**February 2020**

**POSITION PAPER**

**KGHM Polska Miedź S.A. towards European Green Deal**

1. **HAVING REGARD TO THE FOLLOWING POLITICAL, ECONOMIC, SOCIAL AND TECHNOLOGICAL CONDITIONS:**
2. **European Green Deal as a new main political objective of the EU**

Action aimed at achieving climate neutrality by 2050 is a priority for the new European Commission and its President, Ursula Von der Leyen. The political guidelines for the 2019-2024 term of office indicate the pursuit of tightening climate targets, as evidenced by the ambitious proposal of the so-called European Green Deal (EGD). First European Climate Law should be proposed by the Commission in March 2020 and then followed by the ordinary legislative procedure. It is expected that Commission will propose to revise the 2030 reduction target (the current level of 40% is expected to increase to 50%).

For the entire European non-ferrous metals industry, meeting such restrictive requirements in a relatively short period of time means huge challenges related to the energy transformation and the transition to renewable energy sources, all the more so because, apart from the investment outlays in this area, it has to take into account a drastic increase in the prices of CO2 emission allowances and the risk of serious changes in the list of sectors covered by the system of compensation for indirect costs within the 4th settlement period of the EU Emissions Trading System for the years 2021-2030.

1. **The role of key industrial chains in the implementation of EGD**

According to the report[[1]](#footnote-1) published by Strategic Forum for Important Projects of Common European Interest, the six key strategic value chains for European Green Deal are:

* Clean, connected and autonomous vehicles
* Smart Health
* Low CO2 emissions Industry
* Hydrogen technologies and systems
* Industrial Internet of Things
* Cybersecurity

The Strategic Forum has also recognised three additional strategic value chains – (i.e. batteries, high-performance computing and microelectronics) as of key importance for the EU. However, the Strategic Forum has not developed specific recommendations for these value chains due to already ongoing coordinated initiatives.

These strategic value chains are all related to the two main drivers of industrial transformation – the transition to a climate-neutral economy and to a data-driven economy. They are directly linked to improving competitiveness, fighting climate change, and enhancing technological development. **And all of them will inevitably require raw materials: not only those that are currently being tagged as “critical”, but also huge amount of base metals such as copper, aluminium, silver, lead and others. European Union should not turn a blind eye on the standards of production of said raw materials, especially in terms of its carbon footprint.**

1. **Raw materials as an indispensable base for supply chains**

In past years the European raw materials industry has radically progressed in productivity and energy efficiency and is still implementing new solutions aiming at further reducing the energy consumption per unit and improving carbon-intensive operations. As the world shifts to a low-carbon future, mining companies explore methods of decarbonisation in order to efficiently and effectively fulfil the continued increasing demand for resources.

According to the report of Euromines “Providing metals and minerals for carbon neutrality”[[2]](#footnote-2) the mineral raw materials industry and its raw materials are an integral part of any economy and society. Standing at the beginning of most value chains, the sector is a critical supplier of essential materials and products and therefore generates added value and growth through employment, economic growth, development, innovation and generating trade. To continue economic growth and demographic change as a modern society, extraction of commodities will remain essential.

1. **European Union’s weakening position on global map of raw materials**

In addition, the EC report "A Clean Planet for All”[[3]](#footnote-3) (November 2018) shows that raw materials are indispensable enablers for carbon-neutral solutions in all sectors of the economy. Given the scale of fast growing material demand, primary raw materials will continue to provide a large part of the demand. **A growing role for China and a weakening position for the EU.**

Today, China accounts for 30 to 54 % of world demand for all base metals. The growing European demand for copper and copper products also causes a large (about 23% in recent years) increase in the import of finished products from this metal.

1. **Need to ensure security of raw materials supplies**

In view of the growing market position of non-European producers, who do not incur expenditure related to adapting their production processes to EU environmental requirements (their products have up to eight times the carbon footprint of European equivalents), it is therefore necessary to provide systemic and real support for the independence of our continent from imports from other regions of the world.

