

## Metals Focus

Navigating rising costs and shrinking prospects

The IPMI European Chapter 10th Annual Seminar

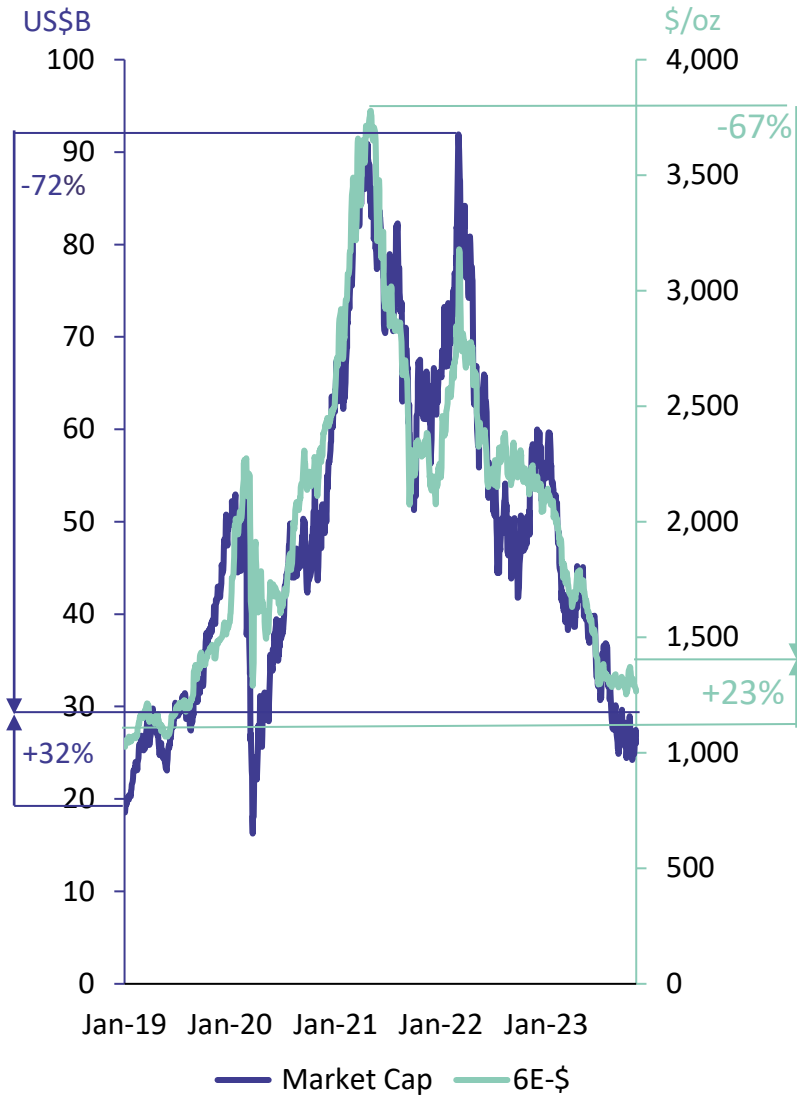
13 November 2023

Presented by Wilma Swarts



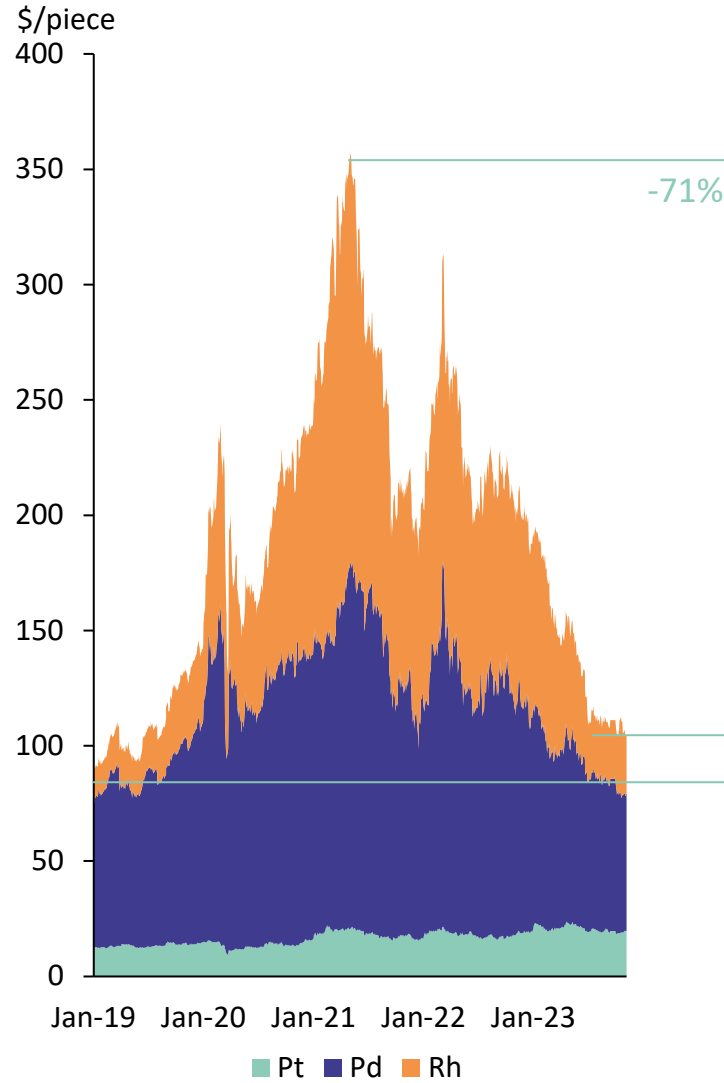
# The supply conundrum

Producer health indicators



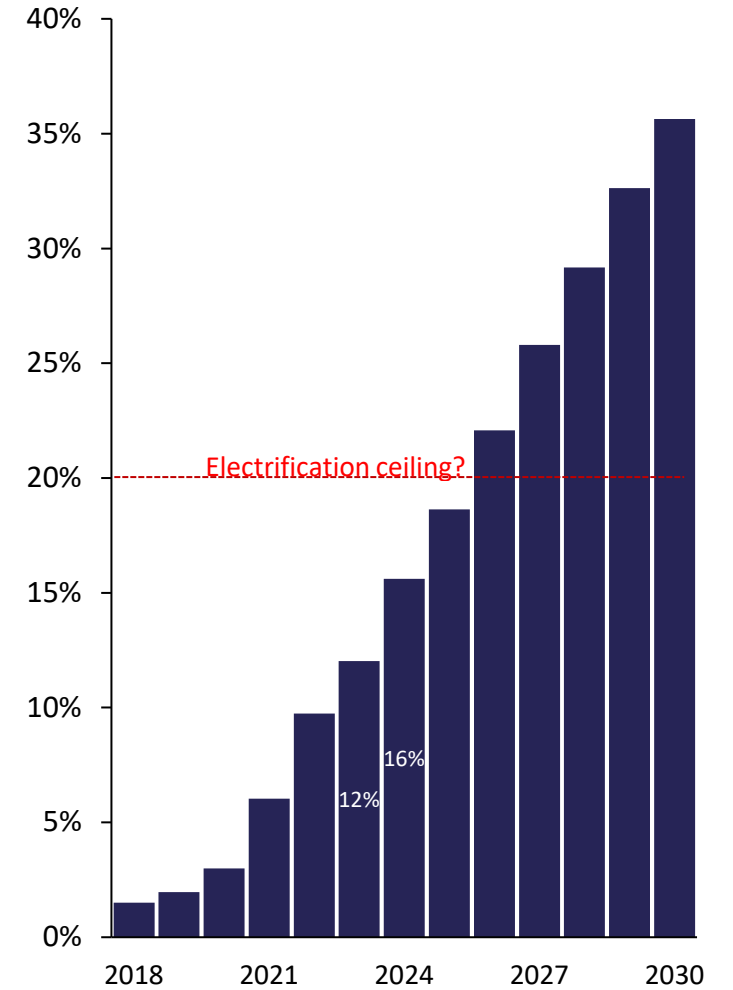
Source: Bloomberg

Value of catalyst piece



Source: Metals Focus, Bloomberg

