

# Platinum: Impact assessment for supply security



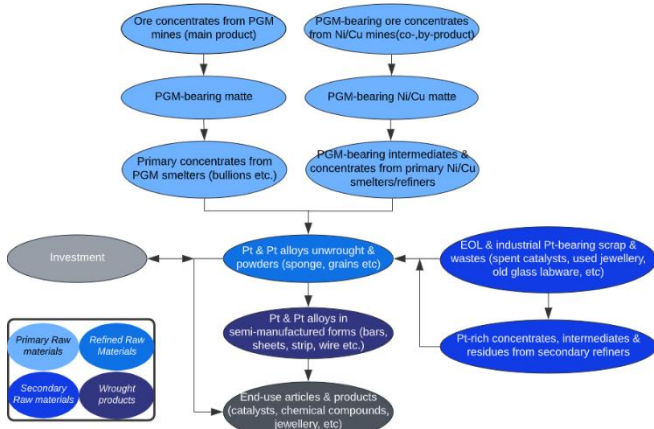
## HIGHLIGHTS

- Russia is the second-largest producer of platinum worldwide and an important supplier to the rest of the world. In 2020, Russia accounted for 13% of global platinum mined production and 7% of world platinum exports.
- The platinum market is expected to move into an overall supply deficit until 2030. Consequently, a widespread switch globally towards non-Russian sources of supply is challenging in the aftermath of Ukraine's invasion, even though Russia doesn't have a dominant role in global supply.
- The EU depends to a large extent on imports of refined platinum. It is estimated that imports were half of total EU supply in 2011-2021. Before Russia invaded Ukraine, the EU was mildly dependent on Russia, which provided circa 10% of EU imports of refined platinum in 2021; thus, less than 5% of the total EU supply. EU imports of refined platinum from Russia stopped during July-November 2022.
- South Africa along with Zimbabwe are the prominent alternative sources for replacing primary supply from Russia in the EU. The UK is also a potential supplier of refined metal for trade diversification.
- Platinum production in the EU from secondary sources moderates supply risks. Given that platinum availability for recycling from spent autocatalysts is expected to decline in the EU in the next decade, the stable flow of secondary raw materials (domestically collected or imported) to EU-based refineries will become increasingly important for supply security.

**QUICK GUIDE** - This briefing is one of a series of overviews in the Raw Materials Information System (RMIS) about the potential supply disruption of non-food, non-fuel raw materials due to Russia's war against Ukraine.

Platinum (Pt) is a precious metal and one of the six elements of platinum-group metals (PGM)<sup>1</sup>. PGMs are among the least abundant of the Earth's elements and are classified as critical and strategic in the EC 2023 list of Critical Raw Materials. Platinum is widely used in catalytic converters to curb vehicle emissions, as well as in jewellery and industrial applications. Platinum is essential for the future green transition due to its applications in emerging technologies such as electrolyzers and fuel cells.

**Figure 1** – Overview of platinum's value chain



Source: JRC

## IMPACT ASSESSMENT

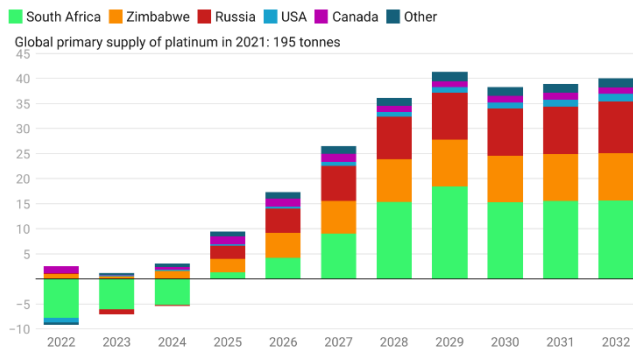
### Short-term impacts and medium-term outlook globally

Platinum is a valuable metal that Russia produces. Concerns about potential supply losses emerged after the invasion of Ukraine in February 2022. Russia accounted for 8% and 10% of the global supply and mined production, respectively, in 2021. MMC Norilsk Nickel PJSC (Nornickel), the fourth-biggest mining producer of platinum and the leading producer of palladium and high-grade nickel worldwide, was not directly targeted by sanctions imposed on Russia<sup>2</sup> until March 2023; neither has Russia withheld platinum-group metal exports.

The supply in the PGM market is characterised by limited flexibility, making diversification into new sources challenging in the case of disruptions or rapid demand growth. In the next decade, most of the additional primary production from non-Russian sources could potentially originate from current producers – mainly South Africa and Zimbabwe – amounting to about 7 tonnes in 2025 and 30 tonnes in 2032 (Figure 2). However, supply is anticipated to remain

constrained in the short term before growing from 2025 onwards. Additionally, recycling is not predicted to provide additional quantities for facilitating a shift from Russian supply (Figure 3).

**Figure 2** – Forecast of additional primary production (Medium-Supply Scenario - MSS)<sup>3</sup> compared to its 2021 level, tonnes of Pt



Source: JRC modelling based on background data from various sources such as (S&P Global, 2022), company reports & announcements.

**Figure 3** – Forecast of additional primary and secondary supply (MSS) from non-Russian sources, tonnes of Pt



Source: as in Figure 2

Platinum's combined primary and secondary production exceeded demand substantially in 2021 and 2022 (Figure 4). The built-up inventories during this period could theoretically absorb supply shocks from Russia<sup>4</sup>. On the other hand, JRC analysis shows that demand could considerably outstrip supply until 2030. The contraction of supply in the short term will be principally due to a slide in South African production and a long period of underinvestment to bolster mine capacity worldwide. At the same time, and regardless of the rising penetration rate of electric vehicles, platinum consumption for autocatalysts and hydrogen applications (electrolysers and fuel cells) is expected to grow in 2023-2025 and remain relatively stable until 2030 (Figure 5). Given the tight metal availability to meet demand in the coming

<sup>1</sup> PGMs is a collective term for six elements. Major PGMs are palladium and platinum, and minor PGMs are iridium, osmium, rhodium, and ruthenium.

