STRATEGIC REPORT

Nornickel maintains its focus on growth and is currently at the peak of its investment cycle.

In 2022, CAPEX totalled to

USD 4.3 bn

In 2023, CAPEX is expected to increase to

USD 4.7 bn

CHAIRMAN'S LETTER

DEAR SHAREHOLDERS!

Having barely recovered from the COVID-19 pandemic and industrial incidents at the Taimyrsky and Oktyabrsky Mines, we faced new, even more daunting challenges in 2022. The unprecedented sanctions regimes imposed by a number of countries against Russia have had a significant negative impact on our business, challenging us to promptly adapt our operations, procurement, sales, and financial activities to the new normal.

Despite all these headwinds, Nornickel fully met its production targets for the year and ramped up its output of all metals following unscheduled production downtimes in 2021. I would particularly note that, as we restored operations at the two mines and Norilsk Concentrator, we maintained our focus on improving our health and safety management, making tangible progress in this area. The number of fatal accidents has decreased by almost three times from 11 to 4, but we are far from satisfied with this, and we will make every effort to achieve zero fatalities at the workplace.

We continue to make progress on the Sulphur Project, our flagship sustainability initiative to dramatically reduce sulphur dioxide emissions in the Norilsk Industrial District. Over 2022, we completed the bulk of the project's first phase, including the construction of furnace gas recovery facilities, a sulphuric acid neutralisation line and related infrastructure at Nadezhda Metallurgical Plant. We can confirm that these facilities will come online before 2023-end.

Amidst strong geopolitical turbulence and economic uncertainty, it is vital for any business to remain socially responsible. As such, we decided to support our employees and their families by indexing salaries above inflation in Russia, as well as paying extra bonuses last April. On top of this, we also launched a long-term programme in 2022 to renovate housing and social infrastructure in Norilsk, for which the Company plans to disburse over RUB 81 billion by 2035.

Of course, the new operating environment has forced the Company to completely rethink the scope and timelines of many investment projects. Although we remain committed to all of our previously stated strategic environmental, mining and downstream priorities, many projects in these areas are being redesigned as we need to substitute imported process equipment, source new suppliers and build alternative supply chains.

In closing, I am proud to say that despite all these challenges, Nornickel has retained its leadership in non-ferrous and precious metals, and our products remain in demand and consistently generate strong revenues and operating profit. The Company has a robust balance sheet, ready to fully meet its obligations to employees, partners, society, and the government, while retaining a compelling investment case for shareholders.

ANDREY BOUGROV
Chairman of the Board of Directors
MMC Norilsk Nickel

Despite all these headwinds, Nornickel fully met its production targets for the year and ramped up its output of all metals following unscheduled production downtimes in 2021.

PRESIDENT'S LETTER

DEAR SHAREHOLDERS!

The year 2022 has come to an end, and I would like to take the opportunity to look back on what we have achieved, as well as share our short-term plans as we deal with very high uncertainty going into 2023.

OPERATIONAL AND FINANCIAL PERFORMANCE

Last year, Nornickel and the broader Russian economy grappled with severe sanctions, which, coupled with high inflation and volatility rates across global commodity and financial markets, could not but affect the Company's key financials.

We have fully restored operations at the Taimyrsky and Oktyabrsky Mines and Norilsk Concentrator after incidents in 2021 and have ramped up our output of all key metals. Despite the geopolitical challenges and related disruptions to international logistics, the Company also successfully met all its obligations to customers in 2022. Meanwhile, lower prices for copper and palladium, as well as higher metal inventories in transit due to longer supply chains, have caused our revenue to fall by 5% to USD 16.9 billion.

Our cost of goods sold has also been affected. The direct impact of inflation aside, it has been affected by the additional incentives we paid to employees and the wage indexation above inflation in Russia, as well as changing the calculation of the MET rates. As a result, our EBITDA for the year was USD 8.7 billion, while EBITDA margin remained above 50%.

EBITDA for the year was
USD **8.7** bn

Our net debt has increased, but its ratio to EBITDA remains at a comfortable 1.1x. Amidst the ongoing turbulence, with Russia cut off from traditional global capital markets, leverage and liquidity management have become another top priority, and we have successfully risen to this challenge by refinancing our dollar-denominated debt through RUB- and RMB-denominated instruments.

Over the year, we also continued to ramp up our investments in growth projects and programmes aimed at reducing our environmental footprint and boosting industrial safety. As a result, our capital expenditure grew to USD 4.3 billion, an all-time high for the Company.

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The total number of retail shareholders in the Company topped 380 thousand, evidencing the confidence that Russian investors have in our business in such challenging times.

In 2022 our capital expenditure grew to
USD **4.3** bn

CAPEX PROGRAMME

As mentioned earlier, the Company is currently at the peak of its investment cycle, which implies further growth in total capital expenditure in 2023 to about USD 4.7 billion. This money is earmarked for financing production growth projects at the Talnakh mines and the South Cluster, expanding Talnakh Concentrator and the environmental Sulphur Project, maintaining and upgrading the energy infrastructure of the Norilsk Industrial District, replacing equipment, carrying out capitalised repairs, and running social projects. Our capital expenditure for asset upgrade and replacement will remain at a consistently high level above 50% of our total investment budget.

Clearly, the extraordinary events that have led to restrictions on exports of process equipment into Russia have significantly changed our long-term strategic plans. We have redesigned a number of major initiatives to reflect these changes and are engaged in comprehensive efforts to source alternative technical and engineering solutions, equipment suppliers and contractors. We are planning to finalise this work before the year's end and present an updated investment programme for 2024–2030 in Q4 2023.

The total number of retail shareholders in the Company topped

380,000

ENVIRONMENT AND OCCUPATIONAL HEALTH

Our Environmental Strategy is centred around the project to reduce sulphur dioxide emissions in the Norilsk Industrial District. Throughout 2022, we made strong progress on the first phase of this project at Nadezhda Metallurgical Plant. At present, construction and installation works are over two thirds of the way to completion, with equipment and pipeline pre-commissioning already underway, which makes us confident that the project will be launched before year-end.

Last year also saw the completion of our CHPP-3 fuel spill response work, as well as a large-scale biodiversity study across our entire footprint and further efforts under our sanitary clean-up and remediation programme.

Nornickel continued its building and structure monitoring programme as part of its climate risk management: by late 2022, we had connected 17 of our enterprises to a special diagnostic system, monitoring over 700 structures in real time.

In 2022, we were able to demonstrate significant progress on industrial safety by considerably reducing the number of work-related fatalities across our operations. Tragically, four of our colleagues lost their lives at work during the last year. All accidents were thoroughly investigated, with the resulting reports submitted to the Board of Directors and action plans developed to eliminate their root causes. I would like to reiterate the Company's commitment to achieving zero work-related fatalities, which is our top strategic priority.

SOCIAL RESPONSIBILITY

In line with the key provisions of Norilsk's social and economic development programme, we have launched efforts to renovate housing and upgrade or overhaul local utilities and engineering infrastructure. We also continue to develop the Corporate Healthcare project to set up private healthcare facilities complementing the public healthcare system across our footprint so as to drastically improve healthcare services for local communities.

Finally, we were the first Russian company to launch a process for obtaining the free, prior and informed consent of indigenous communities, which we have used with the people of Tukhard on the Taimyr Peninsula as part of the Tukhard relocation and development programme. This move has become an important milestone in our relations with the indigenous peoples of the North.

On a final note to our shareholders, I would like to mention that last year, the total number of retail shareholders in the Company topped 380 thousand, evidencing the confidence that Russian investors have in our business in such challenging times – I hope that we live up to your expectations.

VLADIMIR POTANIN
President,
Chairman of the Management Board
MMC Norilsk Nickel

COMMODITY MARKETS

NORNICKEL METALS' APPLICATIONS

Mechanical engineering, chemical and petrochemical industries, construction

Nickel is used in the stainless steel production. Adding nickel as an alloying element to stabilise the austenite structure enhances steel's corrosion resistance, high-temperature properties, weldability, formability, and resistance to aggressive environments. Enhanced this way by nickel, stainless steel finds its applications across many industries, including the mechanical engineering, chemical and petrochemical industries, and construction

Palladium, platinum and rhodium are used as catalysts in chemical and petrochemical processes to boost process performance

EV batteries

Nickel is used as a key element in the production of precursor cathode active materials for EV batteries. The dominating technologies include nickel-intensive NCM and NCA batteries, owing to their higher volumetric and gravimetric energy density, which increases drive range. Nickel-based batteries are also more recyclable and reusable than other types of batteries

Aerospace industry

Nickel alloys are highly resistant to heat and aggressive environments and are used in the manufacturing of aircraft engines and rocket components

Renewable energy

Nickel alloys are used in wind, solar and geothermal power generation

Copper is intensively used in the construction of wind, solar and other types of renewable power plants

Automotive industry

The automotive industry uses copper in batteries, electric motors, inverters, wiring, and charging infrastructure. Transport electrification is expected to become a key driver behind copper demand in this decade

Palladium, platinum and rhodium are used as the active material in automotive exhaust gas catalysts to minimise the vehicles' environmental impact

Construction, air conditioning and cooling systems

The construction sector uses copper in pipes and tubing, heating and cooling systems as well as in wall cladding. Electrical and communication cables are also mostly made of copper

Electronics and home appliances

Copper is used in electronics and home appliances due to its excellent electrical and thermal conductivity