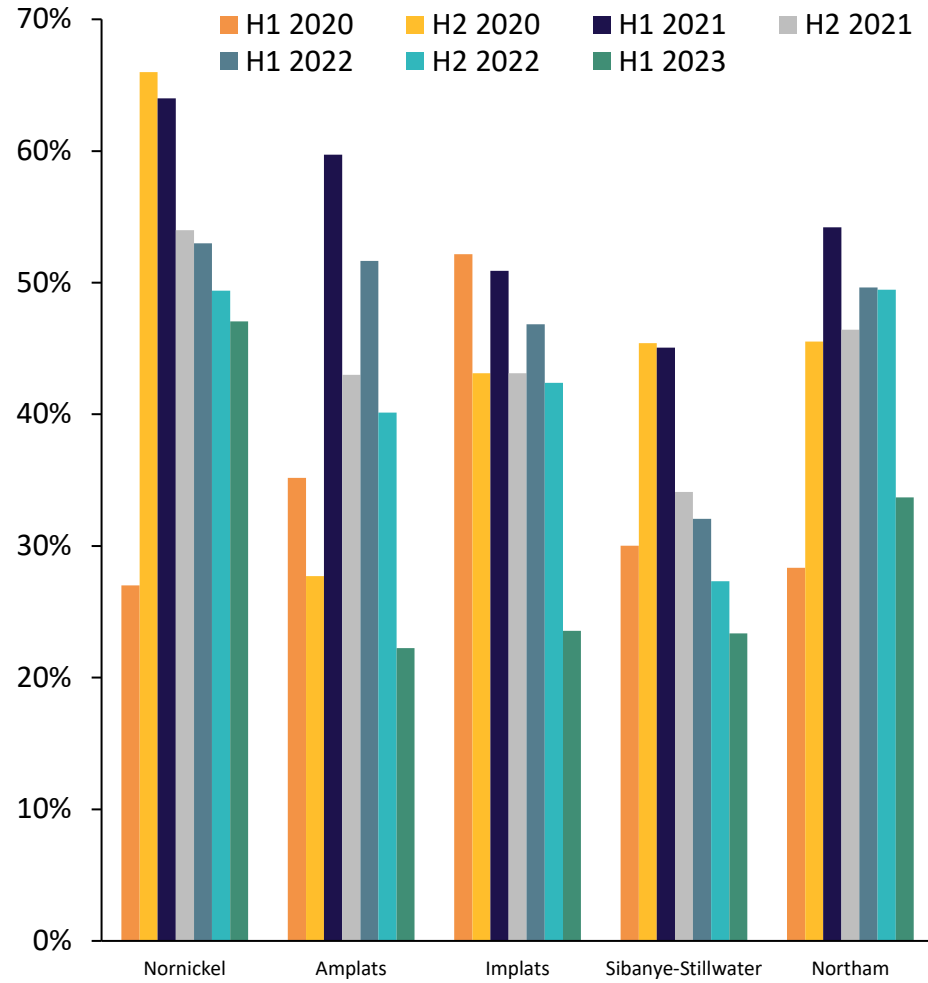
Global rate of electrification



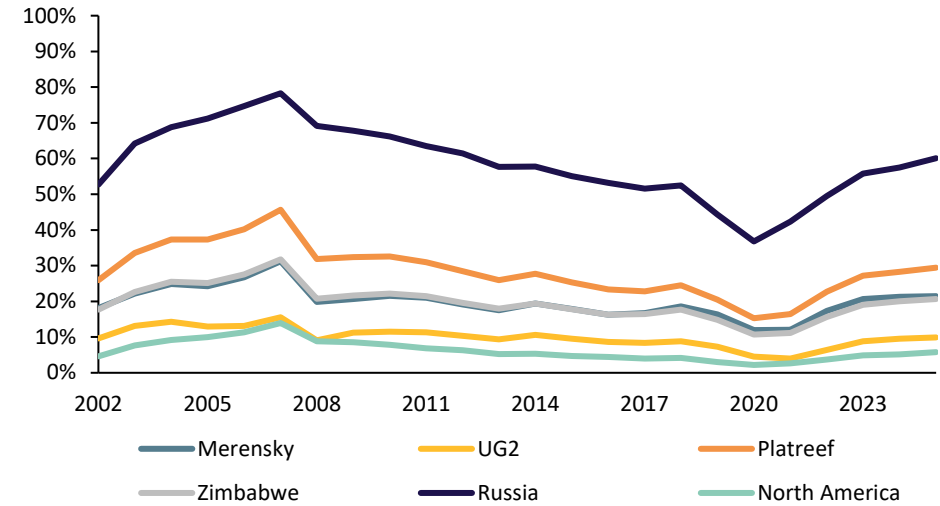
Source: LMC Automotive, a GlobalData Company

# Mining margins are softening as commodity prices fall

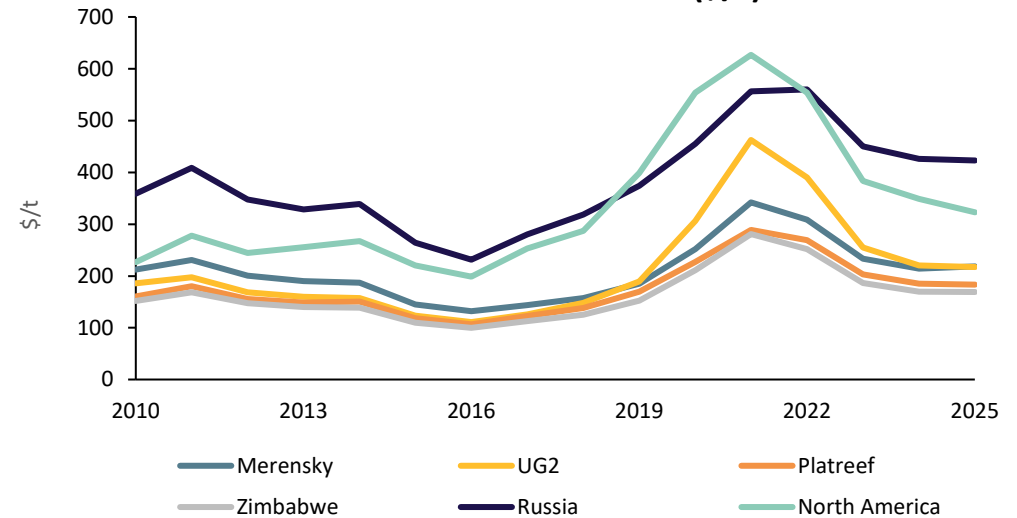
Half-Year EBITDA margin



Base metals revenue share by ore source



Reef in situ ore value (\$/t)



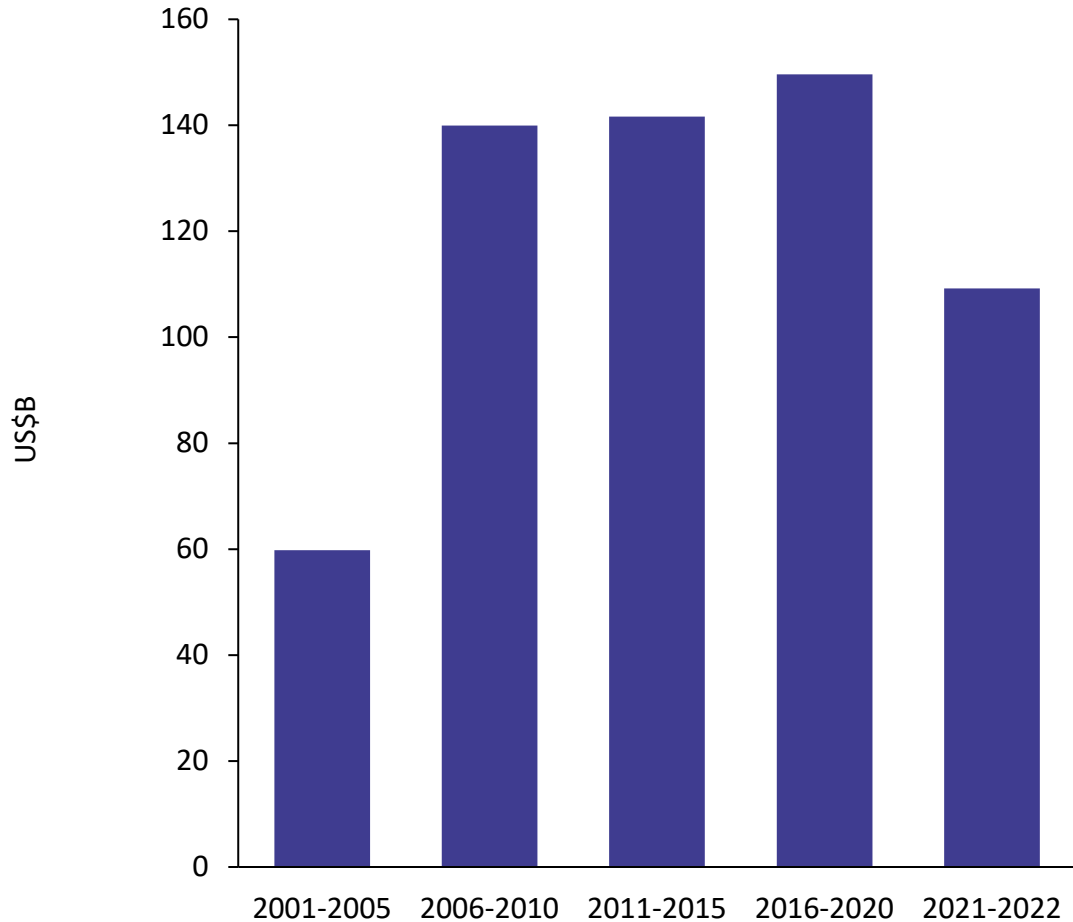
Source: Company Reports, Metals Focus (all charts)



