

PRECIOUS APPRAISAL

No. 5

5th February 2024

- 01 MARKET SPOTLIGHT
- 02 GOLD
- 03 SILVER
- 04 PLATINUM
- 05 PALLADIUM
- 06 RHODIUM, RUTHENIUM, IRIIDIUM
- 07 TRENDS AND INVESTMENTS
- 08 ABOUT HERAEUS

MARKET SPOTLIGHT

Vehicle electrification is not necessarily one-way traffic for PGMs

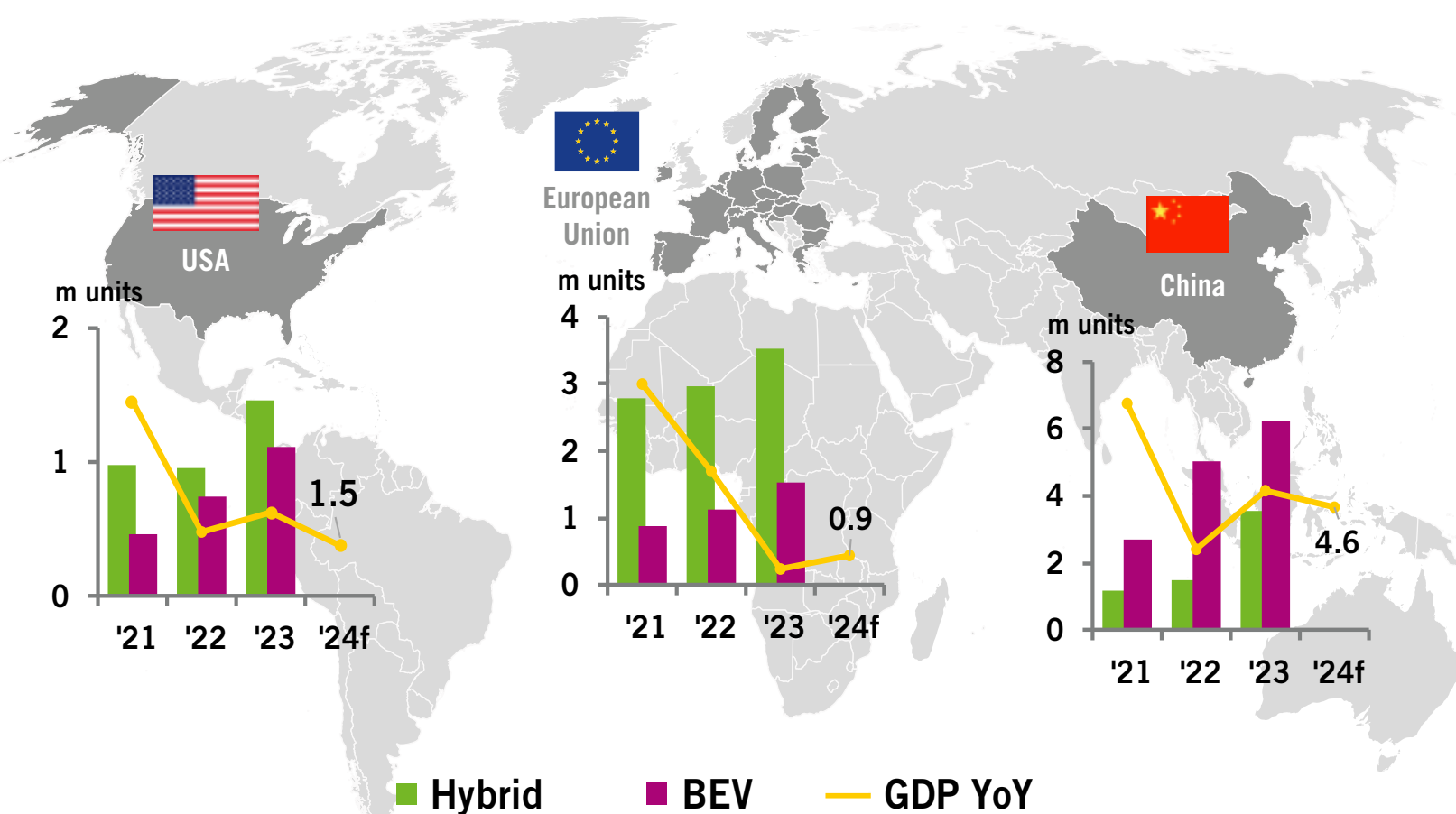
Slower BEV sales growth incentivises hybrids to pick up the slack. The Tesla Model Y was 2023’s best-selling passenger vehicle with 1.24 million units sold. BEV sales are forecast to grow faster than the growth in the total light-vehicle market this year, and this is expected to cut global palladium autocatalyst demand by 5% to 7.4 moz, potentially weakening prices further. There are a number of risks to this growth in BEVs, however, that could lessen palladium’s downside if consumers move in greater numbers to catalyst-containing hybrids (mild, full & plug-in).

