



利用政策便利 创新发展电车

Take advantage of the policy to innovate to develop electric vehicle

文/ 陈全世 Article/Chen quanshi

【按】近日，国家发改委发布《新建纯电动乘用车生产企业投资项目和生产准入管理的暂行规定（征求意见稿）》（简称《暂行规定》）。清华大学汽车工程系教授、全国汽车标准委电动车辆分委会副主任陈全世在论坛上发表个人见解。现根据谈话整理发表，以飨读者。

创新思维迎接准入放开

《暂行规定》总体而言还是比较严格的，但也是比较开放的，比较贴近当前我国电动汽车发展的实际，如能落实到位，相信能起到积极的推动作用。

为什么说比较严格呢？这次的开放，是针对电动汽车但不包括今年争论许久的低速电动车。电动汽车的生产并不是很多人期待的那样完全放开，而是有严格要求的。《暂行规定》对基础能力就要求有3年以上纯电动乘用车的研发基础，具有专业研发团队和整车正向研发能力，掌握整车控制系统、动力电池系统、整车集成和整车轻量化方面的核心技术以及相应的试验验证能力，拥有纯电动乘用车自主知识产权和已授权的相关发明专利，同时具备整车试制能力。

【in】Recently, the national development and reform commission issued the 《new pure electric passenger car production enterprise investment projects and production of access management interim provisions (draft)》 (hereinafter referred to as "interim provisions"). Department of automotive engineering of Tsinghua University professor, China auto standard committee, deputy director of electric vehicles Chen Quan-shi has stated his personal opinion on the BBS. It is published according to the conversation with readers.

Innovative thinking to meet access to open up

It is relatively strict for the whole 《The interim provisions》, but also is relative open, and closer to the practice of the current development of China's electric vehicle, it is believed that will play a positive role if can put it into practice.

Why is more strict? The opening up, it is for electric vehicle but does not include the debating low speed electric vehicle for a long time this year. The production of electric vehicle is not as a lot of people expect completely opening up, but there are strict requirements. 《The interim provisions》 on the basis of ability requires three years of pure electric passenger car research and development base, has a professional R&D team and the positive research and development ability, grasp the vehicle control system, power battery system, integration of the entire vehicle and

但是，也是开放的。要求有三年以上电动汽车研发能力，之前一些没有电动汽车生产资质的企业，但是它具备汽车生产资质，而且具备一定的研发和生产能力，目前是完全可以进入的。比如福田，它没有小轿车的生产资质，但是商用车做得很好，而且迷迪电动汽车早就投放市场示范运营了。它是完全可以进入的。

车企之外，在电池和汽车零部件领域有一定积累的万象也具备这个实力。还有新大洋，是生产摩托车、低速电动车的。之前一款电动汽车已经通过“借壳”的方式上市了。现在资质放开了，完全有机会进入电动汽车生产领域。

利用互联网思维优势

让互联网企业造电动汽车，此前的呼声很高，我认为当前还不行，因为它要求有三年的经验。但是，可以通过类似“借壳”的方式，和传统汽车企业合作融合发展拿到资质，待三年后有资格再申请电动汽车生产资质。

电动汽车需要创新思维和自主创新。特斯拉的成功，给我们最大的启示就是创新。特斯拉不是传统的汽车生产企业，他自己也不认为自己是搞电动汽车的，说自己是搞移动的智能终端。他的显示屏就是个IPAD，能让驾驶员及乘员尽享最新的先进技术带来的实惠。特斯拉的创新思维很大程度得益于互联网的轻资产思维，重研发和销售，生产交给别人来完成，集合各家所长。特斯拉的车身设计、包括很多关键零部件生产都不是自己的，而是用了很多传统汽车的零部件供应商。但是动力控制系统是他自己做的，融入很多互联网的因素，而且在营销方面充分利用现代互联网思维优势，这些都值得我们总结。《暂行规定》在一定程度上体现并鼓励这种创新思维。