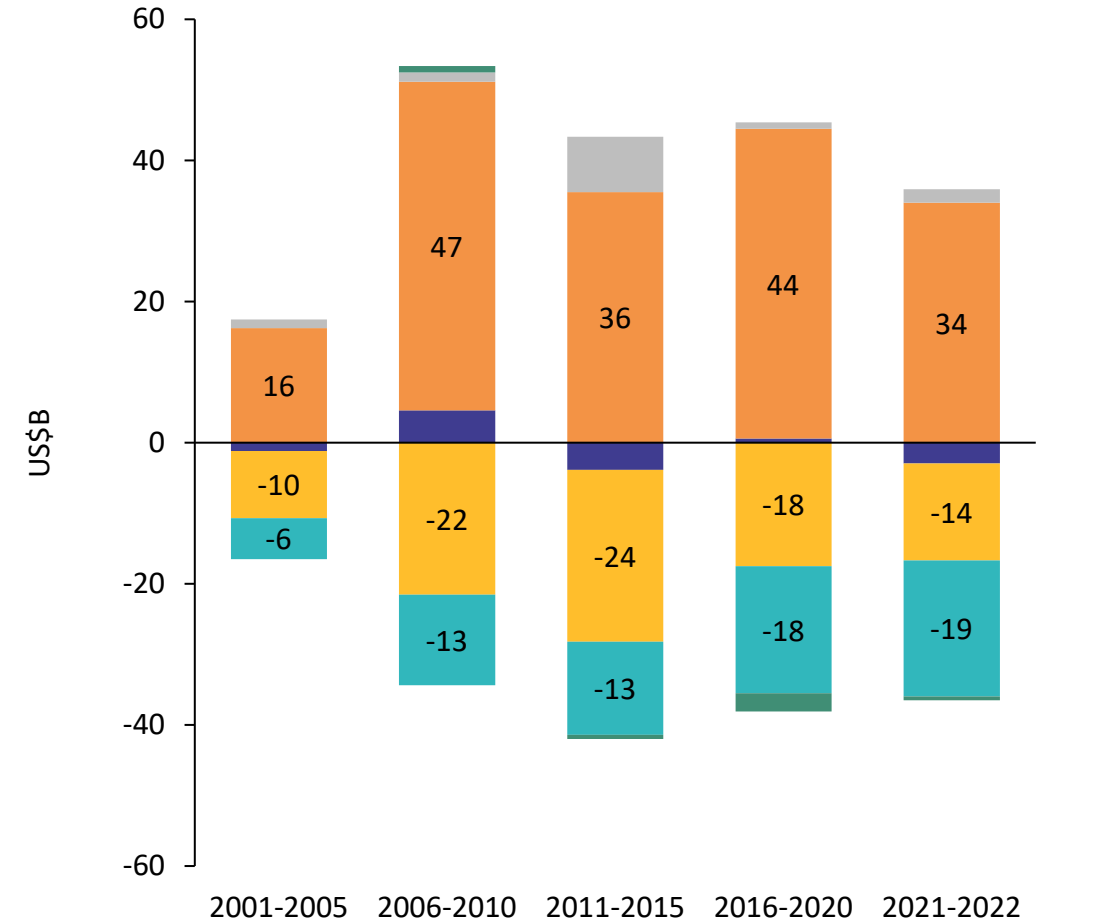


# PGM miners cashflow deployment protect future supply

## Producer revenue



## Producer cashflow allocation



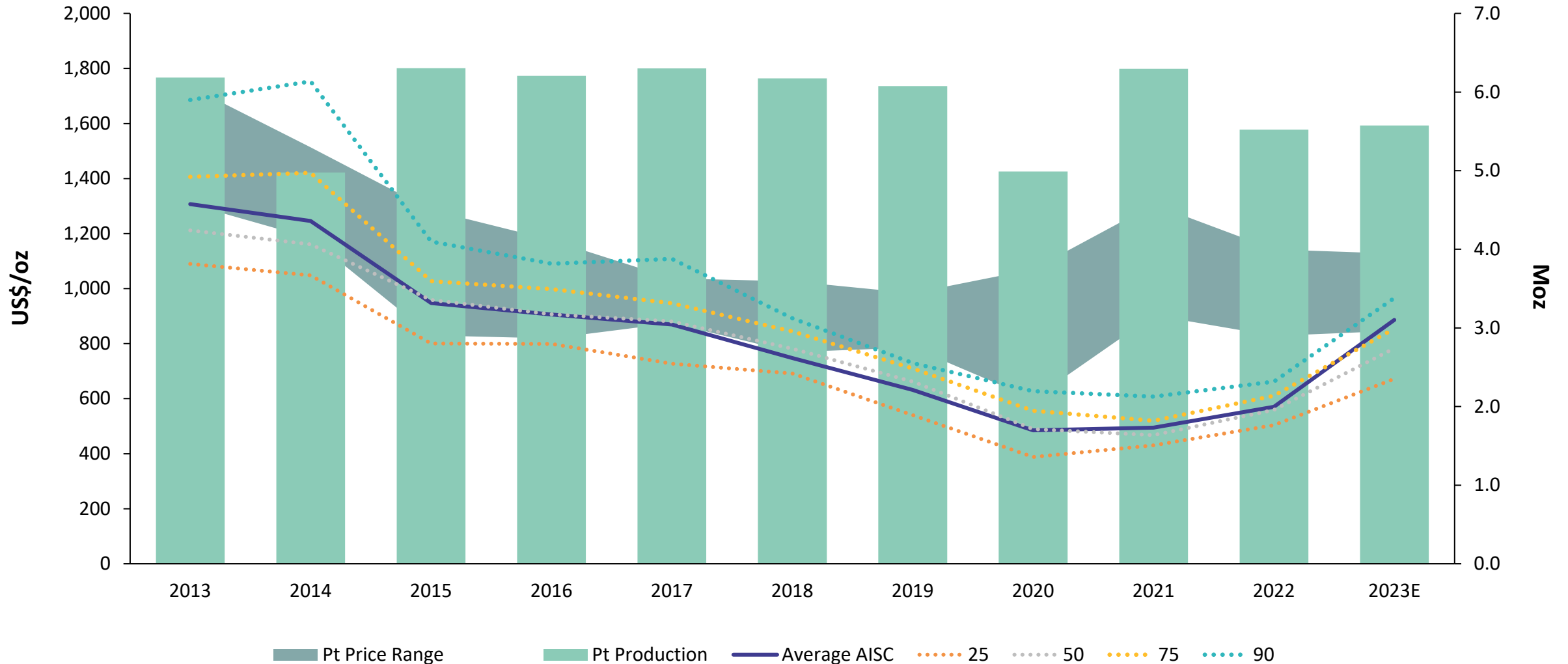
- Equity Issued/Buyback
- Net Debt Raised/Repaid
- Dividend/Repurchases
- Cash Flow from Operations
- Capital Expenditure
- Acquisitions (net of divestments)

Source: Bloomberg, Company Reports, Metals Focus



# Historically, persistent losses were required to shutter production

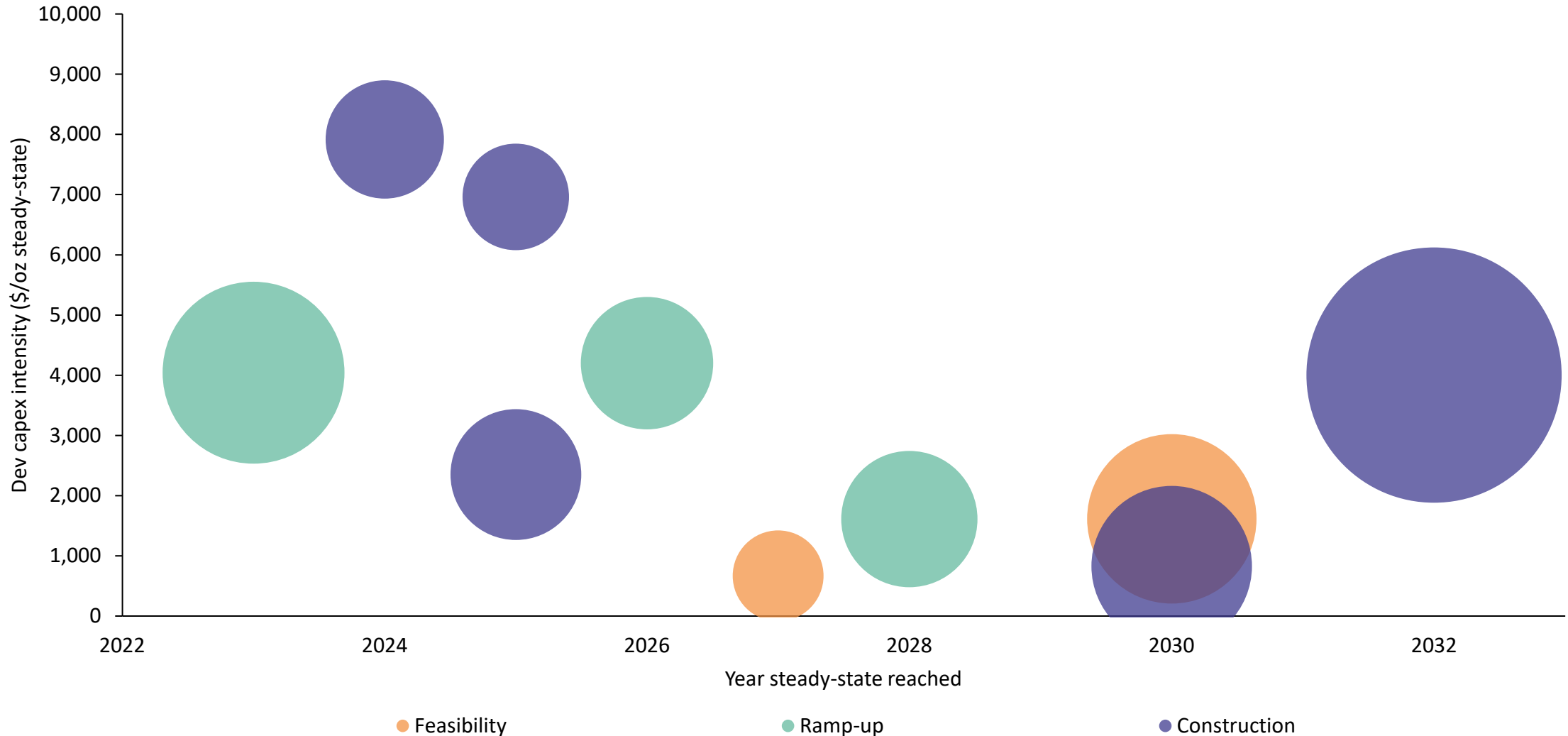
## Platinum price versus all-in sustaining costs (AISC)