Policy changes could check BEV’s accelerated growth. In Europe, Germany has cut subsidies for business and personal BEV purchases, and France’s revamped government schemes exclude most cheap Chinese models. BEV sales in Europe grew by 37% year-on-year last year, while hybrids (HEVs + PHEVs) saw more moderate growth of 19% year-on-year, albeit with more than twice the sales volumes of 3.53 million units vs. 1.54 million for non-catalysed cars (source: ACEA). With reduced financial support in major markets this year, the growth rate of EV sales could slow, though it is likely to remain robust.

US automakers are tempering BEV production plans. Ford has halved its F-150 Lightning production plans, and GM has delayed production ramp-up for at least three BEV models and lowered its cumulative BEV production goal of 400,000 units by the end of this year. The US market is experiencing more obstacles to adoption than other major auto markets, many of which PGM-loaded hybrids can overcome, e.g. range and cost. PHEVs can easily deliver more than 500 miles of range while BEVs generally fall short of this, and do not meet consumer expectations. While IRA credits can apply to both BEVs and PHEVs, hybrids have consistently lower upfront costs. These factors contributed to sales growth and volumes of hybrids outperforming BEVs in the US market in 2023.

Alternatively, recessions mean lower total car sales but BEVs could be less impacted. The data suggests premium light-vehicles’ sales tend to hold up better in recessions than non-premium vehicles. If the US and Europe were to slip into a recession this year, counterintuitively this could favour BEVs over ICE vehicles, as BEVs tend to occupy a higher price bracket. A recession would likely have a net negative impact on autocatalyst PGM demand, as total vehicle production numbers would fall, and this could be compounded by increasing non-catalysed vehicle market shares.

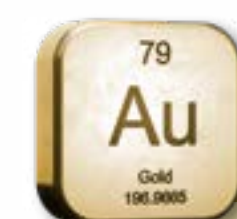
Regional electrified passenger car sales



Source: SFA (Oxford), Bloomberg, Argonne Laboratory, ACEA, Eurostat, BEA. Note: China and EU data records passenger car sales. US data counts light vehicles. Bloomberg consensus GDP forecast for 2024.

PRECIOUS METALS REVIEW

Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	2,036	0.90%	2,065	01/02/2024	2,021	29/01/2024
€/oz	1,888	1.64%	1,902	01/02/2024	1,871	29/01/2024

Central banks were significant gold buyers again in 2023. Net demand from central banking institutions was just 4% lower last year than the record set in 2022 (source: World Gold Council). Of the 1,037 tonnes added to national reserves in 2023, 225 tonnes went to China. The second-largest contributor was Poland, which added 130 tonnes in the last year. It is likely that Poland will continue to add to its gold reserves as it aims to have 20% of its international reserves as gold. By the end of the year, gold made up 12%. Central bank gold-buying activity is still expected to be in excess of long-term averages, but it is possible buying may be slightly lower again. Elevated geopolitical risks and de-dollarisation schemes should help to maintain momentum among emerging market banks and the People’s Bank of China, which was the largest gold buyer last year.

The Fed’s rate hold is an apparently bearish one for gold. As expected, the Federal Reserve held its interest rate steady in last week’s decision. The surprise was Jerome Powell’s comments that seemed to rule out a cut to rates in March, contrary to market expectations. The official statement said it would not be appropriate to cut rates until the committee had “gained greater confidence that inflation is moving sustainably towards 2%”. The stance is unlikely to change unless there is a deterioration in economic data between now and March. If CPI readings do come in cooler in the next two months, gold could begin to trend higher before a larger move in the event of a cut, as it would weaken the US dollar.

The gold price showed surprising strength in the face of the Fed’s decision mid-week; perhaps a sign that traders are not buying what the Fed is selling. On Friday however, gold was beaten lower by a surge in the US dollar following a remarkably strong payroll reading from the US. By close of the markets on Friday, gold finished slightly higher at \$2,036/oz.