我们的电动汽车生产企业也可以专攻设计和销售，而把生产交给其他企业来做。富士康老板郭台铭已经公开表示可以代工汽车生产，他在电脑、手机方面有代工经验。而且他已经开始着手做调研、投资了，他甚至表示：“我一定会代工出质量最好的汽车。”

《暂行规定》在严格的要求之外，对企业的投资规模、生产线建设等方面的规定并没有特别清楚的界定，具有一定的模糊性，这在一定程度上增加了实际操作中的灵活性，给企业很大的发展空间。我们要充分利用政策的便利，创新发展。

申报任务大部可期完成

今年，国家支持的政策基本上到位，消费者也认可，外部环境好了。而且，现在的车型也比较丰富，几乎所有车企都有了自己的电动汽车，续航里程也有所突破，可以

the lightweighting vehicle ability, with the core technology and the corresponding test with pure electric passenger car independent intellectual property rights and authorized invention patent, and has the whole test vehicle manufacture ability at the same time.

But it is opening up. It requires three years of R&D auto production qualification, and the previous enterprise without any electric vehicle production qualifications, but has the car production qualification, also with a certain R&D and production abilities, it should be entered completely. Such as Fukuda, for example, it has no car production qualification, but it has good production qualification in commercial vehicles, and MIDI electric vehicle has already demonstrated operation in the market. It is completely can enter into it.

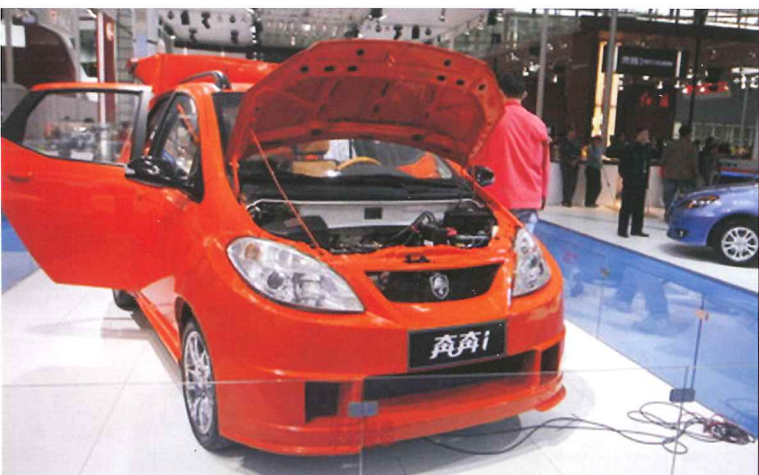
Besides Car companies, Wan Xiang also has the certain production qualification abilities in the field of battery and auto parts. Xindayang group is to produce motorcycles, low speed electric vehicles. An electric vehicle has already listed in the market through the way of "borrowing shell". Now it is opening up with the qualification, it is completely has the chance to enter into electric vehicle production field.

Use the Internet thinking advantages

Making Internet companies to produce electric vehicles, the recall is very high previously, I don't think it works currently, because it requires three years of experience. However, you can produce by "borrowing shell" method, cooperate integration development with traditional automobile enterprise to get the qualification, to apply the electric vehicle production qualification after three years. Electric vehicle needs innovative thinking and independent innovation. The biggest revelation of Tesla's success to us is innovation. Tesla is not traditional automobile production enterprise, it does not think of producing electric vehicles itself, but it is producing intelligent mobile terminal. Its display screen is a IPAD, can let the driver and the passengers enjoy the latest advanced technology bringing benefits. Tesla's innovative thinking largely thanks to the Internet asset light capital thinking, research and development and sales, let others to produce, combine the advantages from each company. Tesla's body design, including many key parts are not produced by their own, but use with a lot of traditional auto parts from suppliers. But the power control system is made by its own, introduced with many factors of the Internet, and make full use of modern Internet thinking advantage in marketing, all of those factors are deserve our consideration. The 《Interim provisions》 in a certain extent, reflect and encourage the innovative thinking.

