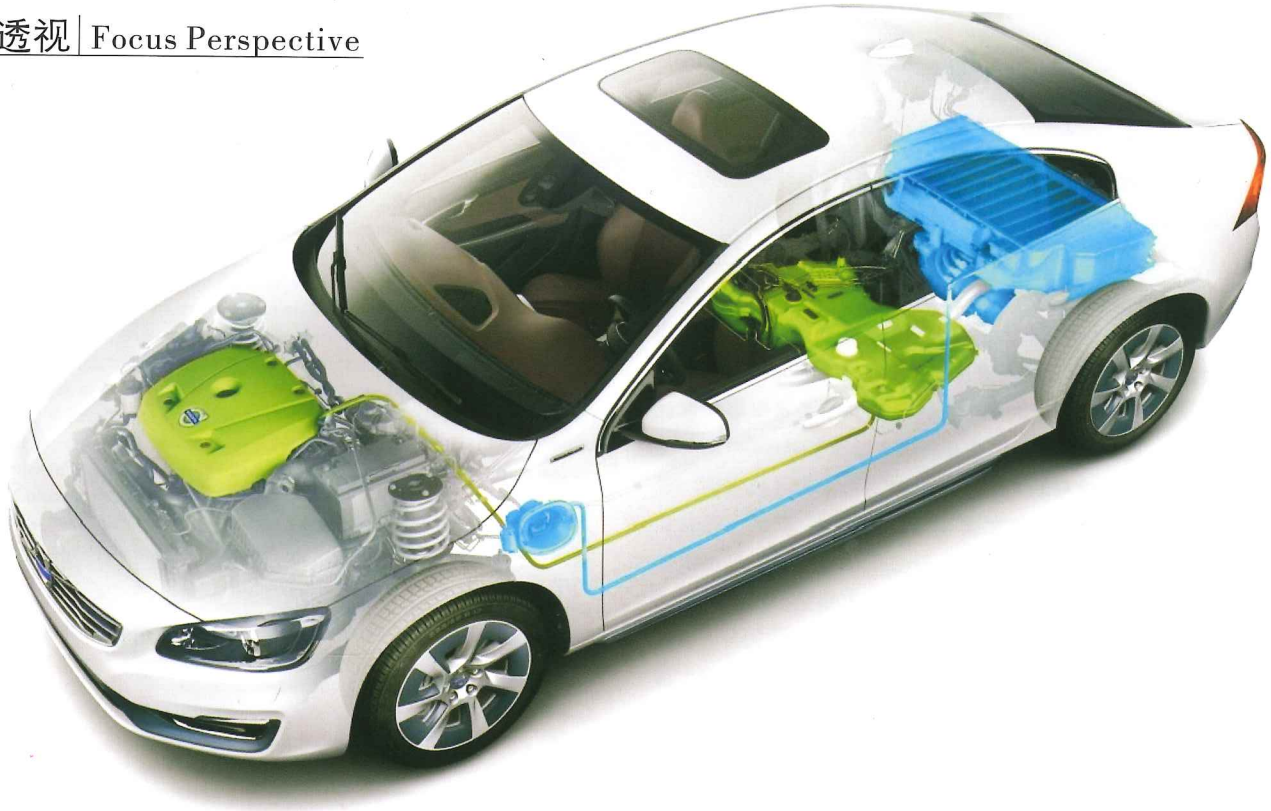


电动汽车产业实现“弯道超车”的思考

Reflection on Corner Overtaking in Electric Car Industry

文/ 晋美 Text/Jin Mei

电动汽车发展的路线图是比较清晰的，但“弯道超车”的战略却引起必要或不必要的争论。能不能“弯道超车”成为一个问题？！

“弯道超车”的战略

近来，“弯道超车”频繁出现在各大产业发展战略和规划中，由于我国汽车产业一直处于相对落后的地位，所以超越、领先始终是中国电动汽车的目标和理想；同时，“弯道超车”也反映了产业寻求发展和突破的迫切愿望。

电动汽车产业面临诸多挑战，“弯道超车”战略的提出是有根据的。

其一、从产业发展来看，重大的产业变革就像弯道一样，也会提供一次超越的机会。当前，全球汽车产业正处在重大变革之中，“弯道超车”可以说是生逢其时。

其二、“弯道超车”的发展模式也表达了不满于永远落后、赶超国际先进水平的企业意愿。处于落后地位的中国汽车产业，与其长期如此落后，不如“弯道超车”一步到位。

其三、中国制定电动汽车发展战略时，确有“弯道超

Electric car development road map is clear, but the at-corner overtaking strategy has caused necessary or unnecessary debates. Whether we can overtake at the corner has become a problem.