<sup>2</sup> Newly refined Russian palladium and platinum was suspended from trading in London Platinum and Palladium Market (LPPM) (<https://www.lppm.com/palladium-list/>) since April 2022 (removal from the LPPM 'Good Delivery Lists'), while Nornickel's largest shareholder is facing sanctions in the USA, the UK, Canada and Australia ([Reuters 23/1/23 'Potatin says sanctions constrain Nornickel, force it to adjust strategy'](https://www.reuters.com/markets/commodities/potatin-says-sanctions-constrain-nornickel-force-it-to-adjust-strategy-2023-03-15/)) ([Bloomberg 15/12/22 'US Sanctions Russia's Richest Tycoon, Nornickel Boss Potatin'](https://www.bloomberg.com/news/articles/2023-03-15/us-sanctions-russia-s-richest-tycoon-nornickel-boss-potatin))

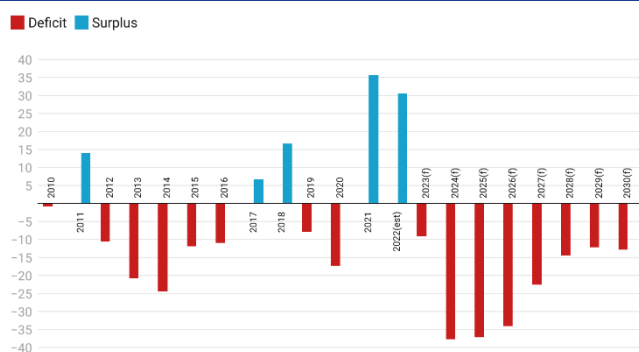
<sup>3</sup> The analysis includes PGM-bearing mine projects scheduled for start-up in the 2020s, recent and foreseen expansions of operating mines, projected mine closures and restarts, projects shelved or postponed, and PGMs produced as by-products of base-metal mining. The modelling is based on

standard JRC in-house assumptions and methodology. In addition for PGM, a footprint on the expected South African output is considered due to the gradual decline of ore grades and electricity supply disruptions. The analysis also takes into account the processing and market release of unrefined stocks at the end of 2022 in South Africa. Moreover, a negative effect of sanctions on operating mines and mine projects in Russia is considered because of logistic and financial challenges. Finally, no constraint is assumed in the refined metal output due to limitations in infrastructure and smelting capacity.

<sup>4</sup> According to (WPIC, 2023), the majority of above ground inventories appear to have migrated to China; therefore, they are unavailable to satisfy shortages in the rest of the world.

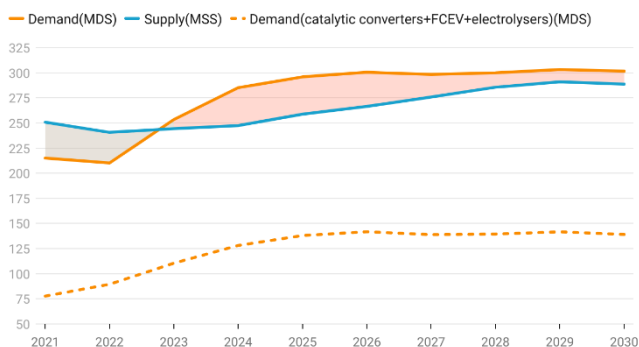
years, the switch to alternative sources away from Russia may trigger competition for non-Russian metal.

**Figure 4 – Market balance<sup>5,6,7</sup> (stock movements), tonnes of Pt**



Source: (WPIC, 2022b) (JM, 2022a) (JM, 2022b)(Heraeus-SFA Oxford, 2022) for 2010-2022, JRC forecast for 2023-2030

**Figure 5 – Forecast of global supply-demand<sup>4,5,6</sup> for platinum (2023-2030), tonnes of Pt**



Source: JRC elaboration based on several sources and background data<sup>8</sup>

## Short-term impacts and medium-term outlook in the EU

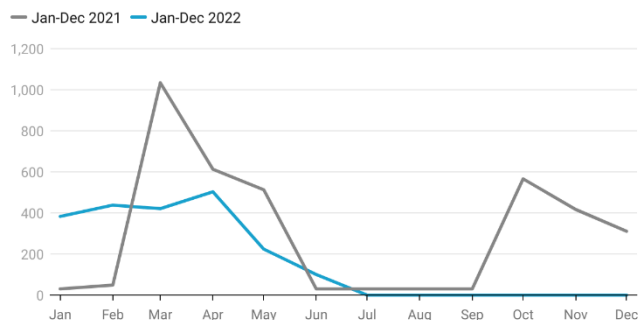
The EU imported about 3.5 tonnes of platinum (unwrought & powders) from Russia in 2021, accounting for 10% of EU import value. In March-December 2022 following the outbreak of the war, the quantity of EU imports of unwrought platinum and powders from Russia fell by 65% relative to the same period last year (Figure 6); EU imports from Russia were eliminated in July-November 2023<sup>9</sup>. At the same time, the total EU imports of unwrought platinum and powders rose by 26% year-over-year in March-November 2022, originating mainly from the USA and the UK. The global supply surplus in 2022 (Figure 4) may have favoured trade re-orientation away from Russia.