Our electric vehicle production enterprise can also specialize in design and sales, and let other enterprises to produce. Foxconn boss Terry Gou has openly stated that can make OEM production, he has experience in OEM of computers, cell phones. And he has already started to do research, investment, he even said: "I will contract the best OEM quality car."

Besides the strict requirements of 《Interim provisions》, it is not has the particularly clear definition for the enterprise investment scale, the regulation of the production line construction, has a certain ambiguity, this has a certain extent to increase the flexibility in the actual operation, to give a lot of growing space for the



满足消费者的各种需求。一个新产品要被消费者接受，必须具备内在外在两个因素，现在这两个因素我们都已经具备，只欠东风。消费市场只要一打开，我们当初规划的任务是完全可以实现的。

电动汽车的市场推广，有准备期、启动期及热销期，今年我们做好充足准备，明年一年热销，地方政府完全可以完成当初的申报任务。

电动汽车产业规划中提出到明年完成50万辆的目标，我认为很难完成。但是，今年我国电动汽车产销量预计可以达到6万辆，明年可以达到30万辆。参与新一轮示范推广的城市50%都可以完成任务，北、上、广、深一线城市和合肥、武汉这些做得比较好的城市还有望超额完成，最后可能有1/5的地方政府无法完成当初的申报任务。

当前，电动汽车的市场推广，有些城市可能会有些困难，或者不作为。有困难你可以提，国家有各种支持政策，包括现在对充电桩的建设也有补贴，力度很大，最高可达1.2亿元，最少也有5000万元。国家政策给地方政府“粮食”和钱让你干，给你“胡萝卜”，帮助你解决各种困难；你不作为，国家、相关部委将加强考核机制，“大棒”重压下，还是能起到一定作用的。

政府主导充电设施建设

现在的私人消费市场，“脑子已经打开了”，消费者

enterprise. We should make full use of the convenience of policy, innovation and development.

Declare task is expected to complete

This year, the national support policy is basically in place, and gain the consumers' recognition, and with the good external environment. Moreover, the car models are rich now, almost all car companies have their own electric vehicles, the endurance driving range is also has a breakthrough, of which can meet the diverse needs of consumers. A new product to be accepted by consumers, must has inner and outer factors, now we have these two factors, all is ready except for what it is crucial. As long as open up a consumer market, our planed task is can be achieved completely.

The promotion of electric vehicle market, run-up, start-up period and the hot sale period, we will be well prepared this year, to hot sale next year, local government can complete original declaration.

The electric vehicle industry planning is put forward to fulfill the goals of the 500000 vehicles next year, I think it is difficult to achieve it. But, this year our domestic electric vehicle production is expected to reach 60000, it is expected to reach 300000 vehicles next year. 50% of participate in the new round promote demonstration cities can complete the task, Beijing, Shanghai, Guangzhou, Shenzhen these first level cities and Hefei, Wuhan these well done cities are expected to overfulfil the target, finally there may be one fifth local governments can not complete the original reporting tasks.

Currently, the marketing of electric vehicles, some cities may have some difficulties, or inaction. You can put forward the problems if you have difficulties, the state will give all kinds of support policies, including subsidies for charging pile construction aggressively, it is up to 120 million yuan, 50 million yuan at least. National policy offer the "food" and "money for local governments, give you a carrot", help you to solve all kinds of difficulties; If You don't take action, the state and related ministries commissions will strengthen the inspection mechanism under pressure of "sticks", it is still can play a role.

The government dominant charging infrastructure construction

Private consumption market, now has opened the "minded", consumer has recognized electric vehicle, and began to gradually accept it, feels that the electric vehicle can meet the demand of the part of everyday life, such as point-to-point travel, daily commute, etc. Consumers are willing to buy electric vehicles, but because the problem of charging pile and will not buy it.