The at-corner overtaking strategy

Recently, the term Corner Overtaking frequently appears in major industrial development
strategies and plans. Our country's automobile industry has always been in a relatively backward status, so our goal in the EV is to overtake at a corner. At the same time, the
"corner overtaking" also reflects the desire in the industry to seek the development and breakthrough.

The electric car industry faces many challenges. The proposal of the corner overtaking strategy is well grounded.

First, from the point of industry development, a major industrial revolution goes along a bent road, which can provide an opportunity

车”的理念蕴含其中。从长远看，纯电动汽车是电动汽车必然发展方向，为了避免长期落后的发展态势，在产业发展之初，就提前将产品锁定在纯电动方向，这在产业出现“弯道”的时候，就有望“抄近道”追赶甚至赶超发达国家。

“弯道超车”的问题

经过十多年的努力，中国纯电动产业在一定程度上取得快速发展。但在技术、成本和市场推广上存在的诸多问题，这是实现“弯道超车”的障碍，我们必须正视。

其一、中国汽车工业尚未形成有核心竞争力的自主技术体系。中国纯电动汽车整体技术水平有一定的提升，但核心技术依赖国外技术输入的状况尚未改变，一些核心技术仍未取得重大突破。纯电动汽车的电池材料（隔膜、六氟磷酸锂）、动力电池、动力总成控制技术等高技术环节与国际先进水平相比还存在较大差距。与电动汽车发展相关的传统汽车技术，如整车电子控制、轻量化、电空调、电制动、电转向、电机耦合传动系统也存在很大差距。这些技术不成熟也直接制约纯电动汽车的发展。

其二、市场发展对环境依赖程度过高。充电站和充电桩等基础设施的建设，已是目前掣肘纯电动汽车市场发展的一个重要制约因素。纯电动汽车与传统汽车不一样，其产业生态更加复杂，而产业生态中各要素的依存度又相对较高，因此，纯电动汽车市场的发展，还要受制于产业生态的建设和完善，这必然给市场发展带来很多不可控的因素。

其三、产业和市场发展过分政策化。传统汽车市场本是一个充分市场化的，而纯电动汽车市场则完全不同，过分依赖于政策。从企业产品研发，到基础设施建设，再到产品市场应用，各个环节都离不开政策扶持。长此以往，一方面会抑制产业发展活力；另一方面，可能因政策退出时、市场难以为继的风险。

其四、成本和价格是市场发展的一大障碍。目前，电动汽车由于大量使用电池，纯电动汽车的市场价格普遍偏高，汽车是主要依赖终端消费市场的产品，这无疑是一大劣势。以比亚迪e6为例，这款车的售价30.98万元起，减去5.7万元的新能源补贴后，价格为25万元起，而同档次的自主品牌普通轿车，售价在15万元以下，要市场化就很困难。

这些都是前进路上出现的问题，随着时间的推移，并不难解决。

to go beyond. At present, the global auto industry is in revolution, and there is an opportunity for the overtaking at the corner.

Second, the developing mode of the corner overtaking corner also expresses the desire to catch up with the international leading level. China's automobile industry hopes to overtake at the corner in order to become a leader in the world.

Third, China's development strategy contains the concept of corner overtaking. In the long run, pure electric vehicles are the developing direction of electric cars. In order to avoid long-term backwardness in the development, we should, at the beginning of the industrial development, position the the product in advance in the direction of pure electric cars. When there is a corner, we are likely to make a shortcut to catch up with and even surpass the developed countries in this industry.

"Corner overtaking" problem

After 10 years of efforts, China's pure electric car industry to a certain extent, has achieved rapid development. But in technology, cost, and marketing, there are still many of the problems which are the obstacle to realize the corner overtaking. We must face them.