<sup>5</sup> Forecast in 2023-2030 is derived from JRC's Medium-Supply Scenario (MSS) and Medium-Demand Scenario (MDS) (baseline scenarios).

<sup>6</sup> Supply consists of primary production from mining and secondary production from recycling. It is assumed that the mine output of new projects will not be constrained by infrastructure and smelting capacity limitations, neither that the PGM basket price will hinder the commercial development of new mine projects (when PGM are the main product). Lastly, the realization or suspension of investment plans for the expansion of mining production in Russia (shown in Figure 2) is doubtful.

<sup>7</sup> An important factor of uncertainty on the demand forecast is the substitution of platinum for palladium in vehicle catalytic converters. The extent to which each PGM can be substituted for one another is complex; market scenarios and forecasts are employed for its estimation. In addition, the level of investor demand yearly is highly uncertain; the forecast assumes it is equal to the historic (20-year) net annual average, i.e. 11.7

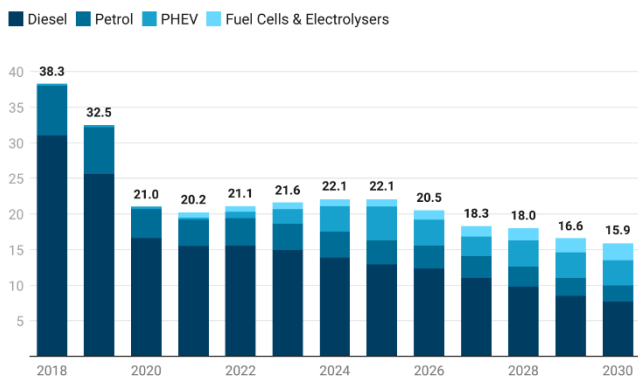
**Figure 6 – Monthly EU imports from Russia of unwrought platinum and powders, H1 2022 versus H1 2021, kilograms**



Source: Data from (Eurostat Comext, 2023)

The projected gradual decline of consumption of platinum in the automotive sector (Figure 7) due to increasing market penetration of electric vehicles could indirectly displace by circa 2027-2030 the need for imports corresponding to the quantities imported from Russia in 2021. Additional demand from emerging technologies (fuel cells and electrolysers) is estimated at 2 to 3 tonnes in 2030.

**Figure 7 – Estimate of Pt content in EU passenger cars placed on the market (POM)<sup>10</sup> and emerging technologies, tonnes of Pt**



Source: JRC based on (RMIS, 2021)(Bobba et al., 2021)(Carrara et al., 2023)

Moreover, platinum recovered in the EU from domestically collected or imported waste & scrap is an additional safeguard for supply security. The EU's PGM refineries (Box 2) commonly process secondary material streams, and the EU is a net importer of PGM-bearing waste & scrap. EU imports rapidly increased in the last years, growing by about nine times in value terms in 2021 compared to 2017; the same trend was also observed in 2022. On the other hand, it is predicted that platinum's availability for recycling from domestic end-of-life vehicles (ELV) will gradually decline, in contrast with palladium (Figure 8). Therefore, the

tonnes per year. Other demand assumptions are sector-specific at the global level.

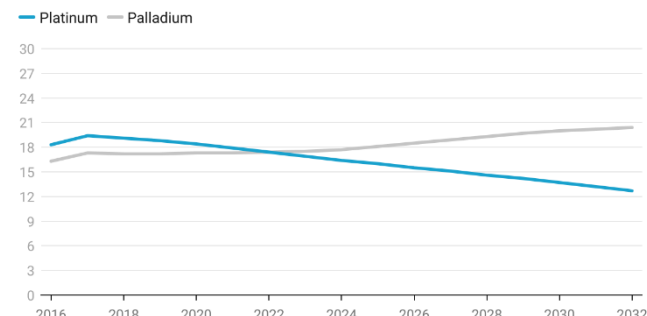
<sup>8</sup> Placed-on-market (POM) vehicles is derived from (Bobba et al., 2021)(Carrara et al., 2023); Pt content in POM vehicles from (RMIS, 2021); collection rate of ELV from (Kitazume et al., 2020); Pt forecast for electrolysers and fuel cells from (Carrara et al., 2023); assumptions of Pt-for-Pd substitution globally are based on (WPIC, 2022a) and other estimates. Supply data in 2021-2022 are based on (JM, 2022a)(Heraeus-SFA Oxford, 2022)(WPIC, 2022b). The forecast of supply (2023-2032) is based on several data sources e.g. (S&P Global, 2022), company announcements.

<sup>9</sup> Noteworthy, [Council Regulation \(EU\) 2022/576](#) of 8 April 2022 banned land freight from Russia and Russian vessels from accessing EU ports. The Regulation does not provide derogations for platinum.

<sup>10</sup> The impact of platinum-for-palladium substitution is not accounted for.

shortage of adequate waste and scrap flows into the EU could be a potential bottleneck for platinum recovery in domestic refineries. Enhancing recycling of post-consumer products, e.g. spent autocatalysts, by improving collection rates (or recovery when technically feasible) could help alleviate supply risks.

