

Quicktake

China Is About to Shake Up the World of Electric Cars

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China is set to unleash a seismic shakeup of the automotive industry when it introduces stringent rules to promote new-energy vehicles. From 2019, major manufacturers will be punished unless they meet quotas for zero- and low-emission cars or they buy credits from other companies that exceed the quotas. The so-called cap-and-trade system is designed to spur the market for electric cars at the expense of gas guzzlers, all part of China's quest to clean its air and reduce dependence on imported oil. Another major driver: Helping develop a homegrown electric-vehicle industry.

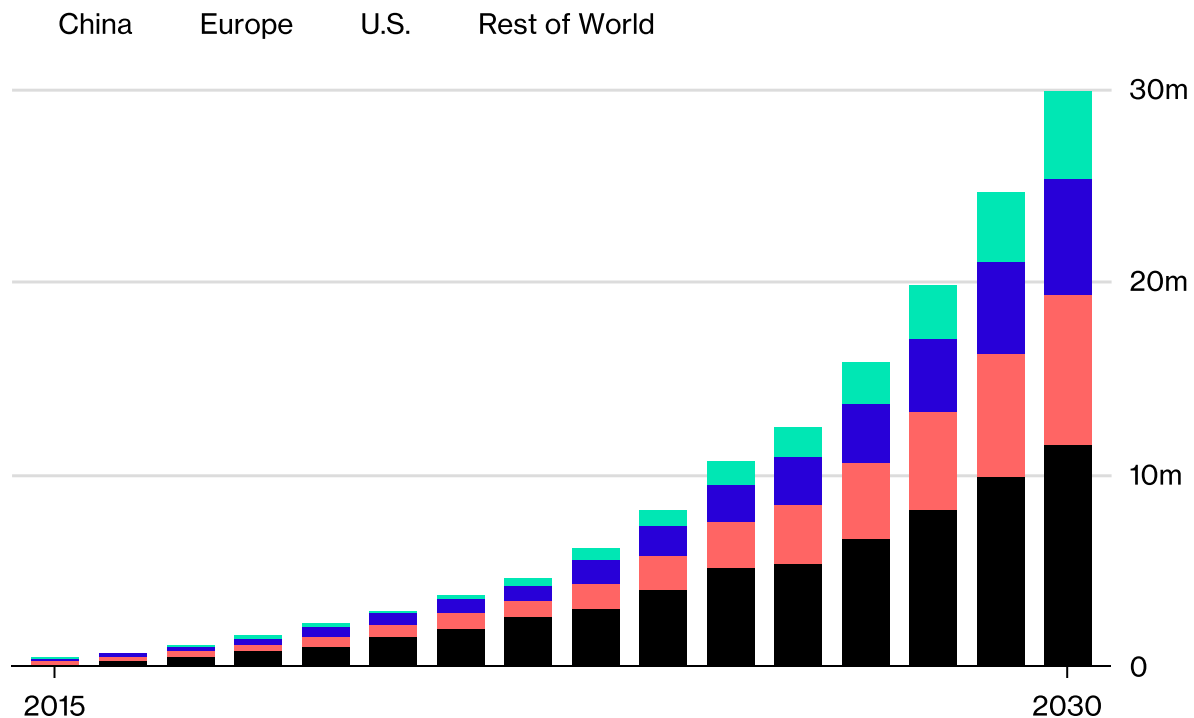
1. How is China's electric vehicle push going?

China is not only the biggest global car market but the world leader in electric cars, with sales seen topping 1 million this year for the first time. Since the first models hit the streets more than a decade ago, the country has overtaken other markets partly through its sheer size and partly by luring consumers with subsidies and tax breaks. Nonetheless, electric vehicles account for just 3 percent of sales, leaving ample room

for growth. Having previously focused on stimulating demand, the government is changing lanes and shifting policy toward propelling supply.

Gearing Up for Cleaner Cars

China leads the charge as electric-vehicle sales seen surging globally



Source: Bloomberg New Energy Finance (forecasts from 2018)

2. What are the new rules?

Complicated. Automakers that produce more than 30,000 vehicles will have to obtain a new-energy vehicle (NEV) credit of at least 10 percent in 2019, rising to 12 percent in 2020. To confuse matters, a score of 10 percent doesn't mean that a full one-tenth of a company's vehicles must be new-energy varieties (battery-powered electric vehicles, plug-in gasoline-electric hybrid vehicles or fuel-cell vehicles). In fact, the total will probably be lower.

3. Why lower?

Because vehicles are awarded credit scores depending on their green credentials, such as how far they go without needing a charge. The least eco-friendly NEV will receive a credit score of two, while the greenest will get a maximum credit of six. So, to meet the 2019 credit target of 10 percent, a carmaker producing 100,000 gasoline-based vehicles would need 10,000 credits. Those could be earned by manufacturing

2,000 cars with an NEV score each of five. If the automaker produced more than 2,000, it could sell the extra credits; fewer than 2,000, and it would need to buy credits. If it failed to top up its credits, the company would face sanctions, such as new models not being approved or production halts for gasoline cars. The government is also introducing new fuel consumption guidelines in 2019. Carmakers that do not comply will be able to use the credit system to address any shortfall.

4. What impact will the quotas have?

It's a milestone policy, says the International Council on Clean Transportation. "Since China is the world's largest auto market, this NEV mandate policy will undoubtedly speed up the global transition to a zero-emission fleet, which will be vital for the climate and for urban air quality," the non-profit group said. According to Bloomberg NEF, the 12 percent target for 2020 would translate to about 4 percent to 5 percent of actual car sales, based on the current average NEV score of 3 per vehicle. China hasn't announced targets beyond 2020.

