PLATINUM QUARTERLY

Q1 2025

19th May 2025

World Platinum Investment Council

FOREWORD

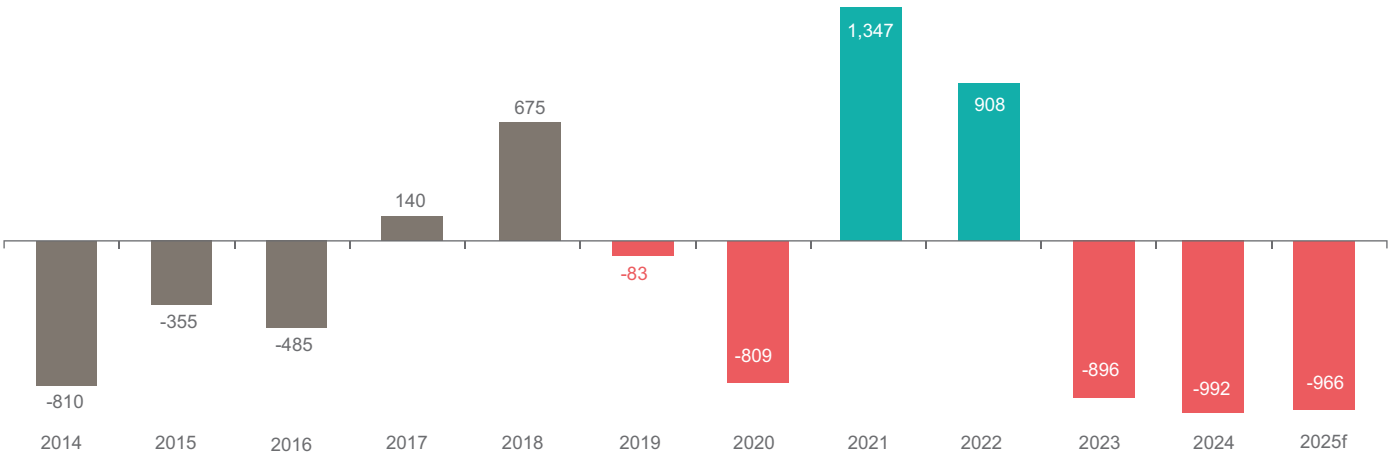
This edition of *Platinum Quarterly* presents platinum supply and demand developments for the first quarter of 2025 and an updated forecast for full year 2025. It also provides WPIC's views on relevant issues and trends for investors considering exposure to platinum as an investment asset, plus an update on how we continue to meet investors' needs through our product partnerships. The *Platinum Quarterly* data and commentary (starting on page 5) are prepared independently for WPIC by Metals Focus.

Platinum is expected to remain in its third consecutive year of market deficit in 2025f. A significant focus of the first quarter of 2025 was the potential for evolving US trade policies, tariffs in particular, to not only directly disrupt the flow of PGMs into the US but also indirectly impact PGMs through softening global economic activity. While recognising the heightened forecast risks related to tariffs and ongoing trade discussions, the aggregate impact on platinum markets in this update to our 2025 outlook is relatively minimal, and is reflected through moderated global automotive production and jewellery imports into the US, offset by the flow of metal into NYMEX exchange stocks which is captured within investment demand. Notably, the forecast platinum market deficit of 966 koz in 2025 represents a significant 12% of projected demand, and thus it is unlikely that deficits would substantially erode this even if a sharp escalation in trade-related economic headwinds arises.

Platinum market enters its third year of substantial deficits

- The platinum market is expected to record a deficit of 966 koz this year, which follows a 992 koz deficit in 2024. The forecast platinum market deficit for 2025 has been increased from the 848 koz reported in the March 2025 *Platinum Quarterly* primarily due to upward revisions in global platinum demand.
- Supply risks remain a prominent theme in 2025. In Q1 2025, mining supply declined by -13% year-on-year to record its lowest output since Q2 2020 which was in the height of COVID lockdowns. While mining should benefit from improved processing capacity availability over the rest of the year, refined output is still expected to be 6% lower in 2025, which in terms of total supply is partially offset by a 3% year-on-year rise in recycling in 2025. Nonetheless, a -4% year-on-year reduction in total platinum supply in 2025 perpetuates the ongoing structural erosion of platinum supply (-1.2% CAGR since 2015).
- Total platinum demand is expected to decline by -4% year-on-year in 2025. While risks to international trade have drawn significant focus in the first quarter, lower demand in 2025 is largely due to a cyclical trough in glass demand where capacity additions have slowed in China. Sectors such as automotive, jewellery and investment are arguably more sensitive to short-term shifts in trade policies. However, lower automotive demand and jewellery production for export to the US have been offset by upward revisions to Chinese jewellery and investment demand. Accordingly, total 2025 platinum demand is revised up by +115 koz since our March 2025 *Platinum Quarterly*.

Annual platinum supply-demand balances, koz, 2014-2025f



Source: SFA Oxford (2014 – 2018), Metals Focus (2019 – 2025f)

The platinum investment case – sifting through the geopolitical noise

Platinum's investment case remains compelling, with the market entering its third consecutive year of projected deficits. Against this backdrop, however, evolving US trade policy has heightened economic uncertainty. The Trump administration has announced, implemented, backtracked and renegotiated on a wide swathe of tariffs since November 2024. Below, we outline the impacts of the market response to tariff fears, improved tariff certainty, indirect tariff risks to platinum demand, and the potential impact of tariff risk escalation.

The spectre of US tariffs initially appeared all encompassing at the start of 2025. Markets pre-emptively responded to the risk of platinum imports being tariffed, resulting in a flow of metal into the US and into exchange stocks with NYMEX stocks rising by 361 koz to 631 koz through the first quarter. In the first quarter of 2025 the implied exchange for physical (EFP) spread peaked at around US$65/oz, while lease rates spiked to 13% from around 1% in last quarter of 2024.

The detailed announcement of tariffs on 2nd April 2025 offered more clarity on how platinum would be impacted by US tariffs. As things stand, the majority of platinum imports (sponge, grain, ingot etc.) are exempt from tariffs as platinum is considered a critical strategic mineral. Manufactured products that contain platinum (catalysts, washcoats etc.) are subject to tariffs, as are minted platinum products that are not classified as legal tender. In effect, bullion coins are exempt, but minted platinum investment bars are subject to tariffs. As a large proportion of US minted bar supply is imported from Switzerland, this is unhelpful for investment demand in the US. Although US bar and coin demand is projected to increase by 21 koz year-on-year in 2025, the updated *Platinum Quarterly* outlook for 2025 reflects a 16 koz reduction in US bar and coin demand for the year compared to our March 2025 *Platinum Quarterly*.

Direct imports of platinum into the US are primarily in the form of sponge, grain, ingot and scrap and thus platinum is broadly exempt from direct tariffs. The exemption and designation of platinum as a critical mineral likely reflects platinum's importance in several strategic industries as well as the fact that US domestic primary plus secondary supplies are inadequate to meet its needs (being about 700 koz p.a. short of consumption). Markets have responded to there being a less than feared direct impact of tariffs on platinum imports, with lease rates coming down (to ~7% at the start of May 2025), the EFP easing, and metal beginning to move back out of exchange warehouses, although it may not necessarily be moving back to Europe as yet. The 2025 forecast in this *Platinum Quarterly* is for exchange stocks to increase by 150 koz, which implies expectations for further reductions in NYMEX stocks for the remainder of 2025 since there was an accumulation of 361 koz of platinum in Q1 2025.

Although platinum has largely avoided direct tariffs, platinum demand will still be indirectly impacted by tariffs since it is an input used in a diverse range of products imported by the US. This updated *Platinum Quarterly* outlook for 2025 reflects the indirect impact of tariffs on the market outlook through the automotive and jewellery segments. Global automotive platinum demand forecasts have been reduced by 50 koz as light-duty vehicle production estimates are trimmed by ~2 million units, while heavy-duty fleet investments are deferred on expectations of lower trade volumes.

The impact of tariffs on platinum jewellery demand is more nuanced. Indian platinum jewellery fabrication has been reduced by 45 koz since our last *Platinum Quarterly* as exports to the US are expected to be impacted by tariffs. However, where heightened trade, geopolitical and recessionary risks have supported higher gold prices through the first quarter of 2025, there has been a consequent negative impact to Chinese gold jewellery demand (-32% in the quarter). Chinese jewellery fabricators and retailers have in response to consumers being priced out of gold, begun initiating some switching from gold to more affordable and higher margin platinum jewellery, leading to expectations that Chinese platinum jewellery demand will increase by 15% year-on-year in 2025 (+62 koz).

Industrial platinum demand is largely tied to new plants being commissioned, the timing of which is a function of long-term investment decisions. Accordingly, the global economic uncertainty arising from US trade policy is yet to materialise in substantial revisions to the near-term outlook for industrial platinum demand (i.e. 2025 forecasts).

Platinum's unique properties and associated uses in a diverse range of end markets help to mitigate the negative impacts of trade wars and the associated erosion of global GDP growth rates; as a result, the adjustment to the 2025 platinum demand outlook is probably less than might be expected. Total platinum demand is forecast to decline by -4% year-on-year in 2025 (-338 koz) and with a projected market deficit of 966 koz. Given compelling market fundamentals, a severe and sharp deterioration of economic conditions would be required to materially reduce entrenched supply shortfalls, which seems unlikely.

Turning to supply, total platinum supply is expected to decline by -4% year-on-year in 2025, thereby broadly matching the decline in demand. Supply side risks remain a key theme facing platinum markets: where miners spent 2024 restructuring assets and capital budgets for lower prices. As for recycling, volumes have struggled to return to pre-COVID levels. Notably, total platinum supply is expected to fall below 7 Moz in 2025 which, barring COVID, will be the lowest level in our time series dating back to 2013 and reflects structural headwinds facing supply (-1% CAGR since 2015).

In conclusion, the structural deficit in the platinum market is embedded and continues to deplete above ground stocks which are expected to fall to barely three months of demand by the end of this year. Over time, this is an unsustainable situation as commodity markets typically self-solve for a deficit with price stimulating a supply response or disincentivising demand. While the large platinum market deficit recorded in Q1 2025 failed to sustain upward moves in the platinum price, this likely stems from investors' concerns about demand destruction from tariffs and potential flowbacks of accumulated NYMEX stocks. In addition, market tightness is reflected in elevated lease rates which have the effect of encouraging the lending of platinum to end users, which acts as a temporary source of supply until such time as the borrowers need to return metal to close out the loans. It remains to be seen whether sufficient platinum will be available at that time at current prices. We believe both supply and demand are relatively price inelastic, at least in the near-term, and this presents an attractive investment opportunity.

Platinum supply and demand – first quarter trends and updated 2025 outlook

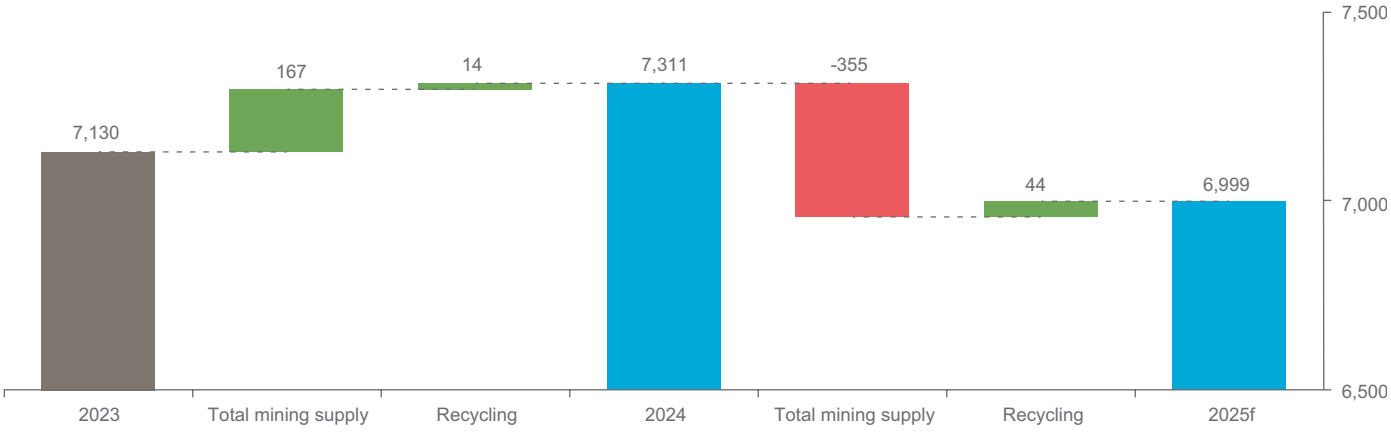
Deficit of 816 koz in Q1 2025 on lower supply and higher demand

During Q1 2025, platinum supply and demand trends diverged. Total platinum supply declined by 10% year-on-year due to a 13% year-on-year decline in mine supply (-117 koz) which was partially offset by a 2% increase in recycling (+6 koz). In South Africa, mining was impacted by heavy rainfalls which led to flooding and lost production. This was compounded by depressed smelter availability in South Africa and Zimbabwe, while in North America, production was negatively impacted by planned mine restructuring. Total platinum demand increased by 10% year-on-year (+215 koz) in the first quarter. Higher demand was primarily underpinned by growth in investment ounces where, in response to the threat of tariffs being applied to platinum imports, markets pre-emptively moved metal into the US, including into NYMEX warehouses, supporting a +361 koz increase in stocks in Q1 2025. As expected, cyclically depressed glass capacity additions in Q1 2025, weighed on industrial platinum demand (-22% year-on-year), while automotive platinum demand shrank by 4% year-on-year as production of catalysed vehicles declined. The net impact in Q1 2025 was a market deficit of 816 koz, the largest quarterly deficit in six years.