Palladium has found its way into the electronics industry as material for capacitors, motherboards and other components, while platinum is primarily used in hard drives, and rhodium in coatings for connectors and contacts

Network infrastructure

Copper is used in power generation, transmission and distribution as well as in all types of wiring. A strong push for transport electrification and transition to renewable energy will require significant expansion of distribution networks

Hydrogen solutions

Platinum, palladium, iridium, and ruthenium are widely used in rapidly developing hydrogen technologies. Platinum group metals find application as catalysts in low-carbon hydrogen production as well as for hydrogen purification, transportation and use as an energy source in fuel cells

Jewellery

Palladium and platinum are widely used in all kinds of jewellery which is renowned for its beauty but also for durability

Healthcare

PGMs are extensively used as catalysts in drug synthesis. Additionally, palladium has found wide application in dentistry, while platinum is used in medical devices such as pacemakers. Platinum is also an active ingredient of anti-cancer medicines

Glass fibre and optical glass manufacturing

In the glass industry, platinum and rhodium are used to manufacture bushings for making glass fibre and optical glass

STRATEGY

GLOBAL TRENDS

COVID-RELATED RESTRICTIONS

In 2022, following the easing of pandemic-induced restrictions, supply chains affected by lockdowns started to recover. China, the largest consumer of base metals and a key producer and consumer of base and precious metals, bucked the trend, as the country, with its zero-COVID policy, kept stringent restrictions in place across major cities, slashing industrial demand for metals across a wide range of applications, from stainless steel to the automotive and jewellery industries. Meanwhile, despite the lockdowns that were in place throughout the year, China managed to boost both its production and consumption of nickel and copper products. The lifting of restrictions in late 2022 is expected to spur business activity and demand for metals in China starting from the second quarter of 2023.

STRICTER MONETARY POLICY

The year 2022 saw a substantial rise in global inflation caused by geopolitical tensions, surging energy prices, ongoing COVID-19 restrictions in China and supply chain disruptions. In response to accelerating inflation, major central banks decided to tighten their monetary policies, dampening global economic growth and, consequently, negatively impacting industrial consumption of base and precious metals. The US dollar appreciation against major currencies caused by the Federal Reserve System's (the Fed) rate hikes resulted in a retracement of commodity prices in the second half of 2022.

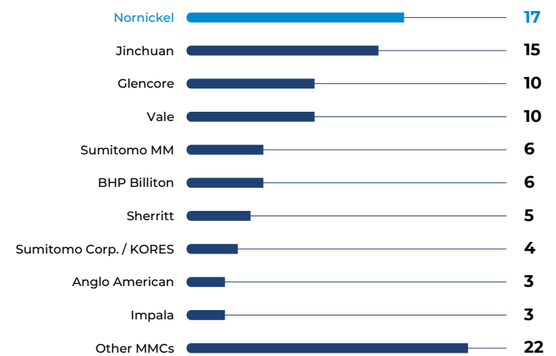
GEOPOLITICAL TENSIONS

The tensions in Ukraine in 2022 led to unprecedented sanctions against Russia. They were exacerbated by what became known as "self-sanctioning" as some international organisations shuttered their Russian operations despite the absence of any legal restrictions on working with Russian companies, which affected both inventory procurement and sales for Russian producers.

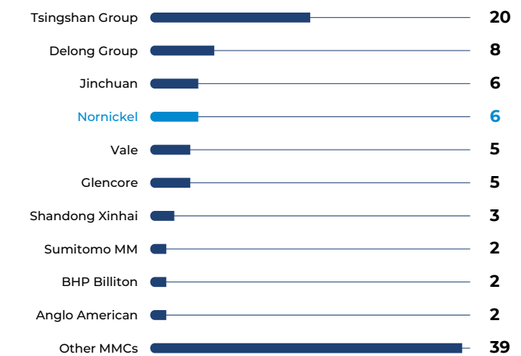
The London Bullion Market Association (LMBA) and the London Platinum and Palladium Market (LPPM) have introduced restrictions on Russian refineries and on the processing of Russian-origin precious metals in other countries. This move has affected the liquidity of Russian metals in the global market. The London Metal Exchange also considered delisting Russian base metal brands but decided against the ban following consultations with market players.

NICKEL (Ni)

Nornickel — No. 1 in high-grade nickel production(%)



Nornickel — No. 4 in primary nickel production(%)



Sources: producer reports, Company analysis as of 3 March 2023.

KEY TRENDS IN THE NICKEL MARKET

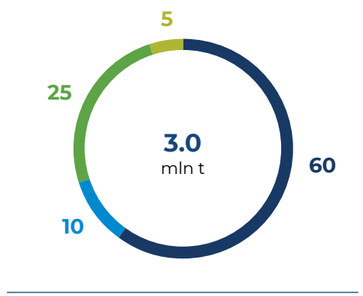
In 2022, the nickel market moved into a surplus of 114 kt, or 4% of annual consumption (compared to a deficit of 172 kt in 2021). Historically, market surpluses have been linked to the LME deliverable / Class 1 nickel. However, in 2022, the surplus was mainly represented by the low-grade nickel units, particularly nickel pig iron (NPI) and FeNi. Meanwhile, the high-grade nickel market remained in deficit, particularly as nickel inventories halved in 2022.

After a year of significant deficit in the nickel market in 2021, which resulted in a 38% increase in the annual nickel price, the price started the year buoyantly as robust speculative demand and significant spot market tightness had caused exchange stocks to dwindle further. As a result, combined with logistical bottlenecks and geopolitical tensions in Eastern Europe, the price has been pushed to an 11-year high of USD 24,000/t in mid-January, although this price spike was somewhat speculative and was accompanied by massive short covering.

In February, the nickel price dynamics were dominated by escalating geopolitical tensions between Russia and Ukraine, which was further exacerbated by the low exchange stocks. As a result, the LME nickel price increased to a new 11-year high of USD 30,000/t during the trading session of 4 March.

On 8 March, the LME was forced to suspend trading in all nickel contracts after prices jumped to a record USD 100,000/t, allegedly due to a massive short squeeze. Given the extreme price movements and low trading volumes, the LME decided to cancel all trades executed on 8 March and rewound the market to the moment when prices closed on 7 March.

Primary nickel consumption by region (%)



Source: Company data

The LME introduced new daily price fluctuation limits on nickel contracts based on the previous day's closing price, allowed nickel position transfers, restricted the opening of new short positions, and resumed trading on 16 March. For several straight sessions, the price fell by the newly established daily limits, and the first settlement price of USD 30,800/t was recorded on 22 March only, but later on, prices steadied at around USD 33,000–34,000/t, albeit at low trading volumes.

The LME nickel price was in a downtrend in April–July, retreating after its enormous volatility and wild price swings. This downturn was further exacerbated by a broader trend of a demand slowdown across all base metals with the underlying weakness in the Chinese economy, strong US dollar and aggressive monetary policy tightening in conjunction with soaring inflation and attendant recessionary fears. On top of that, high energy prices and ongoing supply chain bottlenecks widely reduced investor activity across all markets and dented the industrial demand.

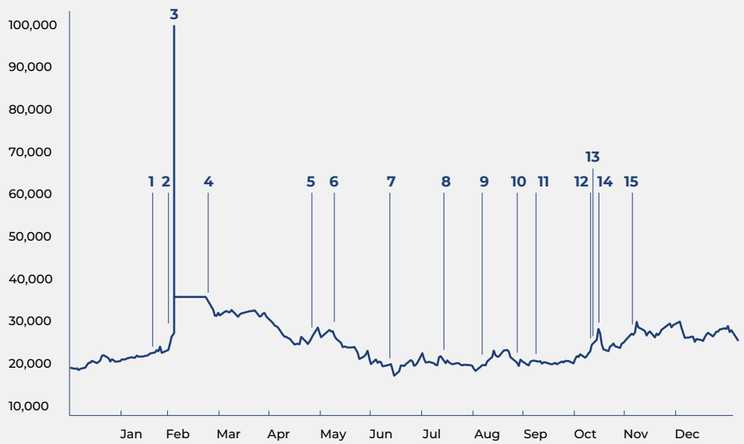
In July–September, nickel prices were rising, hitting a 3-month high of USD 25,000/t in late September, supported by increased sales in the EV market and low LME inventories, but lost all of the gains soon and plunged to USD 21,000/t in less than a week as the US dollar index hit a 20-year high, deteriorating the commodity prices.

