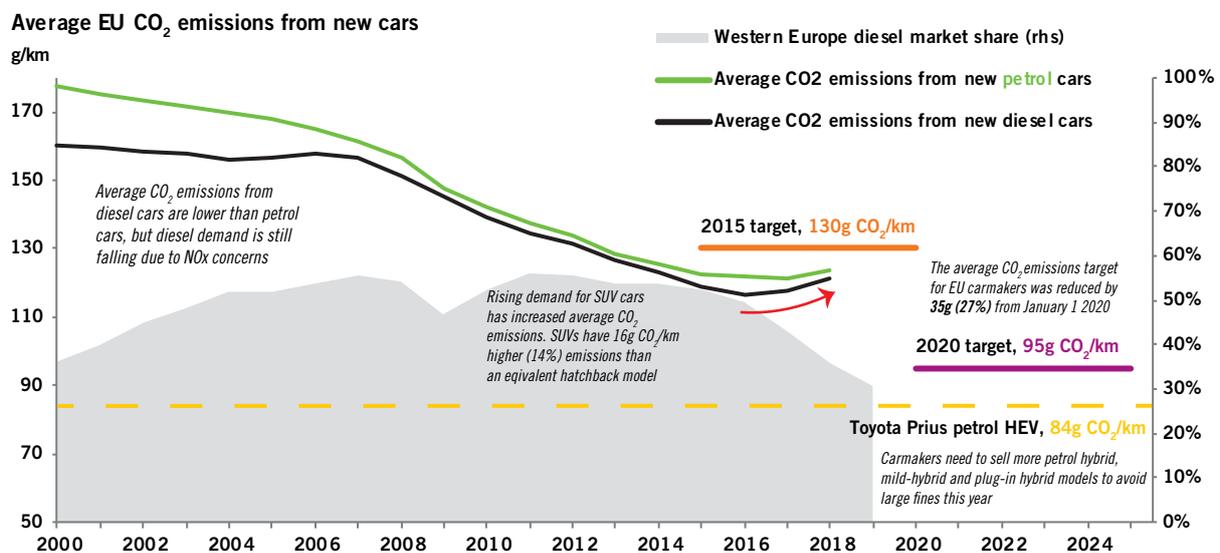




MARKET SPOTLIGHT

Petrol hybrids to win near-term emissions race, supporting Pd & Rh

New CO₂ emissions targets for new cars and light commercial vehicles came into force on 1 January 2020. The fleet-wide average emission target is now 95g CO₂/km. For each g CO₂/km of target exceedance for each car registered by the end of the year, manufacturers will be fined €95. Slow uptake of low-emission vehicles, strong demand for SUVs coupled with an increase in engine size and weight, and a shrinking diesel market have meant the reduction of CO₂ emissions has been slower than anticipated; **most automakers now have significant ground to make up in order to avoid penalties this year.**



Source: SFA (Oxford), European Environment Agency, Transport and Environment, ACEA

Automakers are betting on hybrids and BEVs to reduce CO₂ emissions, not diesel vehicles. Diesel cars have previously been a reliable tool for reducing CO₂ levels as they emit roughly a fifth less CO₂ than petrol, but their European market share has declined by 20% since 2015 to 30.5% over concerns about NOx emissions (source: ACEA). Western Europe's automotive industry is the largest market for platinum, but demand has declined by nearly 500 koz since 2015 (-27%).

European automakers' portfolios are expected to change this year, removing higher polluting models in favour of more petrol hybrid, plug-in hybrid and mild-hybrid options in order to reach the new CO₂ emissions target. The Toyota Prius, a popular hybrid electric vehicle (HEV) model in Europe, claims a CO₂ output of 84g/km, compared to around 120g/km for a conventional petrol car.

Palladium and rhodium will continue to benefit from growth in petrol hybrid demand. Most alternatively powered vehicles in the EU are HEVs, accounting for 5.9% of all sales in 2019, up from a 4% market share in 2018 (source: ACEA). This supports palladium and rhodium demand as the majority of HEVs have petrol engines. Global autocatalyst demand for both palladium and rhodium is expected to increase by 6-7% this year, owing to stricter emissions standards in many of the world's largest markets.



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,568	-0.95%	1,581	03/02/2020	1,548	05/02/2020
€/oz	1,432	0.25%	1,435	07/02/2020	1,403	04/02/2020

Risk-on/risk-off trading pushed the gold price around again last week. Equity markets selling-off sharply had prompted some safe-haven gold buying, but the 'buy the dip' reaction kicked in last week and stocks rallied to new highs in the US. This saw gold drop back. Gold's correction could continue in the short term, but higher prices are expected in due course.