PRECIOUS APPRAISAL

5th February 2024

- 01 MARKET SPOTLIGHT
- 02 GOLD
- 03 SILVER
- 04 PLATINUM
- 05 PALLADIUM
- 06 RHODIUM, RUTHENIUM, IRIDIUM
- 07 TRENDS AND INVESTMENTS
- 08 ABOUT HERAEUS

PRECIOUS METALS REVIEW

Silver



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	22.66	-0.58%	23.33	31/01/2024	22.40	02/02/2024
€/oz	20.94	-0.16%	21.50	30/01/2024	20.75	02/02/2024

Another year of record solar silver demand is anticipated. Installations of solar panels exceeded expectations in 2023. Initial estimates of 413 GW for global photovoltaic additions have been revised higher to about 443 GW (source: BNEF). China led the way, contributing about half of the total, while installations in the US also had a record year as equipment prices fell and the IRA added new subsidies. The huge rollout of new installations propelled solar silver demand to 190 moz last year (source: The Silver Institute). This year, growth should largely continue, possibly taking solar demand over 200 moz. One risk to growth could be the reinstatement of anti-dumping tariffs for certain Asian solar equipment in the US from April. However, compared with China, fluctuations in demand in other markets may be just a drop in the ocean of solar silver demand. Total industrial silver demand is forecast to reach record levels this year of 690 moz, an increase of 4% year-on-year (source: The Silver Institute).

The silver price was choppy last week, but failed to hold above \$23/oz by the end of Friday's trading thanks to the strengthened US dollar.

PRECIOUS APPRAISAL

5th February 2024

01 MARKET SPOTLIGHT

02 GOLD

03 SILVER

04 PLATINUM

05 PALLADIUM

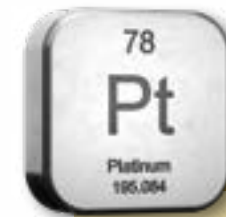
06 RHODIUM, RUTHENIUM, IRIDIUM

07 TRENDS AND INVESTMENTS

08 ABOUT HERAEUS

PRECIOUS METALS REVIEW

Platinum



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	896	-2.41%	937	31/01/2024	894	02/02/2024
€/oz	831	-1.70%	862	31/01/2024	828	02/02/2024

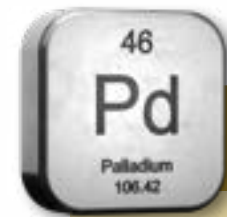
South Africa's platinum production is forecast to fall slightly this year to 3.9 moz as producers battle with higher costs and lower PGM prices. Impala's 11 shaft will soon be back in production. The shaft, which is one of Impala's most productive in the Rustenburg Lease Area, has been closed since the end of November 2023 following a fatal incident. The company estimates that the closure reduced Group output by 30 koz 6E PGMs, and that it will lose another 30 koz in the next six months (total impact of 60 koz 6E PGMs, or ~33 koz of platinum). The shaft has started to ramp up back to 60% production, with full production expected in April. Therefore, in the larger, regional context, the impact of the shaft closure is relatively small.

Similarly, Glencore's Canadian operations reported a 25% decline in platinum output last year, as it fell to 25 koz. Glencore's platinum is produced as a by-product from its nickel mines and represents only around 8% of the 280 koz of platinum that North America is estimated to have produced in 2023. Output from Glencore is forecast to grow this year as its operations recover from industrial action in 2022, though its contribution to regional supply will remain small.

- 01 MARKET SPOTLIGHT
- 02 GOLD
- 03 SILVER
- 04 PLATINUM
- 05 **PALLADIUM**
- 06 RHODIUM, RUTHENIUM, IRIDIUM
- 07 TRENDS AND INVESTMENTS
- 08 ABOUT HERAEUS

PRECIOUS METALS REVIEW

Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	937	-2.35%	997	31/01/2024	931	02/02/2024
€/oz	869	-1.64%	919	30/01/2024	863	02/02/2024

Russian palladium supply is forecast to fall again in 2024. Nornickel’s palladium production declined by 4% to 2.69 moz year-on-year in 2023, and the company expects refined output to fall again this year, into the range of 2,296-2,451 koz. This would be the lowest palladium production volume from Russia in more than 25 years. Nornickel has consistently beaten its announced production forecasts for PGMs in recent years. For 2023, the company’s upper guidance for palladium output was 2.562 koz; thus by year-end it had exceeded this by 5%. However, this could be the year that production does not beat guidance. Major smelter maintenance has been postponed from last year into Q1’24, and sanctions’ impacts on productivity are potentially significant reasons to expect production to be crimped. The palladium market is forecast to be in a smaller deficit this year than in 2023, though the risk to this slightly looser market is an underperformance on the demand side balancing the market, which could push the palladium price lower.