China is different with Japan and the United States, many United States homes have a garage, charging problem is easy to solve. It is not the same as in



已经认识了电动车，并开始逐步接受，觉得电动汽车可以满足日常生活的部分需求，比如点对点的出行、日常上下班等。消费者愿意买电动车，可是因为充电桩的问题又不买。

我国和日本、美国不一样，美国很多居民家里都有车库，充电问题很容易解决。中国不一样，我们很多城市居民没有固定停车位，甚至有了车位，要装充电桩也不是一件容易的事情。这导致私人消费者购买纯电动汽车受阻，充电的问题是影响私人消费市场发展的根本原因。

充电桩的建设，我们之前实行车企责任制，要求企业在卖车之前必须帮助消费者解决充电桩的问题。这是不合理的，车企不具备这个能力。企业想在天安门广场建个充电桩，这可能吗？关键还是看政府。《指导意见》明确了政府主导充电基础设施的建设，这是正确的。只要政府做好规划，开放市场，下大力气做，充电问题是完全可以解决的。

充电桩建设大家都说难，城市建设用地紧张让充电桩建设问题难以解决。其实，这个问题是很好解决的，关键是地方政府要做好规划。因为现在交流充电桩很简单，只要有220V的电压就能充电了。消费者在住宅小区里有个停车位，社区规划有电力接通，允许安装充电桩，这个问题就解决了。建设公共的快速充电桩，加油站有场地、有电力，也很容易。现在建桩难的关键是规划缺失。只要政府做好了规划，今年春节前，一些规划中的充电桩完全可以建设完成，解决公共充电问题。

可能计价还是问题，这需要国家和地方政府作出规划。明确是按照民用电计费，还是按照工业用电计费？明确收费机制，就没问题了。

此外，我们可以考虑电动车的多种用途。社区摆渡车在一线大城市有需求，长7~8米的商用车完全可以满足社区这种需求。造这样一辆车成本只要60多万元，国家补贴就将近60万，降低了应用推广成本。而且这种线路固定的使用模式方便充电，电动汽车完全可以满足使用需求，这个领域如果推广起来会有很大空间。还有物流车，城市物流配送已经成为一种重要的民生需求，如果在这个领域推广电动汽车，既能满足市场需求，又能打开市场，是一个双赢选择。

China, many urban residents without fixed parking, even have the car parking place, it is not easy to build a charging pile. This leads the residence for private consumer to buy pure electric vehicles, charging problem is the fundamental reason for affecting the development of private consumption market.

As for charging pile construction, we had implemented the responsibility system for car companies, required companies must help customers to solve the charging pile problem before selling cars. Is it reasonable? It depends on the government. 《"Guidance suggestion"》 has clearly confirmed about the government dominant charging infrastructure, this is correct. As long as the government has made a good plan, open up the market, strive to it, charging pile problem is can completely solved.

Everybody says it is difficult to construct charging piles, urban construction land tension has made difficulty to solve the charging pile construction problem. In fact, it is very east to solve this problem, the key is the local government need to make a good plan. Because now AC charging pile is very simple, it can charge as long as there is 220 v voltage. Consumers have a parking space in residential district, community planning has a electricity power switch on, allowed to install charging pile, the problem is solved. To build public fast charging pile, gas station has landsite, electric power, and it is also very easy. The key why difficult to build charging pile is because lack of planning. As long as the government make a good plan, before the Spring Festival this year, some planning of charging piles can be completely completed, solved the problem of public charging.

The price may still be a problem, it needs to be made the planning by the state and local

government. Confirming that whether charge the electricity according to the resident using electricity or the industrial electricity? Confirming the charging mechanism, there will not have problem.