5. How are credits calculated?

To qualify for a credit, a battery-electric vehicle needs a range of at least 100 kilometers (62 miles) on one charge and a top speed of at least 100 kilometers per hour. A plug-in hybrid vehicle needs an electric range of at least 50 kilometers. The NEV credit score is calculated in two stages: First, a formula is applied (0.012 multiplied by the range + 0.8) to get a base score. (For a 300km range, the score is 4.4.) Second, that figure is multiplied by a so-called adjustment factor -- ranging from 0.5 to 1.2 -- derived from the vehicle's energy consumption and weight, yielding a maximum total of six.

6. How does the credit-trading system work?

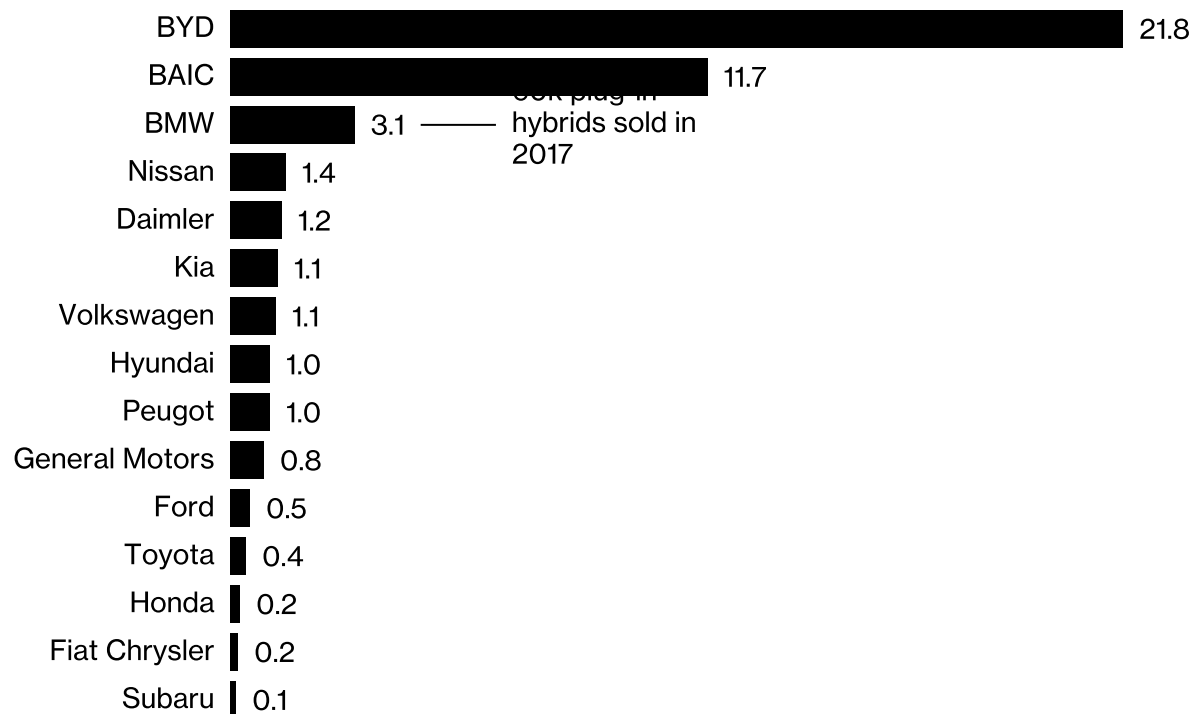
Companies that fail to meet the 10 percent mark next year will need to purchase credits from competitors or face the aforementioned penalties. Trading of the credits will take place on a platform set up by the industry regulator, with pricing negotiated by the companies themselves and determined through supply and demand.

7. Who are the winners and losers?

Companies that have a head start on producing NEVs have the highest credit scores. Those include [BYD Co.](#), [BAIC BluePark New Energy Technology Co.](#) and [Geely Automobile Holdings Ltd.](#), according to the Ministry of Industry and Information Technology. The highest negative fuel consumption credits were [Ford Motor Co.](#)'s China venture with [Chongqing Changan Automobile Co.](#), leading SUV maker [Great Wall Motor Co.](#) and [Dongfeng Motor Corp.](#) Most global brands, such as [Toyota](#), [Volkswagen](#) and [General Motors](#), were somewhere in between. Though their volumes are still small, upscale electric-car makers [Tesla Inc.](#) and [NIO Inc.](#) are eventually set to obtain high scores.

China's Automakers Better Prepared

The sheer size of the global giants slows their transition to electric vehicles



Source: Bloomberg New Energy Finance's EV Exposure Index, which rates carmakers by their readiness for electric vehicles

8. What are carmakers doing to prepare?

Auto companies that focus on NEVs need do nothing different. But almost all global brands that have traditionally relied on gasoline remain far away from China's requirements and have started to accelerate the introduction and production of electric models. Some have also struck pacts with local partners that have NEV

expertise; Ford has tied up with Zotye Automobile Co. and BMW agreed to work with Great Wall in producing electric Minis. Toyota, Honda, Mitsubishi and Fiat Chrysler are planning to sell what's essentially the same electric SUV, developed by local partner Guangzhou Automobile Group Co.

The Reference Shelf

QuickTake explainers on [electric cars](#), [battery technology](#) and [China's EV push](#).

The International Council of Clean Transportation's [report](#) on China's credit score rules.

A 2017 McKinsey [report](#) on China's electric car industry.

The Electric Vehicle Outlook [report](#) compiled by Bloomberg New Energy Finance for 2018.

[Why charging your electric car at night could save the world](#).

A Bloomberg Opinion [editorial](#) on China's electric car rise.

– *With assistance by Ying Tian*

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