Like platinum, palladium closed the week’s trading lower week-on-week at \$937/oz.

PRECIOUS APPRAISAL

5th February 2024

01 MARKET SPOTLIGHT

02 GOLD

03 SILVER

04 PLATINUM

05 PALLADIUM

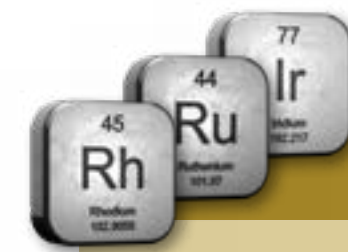
06 **RHODIUM, RUTHENIUM, IRIIDIUM**

07 TRENDS AND INVESTMENTS

08 ABOUT HERAEUS

PRECIOUS METALS REVIEW

Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$5,000/oz	\$455/oz	\$5,500/oz
Previous Edition	\$5,200/oz	\$445/oz	\$5,500/oz

Iridium catalyst-powered electrolyzers seem to be popular in Europe.

Proton exchange membrane (PEM) electrolyzers use iridium and platinum catalysts. Several electrolyser technologies with different capital costs, lifetimes and efficiencies compete in this expanding market. Alkaline (non-PGM) technologies have captured most of the market and make up 90%+ of Chinese green hydrogen production capacity. However, in Europe most new installations and projects are now PEM-powered, which should support iridium demand over the next decade as these projects come online. Germany is a leader in the green hydrogen space. Last month, the German government signed a \$90 million agreement with Australia to develop hydrogen infrastructure and is aiming to massively increase production to meet EU goals by 2035.

Last week the iridium price remained stable, while ruthenium returned to \$455/oz after dipping during January. The rhodium price declined slightly but remains in the trading range established since July 2023.