**Figure 8** – PGM availability for recycling from ELV in the EU, tonnes of PGM



Source: JRC elaboration based on (RMIS, 2021) (Bobba et al., 2021)(Carrara et al., 2023) (Kitazume et al., 2020)

## DEMAND

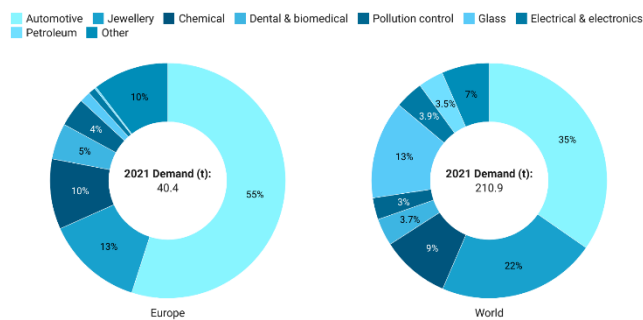
Platinum is vital for various end-use applications in consumer products and industrial processes. Catalysts to reduce polluting emissions from vehicle exhaust systems are the largest demand for platinum. Platinum is primarily used today in converting emissions from diesel engines, and its demand is more exposed to diesel car sales. In 2021, the automotive industry represented 55% of total platinum demand in Europe versus 35% worldwide (Figure 9). Other platinum applications include jewellery, catalysts for the chemical industry and petroleum refining, dental and biomedical applications, the fabrication of glass-making tools, electronic and electrical applications etc. Finally, platinum is used as a form of investment asset.

### Box 1: Platinum demand in the EU

Compared with other regions, Europe has had the highest automotive demand for platinum over the last years owing to its larger diesel market share. Despite the transition to electromobility already underway, internal combustion engine vehicles (ICEV) will remain a significant part of the global drive-train mix well into the 2030s. However, the decline in platinum use associated with fewer ICE vehicles produced will be offset by the recovery in vehicle sales in the short term (as the chip shortage gradually eases), and higher Pt loadings due to tighter emission standards. Moreover, platinum demand will be supported by the ongoing platinum for (the more costly) palladium substitution in gasoline vehicles driven by economic and geopolitical reasons (WPIC, 2022a). Finally, Pt-consuming applications (electrolysers and fuel cells) in the growing hydrogen economy will balance out some of the demand's reduction, especially when demand from hydrogen applications proliferates over the longer term.

<sup>11</sup> Gross demand figures that represent the sum of industry demand for new metal in each application; demand covered by closed-loop recycling is not included. Figures also include any changes in unrefined metal stocks. Demand for investment is excluded.

**Figure 9** – Demand<sup>11</sup> for platinum by end-use sector, 2021



Source: JRC based on data from (JM, 2022a)

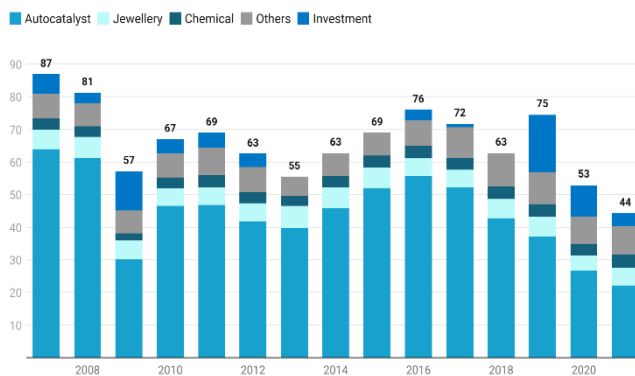
**Figure 10** – Platinum's applications in EU industrial sectors<sup>12</sup>, 2021

Applications	Industries producing end-use products	Industries using Pt-products	Industrial Ecosystem	Platinum consumption (%)
Automotive	C29.32 Manufacture of other parts and accessories for motor vehicles	C29.10 Manufacture of motor vehicles	Mobility-Transport-Automotive	50%
Jewellery	C32.12 Manufacture of jewellery and related articles	-	Retail	12%
Chemical	C20.59 Manufacture of other chemical products n.e.c.	C20.13 Manufacture of other inorganic basic chemicals; C20.14 Manufacture of other organic basic chemicals; C20.15 Manufacture of fertilisers and nitrogen compounds.	Energy-Intensive Industries	9%
Investment	C24.54 Casting of other non-ferrous metals	-	-	9%
Dental & biomedical	C32.50 Manufacture of medical and dental instruments and supplies	-	Health	5%
Pollution control	C29.32 Manufacture of other parts and accessories for motor vehicles; C20.59 Manufacture of other chemical products n.e.c.	C28.24 Manufacture of power-driven hand tools; C28.30 Manufacture of agricultural and forestry machinery	Energy-Intensive Industries	4%
Glass	C25.73 Manufacture of tools	C23.1 - Manufacture of glass and glass products	Energy-Intensive Industries	1%
Electrical & electronics	C26.11 Manufacture of electronic components; (capacitors) C26.80 - Manufacture of magnetic and optical media; (hard drive media) C26.51 Manufacture of instruments and appliances for measuring, testing and navigation; (thermocouples)	C26.20 Manufacture of computers and peripheral equipment; C26.40 - Manufacture of consumer electronics	Digital	1%
Petroleum	C20.59 Manufacture of other chemical products n.e.c.	C19.20 Manufacture of refined petroleum products	Energy-Intensive Industries	<1%
Other	C26.51 Manufacture of instruments and appliances for measuring, testing and navigation; C29.32 - Manufacture of other parts and accessories for motor vehicles	C28.29 Manufacture of other general-purpose machinery n.e.c.; C29.10 Manufacture of motor vehicles;	Renewable energy; Mobility-Transport-Automotive	9%

Source: JRC elaboration based on (Eurostat, 2008) and (JM, 2022a)

European demand for platinum accounted for 21% of the global in 2021. In Europe, consumption declined remarkably over the past years, from 87 t in 2007 to 53 t in 2020 and 43 t in 2021, due to a marked decrease in demand for autocatalysts (Figure 11).

