



**Security of Supply:
It starts with us!**

Annual Report 2019



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Foreword

Foreword



Mark Rachovides, President

The Coronavirus Pandemic now dominates the world. It is a human crisis, of our health and our societies. The economic consequences come second, our people first.

Today, mining faces far greater uncertainties, both economic and in terms of understanding, as personal confinement, trade and travel restrictions send our ultimate customers even further apart from us. So, with climate change and other challenges also signalling a new epoch, how can our industry respond as part of humanity's recovery?

Because of the Coronavirus, governments are already much more involved in industry in ways we could not have foreseen even weeks ago. Expectations and agendas have also changed both in terms of finance, regulation and entire supply and demand chains. Both consumers and governments increasingly actually do want to change the way we live in response to the pandemic and climate change.

Today's decision makers' contexts, terms of reference, priorities and language have changed. They want and fear different things that reflect a new consensus, whether we like that or not, and that is an opportunity, not a threat.

State intervention has become "normal" and a recalibration of what we understand to be "fair competition" is underway as we respond to the new economic uncertainties. In the European Union this is articulated today as the "European Recovery Plan" and an Industrial Policy that will become much more active both in shortening and strengthening supply chains and also responding to public concerns.

The European Green Deal remains part of this: we will change our everyday behaviour. In terms of mining, there are at least two aspects to this change.

First, the massive amount of our products required to enable the transition to greener energy and industry. Second is the requirement that we ourselves change our businesses to become greener.

In 2019 The European institutions set the policy scene for the next five years and established the foundations for future policy developments with a horizon of 2050. At the heart of new Commission's work is the need to address the changes in climate, technology and demography that are transforming our societies and way of life.

The new priorities of the new Commission were summarised as:

1. A European Green Deal
2. An economy that works for people
3. A Europe fit for the digital age
4. Promoting the European way of life
5. A stronger Europe in the world
6. A new push for European democracy

Foreword



Mark Rachovides, President

Ursula von der Leyen said: "I want the European Green Deal to become Europe's hallmark. At the heart of it is our commitment to becoming the world's first climate-neutral continent. It is also a long-term economic imperative: those who act first and fastest will be the ones who grasp the opportunities from the ecological transition. I want Europe to be the front-runner. I want Europe to be the exporter of knowledge, technologies and best practice."

In December 2019, the European Commission announced the EU Green Deal. Because of its cross-cutting impact, almost all sectors of the economy will be affected by this new European initiative. The European Green Deal encompasses an ambitious climate change policy agenda to be achieved through different initiatives that will embrace all activities of the economy and collectively affect society and the way that businesses operate. This is the first time that climate ambition will be translated and enshrined into law.

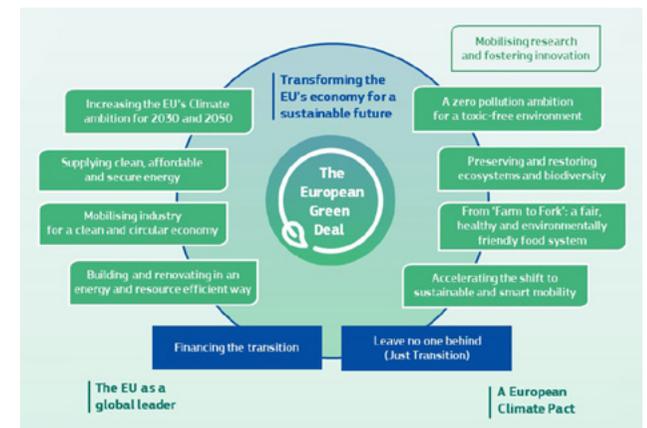
Some companies have already realised the benefit of both demonstrating corporate resilience and reliability in responding to the changed world, but also recognising that relationships are key. More European collaboration and collegiality is essential. Many Euromines companies already meet these goals, deploying and nurturing the highest standards as you can read in the following pages.