Updated 2025 outlook – embedded themes underpinning a third consecutive and meaningful annual deficit

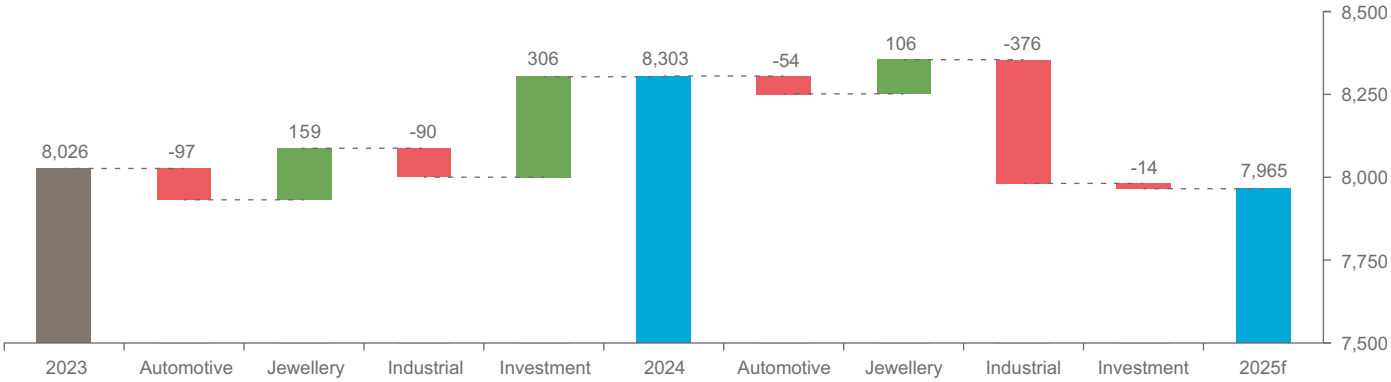
Platinum supply is expected to be depressed in 2025, declining by 4% year-on-year. For the remainder of 2025, mine supply is forecast to sequentially improve after an unexpectedly weak first quarter, however, full year output will still be 6% lower than in 2024 (-355 koz) since South African producers will not benefit from the large drawdown of work-in-process inventory that occurred last year. Recycled platinum supply is forecast to increase by a modest 3% year-on-year in 2025. Autocatalyst scrap recovery has stabilised off a low base in western markets, while China should report higher output as scrap availability benefits from government incentives to scrap older vehicles. Turning to demand, the largest driver of a 4% year-on-year decline in annual platinum demand stems from lower industrial demand (cyclically weak glass capacity expansions). However, elevated risks to international trade flows have introduced considerable risks for the 2025 demand outlook. Encouragingly, platinum's diverse end-markets are expected to limit downside risks from a trade slowdown during 2025. The downward revisions for 2025 to platinum automotive demand and regional jewellery markets which export to the US have been offset by upward revisions to platinum investment demand and platinum jewellery demand in China. Combining the supply and demand outlook results in a projected deficit of 966 koz for 2025, equivalent to 12% of annual platinum demand.

Annual total supply and changes 2023 to 2025f (koz)



Source: Metals Focus prepared for World Platinum Investment Council

Annual total demand and changes 2023 to 2025f (koz)



Source: Metals Focus prepared for World Platinum Investment Council

WPIC initiatives highlights

Our work with our wide and growing global network of product partners continued to provide us with insights to determine appropriate strategies to increase investment in platinum.

In Europe and North America sales were higher than anticipated as tariffs on non-legal tender products and the spike in lease rates had not yet negatively impacted stock or production. With increased awareness of platinum, its low price and lower downside risk compared to gold is making it more attractive to gold investors.

In recent months, China has witnessed unprecedented demand for retail platinum bars (<500g), driven in part by the widening price gap between gold and platinum, coupled with WPIC's successful investor awareness efforts. This surge has prompted a growing number of new fabricators and distributors to enter the platinum market.

Despite capacity constraints and increasing competition, WPIC partners achieved record-breaking sales in the first four months of the year with this volume growth also positively influencing the resurgence of platinum jewellery in China. In April, a key partner launched platinum bar sales on TikTok for the first time, while a leading branded jewellery retailer in Beijing introduced platinum investment bars to its offerings.

Looking ahead, Shanghai Platinum Week is scheduled for the second week of July, featuring a comprehensive agenda focused on PGMs supply dynamics and automotive sector demand.

Trevor Raymond, CEO

Contents

Table 1: Supply, demand and above ground stock summary

	2021	2022	2023	2024	2025f	2024/2023 Growth %	2025f/2024 Growth %	Q4 2024	Q1 2025
Platinum Supply-demand Balance (koz)									
SUPPLY									
Refined Production	**6,295**	**5,520**	**5,604**	**5,766**	**5,426**	**3%**	**-6%**	**1,539**	**1,108**
South Africa	4,678	3,915	3,957	4,133	3,869	4%	-6%	1,161	715
Zimbabwe	485	480	507	512	491	1%	-4%	121	115
North America	273	263	275	254	189	-8%	-26%	63	50
Russia	652	663	674	677	686	0%	1%	146	180
Other	206	200	190	191	191	0%	0%	47	48
Increase (-)/Decrease (+) in Producer Inventory	-93	+43	+11	+16	+0	38%	-100%	-19	-22
Total Mining Supply	**6,202**	**5,563**	**5,615**	**5,782**	**5,426**	**3%**	**-6%**	**1,520**	**1,086**
Recycling	**2,107**	**1,824**	**1,515**	**1,530**	**1,573**	**1%**	**3%**	**428**	**372**
Autocatalyst	1,619	1,383	1,114	1,156	1,200	4%	4%	334	277
Jewellery	422	372	331	298	292	-10%	-2%	74	75
Industrial	67	69	71	76	81	7%	7%	20	19
Total Supply	**8,309**	**7,387**	**7,130**	**7,311**	**6,999**	**3%**	**-4%**	**1,948**	**1,458**
DEMAND									
Automotive	**2,451**	**2,775**	**3,203**	**3,106**	**3,052**	**-3%**	**-2%**	**797**	**753**
Autocatalyst	2,451	2,775	3,203	3,106	3,052	-3%	-2%	797	753
Non-road	†	†	†	†	†	N/A	N/A	†	†
Jewellery	**1,953**	**1,880**	**1,849**	**2,008**	**2,114**	**9%**	**5%**	**521**	**533**
Industrial	**2,561**	**2,341**	**2,576**	**2,487**	**2,111**	**-3%**	**-15%**	**556**	**527**
Chemical	660	672	840	615	580	-27%	-6%	133	173
Petroleum	169	193	159	158	198	0%	25%	40	49
Electrical	135	106	89	94	95	5%	2%	24	23
Glass	789	528	605	690	289	14%	-58%	121	41
Medical	267	278	292	308	320	6%	4%	80	77
Hydrogen Stationary and Other	17	12	23	44	59	92%	35%	15	21
Other	525	552	569	577	569	2%	-1%	144	143
Investment	**-3**	**-516**	**397**	**702**	**688**	**77%**	**-2%**	**360**	**461**
Change in Bars, Coins	349	259	322	194	252	-40%	30%	54	70
China Bars ≥ 500g	27	90	134	162	186	20%	15%	38	35
Change in ETF Holdings	-241	-558	-74	296	100	N/A	-66%	142	-6
Change in Stocks Held by Exchanges	-139	-307	14	50	150	244%	200%	126	361
Total Demand	**6,962**	**6,479**	**8,026**	**8,303**	**7,965**	**3%**	**-4%**	**2,234**	**2,274**
Balance	**1,347**	**908**	**-896**	**-992**	**-966**	**N/A**	**N/A**	**-286**	**-816**
Above Ground Stocks	**4,106****	**5,014**	**4,118**	**3,126**	**2,160**	**-24%**	**-31%**		

Source: Metals Focus 2021 - 2025f.

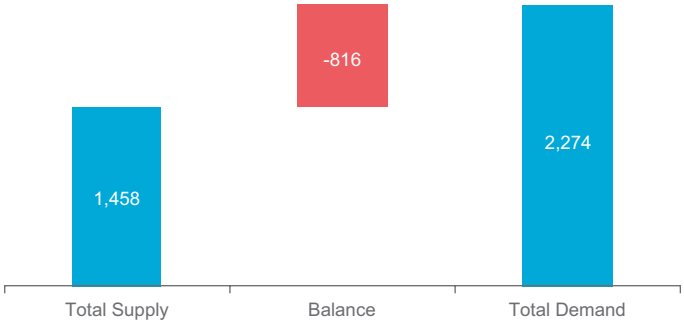
Notes:

1. **Above Ground Stocks 3,650 koz as of 31 December 2018 (Metals Focus).
2. † Non-road automotive demand is included in autocatalyst demand.
3. All estimates are based on the latest available information, but they are subject to revision in subsequent quarterly reports.
4. The WPIC did not publish quarterly estimates for 2013 or the first two quarters of 2014. However, quarterly estimates from Q3'14, to Q4'22 are contained in previously published PQs which are freely available on the WPIC website.
5. Quarterly estimates from Q1'23 and half-yearly estimates from H2'2022 are included in Tables 3 and 4 respectively, on pages 23 and 24 (supply, demand and above ground stocks).
6. Details of regional recycling supply in Table 6 on page 23 are only published from 2019.

2025 FIRST QUARTER PLATINUM MARKET REVIEW

The platinum market deficit deepened markedly in Q1'25, driven by ongoing uncertainty related to US tariffs and production constraints in South Africa where high rainfall led to flooding at some operations. Total supply declined by 10% year-on-year to 1,458 koz, reflecting a weak mine production quarter that could not be offset by the modest year-on-year recovery in secondary supply. Demand increased by 10% year-on-year to 2,274 koz. This increase was overwhelmingly because of elevated CME warehouse stock inflows, as tariff-related uncertainty and a widening location premium encouraged higher metal flows into the United States. Automotive demand softened as quarterly production declined, with auto manufacturers forced to review strategies in light of potential tariff-related raw material and parts input cost increases. Industrial demand also contracted, with limited growth in glass capacity in China offset by plant closures elsewhere.

Chart 1: Supply-demand balance, koz, Q1 2025



Source: Metals Focus prepared for World Platinum Investment Council

Supply

Global refined mine supply of platinum faced significant headwinds in Q1'25, with weakness across all major producing regions except for Russia. Despite a relatively low base in Q1'24, supply fell 10% year-on-year to 1,108 koz in Q1'25, the lowest quarterly output in the time series, with the exception of the Anglo American Platinum ACP shutdown in Q2'20.

South Africa accounted for the bulk of the decline, with output down 10% year-on-year to 715 koz. The country experienced unusually intense rainfall during the quarter, with particularly severe rain in February causing widespread flooding. River overflows and the collapse of a dam resulted in flooding at parts of the underground Amandelbult mine, where full operations are not expected to resume until Q3'25f. Several other operations were also affected.

Anglo American Platinum's refined output fell due to lower mined volumes, planned maintenance of processing infrastructure, and a triennial stock count at the Precious Metals Refinery. Implats' output was affected by a rebuild of Furnace 3 and unscheduled repairs to Furnace 5; however, platinum volumes remained stable year-on-year.

Output from Zimbabwe also fell, dropping 13% year-on-year to 115 koz. Maintenance and lower grades at Unki, along with reduced availability of the mechanised fleet and optimisation work at the furnace, impacted Zimplats.

