

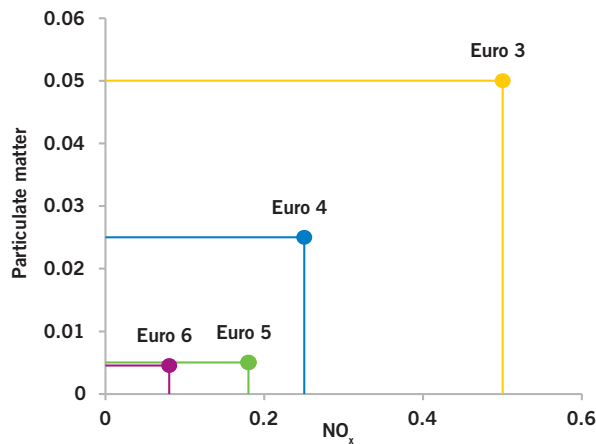


MARKET SPOTLIGHT

Will Euro 7 be a lifeline or loss for diesel and Pt demand?

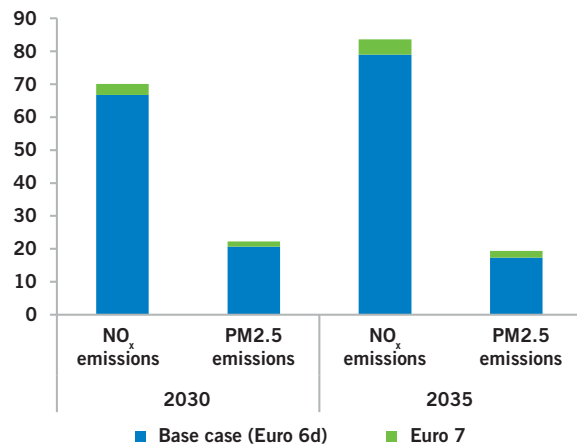
Western Europe remains the largest diesel light vehicle market in the world, despite diesel's declining market share over the past few years, accounting for 30% of global autocatalyst demand for platinum (~780 koz). Increasingly stringent vehicle emissions legislation for both diesel and gasoline engines has led to higher PGM autocatalyst loadings in recent years as catalyst manufacturers work with automakers to ensure vehicle emissions are compliant. Euro 6/VI is the current emissions standard in place across Europe and applied to all new cars from September 2015.

Diesel emissions standards: Europe
g/km



Source: SFA (Oxford)

Emissions reduction Euro 6d vs. Euro 7
% reduction from 2020



Source: SFA (Oxford), AERIS

The European Commission will be presenting a new legislative proposal for more stringent emissions standards, known as Euro 7/VI, later this year. The new legislation, which industry groups initially warned may threaten the future of new vehicles with internal combustion engines, could be implemented as soon as 2025. It is expected that Euro 7 will be the final emissions standard prior to all cars becoming zero-emission.

However, the additional benefit to air quality that Euro 7 could achieve beyond Euro 6d is limited. ACEA, with consultants AERIS, has analysed the impact of the roll-out of Euro 6 vehicles on air quality compared to the impact that a range of Euro 7 standards might have in future. For NO_x, Euro 7 is estimated to deliver an additional reduction of only 3.4% by 2030. In contrast, the study showed that accelerated replacement of older vehicles with the latest Euro 6 vehicles, such as via an incentivised scrappage scheme, would deliver 6-25 times the NO_x emission reduction benefits.

Diesel cars that meet current Euro 6 standards will continue to be an important choice for consumers, and PGM use in autocatalysts will be supported as Real Driving Emissions (RDE) testing works to ensure on-road compliance with Euro 6. Average NO_x emissions from diesel vehicles are 45 mg/km and falling, and well below the 80 mg/km limit. The industry is likely to be wary of sinking costs into Euro 7, impacting the purchase price and total costs of ownership for operators and customers, when Euro 6 and RDE testing may, as studies have shown, to be sufficient. BEV infiltration is already contributing to demand destruction for diesel in Europe, and a further tightening of emissions legislation could accelerate this further. For heavy-duty vehicles, however, diesel is expected to remain the dominant powertrain, supporting platinum demand over the long-term.