In October, the price remained stable at around USD 21,000–22,000/t before surging to above USD 30,000/t in November. This has been caused by several factors, including speculation regarding the ban on the Russian metals by the London Metal Exchange and slower growth in the US CPI data, driving expectations that the Fed would ease the pace of its interest-rate increases with a correspondent drop of the US dollar index and a jump in prices of all major

Average annual nickel prices (USD/t)

Source: London Metal Exchange (cash settlement)

LME nickel price in 2022 (USD/t)



Source: London Metal Exchange

1. Geopolitical tensions in Ukraine
2. Massive short squeeze
3. The LME suspends trading in nickel contracts and cancels all trades after prices doubled to a record USD 100,000/t
4. Resumption of LME trading amid illiquid market
5. Strike at Glencore's Raglan nickel mine
6. LG Energy Solution launches construction of extensive nickel sulphate, PCAM[1] and CAM[2] capacities in Indonesia
7. US inflation at a 40-year high
8. US President Joe Biden signs Inflation Reduction Act 2022
9. Strike at Glencore's Raglan mine ended
10. DXY hits a 20-year high of 115
11. The London Metal Exchange announces public consultation on banning Russian metal
12. US inflation slows down to 7.7% following the DXY decline
13. The London Metal Exchange decides against banning Russian metal
14. Failed squeeze on low volumes, unconfirmed blast at CNGR's plant, Goro's leaks, and rumours about Indonesia's export taxes
15. The EU considers imposing sanctions against the Russian mining sector

[1] PCAM – Precursor cathode material.
[2] CAM – Cathode material.

commodities. These price gains were also supported by the rumours about a possible Indonesian nickel export tax, an unconfirmed report about a blast at CNGR's NPI-to-matte conversion plant in Indonesia, as well as disruptions at several nickel producing sites in Ukraine and New Caledonia. Later, however, the price retreated to USD 25,000–26,000/t.

In the first half of December, the nickel price rebounded to USD 30,000/t amid increased speculative trading, which could augur a new short squeeze attempt, but the price then retraced to USD 28,000/t. In late December, LME nickel prices stayed at USD 28,000–30,000/t in a sluggish market ahead of Christmas and New Year holidays.

Due to substantial volatility, the LME nickel price averaged USD 25,605/t in 2022, up 38% from the 2021 average.

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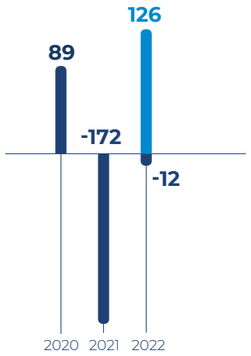
MARKET BALANCE

Primary nickel consumption grew by 5% y-o-y to 3.03 mln t in 2022. However, sluggish stainless steel production due to lower end use demand in China (on the back of the zero-COVID policy and a weak real estate sector) and in Europe (due to a wild surge in energy prices and inflation rates) was offset by a substantial increase in demand from the battery sector (up 32% y-o-y).

Primary nickel production totalled 3.14 mln t in 2022 (up 16% y-o-y). This increase was driven by the massive growth in the Indonesian NPI capacities (to 1.15 Mt Ni, or up 33% y-o-y) and the continued underlying growth of nickel compounds for the EV batteries sector, mainly fuelled by the launches of new HPAL capacities and NPI-to-matte conversion lines.

As a result, in 2022, the nickel market moved into a surplus of 114 kt, mostly in low-grade nickel. This was primarily due to lower-than-expected stainless steel output and a surge in NPI output in Indonesia, resulting in significant discounts for low-grade nickel and accumulation of NPI and FeNi stocks. Meanwhile, the high-grade nickel market saw a moderate deficit as evidenced by a decline in total nickel inventories of the LME and SHFE, which dropped by 49 kt in 2022 to 58 kt at the end of the year, or less than 10 days of global consumption.

Nickel production and consumption balance (kt)



Source: Company data

Primary nickel consumption in 2022

3.0 mln t

+5 % y-o-y

Primary nickel production in 2022

3.1 mln t

+16 % y-o-y

CONSUMPTION

Stainless steel remained the key sector of nickel use (about 65% of primary demand) in 2022. Adding nickel as an alloying element to stabilise the austenite structure enhances steel's corrosion resistance, high-temperature properties, weldability, formability, and resistance to aggressive environments.

Stainless steel production uses almost all types of nickel feed (except for some special products, such as nickel powder and compounds). However, since the quality of nickel used has almost no effect on stainless steel quality, steelmakers primarily use cheaper low-grade nickel such as NPI, ferronickel and nickel oxide. As a result, the share of high-grade nickel used in stainless steel has decreased in recent years.

In 2022, global stainless steel output declined by 5% to 56 mln t as industrial demand in China was dampened by the government's zero-COVID policy and stringent lockdowns amid continuing stagnation in the construction sector, which led to a drop in production in both China and Indonesia (by 2% and 4%, respectively). This was accompanied by a substantial decline in production in Europe and the US due to sluggish end use demand and rising energy prices, which translated to a jump in production costs. Consequently, output dropped by 16% in Europe and by 13% in the United States. Production was also stagnant in other countries around the world (Japan, South Korea, Taiwan). India was the world's only country that ramped up its stainless steel output by launching new production capacities, with its output up 1%.

At the same time, primary nickel demand in the stainless steel sector stayed flat at about 2 mln t in 2022. The overall decline in output was offset by the growing demand for Indonesian NPI, the preferred nickel feedstock for integrated stainless steel producers in China, the world's largest producer accounting for nearly 60% of global steel output.

This led to a lower share of demand for scrap, i.e. secondary raw materials, and a corresponding increase in use for primary nickel.

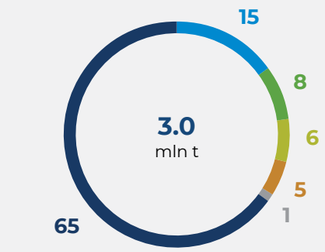
The battery industry uses nickel as a key element in the production of cathode precursors for batteries. In 2022, nickel demand continued to rise and grew 32% to 468 kt, driven by global EV support policies, rapid expansion of charging infrastructure and battery cost optimisation.

Lithium-ion batteries are the key type of batteries because of their high energy density, specific energy and long life cycle. Growth in lithium-ion battery production is primarily driven by transport electrification. In 2022, EV sales (battery electric vehicles and plug-in hybrids) rose more than 60% to 11 million units, growing at a CAGR of over 50% between 2015 and 2022. The impetus for transport electrification comes from government incentives, more stringent environmental regulations, improved battery performance, and lower production costs of battery cells.

China was the epicentre of this growth, with its sales almost doubling due to higher availability of EVs across price segments and more robust consumer demand. At the same time, sales in Europe rose only by 11% y-o-y and even declined for some months, reflecting the increasing cost of living and the pressure on consumer savings as well as the rising expenditure on energy and soaring inflation.

The growing popularity of electric and hybrid cars, along with the evolution of cathode technology towards nickel-intensive types, add to the tailwinds for significant growth in primary nickel demand in batteries in the long run. Despite the mounting competition across technologies, high-nickel formulations will remain the preferred option for automakers owing to their higher energy density, longer range and better recyclability. In our base case scenario, we estimate the nickel use in batteries

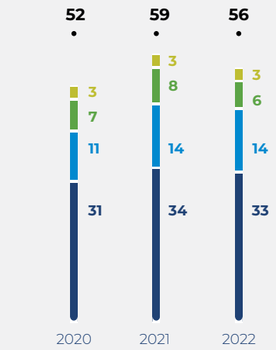
Nickel consumption by industry in 2022 (%)



- Stainless steel
- Batteries
- Alloys and superalloys
- Electroplating
- Special steels
- Other industries

Source: Company data

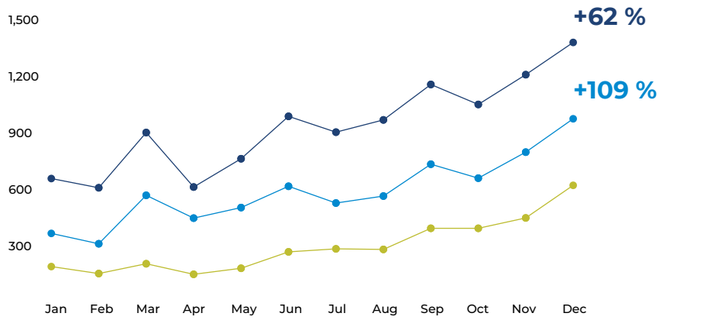
Stainless steel production (mln t)



- China
- Rest of Asia
- EMEA (Europe, Middle East, Africa)
- Americas

Sources: Eurofer, ISSF, USGS, SMR, METI, TSIIA, Company data

Global sales of electric vehicles (thousand units)



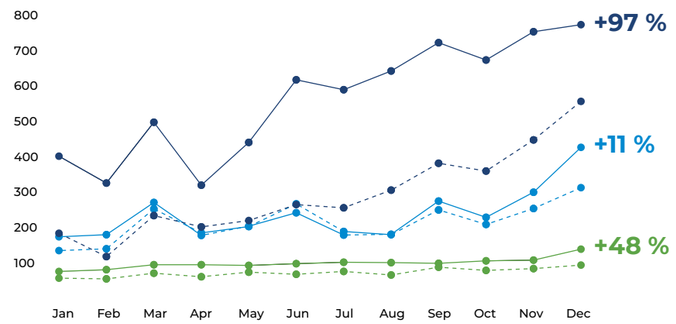
- 2022
- 2021
- 2020

Source: Company analysis

to reach approximately 1.5 mln t of nickel by 2030, or 30% of total primary nickel demand (compared to 15% in 2022). Meanwhile, this figure may require further revisions given the continuous introduction of more ambitious carbon neutrality goals, subsidies-driven transport electrification and cost optimisation of battery cell production.

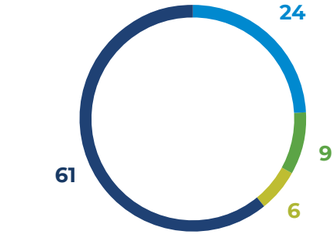
In 2022, nickel consumption in other industries (alloys and superalloys, plating, special steel) increased by 8%, or 43 kt, amid the gradual post-COVID recovery of industrial demand and robust economic performance in the aerospace, oil and gas, and military industries.