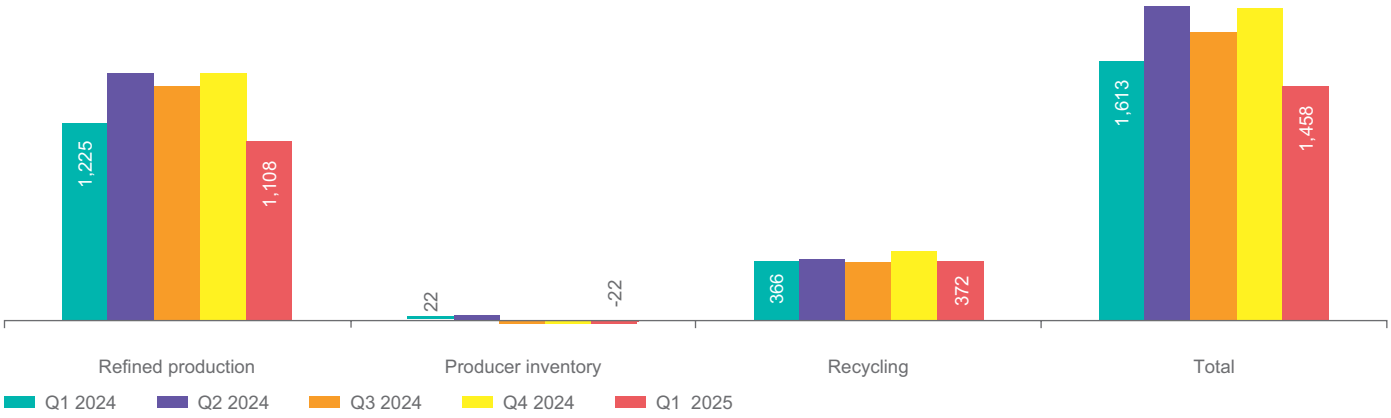
We estimate that North American volumes declined 30% year-on-year to 50 koz. This reflects Sibanye-Stillwater's restructuring of its US operations to create a smaller operating footprint, alongside reduced output from Canadian by-product nickel mining. Russian supply recorded a modest 1% increase, reaching 180 koz for the quarter.

Recycling

Global recycling supply increased by 2% year-on-year to 372 koz, as improvement in autocatalyst recycling offset the 11% contraction in platinum jewellery scrap. Autocatalyst recyclers in both Europe and North America reported modest improvements in the availability of recycled material, partly due to higher new vehicle sales, particularly in the US, where the front-running of tariff implications boosted the availability of end-of-life (ELV) vehicles. A further contributing factor to the increase in spent catalyst recycling was the extension in China of its "large-scale equipment upgrades and consumer goods trade-in initiative".

In contrast, jewellery scrap supply in China declined, as the destocking of platinum jewellery in favour of gold, observed in Q1'24, did not reoccur. Elsewhere, jewellery scrap supply was either flat or recorded modest gains. Electronics recycling saw an increase to 19 koz, up 13% year-on-year, supported by higher collection rates especially in respect of e-scrap generated from hard-disk drives.

Chart 2: Platinum supply, koz

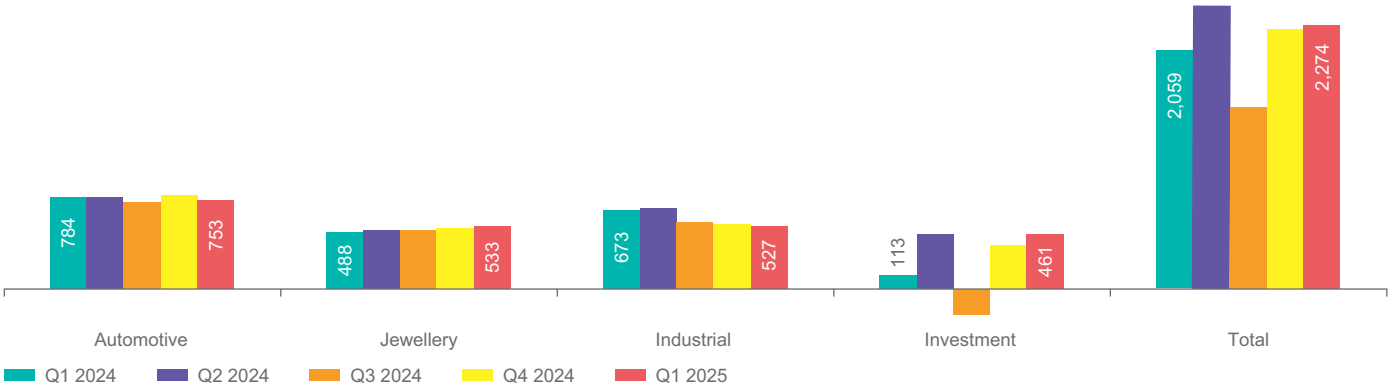


Source: Metals Focus prepared for World Platinum Investment Council

Demand

Global demand in Q1'25 recorded a 10% year-on-year increase to 2,274 koz. What began as a flow of metal into the US ahead of possible tariffs led to an arbitrage opportunity, where platinum traded at a premium in New York, driving even more metal into CME warehouses. In total, some 361 koz of platinum flowed into the United States in Q1, temporarily swelling investment demand. Meanwhile, automotive demand declined in the quarter as catalysed vehicle production slowed. Industrial demand was impacted by a sharp decline in glass demand, as the absence of expansions in China seen in Q1'24 were amplified by closures in Japan.

Chart 3: Platinum demand, koz



Source: Metals Focus prepared for World Platinum Investment Council

Automotive demand

Global automotive platinum demand declined by 4% year-on-year to 753 koz in Q1'25. Amidst uncertainty surrounding impending tariff announcements, this was a relatively resilient performance. While demand from the heavy-duty vehicle (HDV) segment fell by 12% year-on-year and non-road vehicle (NRV) demand contracted by 2% year-on-year, demand within the light-duty vehicle (LDV) segment remained broadly flat during the quarter.

Europe experienced a weak production quarter. Although NRV production rose by 2%, gains were skewed towards electrified models and were insufficient to offset the 6% decline in LDV production and the 12% drop in HDV output. The combined impact of lower production across the vehicle segments resulted a decline of 11% year-on-year to 235 koz.

In North America, platinum demand declined by 10% year-on-year to 113 koz. LDV production was 3% lower while the HDV segment declined by 24% compared to Q1'24. The HDV sector in particular saw OEMs pull back on production as they prefer to wait the outcome of the range of emissions regulation that has come under scrutiny as part of the new administrations aim to reduce cost to OEMs and consequently higher prices to fleet owners.

The apparent year-on-year improvement in Japan was flattered by a particularly weak Q1'24, when the market was navigating the fallout from irregularities in vehicle safety and emissions testing procedures.

In China, scrappage incentives supported both LDV and HDV replacement, with the trade-in scheme now extended to include trading in China IV-compliant trucks. However, China's HDV segment remains closely tied to exports and freight movements. The interplay of tariffs and weak international demand therefore led to a 10% decline in HDV-related platinum demand. Growth in hybrid vehicle production, which also qualifies for financial support under the scheme, supported an uplift in LDV platinum demand which led to total Chinese automotive platinum demand remaining flat in the quarter when compared to the previous year.

In the rest of the world, LDV production declined slightly, while HDV and NRV output increased by 5% and 3% respectively. As a result, platinum demand edged up by 1% year-on-year to 203 koz.

Jewellery demand

Global platinum jewellery demand increased by 9% year-on-year in Q1'25 to 533 koz.

European fabrication is estimated to have risen by 17% year-on-year to a record high in this series back to 2018. Growth was driven by widening price differentials between gold and platinum, with UK hallmarking for January–February up 15% year-on-year for platinum, while gold declined by 4%. The branded segment saw even stronger gains. While white gold remains favoured in jewellery fabrication, due to it being an easier fabrication medium, Swiss platinum watch hallmarking rose by 66% year-on-year in Q1'25, highlighting strength at the upper end of the branded luxury segment. Migration from gold was evident, in part due to the strength in platinum offtake being skewed heavily towards higher-end brands, which tend to favour platinum, over aspirational entry-level producers.

In North America, demand is estimated to have increased by 11% year-on-year, also supported by favourable price differentials in the bridal segment. While consumer purchases may not have risen as quickly, fabrication was lifted by retailer restocking following a stronger-than-expected holiday season, as well as precautionary stocking ahead of potential tariff changes.

In Japan, platinum jewellery continued to enjoy market share gains from gold, due to the latter metal's extremely high price. While growth slowed compared to the previous two quarters, the Q1'24 base was also much higher. In absolute terms, the Q1'25 total was the highest we have seen since Q3'19. Both local sales and exports were healthy, with feedback on the March Hong Kong International Jewellery Show suggesting Japanese exhibitors did well. Bridal demand is still a drag to the total, reflecting both low marriage numbers and a preference for foreign brands. Interestingly, anecdotal information points to some success in marketing Japanese fabricated platinum jewellery to other Asian markets where it has not traditionally been popular recently.

Chinese platinum jewellery fabrication rose by 26% year-on-year and 16% quarter-on-quarter in Q1'25. The strong annual comparison reflects the reversal of destocking trends seen in 2024. With gold prices rising and gold jewellery demand underperforming, wholesalers and regional retailers took profits by liquidating unsold gold inventory and rebuilding platinum stock. Feedback from local manufacturers and showrooms indicated that major Hong Kong-branded retailers had yet to undertake similar restructuring. Their pricing model, which applies a higher mark-up to platinum than to gold, continues to make platinum jewellery less competitive at the retail level.

In India, platinum jewellery fabrication fell by 20% year-on-year to 47 koz, the lowest level since Q3'23. Export-led gains in 2024 were not repeated, with shipments to the US, UK and UAE falling 55% year-on-year due to ongoing tariff uncertainty and broader domestic industry weakness within India due to the high gold price negatively impacting retail footfall. Domestic demand was also affected, with record-high gold prices keeping consumers out of showrooms. However, manufacturers noted a rising share of platinum content in bi-metal designs, a trend supported by sustained gold price strength.

Industrial demand

Platinum industrial demand fell by 22% year-on-year to 527 koz in Q1'25, its lowest since Q3'23. As anticipated, weak glass demand (-81% year-on-year) was the main driver, although chemicals offtake also weakened.

Chemical

Following losses for three consecutive prior quarters, platinum chemical demand rose by 30% quarter-on-quarter to 173 koz in Q1'25, though volumes were still 3% lower year-on-year. This recovery was led by new propane dehydrogenation (PDH) capacity additions outside China. By contrast, demand from the Chinese paraxylene (PX) and PDH plants remained subdued on a net basis. With an absence of new projects coming on-stream in Q1'25, demand for platinum from the Chinese petrochemical industry was driven by depletion-led top-ups at existing plants. Elsewhere, silicone demand showed signs of improvement, following a challenging 2024. Early 2025 saw new production capacity for specialty silicones in Japan and South Korea come online, in order to serve growing demand from the automotive and construction industries. Meanwhile, nitric acid offtake also grew slightly, albeit against a low base in 2024 when capacity barely grew.

Petroleum

Platinum petroleum demand rose by 25% (+9 koz) year-on-year in Q1'25, mostly attributable to higher gas-to-liquid (GTL) catalyst changeouts. By contrast, demand from catalytic reforming and isomerisation units eased slightly, as net growth in global refining capacity slowed. After being hit hard by a downturn in the margins for producing fuel, most oil refineries have seen little prospect of a near-term improvement in profitability during 2025-to-date, due to such factors as a continued rise in oil supply, tepid growth in consumption and elevated uncertainty surrounding US tariff policies. On a regional basis, the "Other" region accounted for the bulk of gains, thanks to continued oil refining capacity additions and higher GTL changeout. By contrast, Europe saw the biggest decline, as easing profitability in recent years has put more refineries at risk of permanent closure. In China, the fuel oil import tariff was lifted from 1% to 3% at the start of 2025, which has seen smaller, independent oil refineries face increasing margin pressure.

Medical

Platinum medical demand increased by 3% year-on-year (+2 koz) to 77 koz. Demand for platinum in medical devices and cancer therapies is on a steady climb, driven by an ageing population in the industrialised world and a global push for more accessible treatments.

Glass

Platinum glass demand dropped 81% year-on-year (-169 koz) to 41 koz in Q1'25, the weakest level since Q4'22. While cyclical Chinese LCD capacity additions boosted 2024, Q1'25 saw a significant slowdown in capacity growth, as well as being hit by Japanese plant closures. Fibreglass offtake also saw a Chinese led slowdown, due to overcapacity and a softening of wind infrastructure rollout.

Electrical

Demand from the electronics segment in Q1'25 rose by 3% year-on-year (+1 koz). This was primarily driven by continued investment in data centres, where the proliferation of artificial intelligence (AI), machine learning (ML) applications, and increasing adoption of cloud and edge computing solutions are underpinning the rising volume of data storage requirements. These trends supported stable shipments of hard disk drives (HDDs), while the rising share of high-capacity HDDs, which require higher metal loadings, also contributed to the increase. In parallel, demand for advanced semiconductor processes grew steadily. Beyond organic capacity expansion, supply chain participants took steps to increase inventory levels ahead of impending US tariffs, further supporting platinum alloy target demand within semiconductor manufacturing.

Hydrogen: Stationary and Other

In Q1'25, demand for platinum in hydrogen-based applications increased to 21 koz marking the first quarter above 20 koz. While concerns regarding the slower-than-expected pace of project rollouts continued to weigh on industry sentiment, there were encouraging developments from key players in the Proton Exchange Membrane (PEM) segment during the quarter. Notably, one major manufacturer reported a 64% quarter-on-quarter increase in its PEM-related order intake.