Source: Company reports, Metals Focus

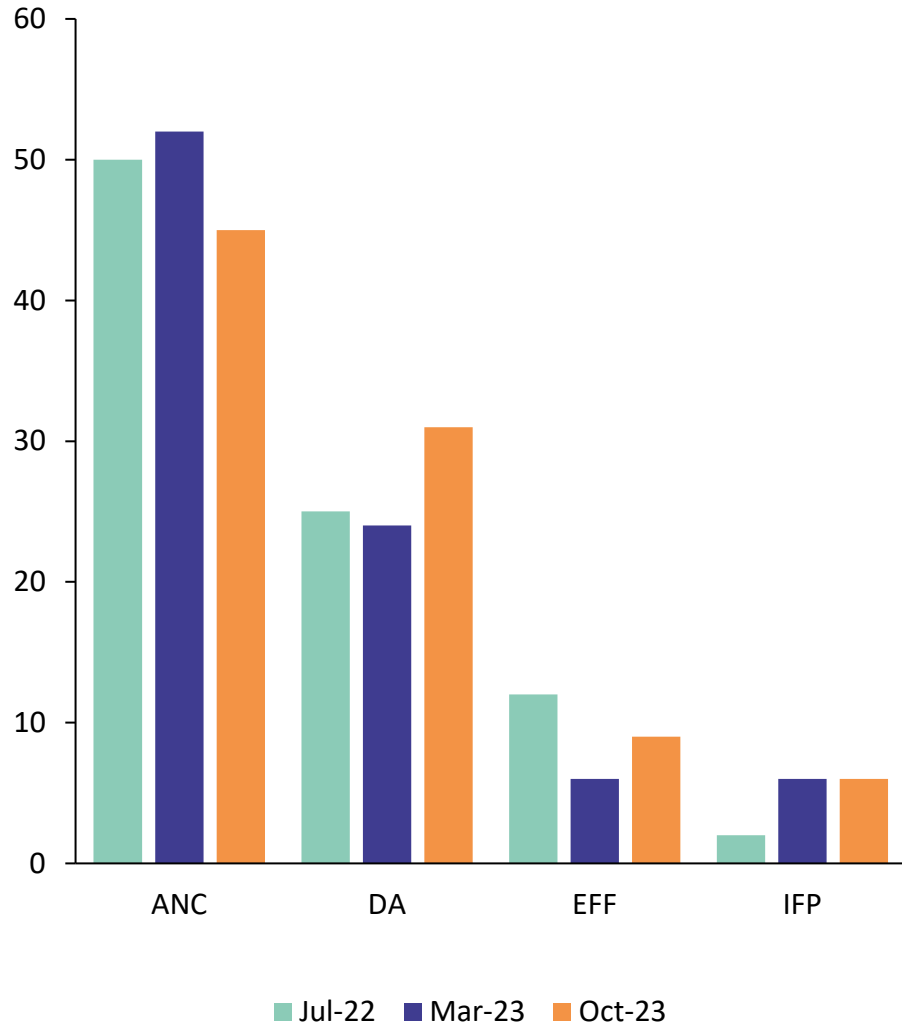


# PGM mine project pipeline appearing increasingly unlikely



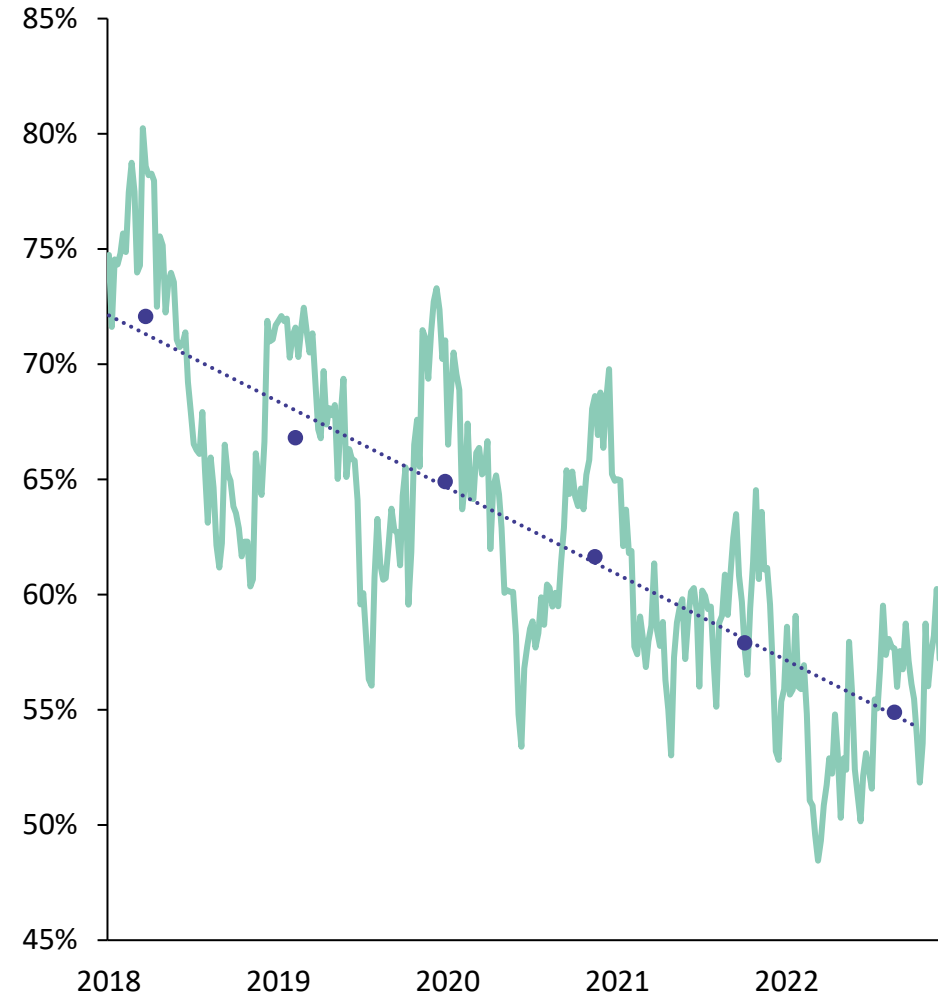
# Near-term challenges, surmountable?

