

Hybrid and EREV market share growth overtaking BEV supports higher-for-longer automotive PGM demand

PGM sentiment has been affected by the drivetrain transition where rising battery electric vehicle (BEV) market share weighs on PGM expectations. However, WPIC forecasts only a muted tapering of PGM automotive demand over the next five years at 1.1% CAGR, suggesting demand erosion projections are overdone. Explosive BEV growth has slowed and is being comfortably outpaced by PGM-containing hybrids and extended range electric vehicles (EREVs) that supports a 'higher-for-longer' automotive PGM demand outlook.

China, Europe, and the US account for around 90% of global BEV demand. Collectively, these markets have seen BEV sales growth rates slow from 20% YoY in Q1 2023 to 7% YoY in Q1 2024. Comparatively, hybrid demand growth accelerated to 38% YoY in Q1 2024 compared to 32% growth in the comparable period last year (Fig. 3). Diverging growth trends have led to hybrid market share increasing ahead of BEVs in Q1 2024 (Fig. 4). Growing hybrid demand highlights a consumer willingness to pay a premium to decarbonise, but that willingness only extends so far as not being encumbered by BEV's range and charging drawbacks. This willingness to pay for an uncompromised "electric" experience is prominently bearing out in China with the emergence of EREVs. An EREV is a plug-in electric vehicle with an onboard combustion engine that is used as a generator to recharge the batteries (unlike a PHEV where the engine drives the vehicle if the batteries are flat). EREVs are China's fastest growing new energy vehicle category (Fig. 1) and are on-track to exceed a million-unit sales in 2024 since they address BEV range and charging concerns (electric only range of ~300 km increases to ~1,000 km with the engine recharging).

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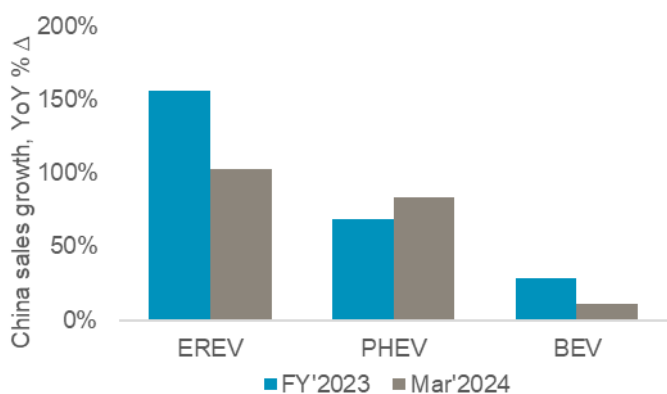
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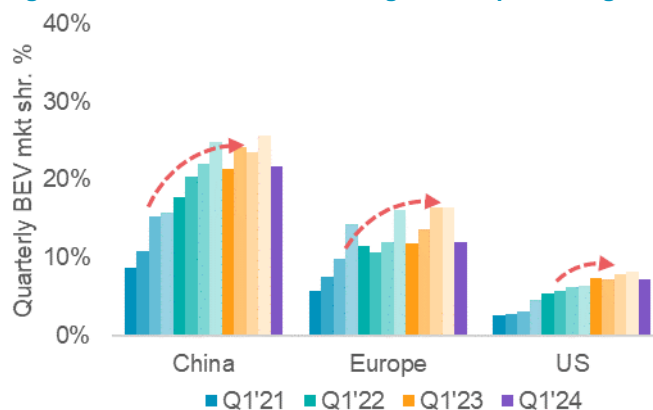
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Figure 1: PGM-containing EREVs are growing fast



Source: China Economic Observer, WPIC Research

Figure 2: Pure BEV market share gains are plateauing



Source: CAAM, ACEA, Bloomberg, WPIC research

We do not explicitly model EREV demand, but the technology may gain share from both prospective BEV consumers (wanting additional range) and ICE consumers (wanting to decarbonise with less compromise). EREVs may appeal in the US where decarbonisation mandates are technology agnostic (EREVs reduce life-cycle emissions by a third compared to ICE) and the BEV penetration rate of ~7% lags other geographies (Fig. 2). Notably, Stellantis has released an EREV model in the form of the 2025 Ram pickup truck, a core part of the US auto market.

