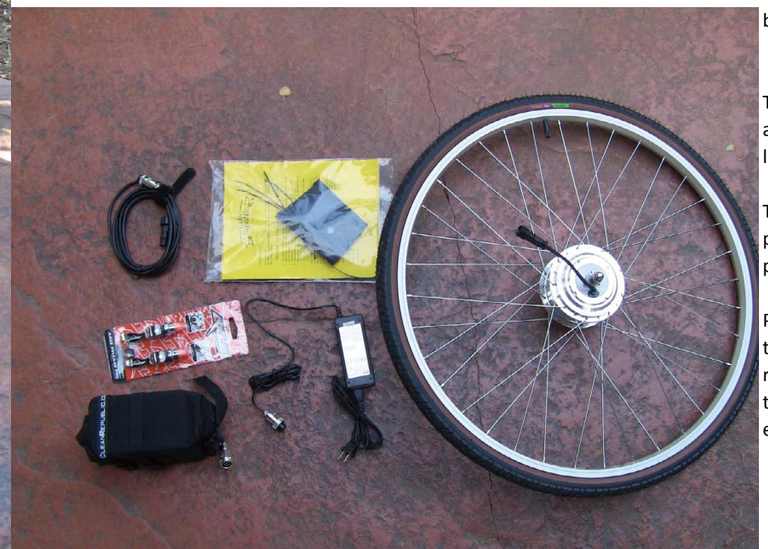
You also have to remember to turn the battery off when you are not riding because it can drain some energy from the battery even when you are not riding. Most e-bike systems on complete bikes turn themselves off after a certain amount of time when they are not in use.

Noise: All geared hub motors make some noise. The Hill Topper is a little noisy, but it is not bad. Just something to be aware of if you are looking for a silent ride. If you want a quiet ride then you should go with a direct drive motor kit.

Who is the Hill Topper e-bike kit for?

The Hill Topper is a great electric bike kit for you if you want some electric assist to make your pedaling that much easier. It will literally help you top the hill that has been giving you a hard time on your non assisted bike. Adding the Hill Topper will make your current bike a lot of fun!

This kit is also a good option for adding electric assist to a cargo bike. Electric assist added to a cargo bike can make hauling 4 bags of groceries up a hill much easier! Electric cargo bikes are great car alternatives.



The standard Hill Topper kit is a great entry level kit and then you could always upgrade later to a better lithium ion battery if you feel that you need it.

This kit is not for you if you want a free ride (no pedaling) up a hill. But that's not as much fun as pedaling!

Please keep in mind that this is a relatively short term test. This testing can't really give you the long term review of durability and reliability. My thoughts on the quality of this electric bike kit are from previous experiences with similar kits.

Personal Responsibility, Personal Transportation

Looking about the world, we can see that humans like to travel. We commute to work; we travel for entertainment, fun, and work. We almost never stop moving!

That constant movement creates a huge expenditure of energy and resources. In the USA, roughly half of all energy use is for transportation of people or goods. That may be lower in other parts of the world, but not by much.

The cost is huge. We pollute our air, our water, fight wars over energy, and damage our health. The smog, grit, noise, and smells of transportation in action are present everywhere. We empty our purses to buy energy, sometimes before we buy food or medicine.

And looking about the world, we can see that energy commercial interests dominate transportation policy creation in most places.

Since the energy industry is the largest and most profitable activity of human kind – there is a lot of money spent to encourage policy makers to protect the status quo. And the largest segment of the energy industry is the oil industry – although ethanol, CNG, and electrical generation are all part of this.

This is clearly evident in the USA – where millions of dollars from oil companies fueled campaign efforts to protect their interests in the recent elections. Oil money has created governments, protected others, and destroyed a few. All to keep the energy tap open, and the profits flowing – making both consumers and sellers happy.

Policy makers have, for the most part, acquiesced to big energy interests. Worldwide.

There are exceptions. I give credit to China for massive investment in train and metro construction and the creation of more than 150 million electric bikes in daily use. And credit goes to the many experiments, local subsidies, fleet purchases, and encouragements of hybrid, alternative fuel, and electric vehicles in most of the western world. Universities, electrical utilities, scientists, and others have diligently worked on alternatives for decades. There is such activity in nearly every community of the world – from improvised wind generators in Africa to tiny hydro electric plants in Germany.