## Upcoming SA Election – Interim poll



Source: Social Research Foundation

## Energy supply

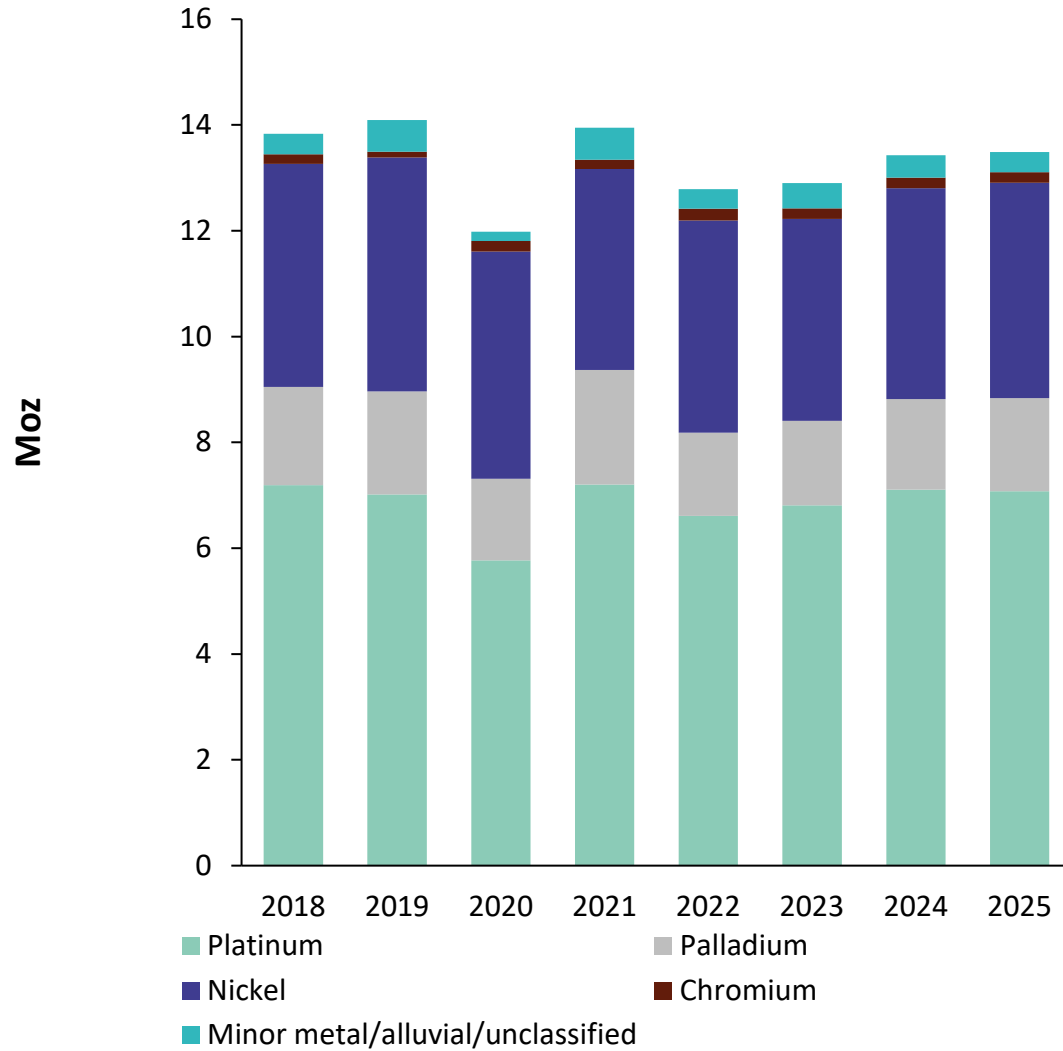


Source: Eskom

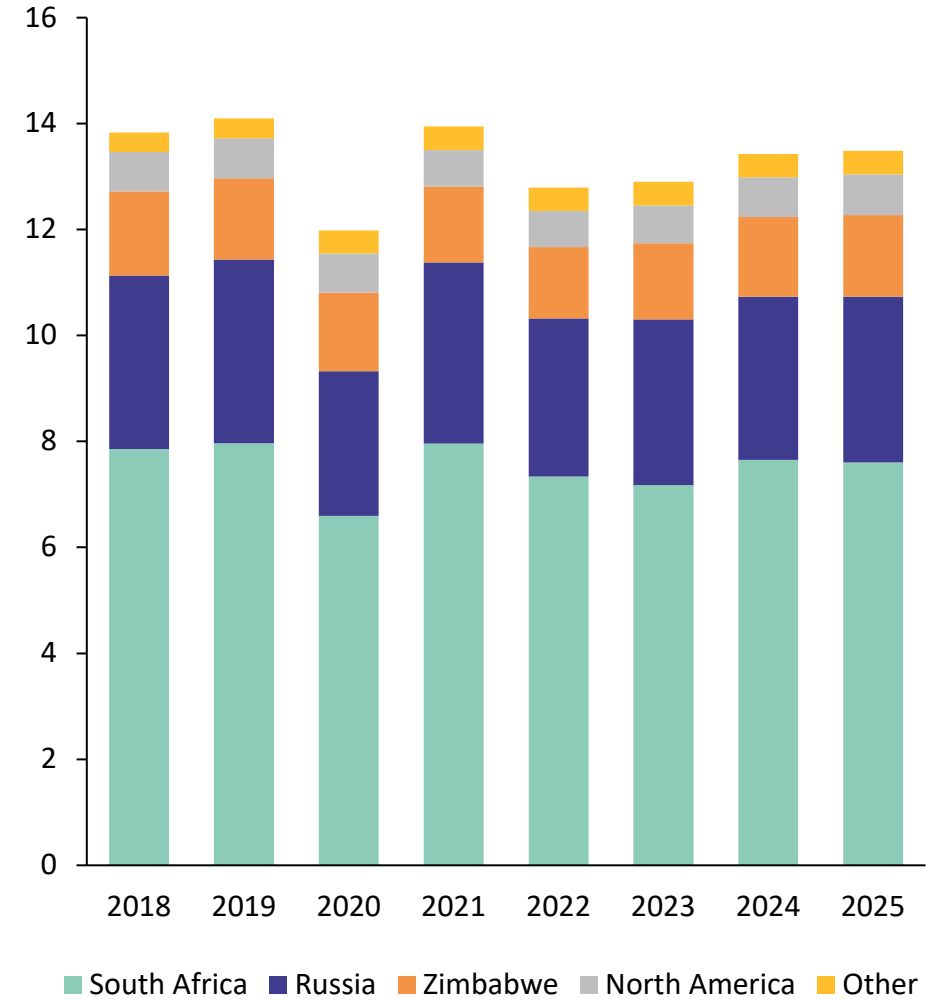


# 3E PGM mine production outlook

## Production by mine type



## Production by region

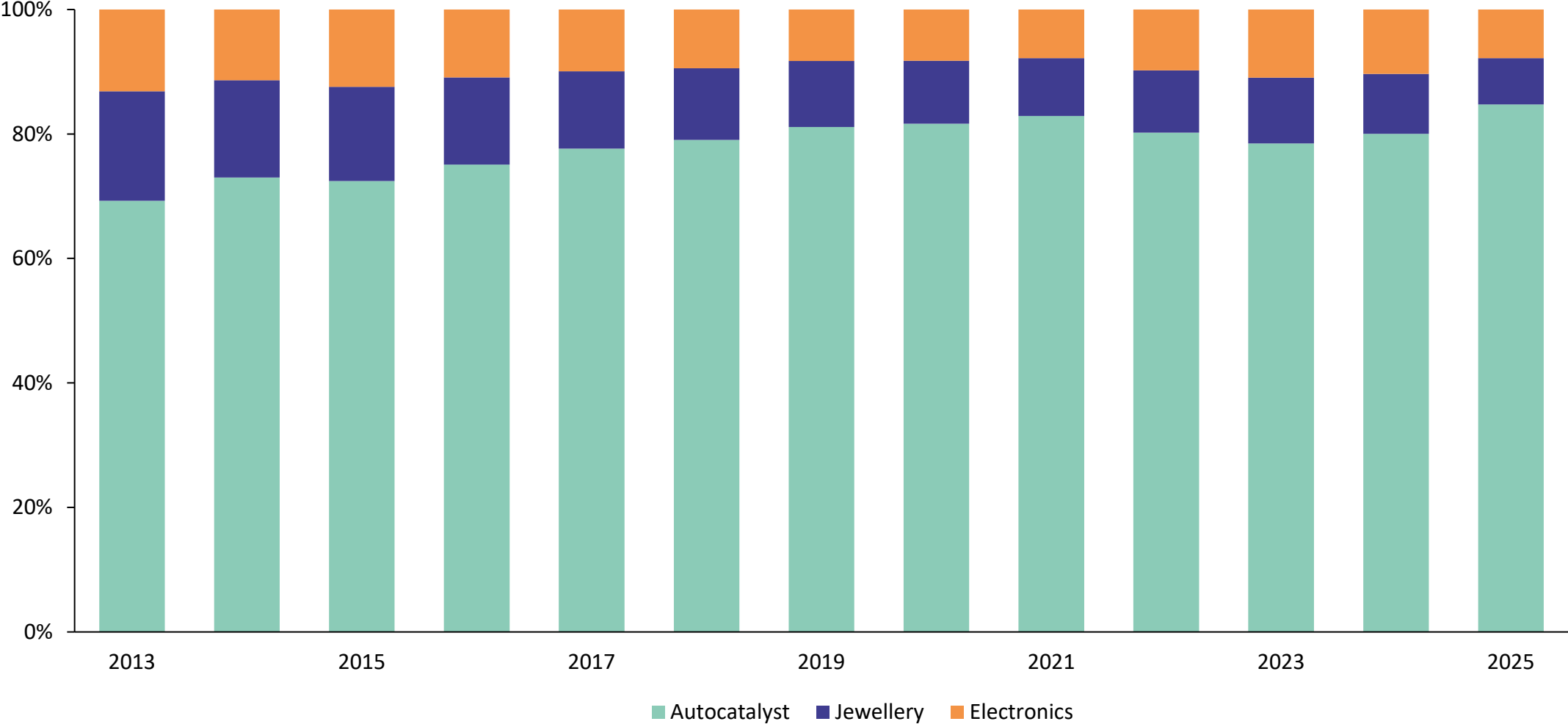


Source: Metals Focus





# Secondary PGM supply dominated by autocatalyst recycling

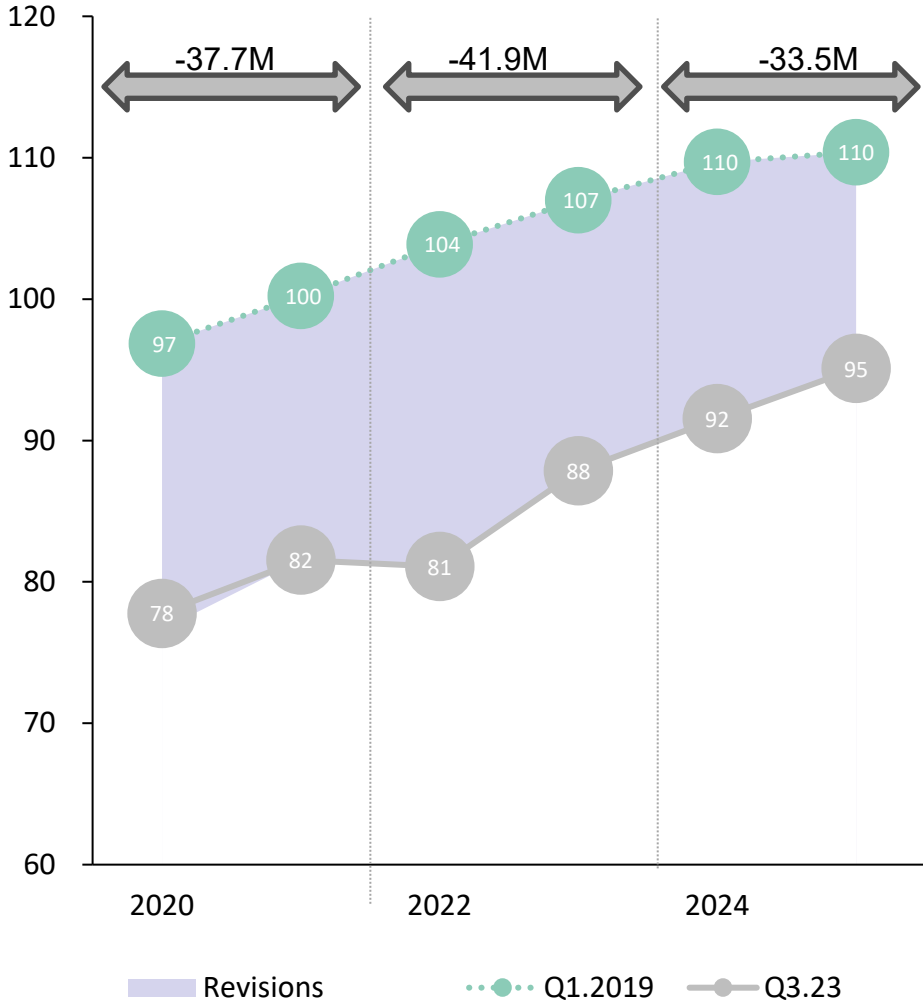


Source: Metals Focus



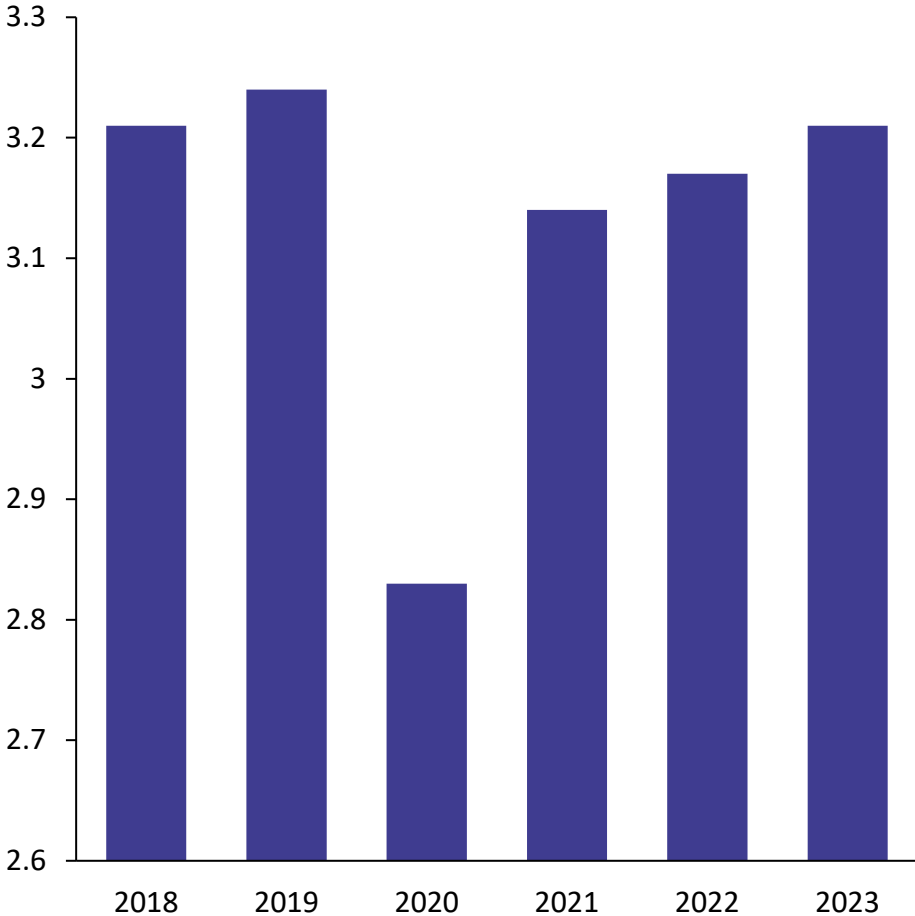
# Autocatalyst recycling victim of behaviour change?