In addition, we can consider multiple USES of electric vehicles. Community shuttle buses have demand in the first level cities, 7 ~ 8 meters long of commercial vehicle can completely meet the demand of the community use. It needs the cost of nearly 600000 yuan to produce such a car, while the state subsidy will reach nearly 600000 yuan, reducing the costs of application promotion. And the fixed route using mode is convenient to charge electricity, the electric vehicle can completely meet the requirements, if develops this field it will have a large space. But also logistics cars, city logistics distribution has become an important means of livelihood of the people demand, if promote electric vehicles in this field, it is not only can meet the demand of market, but also can open up the market, it is a win-win choice.



中国电动汽车产业发展的突破口

Breakthrough Point of Development of China EV Industry

——微型纯电动车

- Micro pure electric car

文/刘刚 Text/LIU Gan

【按】刘刚：新能源汽车已步入市场导入期微型电动车是产业发展突破口

南开大学经济研究所副所长刘刚教授在山东“自律创新发展——小型纯电动汽车创新论坛”上，发表“微型电动汽车市场需要分析”的主题演讲，流传有几个版本。今整理发表如下：

中国电动汽车已经由孕育期步入市场导入期，当此之时微型电动汽车或将是产业发展的突破口。

【Editorial Word】

Li Gang professor and deputy director and of Institute of Economics, Nankai University delivered his speech with Micro EV market demand analysis as a theme in the Innovation and Development - Micro Pure EV Forum held in Shandong Province. The details of his speech are as follows:

The Chinese electric car has been from the incubation period into the market period. At this, there will be a breakthrough point for the tiny electric car development.

Tiny electric cars are the point of the breakthrough of the industry
Ministry of Science and Technology in 2001 released 863 plan in which the electric car as was a national major project. Now 13 years



微型电动汽车是产业突破口

国家科技部2001年推出863计划，把电动汽车列为国家重大专项，到现在已经13年了。电动汽车产业在技术路径上做了诸多探索，目前电动汽车的主导产品已经开始出现，这个主导产品实际上就是微型电动车。

微型电动车售价在3~5万之间，存在一个巨大的刚性市场需求，而这个刚性市场需求与中国的城镇化正好撞在一起，为微型电动车的发展提供了最大机遇。

无论是从技术还是从市场的角度看，微型电动汽车都将是未来中国电动汽车产业发展的一大突破。我们要在此基础上通过技术进步和升级逐步走向高端化。如果没有这个突破口，可能就没有中国电动汽车产业的发展。现在的担心在哪里？由于市场化不足，没有找到这个突破口。现在我们的电池技术还落后，因为任何一个技术与它的市场化运用有非常密切的关系，它和市场之间成正反馈。市场运用好技术会被巩固强化，就能保证这个产业的健康快速发展。要是技术约束了这种车，该产业发展就会停滞。

从技术优势看，现有的电池驱动技术暂时无法替代燃油驱动技术。从市场需求看，中国最有潜力的市场是中低端市场。从政府扶持看，不可能长期动用国家财政资金补助一个产业，而微型车是不需要补助的，企业和产业的自生能力是可持续发展的前提和基础。因此，中国发展电动汽车产业的突破口是微型电动汽车。

微型电动车市场前景广阔

调研发现：微型电动车的主要市场是农村市场。我们用农村市场农用车的的数据来类比，就可以清楚说明。中国第一个井喷的汽车产业就是农用车，农用车在80年代大量涌现。因为那时实行家庭联产承包责任制，农用车的需求非常旺盛。2001年农用车的年销量就已经达到200万台。这个产业主要分布在山东、河南、辽宁、江苏等农业大省；时风等农用车企业也在那时快速发展起来。

如今，山东成为生产微型电动车的主要省份，就因为当年发展农用车的时候，山东是最好的市场。当山东的农用车企业在转型过程中，就最先发现这个新兴的市场机遇。

那么，微型电动车的市场到底有多大呢？山东现有产业的发展显示，微型电动汽车销售量，已从2009年的1.6万辆暴增至2013年的12万辆。这是一个被政策抑制的市场，没有被释放的市场尚且能达到12万辆规模，也有人已经达到20万辆，很多数据还没法完全统计。山东是值得佩服的，在微电动车产业发展上做示范是领袖，要勇敢地挑起来。

微型电动汽车的潜在市场需求主要有几个方面：第一

have passed by. The electric car industry has made much exploration on technical path. In the field of electric cars, the leading products have begun to appear. One of the leading products are is the mini electric vehicle.