But the trend that gives me the most hope is one that cannot be controlled by big energy or policy makers.

It is the actions, one person at a time, of individuals. Acting from a sense of personal responsibility.

Given the chance, personal responsibility is a very powerful force.

We saw it in the recent elections in the USA where billions of dollars were spent to influence the election – but individuals made conscientious decisions to support what they believed was the common good. One voter at a time.

We see this in other areas.
In a world that suffers from overpopulation, the average number of children per woman is falling quickly – due to personal choice by individuals. One woman at a time.

One of the reasons to use a bicycle, or an electric bike, or a hybrid car, or to ride the metro- is to take action to reduce one's carbon footprint. Reducing the cost of one's existence to the rest of society and the world. Reducing stink, noise, grit, and improving the world just a tiny bit. One commuter at a time.

Of course, we can see many conspicuous consumers who delight in expending resources that others cannot afford or have no access too. But it seems to this author that such people, while numerous, are outnumbered by those who take satisfaction in doing the best they can to help their neighbors, their family, their planet. When it is practical for them to do so.

To make such a change in personal behavior is not easy when moving from cars to electric or two wheel vehicles. And not everyone can do it.

To move from a car to a bicycle is to move from complete control of one's environment and comfort to exposure to rain, dirt, noise, and additional risk. Riding an electric bike takes constant awareness of traffic, no chance to daydream during the traffic jam or listen to the radio. Keeping track of state of charge requires more thought than filling the tank with gas once a week.

There does not need to be a complete change. Some people ride their two-wheeler only in good weather, or only a few days a month. But take satisfaction as they do so. Even making the occasional trip by bicycle instead of car brings satisfaction.

For readers who ride the metro to work, this may seem irrelevant. But such readers are already participating in the most important transportation paradigm of our future.

Let me digress for a moment and praise the wisdom of cities that have built metros. This idea is more than 150 years old, with more than 160 systems in place today – at least 58 of them built since 1995.

We can see that the future of nearly all human transport will be: Travel to the station by personal vehicle or food, ride the metro, bus, train, aircraft…to destination

station and then travel by personal vehicle to the final destination.

Short trips, such as to the market, the Doctor, school, etc. will be by personal vehicles. Some planners call them the "first kilometer solution." And those personal vehicles will be, eventually, and quickly, electric or manually powered. (For too many reasons to go into here.)

We will not see a future dominated by the USA car centric transportation paradigm. This paradigm is already costing the USA dearly, and making a transition will be very painful for the USA (but it is in process).

Rather than a car in every garage, we are going to use a variety of personal vehicles that will include: bicycles, electric bicycles, electric motorcycles, manual and electric three wheelers, small electric four wheelers, Segway type vehicles, stand on scooters, skateboards, feet, buses, trams, street trains, rubber tired trains, and, yes…cars when they are the right choice for the trip at hand.

The largest segment of these vehicles will be electric powered two wheelers. The reasons are these:
-Compact, can be stored in high-rise apartments, offices, urban parking areas.
-Can slide through traffic jams with ease.
-Inexpensive
-Work well, today. And getting better.
-Can use energy from any electric source.
-Can meet the needs of most people.
-Low cost of fuel.
-Government encouragement will spread, both for practical reasons and due to increasing cost of fuel straining budgets everywhere.

We can see it today, already, with the millions of affluent bicycle and pedelec riders of Europe. And we can see it in the millions of bicycle and ebike riders of Asia.

The manual bicycle industry has not suffered during the last 4 years of economic misery, worldwide. In a tumultuous economy, the ebike, e scooter, manual bicycles are all increasing in sales. One customer at a time.

THE LIGHT ELECTRIC VEHICLE ASSOCIATION (LEVA) ANNOUNCES SPECIAL REDUCED FEE FOR DEALER MEMBERSHIP CATEGORY PLUS 3 MONTH FREE TRIAL

LEVA encourages independent bike dealers (IBDs) and retailers to take advantage of a free three month trial and reduced annual membership fee and join the growing community for electric bikes, scooters and other light electric vehicles.

