

Does China hold the Key to the Future of the Electric Car?

In the rapidly growing race among electric vehicle manufacturers across the world, China is a power to be reckoned with. Slow to join the international competition, China in only a few years has leapt to the forefront of the world's plug-in vehicles producers. Astonishingly, in 2009, China produced only a small handful of electric vehicles; yet in slightly under ten years, Chinese production of EVs will reach more than a million each year in 2018, comprising half-of the world-wide sales. At this rate, China could soon transform the world-market in electric vehicles, surpassing the United States, Japan, and all European countries. Indeed, China has confidently announced that by 2020, it will sell two million electric vehicles, and ten years later, in 2030 as many as sixteen million. How can this spectacular industrial production be explained, and what does it suggest about the future of the world economy in automobile production?

A combination of factors has contributed to stimulating this burgeoning industry in China. With pollution levels reaching toxic proportions in many Chinese cities like Beijing and Shijiazhuang, ecological considerations have loomed large in efforts to favor electric vehicles over traditional gasoline powered vehicles. Exhaust emissions in China's crowded streets, together with other forms of industrial pollution, now represent the country's most significant health threat, and have prompted the government to implement a series of policy decisions designed to reduce general pollution levels, including many affecting the use of fossil-fuel vehicles such as limiting gasoline-car registrations and the limitation of car use to alternative days in many of the country's major cities. And it has led to the systematic endorsement by the Chinese authorities of electric vehicles of all sorts, particularly privately owned cars. Encouraged by government subsidies to reduce the cost of electric vehicles, ownership of EVs has risen by more than ten percent in metropolitan cities like Beijing, Shanghai, and Shenzhen. Although the sales of plug-in cars throughout the country still lag behind those of gasoline vehicles making up only two percent of

sales last year, for China's city dwellers the development of the electrical vehicle offers the promise of a better quality of air.

And this evolution has promoted another, no less pressing aim of the Chinese government: to make the country as a whole less dependent on the importation of fossil fuels. Since 2016, China has become the second largest consumer of petroleum in the world, and its chief importer. If importation rates were to continue at the present speed, eleven-and-a-half million barrels a day in 2016, this consumption by 2040 could require some seven million additional barrels daily. Thus, to reduce this high dependency on imported oil has grown into a major aspect of Chinese economic planning, and this policy, both short-and long term, helps to explain the government's active and enthusiastic promotion of electric vehicles. Since 2009, China has systematically subsidized this particular industry, promoting research and development to boost technological innovations in electric and hybrid vehicles.

However important for the country's future, environmental concerns have not been the primary motivation behind China's decision to develop its EV industry. A far more prominent consideration has been China's decision to lead the world economically, particularly in this sector. With an unsurpassed domestic market, China has first pursued the sale of EVs among its own citizens. Thanks to a calculated policy of subsidies, more than two-thirds of the hybrid and fully electric cars on display in China are Chinese brands. Not surprisingly for some observers, Chinese customers clearly favor national products: eleven of the top-selling electric car manufacturers are Chinese; the American car, Tesla, stands in twelfth position following Chinese models. After a slow start in 2009, when electric vehicle industry was largely non-existent, from 2015 onwards sales of EVs have steadily increased, with approximately 800,000 sold in 2017, including privately owned cars and buses. There is no doubt that China owes much of its success in domestic sales to individual subsidies to buyers. The restriction on foreign competition within the country has unquestionably facilitated domestic consumption, policy that changed only recently in 2018.

Similarly, the expansion of national battery production, with the help of foreign partners like BMW, has fostered EV production. A key factor in this type of automobile manufacturing, China by the end of 2017 has become the leading manufacturer in the world of automobile batteries, surpassing Japan's Panasonic; from January to May 2018, the sale of batteries in China has increased by more than three times for this vital piece of construction.

Over the last decade, China has worked hard to advance its production of EVs. Before the end of 2018, it is predicted that China will capture more than half of the world's sales for this style of vehicle. The country's proclaimed aim to revolutionize the car industry, and to achieve economic preeminence among EV manufacturers does not

seem to be unrealistic. On the contrary, its remarkable performance in production, design, and marketing of EVs give good grounds for optimistic predictions of continuing success. With a combination of quick adaptation, flexible strategy, and government subsidies, China strives to develop its EV industry by increasing production and sales, even if electric vehicles now represent no more 1,5% of sales of new cars in the world. Yet economic projections conclude that soon the world market for electric vehicles will be counted in tens of millions, with an annual market measured in billions of dollars. The implication of China's dramatic economic growth in this sector is patently clear for most competitors: it is time to act to make their own specialized industries more efficient and productive. Economic eyes are turned on China, for the once sleeping giant may become the next world leader in the automobile industry.

Stephen Clay

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