

RECYCLING

- Recycling in open loop autocatalyst, electrical and jewellery applications is expected to increase again in 2011, acting as an additional secondary source of pgm.
- Recovery of platinum is expected to increase by 3% to 1.88 million ounces in 2011, driven by higher levels of recycling of diesel autocatalysts and old jewellery being traded in by consumers in Japan.
- Palladium recovery is set to rise by 19% to 2.2 million ounces as more end-of-life vehicles are scrapped, recycling of electronic waste increases, and as manufacturers and retailers in China recycle greater volumes of old palladium jewellery.
- Rhodium recycling from spent autocatalysts is set to rise by 8% to 260,000 oz in 2011.

AUTOCATALYST

Recycling of platinum, palladium and rhodium from end-of-life vehicles (ELVs) is forecast to rise in 2011 due to greater numbers of scrapped vehicles as well as higher loadings of pgm. Strong growth in sales of vehicles in the first half of this year, particularly in Europe and North America, are expected to have a knock-on effect on the number of vehicles being scrapped. Elevated platinum and palladium prices, as seen for much of the year, are forecast to encourage greater levels of collection and throughput at refineries. Recycling of ELVs in Japan, however, is set to fall as lower new car sales impact scrappage rates, leading to lower pgm recoveries.

Platinum recovery from spent autocatalysts is set to increase by 95,000 oz this year to 1.18 million ounces. Many ELVs being scrapped now were manufactured around the turn of the millennium, when diesel vehicles were gaining popularity in Europe. In addition, Euro 3 legislation came in at this time requiring higher loadings of platinum on diesel vehicles. Platinum recoveries should therefore grow again this year.

Recovery of palladium in autocatalysts is anticipated to increase by 15% to 1.51 million ounces in 2011. In North America, the largest market for auto recycling where the vast majority of ELV catalysts are recovered, the palladium yield from scrap vehicles is forecast to rise by 135,000 oz to 925,000 oz. Volumes of palladium recovered are expected to be boosted by higher sales in the first half of this year, as well as higher palladium-loaded catalysts entering the refining stream.

Recovery of rhodium is also forecast to increase by 8% to 260,000 oz in line with greater numbers of rhodium-rich gasoline autocatalysts being recycled worldwide.

ELECTRICAL

Open loop recycling of palladium-containing components in the electrical sector, such as electrodes, resistors and plated parts, is expected to rise by 9% this year to 480,000 oz. Europe

leads on recovery of palladium from scrap electronic items, with the Waste Electrical and Electronic Equipment (WEEE) legislation now in force in 29 countries.

JEWELLERY

Recovery of platinum from the jewellery sector is set to decline by 6% in 2010 to 690,000 oz, mainly due to a reduction in recycling in China of 20% from previously elevated levels. There is evidence that growing sales of platinum jewellery in China this year are leading to less unsold retail stock being recycled. We anticipate that levels of consumer recycling will remain high in the elevated price environment of 2011.

In Japan, the after-effects of the March disaster appear to have led many individuals to 'declutter' their homes and lives. Together with manufacturer and retail scrap, this additional consumer scrap is expected to lead to a total of 325,000 oz of old platinum jewellery entering the recycling stream. Another driver has been the rising price of gold, which tends to encourage recycling of both gold and platinum jewellery pieces by consumers.

Driven by higher prices, recycling of palladium jewellery in China is forecast to more than double this year, returning 190,000 oz of manufacturer and retail scrap. The increase in palladium recycling contrasts with platinum jewellery recycling in China, which is set to decline in 2011. It is also notable that the palladium being recycled in China is mainly unsold retailer and manufacturer inventory rather than metal from customers.

	Recycling '000 oz					
	Platinum		Palladium		Rhodium	
	2010	2011	2010	2011	2010	2011
Autocatalyst	(1,085)	(1,180)	(1,310)	(1,505)	(241)	(260)
Electrical	(10)	(10)	(440)	(480)	0	0
Jewellery	(735)	(690)	(100)	(210)	0	0
Total	(1,830)	(1,880)	(1,850)	(2,195)	(241)	(260)