Regional sales of electric vehicles (thousand units)



- China 2022
- China 2021
- Europe 2022
- Europe 2021
- USA 2022
- USA 2021

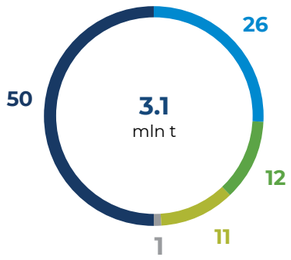
Sales of electric vehicles by region in 2022 (%)



- China
- Europe
- USA
- Rest of World

PRODUCTION

Primary nickel production by product in 2022 (%)



- Nickel pig iron
- Nickel metal
- Nickel compounds
- Ferronickel
- Nickel oxide and utility nickel

Source: Company data

Primary nickel production can be divided into the high-grade and low-grade nickel segments.

High-grade nickel is produced in the form of nickel cathodes, briquettes, pellets and powder, rondelles, and other small shapes, as well as chemical compounds, both from sulphide and from more common and available lateritic raw materials. 2022's leading producers of high-grade nickel were Nornickel, Jinchuan, Glencore, Vale, BHP, and Sumitomo Metal Mining (SMM).

Low-grade nickel includes nickel pig iron, ferronickel, nickel oxide, and utility nickel, which are produced from lateritic raw materials only. In 2022, the key producers of low-grade nickel were Indonesian and Chinese NPI smelters, such as Tsingshan Group and Delong Group, as well as the largest ferronickel producers: POSCO, South32, Eramet, Anglo American, etc.

The nickel market, which had been fundamentally divided into the low-grade and high-grade segments, became interconnected once the practical implementation of the NPI-to-matte conversion started in early 2021 along with the massive launches of HPAL capacities.

In 2022, producers around the world were faced by both geopolitical upheavals, energy crisis, operational disruptions, and pandemic-induced challenges. Nonetheless, primary nickel production in 2022 grew by 443 kt, or 16% y-o-y, to 3.14 mln t, driven by the huge growth in the Indonesian NPI capacities and the continued underlying growth of nickel compounds for the EV batteries sector, mainly fuelled by the launches of new HPAL capacities and NPI-to-matte conversion lines.

Production of high grade nickel grew 14%, or 135 kt, to 1.1 mln t in 2022.

Production of nickel metal rose 5% y-o-y to 817 kt. Nickel metal production in 2022 was slowly recovering, although several major producers reported some downturns in their output because of strikes, operational issues and rising costs on the back of the energy crisis.

For instance, Vale's Copper Cliff pellets and powder production in Canada grew year-on-year, while Long Harbour's rondelle output declined. In turn, the output of pellets and powder at the UK Clydach plant declined year-on-year due to the lower availability of PT Vale Indonesia's matte.

Primary nickel production in 2022 totalled

3.1 mln t

+16 % y-o-y

Glencore reported a lower production of cathodes and rondelles in 2022 because of the strikes at its Nikkelverk refinery in Norway and at Canada's Raglan mine (both conflicts are now resolved). The company, however, increased its production of briquettes and electrolytic powder at its Australian Murrin-Murrin plant after numerous operational disruptions in 2021.

In 2022, Australian BHP's briquette and electrolytic powder production decreased due to equipment maintenance on the back of the switch from briquettes to nickel sulphate crystals production, gradually rising following its launch in late 2021.

Japan's SMM demonstrated weak results in 2022 due to feed shortages and some operational issues in the Philippines, which adversely affected HPAL operations (Taganito and Coral Bay) that feed the Japanese refineries of SMM.

Meanwhile, Ambatovy continued ramping up briquette production in 2022 in order to achieve stable operation levels of 40 ktpa of nickel.

In 2022, Nornickel increased its nickel output as a result of postponing the repair of the flash smelting furnace at Nadezhda Metallurgical Plant to 2023 and the low base of 2021, when Oktyabrsky and Taimyrsky Mines as well as the Norilsk Concentrator were temporarily suspended.

Primary nickel production (mln t)

- Low-grade nickel **+14%**
- High-grade nickel **+18%**

Source: Company data

Production of nickel compounds, including nickel sulphate from primary sources (excluding sulphate produced by Class 1 nickel dissolution), increased by 81% y-o-y to 378 kt in 2022 on the back of the massive launches of new NPI-to-matte conversion capacities and announced launches and ramp-ups of new and existing HPAL capacities in Indonesia, Australia and New Caledonia. This was caused by robust EV sales and solid nickel demand from the battery sector.

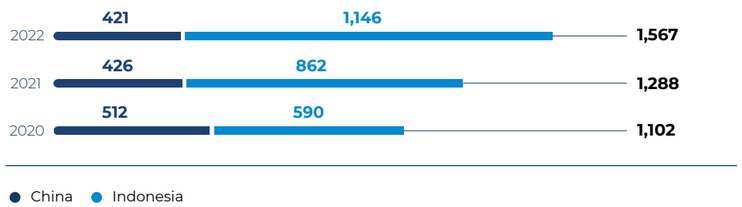
Nickel sulphate can be produced from a variety of raw materials by different processes: directly from nickel intermediates such as mixed hydroxide precipitate (MHP), mixed sulphide precipitate (MSP), nickel matte, and crude nickel sulphate (product of copper processing), or by dissolving Class 1 nickel (as nickel briquettes or powder) or from recycled materials.

In 2022, the expansion of HPAL capacities launched by Lygend and PT Huayue Nickel and Cobalt in 2021 as well as the launch of a new PT QMB New Energy Materials asset drastically increased total MHP output in Indonesia compared to 2021, approaching 100 kt. Huayou's fourth project, PT Huafei, is expected to be brought online in 2023, accompanied with the expansion of existing capacities, which will further boost MHP output.

Meanwhile, the waste generated by HPAL projects is becoming a severe limiting factor in terms of potential environmental effects as well as costs required to ensure their safe storage. According to CRU, if all Indonesian HPAL tailings were dry-stacked, the total electricity consumption to achieve that would exceed 300 GWh, primarily through coal combustion. For comparison, it is about 10% of the Greater London's current total electricity consumption. Moreover, this waste will require haulage resulting in nearly 40 million litres of diesel consumption, too.

In general, laterite mining is associated with substantial damage to ecosystems, including deforestation, lower biodiversity, groundwater contamination as well as soil and coastal erosion.

NPI production (kt)



- China
- Indonesia

Low-grade nickel output grew by 18%, or 308 kt, to 2.0 mln t..

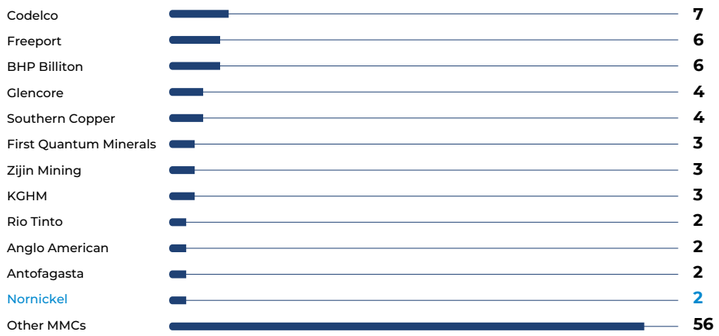
Indonesian NPI production continued to grow year-on-year, becoming the key driver behind the low-grade nickel supply growth in 2022. However, its growth rates slowed down slightly year-on-year due to both conversion of some furnaces to high-grade matte production and softer demand for stainless steel as well as skilled labour shortages in Indonesia. In addition, strict COVID regulations and more expensive airline tickets made travelling to these projects less attractive for Chinese workforce. Overall, we estimate the total 2022 NPI production in Indonesia at 1.1 mln t (up 33% y-o-y).

In 2022, China's NPI output was down 1% y-o-y to 421 kt suppressed by stronger imports of Indonesian NPI and stagnant stainless steel production. Nickel ore imports from the Philippines were down due to bad weather conditions, which kept ore prices high, putting additional pressure on the NPI production.

During the year, FeNi production declined substantially to 341 kt (down 10% y-o-y). This was due to production shutdowns across several sites, including facilities in Serbia, North Macedonia, Greece, and Ukraine, as well as technical and operational disruptions at projects in Myanmar, Guatemala, Japan, and New Caledonia. On the other hand, a number of producers in New Caledonia, Brazil, the Dominican Republic, and Colombia were able to ramp up their output and deliver consistent performance. The surplus in the low-grade nickel market resulted in significant discounts for FeNi and accumulation of its stocks.

COPPER (Cu)

Nornickel — No. 12 in copper mine production (%)



Sources: producer reports, Company analysis as of 3 March 2023

In 2022, the LME copper price averaged at

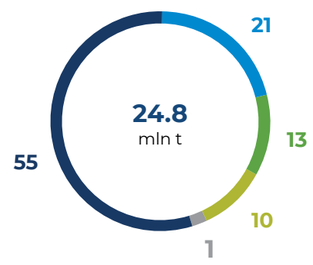
8,797 USD/t

KEY TRENDS IN THE COPPER MARKET

Macroeconomic and geopolitical factors were the main driving forces of the copper market in 2022. Volatile demand in China, tough policies by the Fed and other central banks, strikes and social unrest in Latin America, Russian metal supply risks, low exchange and warehouse stocks, the push for transport electrification, and new renewable capacity additions all combined to slow the copper market in 2022.

