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CHINA POLICY: THE ROADMAP FOR ELECTRIC VEHICLES

Kerin Cantwell and Ingrid Cheng
Akin Gump Strauss Hauer & Feld LLP

China's central government has decided that the future of its automobile industry, one of the nation's most important, lies in electric vehicles. After nearly three decades of research and development and consistent, increasing support for the nascent electric vehicle industry, China's planners have, over the course of the last year, begun to implement a comprehensive package of monetary and other incentives, programs, and regulatory policies to achieve aggressive targets that are intended to result in electric vehicles dominating China's new vehicle industry by 2020. The push toward electric vehicles is driven by several national policy objectives: increasing energy security by reducing the country's reliance on imported oil, dramatically cutting pollution, reducing energy consumption, and increasing non-fossil fuel resources. The policies are also strategic economic measures to transform China's automobile industry (the world's largest) into an international competitor, taking advantage of China's strengths and natural resources to provide new areas of economic growth.

A NEW, DETAILED, AND EVOLVING POLICY FRAMEWORK FOR 2012–2020

The 12th Five Year Plan promulgated by China's National People's Congress in March 2011 (the "12th Five Year Plan"), which sets forth the central government's broad economic, development and social policy goals for the period from 2011 through 2015, is striking in its emphasis it on environmental protection, conservation, clean energy, and the creation of a "green" economy. One of the "new strategic industries" in the plan is the "new energy automobile industry," which includes plug-in hybrid electric vehicles (PHEVs), pure electric vehicles (EVs), and fuel cell vehicles.

Since late 2011, continuing through this summer, and probably for the forseeable future, various governmental agencies have promulgated a slew of new directives, programs, incentives, and additional policy statements in an effort to achieve the goals for PHEVs and EVs set forth in the 12th Five Year Plan and beyond. For example, in March 2012, the Ministry of Industry and Information

Technology (MIIT) issued a statement that pure electric vehicles will be the top priority of China's new energy automobile industry development goal.[16]

The State Council, China's highest administrative agency, published its comprehensive development plan for the new energy automotive industry in June 2012.[17] The plan states that the development of the component supply chain for batteries, motors, automotive electronics, lightweight materials, advanced internal combustion engines, and efficient transmissions will be accelerated, as will the construction of charging facilities, and that charging stations, the smart grid, and renewable energy will be developed in coordination with each other. The plan sets ambitious targets: annual production and sale of EVs of 500,000 per year by 2015, increasing to a cumulative sales volume of five million EVs by 2020, with production capacity of two million EVs per year by 2020. Battery prices are targeted to drop to 2 RMB per kilowatt hour (kWh) by 2015 and 1.5 RMB per kWh by 2020, and battery life is intended to achieve ten years by 2015.

The State Council's plan also takes into account various additional measures that will be necessary to create a sustainable EV market. For example, marketing and business models which incorporate leasing (of both cars and batteries), consumer financing, insurance, after-sales service, a network of charging facilities, a used car market, and battery recycling programs are part of the plan. The State Council's plan also addresses the need for nationwide standards for charging stations and vehicle charging interface. The plan encourages the financial services industry to arrange loans, debt offerings, stock offerings, and local-level venture funding for companies involved in the EV supply chain. The plan calls on various government departments to provide fiscal and tax incentives, export credit support, and inter-ministerial coordination. The State Council's plan states that government support and incentives are crucial in this early phase of the industry, but will give way to market forces as the industry matures.

Since late last year, national and local government departments have implemented monetary and non-monetary incentives and policies to encourage consumer adoption of EVs. At the national level, among other things, the MIIT has announced common standards for charging stations, and the Ministry of Finance (MOF) has waived sales tax on certain qualifying, domestically-manufactured EVs and fuel cell vehicles. Some cities that are participating in the EV pilot program have exempted EVs from license plate auctions and six days per week driving limitations, granted preferential parking, waived toll road fees, and provided electricity for EVs at a reduced price.

NEW ELECTRIC VEHICLE POLICY DRIVERS

There are several factors behind the new EV policy and incentives. One factor is energy security, as approximately half of China's oil is imported.[18] While environmental concerns certainly are a genuine national priority, the use of EVs will probably have less of an impact on environmental improvement than one might hope, given that approximately 70% of China's electricity is generated by coal. Another important factor behind the policy is economic: foreign car makers dominate the international internal combustion vehicle market; however, as the world moves toward cleaner vehicles, China has certain strategic advantages that could make it a dominant player in the international EV market. China is a major world producer of lithium ion batteries and electric motors, and has

16 Special Twelfth Five Year Plan for the Development of Electric Vehicle Technologies, promulgated by MIIT on March 27, 2012 (Guokefaji [2012] No. 195).

17 Circular of State Council on Printing and Distributing the Development Plan for Energy-Saving and New Energy Automotive Industry (2012–2020), promulgated by the State Council on June 28, 2012 (Guo Fa [2012] No.22).