Our drivetrain outlook projects BEV market share of 31% by 2030 with the residual ICE vehicles being increasingly hybridised. Slowing BEV market penetration (fig. 7) and higher ICE (incl. hybrid and EREV), support our higher-for-longer automotive demand for PGMs thesis, but contrast with higher BEV penetration rates projected by other market commentators. Each 1% delta in LV BEV/ICE market share equates to 25 koz of platinum and 100 koz of palladium demand annually. This underpins our forecasts for platinum market deficits of ~430 koz from 2025 through 2028.

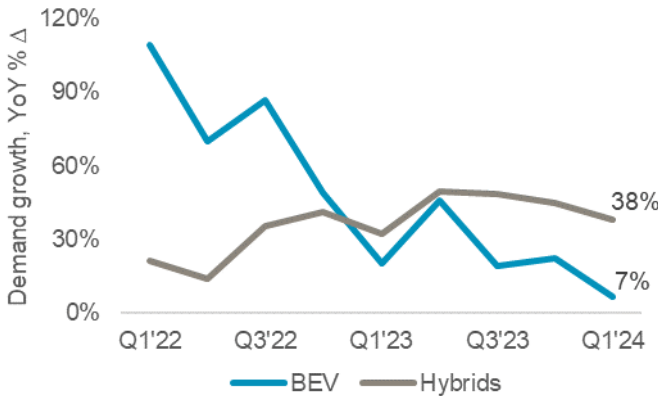
BEV demand growth slowed to 7% in Q1 2024 from 20% Q1 2023, significantly lower than hybrid growth of 38% YoY.

Automotive PGM demand erosion has been greatly exaggerated and is forecast to decline by only 1.1% CAGR between 2023 to 2028.

Platinum's attraction as an investment asset arises from:

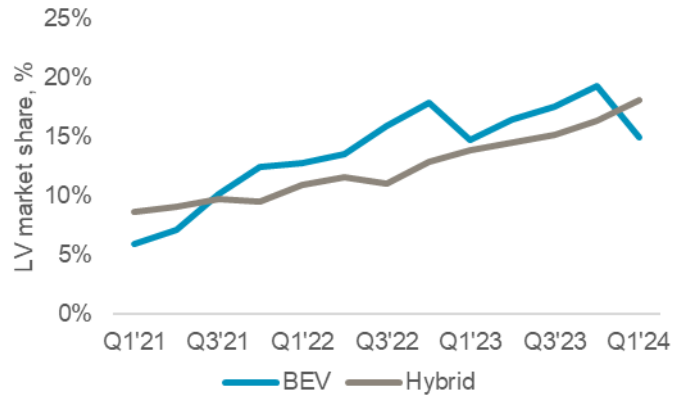
- WPIC research indicates the platinum market entering a period of consecutive deficits from 2023.
- Platinum supply remains challenged, hampered by production challenges in South Africa and with recycling supplies.
- Automotive platinum demand growth should continue due principally to substitution in gasoline vehicles.
- Growing off a small base, hydrogen will be a major source of platinum demand in the future.
- The platinum price remains historically undervalued and significantly below both gold and palladium.

Figure 3: BEV demand growth has systematically slowed, highlighting unwinding subsidies and challenges in converting the next cohort of buyers from ICE to BEV



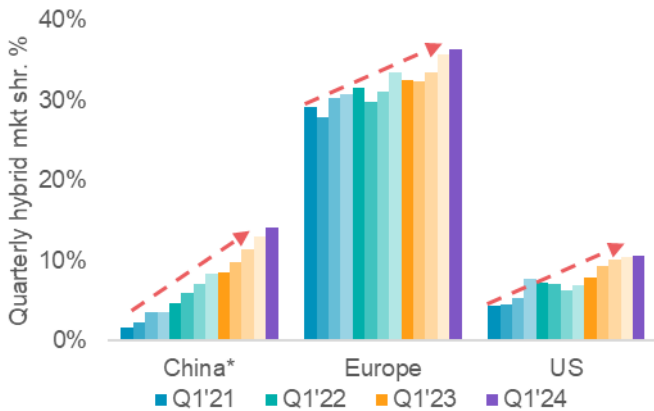
Source: Bloomberg, WPIC Research, Cumulative China, Europe, and US markets