The metal was traded within a wide range of USD 7,000–10,700/t during the year. It peaked in March amid geopolitical concerns and mine disruptions in South America, then corrected to USD 7,000/t by the middle of summer on the back of the interest rates hikes, stronger US dollar and subdued economic activity in China. Subsequently, the copper price bounced back to the range of USD 8,000–8,900/t against the backdrop of a more dovish Fed rhetoric, the threat of strikes in Latin America, low metal inventories, and a more optimistic outlook for the Chinese economy after the Communist Party congress and the lifting of COVID-related restrictions.

Refined copper consumption by region in 2022 (%)



- China
- Rest of Asia
- Europe
- Americas
- Rest of World

Average annual copper prices (USD/t)

Source: London Metal Exchange

In December 2022, the total exchange stocks (LME, SHFE and CME) were at an extremely low level of 190 kt, roughly flat year-on-year, while China's bonded stocks decreased dramatically by 71% since the beginning of the year to 55 kt, which is the lowest level for more than 10 years.

In 2022, the LME copper price averaged at USD 8,797/t vs USD 9,317/t in 2021 (down 6%).

LME copper price in 2022 (USD/t)

Source: London Metal Exchange

1. Geopolitical tensions in Ukraine
2. Copper price hitting an all-time high of USD 10,730/t
3. First LME statements regarding potential banning of Russian metal
4. COVID-19 outbreak in China
5. A cycle of rate hikes started by the Fed and the European Central Bank
6. A tax reform bill introduced for copper producers in Chile
7. Lowest copper price in 2022
8. DXY hits a 20-year high of 115, price rebounds on expectations of a softer-than-anticipated Fed medium-term policy
9. Aurubis and Codelco raise their copper premium offer by 85%, reports of shipment cuts to China by Codelco in 2023
10. The London Metal Exchange decides against banning Russian metal
11. The EU considers imposing sanctions against the Russian mining sector
12. China lifts all strict lockdown measures across the country
13. Protests start in Peru

MARKET BALANCE

In 2022, copper mine output increased by 4% to 21.9 mln t and refined copper production by 1% to 24.6 mln t. Global refined copper consumption totalled 24.8 mln t, up 1%. Overall, the copper market was balanced in 2022 with an immaterial deficit amounting to 231 kt, or less than 1% of global consumption.

Copper market balance (kt)

Source: Company data

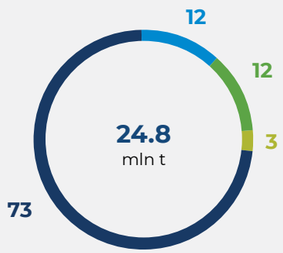
In 2022, copper mine output

21.9 mln t

+4 % y-o-y

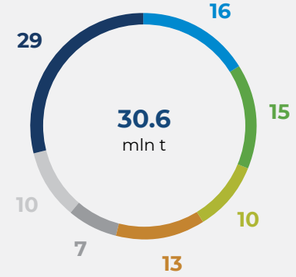
Refined copper consumption by industry

First use (%)



- Wire rod
- Pipe
- Rolled products
- Other

End use by industry (%)



- Construction
- Power grids
- Heavy engineering
- Transport
- Consumer goods
- Air conditioning and cooling systems
- Other

Source: Company data

In Russia, copper consumption stayed flat y-o-y at

about 300 kt

CONSUMPTION

Thanks to its high electrical and thermal conductivity, ductility and corrosion resistance, copper is widely used in various industries. Up to 75% of refined copper produced globally is used to make electrical conductors, including various types of cable and wire. Key copper-consuming industries include construction, electrical and electronic equipment, power industry, transport, machine building, and the production of various equipment and consumer goods. Copper is also a key material for renewable energy development (solar panels, wind farms) and transport electrification (batteries, wiring, electric motors, and charging infrastructure).

In 2022, global refined copper consumption totalled 24.8 mln t, up 1% y-o-y.

With its 55% share of global consumption, China remains the largest copper consumer globally. Despite strict COVID-related restrictions throughout the year followed by lockdown lifting, China ramped up its domestic consumption to 13.6 mln t, or up 2% y-o-y. In 2022, China increased its imports of copper products, including refined copper to 3.7 mln t, or up 7% y-o-y, scrap to 1.8 mln t, or up 5% y-o-y, and concentrates to 25.3 mln t, or up 8% y-o-y.

Demand in Europe and North America remained flat year-on-year at 3 mln t and 2.2 mln t, respectively, while Asia (excluding China) showed a 2% growth to 5.1 mln t. In Russia, copper consumption stayed flat year-on-year at about 300 kt.

PRODUCTION

Global copper mine production rose by 4% to 21.9 mln t in 2022 as a result of the commissioning of new projects and the expansion of brownfields.

In 2022, copper mine production in Chile, the world's leading producer of the metal, declined 5% y-o-y to 5.3 mln t. Peru, the world's second-largest producer of copper, managed to increase its copper mine output by 4% to 2.4 mln t.

An 18% increase in Africa's mining production to 3.4 mln t was mainly due to a higher output from mines in the Democratic Republic of the Congo.

China ramped up its production by 7% to 1.88 mln t, while copper mine production in Indonesia grew 26% to 0.95 mln t.

Production in North America was down by 2% y-o-y to 2.45 mln t, with US production up by 1%, a decline of 10% in Canada and a drop of 1% in Mexico.

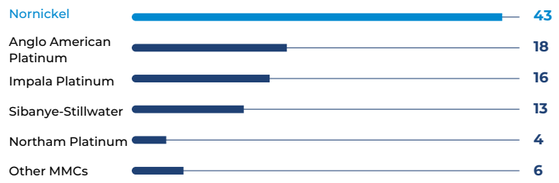
Refined copper output also rose by 1% to 24.6 mln t. In 2022, South and Central Americas produced 2.6 mln t of refined copper (down 2% y-o-y), Africa grew its output by about 12% y-o-y to 1.8 mln t, and Asia increased its refined copper production by 2% y-o-y to 14.8 mln t, including China up 2% y-o-y to 10.6 mln t and Japan up 3% y-o-y to 1.5 mln t. Europe produced 3.5 mln t, roughly 4% down y-o-y, while North America produced 1.6 mln t (down 1% y-oy).

Production of refined copper (mln t)

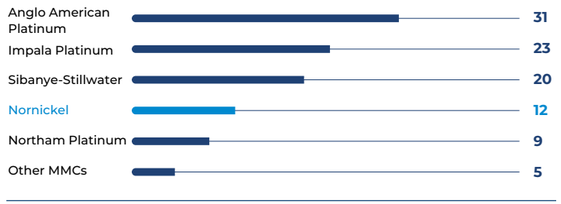
Source: Company data

PGMs

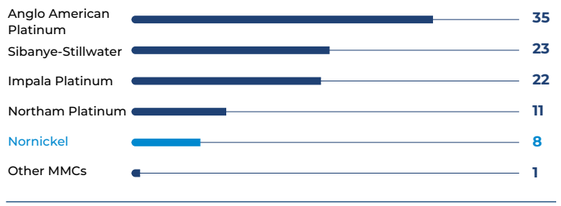
Nornickel — No. 1 in palladium production (%)[1]



Nornickel — No. 4 in platinum production (%)[1]



Nornickel — No. 5 in rhodium production (%)[1]

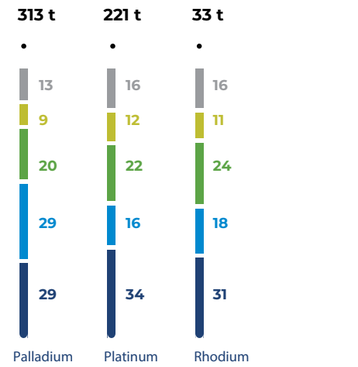


Sources: producer reports, Company analysis as of 9 March 2023

[1] Refined metal output including production from third-party feedstock and production from own feedstock by third parties under tolling agreements.

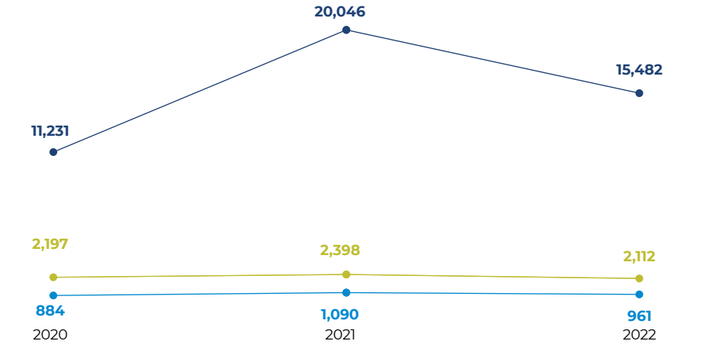
KEY TRENDS IN THE PGM MARKET

PGM consumption by region (%)



- China
- North America
- Europe
- Japan
- Rest of World

Average annual PGM prices (USD/oz)



- Rhodium
- Platinum
- Palladium

Source: LBMA, Johnson Matthey

Palladium price started the year at around USD 1,900/oz; however, in the second half of January, it increased sharply to USD 2,432/oz, as the fear of geopolitical crisis was building up. The price shot further up to USD 2,650/oz on 24 February and skyrocketed to an all-time high of USD 3,177/oz on 7 March.