Other

Global other industrial demand increased by 1% (+1 koz) year-on-year to 143 koz in Q1'25. Within the automotive sector, despite a slight decline in the production of fuel-injected vehicles year-on-year, there was a notable increase in aftermarket demand. This was driven by distributors proactively building inventories ahead of anticipated tariff announcements in the United States, leading to increased demand in the spark plug and sensor segments.

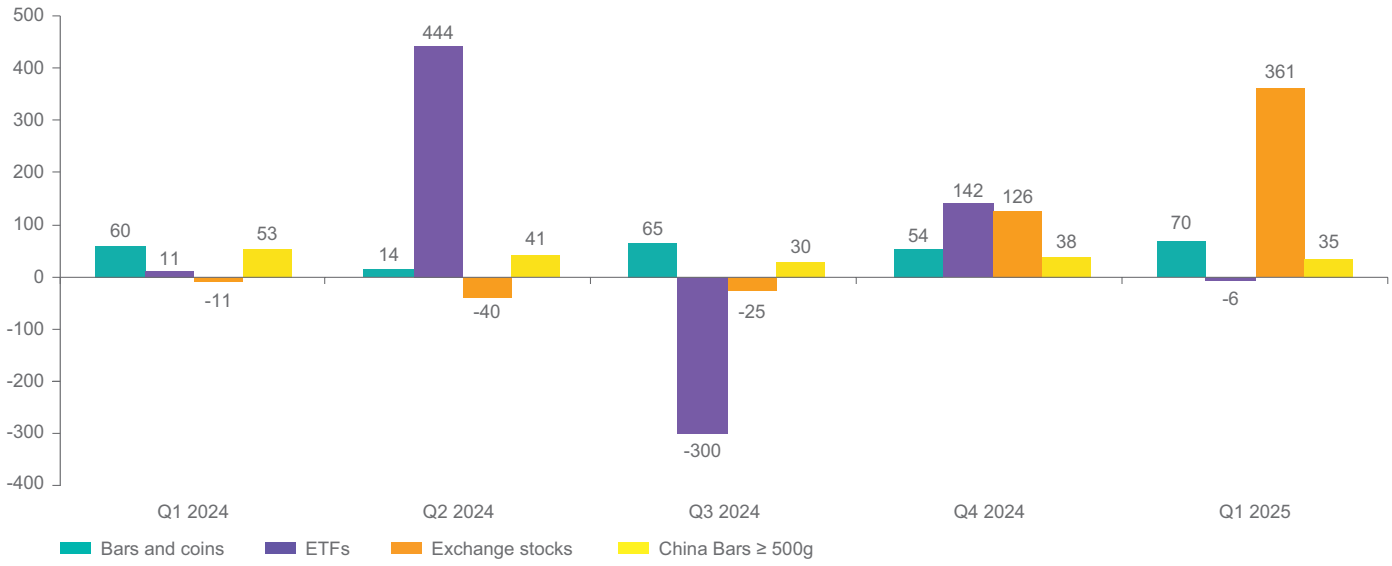
Investment demand

In total, investment demand in Q1'25 was 461 koz; albeit heavily skewed by CME inflows. The first quarter saw global bar and coin investment rise by 17% year-on-year (+10 koz) to 70 koz, its highest level since Q3'23. This was overwhelmingly due to a surge in Chinese buying, which hit a record high. Excluding China, bar and coin demand would have been down 17%.

Looking first at China, bar and coin investment jumped by 140% year-on-year (+18 koz) to 31 koz, in the process edging ahead of North America to become the largest market for platinum retail investment in Q1 (North America remains the largest for the full year 2025 forecast). This represented a new high for China, but it is important to also acknowledge Q1'24's low base, which exaggerated the year-on-year gain. An increasing number of 'Shuibei-style' small wholesale counters and second-tier wholesalers liquidated unsold gold jewellery stocks, as the gold price hit record highs, and instead built inventory of platinum retail investment bars, as they believed the white metal was undervalued.

Although not part of the bar and coin investment category, Metals Focus do measure Chinese High Net Worth (HNW) demand for bars over 500g. During Q1'25, we estimate purchases fell by 34% year-on-year and by 7% quarter-on-quarter. The extent of the decline was exacerbated by Q1'24's high base. The contrasting trend with bar and coin investment smaller than 500g reflected HNW buyers entering the market earlier in 2024 than their retail counterparts, hence the higher starting point last year for HNW platinum demand.

Chart 4: Platinum Investment, koz



Source: Metals Focus prepared for World Platinum Investment Council

Turning to the US, Q1 bar and coin investment fell by 16% year-on-year (-6 koz) to 30 koz, by far the lowest first quarter total for several years. This largely reflected the impact of a sharp rise in gold and silver retail liquidations, combined with exceptionally high lease rates, which forced the trade to destock quite noticeably. The pockets of buying that did emerge appeared concentrated among larger investors attracted by the growing gold-platinum price differential.

In Europe, bar and coin investment increased by 9% year-on-year in Q1'25, supported by improving investor sentiment across precious metals. Rising economic and geopolitical uncertainty, particularly in the wake of Trump's inauguration, spurred demand for hard assets.

Japanese bar and coin investment continued to suffer due to local investors' attention being focused on gold, the strength of which continued to make headlines in the first quarter. Volumes, both buying and selling back, were historically low and the market was virtually balanced, meaning sales to investors and buy-backs were almost identical.

Platinum exchange traded fund (ETF) holdings were unchanged during the quarter at 3,302 koz. With 30-day price volatility falling to a six-year low in March, platinum prices remained relatively stable, giving investors little impetus to adjust positions.

Exchange held platinum stocks rose sharply in Q1'25, increasing by 361 koz from the start of the year to reach 636 koz, the highest level since the COVID-driven dislocations of 2021. This extended the trend seen in Q4'24, when inventories climbed by 126 koz. Anticipation of tariff measures led to strong demand for US-located metal, driving premiums. This was reflected in the exchange for physical (EFP) spread between US futures and London spot, which spiked to USD 60 in January, prompting increased flows into CME-approved vaults.

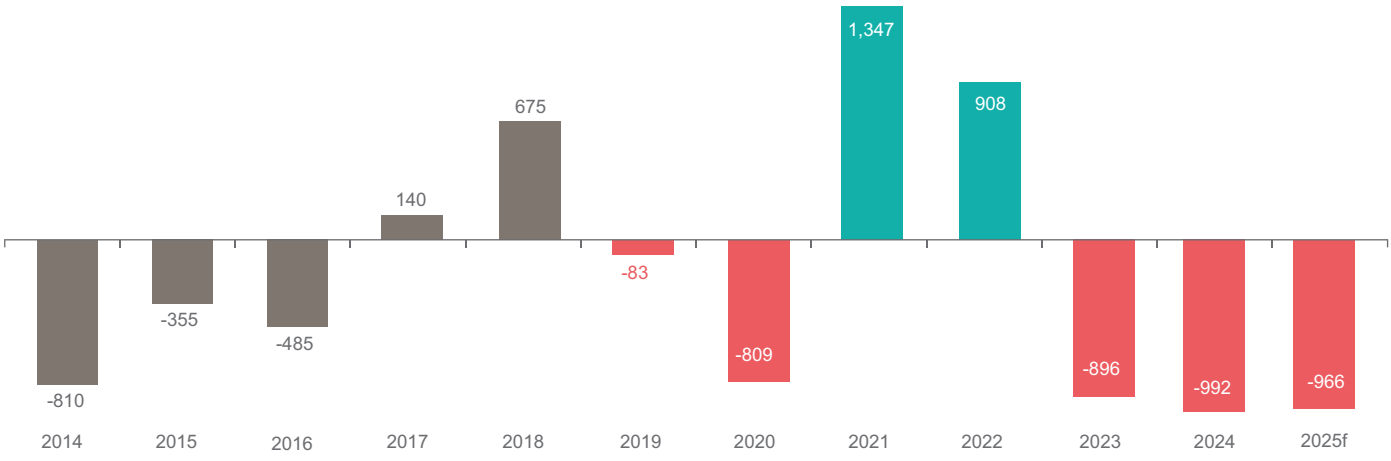
While the EFP narrowed, even briefly turning negative, the futures market remained in contango, rewarding borrowing, whereas the over-the-counter (OTC) market was in backwardation. This dynamic points to a continued preference for US-located positions. Inventory levels peaked at the end of the quarter, before dropping sharply following confirmation that platinum and other precious metals in most forms would not be subject to tariffs.

2025 OUTLOOK

The outlook for the platinum market in 2025 has become increasingly uncertain due to the United States' fluctuating trade policy, other nations' responses and the consequent impact all this may have on the global economy. At the time of writing, we have seen yet another executive order relating to US tariff policy (the third order in one month), underscoring how transient any forecast may prove to be this year. Against this backdrop, we continue to forecast a deep market deficit of 966 koz, as supply once again falls well short of demand.

Total supply for the full year is expected to reach 6,999 koz, a decline of 4% compared to 2024. Refined mine production is projected to contract by 6%, while secondary supply is estimated to grow by 3%. Total demand is forecast at 7,965 koz, 4% lower year-on-year. Although automotive and industrial demand are expected to contract, this will be partially offset by a recovery in the jewellery market.

Chart 5: Supply-demand balance, koz, 2014-2025f



Source: SFA Oxford (2014 – 2018), Metals Focus (2019 – 2025f)

Supply

The magnitude of the year-on-year decline in Q1'25 output was largely the result of short-term disruptions, but the broader structural downtrend in platinum mine supply is set to persist throughout 2025.

In South Africa, the drawdown of Anglo American Platinum's semi-finished inventories, which boosted supply in 2024, was completed in Q4'24. As a result, refined production in 2025 is expected to align more closely with mined output, which remains in structural decline. While, following recent smelter maintenance, both Implats and Northam retain some excess semi-finished inventory, management teams expect the drawdown to extend beyond 2025. As a result, any drawdown during the year is not expected to offset the impact of the depletion of the Anglo American Platinum inventory.

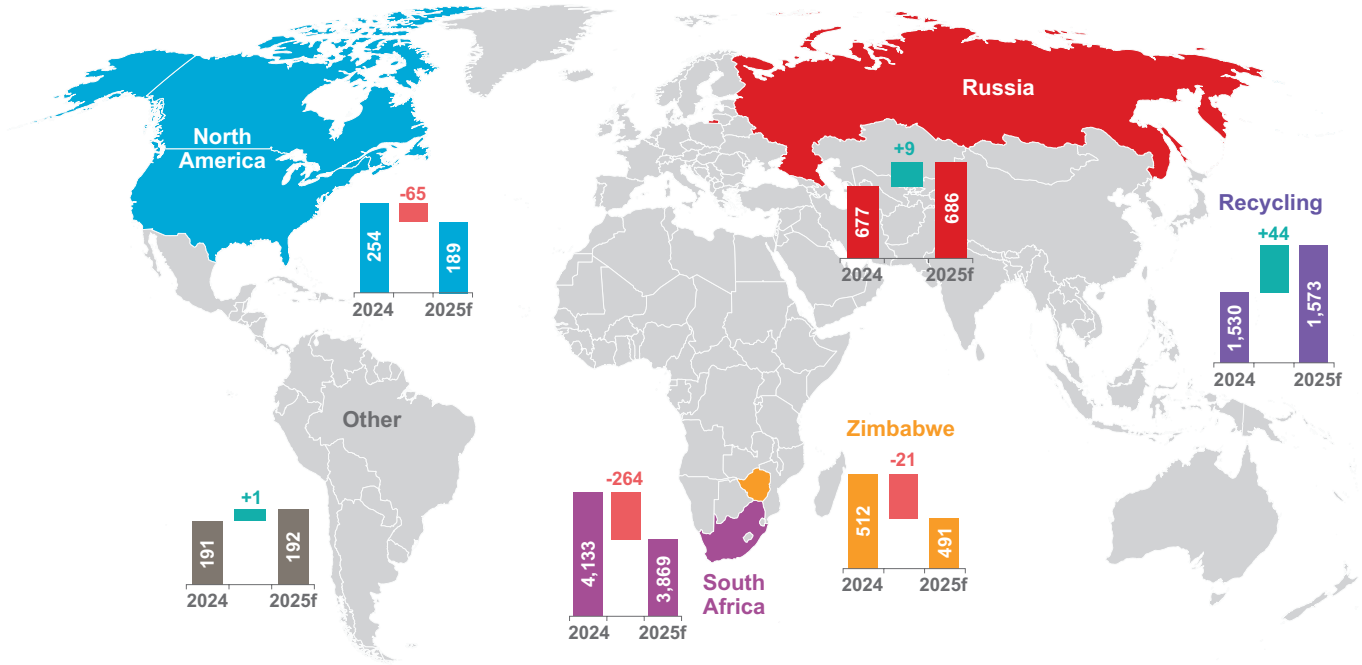
Despite a slight recovery from the Q1'24 low, persistently weak PGM prices continue to place pressure on higher-cost producers. Cost-cutting has been widespread, with around 7,500 jobs restructured across the PGM mining sector during 2024. Mine closures and the restructuring of operations have already removed significant volumes from the market. Output in 2025 is projected to be approximately 0.5 Moz below pre-pandemic levels. Long-term capital investment remains insufficient to sustain historical production rates, and new projects have failed to replace declining output from ageing assets. At current price levels, profitability is marginal for many operations, increasing downside risks. Further declines in PGM or by-product prices, such as chrome, are likely to trigger additional restructuring and supply reductions.