First, China's auto industry has not yet formed the independent technological system having the core competitiveness. For pure electric cars of China, the overall technology level has a certain improvement, but the core technology still relies on foreign countries. Some core technologies have not achieved a major breakthrough. We still have a big gap in pure electric vehicle battery materials (diaphragm and so forth), power battery, powertrain control technology when compared with the international advanced level. The gap also exists in the traditional auto technologies relating to the development of the EV, such as vehicle electronic control, lightweight, electric air conditioner, electric brake, power steering, and motor coupling transmission system. These technologies are not mature so directly restricting the development of pure electric vehicles.

Second, the market development has high dependence on the environment. The construction of charging stations and charging piles so forth are mainly hampering the market development of pure electric cars. Not like the traditional cars, pure electric vehicles has the more complex environment in which the mutual

“弯道超车”的实现

电动汽车市场的兴起和发展，其实并不复杂。简言之，不外几个方面：

其一、按消费者的需求，设计迎合消费者需求的产品，加上合理的价格，电动汽车市场就会自然而然地发展起来。

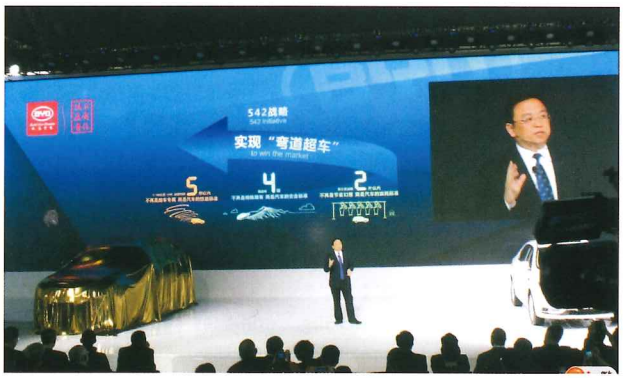
其二、新兴产业发展初期，适当的政策引导与扶持是有必要的。但是，引导的目的是为了最终实现“不需要引导的发展”，完全走上市场化的道路。

其三、细分市场，分类指导。目前中国电动汽车市场，产品能基本满足公共交通需求，但需要解决续航能力不足、基础设施不便的问题。产品在私人应用领域已经起步，势头很好，但需要解决挑战公众使用习惯、配套设施不完善等问题。

其四、依托科技创新，解决纯电动车的技术瓶颈，提高纯电动车普及程度。电动汽车发展的路线图是清晰的，

按照“弯道超车”理念，我们选择“抄近路”的可能性是存在的。

目前，对中国电动汽车战略目标作出任何结论为时尚早。我们只要对战略目标充满信心，经过一段时间的努力，有政策扶持，走市场化道路，就一定能够实现“弯道超车”的战略目标。



dependency among each element is relatively high. Therefore, the development of the pure electric car market is closely related with the construction of the peripheral facilities, which inevitably causes a lot of uncontrollable factors for market development.

Third, the industry and market development is highly relied on the policy. The traditional automobile market is fully market-oriented, but the pure electric vehicle market is completely different, since it is highly dependent on the policy. From the enterprise product research and development, to the infrastructure construction, to product market applications, each link is inseparable from the policy support. In the long term, on the one hand, it will inhibit industry development activity; on the other hand, it causes the risk in the market when the policy exits.

Fourth, cost and the price are a big obstacle in the development of the market. At present, electric cars, due to the extensive use of battery, generally have a high price. The car is a product which mainly depends on the terminal consumer market. This is definitely a big disadvantage. E6, for example, costs 309800 yuan. 57000 yuan of new energy subsidies is deducted, the actual price is 250000 yuan. On the other hand, the price for independent brand ordinary cars of the same kind is 150000 yuan. Thus, its marketing is very difficult.

These are on the way the problems, which, with the passage of time, will be not difficult to solve.

The implementation of the "corner overtaking"

In the rise and development of the electric car market, this implementation in fact is not complicated. In short, there are some aspects as follows:

First, according to the needs of the consumers, we should design the products that can cater to consumer demands and have reasonable prices. As such, the electric car market will naturally develop.

Second, it is necessary to give the policy guidance for the early development of the emerging industry. However, the goal of the guidance is to achieve the development without the guidance and be completely on the path of being market-oriented.