Gold mine supply declined last year. Mine production fell by 1% in 2019 to 3,463.7t, the lowest level since 2008 (source: World Gold Council). Declining supply from some of the top gold-producing nations was attributable to mine depletion and declining ore grades. Some South African and South American operations were heavily impacted by industrial action. The high gold price is likely to encourage miners to increase their efforts to produce more of the metal this year.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	17.69	-1.81%	17.89	06/02/2020	17.49	05/02/2020
€/oz	16.15	-0.63%	16.27	07/02/2020	15.86	05/02/2020

US photovoltaic silver forecast: 18.5 moz with a chance of thifting. The Energy Information Administration agency of the US Department of Energy predicts 24GW of solar installations in the US in 2020. This would equate to around 18.5 moz of silver based on current loadings, but photovoltaic demand continues to face ongoing thifting (using less silver per unit). Photovoltaic applications accounted for 80.5 moz of silver in 2018 (~8% global demand). An additional 24GW would be almost double the estimated capacity installed in 2019

(12.5GW). The US solar market is expected to experience strong growth up until 2021, when the solar investment tax credit (ITC) will expire for residential projects. The solar ITC will continue for another year at a reduced rate of 10% for commercial installations, after which overall growth is expected to slow. The value of the solar ITC has already been reduced from 30% to 26% this year. The silver price kept pace with gold this week but, as safe-haven demand favours gold, that may be the best silver can manage.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	964	0.47%	989	06/02/2020	952	03/02/2020
€/oz	881	1.71%	899	06/02/2020	860	03/02/2020

China's lockdown will dampen jewellery sales. Although Q1 has been a strong period for Chinese platinum jewellery demand in the past, reduced footfall and store closures due to government-enforced travel restrictions mean the first quarter this year is likely to be significantly weaker. China is the largest platinum jewellery market, accounting for almost 50% of global platinum jewellery demand in 2019 (1.0 moz), and it was already expected to decline further in 2020. The novel coronavirus appears to be another set-back for an already shrinking market

since missed discretionary jewellery sales are less likely to be made up later in the year than delayed car purchases.

Speculators may be long and wrong on platinum. Speculative futures positions hit another record of 3.5 moz on January 28. However, the platinum price has not managed to make new highs for the year since 16 January and, with the fundamental picture looking weak, the price is expected to continue to slide lower.



PRECIOUS METALS REVIEW

⁴⁶ Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	2,308	0.39%	2,501	05/02/2020	2,270	03/02/2020
€/oz	2,107	1.53%	2,267	05/02/2020	2,054	03/02/2020

Novel coronavirus could cause automotive supply-chain bottlenecks. Chinese car production is likely to drop significantly in Q1 because the holiday season has been extended in most regions to contain the coronavirus outbreak. The effects on the wider, global supply-chain are also starting to show. Most manufacturers with operations in China have already closed factories, but plants across Europe and the wider Asia region are also at risk now because of problems sourcing Chinese-made parts. However, while the outbreak may temporarily reduce demand for palladium (China's automotive industry accounts for 20% of Pd demand), once car

production resumes there is likely to be a rebound as plants try to make up for lost time, and consumers make car purchases that they were forced to delay.

The palladium market is expected to have a significant deficit in 2020. Currently, the negative effects of the coronavirus seem unlikely to reduce automotive demand over the year as a whole. Lease rates have dropped back into the low double digits and the palladium price could correct further in the short term, but the price is expected to remain at a high level this year.

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

	Rhodium	Ruthenium	Iridium
Reporting week	\$10,850/oz	\$260/oz	\$1,520/oz
Previous week	\$10,750/oz	\$260/oz	\$1,510/oz

High demand and an even higher price should incentivise UG2 output. The rhodium price reached \$10,950/oz last week, before easing back to \$10,850/oz. The market is stuck with rising demand and flat supply. Automakers will be less able to resort to substitution than they were in 2008, as they have more stringent emissions standards to meet, which require higher loadings of rhodium to deal with NOx. Global rhodium supply is expected to increase marginally in 2020 to around 780 koz, owing to increased output from some South African producers, so the market deficit is estimated to widen this year.