LEVA represents the strategic interests of light electric vehicle retailers, dealers, distributors, manufacturers and suppliers to promote the development, sale, and use of LEVs worldwide. Members receive support and educational resources to expand their businesses while initiating efforts to influence and adopt legislation, regulation, performance standards, promotion and general best practices in the light electric vehicle industry.

When you join LEVA, you contribute to the LEV industry's combined effort to promote the use of electric bikes, scooters and other light electric vehicles around the world. At Interbike 2011, LEVA managed the electric bike test track, held educational seminars, and hosted its annual networking breakfast. These events brought great opportunities to dealers to learn more about the advantages of adding electric bikes to their product line.

TOP THREE REASONS TO JOIN LEVA:

1. We're providing services and assistance to light electric vehicle companies by helping to establish a favorable operating environment, by providing a forum for discussion and networking, an industry voice on non-competitive information sharing issues, and to assist in the promotion of LEV business on an international basis. A more favorable operating environment means more people buying LEVs and equipment—and that's good for business.

2.We educate consumers about the advantages of embracing electric technology in terms of better health, a safer environment, and a better environment.

3.The LEVA is a forum for the exchange of business building ideas and strategies for independent bicycle dealers.

All component suppliers, manufacturers, IBDs, distributors, assemblers, wholesalers, retailers, and interested individuals are invited to join. The special membership for IBDs and retailers is $99. Other member categories and sponsorships can be found on the LEVA website. LEVA has over 190 members from 25 countries.

Dues can be paid via credit card or Pay Pal at (http://www.levassociation.com/how-to-join-renew) or contact sidneyk@levassociation.com for an invoice or wire transfer information. Your name should be on our Member Roster at http://www.levassociation.com/member-roster!

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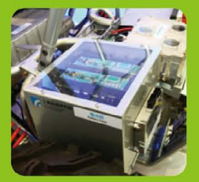

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David's Post Box

The Englishman in China attempts to answer your EV enquiries.

china.e.vehicle@gmail.com

This column is designed to answer any questions that you might have about the EV industry. Unlike the China Motor Magazine Post Box which primarily deals with dealer/importer enquiries this post box deals with the standard questions involved when discussing electric vehicles. Because this is such a relatively new industry most of the questions I have received have been quite entry level and of a more technical theme, I will try my hardest to reply to any questions that you have no matter how difficult or simple and where possible supply you with website addresses so that you can further your studies.

Question

Good electric cars for a fair price?
With weighed pros and cons I am looking to hear some advice about what cars would be a good choice. I have heard of the Chevy Volt but I know the range is short. I'm thinking electric cars are worth it since gas prices are so unreasonable no matter how brainwashed people are.

David says

Chevy volt has a short electric range (25 to 50 miles) but it also has a gas engine. The combined range is around 400 miles.
*The most reasonably priced electric car today is the Mitsubishi MiEV. After rebates, it's around $22,500.
*However, the drawback is the driving range - it's around 70 miles most of the time (more in summer, less in winter.)
*If the range works with your typical driving, it's a good choice.
*If you need a longer range on a regular basis (trips over 100 miles), the the Volt ($31,645 after rebates) is a good choice. I own one, and manage to do 90% of my driving inside the pure electric range. But having the gas engine is good too, so we can take a couple of vacations in the summer.
*One thing to bear in mind when looking at higher purchase prices for electric cars is that you will easily save anywhere from $100 to $300 per month on fueling cost. This means you can afford a higher monthly car payment.

Question

Can you hotwire an electric car?

David says

Without question you can "hotwire" (start it without its key) an electric car. You may have to disassemble the car to do it so the real question is can it be done quickly. The answer is likely to be no, not in the traditional sense of connecting a couple of wires together under the dash. As with a petrol vehicle it will change with the make of the vehicle.

