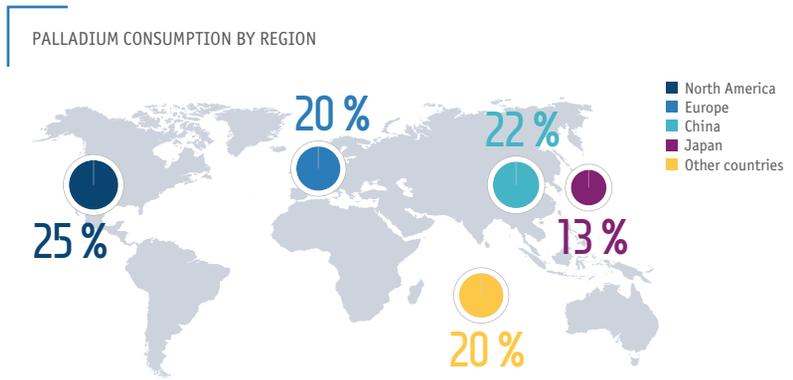


Metals Market Overview



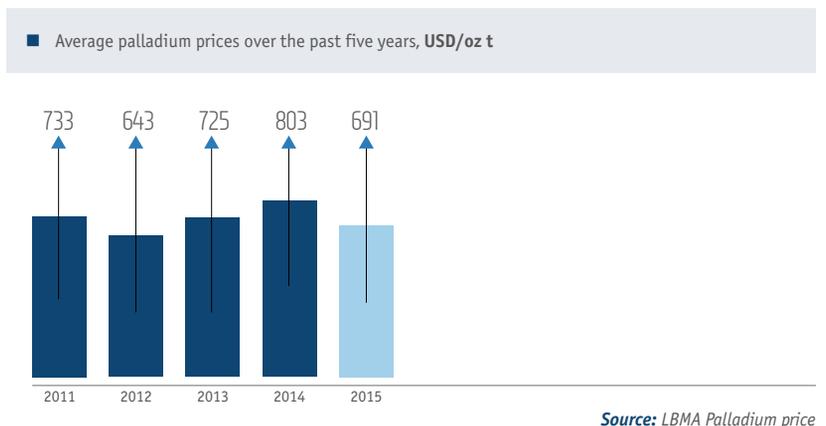
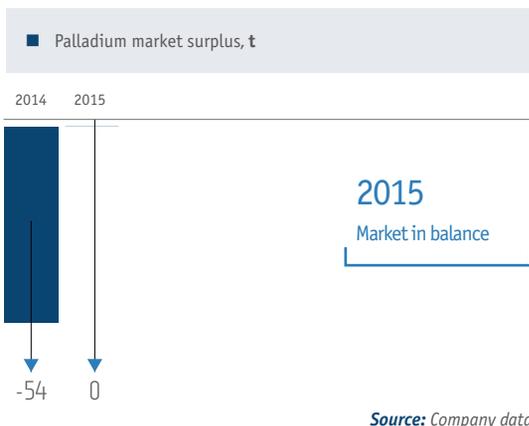
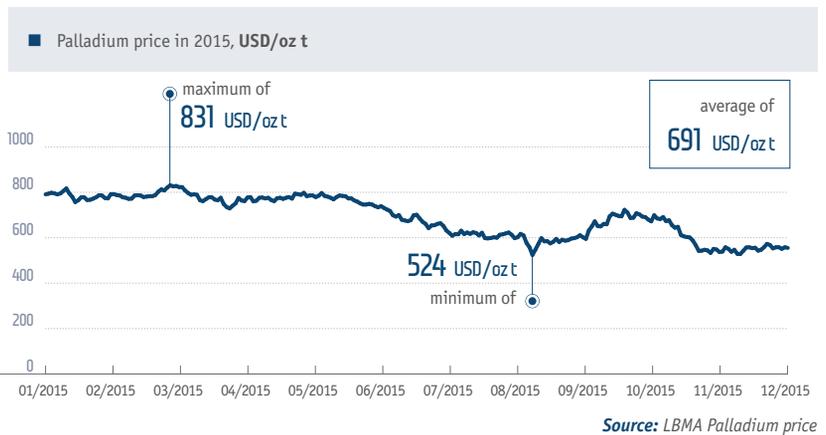
KEY TRENDS IN THE PALLADIUM MARKET

Palladium prices went down significantly in June–August 2015, reaching USD 520 per troy ounce as at the end of August amid increased short positions and closing of long positions. In mid-October, palladium prices bounced back to above USD 700 per troy ounce against the backdrop of the Volkswagen diesel emissions scandal, the stimulus plan for the Chinese car market implemented in October, expectations of

potential suspension of operations in South Africa, and uncertainty over the key rate increase by the US Federal Reserve. In November, the palladium price trend turned negative again as the closure of loss-making assets in South Africa, major investment outflows from palladium exchange-traded funds (ETFs), and the strong US dollar brought the prices down to USD 550 per troy ounce.

MARKET BALANCE

The considerable undersupply in the palladium market that we saw in 2014 (16% of the global demand) gave way to an almost balanced state in 2015. This trend shift is the result of the full recovery of platinum metals production at the South African facilities after the unprecedented five-month strike of 2014, coupled with the massive investor withdrawal from palladium ETFs (mainly in the second half of the year).