**Figure 11** – Evolution of platinum consumption in Europe<sup>13</sup>, 2007-2021, tonnes of Pt



Source: JRC elaboration based on data from (JM, 2022a) (JM, 2022b)

<sup>12</sup> Demand data refer to Europe (EU including UK and Turkey). Investment is included.

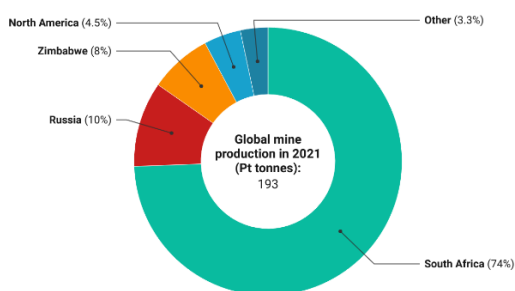
<sup>13</sup> Data refer to Europe (EU including UK and Turkey). Negative demand for investment is excluded.

## SUPPLY

### Global production

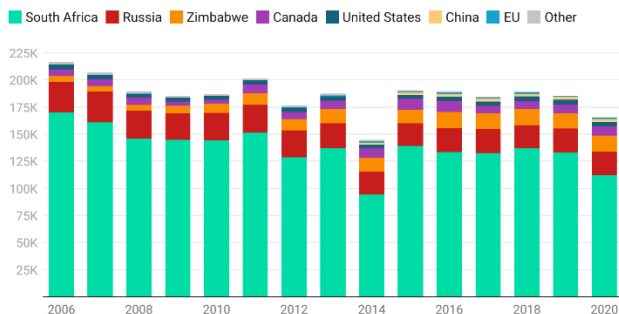
At the mining level, global production of platinum is highly concentrated. South Africa is the dominant mining producer accounting for nearly three-quarters of the world's output in 2021 (Figure 12). Russia is the second largest producer, holding a global output share of 13% in 2020 and 10% in 2021. Other significant producers are Zimbabwe, Canada and the USA. The top-5 producing countries account for over 95% of the world's production. EU production accounts for less than 1% of the global output of primary platinum.

Figure 12 – Main global suppliers of primary platinum in 2021



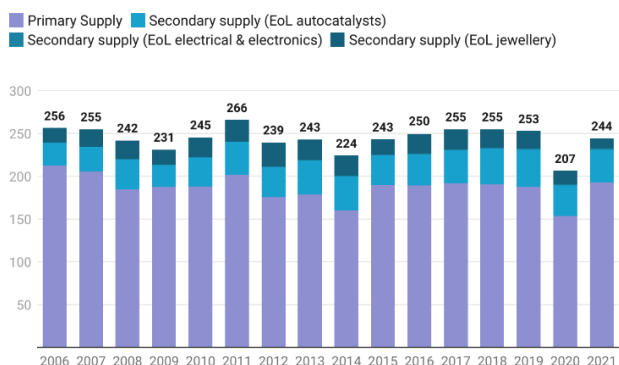
Source: (JM, 2022a)

Figure 13 – Mined production of platinum, kilograms of Pt



Source: (WMD, 2022)

Figure 14 – Global supply of platinum<sup>14</sup>, tonnes of Pt



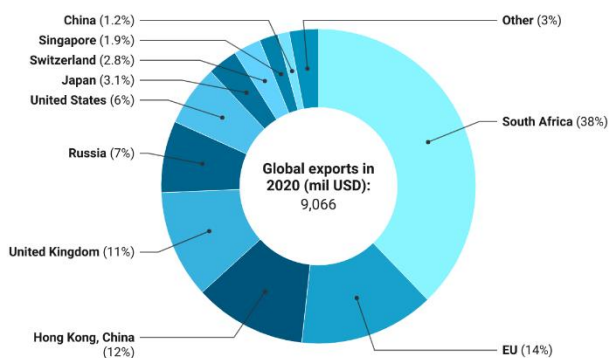
Source: JRC based on data from (JM, 2022a) (JM, 2022b)

<sup>14</sup> Mined (primary) supply reflects metal sold each year by producers. It may differ from underlying mining production, because of changes in work-in-progress stocks or due to additional sales by the producers of metal held in refined inventory. Recycling covers only open-loop recycling, i.e. secondary metal supplied to the global market each year that may be used in any sectors using PGM. Closed loop recycling is excluded

## Global trade

International trade statistics do not provide disaggregated data for the trade of primary PGM raw materials<sup>15</sup>; therefore, it is impossible to ascertain the volumes exported by Russia and other suppliers. With respect to refined/processed raw materials, South Africa was the leading exporter worldwide in 2020, accounting for 38% of global exports of unwrought platinum and powders based on value. Russia was ranked fifth, with a 10% share of global export value (Figure 15). The export supply of unwrought platinum & powders is highly concentrated, as the top-5 exporters typically account for 80-85% of the world's exports.

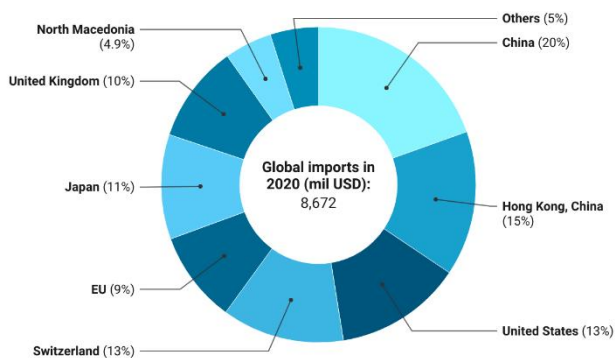
Figure 15 – Global exporters<sup>16</sup> of unwrought platinum & powders in 2020 by value



Source: JRC based on (WITS, 2022) (Eurostat Comext, 2022)

In 2020, the largest importers of unwrought platinum and powders were China & Hong Kong SAR (35%), the United States (13%), Switzerland (13%), Japan (11%), the UK (10%), and the EU (9%).