1. **Corporate Social Responsibility of the non-ferrous metals sector in Europe**

European non-ferrous metals industry is a complex ecosystem of mining, smelting, processing, refining and recycling activities spread throughout the continent. More than 900 plants producing and processing base, precious and specialty metals employ around 500,000 people today and a further 3 million people are indirectly linked to the sector. The total production volume of the European non-ferrous metals sector is 47 million tonnes. Its annual turnover is EUR 120 billion, making a significant contribution to economic development and raising the standard of living of the people of our continent.

Despite unfavourable market trends in recent years, the European Union is still the third largest producer of industrial minerals in the world and its indigenous industry supplies around 40% of metal ores and concentrates used in the Community.

The example of KGHM Polska Miedź S.A. shows how the activities of European metal producers affect the regions in which they operate. Along with the development of KGHM's operations, we observe a gradual influx of people to the Copper Basin region (approximately 187 thousand inhabitants in the 1960s, approximately 520 thousand today), an increase in employment and the creation of thousands of new specialist, highly paid, stable and safe workplaces, rapid development of housing and the health care system, as well as changes in the structure of education, culture and leisure.

According to a survey conducted by the Central Statistical Office in 2016, the average gross salary in Lubin is the highest in Poland. It is as much as 67% higher than the average gross salary in Poland and 24% higher than in Warsaw, which is generally considered to be the richest city in the country.

1. **Innovative potential of the raw materials sector and its achievements in climate protection**

Europe's metal producers are switching to clean electricity more than any other energy-intensive industry as one of the world's leading environmental champions. Compared to 1990 levels, the European non-ferrous metal industry already reduced its greenhouse gas emissions by 61% in 2015.

Without the products of the European non-ferrous metals industry, the ongoing technological revolution around us would be much slower and much smaller than what we are all used to in recent years.

For example, about 15-20 tonnes of copper are needed to produce one 2 MW wind turbine, while the construction of a 1 MW solar power plant requires between 3.1 and 4.5 tonnes of copper. Another opportunity for copper is electro-mobility - up to four times more copper is needed to manufacture an electric vehicle than a combustion car, and another area of application is vehicle charging infrastructure.

As early as 2017 the World Bank predicted that by 2050, the growing production of wind turbines will require 300% more metals, 200% more metals for solar panels and 1000% more metals for battery production.

Other future metals are molybdenum and rhenium. The first is widely used in the aerospace, defence, oil, nuclear and electronics industries - more than two-thirds of production is used as an additive in alloys, mainly in high-strength and high-temperature steels. On the other hand, rhenium, of which KGHM is the only European producer, is used, due to its very high melting point, for the production of jet engine turbines, gas turbines and covers for space vehicles. Silver and palladium are also used in the electronics industry and in medicine.

1. **WE PROPOSE:**
2. **Subjecting all EU policies affecting the business environment of raw material companies (including environmental protection in terms of air, water, landscape and soil; health and safety, including OEL; international trade) to the main objective of decarbonisation with Clean & Safe European Raw Materials**

Not only do raw materials enable the European economy, but looking ahead, they are needed to enable a carbon neutral Europe and help address climate change adaptation. Alternative energy production will require considerable amounts of raw materials. The infrastructure of the energy sector requires the massive use of metals and minerals, in particular steel for ships, pipelines, mining equipment, power plants, refineries and exploration activities, copper for the electricity grid, generators and electric motors, and aluminium, primarily for the electricity grid, and a host of other metals and minerals including phosphorous, potassium and nitrogen for biomass production.

Currently, EU Member States have exclusive competence in the field of concession licenses for mining enterprises. However, it should be taken into account that the EU largely influences environmental & OSH regulations, which have a strong impact on the functioning and development of raw materials enterprises. Therefore, all EU policies should consider the important role of the mining and smelting sectors related to raw materials, which are necessary for climate and energy transformation. That is why we propose to introduce the term Clean & Safe European Raw Materials as key raw materials whose extraction and processing are key to the development of climate neutrality in Europe.