18 World Bank. The China new energy vehicles program: challenges and opportunities, (Washington D.C.: World Bank, 2011), 12, accessed August 2, 2012, http://documents.worldbank.org/curated/en/2011/04/14082658/china-new-energy-vehicles-program-challenges-opportunities.

abundant resources of lithium and rare earth materials that go into EV component production.

While early government-sponsored research and development into EVs began in China in the early 1990s, the first central-government pilot program to promote their commercial use began in 2009 with the "10 Cities, 1,000 Vehicles Plan," which, by 2010, had expanded to 25 cities. Under this program, the purchase of EVs for public use, such as government fleets, taxis, and electric buses, were subsidized by the central government. The program did not apply to private purchases, and left infrastructure development, such as charging stations, to local governments to fund and construct. In a joint notice issued in May 2010,[19] by the MIIT, the National Development and Reform Commission (NDRC), the Ministry of Science and Technology (MOST) and the MOF, five cities were selected to implement a two-year pilot program for the promotion of the private EV market. Under this program, central government subsidies of up to 50,000 RMB for PHEVs and 60,000 RMB for EVs are available for direct private purchases. When combined with local subsidy programs in some cities, the combined EV purchase subsidies could be as high as 120,000 RMB. Media reports state that the pilot programs have not been as successful as hoped, and critics both inside and outside of China are skeptical whether the State Council's new targets can be achieved. However, the 2009 pilot program caught the attention of the World Bank, which it studied and reported on in April 2011.[20] Many of the World Bank's recommendations to promote consumer acceptance of EVs have been incorporated in the new policies and incentive programs enacted since the 12th Five Year Plan. Moreover, the government has implemented standards to address public concern about the safety of EVs.

HOW ARE THE POLICIES WORKING AND WHAT DOES THE FUTURE HOLD?

While EV sales in China to date reportedly have not met the targets set forth in the pilot programs, it is quite possible that the combination of policies introduced in the last year, which address the shortcomings of the pilot programs, could have the desired effect. Certainly tax and other financial incentives have been shown to work in China. In 2009 and 2010, the government implemented tax rebates for small vehicles and subsidies for trade-ins and rural buyers, which helped China's auto sales grow by 46% and 32%, respectively, in those years. When the stimulus policies expired, the automobile market grew by only 2.45%. A study by PricewaterhouseCoopers Autofacts Group from 2010 estimated that, by 2016, alternative fuel vehicles production in China (which includes traditional hybrids, PHEVs, and EVs) could reach 400,000, but that with strong government incentives and lower pricing, production could reach 700,000.[21] The strong government policies and incentives are now here, and government officials have announced that more are on the way. The policies and incentives address the obstacles to EV market penetration in a holistic way, from research and development though the supply chain to the consumer, and this combination could very well help meet the country's ambitious goals for EVs. Already this year Chinese industry players and foreign investors have jumped into the mix: one large Chinese automobile manufacturer entered into a joint venture with a U.S. company to market Chinese EVs overseas; another entered into a battery-swapping venture with the China Southern Grid and a foreign battery supplier, and a U.S. battery maker has agreed to supply batteries and build a research and engineering facility for a Chinese automobile manufacturer.

19 Notice Concerning the Demonstration Work of Promoting New Energy Vehicles in the Private Market, jointly issued by MOF, MIIT, MOST and NDRC on May 31, 2010 (Caijian [2010]230).

20 World Bank, The China new energy vehicles program: challenges and opportunities, 1–31.

21 PricewaterhouseCoopers, The US-China cleantech connection: shaping a new commercial diplomacy, (2011), 7, accessed August 2, 2012, http://www.pwc.com/us/en/technology/publications/us-china-cleantech-connection.jhtml.

CONCLUSION

Unlike earlier programs and policies, which predominantly consisted of purchase subsidies for electric vehicles, the new policies introduced since the passage of the 12th Five Year Plan reflect a multi-faceted approach to developing China's electric vehicle market. The policies address the industry as a whole: starting with raw materials and research and development; continuing through the component supply chain, required infrastructure, and integration with the electric power grid; and finally with the institution of a variety of monetary and non-monetary incentives to attempt to create a critical mass of consumer demand. Ultimately, consumers will sustain the industry and allow the government to gradually withdraw monetary support. The Chinese government recognizes (as do many other countries) that the next ten years will provide key opportunities to grow the electric vehicle industry or be left behind.

ABOUT THE AUTHORS

Kerin Cantwell is a partner in Akin Gump's Downtown Los Angeles office. She is a member of the firm's global project finance group focusing primarily on renewable energy project development, financing, and mergers and acquisitions. Ingrid Cheng is counsel in Akin Gump's Beijing office and focuses on corporate, funds, project finance and real estate matters. Akin Gump Strauss Hauer & Feld LLP is one of the world's leading law firms in the development and financing of energy and infrastructure projects.