Question

Is there a plug in hybrid with 100 miles of all electric range, and a gas tank?
So I love Electric cars, but they're just too expensive to get if you can only go 100 miles at a time in one. So is there a car, like a plug in hybrid (like the chevy volt) that can go 100 miles all electric (like the Nissan leaf) then have a backup gas tank to get you the rest of the way? This makes way more sense to me than having an electric car for around town, and a gas car for when you want to drive far. Why not combine the two? Is there a car out there like this? Or one planned for the future? In my opinion that'd be the perfect car since today's electric vehicle batteries can only get you so far. Thanks!

David says

No, and it is unlikely that there will ever be such a vehicle. Hybrids have an engine to reduce the size, weight and expense of the battery while extending the range of the vehicle. An engine plus a large battery works to make the vehicle expensive and very inefficient while pandering to a human desire to "have it all." (some people can imagine having a cell phone for all your calls, texting, email, web browsing, and then keeping a land line so you can get faxes)
Any vehicle that stores energy on the vehicle will have limited range no matter if it is stored in batteries, rubber bands or gasoline. What makes the limited range workable is the infrastructure that is not part of the vehicle: many gas stations, charging stations or rubber band wind-up stations. Rather than increasing the miles on the vehicle we should consider what the tipping point is for the number of recharging stations.
But the electric car can be charged up at home and as most people travel less than 40 miles per day and travel less than one hour a day that leaves potentially 23 hours to charge a vehicle that most people can use for business routes, around town and the daily commute.
Rather than pay extra money for a petrol drive-train that will almost never be used (causing problems with stored gasoline that can go bad in the tank) and a large battery capacity that will almost never be completely used, some two car families instead will have one EV which becomes the car of choice and one petrol vehicle that sits around waiting for the longer trip.

Question

Hybrid battery life reliability?
I bought a Honda Civic Hybrid in 2010 (that is also the year of the model). The engine light turned on, and I took it to the dealership to get checked out. It turns out that after 2 years of gentle driving and proper maintenance, the IMA hybrid battery has gone dead. The dealership says it is a special case and it is not too common, but good thing that it is covered under warranty. Here is a question for David. Does a person's driving style, weather condition, vehicle usage, or other factors affect hybrid battery life? I am trying to figure out what to do in order to preserve battery life.

David says

Honda makes horrible hybrids, and they didn't properly design their 2006+ Civic Hybrid where their batteries would die prematurely.
There was a class action lawsuit about it where many owners MPG's would drop to 30 from 50 due to batteries prematurely failing.
I would not trust a Honda design anytime soon as they simply do not know how to properly design a battery management system to prevent premature degradation. Toyota, Ford, and GM all have much better engineers in their battery design systems.

Question

Why can't you install a trailer hitch on electric cars?

David says

You could but with the present energy storage systems towing may present too much of a drain on a battery system.
There is "power" and there is "energy." Power is the ability to move energy quickly. Electric motors can be very powerful. They are used in place of a transmission on the largest construction electric vehicles. Where a diesel engine will produce the energy from a fossil fuel and transmit electricity to an electric motor to drive the wheels. This kind of energy/power system could easily tow another vehicle.
But if the energy is stored in batteries then it represents only a small fraction of the energy stored in gasoline. Electric vehicles are very efficient and so under normal use a battery electric vehicle could travel a reasonable distance before requiring a recharge but if it were to tow a load the energy required would likely be too draining to make the system practical.

Question

$249 million grant from the Obama administration. Today, A123 Systems filed for bankruptcy is good or no good?
No company has embodied Washington's hope for an American-built electric vehicle business like A123 Systems. The Massachusetts-based company was supposed to become the leading home-grown supplier of lithium-ion batteries for automakers in the United States and around the world -- fueled in part by a $249 million grant from the Obama administration. A123 Systems filed for bankruptcy, saying much of its assets would be sold after losing $857 million over the past several years. Here's why it failed.
Obama, you no good president

David says

That brings the total to four or five companies out of 25 to 30 or so that received green development loan guarantees. Furthermore, the entire purpose of that money is to spur research in areas that don't attract conventional investors. That's pretty standard with R and D development.
If you look at companies that Bain invested in under Romney, you'd see a good deal of them didn't turn out. No one hits 100% with investments. This is standard stuff that you're trying to make look like incompetence.
It says more about your lack of knowledge than the viability and value of the investments that you think that every single investment in cutting edge technology would come out a winner. It also shows a lack of knowledge when you try to equate a loan guarantee to a "grant."
It's nothing close to the same, and the amount of money at risk is a fraction of the loan amount.