1. **Each new or amended regulation concerning every aspect of raw materials enterprises' operations in Europe should be analysed also in terms of socio-economic costs and consequently the possibility of weakening the sector's competitiveness in relation to foreign competition with a higher carbon footprint**

The analysis of the regulations governing raw material enterprises and their impact on socio-economic side of business should take into account how it affects the level of competitiveness against non-EU companies. The EC have to assess if said regulations pose a threat to the development of Clean & Safe European Raw Materials industry, which in result could leverage non-EU companies with higher carbon footprint and worse occupational, health and safety conditions.

1. **Enabling further decarbonisation through even more electrification supported by maximum possible compensation for indirect emission costs and funding for investments to switch from fossil fuels to electricity in technological processes**

Electrifying the mining sector – that is, replacing machines and upgrading processes to use electricity as an energy source instead of fossil fuels – is essential to reducing carbon emissions. Most mines and quarries in the EU are dependent on the national grid for their electricity supply, which means that industry has to pay for indirect costs in the price of electricity. This can have considerable impact on the mining industry competitiveness. The cost versus benefits of phasing out diesel in a mine is heavily dependent on the characteristics of its operation. The electrification of mining equipment will cost up to billions of euro for company as big as KGHM because it will require not only purchases of completely new, electric machines but also large investments in infrastructure (electric grid, recharging points).

**New investments in zero-carbon energy sources and industrial installations in KGHM may require billions of euro by 2050**. Large part of these investments will need to be funded by EU’s dedicated mechanisms as it exceeds company’s ability to generate free cash or debt money. Additionally, support through the maximum possible compensation of indirect emission costs will keep the energy prices at acceptable level, reducing necessary OPEX.

1. **Including the raw materials sector as an energy-intensive industry in the possibility of obtaining EU funding for investments in self-owned RES, smart grids, energy storage facilities, industrial applications in the area of energy efficiency and others (e.g. through the Modernisation Fund, Innovation Fund, European Investment Bank)**

A considerable decrease in specific energy consumption will only be achieved through major retrofits, which often have high investment costs that can be financially unviable, particularly for smaller operators. This is why raw material sector need the access to funding.

The financing instruments at EU and Member States level should be present and accessible to facilitate investments. Investment costs can be significant and it would not be in the interest of the EU to have European companies relocating their headquarters and their stock exchange listing in order to access adequate finances and investments. Those cost can reach levels as high as tens billions of euro in CAPEX and OPEX combined.

1. **Support for innovation and high technology investments in the raw materials sector through programmes dedicated to mining and metallurgy under Horizon Europe and similar mechanisms**

Industry is faced with uncertainty when considering the investments required for realising the lower carbon reduction targets. Public incentives can give support by taking away some of this uncertainty. It is important to introduce R&D programmes dedicated to the raw materials industry’s low-CO2 technologies. Support for development, piloting and up-scaling of key innovative decarbonisation and energy efficiency technologies is necessary.

In particular CCS and CCU will also be needed for a number of mineral processing since naturally occurring compounds will continue to emit CO2 which ideally needs to be used, rather than emitted. European mining equipment manufacturers are world leaders in quality equipment and new developments. Therefore, Europe will provide excellent opportunities for exporting such know-how and technologies, hence, contributing to addressing climate change contributions in other parts of the world.

1. **Significant increase in co-financing of investments in energy and raw material efficient recycling of non-ferrous metals and legislative support for the sector by securing the supply of metal scrap (preventing its export outside the EU)**

According to the Institute for European Studies (IES)[[4]](#footnote-4) at the Vrije Universiteit Brussel (VUB), European raw materials sector shows high level of circularity, with around 50% of Europe’s production of base metals now coming from recycled sources. We need to secure the supply of metal scrap, excluding the possibility of exporting it outside the EU. Even though **recycling of copper** **will never be enough** to cover the demand and **primary production from European mines will still be required**, it is a very clear and helpful direction for industry’s race towards circular economy.