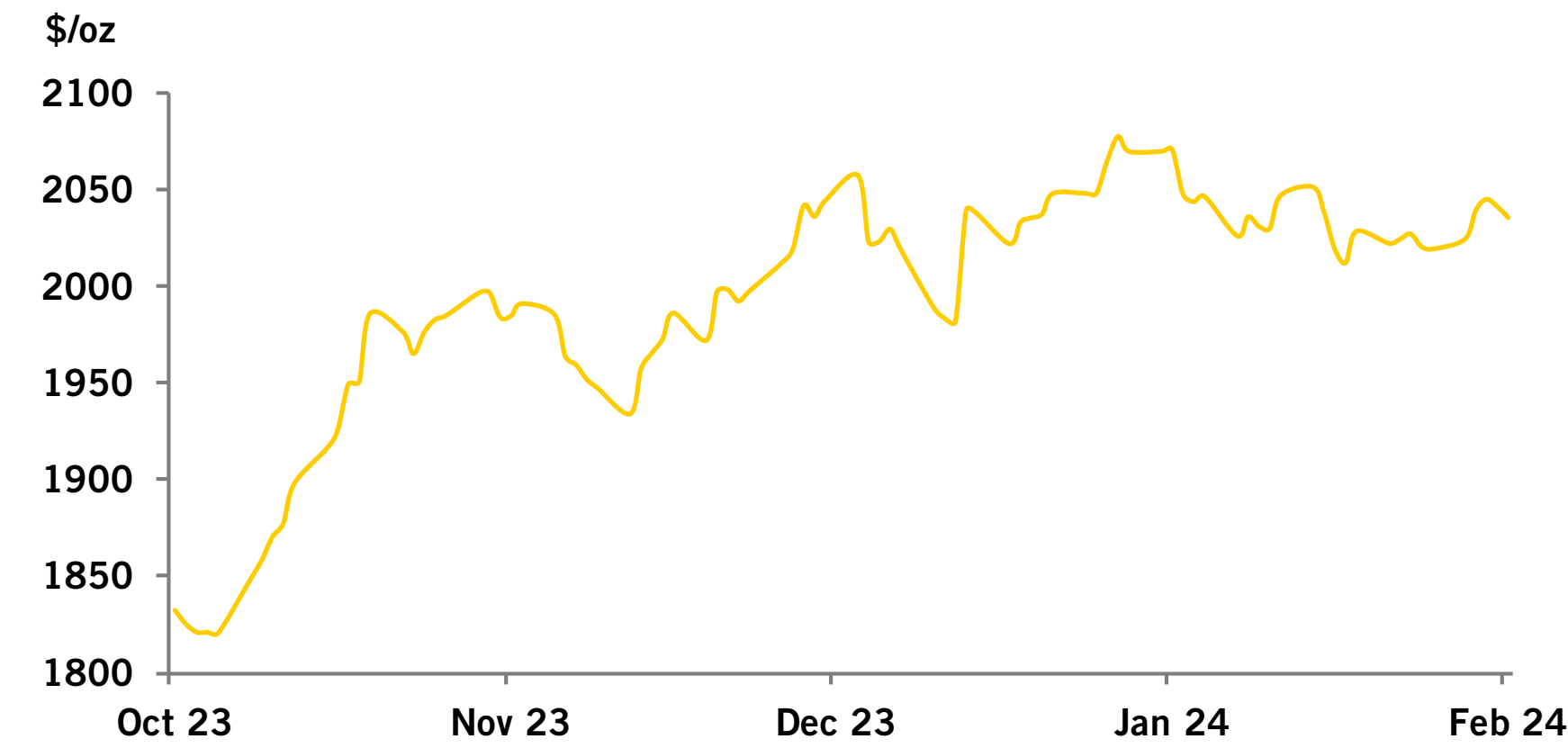
PRECIOUS APPRAISAL

5th February 2024

- 01 MARKET SPOTLIGHT
- 02 GOLD
- 03 SILVER
- 04 PLATINUM
- 05 PALLADIUM
- 06 RHODIUM, RUTHENIUM, IRIIDIUM
- 07 TRENDS AND INVESTMENTS**
- 08 ABOUT HERAEUS

