

# PRECIOUS APPRAISAL



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

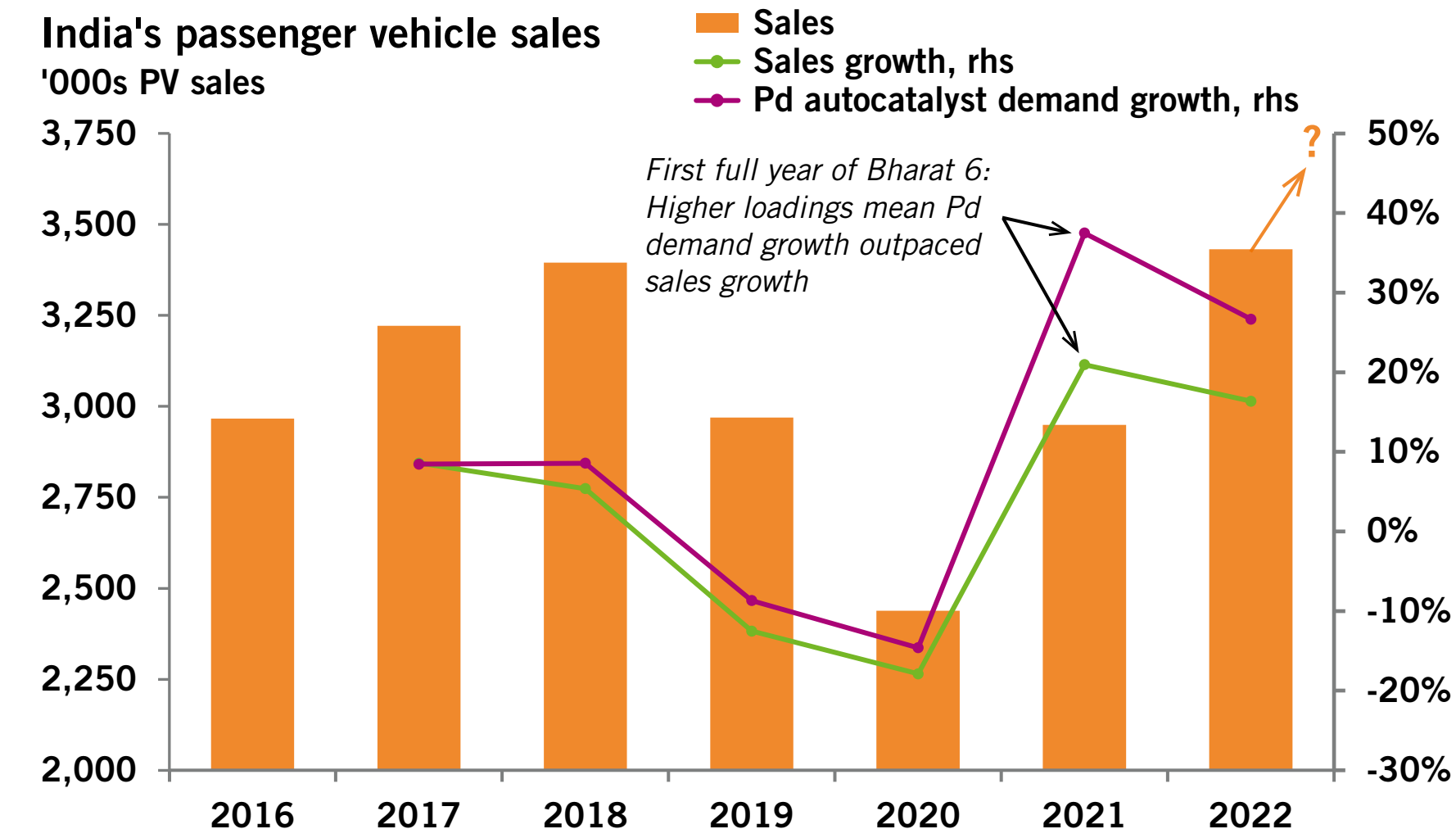
## MARKET SPOTLIGHT

### India's rising passenger vehicle sales to eclipse Japan's in 2023

**India's passenger vehicle sales are on track to overtake Japan's this year, to become the third-largest market.** Sales of passenger vehicles (PVs) in India have recovered from the pandemic and are now above pre-Covid levels. India was the fourth-largest PV market globally with sales of W3.4 million units in 2022 – the highest level on record and a 16% increase year-on-year. Sales in January were strong too, growing to 340,000 units, more than 25% higher than in December 2022 and a 22% rise year-on-year (source: LMC Automotive, FADA). Indian consumer sentiment has recovered strongly since pessimistic lows in 2021. Japan has historically been a large automotive market, but PV sales have been falling since before the pandemic owing to the country's shrinking population. In 2022, total Japanese PV sales of 3.45 million units were only marginally above India's, by fewer than 50,000 units.

**Auto sales in India will mostly rely on economic growth outperformance to boost numbers** – and that may prove effective. India is predicted to show the strongest GDP growth of any major economy in 2023. The IMF expects India's economy to grow by 6.1% year-on-year this year, versus forecasts of 1.8% growth in Japan. India's latest budget included a cut to personal income tax and a provision for scrappage of older vehicles. An increase in personal income should help to boost PV sales, but the effect of the scrappage scheme is likely to be modest as similar programmes have not lifted sales in the past.

**India is relatively insulated from external macroeconomic problems.** Although global light-vehicle production is forecast to grow this year following the easing of semiconductor supply issues, the worsening macroeconomic outlook (outside India) adds downside risk to global sales volumes. BEVs' market penetration is expected to continue to climb, particularly in China and Europe, capping potential PGM demand upside. However, in India it is estimated to remain below 3%, so the negative effect on autocatalyst PGM demand is likely to be minimal.

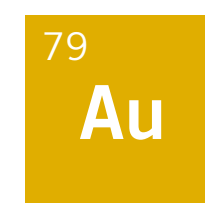


Source: : SFA (Oxford), FADA