Micro electric car is priced at RMB 30000 ~ 50000. There is a huge market demand which goes with the urbanization in China, so providing the biggest opportunity for the development of micro electric vehicles.

Whether from the technical or from the market point of view, mini electric cars will be a breakthrough in the development of electric vehicle industry in China. We will be based on this through the technology progress and gradual upgrade to a higher level. If there is no this breakthrough, there may be no development of China's electric car industry. Now where is the worry? Due to lack of sufficient marketization, we do not find a breakthrough. Now our battery technology is still backward. Any one technology is very closely related with the application of its market. There is a positive feedback between it and the market. The good use of the technology in the market can guarantee the healthy and rapid development of the industry. If there are technical constraints, then the industry development will stall.

From the technical superiority, the existing battery power temporarily is unable to replace the fuel technology. From the market demand, China is the most potential market in low-end market. From government support, it is not possible to provide the national finance for an industry for a long time. Mini cars don't need subsidies. Viability of the industry and the enterprise is the premise and basis of sustainable development. Therefore, for China's development of electric vehicle industry, the breakthrough point is the mini electric car.

Mini electric vehicle market has good prospectus

Research found that the micro electric main market is the rural market. We use the data about agricultural vehicles in rural markets for analogy. China's first booming market was the agricultural vehicles market in the 1980s. Because of the household contract responsibility system adopted, the agriculture vehicles had a strong demand. Its annual sales of agricultural vehicles reached 2 million in number in 2001. The industry was mainly distributed in Shandong, Henan, Liaoning, Jiangsu and other leading agricultural provinces. Shifeng and so forth as agricultural vehicle companies have rapidly developed since then. Today, Shandong has become the leading province for production of miniature electric vehicles. Then time, it was the best market for



是农村市场；第二是小城镇民用市场；第三个是城市的快递和短途货运市场；第四是大城市家庭第二辆车需求；第五还包括场地用车等。据初步测算，满足农村和小城镇市场为主导的市场需求，大约为1~1.5亿辆。微型电动汽车市场前景十分广阔。

为什么会拥有这么广大的市场需求呢？存在广阔市场需求的关键不仅在于价格低，而且在于使用成本低。中国未来城市化的重点在于小城镇和大城市的郊区化，此外中国的能源安全需要和国际市场也起到了推动作用。

微型电动车谋求政策关怀

发展微型电动汽车面临最大障碍是政府政策的约束。政府政策的约束是基于发展高精尖的电动汽车，实现“弯道超车”的理念，这无可挑剔。

然而，市场的需求是多元化的，至少有高中低的分野，微型电动车的市场火爆是政策制定者始料不及的。当下的问题，不是用政策限制市场，而是要为市场寻求政策，为微型电动车谋求政策关怀。

按市场规律发展微型电动车，可以借鉴欧盟微型电动车和日本分类管理的经验，明确微型电动车的属性、名称、定义，制定满足道路行驶车辆所具备的牌照、驾驶证、控制行驶区域、保险管理等相关的法律法规体系。要尽快修订和补充GB/T15089-2001机动车辆分类标准，在L类中增加L6e、L7e车型分类，按四轮摩托车实施分类管理。

在技术约束方面，将引入锂电池、电力电子、微电子、车联网和物联网等技术。

在资本市场与高端电动汽车相比，微型电动汽车的投资强度尚存在着差距，随着市场机遇的到来，未来3~5年会迎来微型电动汽车投资和开发的高潮。

微型电动车或将是电动汽车产业发展的突破口，可能成为中国新兴产业的代表。

agricultural vehicles. When the agricultural vehicle companies are transformed in Shandong, they are the first to find this emerging market opportunity.