Light vehicle sales forecast, million units



Source: LMC Automotive, a GlobalData Company

Annual miles travelled in the US, trillion miles

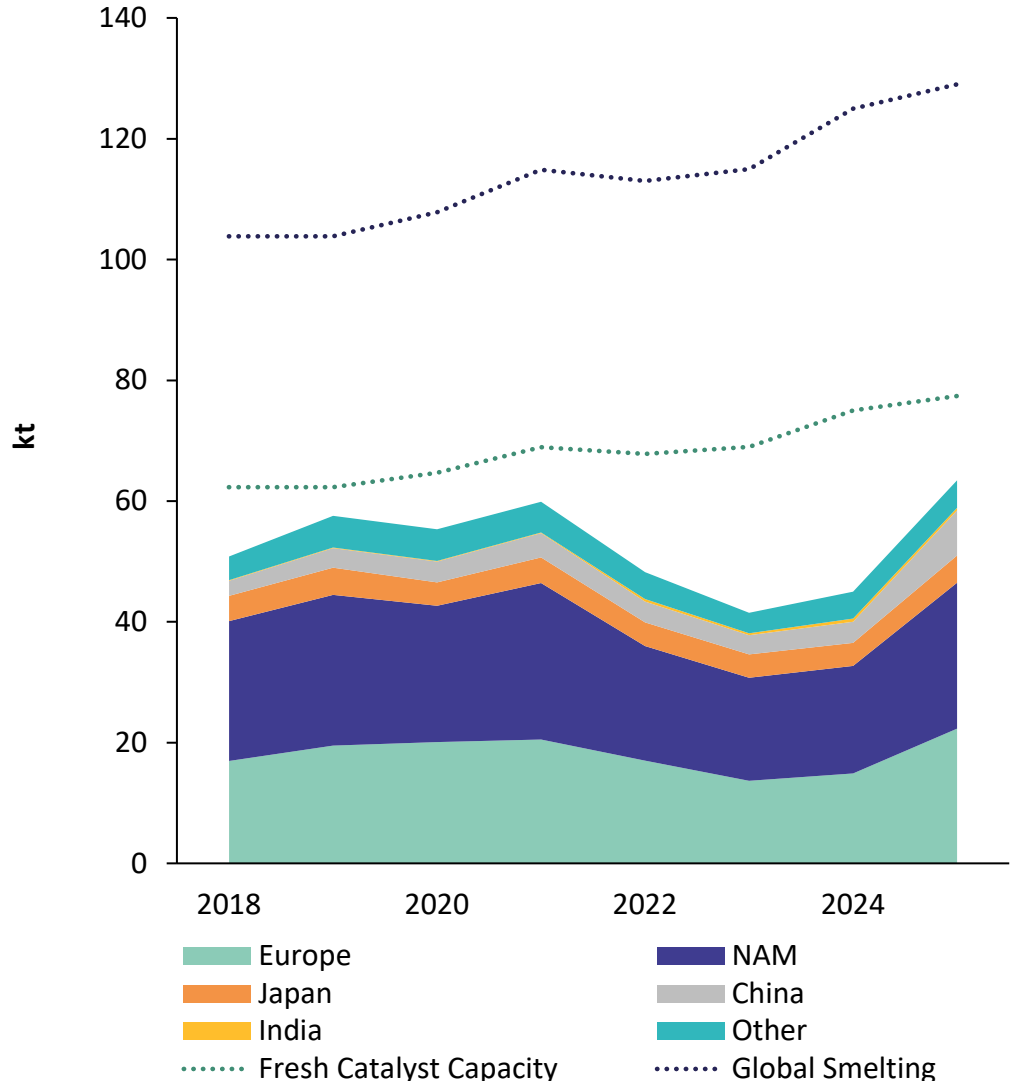


Source: FRED.com (Federal Reserve Bank Economic Data)



