RECYCLING

- Due to the impact of lower prices for much of the year, recycling of pgms in autocatalyst and jewellery applications is forecast to decline in 2012.
- Platinum recovery from spent autocatalysts is expected to fall by 16% to 1.04 million ounces. Recovery of palladium is set to drop by 8% to 1.53 million ounces.
- Recycling of palladium-containing components from old electrical devices is predicted to increase by 8% to 520,000 oz.
- Recycling of old platinum jewellery is expected to decline by 3% to 785,000 oz, while recycling of palladium jewellery is expected to soften by 7% to 195,000 oz.

AUTOCATALYST

Largely as a result of lower average metal prices, global pgm recycling is forecast to fall in 2012. A declining stainless steel price for much of the first nine months resulted in scrap collectors holding on to vehicle exhaust systems, while lower pgm prices also reduced shipments of converter substrates to the major pgm smelters. With rising pgm prices in late August and September 2012, there was evidence of increased throughput of autocatalyst scrap at refineries, although pgm recovery rates are likely to be lower compared with 2011.

In Europe, recycling of platinum from spent autocatalysts is forecast to fall by 17% to 370,000 oz. Palladium recycling is expected to decline more substantially, by 22% to 300,000 oz. Euro 3 legislation around the turn of the millennium required catalysts to be fitted to diesel cars. These mainly platinum-containing formulations are now being recycled in large numbers, helping platinum recovery to hold up well compared with palladium.

Stronger new vehicle sales in Japan this year as the country recovered from the 2011 earthquake disaster meant that there was an associated increase in the scrapping of older vehicles. New car sales were enhanced by the reintroduction of a government subsidy for fuel-efficient vehicles, helping drive scarpag of older vehicles and translating into higher pgm recycling volumes.

In North America, pent-up demand for both light and heavy duty vehicles, originating from the recession in 2009, helped sales to accelerate during 2012, leading to more scrapping of older vehicles. Despite this, due to subdued pgm prices, intake of autocatalyst scrap at refineries declined year-on-year in the first three quarters as collectors hung on to inventories.

Recycling of platinum, palladium and rhodium is expected to fall in 2012, but the relative decline in palladium recovery will be less than that for platinum and rhodium as a consequence of the large amount of palladium on vehicles from the late 1990s onwards that are now being scrapped.

JEWELLERY

Recycling of platinum jewellery is expected to decline by 25,000 oz to 785,000 oz this year, while palladium jewellery recycling is set to soften by 15,000 oz to 195,000 oz.

In China, platinum jewellery recycling is anticipated to increase by 10% to 500,000 oz in 2012 but remain as a similar proportion of gross demand to last year. Consumers continue to trade in older platinum jewellery at retailers in order to buy new designs. Normally by this route, the consumer will need to buy at least the same amount of metal as they are trading in – meaning an overall increase in the weight of metal purchased.

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Recycling of old platinum jewellery is expected to decline by 3% to 785,000 oz, while recycling of palladium jewellery is expected to soften by 7% to 195,000 oz.

<table>
<thead>
<tr>
<th>Recycling `000 oz</th>
<th>Platinum</th>
<th>Palladium</th>
<th>Rhodium</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2011</strong></td>
<td><strong>2012</strong></td>
<td><strong>2011</strong></td>
<td><strong>2012</strong></td>
</tr>
<tr>
<td>Autocatalyst</td>
<td>(1,225)</td>
<td>(1,035)</td>
<td>(1,655)</td>
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<tr>
<td>Electrical</td>
<td>(10)</td>
<td>(10)</td>
<td>(480)</td>
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<tr>
<td>Jewellery</td>
<td>(810)</td>
<td>(785)</td>
<td>(210)</td>
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<tr>
<td><strong>Total</strong></td>
<td>(2,045)</td>
<td>(1,830)</td>
<td>(2,345)</td>
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