Figure 4: More consistent demand growth has supported hybrids regaining a market share lead over BEV in Q1 2024



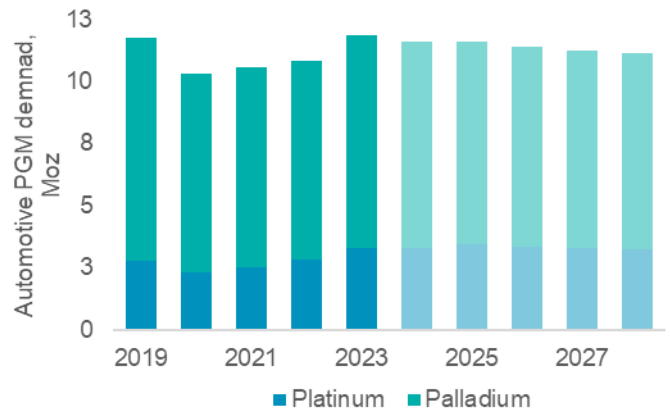
Source: Bloomberg, WPIC Research, Cumulative China, Europe, and US markets

Figure 5: The rate of light-duty hybrid market share gains is stable suggesting PGM automotive demand will have a long-tail into the 2030's



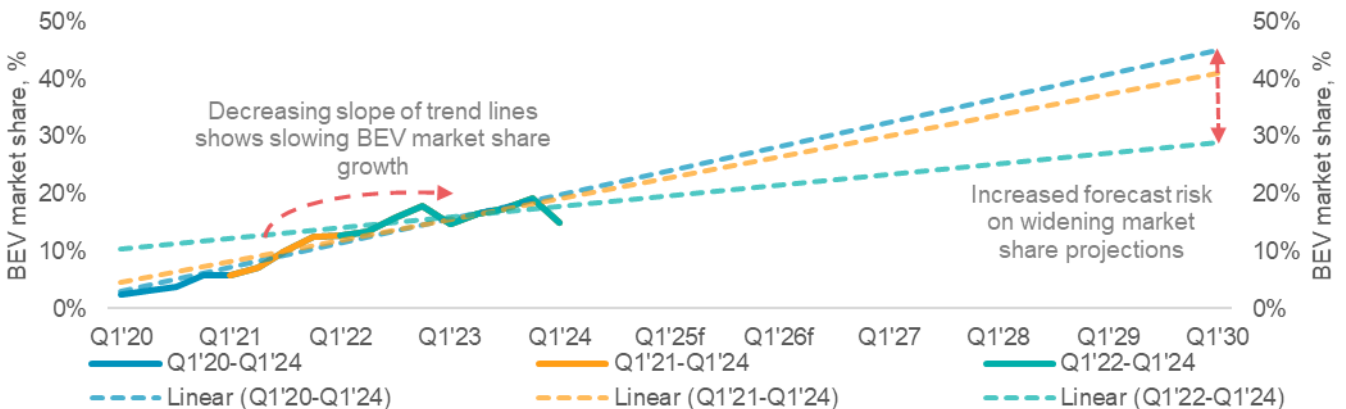
Source: CAAM, ACEA, Bloomberg, WPIC research, *China data is PHEV only

Figure 6: Hybridisation of the drivetrain will support automotive higher-for-longer PGM demand despite rising BEV market share



Source: Metals Focus (Pt: 2019 to 2024f; Pd: 2019 to 2022), WPIC research

Figure 7: Slowing BEV growth has altered the linear progression of expected BEV market shares gains thereby increasing future uncertainty relative to linear progressions from 2020 and 2021. Note that at the current rate of BEV growth in market share, it would come in at around 30% in 2030, versus up to 45% at the 2021 growth rate.



Source: CAAM, ACEA, Bloomberg, WPIC research, Cumulative China, Europe, and US markets

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