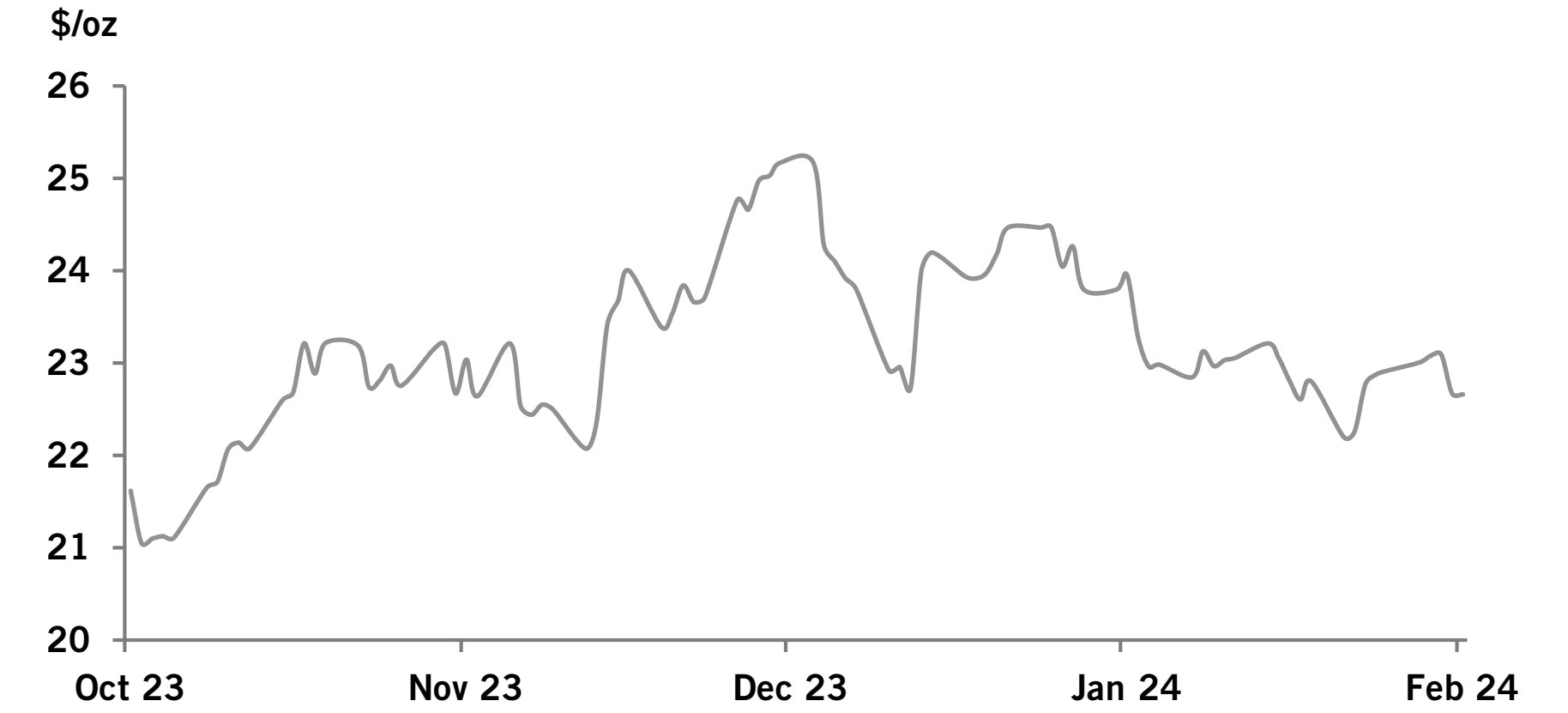
TRENDS AND INVESTMENTS

Gold price



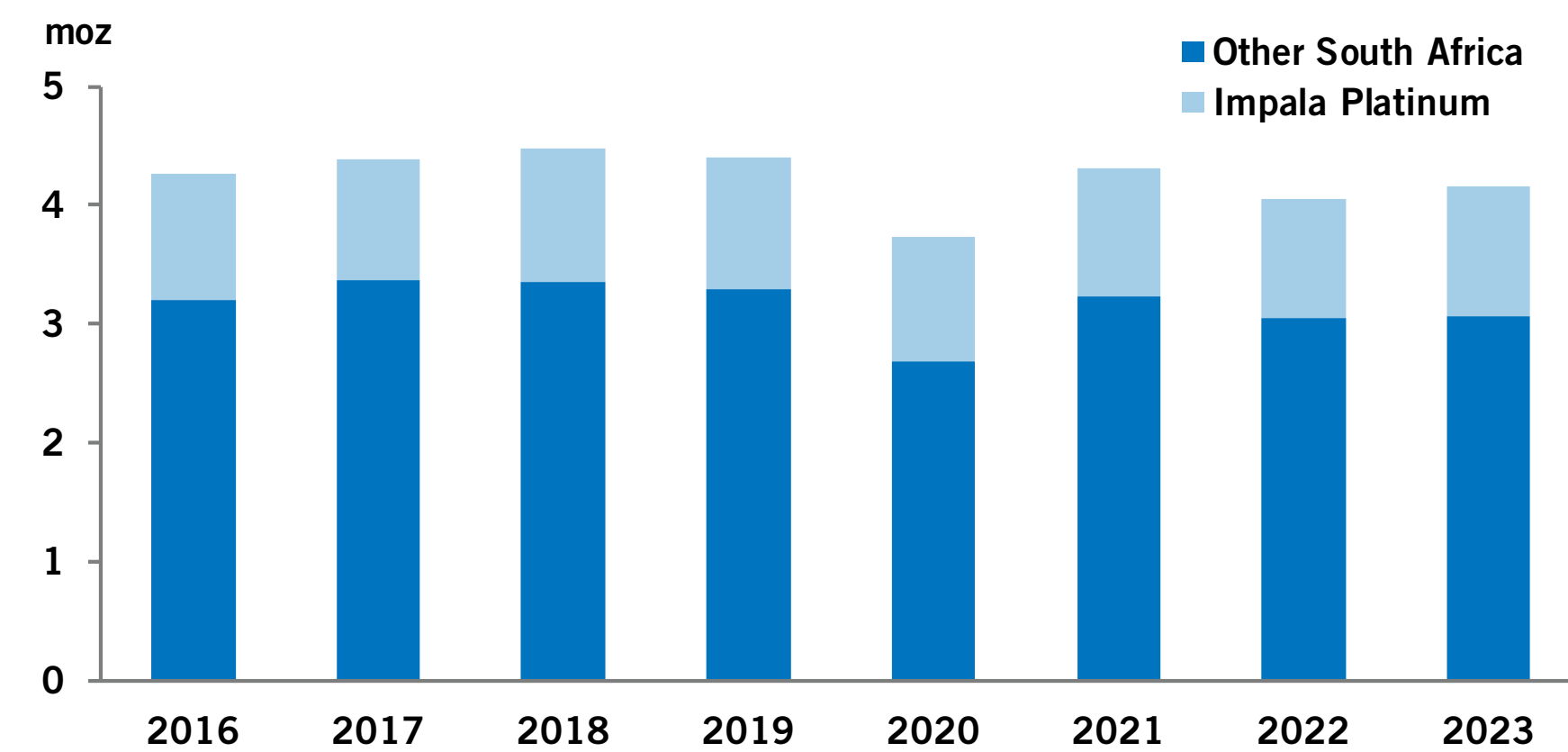
Source: SFA (Oxford), Bloomberg

Silver price



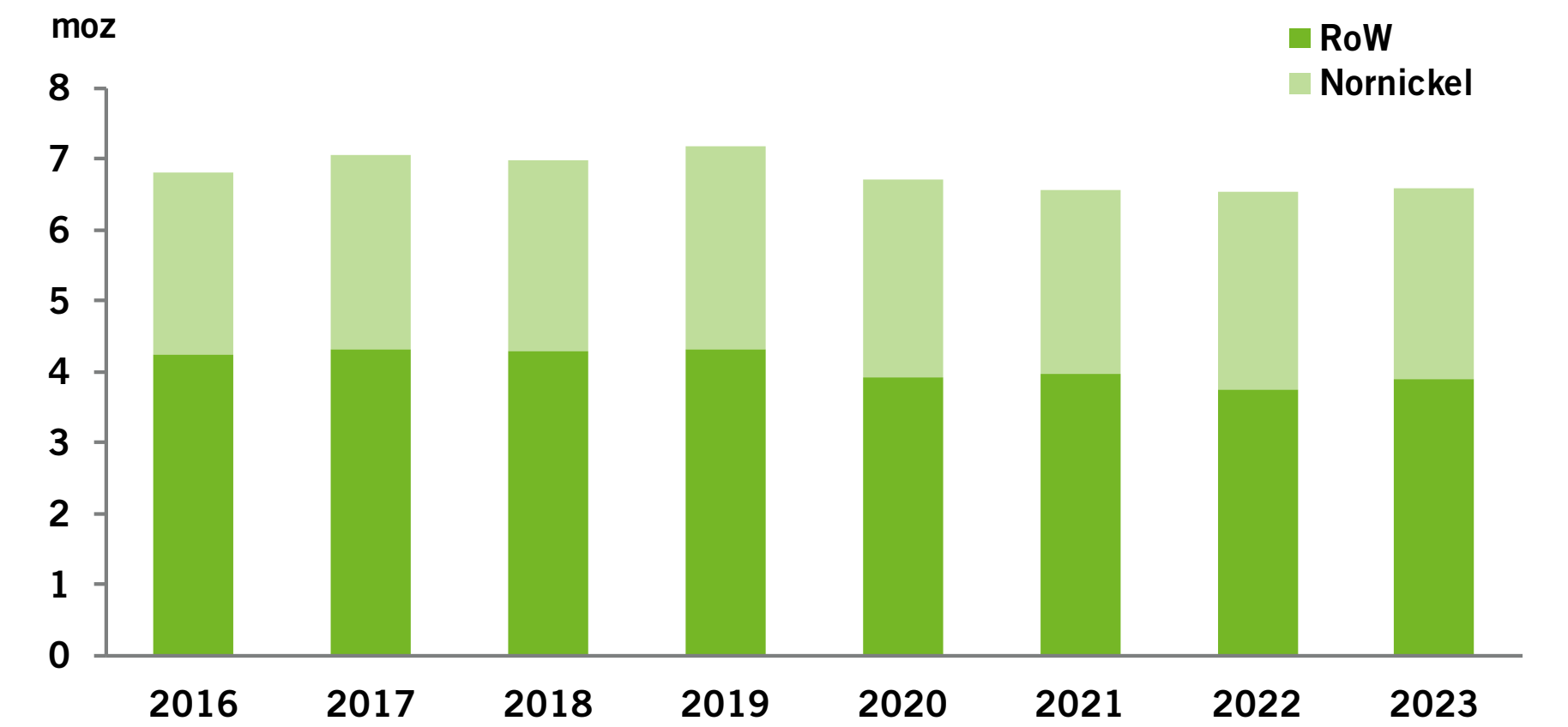
Source: SFA (Oxford), Bloomberg

South Africa platinum production



Source: SFA (Oxford), company reports

Global palladium production



Source: SFA (Oxford), company reports

PRECIOUS APPRAISAL

5th February 2024

- 01 MARKET SPOTLIGHT
- 02 GOLD
- 03 SILVER
- 04 PLATINUM
- 05 PALLADIUM
- 06 RHODIUM, RUTHENIUM, IRIIDIUM
- 07 TRENDS AND INVESTMENTS
- 08 ABOUT HERAEUS