South African mine supply is forecast to decline by 6% year-on-year to 3,869 koz in 2025. Excluding the strike-affected 2014 and ACP shutdown-impacted 2020, this would mark the lowest annual output in approximately 25 years.

Zimbabwean platinum production is forecast to decline by 4% year-on-year to 491 koz, down from 2024's all-time high. The drop reflects the depletion of semi-finished inventory that supported last year's output, as well as ongoing regional power disruptions.

In North America, platinum production is projected to fall 26% year-on-year to 189 koz, marking the lowest level in three decades. This reflects the restructuring of Sibanye-Stillwater's US operations and lower output from Canadian by-product nickel producers, who are facing increased margin pressure. Russian mine supply is expected to remain broadly stable, rising 1% year-on-year to 686 koz.

Chart 6: Changes in supply, koz, 2024 vs. 2025f



Source: Metals Focus prepared for World Platinum Investment Council

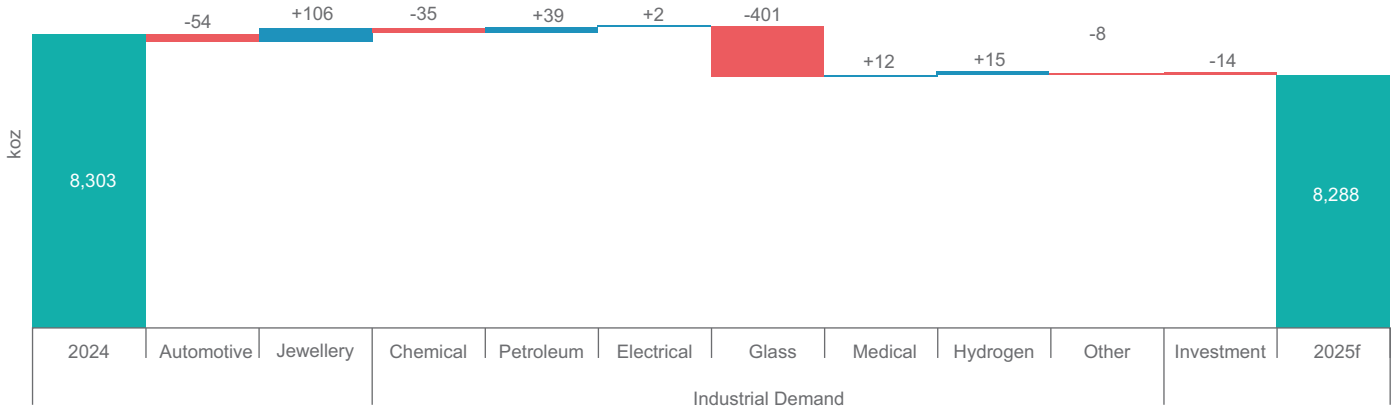
Recycling

As of 30th April 2025, spent autocatalysts remain exempt from the slew of new tariffs, which should support the tentative recovery that began in 2024. For the full year, total supply from spent autocatalysts is expected to rise by 4%. As will be the caveat across every segment under review, barring further complications from tariffs, that could disrupt material flows, global recycling is forecast to increase by 3% year-on-year to 1,573 koz in 2025.

Regionally, North America and Europe are expected to post low single digit growth, with recyclers reporting improved availability of end-of-life vehicles or spent autocatalysts from scrap yards, in part due to improvements in new vehicle sales. In China, the extension of the scrappage scheme, along with its expansion to include China IV compliant trucks, is anticipated to further support supply from this market.

Jewellery scrap is forecast to decline by 2% year-on-year in 2025, primarily due to softer trends in Japan and China. However, as local jewellery fabrication improves, this is expected to stimulate a gradual recovery in secondary flows. Meanwhile, although coming from a low base, electronics recycling is forecast to increase by 7% year-on-year in 2025.

Chart 7: Changes in demand by category, 2024 vs. 2025f



Source: Metals Focus prepared for World Platinum Investment Council

Demand

Global platinum demand is expected to contract by 4% year-on-year (-338 koz) to 7,965 koz in 2025. Automotive and industrial demand combined is estimated to decline by 430 koz, reflecting an ongoing shift to electrified powertrains and cyclical fluctuations in glass and chemical fabrication activities. This contraction is expected to be partially offset by growth in jewellery demand, which is forecast to rise by 106 koz to 2,114 koz. Investment demand is projected to decline year-on-year by 2%, as softer ETF inflows compared to 2024 are expected to limit total investment demand to 688 koz.

Automotive demand

The various announcements regarding tariffs on automotive vehicles, parts and raw materials have led several auto manufacturers to pare back or withhold their 2025 production guidance. Against this backdrop, there is growing consensus that LDV production may, at best, remain flat compared to 2024. This would imply total output of approximately 90 million units, of which around 77 million are expected to be fitted with a PGM-coated aftertreatment system, representing a downward revision of almost 1 million units compared to our PQ Q4'24 report. Global automotive demand for platinum is estimated to fall 2% to 3,052 koz.

Battery electric vehicle (BEV) production is also expected to achieve slower growth in 2025, with output now forecast to rise by 18% year-on-year, compared to the 22% projected at the beginning of the year. Meanwhile, HDV production is currently expected to remain flat, supported by a recovery in Japanese manufacturing and the expansion of China's trade-in scheme to include China IV trucks. In the NRV category, production is forecast to grow by 1%, although this may be at risk should the construction sector suffer from weaker economic prospects.

For the full year, we forecast a 7% decline in platinum demand from the HDV segment, a 2% increase in NRV demand, and flat demand from the LDV sector. Taken together, total global automotive platinum demand is expected to reach 3,052 koz in 2025, representing a 2% decline year-on- year.

In Europe, platinum demand is expected to decline to 927 koz in 2025, a reduction of 6% compared to the previous year. Although vehicle manufacturers have been granted some relief from CO_2 penalties, with fleet averages now calculated over a three-year period, most are continuing with plans to expand their pure electric vehicle product offerings. BEV production is forecast to increase by 34% in 2025. This growth comes at the expense of diesel passenger vehicle output, which is expected to fall from 25% to 21% of total production across Europe (Western and Eastern).

HDV production is expected to recover in 2025 following a weak 2024. Last year's decline was driven by a pre-buy in 2023, as fleets moved to avoid the cost impact of the EU General Safety Regulation. This regulation requires the inclusion of several advanced safety features at an additional cost. While production may improve, the mix is expected to shift towards smaller trucks. Combined with continued metal optimisation, this will keep platinum demand from the HDV segment flat year-on-year.

In North America, platinum demand is forecast to decline by 5% (-24 koz) to 460 koz in 2025. LDV production is expected to fall by 1%. However, platinum demand within this segment is expected to improve slightly, supported by the larger average vehicle size and the higher platinum ratio used in trimetal catalyst systems. In contrast, platinum demand from the HDV and NRV segments is forecast to decline. Original equipment manufacturers are holding record inventory levels of heavy-duty vehicles, while ongoing uncertainty around US government policy continues to weigh on sentiment. These factors are expected to result in lower production across both segments, putting downward pressure on overall platinum requirements.

Despite Japanese vehicle production being highly exposed to export markets, output is expected to improve year-on-year. The recovery follows a decline in 2024, which was driven by production stoppages linked to safety and emissions testing irregularities. In 2025, production is expected to increase across both LDV and HDV segments. Japanese manufacturers continue to pursue a multi-pathway strategy. While production plans are increasingly skewed towards BEVs, internal combustion engine output remains resilient in the HDV segment. This strength is expected to support a 5% year-on-year increase in platinum demand from the HDV sector, but it will fail to offset softer LDV demand.

In China, the local scrappage scheme is expected to continue supporting vehicle production in 2025. However, the introduction of a recycling fee on imported vehicles by Russia could likely reduce China's export volumes to that market. As exports to Russia are heavily weighted towards internal combustion engine vehicles, this will limit overall growth in platinum demand. As a result, platinum demand from China is forecast to rise by a modest 1% in 2025.

In the rest of the world, platinum demand is expected to increase by 3% this year. In these regions, internal combustion engine vehicles remain the more practical option due to continued constraints on grid capacity and charging infrastructure, which limit the expansion of BEVs.

Overall, we estimate that in 2025 substitution of palladium for platinum will peak at 877 koz.

Jewellery demand

Jewellery demand is expected to continue the recovery seen in 2024, increasing by 5% to 2,114 koz, a second consecutive year in excess of 2,000 koz.

European demand this year is forecast to rise by 7% to a record high, with both bridal and the top-end brands contributing to gains. Much is due to a shift from white gold as more consumers and those in the trade either become aware of, or finally react to, price differentials. In contrast, total jewellery sales may stagnate given an uncertain economic backdrop which is hitting both consumer purchases and the willingness of retailers to build stocks.

Full year demand in North America is forecast to grow by 8%. Sources remain confident that wedding and engagement numbers will normalise but most of the growth will flow through from yet wider gold and platinum metal price differentials (and the generous margins this opens up for retailers) plus yet lower diamond prices (especially lab-grown). Uncertainty surrounding government policy (especially as regards tariffs), the hit to consumers' wealth from recent stock market corrections and recession warnings may hit total jewellery sales, but platinum is expected to largely escape these downdrafts.

Taking into account the much higher gold price than we had originally anticipated and Japanese jewellery's strong performance in Q1, we have revised our 2025 forecast for Japanese jewellery upwards. We now expect demand will increase by 5%, to its highest level in at least 15 years (for background, this compares to our earlier forecast of a small decline). Market share gains from gold will continue to drive this strength.

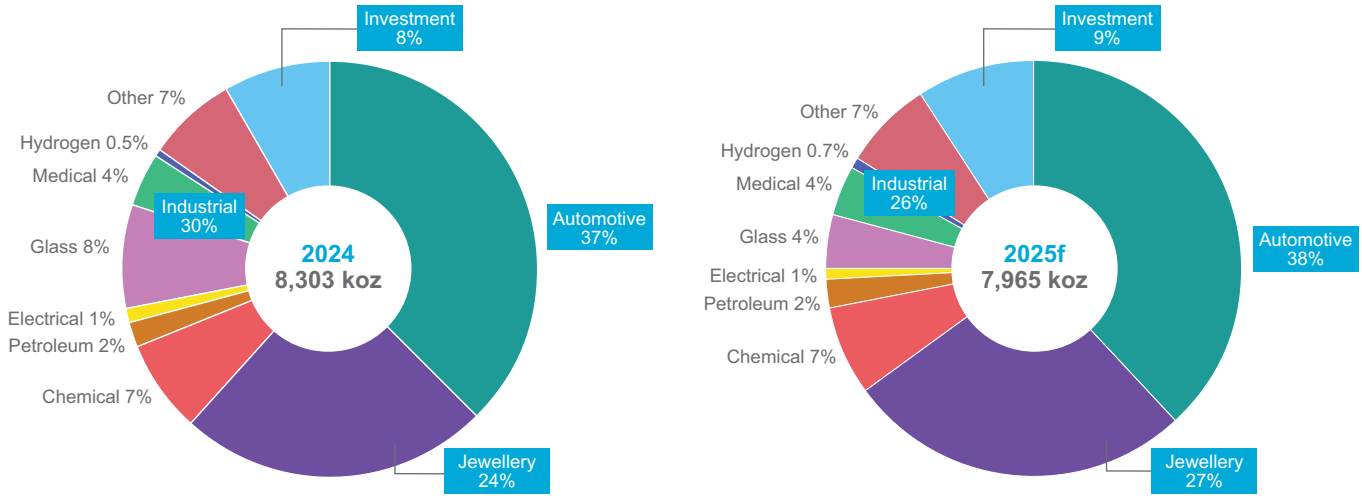
In response to the better-than-expected Q1'25 performance for Chinese jewellery demand, along with the ongoing increase in jewellers' stock-building activities, we have revised our 2025 growth forecast higher, from 5% to 15%, taking jewellery demand up to 474 koz. In addition, some leading manufacturers' successful product development, healthy demand for menswear and unisex designs, and retailers' promotion via live broadcasting platforms will all support demand

In India we expect fabrication to fall by 10% year-on-year to 240 koz due to declining exports amid US tariff uncertainty. Overseas shipments, which accounted for nearly 40% of fabrication last year, may drop below 30%. Though exports are expected to decline, continued retail expansion in India will support domestic fabrication. While jewellers increasingly market platinum for its high profit margins, the growing appeal of bimetal platinum jewellery and the widening price gap with gold are expected to attract more buyers.