Third, market segment and classified guidance. At present, in China's electric car market, the product can basically meet the demand of public transport, but it needs to solve the problems of mileage insufficiency and infrastructure inconvenience. Products in the field of private applications have started with the good momentum, but they need to deal with the challenges of the user’s habits and imperfect supporting facilities the like.

Fourth, we should rely on scientific and technological innovation to solve the pure electric vehicle technology bottlenecks, improve the popularity of pure electric vehicles. The electric car development road map is clear. According to the "corner overtaking" concept, there is the possibility of having rapid developments via the shortcut.

At present, any conclusion on the electric car strategy of China cannot be made yet. However, As long as we have the confidence in the strategic target and the policy support and go the market-oriented road, we can achieve the objectives of the "corner overtaking" strategy after a period of efforts.

四座太阳能电动汽车续行800公里

Four seats solar electric vehicle endurance driving for 800 km

文/ 王伟 Article /Wang wei

太阳能电动汽车正在不断更新换代中，但是一直以来都存在的问题就是只能乘坐一个人。而在不久的将来，Stella将推出四座版太阳能电动汽车，真正实现太阳能电动车家用这一设想。

太阳能动力的电动汽车对车身重量要求很高，需要质量轻但又结实的材质制造；而且太阳能电池板需要完全覆盖车顶来为驾驶提供足够的电力，汽车行驶过程中遇到的阻力必须降到最小，这就要求车型在设计上符合低、窄的要求，自然驾驶舒适度也会大大降低。车身大小、驾驶体验这两个问题自从20年前太阳能电动车问世之后便一直存在，不过荷兰埃因霍芬理工大学的一些学生对这些问题做了深入研究，正在一步步解决这个问题，让太阳能电动车家用化早日实现。

这款电动车续航里程在800km左右，最高时速可达120km/h。目前已吸引越来越多的投资者，预计将在未来5至10年内投入量产。

Solar electric vehicles are constantly updating, but there has always been the problem was only seat for one person. And in the near future, Stella will launch four seats version solar electric vehicle, truly to achieve the idea of solar electric household.

Solar power electric vehicle is highly demand to body weight, need to be manufactured by the light and strong quality materials; And solar panels need to completely cover the roof to provide enough power for driving, the car moving resistance must be minimized, and in the process of this request models in the design need to meet the requirement of low, narrow, natural driving comfortable level will be greatly reduced. Body size, driving experience, these two problems have been there since the solar vehicle was launched 20 years ago, but the Dutch PSV tech done in-depth research on these problems, some students are solving this problem step by step, make solar electric vehicle become in home application as soon as possible.

The driving range of this electric vehicle is about 800 km, a top speed of 120 km/h. It has attracted more and more investors, is expected to go into bulk production in the next five to ten years.

破除地方保护
Break Local Protectionism

——全国电动
How many are there electric

近日，在优惠政策的强刺激下，电动汽车发展有望加速。电动汽车未来市场被行业看好，而且很多地方政府、企业开始投建电动汽车产业园，希望能在这巨大的电动汽车市场中分得一杯羹。

这些产业园投资金额少则十几亿，动辄上百亿，令人咋舌。企业在进入电动汽车行业时，既要看到在政府政策引导下巨大的市场需求，也应该看到这一行业技术含量高、初始投资规模大、未来竞争激烈的因素，在选择进入市场时一定要做好可行性研究工作。从全国来看，在鼓励企业进入电动汽车领域的同时，为防止一哄而上、低水平重复建设的现象发生，不应再用“叫停”类似的行政手段，而重点引导人才、资金、产品的自由流通，破除地方保护，规避地方政府“以市场换投资”的空间。

上海梅亿175亿在内蒙古投建电动汽车产业园

9月12日，总投资175亿元以上的电动汽车产业园项目落户内蒙古霍林郭勒市。该项目由上海梅亿新能源控股集团有限公司投资兴建，总占地面积6350亩，分二期建设。一期项目总投资35亿元，建设年产20万辆纯电动汽车生产基地，计划2015年底总装生产线投产。二期项目总投资115亿元，建设年产80至100万辆纯电动汽车生产基地。配套件产业园区总投资25亿元，建设100万辆电动汽车配套零部件生产基地，建设周期为2年。