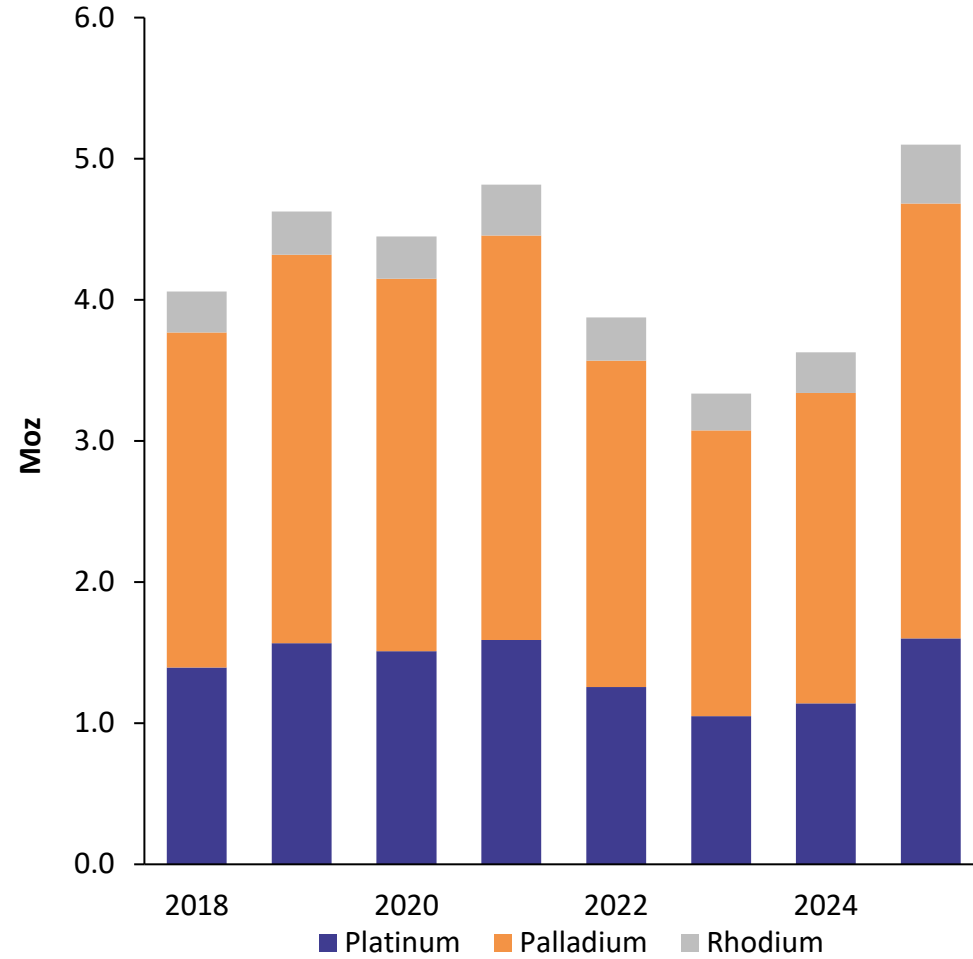
# Autocatalyst smelting idle for now

Global smelting capacity and catalyst material by region



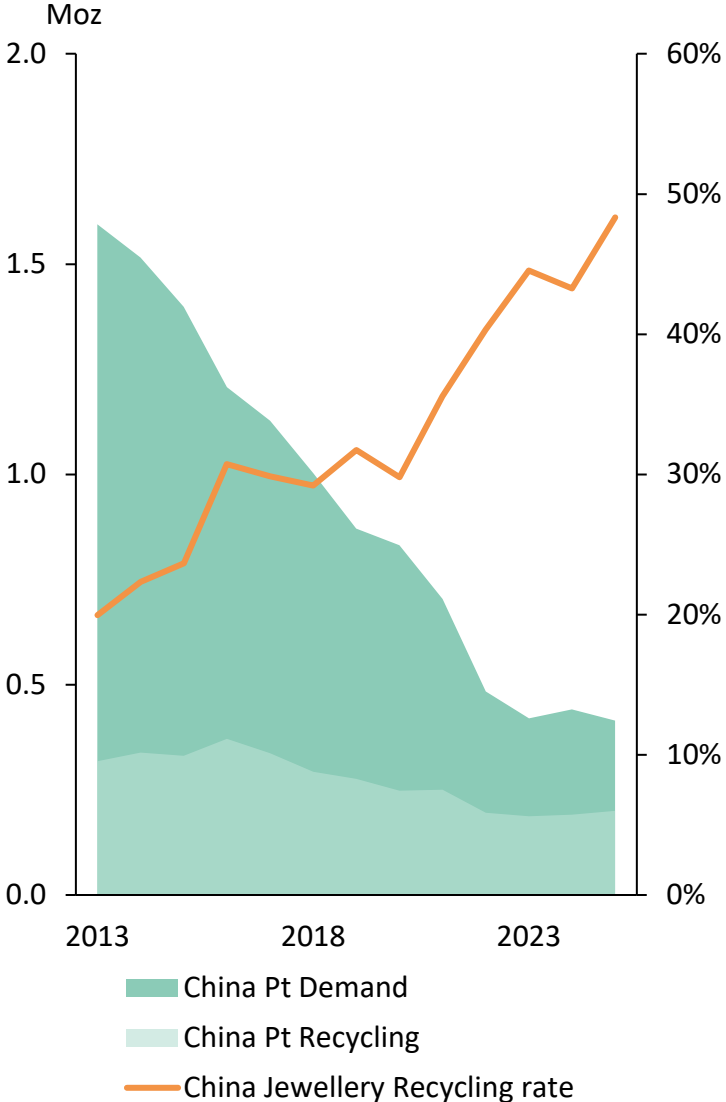
Source: Metals Focus

Autocatalyst supply

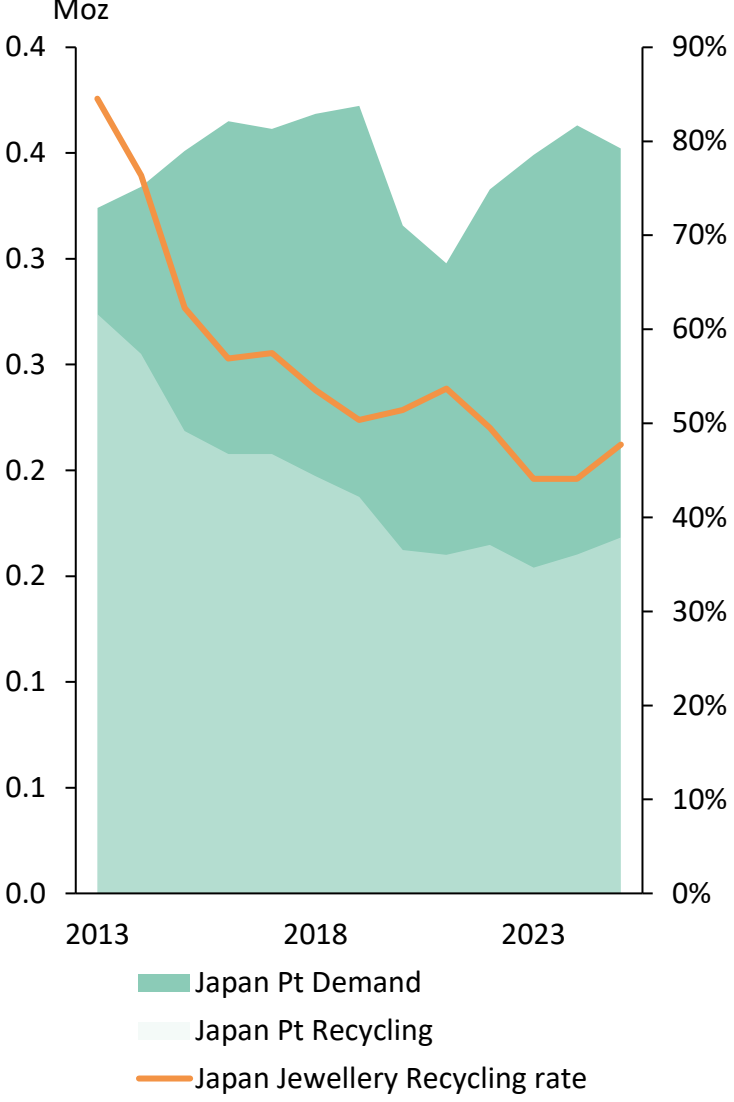


# Jewellery recycling predominantly in Asia and impacted by sales

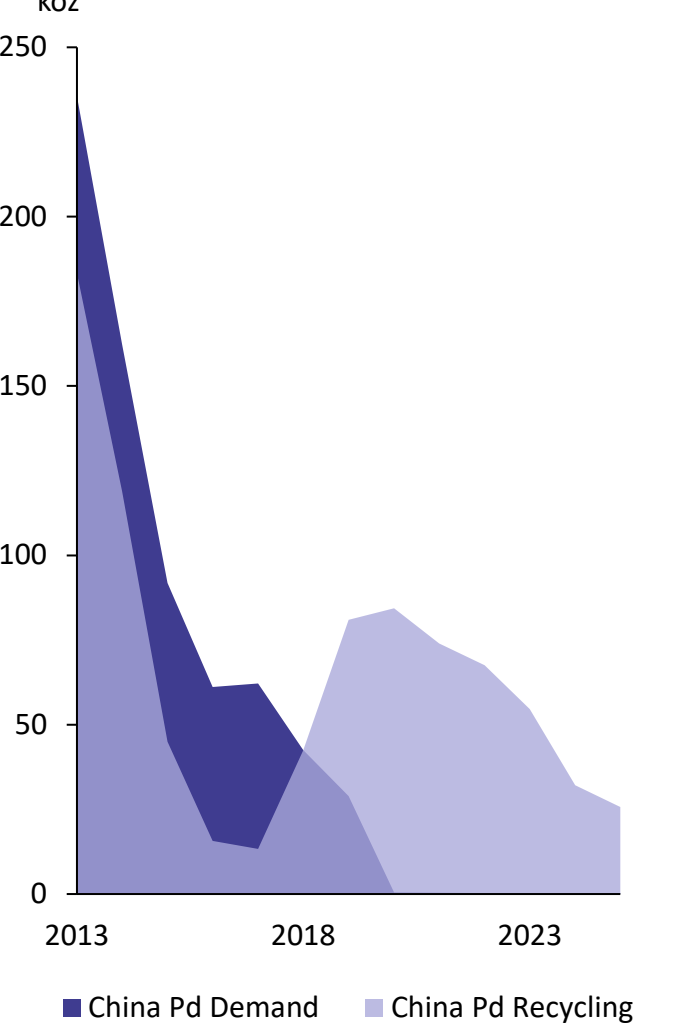
Chinese platinum jewellery demand and recycling