Figure 16 – Global importers of unwrought platinum & powders in 2020 by value



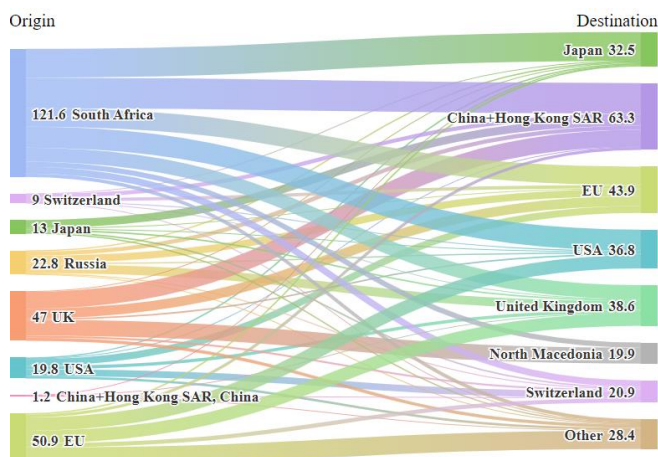
Source: JRC elaboration based on (WITS, 2022) (Eurostat Comext, 2022)

Hong Kong SAR, the UK, the USA, the EU and Switzerland are focal points in the international trade of platinum products as they are significant exporters and importers of refined platinum products.

<sup>15</sup> Ore concentrates and other intermediate products of PGM and Ni/Cu metallurgy

<sup>16</sup> South African exports were derived from reported imports by trade partners

**Figure 17** - Main flows in trade of unwrought platinum & powders, average 2017-2020, tonnes



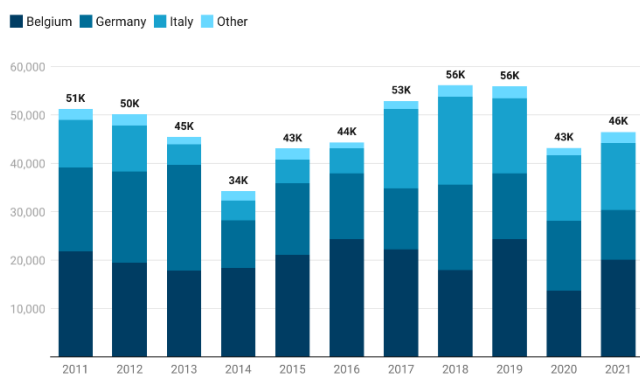
Source: JRC based on background data from (CEPII, 2022)

## EU IMPORT DEPENDENCY

### EU production

Mining production in the EU is of a meagre scale (1-1.5 tonnes of Pt content annually), making a small contribution to domestic supply. Finland is essentially the only producer of Pt-rich ores. According to a rough approximation, the annual output of platinum in unwrought & powder form ranged from 34 to 56 tonnes in 2011-2021; the yearly average production was about 48 tonnes over the same period.

**Figure 18** – Estimated<sup>17</sup> EU production of refined platinum products (unwrought & powders) by country, kilograms



JRC based on (Eurostat Prodcom, 2023) (Eurostat Comext, 2022)

### EU imports

EU imports of unwrought platinum and powders amounted to about 36 tonnes in 2021, worth EUR 1.1 billion. From 2011 to 2021, imports of refined platinum products (unwrought & powder) represented half (52%) of the total estimated EU sourcing (production+imports). South Africa and the United Kingdom have been the largest EU suppliers in recent years (Figure 19). The EU sourced from Russia 10% by value of its unwrought platinum and

<sup>17</sup> Available statistics in the public domain for the EU production of refined platinum are insufficient for thorough coverage. The production in Germany in 2019-2020 is sourced from (Eurostat Prodcom, 2023); for 2011-2018 it was estimated from aggregated data for all PGM as reported by (Eurostat Prodcom, 2023). The production in Belgium is approximated on the basis of operating capacity (25 kt per year) and the assumption that it followed

## Box 2: The PGM industry in the EU

Boliden's *Kevitsa* multi-metal mine in Finland is effectively the sole primary producer in the EU. PGM are produced as a by-product in the form of PGM-containing Ni/Cu concentrates. Trivial quantities are also extracted in Poland. Exploration activities and new mine development projects are currently ongoing in Finland and Sweden.

The refining of PGM in the EU takes place at dedicated precious metal refining installations. Refineries in the EU process a wide range of Pt-bearing materials originating from European and overseas sources. These include primary raw materials (concentrates, by-products and residues from the non-ferrous mining and processing industries), as well as secondary raw materials (end-of-life products and manufacturing waste).

A few base metal installations produce from primary feedstock unrefined intermediate products (by-products) for the subsequent recovery of PGMs. For example, *Norilsk Nickel Harjavalta* refinery in Finland, owned by Russia's Normickel, produces PGM-bearing copper cake as a by-product. Boliden's *Harjavalta* smelter/refinery in Finland and Boliden's *Rönnskär* smelter in Sweden produce Pd concentrate as a by-product.

