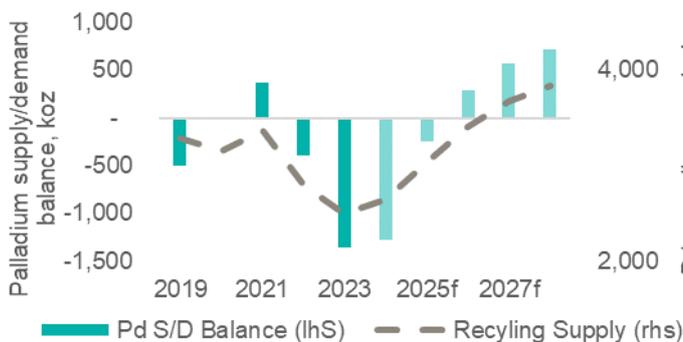


## Any delays to forecast recycling recovery will prolong larger deficits in the palladium market

WPIC's [latest palladium supply/demand forecast](#) projects tightening deficits for 2024 and 2025, followed by surpluses from 2026 onwards. Contrary to received market wisdom, the surpluses are not the result of a rapid decline in ICE demand, which remains relatively flat (fig 3). Indeed, the projected transition to a surplus is entirely contingent on a significant increase to recycling (over 1.3 Moz p.a. by 2028, fig 1), but this outlook is predicated on a number of existing challenges being resolved. Any delays to solving these could slow the pace of the growth in recycling supply, resulting in deeper and more persistent deficits and further postpone the surplus. This would in turn feed into value expectations and provide upward support for the palladium price, especially in the context of any potential short covering rallies (fig 2).

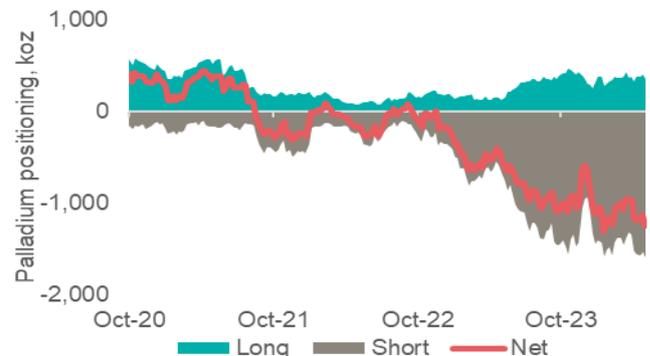
Market sentiment has been particularly negative towards palladium due to a view that demand will fall away with rapid drivetrain electrification. In reality, however, the outlook for auto demand is proving resilient due to consumer reluctance to adopt full electrification and growth in demand for hybrid vehicles (10-15% higher PGM loadings versus the pure ICE equivalent). Palladium is expected to move into a surplus, but this is driven by a 1.3 Moz p.a. increase in recycling rates (2023-2028). Challenges to mine and recycling supply have resulted in the tipping point into a surplus being delayed by a year to 2026 and our supply/demand estimates have been reduced by 1 Moz in 2024. Recycling headwinds include vehicles being used longer as high interest rates and consumer scepticism about electrification weigh on new purchases. Additional issues include concerns about scrap catalyst origin in Europe and the US, following high-profile cases of stolen autocatalysts being recycled, and punitive tax changes in China that hinder recycling growth. Our base case forecast assumes these challenges will be resolved, enabling a normalisation of recycling supply growth and increasing palladium availability over the long term. However, the timing and magnitude of the expected recovery are crucial to near-term market sentiment. Positive news for demand or setbacks to supply delaying the shift to surplus could trigger short-term covering rallies.

Figure 1: Palladium balances most sensitive to supply. Downside risks exist to timing of recycling supply growth.



Source: Metals Focus (2019-2023), WPIC Research (2024 onwards)

Figure 2: Palladium appears oversold, and vulnerable to positive sentiment prompting short covering and price uplifts.



Source: Bloomberg, WPIC Research

In contrast to palladium, platinum has much stronger short- and long-term fundamentals. Increasing recycling supply is more of a palladium phenomenon, with a projected CAGR of 9% (2023-2028), double that of platinum scrap. Platinum faces fewer downside demand risks and shares upside potential for market tightening. It is exposed to the same primary supply constraints but also benefits from a more diverse demand base and a growing hydrogen economy. Unlike palladium, the platinum market is expected to remain in deficit throughout our forecast period (2024-2028).

**Palladium market balances are contingent on the recovery and growth of palladium recycling.**

**Further disruption to recycling supply chains can defer surpluses and change short to medium term sentiment.**

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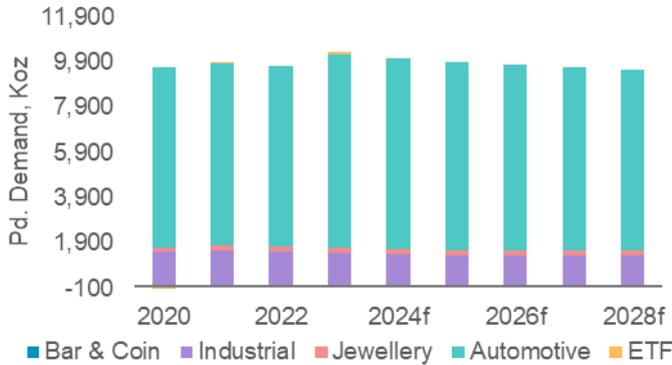
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04 June 2024

