

Insight from Shanghai



By Sebastian Lewis

China's EV sales have seen breakneck growth over the past decade, but the path ahead looks bumpier as the government tries to wean the market off expensive subsidies given to buyers that have cost nearly \$37 billion so far.

China has put leadership in the development of what it calls New Energy Vehicles (NEVs) – battery electric vehicles (BEV), plug in hybrid (PHEV) and fuel cell vehicles – and the technologies that fuel them at the heart of its industrial policy. The country is the world's largest market for electric vehicles, with 2.3 million battery electric and plug in hybrid vehicles on the road in 2018, accounting for 45% of the global stock. Government policies mandating procurement of EVs mean that China accounts for 99% of the global market for electric buses.

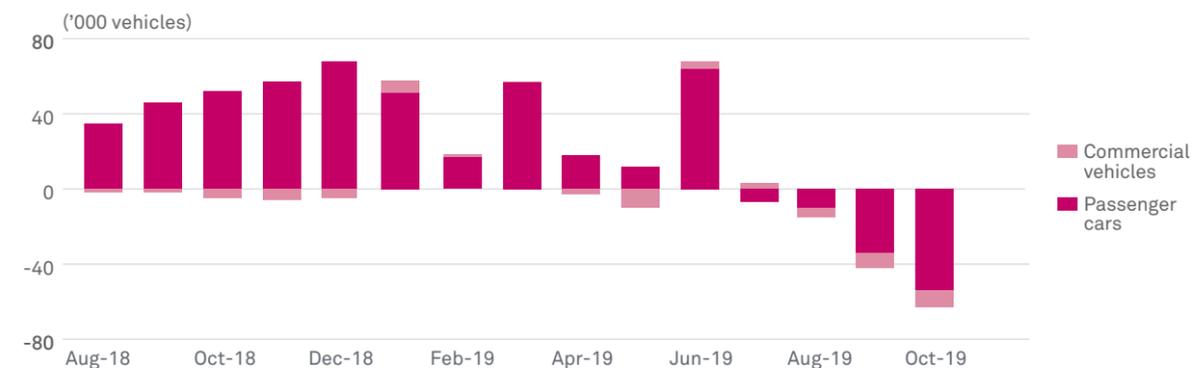
But after growing at high speed over the last decade achieving compound annual growth rate of over 100%, this year electric car sales are faltering. Could it be that China's electric car revolution has finally run out of juice?

Sales of electric vehicles are down more than 20% this year as China takes an axe to the subsidies that

have supported EV sales since 2009 when they were introduced. Fewer than 1,000 passenger BEVs and PEHVs were sold in China in 2009. In 2018 this rose to more than one million vehicles, making China the world's largest market for electric cars by far, well ahead of the global number two, the United States, where sales were only a third of China's.

But this soaring growth cost the government an estimated RMB 245 billion (\$36.6 billion) in direct central and local government subsidies to buyers according to the Center for Strategic and International Studies, a think tank. Add lost revenue from exempting EVs from sales tax, as well as mandated government procurement of vehicles like electric buses and investment in charging infrastructure, and total government largesse was RMB 390 billion (\$58.3 billion) between 2009-2017. That's more than the economy of Slovenia.

Year on year change in electric vehicles sold in China



Source: CEIC, Platts

The subsidy programme inadvertently helped create and sustain a huge number of players. By the end of 2018 more than 200 companies were authorized to make EVs, and a further 200 were awaiting government approval. In 2016 the Ministry of Finance reported that some of these manufacturers had been fraudulently claiming subsidies. Little wonder the government decided enough was enough.

Less carrot, more stick

Starting January 2017, the government tightened the requirements for subsidies, making them more dependent on the energy density of the battery, a measure of how much charge it can hold for its weight. This meant that autos using older battery technologies would not qualify for subsidies.

But the big change came in March this year. Tighter technical requirements around range and battery density mean that many passenger cars are no longer eligible for subsidies. And for those that still are, the subsidies are a lot less generous. The funding for the most efficient BEV offering a range of greater than 400 km has been halved from RMB 50,000 to 25,000. PHEV subsidies have also been slashed by 50% and are now one third of what they were in 2016.