总投资10亿元电动汽车产业园项目落户南宫

总投资10亿元CSG电动汽车产业园项目落户南宫。该项目由中瑞德科(北京)工业设计有限公司投资建设，分三期进行，一期和二期计划投资5亿元，建成后，年可产微型电

Recently, under the strong stimulation of the preferential policy, the development of electric vehicles is expected to accelerate. Electric cars in the future market are welcome by the industry. A lot of local governments and enterprises start to building electric car industrial parks for the sake to grip a piece of pie in this huge electric car market. These industrial parks need the investment whose amount is up to tens of billions and even more. When enterprises enter the electric car industry, they should see the huge market demand under the guidance from the government policy and should also see the negative factors: a large scale, high technical content, high investment in initial time, and competitive factors in the future. Therefore, when choosing to enter the market, we must do a good job in the feasibility study. Nationally, while encouraging companies to enter into the field of electric vehicles, we should avoid the phenomenon of the low level repeated-construction, and should no longer use similar administrative means where the market can play a role. We should guide the free flow of talent, capital, products; break regional protect-ism and inappropriate behavior from the local government.

Shanghai Meiyi to invest 17.5 billion yuan in Inner Mongolia to build the electric automobile industrial park

September 12, with a total investment of 17.5 billion yuan, the electric car industrial park project was located in Inner Mongolia. The project was invested by Shanghai Meiyi New Energy Holding Group with the total area of 6350 mu. It is constructed in two phases. The first phase of the project has a total investment of 3.5

汽车产业园知多少
vehicle industrial parks in China?

文/ 陈亮 Text/Chen Liang

动汽车15万辆，产值30亿元。三期工程投资5亿元，增上微型电动汽车生产线4条，总产能将达到年产35万辆微型电动汽车。同时根据市场情况，与三期工程同步计划追加投资10亿元，上防暴SUV生产线1条，生产康巴特牌防暴SUV装甲车。建成后，可年产防暴SUV装甲车1.5万辆。

投资10亿元洛阳阿帕奇电动汽车产业园签约

8月19日上午，洛阳阿帕奇电动汽车产业园项目在洛宁县正式签约，这标志着苏州阿帕奇电动汽车项目成功落户我县。

该项目投资10亿元，项目全部建成后，年产电动汽车10万台，年产值达30亿元以上，年缴税金1.5亿元以上。其中，2016年生产电动汽车10000台，产值达到3亿元；2017年产量达到30000台，产值达到9亿元；2018年产量达到10万台，产值达到30亿元以上。

北理工包头电动汽车产业园启动

8月16日上午，北京理工大学包头电动汽车产业园正式启动。电动汽车产业园位于青山区装备制造园区，规划面

billion yuan in which it will be a pure electric car production base that can produce 200000 cars. The assembly production line will be put into production in the end of 2015, as the plan says. Phase II project had a total investment of 11.5 billion yuan in which it will be a pure electric car base that can produce 0.8 million to 1 million pure electric cars. The industrial park for parts or components has a investment of 2.5 billion yuan and is expected to produce parts and components used in 1 million electric cars, and its construction cycle is 2 years.

Electric car industrial park project is located in Nangong with a total investment of 1 billion yuan

The project has a total investment of 1 billion yuan, and is called CSG Electric Car Industrial Park in Nangong. It is invested and constructed by Zhongrui Deke (Beijing). In the construction, it is divided into three phases. Phase I and II are expected to have an investment of 500 million yuan; they can produce 350000 tiny electric cars with an output value of 3 billion yuan. Phase III has an investment of 500 million yuan and has 4 production lines for tiny EV with the annual output of 35000 tiny electric cars. It may have the additional investment of 1 billion yuan for 1 production line for SUV with the annual output of 15000 SUV cars.

Luoyang Apache EV Industrial Park with investment of 1 billion yuan

In the morning of August 19, the agreement was officially signed concerning this park in Luoning County. This marked that Suzhou Apache Electric Car Project is successfully located in our county. The project has an investment of 1 billion yuan. After the completion, It is expected to have annual output of 100000 electric vehicles, annual output value of 3 billion yuan, and annual taxes paid of more than 150 million yuan; in 2016, annual output of 10000 electric cars, annual output value of 300 million yuan; in 2017, annual output of 30000 electric cars, output value of 900 million yuan; in 2018, annual output of 100000 electric cars, and output value of more than 3 billion yuan.