So, how much is the micro electric market? In Shandong, the number of the micro electric cars sold has grown from 16000 in 2009 to 120000 in 2010. This is a market not supported by the policy. It can reach the scale of 120000 or 200000 vehicles. A lot of data are not yet included in the statistics. Shandong is worth admiring. Therefore, the micro electric industry has a great development potential.

Micro electric potential markets mainly have several aspects: the first is the rural; the second is the small town; the third is the city's express delivery and short-distance freight field; the fourth is the big city family; the fifth is the work site. According to preliminary estimates, the rural and small town markets are at the dominant position with a scale of about 1m ~ 150m mini cars. Thus, the mini electric car market prospect is very broad.

Why is there such a broad market demand? The reason is that the price is low and that the use cost is also low. In the future, China's future urbanization is focused in the suburbanization of the small towns and big cities. In addition, both the energy security needs in China and the international market play a role.

Mini electric cars hope the policy support

Mini electric car development faces the biggest obstacle which is the government's policy restraint. The constraints of government policy are from the ideas that the high-end electric vehicles should be developed and the overtaking be made at the corner, although this is impeccable.

Diversity, however, exists in the demand of the market, at least including the division into the high and low grades. The mini electric car market popularity would be not expected by the policy makers. The present goal is the the market should be supported by the policy rather than limited. That is, the policy concern should be in the micro electric vehicle.

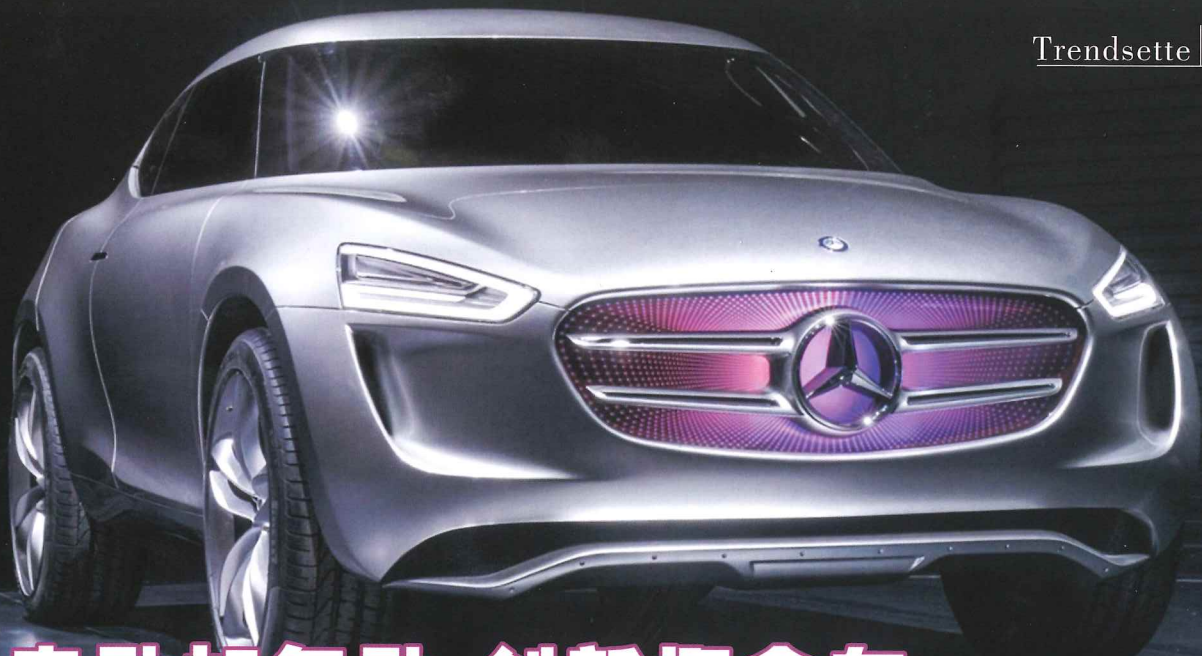
According to the law of market, the micro electric cars are developed. The lessons from the micro electric management in EU and Japan can be drawn. The management is involved in relevant laws and regulations about the mini electric vehicle's properties, name, definition, driving license, control area, insurance and etc. GB/T15089-2001 on motor vehicle classification should be modified. Namely, the L6e, L7e and so forth should be added in it. The mini electric vehicles belong to the class of four-wheel motorcycles in the management work.