**Automotive palladium demand in India is forecast to rise by 7% in 2023 to 380 koz.** Japan's automotive palladium demand will still be larger despite India's growth and the expected superior PV sales figures. Average palladium loadings in Japan's gasoline autocatalysts are higher than in India as vehicles tend to be larger and Japan has a higher proportion of palladium-rich catalysts owing to its smaller diesel market share. Other major automotive markets in the US and Europe are facing downside risk owing to potential economic downturns. Combined, these markets represent ~50% of global automotive palladium demand. Any further downgrades to demand forecasts are likely to weigh on the palladium price this year.

# PRECIOUS METALS REVIEW

## Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,855	0.41%	1,868	10/03/2023	1,810	08/03/2023
€/oz	1,741	0.02%	1,746	10/03/2023	1,714	08/03/2023

**Higher yields discouraged gold investors in February.** The yield on 2-year US government bonds had risen almost 100 bp since the beginning of February to over 5%, as of last week, the highest level since the US economy was on the cusp of the financial crisis in 2008. The recent rise seems to have stimulated investors' selling in gold ETFs. Net outflows from gold-backed funds accelerated in February to 34.5 tonnes, from 26.2 tonnes in January. North American funds saw the largest month-on-month swing. They flipped from net buyers to net sellers, shedding 10 tonnes of metal with an average value of \$418 million during February, more than offsetting the 9 tonnes increase in holdings in the first month of the year. Gold ETF investors have been net sellers in both price rallies and declines since May last year, liquidating 476 tonnes of gold holdings in the process. In contrast, platinum- and palladium-backed ETFs have seen levels of renewed buying as bargain-hunting investors move in on depressed prices.

**Higher for longer interest rates = lower for longer gold price.** The gold price reacted negatively to the increased hawkishness on the Federal Reserve's interest rate path following its chairman's semi-annual testimony to Congress last week. Jerome Powell's comments that strong economic data is likely to lead to higher than originally anticipated peak interest rates have opened the door to a 50 bp hike later this month. Friday's (yet again) stronger than expected non-farm payrolls have now blown that door wide open. Market interest rate expectations have been uprated significantly in the last month, from an implied terminal rate of 4.89% on 1 February to 5.64% as of last Thursday. Hikes are currently anticipated at every meeting until the autumn. The longer that hikes continue, the longer dollar strength is likely to hold up, capping gold price upside potential.