**Platinum's attraction as an investment asset arises from:**

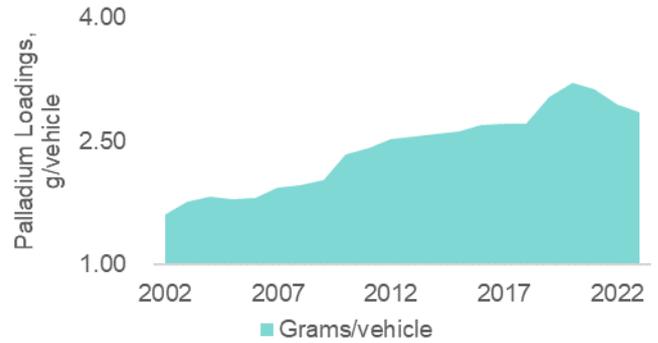
- WPIC research indicates the platinum market has entered a period of sustained deficits from 2023.
- Platinum supply remains challenged, hampered by headwinds to mine supply and with recycling rates.
- Higher-for-longer ICE/hybrid vehicle production will support automotive demand for platinum.
- Growing off a small base, hydrogen will be a major source of platinum demand in the future.
- The platinum price remains historically undervalued and significantly below gold.

**Figure 3: Palladium demand will not dramatically decline. Instead, it remains relatively stable (-1% CAGR) over the forecast period (2023-2028).**



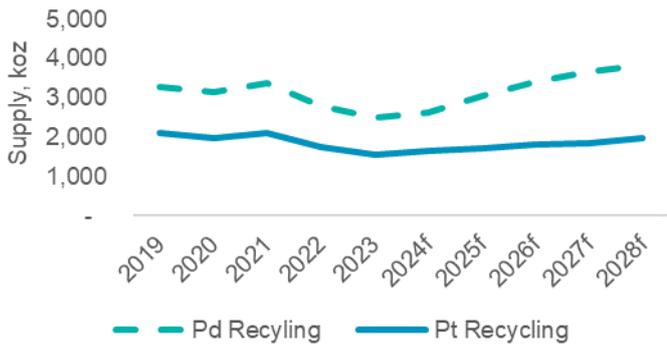
Source: Metals Focus (2020–2023), WPIC Research (2024 onwards)

**Figure 4: Vehicle loadings have almost doubled on tighter emissions controls. The flat and longer scrappage curve delays that impact on recycling.**



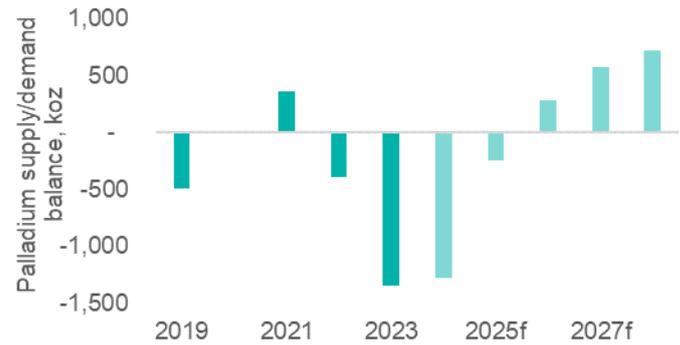
Source: OCIA Johnson Matthey (2002-2009), Metals Focus (2010-2022), WPIC Research

**Figure 5: Palladium recycling to grow at 9% CAGR (2023-2028), double that of platinum as palladium rich gasoline vehicles reach end-of-life.**



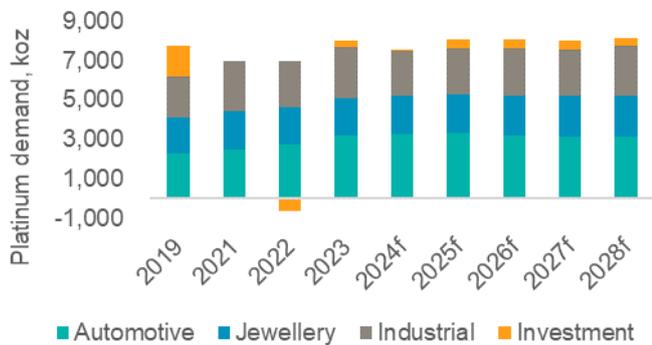
Source: Metals Focus (2019–2023), WPIC Research (2024/2025 onwards Pd, Pt respectively)

**Figure 6: Growth in recycling supply results in palladium market surpluses from 2026, but any disruption to recycling will change the shorter-term outlook.**



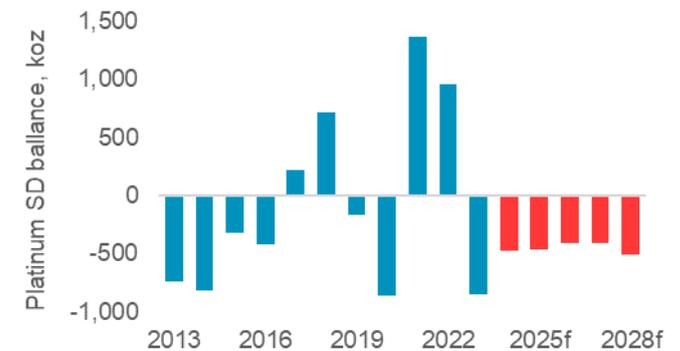
Source: Metals Focus (2019 – 2023), WPIC Research (2024 onwards)

**Figure 7: Platinum in contrast has a diverse and growing demand base, exceeding supply. Benefiting from the expansion of the hydrogen economy.**



Source: Metals Focus (2019–2024), WPIC Research (2025 onwards)

**Figure 8: Platinum has a much more constructive long-term outlook. Platinum deficits average 450 koz p.a., depleting down above ground stocks and tightening the market.**



Source: SFA (Oxford) (2013-2018), Metals Focus (2019–2024), WPIC Research (2025 onwards)

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