

Argus White Paper: The rise and rise of electric vehicles



Global electric vehicle (EV) sales had a record year in 2020, and they look set to hit new highs this year

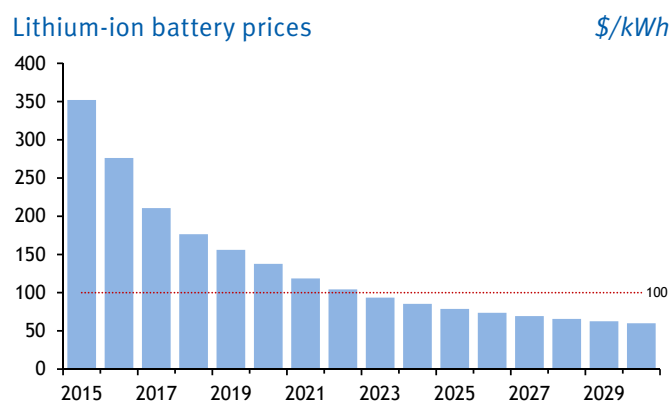
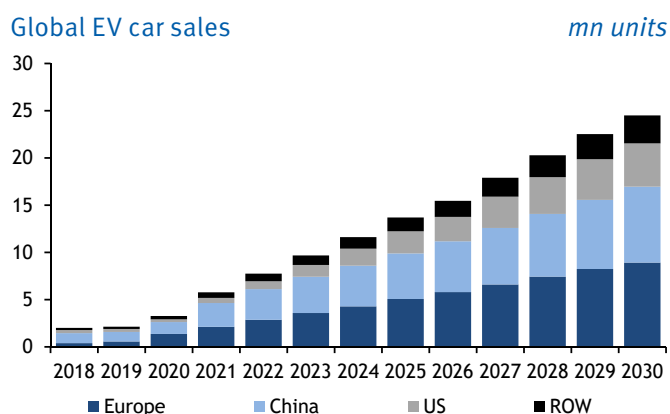
China recorded two of its strongest months for what it calls ‘new energy vehicles’ (NEVs) — battery-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) — in June and July, even after it cut subsidies. And European EV sales in the first six months of 2021 were up by almost 160pc on the same period of what was already a record-breaking 2020. Even the US — the third-largest market after Europe and China, and which has typically lagged behind both in EV sales — achieved notable growth, with its best quarter to date for electric cars and light trucks in April-June.

Historically, much of this growth in sales has been driven by government incentives in the shape of tax exemptions and purchasing grants. But China and some European countries have shown that EV demand is now able to withstand reductions in such incentives, indicating the start of a shift to other market drivers.

One of these new drivers is economic, in the form of falling EV battery prices. These are a key component of EV sticker prices and, along with motors, have made EVs more expen-

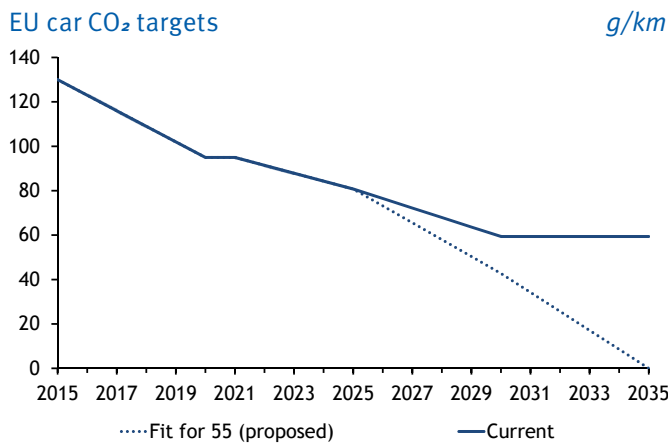
sive than conventional internal combustion engine (ICE) vehicles. Many EVs are in fact already cheaper on a lifetime basis than conventional ICE cars because of the comparatively low cost of electricity, but consumers are more sensitive to sticker prices, and this is one reason why purchase grants have been so effective. Technological advances, changes in the choice of battery chemistry, and economies of scale will all push down EV battery prices, which we see reaching a nominal \$100/kWh — the level conventionally taken to be at parity with ICE — by 2022-23.

Another key factor is legislative in nature — namely mooted and planned bans on ICE vehicles and targets for EV uptake. Several European countries have announced that they plan to introduce bans on conventional ICE vehicles in the 2030s — some of these will include PHEVs, such as Norway’s ban, which takes effect in 2025 — while China will ban ICE vehicles, but not conventional hybrid cars, by 2035. In the US, the Biden administration has announced a target for 50pc of new cars to be EVs by 2030, although this is non-binding and, in our opinion, overly optimistic. The EU meanwhile,



recently released its 'Fit for 55' legislative package. Among other things, this proposes an EU fleet-wide reduction in tailpipe CO₂ emissions by 55pc in 2030 against 2021 levels, and a 100pc reduction by 2035. If the legislation is passed as is, this would mean an effective ICE ban, including PHEVs, by 2035.

The result of all this will be a dramatic increase in EV sales over the next 10 years and beyond. Even without 'Fit for 55', we see Europe overtaking China by 2025 as the largest EV market, with the US staying in third spot throughout our forecast. We do not expect significant uptake in other markets before 2030 — the rest of the world comprises either high EV adopters at small volumes, relative to Europe and China, or large car markets with low EV penetration rates, such as India. By 2030, we expect EVs to comprise over 25pc of new car sales globally, totalling almost 9mn units a year.



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