From the end of April, once the market squeeze was over, palladium was trading in the range of USD 1,800/oz to USD 2,300/oz up until late July, when it found strong support at USD 2,000/oz on the back of 2022's first year-on-year growth in monthly global auto sales, mainly caused by the easing of China's COVID-related restrictions. Since then, the price was repeatedly hitting both the upper and lower boundaries of this range without breaking through them.

A notable attempt to break the USD 2,300/oz resistance level occurred on 4 October. Although palladium closed above the USD 2,300/oz level, the relatively light trade volume did not signal the significance of the resistance level breakout. Further into the autumn, the price fall continued on the back of the new negative demand expectations related to the potential short- and mid-term production cuts by the European automotive sector.

In the middle of December, the price fell below USD 1,800/oz on the back of weak car market performance in China, the USA and Western Europe, the possible sale of consumer stocks before the end of the financial period and speculative actions (closing long and/or opening short positions) after the Fed's announcement of higher than expected peak interest rate target. The price bounced back to USD 1,800/oz level by the end of the year.

The platinum price experienced the same shocks as palladium, of which the geopolitical crisis was the most notable. It reached its local high on 8 March at USD 1,150/oz. With supply concerns subsiding, the platinum price corrected down to its year-lows of USD 838/oz at the beginning of September. Operational disruptions at South African mining assets, mostly but not exclusively caused by unstable electricity supply, have set the price of platinum on an upward trend since the beginning of September. The ETF outflow in 2022 was 0.6 Moz as elevated interest rates reduced investors' appetite for commodities.

Rhodium prices also followed the palladium pricing trends as the two metals have similar consumption breakdowns by industry. After peaking at USD 22,000/oz on 8 March, prices dipped to USD 13,500–14,000/oz in the first half of the summer, and then, despite local support from the Chinese automotive industry recovery, rhodium prices followed a downward trend, hitting a year-low of USD 12,300/oz in late December.

Palladium and platinum prices in 2022, LPPM

1. The geopolitical crisis starts
2. The LPPM suspends Russian refineries from the Good Delivery List
3. Automobile manufacturing starts to recover in China
4. The world's leading platinum producer announces lower production in 2022
5. OPEC+ commits to cut production, driving up inflation expectations. A positive trend starts in precious metals markets on expectations of a softer-than-anticipated Fed policy in the medium term
6. Daily blackouts start in South Africa
7. The Fed slows interest rate increases with a 50 bps hike but signals a potentially higher-than-expected peak interest rate target
8. Speculative sales of palladium as the fiscal year draws to a close

MARKET BALANCE

In 2022, the palladium market remained in a moderate deficit estimated at 16 t (net of investment demand), while the surplus in the platinum market shifted to a balanced market, and deficit in rhodium remained at 4 t. Demand for platinum group metals was primarily driven by slower-than-expected recovery rates in auto production after the slump caused by COVID-19 as well as by the substitution effect between platinum, palladium and to a lesser extent rhodium in automotive catalysts. In 2022, PGM supply fell due to lower recycling, the flooding of the Stillwater Mine in the USA, and the lack of smelting capacities and widespread power outages in South Africa.

In 2022, the palladium market deficit estimated at

16 t

CONSUMPTION

In 2022, industrial consumption of palladium and platinum fell by 14 t (down 4%) y-o-y and 3 t (down 1%) y-o-y to 295 t and 221 t, respectively. In 2022, industrial consumption of rhodium stayed flat at 33 t.

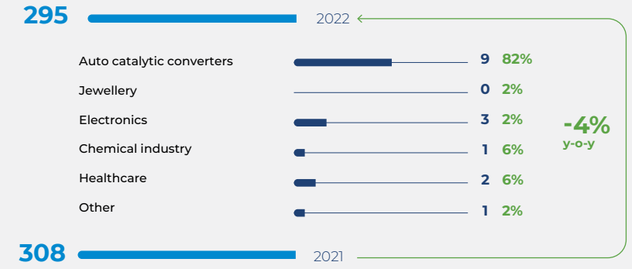
Automotive industry. Exhaust treatment systems account for the bulk of total PGM consumption. In this sector, palladium, platinum and rhodium are used in catalytic converters, which are mandatory for road transport and legally regulated in most countries. These solutions drastically reduce emissions of hazardous substances.

Due to their unique catalytic properties ensuring effective chemical reactions throughout the entire vehicle life cycle, there are almost no alternatives to PGMs in this sector.

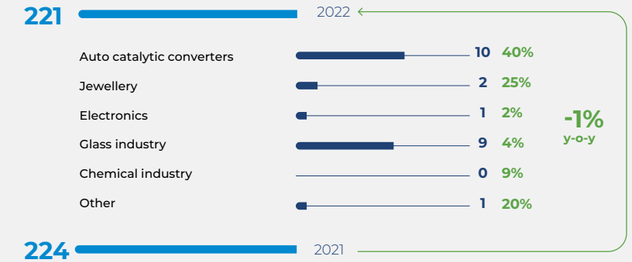
Due to their catalytic properties, palladium and rhodium are the key choice for exhaust treatment systems in petrol vehicles, while platinum is used mostly in diesel vehicles. In recent years, manufacturers of catalytic systems have been developing catalysts based on the three platinum group metals, which could be used in engines of different types, but such formulations are not widespread yet. Meanwhile, there has been a partial substitution of platinum for palladium in petrol vehicle catalysts in recent years due to the price spread between the metals.

In 2022, palladium consumption in the automotive industry decreased by 9 t as the overall automotive industry recovery was taking place in parallel with the increase in the proportion of electric vehicles in the market, which, combined with limited price-driven substitution of platinum for palladium in petrol vehicles, reduced the overall consumption of the metal by the industry.

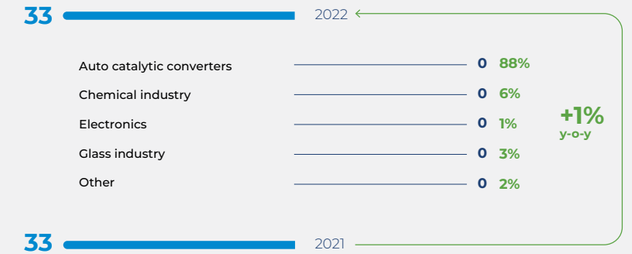
Palladium: consumption by industry (%) and by application (t) in 2022



Platinum: consumption by industry (%) and by application (t) in 2022



Rhodium: consumption by industry (%) and by application (t) in 2022



At the same time, palladium consumption in the automotive industry is supported by the declining proportion of diesel vehicles in the fleet mix as they are replaced with petrol cars and hybrids, which make greater use of palladium-based catalytic converters for exhaust fumes. The market share of diesel vehicles in Europe (27 EU countries + the UK + European Free Trade Association countries) dropped from 20% to 16% over the year. Despite the declining share of diesel vehicles, global demand for platinum from the automotive industry has grown by 10 t in 2022 driven by the partial substitution of platinum for palladium in petrol vehicles, as discussed above.

Rhodium consumption in this industry stayed flat year-on-year amid a moderate recovery in auto production offset by a partial palladium substitution for rhodium.

Electronics. Palladium has found its way into the electronics industry primarily as a material for capacitors and motherboards, while platinum is used in hard drives. In 2022, palladium and platinum consumption in the electronics industry fell by 3 t and 1 t to 17 t and 5 t, respectively, subdued by a marked decline in personal computer and smartphone shipments due to strong inventory accumulation and stocking up during the pandemic in 2019–2020.

Chemical industry.In 2022, the use of PGMs in chemical process catalysts stayed flat year-on-year.

Healthcare. Demand for palladium in healthcare dipped by 1.5 t in 2022 due to a drop in demand for the metal in dental prosthetics amid the price-driven substitution with cheaper materials. The use of platinum in healthcare grew by 0.3 t driven by an increase in scheduled high-tech healthcare services after the peak of the COVID-19 response.

Jewellery. In 2022, global demand for platinum from the jewellery industry remained flat year-on-year. Jewellery sales fell in China, which accounts for over half of global platinum demand in this sector, caused by strict COVID-related restrictions; however, this drop was offset by demand recovery in other regions. The use of palladium in jewellery did not change year-on-year.

Glass industry. Platinum is needed to produce glass fibre and optical glass. Demand for the metal in this industry fell by 9 t in 2022 as China slowed down its glass capacity expansion after a ramp-up in previous years. The use of rhodium in this industry has also declined, partially due to manufacturers of bushings for the glass industry seeking to minimise the metal's use because of its high cost.

Investments. Palladium and platinum are widely used as an investment instrument. Physical investments may vary from coins and smaller bars to investments in ETFs, which accumulate large amounts of the metals in standard bars. In 2022, palladium and platinum stocks in ETFs slipped by 2.8 t and 17.7 t to 16.0 t and 95.4 t, respectively.