A key driver for this is that the increase in total demand for materials can only be easily met through **increasing both primary and secondary materials production and use**. The relatively high labour costs for secondary production methods also hampers further penetration of secondary non-ferrous metals in the central baseline projection. This is why we need funding programme, which will help us to increase our energy efficiency and recycling process and thus keep the costs low enough for this part of the business to constantly develop and progress.

1. **Preferences for raw materials extracted and produced in Europe under public procurement contracts**

In the directive on public procurement we propose to include preferential provisions for raw materials extracted in Europe and manufactured products. The preferential coverage of extracted raw materials and manufactured products will contribute to the fact that European companies would be used in the first place for investments related to public procurement. Such action will significantly contribute to securing the supply chain, stabilizing the development of European enterprises and strengthening the European mining and manufacturing sector. In addition, such activities will contribute to the use of raw materials in public procurement that have a low carbon footprint and come from a trusted and safe source.

1. **ARGUMENTS IN FAVOUR OF ADOPTING THE PRESENTED POSITION:**
2. **European Green Deal will require more base metals. European raw materials industry can contribute and has very low carbon footprint**

As vital as this sector is for the European economy because it provides the base load for many metals and minerals for the EU downstream industries, its overall contribution in CO2 on the scale of things is not enormous. On average 40% of metals are produced in the EU, in most industrial minerals and aggregates the EU is self-sufficient and in some cases even exports.

According to the Eurometaux data, Europe’s metals ecosystem is a frontrunner industry in the transition to climate-neutrality:

* High levels of electrification (shifting away from carbon-intensive processes), with a 58% share of electricity in the sector’s overall energy use,
* High levels of historical emissions reduction, with a 61% improvement on 1990 levels,
* High levels of circularity, with around 50% of Europe’s production of base metals now coming from recycled sources.

“The energy intensity and carbon dioxide emission of a unit production can be used to gauge the commitment to saving energies, and sourcing of minerals and metals that has less energy intensity is responsible business conduct.” – 6.8. Goal Seven – draft report on responsible sourcing.

Copper should be particularly considered as a clean and safe raw material:

„Copper mining is a backbone industry in some major producing countries, and copper products are cornerstone materials in power generation/distribution/transmission, appliances/electronics, transport and construction industries that use 45%, 12.5%, 12.5% and 20% of world total copper production respectively. With about 35% of annual copper usage sourced from recycling, the lifespan of copper is infinite” – draft report on responsible sourcing by International Copper Study Group.

**European Green Deal will require more copper, here are the reasons:**

Renewables

Copper plays an important role in renewable energy solutions – such as solar, wind, todal, hydro, biomass and geothermal – by improving their overall performance. For example a 3 MW wind turbine contains up to 4,7 tons of copper. In case of solar energy due to its intrinsic characteristics copper has always been the material of choice for the efficient extraction of electricity from solar cells. Relatively thick but soft copper is preferred for use in silicon cells to reduce fragility, and because soft copper offers faster throughput and better low yield strength.

Energy efficiency

Copper has the highest electrical conductivity of any metal, after silver.Products containing copper (e.g. engines) tend to operate more efficiently, with typical cost-effective reductions in energy use in the range 20-30%.

Transportation

Beyond the energy sector copper is also key component in new, low-carbon modes of transportation, such as electric vehicles, playing an important role in their batteries and control systems as well as charging infrastructure. An electric car contains on average almost four times more copper than its counterpart with a combustion engine (83 kg to 23 kg).

Energy footprint

Compared to 1990 levels the European copper industry has managed to reduce its per-unit energy consumption by 60%. Emissions from copper production in Europe are now very modest at 0.4% of total EU greenhouse gases emissions.