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,808	1.41%	1,818	08/07/2021	1,789	05/07/2021
€/oz	1,524	1.29%	1,536	08/07/2021	1,507	05/07/2021

Federal Reserve edges closer to taper. Minutes from the June meeting of the Federal Open Market Committee released last week confirmed the sentiment from various officials that tapering of the Fed's \$120 bn asset purchase programme may start earlier than they had anticipated at earlier meetings. While not imminent, the likelihood is growing, which would be headwind for gold. Most officials also expect higher interest rates in 2023, a year earlier

than previous projections. There was acknowledgement of rising inflation, but the Fed still seems satisfied that this is largely transitory, so gold is forecast to continue to benefit until the Fed acts. In Europe, the ECB has updated its inflation target to 2%, from the current target of just below 2%, and is allowing it to be exceeded when needed if inflation remains high and central banks don't act then the gold price should ultimately rise.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	26.12	-1.07%	26.77	06/07/2021	25.76	09/07/2021
€/oz	22.02	-1.19%	22.61	06/07/2021	21.77	08/07/2021

China's solar PV installations could comfortably exceed 100 GW next year, according to Asia Europe Clean Energy (Solar) Advisory, following a potentially a weaker than anticipated 2021. As noted in an earlier HPM Spotlight, the high price of certain raw materials used in solar panels has seen some marginal PV projects delayed until 2022 or cancelled entirely. The high prices of polysilicon and solar glass are forecast to prevail for most of this year. The country's NEA has also recently announced that solar projects approved in 2019/20, but which are not connected by the end of 2021, will be included in next

year's quota rather than being revoked. The combination of delayed projects and automatic carry-over of approval could see a surge in installations in 2022. While a weaker 2021 could weigh on silver demand from the photovoltaics (PV) market, this is expected to be countered by a strong recovery in 2022. Silver consumption in PV accounted for 101 moz last year (source: The Silver Institute). The silver price underperformed gold once again last week. The Fed is sounding slightly more hawkish but monetary policy is not changing while inflation is already high, so eventually the price is expected to move higher.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,099	0.98%	1,121	06/07/2021	1,069	08/07/2021
€/oz	927	0.90%	946	06/07/2021	901	08/07/2021

Piece-based pricing and branded collections could help lift platinum jewellery demand, according to the latest Insight report from Platinum Guild International (PGI). Historically, retailers in China have sold jewellery based on weight and the spot market price at the time. Branded products are sold on piece-based pricing and this is helping to drive up revenue and create perceived value for consumers, which lifts sales. PGI notes that the higher margin opportunity associated with branded collections has been fundamental to the adoption of platinum in India, a mature gold market, where platinum is now competitive. The platinum jewellery market had a slow start to the year, as Covid-related restrictions continued to weigh on key markets. Consumer sentiment is expected to improve moving into the second half of the year with

growing optimism around vaccines and an economic recovery. Platinum demand associated with jewellery fabrication is forecast to reach around 1.7 moz this year, an 11% year-on-year recovery but below pre-pandemic levels.

Platinum lease rates have been rising in July, signalling a temporary squeeze on liquidity. One-month and three-month lease rates have moved up a few percentage points. The platinum market remains well-supplied and a surplus of close to 1 moz is forecast for the full year (excluding investment), so the rise is likely to be short-lived. The platinum price is now close to flat for the year and, with a large surplus (ex. investment), it may not return to the highs seen earlier in the year.



PRECIOUS METALS REVIEW

⁴⁶ Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	2,816	1.22%	2,883	06/07/2021	2,769	06/07/2021
€/oz	2,374	1.10%	2,433	06/07/2021	2,344	07/07/2021

Low new-vehicle inventory will impact the US car market in Q3, with the next three months predicted to record the weakest sales in 2021 (source: Cox Automotive). Despite the impact of the semiconductor chip shortage on vehicle production and inventory, new car sales in the US have defied expectations so far this year. However, momentum appears to be slowing. Vehicle sales in June are estimated to have fallen to a seasonally adjusted annual rate of 16.4 million, down from the 17.0 million recorded in May. June is expected to mark the second consecutive month of slowing sales after the peak of 18.8 million in April, one of the strongest months in history (source:

Cox Automotive). At the start of last month, new-vehicle inventory was running 43% behind levels for the same period last year and 54% that of 2019. Automakers have benefitted from consumers' pent-up demand so far this year but limited light-vehicle supply could see sales in the second half of the year fall below those in H1'21. Palladium consumption attributed to autocatalyst demand in North America is forecast to be ~1.7 moz this year, as the strong first-half recovery in sales lifts PGM requirements. Palladium's rally has slowed as it reached the \$2,800/oz area, but the price is likely to stay elevated until Russian refined output recovers.