Once again thanks for your input, the EV industry is relatively new and you help us to develop it. If I haven't answered you here it's due to space restriction and I will answer you directly to your email address,
See you next month.






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2012年全球专业电动车展会

Exhibition Name 展会名称	Dealer Expo 2012 第45届美国国际机车产品贸易展	Taipei Cycle 2012 2012台北国际自行车展	INA Bike 2012 2012印尼国际汽摩配展览会	EV Taiwan 2012 2012台湾国际电动车展
Time 举办时间	Feb. 17th- Feb. 19th 2月17日-2月19日	Mar. 7th- Mar. 10th 3月7日- 3月10日	Mar. 28th- Mar. 31st 3月28日-3月31日	Apr. 12nd- Apr. 15th 4月12日-4月15日
Location 举办地点	Indianapolis, USA 美国，印第安纳波利斯	Taipei, China Taiwan 中国台湾, 台北	Jakarta, Indonesia 印度尼西亚，雅加达	Taipei, China Taiwan 中国台湾，台北
Exhibits Scope 展品范围	Road motorcycle, Off-road motorcycles, Karts,ATVs, Electric motorcycles, Engine,Motorcycle related parts, components and accessories 公路摩托车,越野摩托车,卡丁车,沙滩车,电动摩托车整车,摩托车发动机,各种摩托车零配件及附件	Bicycles, Bicycle related parts, components and accessories, Brake, Bicycle repair tool, Other machinery; Other sporting & leisure goods 自行车, 自行车零配件及附件， 刹车系统,自行车修理工具,其他机械,其他运动休闲用品	Motorcycles, parts, and accessories, Bicycles, LEVs and parts 摩托车及零部件,自行车及轻型电动车整车及零部件	Electric vehicles,Drive and Motor systems, Energy & recharging infrastructure, Test systems & services 电动车， 驱动与马达系统， 能源与充电站相关设施， 测试系统与服务
Delegation Organizer 组团单位	Beijing Heliview International Exhibition Co., Ltd 北京恒立伟业国际展览有限公司	Hi-Lighting Int'l Exhibition (Beijing)Co., Ltd. 海兰基国际展览（北京）有限公司	Hi-Lighting Int'l Exhibition (Beijing) Co., Ltd. 海兰基国际展览（北京）有限公司	

GLOBAL PROFESSIONAL E-VEHICLE EXHIBITIONS IN 2012
2012年全球专业电动车展会

Exhibition Name 展会名称	The 111th China Import and Export Fair 111届中国进出口商品交易会	China Cycle 2012 第22届中国国际自行车展览会	Eurobike 2012 2012欧洲国际自行车展览会	Interbike 2012 美国拉斯维加斯国际自行车及零部件展览会
Time 举办时间	Apr. 15th- Apr. 19th 4月15日-4月19日	Apr. 26th- Apr. 29th 4月26日-4月29日	Aug. 29th- Sep. 1st 8月29日-9月1日	Sep. 19th– Sep. 21st 9月19日-9月21日
Location 举办地点	Guangzhou, China 中国，广州	Shanghai, China 中国，上海	Friedrichshafen, Germany 德国，腓德烈斯哈芬	Las Vegas, USA 美国，拉斯维加斯
Exhibits Scope 展品范围	Bicycles and parts, E-bikes, Motorcycles, Electric scooters, ATVs, Vehicle spare parts 自行车及配件,电动自行车,摩托车,电动踏板车,沙滩车,汽车配件	Bicycles and e-bikes, Bicycle and e-bike parts, components and accessories, Bicycle and e-bike equipments, Bicycle related riding supplies 自行车与电动自行车,自行车与电动自行车零部件,自行车与电动自行车设备,自行车相关骑行用品	Off-road motorcycles, ATVs, Sport motorcycles, Children's carts, Racing bicycles, E-bikes, Electric tricycles, Electric scooters, Bicycles parts, components and accessories, Auxiliary supplies 越野车,山地车,运动车,童车,赛车,电动自行车,电动三轮车,电动踏板车,自行车零部件,相关辅助用品	Motorcycles; Electric motorcycles; Motor vehicles; Mopeds; Motorcycle spare parts; Tyres; Engine and engine module; Electric equipments; Motorcycle manufacturing equipments; Garment and supplies; Care products; Raw materials; Semi-finished products; Lubricants and packaging materials; Motorcycle outdoor supplies 摩托车、电动摩托车、动力车、助动车、摩托车零配件、轮胎、发动机及组件、电动设备、摩托车生产设备、服饰及用品、护理用品、原材料、半成品、润滑油和包装材料、摩托车户外用品
Delegation Organizer 组团单位		Shanghai Xiesheng Exhibition Co., Ltd. 上海协升展览有限公司	Hi-Lighting Int'l Exhibition (Beijing)Co., Ltd. 海兰基国际展览（北京）有限公司	Hi-Lighting Int'l Exhibition （Beijing） Co., Ltd. 海兰基国际展览（北京）有限公司