And if that wasn't enough, local governments are no longer allowed to offer subsidies to buyers. Little wonder that EV sales are down 28%, or 124,000 units since June

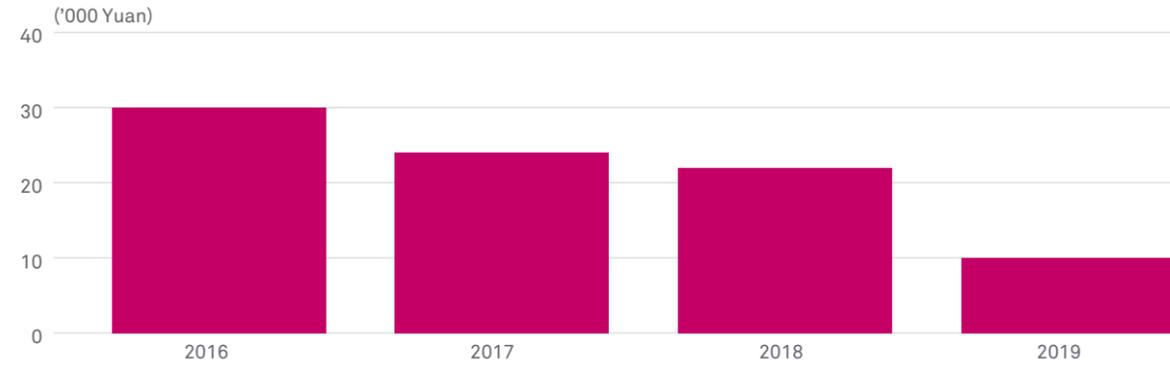
when the policy came fully into effect. In an already weak autos market, paring back purchase subsidies has made buying an EV a lot less attractive.

The subsidy programme will be phased out by the end of 2020 to be replaced by a new policy called the "dual credit policy". This scheme compels manufacturers of passenger automobiles to produce NEVs and improve the fuel efficiency of the ICE vehicles.

Each NEV produced is awarded NEV credits according to a complex formula which takes into account factors like type of vehicle, maximum speed, energy consumption, weight, and range. These credits are used to offset against a target based on total production of passenger cars. Those manufacturers that do not earn enough credits must purchase them from manufacturers that have surplus credits or face financial penalties.



China subsidies have been slashed for electric vehicles



Source: International Council on Clean Transportation

This year the target number of NEV credits is equal to 10% of total production. The 15 million passenger cars sold in the first nine months of this year must therefore earn 1.5 NEV million credits. Over the same period 800,000 NEVs have been produced suggesting that each car will need to earn on average 1.9 NEV credits.

This year the target should be relatively easy for the industry to meet. But it will rise by 2% in subsequent years so that by 2023 car makers will need to earn NEV credits to meet 18% of their output. The ratcheting up every year of the target means that manufacturers will need to produce more efficient cars with a higher range as well as increase the number of NEVs they produce in order to gain the required number of credits.

The government's hope is that the stick of sanctions if car makers do not meet their NEV credit targets will be more effective than the carrot of subsidies in meeting government ambitions to make China a global leader in NEV production and battery technology.

In this new Darwinian landscape, car makers will have to bring down costs to make NEV competitive with ICE vehicles. This will require using the latest battery technologies. Without government subsidies, only the strongest domestic auto companies are likely to survive.

They will be encountering stiff competition. The dual credit policy means foreign carmakers that hitherto had little interest in making NEVs have little choice other than to commit to investing in NEV production. VW and its local partners aim to be able to produce

1.5 million EVs by 2025. That's nearly 50% more than total EV sales in China last year. And others want a slice of the action too. In October Tesla gained approval to start producing cars at its factory in Shanghai; then in November, Mercedes launched its first China-made electric SUV.

It's likely that in the short term the removal of buyer subsidies will see NEV sales continue to contract. But with the dual credit policy forcing so much investment into NEVs, it's unlikely we will have to wait long before advanced battery technologies coupled with economies of scale mean the price of NEVs will fall to be competitive with ICE vehicles without subsidy.

Far from running out of juice, it looks like China's EVs sector has just paused for a quick recharge before getting back on the electric highway. ■