Industrial demand

In 2025, industrial demand is forecast to fall by 15% to 2,111 koz. Glass demand is expected to decline by 58%, following cyclical capacity offtake in 2024, as well as LCD plant decommissionings this year. Chemicals offtake is forecast to fall by 6%, broadly offsetting the marginal gains in petroleum, hydrogen, medical and electrical sectors. Industrial demand is estimated to make up 26% of total demand this year, down from 30% last year but making a similar contribution to 2019–2020.

Chart 8: Demand end-use shares, 2024 vs. 2025f



Source: Metals Focus prepared for World Platinum Investment Council

Glass

Platinum demand in the glass sector is forecast to slide by 58% (-401 koz) to 289 koz in 2025. After 2–3 years of cyclical growth in China's LCD and fibreglass sectors, the market is set to normalise. In LCD manufacturing, plant closures in Japan will offset gains elsewhere, leading to most glass demand this year coming from the fibreglass segment. However, fibreglass demand is forecast to slow, primarily due to weaker activity in China. Outside of Japan and China, demand in the 'rest of world' segment is set to rebound, climbing from -70 koz to 39 koz. This reflects a normalisation following last year's LCD plant closures in South Korea and Taiwan, which are not expected to be repeated.

Chemical

Platinum chemical demand is projected to fall by 6% year-on-year in 2025 to a seven-year low of 580 koz. Weaker demand from PX and PDH units in China will account for the vast majority of this year's losses. To a large extent, this reflects a return to normality, after several years of aggressive capacity expansions in the late 2010s and early 2020s. The US-China trade war has also added considerable uncertainty, as demand for petrochemicals from downstream industries (clothing, plastic bottles, and other materials) slows in the wake of still soft domestic Chinese demand and falling exports. As for PDH plants, the impact has been particularly acute, as Chinese PDH plants rely heavily on US feedstocks, which are now subject to tariffs. By contrast, demand for platinum in the silicone industry is expected to post a small increase, as a repeat of last year's inventory de-stocking is unlikely. Meanwhile, demand from the fertiliser industry is also expected to edge slightly higher, on the back of modest capacity growth.

Petroleum

Petroleum demand is expected to rise by 25% year-on-year to just under 200 koz. This increase is entirely premised on higher planned catalyst changeouts at gas-to-liquid (GTL) plants. Excluding this, the use of platinum in catalytic reforming and isomerisation units are now expected to record a modest decline this year. This marks a downward revision since the previous report, which reflects a deteriorating outlook towards global oil demand, as the sharp increase in tariffs and uncertainty will weigh on global growth. In addition to a challenging economic backdrop, growth in global oil refining capacity is also expected to slow, which will also affect demand for platinum catalysts. While new capacity additions are still expected, led by Africa and the Middle East, part of these will be offset by several permanent refinery shutdowns in industrialised countries. In China, following the recent rise in the oil import duty, squeezed margins could see some small refineries face the risks of permanent shutdowns, considering that oil consumption had already slowed in 2024 amid a slowing economy and the ongoing electrification of the transport sector.

Medical

Platinum medical demand is forecast to grow by 4% (+12 koz) to 320 koz, a continuation of its post-COVID trend. Medical demand is driven by rising cancer incidence, greater oncology funding, and the expanding use of platinum-based devices. This trend is underpinned by ageing populations, improving healthcare access and elevated post-pandemic medical spending.

Electrical

Expanding demand for data storage is driving a surge in global data centre construction. Despite ongoing competition from solid-state drives (SSDs), the cost-effectiveness per unit of storage and the lower carbon footprint of HDDs are expected to secure their position within the storage landscape, leading to projected stable HDD shipments in 2025. Concurrently, robust demand for semiconductors is expected to persist, indicating a cautious positive outlook for platinum demand. However, tariffs have forced cloud-service providers to re-evaluate their expansion plans, which will present the greatest downside risk for this year.

Hydrogen Stationary and Other

Ambiguity in policy direction and the redirection of funding towards defence spending and other political priorities have contributed to downward revisions in the number of hydrogen-related projects over the past quarter. Nevertheless, this does not indicate a lack of progress in the adoption of hydrogen as part of the future energy mix. For 2025, there are approximately 100 projects under development or execution, representing a combined 9 GW of electrolyser capacity, with around 33% based on the proton exchange membrane (PEM) technology. When including stationary power, electrolysis, and storage applications, platinum demand from hydrogen-related uses is forecast to grow by 35% this year to 59 koz.

Other

While the decline in ICE vehicle production will exert downward pressure on spark plug and sensor demand, the growth of hybrid vehicles and increasing demand for advanced technologies and sensors in other sectors, such as marine and aerospace, will likely mitigate this decline. As a result, we estimate that demand for spark plugs, sensors, and other PGM-containing aftermarket components will decline. The downside risk will depend on the specifics and extent of any tariffs and the response to these measures.

Investment demand

Total investment is set to decline by 2% year-on-year to 688 koz in 2025. Retail investment is forecast to partially recover by 30% (+58 koz), albeit to just a two-year high of 252 koz. This reflects further gains in China and a modest recovery in North America. By contrast, Japan is set for a second year of net disinvestment.

North American demand is forecast to regain some of the ground lost in 2024, with a forecast 18% lift this year. This reflects a relatively decent start to the year from those investors attracted by the record discount to gold, in spite of the overall weakness in North American precious metals retail investment. Even so, this forecast is subject to considerable uncertainty as most platinum investment bar imports are currently subject to a 10% baseline tariff, which in early Q2'25 decimated the trade (the minted gold bar market was also similarly affected). As such, this forecast assumes this issue will eventually be resolved, resulting in a much stronger H2'25. Should a solution not emerge then the next *Platinum Quarterly* may feature a considerable downgrade to the 2025 forecast.

In Europe, platinum retail investment is expected to rise by 10% in 2025. High macroeconomic uncertainties and further cuts to interest rates will be key drivers behind this growth, as investors seek precious metals for wealth preservation. Even though fresh interest is likely to centre on gold, platinum should also benefit

With regards to China, bar and coin investment is expected to rise by 48% in 2025. The lack of alternative investment options, increasing sales channels (including online stores and livestream sales), and the market's increasing interest in platinum investment will all benefit demand. Similarly, we expect growth in larger bars, while perhaps not at the same rate as 2024 as platinum now comprises a decent share of many HNW individual's portfolios.

Barring a shock that sends its price materially higher, creating excitement in the market, we expect Japanese investor interest in platinum to be limited over the rest of the year, as attention continues to centre on gold. On a net basis we continue to see some modest liquidations, as some investors take the opportunity of somewhat elevated prices to liquidate positions that have not performed as well as they would have hoped, some potentially shifting funds into gold.

We expect platinum ETF holdings to increase by 100 koz to 3,407 koz in 2025, underpinned by strong fundamentals, opportunistic buying of dips and a continued and growing discount to gold.

ABOVE GROUND STOCKS

The projected 2025 deficit of 966 koz will draw stocks down to 2,160 koz, which will cover a mere three months of global platinum demand. The WPIC definition of above ground stocks is the year-end estimate of the cumulative platinum holdings not associated with exchange-traded funds, metal held by exchanges or working inventories of mining producers, refiners, fabricators or end-users.

Table 2: Supply, demand and above ground stock summary – annual comparison

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025f	2024/2023 Growth %	2025f/2024 Growth %
Platinum Supply-demand Balance (koz)													
SUPPLY													
Refined Production	**6,160**	**6,145**	**6,130**	**6,125**	**6,074**	**4,988**	**6,295**	**5,520**	**5,604**	**5,766**	**5,426**	**3%**	**-6%**
South Africa	4,480	4,365	4,385	4,470	4,374	3,298	4,678	3,915	3,957	4,133	3,869	4%	-6%
Zimbabwe	405	490	480	465	458	448	485	480	507	512	491	1%	-4%
North America	365	390	360	345	356	337	273	263	275	254	189	-8%	-26%
Russia	710	715	720	665	716	704	652	663	674	677	686	0%	1%
Other	200	185	185	180	169	200	206	200	190	191	191	0%	0%
Increase (-)/Decrease (+) in Producer Inventory	+30	+30	+30	+10	+2	-84	-93	+43	+11	+16	+0	38%	-100%
Total Mining Supply	**6,190**	**6,075**	**6,160**	**6,135**	**6,076**	**4,904**	**6,202**	**5,563**	**5,615**	**5,782**	**5,426**	**3%**	**-6%**
Recycling	**1,720**	**1,860**	**1,915**	**1,955**	**2,157**	**2,041**	**2,107**	**1,824**	**1,515**	**1,530**	**1,573**	**1%**	**3%**
Autocatalyst	1,185	1,210	1,325	1,430	1,612	1,553	1,619	1,383	1,114	1,156	1,200	4%	4%
Jewellery	515	625	560	505	476	422	422	372	331	298	292	-10%	-2%
Industrial	20	25	30	30	69	66	67	69	71	76	81	7%	7%
Total Supply	**7,910**	**7,935**	**8,075**	**8,090**	**8,233**	**6,945**	**8,309**	**7,387**	**7,130**	**7,311**	**6,999**	**3%**	**-4%**
DEMAND													
Automotive	**3,245**	**3,360**	**3,300**	**3,115**	**2,689**	**2,209**	**2,451**	**2,775**	**3,203**	**3,106**	3,052	**-3%**	**-2%**
Autocatalyst	3,105	3,225	3,160	2,970	2,689	2,209	2,451	2,775	3,203	3,106	3,052	-3%	-2%
Non-road	140	135	140	145	†	†	†	†	†	†	†	N/A	N/A
Jewellery	**2,840**	**2,505**	**2,460**	**2,245**	**2,106**	**1,830**	**1,953**	**1,880**	**1,849**	**2,008**	**2,114**	**9%**	**5%**
Industrial	**1,875**	**2,020**	**1,900**	**2,040**	**2,257**	**2,132**	**2,561**	**2,341**	**2,576**	**2,487**	**2,111**	**-3%**	**-15%**
Chemical	515	560	570	565	786	639	660	672	840	615	580	-27%	-6%
Petroleum	170	220	120	235	219	109	169	193	159	158	198	0%	25%
Electrical	205	195	210	205	144	130	135	106	89	94	95	5%	2%
Glass	300	320	260	275	243	491	789	528	605	690	289	14%	-58%
Medical	240	235	235	235	277	256	267	278	292	308	320	6%	4%
Hydrogen Stationary and Other	†	†	†	†	29	28	17	12	23	44	59	92%	35%
Other	445	490	505	525	559	481	525	552	569	577	569	2%	-1%
Investment	**305**	**535**	**275**	**15**	**1,264**	**1,582**	**-3**	**-516**	**397**	**702**	**688**	**77%**	**-2%**
Change in Bars, Coins	525	460	215	280	278	593	349	259	322	194	252	-40%	30%
China Bars ≥ 500g	†	†	†	†	16	23	27	90	134	162	186	20%	15%
Change in ETF Holdings	-240	-10	105	-245	991	507	-241	-558	-74	296	100	N/A	-66%
Change in Stocks Held by Exchanges	20	85	-45	-20	-20	458	-139	-307	14	50	150	244%	200%
Total Demand	**8,265**	**8,430**	**7,935**	**7,415**	**8,316**	**7,754**	**6,962**	**6,479**	**8,026**	**8,303**	**7,965**	**3%**	**-4%**
Balance	**-355**	**-485**	**140**	**675**	**-83**	**-809**	**1,347**	**908**	**-896**	**-992**	**-966**	**N/A**	**N/A**
Above Ground Stocks	**2,225***	**1,740**	**1,880**	**2,555**	**3,567****	**2,759**	**4,106**	**5,014**	**4,118**	**3,126**	**2,160**	**-24%**	**-31%**

Source: SFA (Oxford) 2015 – 2018, Metals Focus 2019 – 2025f.

Notes:

1. Above Ground Stocks: *4,140 koz as of 31st December 2012 (SFA (Oxford)). **3,650 koz as of 31 December 2018 (Metals Focus).
2. † Estimates for this item in this period are either negligible, or captured respectively in autocatalyst demand, other industrial demand, or change in bars, coins.
3. Data from Metals Focus and SFA (Oxford) may not have been prepared on the same or directly comparable basis.
4. Prior to 2019 SFA (Oxford) data is independently rounded to the nearest 5 koz.