In terms of technical constraints, will introduce the lithium battery, power electronics, microelectronics, networking and the Internet of things technology, etc.

In the capital market, when compared with high-end electric cars, there is a gap with the mini electric car investment intensity. With the advent of market opportunity, it may take 3 ~ 5 years to reach the climax for the mini electric car investment and development.

Mini electric vehicle may be a breakthrough in the development of electric vehicle industry and become a representative in the emerging industries in China.





电动加氢动 创新概念车

文/阿寒 Text/A Han

Electric plus hydrogen: An Innovation

——奔驰G-Code概念车 — Benz G - Code concept car

奔驰G-Code概念车在今年的洛杉矶车展首次亮相。驱动后轴上搭载电动机，前置发动机舱搭载燃烧液化氢内燃机，产生的能量将用于驱动前轮。

奔驰此前拥有Ener-G-Force梅赛德斯-奔驰全尺寸SUV，如今又有奔驰G-Code概念车出炉。



奔驰宣称，G-Code的概念车仅有4.1米长，定位比品牌旗下入门跨界车GLA还要低，假想敌为还在襁褓中的奥迪Q1。

奔驰G-Code的设计，滚圆的外形显得憨厚，两扇马车式后门很方便后座乘客，21英寸铝合金轮毂也加分不少。

此前，Ener-G-Force是用车顶水槽和催化剂/阳光来生产氢气；如今奔驰G-Code概念车则使用一种名为multi-voltaic的涂料，让车身在太阳照射时产生电能并传送到蓄电池。此外，悬挂的阻尼器还会在运作时把机械能转化为电能。

奔驰G-Code概念车的电能仅用于后轴上的电动机驱动后轮，前置发动机舱搭载的燃烧液化氢的内燃机，产生的能量将用于驱动前轮。为了统一调配两股能源，奔驰采用了一台双离合变速箱进行传动。

这款新车何时量产不得而知，技术预览也会让人眼睛一亮。

Benz G - Code concept car debut in the Los Angeles Auto Show this year. It has the motor in the rear driving axle. The engine compartment in the front position has the liquefied hydrogen internal combustion engine which produces energy used to drive the front wheel.

Mercedes had Ener - G - Force as a Mercedes-Benz full-size SUV. Now it has a Mercedes G - Code concept car.

Mercedes claims, the G Code concept car is only 4.1 meters long and has a lower positioning than GLA. Its putative foe is Audi Q1.

Mercedes G - Code design: Rounded appearance looks simple and honest; two back doors are very convenient for the back seat passengers; the 21-inch alloy wheel is a bonus too.

Previously, Ener - G - Force adopted the roof water tank and catalyst/sunlight to produce hydrogen gas; now Mercedes G - Code concept car used a technique called multi - voltaic coating, so that the electric energy is generated under sunlight and transferred to the battery. In addition, the suspension damper can convert mechanical energy into electricity in the operation.

Electric energy from Mercedes G - Code concept car is used only for the motor on the rear axle to drive the rear wheels. The liquefied hydrogen internal combustion engine in the front-site engine compartment can produce energy used to drive the front wheel. In order to coordinate the two kinds of energy, Mercedes has adopted a dual-clutch gearbox in transmission.

When the new car is subject to a mass production is not clear. However, the technical preview can give us a surprise.