Copper’s circularity

In addition copper is 100% recyclable and can be used over and over without losing its engineering properties. Copper is also a carrier of valuable metals present in electronics, batteries (cobalt for instance, is as a key by-product of copper metallurgy - 60% of cobalt production; other metals accompanying copper are, inter alia, nickel, silver and gold).

1. **High energy costs**

Globally competitive electricity costs are key for our industry. Indeed, energy costs – mainly electricity – represent 25 to 30% of the overall operational costs for many of smelting and refining installations. Hence this is one of the main decision factors for the continuation of investments at existing European locations. Higher electricity costs will act as a discouragement to invest in copper production in Europe, while significant additional quantities of copper will be needed to support the transition to a climate-neutral, sustainable economy in the EU.

1. **Copper industry is a “Price taker”**

Although electricity markets are national or regional, copper products are globally traded, with the highest degree of international competition. Moreover, our products are priced globally at exchanges such as the London Metal Exchange (LME). The price discovery of a ton of copper on LME mainly derives from financial transactions like hedging, rather than from physical transactions triggered by supply and demand. In other words, European Copper producers are ‘price takers’ and are thus not in a position to pass regionally applicable regulatory costs, such as the indirect costs of the EU ETS, to their customers.

1. **Carbon leakage**

With price taker status and electro-intensive nature, the copper industry is particularly exposed to carbon leakage due to the indirect costs of the EU ETS. Carbon leakage is already evident by rising production numbers in Asia and not in Europe. During last ten years, global copper output increased by 50% but European copper production did not show any significant growth. Asia's share of world copper smelter output jumped from 27% in 1990 to almost 61% in 2017 (Source: International Copper Study Group, ICSG).

This high exposure to carbon leakage is presented in the study commissioned by the European Copper Institute to the international consultancy Wood Mackenzie. This analysis for year 2017 shows that at a price of 30 €/t of CO2, copper sector’s upstream part -namely smelting and refining-, is highly exposed to indirect emissions costs. Smelting and Refining processors exposure to indirect emissions costs represents around 26% of GVA, 43% of operating costs, 43% of operating margin and finally, 57% of profit margin. These ratios may increase as a result of further electrification as well as of end of pipe filtration technologies to comply with increasingly stricter environmental regulations in Europe, while competitors in non-EU countries do not face such environmental restrictions.

An improved indirect compensation in Phase IV, implemented in all EU member states is essential for our industry to continue to contribute to the greening of the European economy as foreseen by the EU 2050 Roadmap and the upcoming European Green Deal.

1. **Development of exploration and extraction in Europe will secure a supply of raw materials for the EU economy**

Being aware of a crucial role of raw materials in energy transformation (the infrastructure of the energy sector requires the massive use of metals and minerals), the EU should focus on securing the raw material base load supply from European resources, which will save CO2 in production and in transport and allows the EU economy to remain independent from foreign suppliers.

1. **European industry excels in standards of production. To keep them the highest, we should import only for the amount exceeding those extracted domestically**

Europe mines have outstanding standards in terms of safety regulations, human rights, environment. Thus action should be considered to diminish the import of raw materials from countries with less stringent GHG emission reduction policies (carbon leakage), lower safety regulations or human rights.

1. **Recycle/reuse as a driver of the circular economy**

The EU is a world leader in copper recycling. In 2015, 61% of European end-of-life copper was recycled, while copper scrap made up 47% of the source material for the production of new copper. This would have the double advantage of reducing the energy consumption of copper production as well as Europe’s dependence on copper ore imports.

1. <https://www.earto.eu/wp-content/uploads/Strategic-Forum_Strengthening-Strategic-Value-Chains-for-a-future-ready-EU-Industry.pdf> [↑](#footnote-ref-1)
2. <http://www.euromines.org/files/euromines_decarbonisation_final.pdf> [↑](#footnote-ref-2)
3. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0773> [↑](#footnote-ref-3)
4. <https://www.eurometaux.eu/media/2005/full-report-8-56-17.pdf> [↑](#footnote-ref-4)