Table 3: Supply and demand summary – quarterly comparison

	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q1'25/Q1'24 Growth %	Q1'25/Q4'24 Growth %
Platinum Supply-demand Balance (koz)											
SUPPLY											
Refined Production	**1,192**	**1,486**	**1,393**	**1,532**	**1,225**	**1,541**	**1,461**	**1,539**	**1,108**	**-10%**	**-28%**
South Africa	778	1,051	984	1,143	796	1,127	1,049	1,161	715	-10%	-38%
Zimbabwe	116	126	132	133	132	126	132	121	115	-13%	-5%
North America	71	73	60	72	71	59	60	63	50	-30%	-21%
Russia	180	190	168	136	178	181	172	146	180	1%	23%
Other	48	46	48	48	48	48	48	47	48	0%	2%
Increase (-)/Decrease (+) in Producer Inventory	+33	+8	-6	-23	+22	+35	-22	-19	-22	N/A	N/A
Total Mining Supply	**1,226**	**1,494**	**1,387**	**1,509**	**1,247**	**1,576**	**1,439**	**1,520**	**1,086**	**-13%**	**-29%**
Recycling	**392**	**377**	**347**	**399**	**366**	**379**	**357**	**428**	**372**	**2%**	**-13%**
Autocatalyst	280	284	255	296	264	289	270	334	277	5%	-17%
Jewellery	95	76	75	85	84	72	68	74	75	-11%	2%
Industrial	17	17	17	18	17	19	20	20	19	13%	-4%
Total Supply	**1,618**	**1,871**	**1,734**	**1,907**	**1,613**	**1,955**	**1,796**	**1,948**	**1,458**	**-10%**	**-25%**
DEMAND											
Automotive	**810**	**813**	**768**	**812**	**784**	**782**	**743**	**797**	**753**	**-4%**	**-6%**
Autocatalyst	810	813	768	812	784	782	743	797	753	-4%	-6%
Non-road	†	†	†	†	†	†	†	†	†	N/A	N/A
Jewellery	**458**	**474**	**446**	**471**	**488**	**506**	**493**	**521**	**533**	**9%**	**2%**
Industrial	**686**	**790**	**488**	**612**	**673**	**694**	**563**	**556**	**527**	**-22%**	**-5%**
Chemical	329	251	127	133	178	167	136	133	173	-3%	30%
Petroleum	41	41	38	39	40	40	40	40	49	25%	25%
Electrical	23	23	22	22	22	23	24	24	23	3%	-5%
Glass	77	255	85	188	209	230	130	121	41	-81%	-67%
Medical	76	72	71	72	74	77	77	80	77	3%	-4%
Hydrogen Stationary and Other	3	4	6	10	8	9	12	15	21	159%	45%
Other	137	145	139	148	142	148	144	144	143	1%	-1%
Investment	**229**	**195**	**50**	**-78**	**113**	**459**	**(230)**	**360**	**461**	**>±300%**	**28%**
Change in Bars, Coins	128	47	86	61	60	14	65	54	70	17%	30%
China Bars ≥ 500g	31	20	35	48	53	41	30	38	35	-34%	-7%
Change in ETF Holdings	40	155	-99	-171	11	444	-300	142	-6	N/A	N/A
Change in Stocks Held by Exchanges	29	-27	28	-16	-11	-40	-25	126	361	N/A	187%
Total Demand	**2,184**	**2,272**	**1,752**	**1,817**	**2,059**	**2,441**	**1,570**	**2,234**	**2,274**	**10%**	**2%**
Balance	**-566**	**-401**	**-18**	**90**	**-446**	**-486**	**226**	**-286**	**-816**	**N/A**	**N/A**

Source: Metals Focus 2023 – 2025f.

Note:

1. † Non-road automotive demand is included in autocatalyst demand.

Table 4: Supply and demand summary – half-yearly comparison

	H2 2022	H1 2023	H2 2023	H1 2024	H2 2024	H2'24/H2'23 Growth %	H2'24/H1'24 Growth %
Platinum Supply-demand Balance (koz)							
SUPPLY							
Refined Production	**2,718**	**2,679**	**2,925**	**2,766**	**3,000**	**3%**	**8%**
South Africa	1,908	1,829	2,127	1,923	2,210	4%	15%
Zimbabwe	239	242	265	258	254	-4%	-2%
North America	132	143	132	130	123	-6%	-5%
Russia	339	370	304	359	318	5%	-11%
Other	100	94	96	96	95	-1%	-1%
Increase (-)/Decrease (+) in Producer Inventory	21	41	-30	57	-41	N/A	N/A
Total Mining Supply	**2,739**	**2,720**	**2,895**	**2,823**	**2,959**	**2%**	**5%**
Recycling	**838**	**769**	**746**	**745**	**785**	**5%**	**5%**
Autocatalyst	622	563	550	553	603	10%	9%
Jewellery	182	171	160	156	142	-11%	-9%
Industrial	34	35	36	36	40	12%	12%
Total Supply	**3,576**	**3,488**	**3,641**	**3,567**	**3,744**	**3%**	**5%**
DEMAND							
Automotive	**1,413**	**1,623**	**1,580**	**1,566**	**1,540**	**-3%**	**-2%**
Autocatalyst	1,413	1,623	1,580	1,566	1,540	-3%	-2%
Non-road	†	†	†	†	†	N/A	N/A
Jewellery	**935**	**933**	**917**	**994**	**1,014**	**11%**	**2%**
Industrial	**1,100**	**1,476**	**1,100**	**1,367**	**1,119**	**2%**	**-18%**
Chemical	371	580	260	345	269	4%	-22%
Petroleum	101	82	77	79	79	3%	0%
Electrical	49	45	44	45	48	9%	7%
Glass	164	332	273	439	251	-8%	-43%
Medical	138	149	144	151	157	9%	4%
Hydrogen Stationary and Other	6	7	16	18	27	66%	51%
Other	270	282	287	290	288	0%	-1%
Investment	**-256**	**424**	**-27**	**572**	**130**	**N/A**	**-77%**
Change in Bars, Coins	105	175	147	75	119	-19%	60%
China Bars ≥ 500g	45	51	83	94	68	-19%	-28%
Change in ETF Holdings	-280	196	-270	455	-159	N/A	N/A
Change in Stocks Held by Exchanges	-127	2	12	-51	101	>±300%	N/A
Total Demand	**3,192**	**4,456**	**3,570**	**4,500**	**3,804**	**7%**	**-15%**
Balance	**384**	**-968**	**72**	**-932**	**-60**	**N/A**	**N/A**

Source: Metals Focus 2022 - 2024.

Notes:

1. † Non-road automotive demand is included in autocatalyst demand.

Table 5: Regional demand – annual and quarterly comparison

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025f	2024/2023 Growth %	2025f/2024 Growth %	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025
Platinum Gross Demand (koz)																		
Automotive	**3,250**	**3,350**	**3,290**	**3,115**	**2,689**	**2,209**	**2,451**	**2,775**	**3,203**	**3,106**	**3,052**	**-3%**	**-2%**	**784**	**782**	**743**	**797**	**753**
North America	480	410	390	390	311	273	339	413	446	483								
Western Europe	1,450	1,630	1,545	1,340	1,354	988	927	971	1,153	987								
Japan	510	450	435	425	284	228	250	245	289	298								
China	145	195	230	220	162	241	342	434	551	531								
India	180	170	175	200	††	††	††	††	††	††								
Rest of the World	485	495	515	540	577	481	593	711	764	806								
Jewellery	**2,840**	**2,505**	**2,460**	**2,245**	**2,106**	**1,830**	**1,953**	**1,880**	**1,849**	**2,008**	**2,114**	**9%**	**5%**	**488**	**506**	**493**	**521**	**533**
North America	250	265	280	280	341	277	409	448	438	445								
Western Europe	235	240	250	255	237	196	260	301	319	343								
Japan	340	335	340	345	372	316	298	333	338	376								
China	1,765	1,450	1,340	1,095	871	832	703	484	408	412								
India	180	145	175	195	109	59	123	171	203	266								
Rest of the World	70	70	75	75	176	151	159	144	144	166								
Chemical	**515**	**560**	**570**	**565**	**786**	**639**	**660**	**672**	**840**	**615**	**580**	**-27%**	**-6%**	**178**	**167**	**136**	**133**	**173**
North America	55	50	50	50	81	103	109	110	121	95								
Western Europe	75	110	115	105	124	112	115	106	113	103								
Japan	10	15	15	15	66	62	65	66	61	58								
China	230	225	220	215	299	205	221	234	360	183								
Rest of the World	145	160	170	180	215	157	149	155	185	176								
Petroleum	**170**	**220**	**120**	**235**	**219**	**109**	**169**	**193**	**159**	**158**	**198**	**0%**	**25%**	**40**	**40**	**40**	**40**	**49**
North America	-25	90	55	55	30	5	32	44	44	56								
Western Europe	35	10	5	20	14	11	18	30	22	21								
Japan	5	0	-20	5	7	6	12	7	5	5								
China	45	80	45	10	66	35	39	26	24	17								
Rest of the World	110	40	35	145	103	52	67	86	64	60								
Electrical	**205**	**195**	**210**	**205**	**144**	**130**	**135**	**106**	**89**	**94**	**95**	**5%**	**2%**	**22**	**23**	**24**	**24**	**23**
North America	15	10	15	15	38	35	35	28	24	25								
Western Europe	10	10	10	10	27	23	25	20	16	17								
Japan	15	15	15	15	20	16	17	14	12	13								
China	70	80	90	85	28	31	31	23	19	20								
Rest of the World	95	80	80	80	31	25	26	22	18	20								
Glass	**300**	**320**	**260**	**275**	**243**	**491**	**789**	**528**	**605**	**690**	**289**	**14%**	**-58%**	**209**	**230**	**130**	**121**	**41**
North America	0	10	5	5	-78	-21	19	35	54	20								
Western Europe	5	5	5	20	67	44	8	32	-85	8								
Japan	0	-10	-10	0	-38	-62	7	-150	6	-9								
China	195	225	165	120	183	371	787	510	620	740								
Rest of the World	100	90	95	130	109	159	-33	102	10	-70								
Medical	**240**	**235**	**235**	**235**	**277**	**256**	**267**	**278**	**292**	**308**	**320**	**6%**	**4%**	**74**	**77**	**77**	**80**	**77**
Other industrial	**445**	**490**	**505**	**525**	**559**	**481**	**525**	**552**	**569**	**577**	**569**	**2%**	**-1%**	**142**	**148**	**144**	**144**	**143**
Hydrogen Stationary & Other	**†**	**†**	**†**	**†**	**29**	**28**	**17**	**12**	**23**	**44**	**59**	**92%**	**35%**	**8**	**9**	**12**	**15**	**21**
Bar & Coin Investment	**525**	**460**	**215**	**280**	**278**	**593**	**349**	**259**	**322**	**194**	**252**	**-40%**	**30%**	**60**	**14**	**65**	**54**	**70**
North America					155	234	256	258	169	115								
Western Europe					52	75	61	44	24	32								
Japan					46	240	-26	-114	54	-24								
China					15	23	26	38	52	64								
Rest of the World					9	21	33	33	23	7								
China Bars ≥ 500g					**16**	**23**	**27**	**90**	**134**	**162**	**186**	**20%**	**15%**	**53**	**41**	**30**	**38**	**35**
ETF Investment	**-240**	**-10**	**105**	**-245**	**991**	**507**	**-241**	**-558**	**-74**	**296**	**100**	**N/A**	**-66%**	**11**	**444**	**-300**	**142**	**-6**
North America					125	524	-6	-102	-61	165								
Western Europe					508	237	56	-313	-99	163								
Japan					-13	58	-23	-28	12	-6								
Rest of the World					370	-312	-268	-116	74	-26								
Change in Stocks Held by Exchanges	**20**	**85**	**-45**	**-20**	**-20**	**458**	**-139**	**-307**	**14**	**50**	**150**	**244%**	**200%**	**-11**	**-40**	**-25**	**126**	**361**
Investment	**305**	**535**	**275**	**15**	**1,264**	**1,582**	**-3**	**-516**	**397**	**702**	**688**	**77%**	**-2%**	**113**	**459**	**-230**	**360**	**461**
Total Demand	**8,270**	**8,410**	**7,925**	**7,415**	**8,316**	**7,754**	**6,962**	**6,479**	**8,026**	**8,303**	**7,965**	**3%**	**-4%**	**2,059**	**2,441**	**1,570**	**2,234**	**2,274**

Source: SFA (Oxford) 2015 – 2018, Metals Focus 2019 – 2025f.

Notes:

1. † Hydrogen and Stationary Other demand is included in Other industrial demand prior to 2019.
2. †† India automotive demand is included in Rest of the World.
3. Data from Metals Focus and SFA (Oxford) may not have been prepared on the same or directly comparable basis.
4. Prior to 2019 SFA data is independently rounded to the nearest 5 koz.

Table 6: Regional recycling – annual and quarterly comparison

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025f	2024/2023 Growth %	2025f/2024 Growth %	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025
Platinum recycling supply (koz)																		
Automotive	**1,185**	**1,210**	**1,325**	**1,420**	**1,612**	**1,553**	**1,619**	**1,383**	**1,114**	**1,156**	**1,200**	**4%**	**4%**	**264**	**289**	**270**	**334**	**277**
North America					522	486	490	458	311	327								
Western Europe					792	823	842	687	580	585								
Japan					137	92	114	81	73	64								
China					35	68	77	59	53	85								
Rest of the World					126	83	95	99	96	95								
Jewellery	**515**	**625**	**560**	**505**	**476**	**422**	**422**	**372**	**331**	**298**	**292**	**-10%**	**-2%**	**84**	**72**	**68**	**74**	**75**
North America					3	3	3	3	3	3								
Western Europe					4	4	3	4	4	4								
Japan					187	162	160	165	136	107								
China					276	248	250	195	183	179								
Rest of the World					5	5	5	6	5	5								
Industrial	**20**	**25**	**30**	**30**	**69**	**66**	**67**	**69**	**71**	**76**	**81**	**7%**	**7%**	**17**	**19**	**20**	**20**	**19**
North America					15	12	12	13	12	15								
Western Europe					11	10	11	11	13	15								
Japan					34	34	34	34	34	34								
China					7	7	8	9	9	10								
Rest of the World					2	2	2	2	2	2								

Source: SFA (Oxford) 2015 – 2018, Metals Focus 2019 – 2025f.