*Umicore's* smelting/refining plant at Hobogen in Belgium, where raw materials from primary and secondary sources are processed, is one of the world's largest refining facilities with an annual *capacity* of over 50 t PGMs (25 t Pd, 25 t Pt and 5 tonnes Rh). In Germany, PGM are recovered in multiple sites, mostly from secondary feedstock. e.g. *Saxonia Edelmetalle GmbH* and *Wieland Edelmetalle GmbH* (Halsbrücke and Pforzeim refineries, respectively), *C. Hafner GmbH* (Pforzheim and Wimsheim refineries), *Heimerle + Meule GmbH* (Pforzheim refinery), and *Allgemeine Gold- und Silberscheideanstalt AG* (Agosi refinery, part of Umicore). Italy also hosts significant capacity for PGM refining. *Chimet Spa* (Arezzo), *Safimet Spa* (Arezzo, Vicenza), *TCA Spa* and *Italpreziosi Spa* (Arezzo) operate PGM refining facilities with secondary materials feedstock. In other Member States, production facilities exist in Austria (*Ögussa GmbH*, part of Umicore), Czechia (*Safina as*, belonging to the Russian Renova Group), France (*WEEECycling SAS*), Netherlands (*Remondis PMR BV* and *Elephant*) and Spain (*Sempsa JP*).

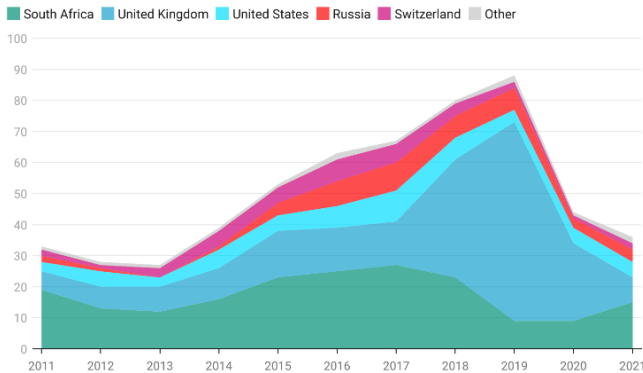
In addition, there are installations across the EU that specialise in the manufacturing of semi-finished (wrought products like sheets, strip and wire), as well as end-use products (catalysts, catalyst-based products, chemical compounds, electrical components etc.). Finally, many EU companies are involved in the collection, pre-processing and trading of PGM scrap and secondary materials.



powders imports in 2021 (Figure 20). Russia accounted for 4% of the estimated EU sourcing for refined platinum in 2011-2021.

yearly the trend of global demand. Exports (EU-intra and EU-extra) are used as a proxy for the output in other producing countries (Italy, Austria, Czechia, France, Ireland) after accounting for re-exports. Platinum unwrought & powder comprises platinum metal and alloys in which platinum predominates by weight.

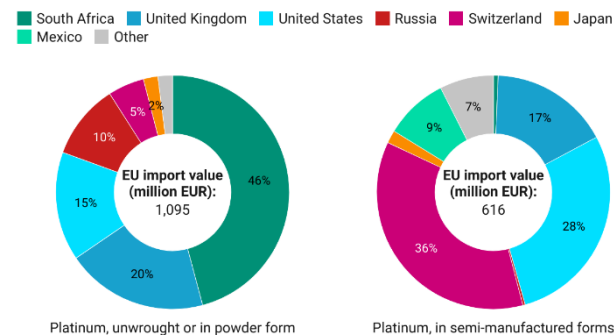
**Figure 19** – Structure of EU imports of unwrought platinum & powders by origin, tonnes



Source: (Eurostat Comext, 2022)

Regarding imports of wrought platinum products (semi-manufactured forms), imports amounted to 81 tonnes in 2021, worth EUR 616 million, and represented 36% of total platinum import value in the EU (unwrought, powders and wrought). Switzerland and the United States are the principal EU partners for imports of platinum in semi-manufactured forms (Figure 20). Concerning PGM-bearing waste & scrap<sup>18</sup> for material recovery, the USA is the main origin of EU imports (38% share by value in 2021), followed by South Africa, the UK (18%), South Africa (14%), and Switzerland (6%)(Eurostat Comext, 2022). EU imports from Russia of wrought platinum and PGM waste & scrap are minor.

**Figure 20** – EU import value of refined platinum (unwrought & powder) and semi-manufactured platinum by origin, 2021

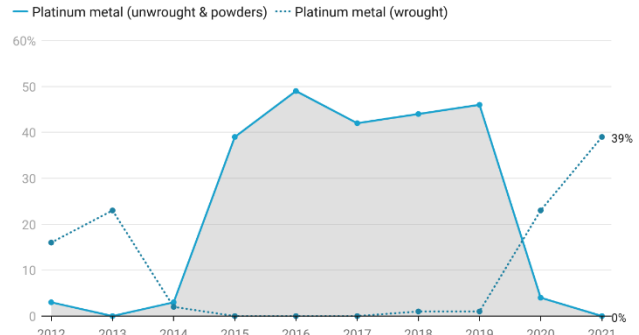


Source: (Eurostat Comext, 2022)

The EU's reliance on imports of primary raw materials cannot be calculated due to the absence of specific trade codes for PGM-rich commodities marketed by primary producers. It is considered close to 100% as domestic production is tiny. Regarding refined raw materials, i.e. unwrought platinum and powders, the EU's reliance on imports increased in 2015-2019 by approximately 40% and 50% (Figure 21). The EU was a net exporter of unwrought platinum and powders in 2021 (Figure 22). With respect to wrought platinum products, the estimate of the EU's reliance on imports demonstrates an opposite trend compared to refined platinum, as it rose in 2020-2021 (Figure 21). It can be deduced that EU platinum consumers switched their imports from refined to semi-manufactured forms during this period.