⁴⁵ Rh ⁴⁴ Ru ⁷⁷ Ir **Rhodium, Ruthenium, Iridium**

	Rhodium	Ruthenium	Iridium
Reporting week	\$18,450/oz	\$795/oz	\$6,150/oz
Previous week	\$19,950/oz	\$795/oz	\$6,150/oz

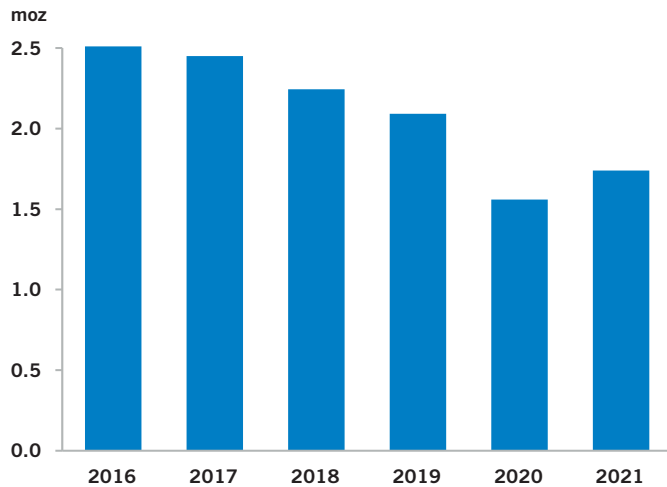
The rhodium price has dropped back to levels last seen in early January, bringing its year-to-date price performance to a modest 4.4%. Nonetheless, it remains at extremely high levels by historical standards, when compared to the average prices from 2019 and 2020 (\$3,923/oz and \$11,620/oz respectively). At today's prices, rhodium is still a considerable incentive for supply investment, particularly in rhodium-rich UG2 regions of South Africa. However, producers are right to exercise caution as rhodium has a history of volatile price action. Fortunately,

future demand for iridium and ruthenium from the hydrogen economy strengthens the long-term investment case for mining the UG2 Reef which contains the highest proportion of these small PGMs. There is significant Rh-Ir-Ru-rich production capacity that can be brought online with relatively low capital requirements and short lead times (1-2 years) should the price environment remain favourable. Meanwhile, iridium and ruthenium prices held steady.



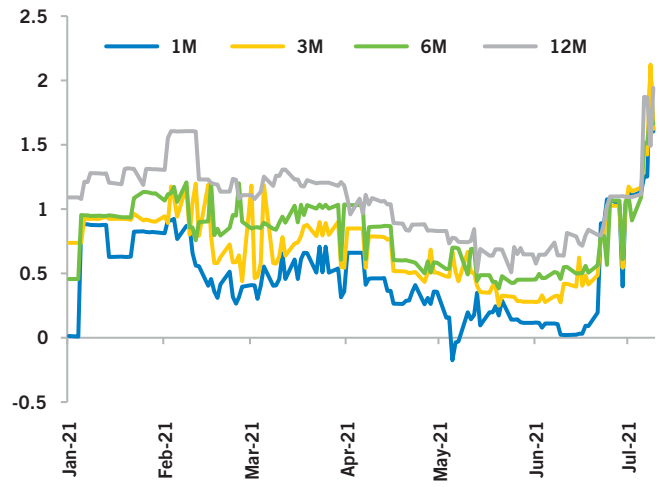
TRENDS AND INVESTMENTS

Platinum jewellery demand



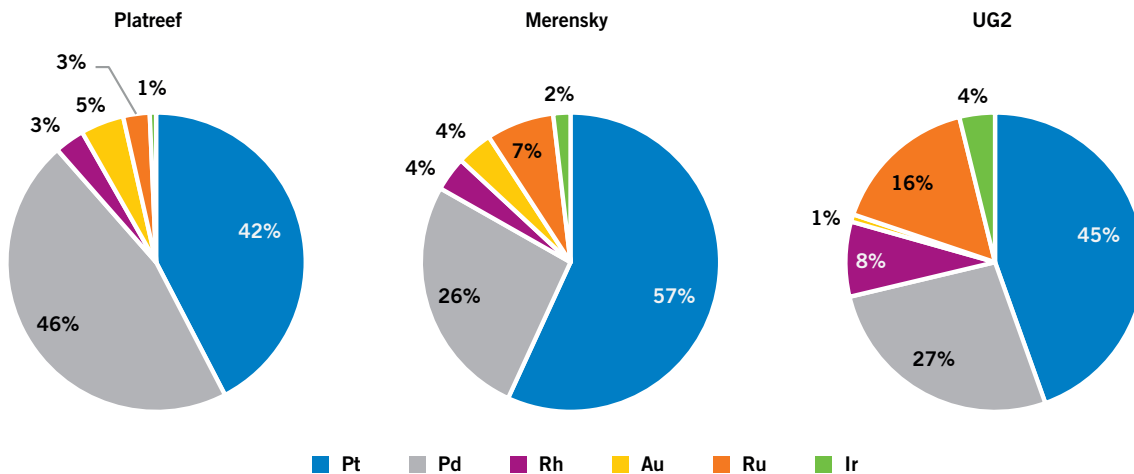
Source: SFA (Oxford)

Platinum lease rate indicators



Source: SFA (Oxford), Bloomberg

South Africa prill split by orebody



Source: SFA (Oxford)

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