GLOSSARY OF TERMS

Above ground stocks

The year-end estimate of the cumulative platinum holdings not associated with exchange-traded funds; metal held by exchanges or working inventories of mining producers, refiners, fabricators, or end-users. Typically, unpublished vaulted metal holdings from which a supply-demand shortfall can be readily supplied or to which a supply-demand surplus can readily flow.

ADH

Alkane dehydrogenation: catalytic conversion of alkanes to alkenes. Broad term encompassing BDH and PDH.

BDH

Butane dehydrogenation; catalytic conversion of isobutane to isobutylene.

BEV

A Battery Electric Vehicle uses an electric motor exclusively powered by rechargeable batteries for propulsion.

Bharat

The Government of India introduced Bharat emission standards (BSES) to reduce and regulate the output of air pollutants from internal combustion and spark-ignition engine equipment, including motor vehicles.

Bharat Stage VI standard (BS-V, BS-VI)

Bharat Stage VI standard is the equivalent of Euro 6 and was rolled out in India between 2018 and 2020.

Catalysed vehicle

A catalysed vehicle refers to a vehicle equipped with a catalytic converter, a device in the exhaust system that reduces harmful emissions by converting pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), and unburned hydrocarbons (HC) into less harmful gases like carbon dioxide (CO_2), nitrogen (N_2), and water vapour (H_2O). Both pure internal combustion engine vehicles and hybrid vehicles that burn fossil fuels will be fitted with a catalyst.

China Bars ≥ 500g

Net China demand for platinum bars of 500g or larger in size, excluding bars identified as being sold to investors mostly associated with industrial companies.

China Vehicle Emission Standards

China's vehicle emission standards are set nationally by the Ministry of Environmental Protection and are regionally and locally enforced by Environmental Protection Bureaus. A number of cities and provinces in China continue the historic practice of early introduction of new standards.

China 6

As of December 2016, China adopted China 6 standards that apply nationwide to light-duty passenger vehicles from July 2020 (China 6a) and July 2023 (China 6b). These standards incorporate elements of Euro 6 and U.S. Tier 2 regulations for tailpipe and evaporative emissions. China 6b includes mandatory on-road emissions testing modelled after the EU RDE regulation (also known as Euro 6d TEMP) with a few enhancements and modifications.

China VI

China VI standards have applied to all new heavy-duty diesel vehicles since July 2023.

Compounds (Platinum based)

Platinum combines with other elements to form chemical mixtures that are used as catalysts in chemical processes as well as in plating, metal deposition and other industrial processes.

Diesel oxidation catalyst (DOC)

A DOC oxidises harmful carbon monoxide and unburnt hydrocarbons, produced by incomplete combustion of diesel fuel, to non-toxic carbon dioxide and water.

Diesel particulate filter (DPF) and catalysed diesel particulate filter (CDPF)

A DPF physically filters particulates (soot) from diesel exhaust. A CDPF adds a PGM catalyst coating to facilitate oxidation and removal of the soot. The terms are often used interchangeably.

Electrolysis of water

Water electrolysers are electrochemical devices used to split water molecules into hydrogen and oxygen. An electrical current is applied to the electrolyser cell, and water is split into oxygen and hydrogen. The electrolysis system comprises of the system, the stack, and the cell.

Emissions Legislation

Regulations that necessitate the fitment of autocatalyst systems dealing with the treatment of vehicle tailpipe emissions such as carbon monoxide (CO), particulate matter, hydrocarbons, and oxides of nitrogen (NO_x). There are a range of standards specific to various regions and countries with varying minimum emissions targets and deadlines for compliance.

EPA

Environmental Protection Agency regulating the US vehicle and engine emission standards for pollutants.

EREV

An Extended Range Electric Vehicle is a BEV with a gasoline ICE which cannot drive the wheels directly (unlike in a PHEV, for example), but acts as a generator to charge the battery giving a greater driving range.

HEV

A Hybrid Electric Vehicle has an internal combustion engine that can drive the wheels directly or act as a generator to charge the battery. Energy can also be recovered to the battery from regenerative braking. The electric only driving range is typically a few kilometres.

Hydrogen Production Methods

In recent years, colours have been used to refer to different hydrogen production routes. There is no international agreement on the use of these terms as yet, nor have their meanings in this context been clearly defined but the following colour key provides a guideline of most widely use reference to the various production methods.

white – naturally occurring or produced as industrial by-product black or brown – coal gasification

grey – steam methane reforming turquoise – methane pyrolysis

blue – steam methane reforming plus carbon capture green – water electrolysis with renewable energy sources pink – nuclear power

yellow – solar power or mix of multiple sources.

ICE

Internal combustion engine.

IoT

Internet of Things. Networking system that allows data to be sent to and received from objects and devices through internet.

ISC

In Service Conformity which requires vehicles to not only conform with exhaust emission standards when they are new but also while in use.

Jewellery alloys

The purity of platinum jewellery is invariably expressed in parts per 1,000. For example, the most common variant, pt950, is 95% fine platinum, with the rest of the jewellery alloy made up of other metals such as cobalt or copper. Different markets would typically prescribe the purity levels for qualification and hallmarking of the jewellery as platinum jewellery.

Jewellery demand

Captures the first transformation of unwrought platinum into a semi-finished or finished jewellery product.

koz

Thousand ounces.

LCD

Liquid Crystal Display. It is a flat-panel display technology that uses liquid crystals sandwiched between two layers of glass or plastic and manipulated by electric fields to control the passage of light

LDV

Light-duty vehicle.

ETF

Exchange-traded fund. A security that tracks an index, commodity, or basket of assets. Platinum ETFs included in demand are backed by physical metal (LPPM good delivery bars stored in a secure vault approved by the listing exchange).

Euro VI emission standards

EU emission standards for heavy-duty vehicles Euro VI was introduced in 2013/2014; similar standards have later been adopted in some other countries.

Euro 6 emission standards

EU emission standards for light-duty vehicles Euro 6 legislation was introduced in 2014/2015. The limits set in Euro 6 have remained unchanged, but the measuring methods have become more stringent progressively including Euro 6 a, b, c, d, and Euro 6d-Temp, now in place. For CO_2, the laboratory based WLTP and for NO_x RDE.

Euro 7 emission standards

Euro 7 regulations will keep the existing Euro 6 exhaust emission limits for LVs and LCVs but introduce stricter requirements for solid particles, as well as stricter lifetime requirements in terms of both mileage and lifetime. The new regulations are expected to be phased in from the start of 2027.

Euro VII emission standards

Euro VII regulations on HDVs imposes more stringent limits for various pollutants, including some that have not been regulated until now, such as nitrous oxide (N_2O), as well as stricter lifetime requirements. The new standards are expected to be phased in from the start of 2027.

FCM

Fuel Consumption Monitoring describes the recording of actual consumption during the life of the vehicle. Applicable under Euro 6d to all new vehicles from 1/01/2020 and all new registrations from 1/01/2021.

FCEV

Instead of batteries, Fuel Cell Electric Vehicles use hydrogen in a platinum containing fuel cell to generate electricity to drive electric motors.

Forward prices

The price of a commodity at a future point in time. Typically comprises of the spot price as well as the risk-free interest rate and cost of carry.

GTL

Gas-to-liquids is a process that converts natural gas to liquid hydrocarbons such as gasoline or diesel fuel.

HDD

Hard disk drive. Data storage device that stores digital data by magnetic platers.

HDV

Heavy-duty vehicle.

NEDC

New European Driving Cycle vehicle emissions test set out in United Nations Vehicle Regulation 101 maintained by the United Nations Economic Commission for Europe and updated and reviewed from time to time. The WLTP is aimed to significantly enhance and replace this regulation.

Net demand

A measure of the requirement for new metal, i.e., net of recycling.

Non-road engines

Non-road engines are diesel engines used, for example, in construction, agricultural and mining equipment, often using engine and emissions technology similar to on-road heavy-duty diesel vehicles.

Ounce conversion

One metric tonne = 1,000 kilogrammes (kg) or 32,151 troy ounces.

oz

A unit of weight commonly used for precious metals. 1 troy oz = 31.103 grams.

PDH

Propane dehydrogenation, where propane is converted to propylene.

PEM Electrolyser Technology

One of four key water electrolyser technologies. The electrode on oxygen side (anode) contains iridium oxide while the electrode on hydrogen side (cathode) typically contains platinum. Transport layers are platinum-coated sintered porous titanium, and the bipolar plates would typically have platinum on with other metals.

PGMs

Platinum group metals.

PHEV

Plug in Hybrid Electric Vehicles can be plugged in to a power supply to charge a medium sized battery but also contain an ICE that can drive the wheels directly or charge the battery. The electric only driving range is typically 30-80km.

PMR

Precious metals refinery.

Pricing benchmarks

A price for a commodity that is traded on a liquid market that is used as a reference for buyers and sellers. In the case of platinum, the most commonly referenced benchmark is the LBMA Platinum Price, which is administered and distributed by the London Metals Exchange. The LBMA Platinum Price is discovered through an auction process.

Producer inventory

As used in the supply-demand balance, the change in producer inventory is the difference between reported refined production and metal sales.

PX

Paraxylene ('PX') is a chemical produced from petroleum naphtha extracted from crude oil using a platinum catalyst. This is used in the production of terephthalic acid which is used to manufacture polyester.

Refined production

Processed platinum output from refineries typically of a minimum 99.95% purity in the form of ingot, sponge, or grain.

RDE

The Real Driving Emissions (RDE) test measures the pollutants such as NO_x, emitted by cars while driven on the road. It is in addition to laboratory tests. RDE testing was implemented in September 2017 for new types of cars and has applied to all registrations from September 2019.

Secondary supply

Covers the recovery of platinum from fabricated products, including unused trade stocks. Excludes scrap generated during manufacturing (known as production or process scrap). Autocatalyst and jewellery recycling are shown in the country where the scrap is generated, which may differ from where it is refined.

Selective catalytic reduction (SCR)

Selective Catalytic Reduction (SCR) is an emissions control technology system that injects a liquid-reductant agent (urea) into the outlet stream of a diesel engine. The automotive-grade urea, known by the trade name AdBlue. The system typically requires a platinum bearing DOC ahead of the SCR unit.

SGE

Shanghai Gold Exchange.

SSD

Solid-state drive. Data storage device that uses memory chips to store data, typically using flash memory.

Stage 4 regulations

Non-road mobile machinery (NRMM) is regulated by increasingly stringent regulations set out in tiers from Stage 1 to 5. This was last reviewed in May 2018 with deadlines set for 2020 and 2021. A submission by industry bodies requesting a delay in implementation as yet to be ruled on.

Three-way catalyst

Used in gasoline cars to remove hydrocarbons, carbon monoxide and NO_x. Platinum for palladium substitution has seen some platinum incorporated into the largely palladium-based catalyst, they also include some rhodium.

Tri-metallic catalyst

In the context of automotive emissions control, a tri-metallic catalyst typically refers to a catalytic converter that uses a combination of three platinum group metals (PGMs)—platinum (Pt), palladium (Pd), and rhodium (Rh)

US Vehicle Emission Standards

US vehicle and engine emission standards for pollutants, are established by the US Environmental Protection Agency (EPA) based on the Clean Air Act (CAA). The State of California has the right to introduce its own emission regulations. Engine and vehicle emission regulations are adopted by the California

Air Resources Board (CARB), a regulatory body within the California EPA. Vehicles can in every year be certified in different emission classes, called “bins.” The fleet average emissions over all “bins” are then regulated.

Tier 3

Emission regulation issued by EPA. The regulation defines common targets until 2025 in the USA.

Tier 4 stage

Non-road mobile machinery (NRMM) in Europe is regulated by increasingly stringent regulations set out in tiers from Stage 1 to 5. This was last reviewed in May 2018 with deadlines set for 2020 and 2021. A submission by industry bodies requesting a delay in implementation yet to be ruled on.

Washcoat

The layer that contains the active catalytic materials, such as PGMs, that is applied on the inactive, often ceramic, substrate within an autocatalyst block or component.

WIP

Work in progress.

WLTP

Worldwide Harmonised Light Vehicle Test Procedure is a laboratory test to measure pollutant emissions and fuel consumption. WLTP replaces the New European Driving Cycle (NEDC). It became applicable to new car types from September 2017 and new registrations from September 2018.

WPIC

The World Platinum Investment Council.