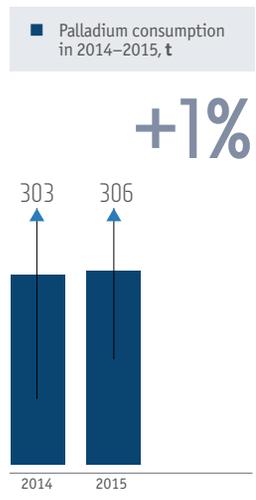
CONSUMPTION

In 2015, industrial consumption of palladium increased by 3 t (+1%) year-on-year, reaching 306 t, while the consumption of primary palladium went up by 8 t (+4%) due to use of end-of-life automotive catalysts coupled with low prices for PGM, all of which led to the decreased recycled metal supply in the market compared to 2014.

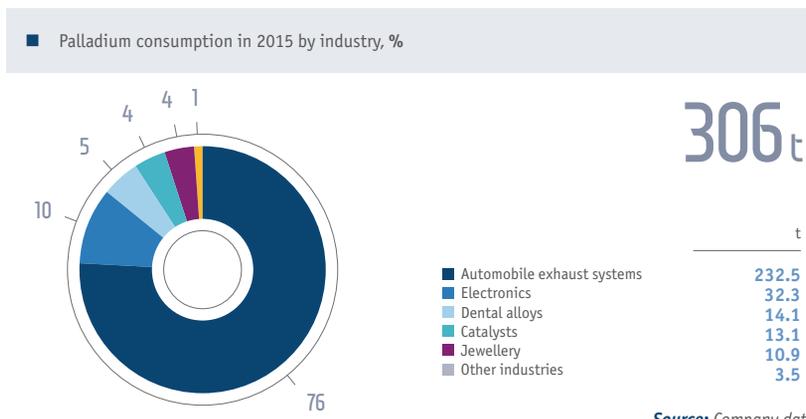
The automotive industry accounts for over 70% of total palladium consumption. In this sector, palladium is used in catalytic converters to detoxify exhaust fumes. In most countries, such converters are legally required to be installed on all new cars. Due to its unique properties, palladium has no substitutes except for platinum, which is more expensive and not economically justified, and rhodium, which, given the small market size (the world only produces 30 t of the metal), suffers from high price volatility and the risk of creating an artificial market shortage.

In 2015, palladium consumption in the automotive industry increased by 4 t. The additional demand for the metal is mainly attributed to the strong production increase in the US and China and to the recovery of production in Europe, coupled with the tightening of Euro 6b emission standards starting September and the overall decline in car production in other countries.

In 2015, palladium consumption in the electronics industry remained broadly unchanged. In the healthcare sector, primary palladium demand continued declining in 2015 on the back of transition to alternative composites and dental scrap processing. While palladium has a number of advantages in jewellery manufacturing, its consumption in the industry dropped by 1 t (6%) in 2015, mostly due to China's continuing decade-long fall in palladium goods production in the absence of a strong jewellery metal brand.



Source: Company data



Source: Company data

>70% of palladium is used for exhaust treatment systems

Metals Market Overview

The 2015 primary palladium consumption in the production of chemical catalysts increased by 4% as a result of newly launched vinyl acetate monomer plants, which more than offset the low catalyst demand in terephthalic and nitric acid production.

Apart from its industrial application, palladium is also popular among investors. In 2014, net investments in physical palladium ETFs increased by 28 t on the back of two South African fund launches (by ABSA and Standard Bank), while 2015 saw a 22 t net outflow from ETFs, caused by anxiety over China’s economic prospects and the strengthening US dollar.

■ Palladium consumption in 2015 vs 2014 by application area

APPLICATION AREA	2015 VS 2014
Exhaust treatment systems	+4 t (+2%)
Chemical catalysts	+0.5 t (+4%)
Jewellery	-1 t (-6%)
Electronics	-0.2 t (-1%)
Dental alloys	-0.5 t (-3%)
Other application areas	+0.2 t (+2%)
TOTAL	+3 t (+1%)

Source: Company data

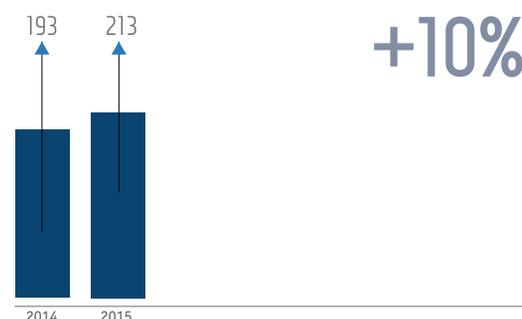
PRODUCTION

In 2015, after an unprecedented five-month strike in South Africa had paralysed 55% of the country’s platinum group assets, the metal production was fully back on track. Zimbabwean production stagnated, with Zimplats’ ramp-down offset by higher concentrate production at Unki. Russia and North America also saw declines in production. As a result, global output of primary palladium in 2015 increased by 20 t.

The main sources of recycled palladium are used exhaust gas autocatalysts, as well as jewellery and electronic scrap. In 2015, recycled output decreased by 5 t.

The sources of previously accumulated palladium stockpiles include trading companies, financial institutions, government reserves, and surplus inventories of consumers. In recent years, Russia’s palladium supply came primarily from the country’s government stockpiles. Non-market-bound supply of palladium from these stockpiles had long been the main driver of market surplus. In 2015, Russian stockpiles were not part of the supply, which points to their depletion and marks a transition toward fully market-dependent palladium supply and demand.

■ Annual primary palladium output in 2014–2015, t



+10%

Source: Company data

The sources of previously accumulated palladium stockpiles include trading companies, financial institutions, government reserves, and surplus inventories of consumers

Apart from its industrial application, palladium is also popular among investors