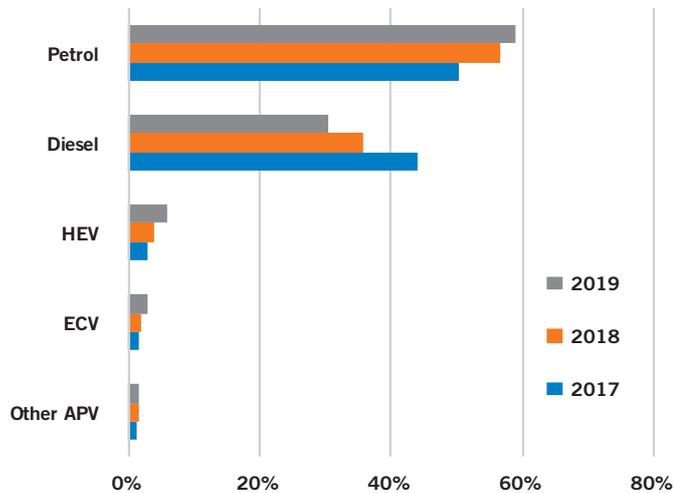
The high price is an incentive for South African PGM producers to increase their output from the UG2 reef, the richest rhodium orebody. However, supply responses take time, and the rhodium price is expected to remain high in the near-term as the market is in deficit. Obviously, should the situation in China hit rhodium demand then the price could fall back for a while.

The iridium price moved up another \$10/oz to \$1,520/oz last week, while ruthenium was unchanged.



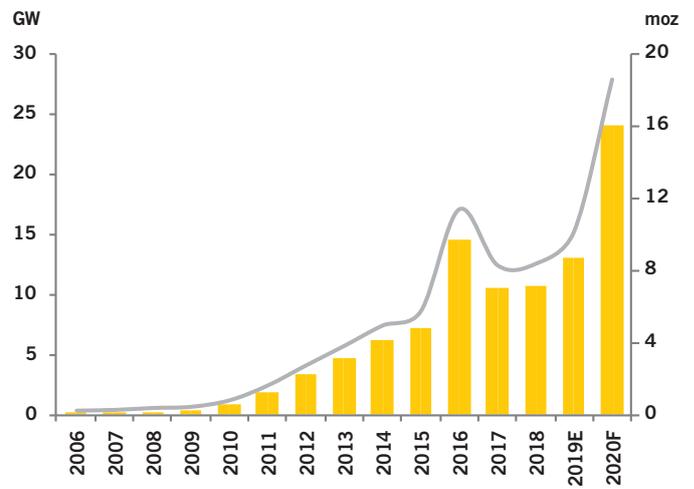
TRENDS AND INVESTMENTS

EU passenger car market by fuel type



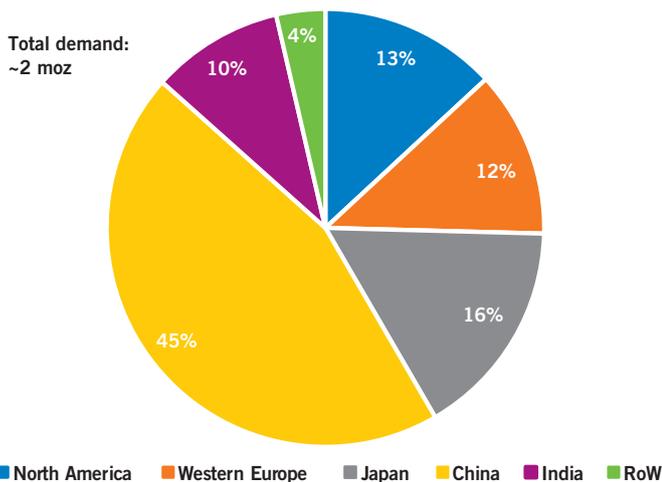
Source: SFA (Oxford), ACEA

US PV installations and silver demand



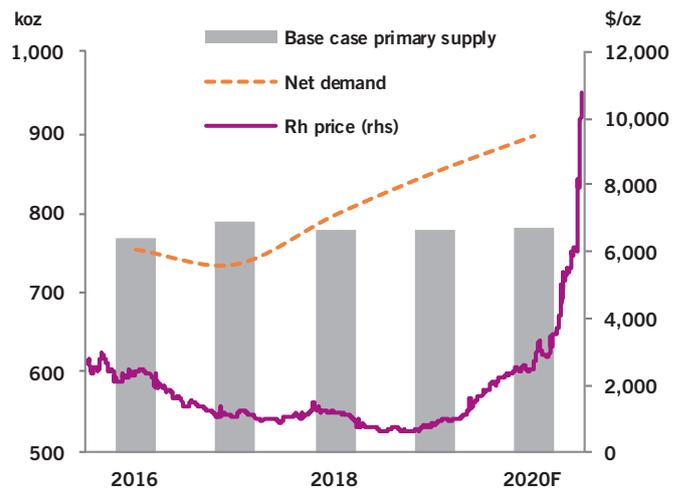
Source: SFA (Oxford), SEIA, US DoE

Platinum jewellery demand, 2019E



Source: SFA (Oxford)

Rhodium market balance



Source: SFA (Oxford), Heraeus

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