Japanese platinum jewellery demand and recycling



Chinese palladium jewellery demand and recycling

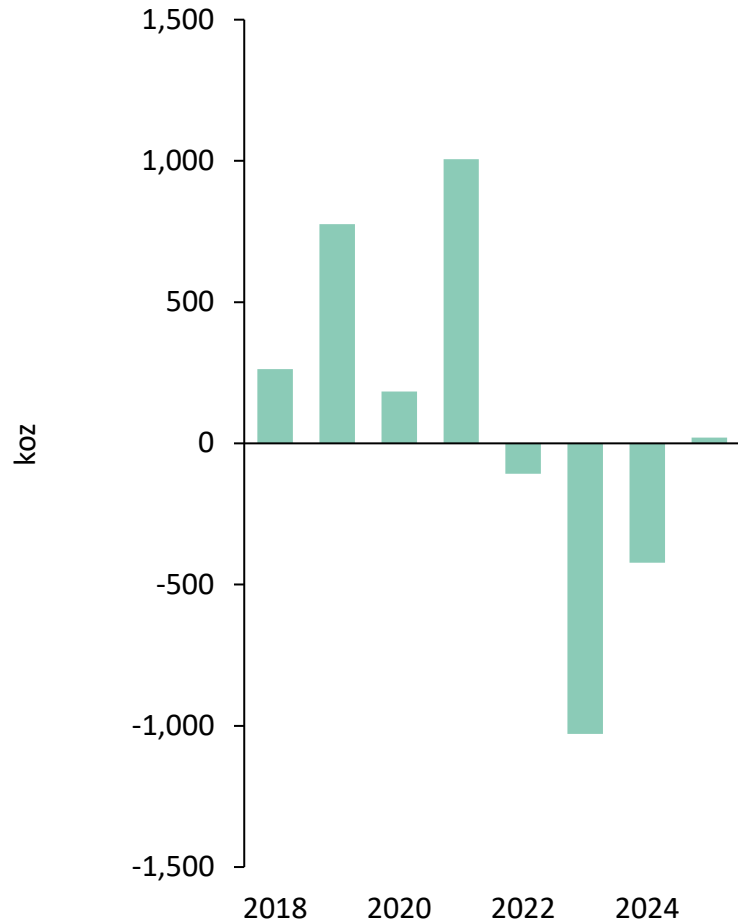


Source: Metals Focus

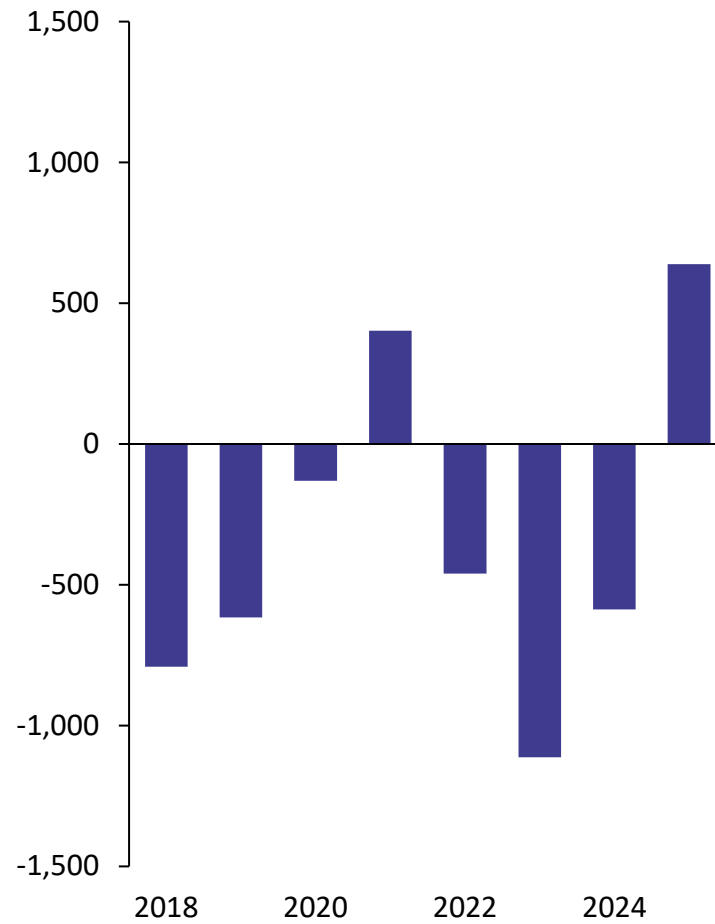


# Deep technical deficits, dramatic shifts 2025 onwards

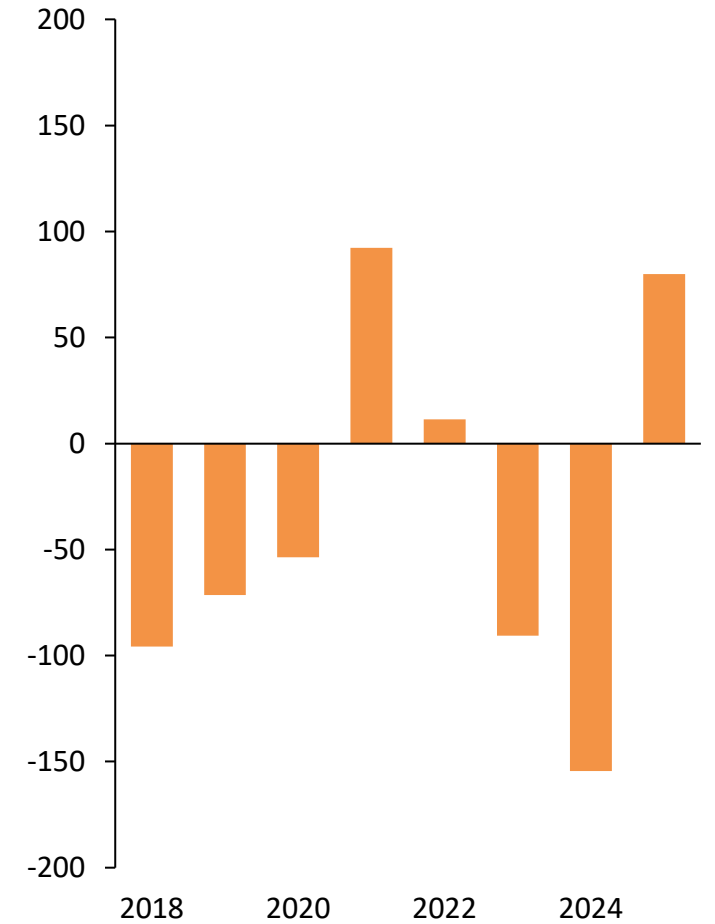
### Platinum



### Palladium

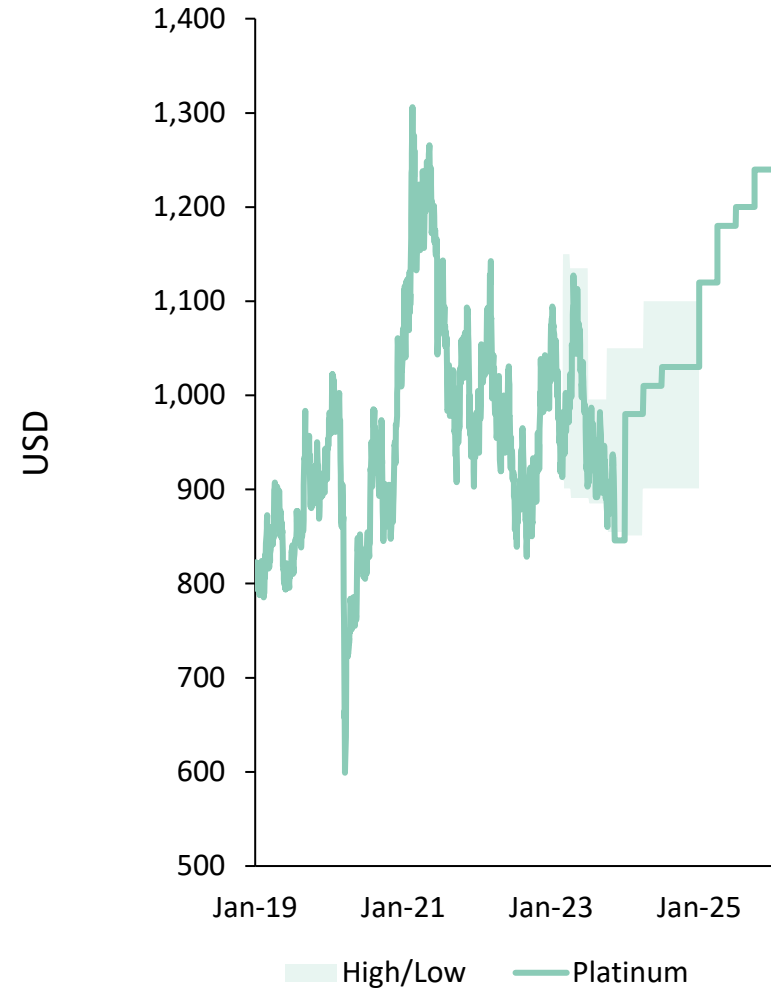


### Rhodium

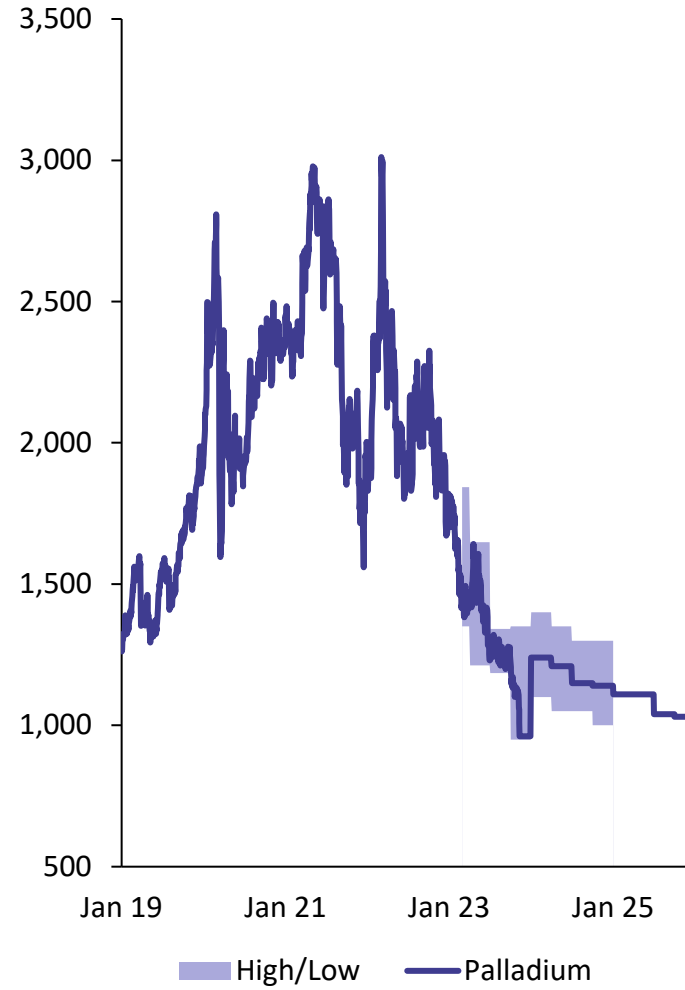


# Price outlook reflects weight of inventory and future outlook

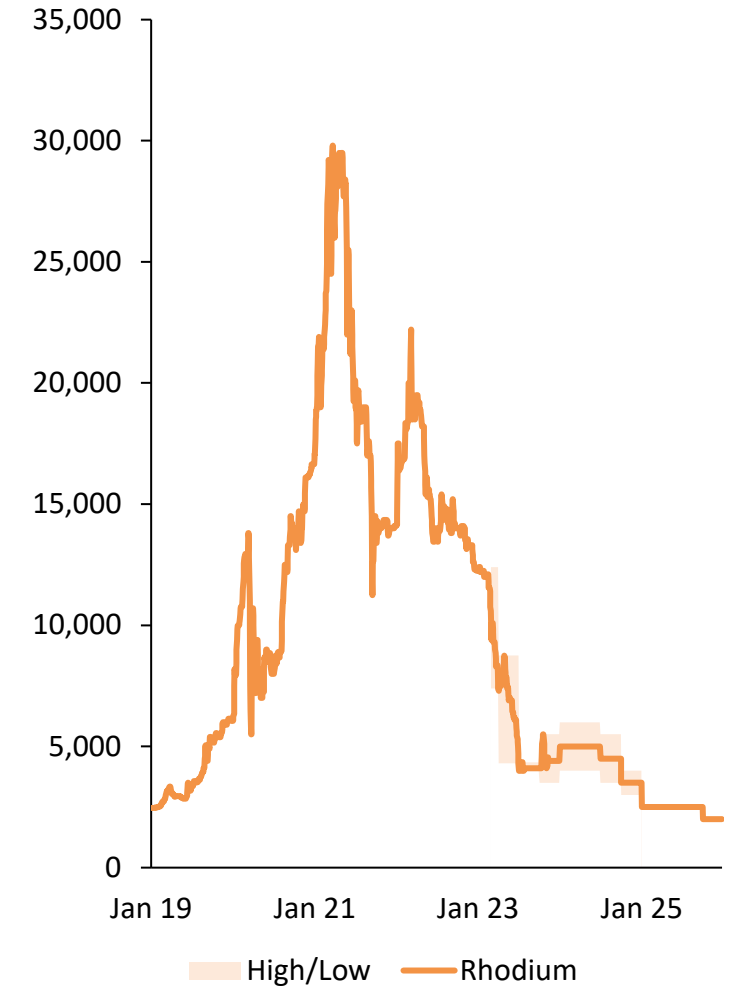
### Platinum



### Palladium



### Rhodium





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