Palladium stocks in ETFs decreased to

17.7 mln t

+2,8 % y-o-y

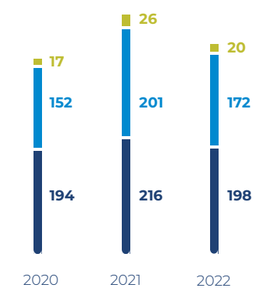
Platinum stocks in ETFs decreased to

95.4 mln t

+16 % y-o-y

PRODUCTION

Primary PGM production (t)



Rhodium Platinum Palladium

-23% **+14%** **-9%**

Source: Company data

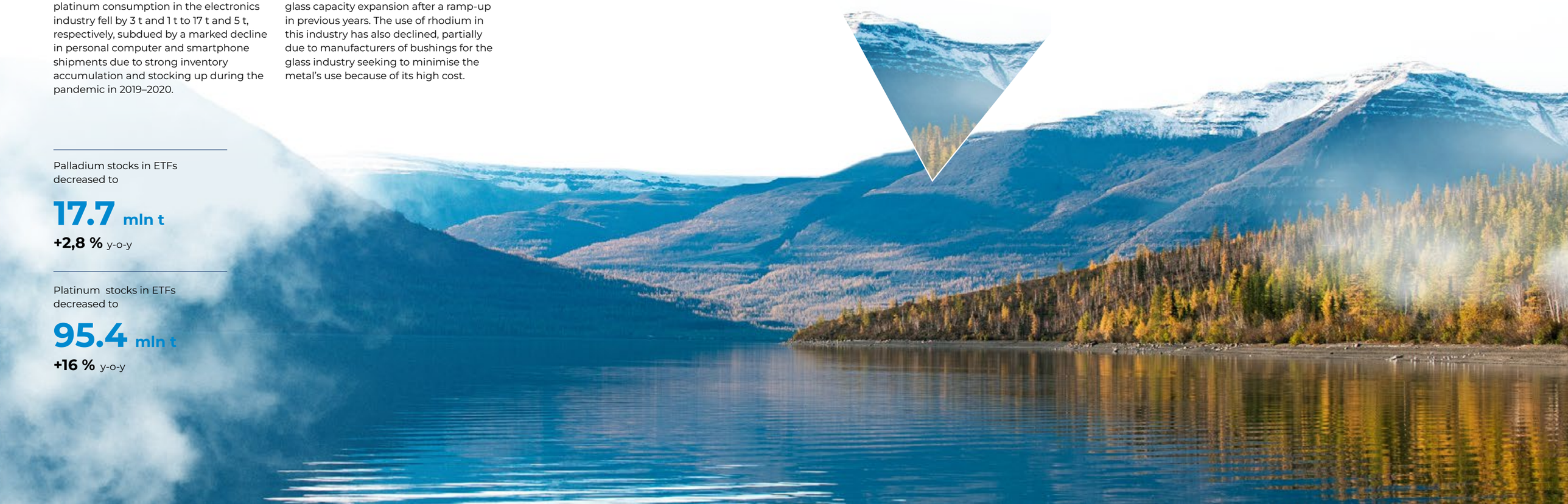
In 2022, primary refined palladium, platinum and rhodium production decreased by 9%, 14% and 23% y-o-y to 198 t, 172 t and 20 t, respectively.

Production in the Russian Federation, the key producer of palladium, grew by 5 t driven by a recovery in production after a temporary shutdown of the Oktyabrsky and Taimyrsky Mines flooded by groundwater and suspension of operations at the Norilsk Concentrator in 2021.Platinum production stayed flat at 20 t.

In 2022, South Africa, the key producer of platinum and rhodium, saw a significant drop in PGM production (down 27 t for palladium, 31 t for platinum and 6 t for rhodium) due to the high base effect of 2021 when previously built-up work-in-progress inventories were drawn down in South Africa, power supply issues and smelting capacity shortages.

Primary platinum production in Zimbabwe rose by 1 t, while palladium and rhodium output remained flat year-on-year. Palladium and platinum production in the USA was down by 1 t due to the floods in Montana in July 2022.

The main sources of recycled PGM supply are scrapped auto catalytic converters. In 2022, secondary production of palladium, platinum and rhodium declined by 9 t, 5 t and 1.5 t to 81 t, 48 t and 8 t, respectively, due to supply chain disruptions and weak new vehicle sales, which in turn impacted the supply of older vehicles for recycling.



OUR STRATEGY

STRUCTURE OF THE COMPANY'S INVESTMENT PROGRAMME

FOR 2022–2023 (USD BILLION)

- Environment: Sulphur Project
- Production growth and development
- Energy infrastructure upgrades
- Fixed asset reliability programme

THE COMPANY'S KEY PRODUCTION PROJECTS

TOF-3

Boosting the capacity of Talnakh Concentrator to 18 Mtpa, improving nickel recovery rate

NOF-2

Construction of a 9/12 Mtpa concentrator to replace the retired capacity

Sulphur Project at Nadezhda Metallurgical Plant

Construction of furnace gas recovery facilities, a sulphuric acid neutralisation line and associated infrastructure

Sulphur Project at Copper Plant

Construction of a continuous converting complex and a sulphuric acid neutralisation line

Copper refining at Kola MMC

New copper refining line using the advanced and efficient roast–leach–electrowin technology

Nickel refining at Kola MMC

Development of long-term solutions to improve performance and optimise the product portfolio

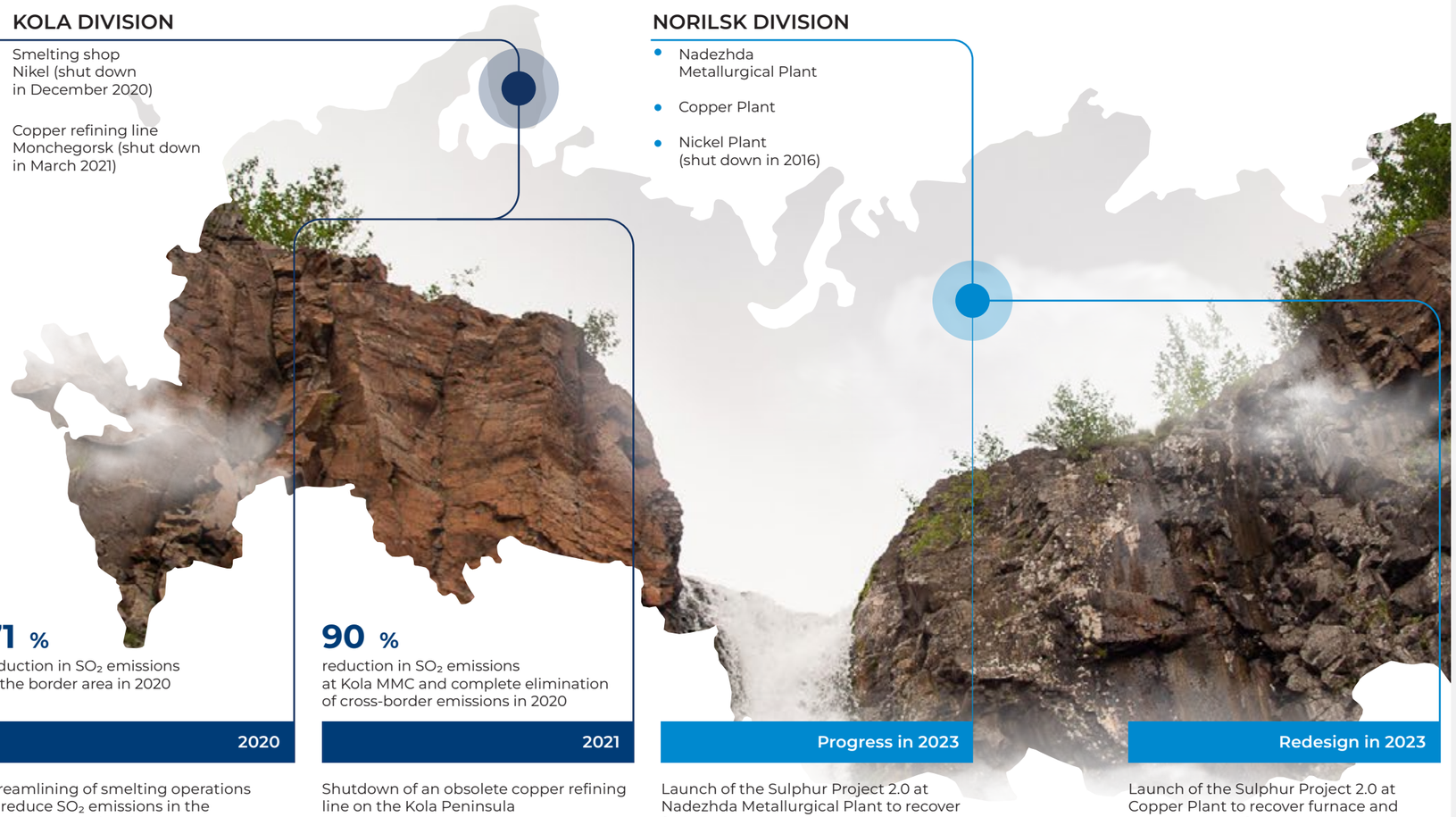
Redesign

Progress

Source: Company data

SULPHUR PROJECT 2.0

ENVIRONMENTAL ROADMAP



KOLA DIVISION

- Smelting shop Nikel (shut down in December 2020)
- Copper refining line Monchegorsk (shut down in March 2021)

NORILSK DIVISION

- Nadezhda Metallurgical Plant
- Copper Plant
- Nickel Plant (shut down in 2016)

71 %
reduction in SO_2 emissions in the border area in 2020

2020

Streamlining of smelting operations to reduce SO_2 emissions in the Russia–Norway border area

In December 2020, the obsolete smelting shop in Nikel was shut down

Reduction in SO_2 emissions in Nikel and Zapolyarny

-50 %[2] → 2x

90 %
reduction in SO_2 emissions at Kola MMC and complete elimination of cross-border emissions in 2020

2021

Shutdown of an obsolete copper refining line on the Kola Peninsula

Metallurgical shop shut down on 20 March 2021

Reduction in total SO_2 emissions at the Kola Division facilities

-85 %[2] → 7x

Progress in 2023

Launch of the Sulphur Project 2.0 at Nadezhda Metallurgical Plant to recover furnace gases

Reduction in SO_2 emissions at the Norilsk Division facilities by 2024

-45 %[2] → ~2x

Redesign in 2023

Launch of the Sulphur Project 2.0 at Copper Plant to recover furnace and converter gases[1]

Reduction in total SO_2 emissions at the Norilsk Division facilities after the design capacity is reached

up to 90 %[2] → 10x

[1] The implementation timeline for the project at Copper Plant is indicated in accordance with the Polar Division's Environmental Performance Improvement Programme (2020) taking into account Clause 6 of Appendix No. 8 to Resolution of the Russian Government No. 353 dated 12 March 2022.
[2] From a 2015 baseline.