GLOBAL PROFESSIONAL E-VEHICLE EXHIBITIONS IN 2012
2012年全球专业电动车展会

Exhibition Name 展会名称	Intermot 2012 2012德国科隆摩托车展	The 112th China Import and Export Fair 112届中国进出口商品交易会	Gulf Bike Expo 2012 2012中东迪拜国际两轮车展
Time 举办时间	Oct. 3rd- Oct. 7th 10月3日-10月7日	Oct. 15th- Oct. 19th 10月15日-10月19日	Oct.18th- Oct. 20th 10月18日-10月20日
Location 举办地点	Cologne, Germany 德国，科隆	Guangzhou, China 中国，广州	Dubai, UAE 阿联酋，迪拜
Exhibits Scope 展品范围	Motorcycles, Electric Vehicles, Trailers, Accessories for two-wheeled vehicles, Engines and motors, Electronic equipment, Workshop equipment, supplies, Bicycle accessories 摩托车,电动车,拖车,两轮车配件,发动机与马达,电子设备,生产设备,用品,自行车配件	Bicycles, E-bikes, Electric Scooters, Bicycle Parts; Motorcycles, All terrain motorcycles, Vehicle Spare Parts, Vehicles (Outdoor) 自行车, 电动自行车,电动滑板车,自行车零配件,摩托车,沙滩车,汽车配件,车辆（露天户外）	Motorcycles, Bicycles, E-bikes, Garment, Spare parts and accessories 摩托车整车,自行车整车,电动自行车整车,服饰,两轮车零配件
Delegation Organizer 组团单位	Hi-Lighting Int'l Exhibition (Beijing) Co., Ltd. 海兰基国际展览（北京）有限公司		Beijing Heliview International Exhibition Co., Ltd 北京恒立伟业国际展览有限公司

GLOBAL PROFESSIONAL E-VEHICLE EXHIBITIONS IN 2012
2012年全球专业电动车展会

Exhibition Name 展会名称	Motorcycle Show Brazil 2012 2012巴西国际摩托车展览会	EICMA 2012 2012意大利米兰国际摩托车展
Time 举办时间	Nov.6th-11th 11月6日-11月11日	Nov.13th-18th 11月13日-11月18日
Location 举办地点	Sao Paulo, Brazil 巴西，圣保罗	Milan, Italy 意大利，米兰
Exhibits Scope 展品范围	Motorcycles, Dirt bikes, ATVs, Racing bikes, Electric vehicles, Motorcycle production equipment,testing equipment and maintenance tools, Motorcycle spare parts,supplies and garments 摩托车,越野摩托车,沙滩车,赛车,电动摩托车,摩托车生产设备,检测设备,维修工具,摩托车零配件,用品,服饰	Motorcycles, Accessories for two-wheeled Vehicles 摩托车,两轮车配件
Delegation Organizer 组团单位	China Chamber of Commerce for Import & Export of Machinery & Electronic Products 中国机电产品进出口商会	Hi-Lighting Int'l Exhibition (Beijing)Co., Ltd. 海兰基国际展览（北京）有限公司

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