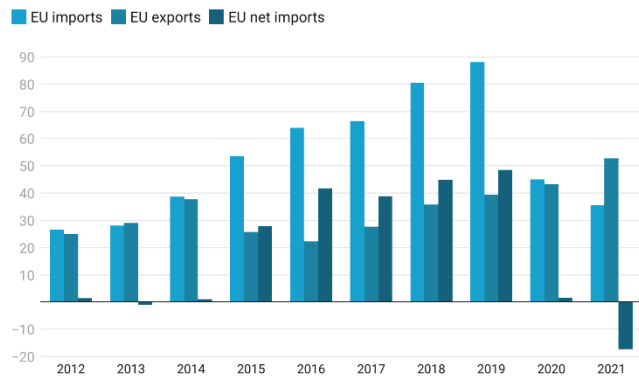
<sup>18</sup> CN 71129200 'Waste and scrap of platinum'. The expression 'platinum' refers to all PGM, according to the HS explanatory notes.  
<sup>19</sup> 'Import Reliance' Indicator = (Imports – Exports) / Apparent consumption; Apparent consumption = Domestic production + Imports – Exports

**Figure 21** – Estimated EU import reliance<sup>19</sup> for platinum refined (unwrought & powders) and semi-manufactured<sup>20</sup> (wrought), %



Source: JRC based on (Eurostat Comext, 2022)(Eurostat Prodcom, 2023)

**Figure 22** – EU trade of platinum in unwrought & powder forms, tonnes



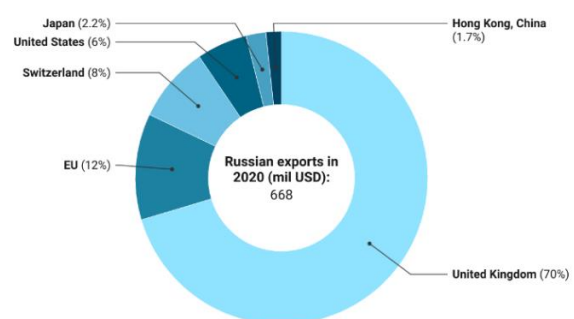
Source: JRC based on (Eurostat Comext, 2022)

## TRADE FLOWS FROM RUSSIA

### Global

The UK was the primary export market for Russian platinum in 2020 (Figure 23). The EU ranked second, accounting for a 12% share of Russia's exports in 2020. The value of Russian exports of unwrought platinum & powders amounted to USD 668 million in 2020.

**Figure 23** – Destinations of Russian exports of unwrought platinum & powders in 2020 by value






Source: (WITS, 2022)

<sup>20</sup> In the case of wrought products, the indicator's estimate is based on monetary terms (production and trade value).

## EU

EU imports from Russia amounted to 3.5 tonnes of unwrought platinum and powders in 2021; in 2017, these reached their highest-ever level (9 tonnes). On average, the EU imported unwrought platinum and powders worth EUR 128 million annually over 2019-2021. The EU relied on Russia for 15% of its unwrought platinum and powders imports by value and 9% by quantity in the same period. EU's dependency on Russian imports of refined platinum products is lower for platinum than palladium. Figure 24 reveals that Italy is by far the Member State most exposed to imports of Russian platinum; Russia accounted for almost half of Italy's import value in 2019-2021.

**Figure 24** – Import value of unwrought palladium & powders by Member State, annual average 2019-2021

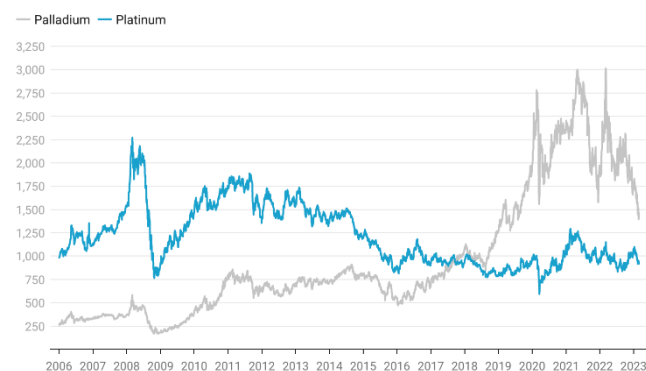
EU country	EU-extra imports (million EUR)	Imports from Russia (million EUR)	Imports from Russia (% of EU-extra imports)
	843	128	15
	504	12	2
	247	116	47
Other	93	0	0

Source: JRC based on data from (Eurostat Comext, 2022)

## PRICES

What stands out in platinum's price evolution over the last 15 years is the general pattern of decline from 2011 to 2018. It is noted that palladium prices exceeded platinum, for the first time since 2001, at the end of 2017. What is also visible in Figure 25 is that the price of platinum did not peak when Russia invaded Ukraine, unlike other commodities.

**Figure 25** – LBMA platinum daily price evolution compared to palladium, Jan 2006 – Feb 2023, in USD/oz t<sup>21</sup>



Source: (LBMA, 2023)

<sup>21</sup> 1 troy ounce (oz t) = 31.10348 g

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## CONCLUDING REMARK

The projected tight supply/demand balance in the short and medium term may sustain dependence on Russian supply worldwide. The EU's autonomy from Russia in the coming years requires import switch to other established producers, as well as availability of secondary raw materials for domestic refineries.

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