The gold price finished the week slightly higher after initially declining by \$32/oz following chairman Powell's testimony.

## PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

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	20.42	-3.23%	21.30	06/03/2023	19.90	10/03/2023
€/oz	19.16	-3.63%	20.01	06/03/2023	18.79	10/03/2023

**Silver also declined in the wake of higher interest rate expectations.** The gold:silver ratio reached its highest level since September 2022 last week as the fall in the silver price outpaced the fall in gold. Even though the dollar weakened later in the week, silver failed to capitalise after hitting a new low for the year below \$20/oz. Along with the price decline, interest in silver investment products seems to have softened recently. ETFs saw net outflows of more than 6 moz in the last week, and the Silver Eagle coin sales of 4.8 moz from the US Mint in the first two months of 2023 are 29% lower than the 10-year average.

The silver price did find some support around the psychological level of \$20/oz towards the end of last week as the metal became oversold. Silver will remain under pressure while the dollar remains strong, leaving the price open to further easing.

## PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

- 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

<sup>78</sup> Pt	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	958	-1.87%	982	07/03/2023	932	07/03/2023
€/oz	900	-2.22%	920	06/03/2023	882	07/03/2023

**Brownfield and expansion projects are still being incentivised by elevated PGM prices despite recent declines.** Bokoni mine, owned by African Rainbow Minerals (previously an Anglo American Platinum-Atlatsa joint venture), is scheduled to deliver PGM production earlier than expected as the mine is set to restart during FY'24. The mine was closed in 2017 after the platinum and rhodium prices slumped. Despite platinum trading near the level it was at when the mine closed, the palladium, rhodium and iridium prices are high enough to incentivise a faster than anticipated restart. Production ramp-up is estimated to result in ~143 koz of platinum production by FY'27, assuming PGM prices remain supportive. The development of Northam's Booyendal South mine is also on track. The project is weighted towards production of UG2 Reef orebodies, plus one Merensky Reef module, and from 2025 should produce 250 koz 4E PGMs, including ~145 koz of platinum. Total South African platinum supply is forecast to decline over the coming years as some operations near end-of-life. Consequently, investment in growth projects is required now to secure platinum supply over the longer term, particularly if demand from hydrogen applications begins to proliferate.

## PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

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

### Palladium

<sup>46</sup>  
Pd

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,382	-4.47%	1,454	07/03/2023	1,350	09/03/2023
€/oz	1,298	-4.88%	1,360	07/03/2023	1,280	09/03/2023

**China's cars-for-cash scheme could hurt palladium demand.** BEV sales in China have slumped so far in 2023 as national subsidies have ended. However, to support demand, regional-level cash incentives have been maintained or have been introduced in various jurisdictions. Several incentives include cashback for trading in an internal combustion engine (ICE) car for an electric vehicle. In Shanghai, residents can receive a one-time cash payment of CNY10,000 (~\$1,440) when replacing an ICE vehicle with a pure electric vehicle. Shanghai leads the rest of China in terms of electric vehicle market penetration. xEVs (pure electric and plug-in hybrids) accounted for 53% of all new registrations in the city in 2022. Of these, 55% were pure electric BEVs. As of the end of 2022, the BEV fleet on the roads in China totalled 10.45 million units. Beijing, similarly, is incentivising the replacement of ICE vehicles with BEVs. A CNY8,000 (\$1,150) subsidy is available to owners who de-register an ICE vehicle between one and six years old, while a CNY10,000 (~\$1,440) subsidy is offered to de-register vehicles older than six years. Palladium autocatalyst demand is estimated to remain relatively stable in China this year at 2.6 moz, with risk to the downside depending on the effectiveness of regional subsidies. In Europe, palladium autocatalyst demand is forecast to decrease by 6% as a result of increasing BEV penetration eroding ICE sales and the substitution of some platinum for palladium in autocatalysts.

Palladium passed its 2020 lows last week but found some support at around \$1,375/oz and the price finished the week at \$1,382/oz. The price remains vulnerable to the downside as the price has yet to find solid support.

## PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

01 MARKET SPOTLIGHT

02 GOLD

03 SILVER

04 PLATINUM

05 PALLADIUM

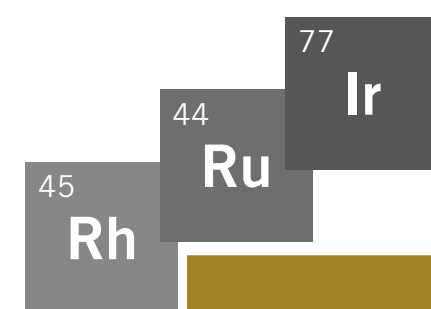
06 RHODIUM, RUTHENIUM, IRIDIUM

07 TRENDS AND INVESTMENTS

08 ABOUT HERAEUS

## PRECIOUS METALS REVIEW

### Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$10,950/oz	\$525/oz	\$5,150/oz
Previous Week	\$11,300/oz	\$525/oz	\$5,050/oz

**Alternatives to electrolytic clean hydrogen production are attracting attention.** A hydrogen-from-coal project in Australia has been awarded more than \$1.55 billion in funding from the Japanese government's Green Innovation Fund to enter the commercial demonstration phase. When fully operational, the project is planned to produce 30 ktpa of hydrogen. For comparison, the largest operational polymer electrolyte membrane (PEM) electrolyser in the world produces 3 ktpa from renewable energy. When combined with carbon capture and storage, non-electrolytic hydrogen can have very low carbon intensity. However, projects similar to this one are more geographically limited in their potential deployment as they must be located where the resources exist. As a consequence, hydrogen-from-coal projects are unlikely to replace electrolysis as a future source of low-carbon hydrogen, so iridium demand in PEM electrolysers for green hydrogen production is not under threat. BP recently announced a similarly sized project at its Spanish refinery that could produce 31 ktpa of green hydrogen by 2027. It is not clear whether the project will use PEM technology, but it demonstrates the viability of large-scale electrolytic green hydrogen production. The forecast growth in green hydrogen demand should rapidly increase requirements for iridium-platinum electrocatalysts as the use of PEM expands.

The iridium price again crept higher last week to \$5,150/oz, signally some industrial buying. Having fallen by 20% since the beginning of the year, the rhodium price continued its trend, closing the week at a new cycle low of \$10,950/oz.

# PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

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

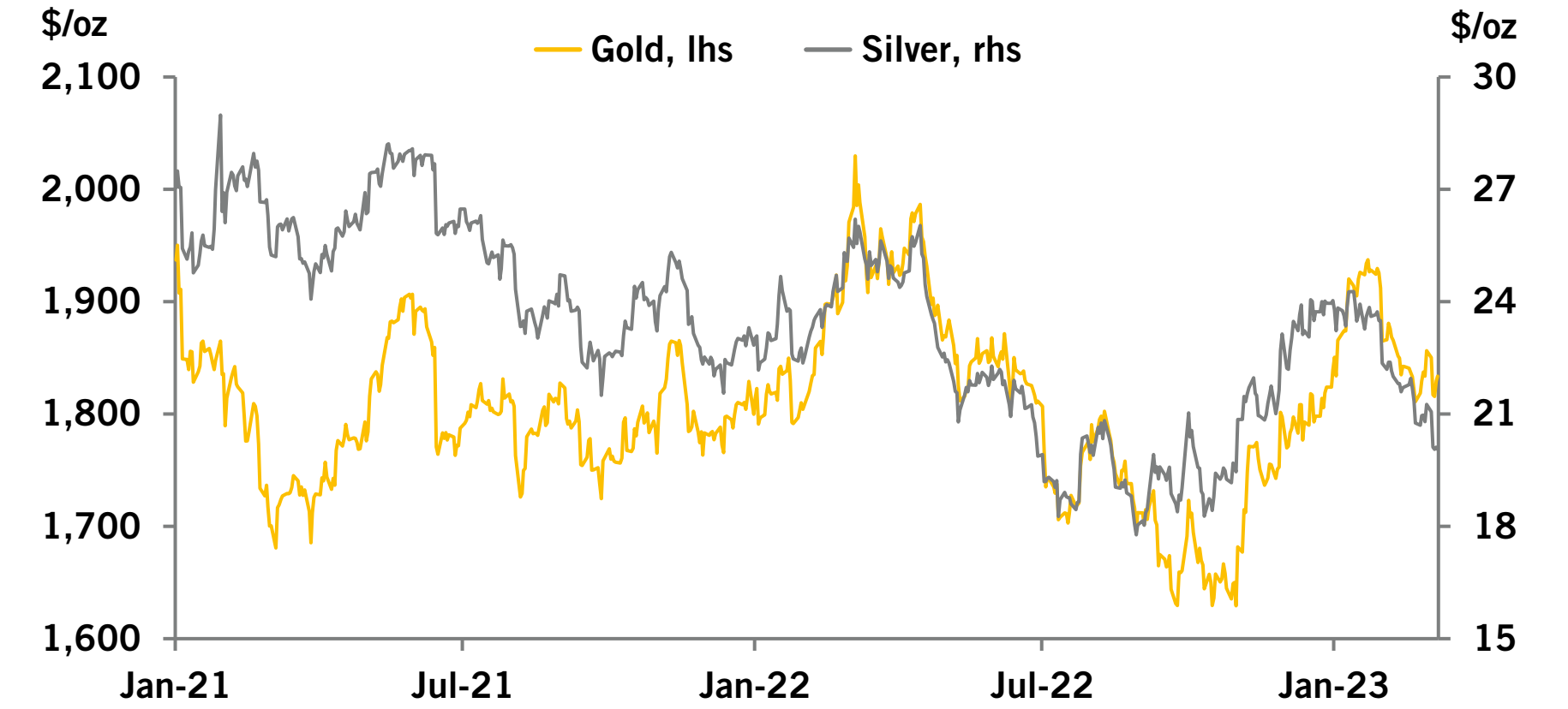
# TRENDS AND INVESTMENTS

## US dollar index



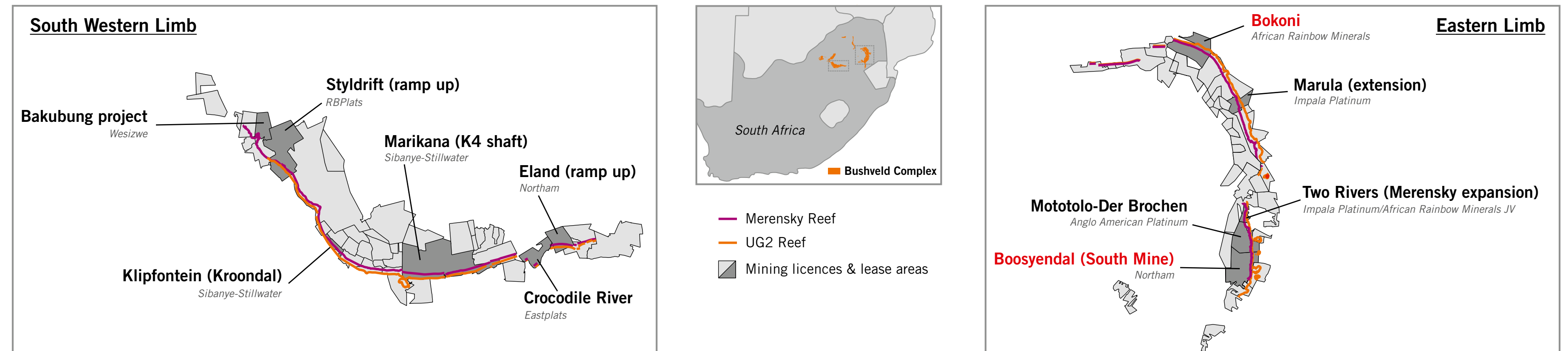
Source: SFA (Oxford), Bloomberg

## Gold price vs. silver price



Source: SFA (Oxford), Bloomberg

## Projects that will add to South African platinum supply and replace depletion



Source: SFA (Oxford). Note: Size and position of licences are not to scale



## PRECIOUS APPRAISAL

13<sup>th</sup> March 2023

- 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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