NORILSK DIVISION

Nadezhda Metallurgical Plant (Phase 1)

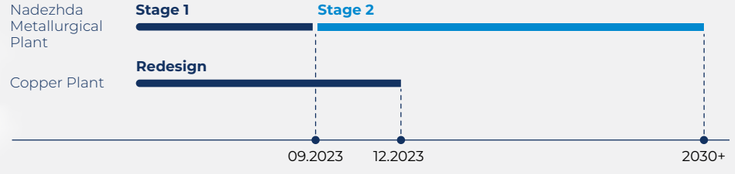
The Sulphur Project at Nadezhda Metallurgical Plant includes construction of facilities to recover SO_2 from off-gases of the main smelting units by converting them into sulphuric acid and then neutralising it with limestone to produce gypsum.

- To date, the excavation and concrete works have been finished, with foundations for the building's frame and equipment built, the building's metal frame 99% complete, and the process equipment partially installed.
- The primary dam and roads have been built, and the impervious shell of the dam has been constructed.
- Installation of the core process equipment, pipelines and electric power networks is in progress.
- The core equipment and pipelines undergo individual testing .
- Plans for 2023 include completing the construction and installation works, pre-commissioning, launch of pilot operation, and early results from the emission-reduction project.

Copper Plant (Phase 2)

The Sulphur Project at Copper Plant comprises three key initiatives: upgrades of existing and construction of new facilities to recover SO_2 and the construction of a continuous converting complex. The technology to recover SO_2 from off-gases of Copper Plant's main smelting units comprises converting such gases into sulphuric acid and then neutralising it with limestone to produce gypsum.

- Amid external restrictions, the Company is taking comprehensive efforts to refine the design solutions to incorporate technology and equipment import substitution options.
- The review of design documentation to refine design solutions is expected to be completed in 2023.



SOUTH CLUSTER:

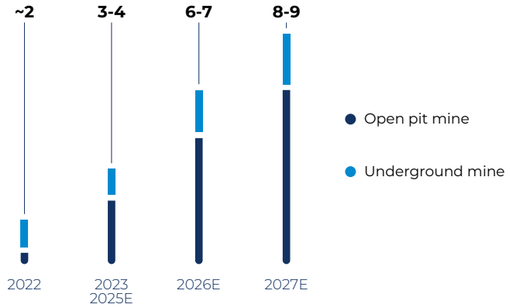
GROWING PRODUCTION VOLUMES

- A large existing deposit with a long reserve life in the bottom quartile of the PGM cost curve
- Feasibility study, design documentation and contractor selection have been completed
- In 2022, construction permits were obtained for all the mine facilities
- Construction of the underground mine and related infrastructure is in progress

143 mln t[1]
disseminated ore

25 years
reserve life

Ramp-up to design capacity in 2022–2027 (mln t)



2027–2028 mining targets

Ore	9	mln t
Ni	13+	kt
Cu	20+	kt
PGMs	750-850	koz

[1] Calculated to the JORC Code as at 1 January 2023.

BYSTRINSKY GOK

- Follow-up exploration is planned on the flanks of the Bystrinskoye deposit
- In 2022, the iron ore concentrate production section and the chemical analysis laboratory were upgraded
- Plans for 2023 include further upgrades to the concentrator's milling section

274 mln t
ore reserves, grading

Cu **~0.73 %**[1]

Fe **~14.60 %**[1]

28 years
life of mine

USD 934 mln
2022 EBITDA

50.01 %
Nornickel's interest in the mining industry's major greenfield project»

Production volumes

	2022	2023E	
Ore[2]	10.6	10.8	mln t
Cu in concentrate	67.2	66.6	kt
Iron ore concentrate	2.5	2.8	mln t

[1] Calculated to the JORC Code as at 1 January 2023.
[2] Processed ore volumes.

UPGRADE OF TALNAKH CONCENTRATOR

(TOF): STAGE 3

Project summary

Major capacity expansion based on proven technology to process growing Talnakh ore volume and to unlock strategic optionality of the South Cluster development project.

Project status

- Ore dressing and ore feeders: the metal frame is 75% complete, installation of fences and preparations to install the process equipment are in progress
- Installation of reinforced concrete and metal structures is in progress
- Deliveries of core process equipment are underway
- Power supply facilities are under construction
- The water recycling system is under construction
- The bulk of works to install the process equipment is planned for completion in 2023

Projected implementation timeline[1]

Commissioning before the end of 2024 and ramp-up to design capacity in 2025.

+8 Mtpa
capacity additions

+4 - 7 %
expected increase in metal recovery

[1] Subject to import substitution of flotation equipment and the target delivery schedule being met.

ENERGY INFRASTRUCTURE
UPGRADE PROGRAMME

THE PROGRAMME'S GOAL:

Accelerated replacement of obsolete equipment, mitigating physical risks and improving long-term reliability.

Gas and gas condensate exploration, production and transportation

- Construction of a new 70+ km gas and gas condensate pipeline (Pelyatkinskoye–Messoyakhskoye)
- Upgrade of 150+ km of gas and gas condensate pipelines
- Ramp-up of gas well drilling at the Pelyatkinskoye field beyond 2028

Heat and water supply networks

- Accelerated replacement of 110-kV and 220-kV power lines (over 1,000 km)
- Upgrades of heat and water supply networks

CONTRIBUTION TO ENERGY EFFICIENCY:

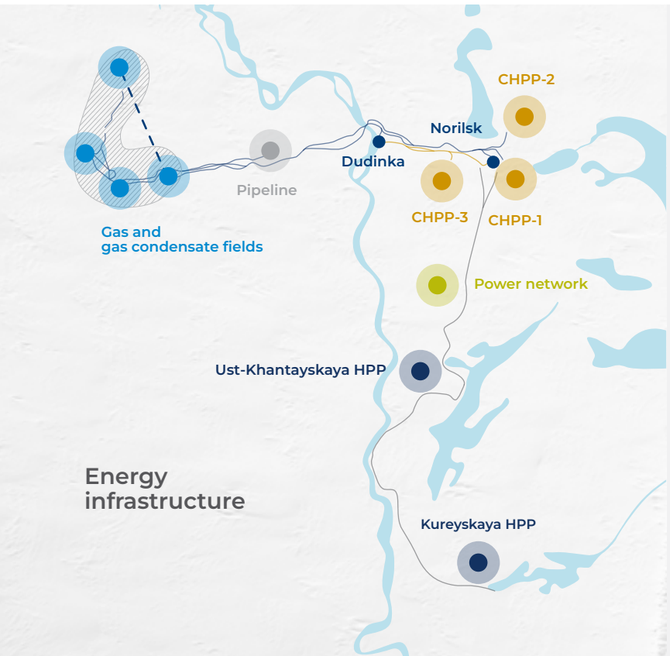
Reinforced emphasis on higher output of the new generating units at CHPPs[1] and TPPs and comprehensive energy loss reduction throughout the electricity value chain

Combined heat and power plants

- Replacement of two power generating units at CHPP-2 and installation of two new generating units at CHPP-3
- The new equipment is significantly more powerful and fuel efficient, ensuring minimal energy losses

Hydropower plants

- Upgrade of all seven hydraulic turbines at Ust-Khantayskaya HPP[2] is completed.
- Upgrade of the Kureyskaya HPP
- The HPP upgrade is aimed at expanding the installed capacity and improving efficiency to boost low-carbon hydropower capacity



Gas and gas condensate exploration, production and transportation

Combined heat and power plants

Heat and water supply networks

Hydropower plants

Gas transportation

[1] CHPP – combined heat and power plant.
[2] HPP – hydropower plant.

LOGISTICS INFRASTRUCTURE
DEVELOPMENT PROGRAMME

PROGRAMME RATIONALE

- Growing eastbound shipments of construction equipment and raw materials as the investment programme is entering its active phase, and growing westbound shipments of intermediate products as projects move to the post-investment phase
- Accelerated pace of production equipment upgrades
- Expansion of Northern Sea Route operations and increased freight volumes for major investment projects of other players using the route in the Russian Arctic

MAJOR PROJECTS

40-50 %
throughput increase at
Dudinka port (the Gateway to Taimyr)

Replacement of harbour cranes at
Dudinka port by 2027–2029