BIT Electric Car Industrial Park in Baotou Launched

In the morning of August 16, BIT (Beijing Institute of Technology) Baotou electric automobile industrial park was officially launched. This industrial park is located in Qingshan District, and is expected to cover 230 mu. It is divided into three phases. The first phase of construction will be completed in 2016, and is expected to achieve output value of 3 billion yuan. Phase I accommodates the enterprises in the fields of electric car batteries, electric vehicle

积230亩，项目共分三期建成，一期建设将于2016年完成，达产后预计实现产值30亿元。产业园第一期计划入住电动汽车整车组装及动力电池、电驱动动力总成、电控系统企业以及电动汽车用电池、变频器、高压连接器、充电器、电动空调等研发制造企业，初步形成新能源产业链条和联盟，产品优先在包头、呼和浩特市和北方城市示范应用。

总投50亿元浙江余姚市将兴建电动汽车工业园

由余姚市与宁波铭马汽车电动车辆工业有限公司、宁波悍霸汽车制造有限公司合作兴建的电动汽车工业园位于余姚市临山镇，总用地745亩，一期用地200亩，项目总投资50亿元，一期投资10亿元，主要生产新能源SUV型汽车，轻型、大中型客车，特种车辆，电动汽车电控系统和电机等。该项目引进美国独特的电机生产技术和意大利电动涡旋制动系统，并通过自主研发，拥有先进的电池管理系统。一期投产后，计划年产客车1.1万辆，年销售额66亿元；项目计划于2016年全部完成并投产，将达到年产5万辆SUV电动汽车、年销售额400亿元以上的规模。

年产20万台电动汽车产业园有望落户常德经开区

4月14日，加拿大Onni集团执行董事Melos Amy及广东银泰电动车辆发展有限公司计划在常德经开区投资建设电动汽车产业园。银泰电动汽车产业园计划投资30亿元，占地2500亩，项目建成投产后年产20万台电动汽车，实现销售收入100亿元以上。通过3到5年的发展，产业园将带动电动汽车电机、电池、空调系统、汽车底盘、内饰等近百家新能源行业企业及配套产业入驻，形成电动汽车完整产业链和产业集群，综合产值将接近1000亿元。

河南安阳年产10万辆电动汽车产业园今年10月投产

2013年，安阳林州市顺丰电动车业有限公司与山东瑞驰公司共同投资建设的年产10万辆电动汽车产业园项目进

assembly and power drive powertrain, electric control system, inverter, high voltage connector, charger, electric air conditioning and other research and development plus manufacturing enterprises. The products will be given the priority to apply in the domonstration applications in Baotou, Hohhot and other northern cities.

EV industrial park in Yuyao with the total investment of 5 billion yuan

Yuyuao City cooperates with Ningbo Mingma EV Industrial Limited and Ningbo Hanba Car Limited to build an EV industrial park located in Linshan Town, Yuyao. This project covers 745 mu, including 200 mu in phase I. The total investment is 5 billion yuan, including 1 billion yuan in phase I. It is involved in the main production of new energy cars, including SUV, light weight, large and medium-sized passenger cars, special vehicles, electric control systems and motors, etc. The project introduces the unique motor production technology and the electric eddy brake system. Through the independent research and development, it will have the advanced battery management system. After the phase put into production, it is expected to have the annual output of 11000 passenger cars, annual sales of 6.6 billion yuan. This project is expected to be completed and put into production in 2016, and reach the following scale: 50000 SUV electric cars and annual sales of more than 40 billion yuan.

EV industrial park to be located in Changde with annual output of 200000 electric cars

On April 14, Canada Onni Group executive director Melos Amy and Guangdong Yintai EV Limited planned to invest and construct the EV industrial park in Changde. This park covers 2500 and has an investment of 3 billion yuan. It is expected to produce 200000 cars each year, achieve sales income of more than 10 billion yuan. Through 3 to 5 years of development, the industrial park will attract more enterprises in the fields of the electric motor, battery, air conditioning system, automobile chassis, interior decoration and so forth, forming a complete industry chain and industry cluster with a comprehensive value close to 100 billion yuan.