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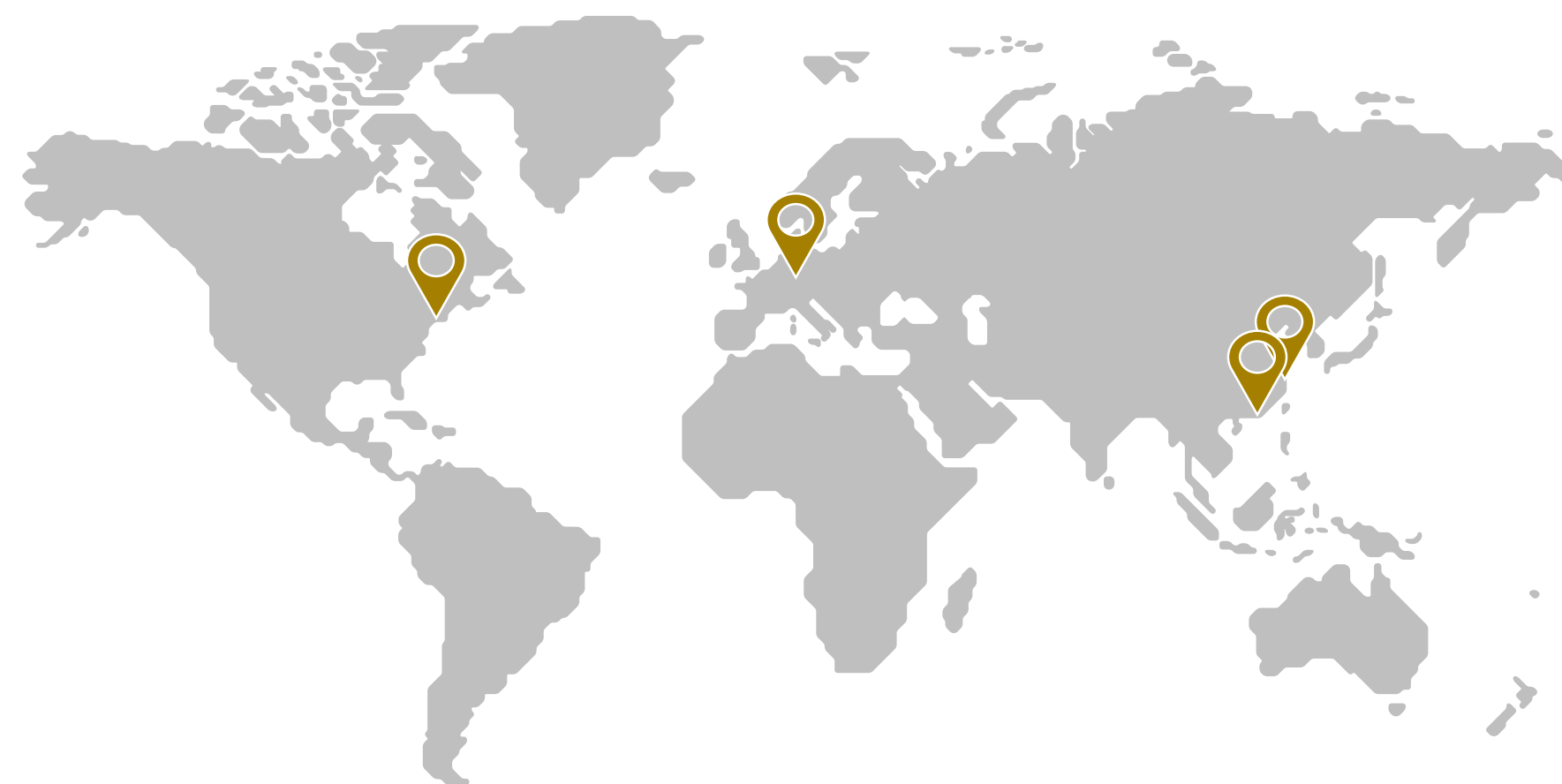
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