

## “Platinum 2012 Interim Review”

The latest market survey of platinum group metal (pgm) supply and demand from Johnson Matthey, “Platinum 2012 Interim Review”, was released on 13th November 2012.

### Platinum

#### Platinum Market Forecast to Move from Surplus to Deficit in 2012

Severe disruption to pgm mining in South Africa as a result of labour stoppages and the closure of marginal operations is forecast to result in a 10% drop in worldwide platinum supplies in 2012 to 5.84 million oz. Gross demand is predicted to remain firm, at 8.07 million oz, while a decline in recycling will help decidedly shift the market into a deficit of 400,000 oz.

#### Lower Supplies and Recycling Expected

Supplies of platinum from South Africa are forecast to fall by 12% to 4.25 million oz, an 11-year low. With the exception of Zimbabwe, which is set to see a rise in output of 6% to 360,000 oz, all other producing regions are predicted to see flat or lower supplies. Recovery of platinum from open loop recycling is forecast to decline by 11% to 1.83 million oz as weaker average pgm prices have encouraged collectors to hold on to exhaust catalysts from end-of-life vehicles. Jewellery scrap recycling is also expected to fall following a strong year in 2011.

#### Automotive Demand to Weaken Slightly

Gross platinum demand in autocatalysts is predicted to soften by 1% to 3.07 million oz in 2012. Although purchasing of platinum by the European autocatalyst sector is set to decline by 14% as a consequence of falling vehicle production and a reduction in the market share of diesel cars, this will be mostly offset by higher demand elsewhere. Following the Great East Japan Earthquake disaster of 2011, vehicle output in Japan recovered strongly during 2012, stimulating greater platinum purchasing. Additional demand came from the strongly-performing light-duty diesel sector in India as well as greater platinum use in heavy-duty diesel emissions aftertreatment worldwide.

#### Industrial Demand Forecast to Fall by 13%

Lower demand for platinum by the glass manufacturing industry is expected in 2012 due to the use of metal scrapped from old glass fibre production facilities and the drawing down of inventory bought during the previous year. Demand for platinum in electrical applications is also expected to soften due to a contraction of purchasing by the manufacturers of hard disk drives. However, purchasing of platinum for non-road emissions control applications will more than double to 130,000 oz as pgm-forcing legislation is now in effect for various types of agricultural and construction machinery in many markets.

#### Jewellery Demand to Reach a 3-Year High

Demand for platinum in the jewellery sector is expected to reach 2.73 million oz in 2012. Gross demand from the trade in China is forecast to grow by 14% to 1.92 million oz as manufacturers increase output of platinum jewellery to stock new retail stores. In India, consumer demand for platinum jewellery has continued to grow, prompting an expansion of platinum jewellery manufacturing.

#### Investment Demand to Remain Positive

Physical investment demand for platinum is forecast to remain positive, at 490,000 oz in 2012. Periods of rising price have tended to attract net investment in the physically-backed exchange traded fund (ETF) market.

### Palladium

#### Palladium Market Set to Swing into Large Deficit

The balance of the palladium market in 2012 is forecast to swing by over 2 million oz from surplus to deficit due to lower supplies, higher gross demand and less recycling. Supplies will contract mainly because of lower sales of Russian state stocks, while recycling will be constrained by subdued pgm prices. Gross palladium demand is predicted to rise to 9.73 million oz, driven by a return to positive net physical investment and higher autocatalyst purchasing, moving the palladium market into a deficit of 915,000 oz.

### Automotive Demand to Reach a Record Level

Demand for palladium in automotive applications is set to rise by 7% to reach a new all-time high of 6.48 million oz. Growth in global vehicle production, a strong performance in the principally gasoline car markets of Japan and the USA and continuing substitution of platinum with palladium in diesel aftertreatment formulations are all factors behind this rise.

### Industrial Demand to Soften

Industrial demand for palladium is forecast to fall by 3% to 2.41 million oz in 2012. A long-term trend towards using cheaper base metal alternatives to palladium in all but niche and high-end electrical components continues to drive demand lower. This will be offset somewhat by the purchasing of palladium for process catalysts in new chemical manufacturing plants in China.

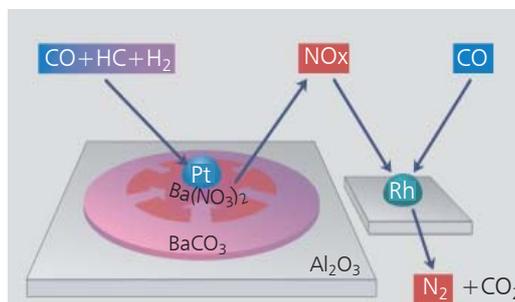
### Return to Net Positive Investment Demand, Fall in Jewellery Demand

A change in investor sentiment towards palladium ETFs is expected to result in 385,000 oz of net new physical investment demand, a swing of 950,000 oz compared with 2011. Gross demand for palladium in jewellery is predicted to dampen by 11% to 450,000 oz as the metal continues to suffer from competition and a lack of effective marketing in China, the biggest market.

### Other Platinum Group Metals

The rhodium market is forecast to move into a deficit of 43,000 oz, the first since 2007, as a result of falling supplies and lower autocatalyst recycling, as well as stronger gross demand. The return of Japanese auto manufacturers to full production in 2012 has resulted in additional rhodium demand while demand is also expected to benefit from higher physical investment purchasing and a rise in sales to the chemical industry.

Demand for ruthenium is forecast to fall by 20% to 770,000 oz in 2012. Purchasing by the chemical sector is predicted to drop following unusually high levels of purchasing in 2011, when several ammonia plants globally bought complete new charges of ruthenium catalyst. Ruthenium demand in the electrical sector is expected to soften in



*NOx traps are a promising area of future pgm demand*

line with lower use by the global hard disk drive industry.

Iridium demand is forecast to weaken by 35% in 2012 to 218,000 oz, mainly as a result of a decline in purchasing by the electrical sector, which has stood at exceptionally high levels in the last two years. The main market for iridium is in crucibles used to manufacture sapphire crystal wafers for light-emitting diodes (LEDs).

### Special Feature

“Platinum 2012 Interim Review” contains a special feature on the control of emissions of oxides of nitrogen (NO<sub>x</sub>). Over several decades, NO<sub>x</sub> emissions from vehicles have been mitigated by a range of technologies driven by progressively tighter regulations. The special feature details some of the ways that NO<sub>x</sub> can be controlled from vehicles, including pgm-containing three-way catalysts and NO<sub>x</sub> traps. As legislation around the world is extended, tightens and covers more vehicle types, pgm demand should benefit from integrated catalyst solutions that combine the functionality for NO<sub>x</sub> reduction with that to reduce other pollutants.

### Availability of “Platinum 2012 Interim Review”

The book is available, free of charge, as a PDF file in English, Chinese or Russian from Platinum Today at: <http://www.platinum.matthey.com/>. The English version can be ordered in hard copy, by filling in a form on the website, by emailing: [ptbook@matthey.com](mailto:ptbook@matthey.com), or by writing to: Johnson Matthey, Precious Metals Marketing, Orchard Road, Royston, Hertfordshire SG8 5HE, UK.