Henan Anyang: EV industrial park with annual output of 100000 electric cars

In 2013, Shunfeng EV Limited in Linzhou, Anyang and Ruichi Company cooperated to invest and construct an EV industrial park which is expect to produce 100000 electric cars. This project progresses smoothly. It covers an area of 400 mu with a total investment of more than 1 billion yuan including 300 million yuan in plant construction and more than 700 million yuan in equipment. The area of the factory

展顺利。项目占地400亩，总投资10亿余元,其中厂房投资3亿元,设备投资7亿余元,建成标准化厂房10余万平方米,项目投产后可年产电动汽车10万辆。

总投资148.23亿元山西临汾梅亿电动汽车产业园签约

总投资148.23亿元临汾梅亿电动汽车产业园分二期建设。其中一期项目投资18.23亿元，占地800亩，建设年产5万辆至10万辆纯电动汽车生产基地。投产达效后，年产值可达40亿元至60亿元，利税8亿元至12亿元，安排近千人就业；二期项目总投资130亿元，占地1800亩，建设年产80万辆至100万辆纯电动汽车生产基地，年产值可达400亿元至600亿元，利税80亿元至120亿元，可安排1万至1.2万人就业。

投资12亿元电动汽车产业园落户河南孟津县

2013年11月6日，洛阳市首个电动汽车产业园项目落户孟津县华阳产业集聚区。

投资12亿元的该产业园首个项目——江苏金彭车业有限公司电动车生产项目开建。该产业园规划占地3000亩，将通过3年左右的时间，形成集电动汽车研发、零配件生产、汽车模具加工、整车装配、电动汽车成品检测、物流运输等于一体的产业链条，届时可年产低速电动汽车20万台。

总投资100亿元电动汽车产业园项目落户台江

2013年10月29日，台江经济开发区与贵州鹏程电动汽车科技有限公司签订了投资协议书，由贵州鹏程公司投资100亿元在台江经济开发区革一北片区建设新能源电动汽车产业园。该项目分三期实施，第一期投资约30亿元，拟建年产30万辆新能源电动汽车生产线及其配套设施。

buildings is more than 10 square metre. This project, after put into production, is expect to have annual output of 100000 electric cars.

Meiyi EV industrial park in Linfen, Shanxi: a total investment of 14.823 billion yuan

This industrial park with a total investment of 14.823 billion yuan is divided into 2 phases in construction. The first phase has the investment of 1.823 billion yuan, covers an area of 800 mu, and is expected to produce 50000 to 100000 pure electrics with annual output of 4 billion to 6 billion yuan and profit tax of 800 million to 1.2 billion yuan and one thousand jobs. Phase II has a total investment of 13 billion yuan, covers an area of 1800 mu, and is expected to produce 800000 to 1 million pure electric cars with annual output of 40 billion to 60 billion yuan, profit tax of 8 billion to 12 billion yuan, and from 10000 to 12000 jobs.

EV industrial park in Mengjin, Henan with an investment of 1.2 billion yuan

November 6, 2013, the first electric car industrial park project of Luoyang was located in Mengjin County Huayang Industrial Cluster Area.

Jinpeng Vehicle Limited EV Production Project with an investment of 1.2 billion yuan, which was the first project began its construction. It is expected to an area of 3000 mu, and after 3 years or so, will form a complete industrial chain including the electric car research and development, parts production, auto mould processing, vehicle assembly, electric vehicles testing, logistics transportation and etc. Then time, the annual output will be 200000 electric vehicles at low speed.

EV industrial park with a total investment of 10 billion yuan to settle in Taijiang

October 29, 2013, Taijiang Economic Development Zone and Guizhou Pengcheng EV Technology signed the investment agreement in which the EV industrial park invested 10 billion yuan by Pengcheng EV Technology would be constructed in Yibei Plot of Taijiang Economic Development Zone. This project is divided into three phases. The first phase has an investment of about 3 billion yuan and is expected to have annual output of 300000 new energy electric cars and relevant supporting facilities.