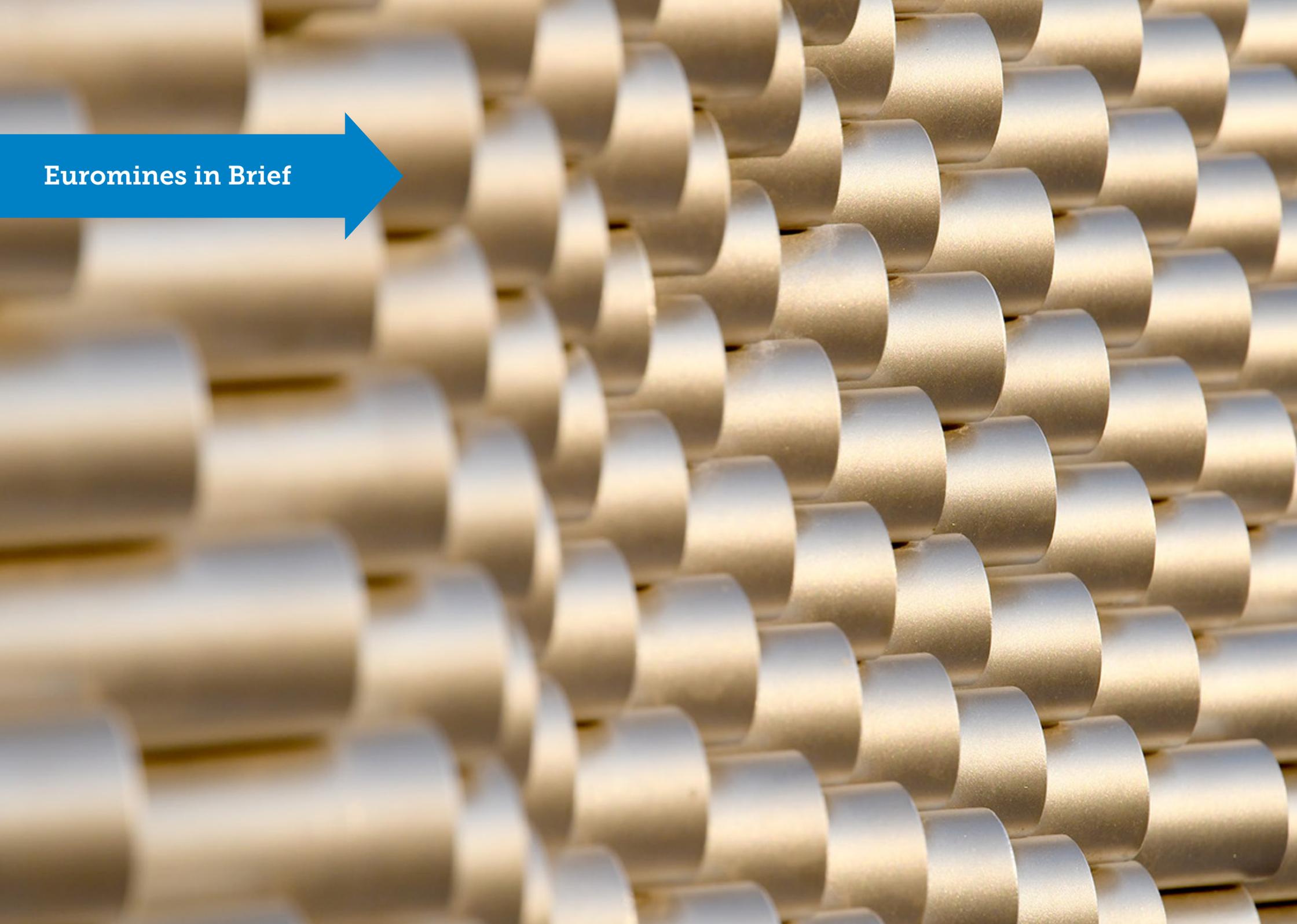
That does chime with the European Green Deal and the climate change agenda and already makes us very much part of it.

[Click the image to enlarge](#) ↓



[Click the image to enlarge](#) ↓





Euromines in Brief

Euromines in Brief

Who We Are

Euromines is the recognised representative of the European mineral raw materials industry. Our members' main objective is to promote the industry and maintain their relations with European institutions at all levels. Euromines provides services to its members with regard to EU policy and forms a network for cooperation and the exchange of information throughout the sector within Europe. The association also supports contacts with the mining community throughout the world.

What We Do

Euromines is the primary interface between the European mineral raw materials industry and the European authorities and international or intergovernmental bodies. The association works to establish common industry positions and initiatives, enhance constructive dialogue on areas of European and international policy affecting the industry and assert the industry's views and positions. As an advocate for the industry, Euromines promotes the benefits and societal value of both its activities and its investments. Euromines members are diverse, National Associations, large and small companies who, within Europe as well as other parts of the world, provide jobs to more than 350,000 people. Their activities and operations produce more than 42 different metals and minerals, for several of which, Europe is the world's leading producer

Why We Do It

Euromines provides members with early warnings of policy change. The association also stimulates policy debate, articulates what is needed and creates opportunities to secure those needs. At the same time, Euromines seeks to protect and maintain the industry's reputation so that members can stay in business.

Euromines Vision

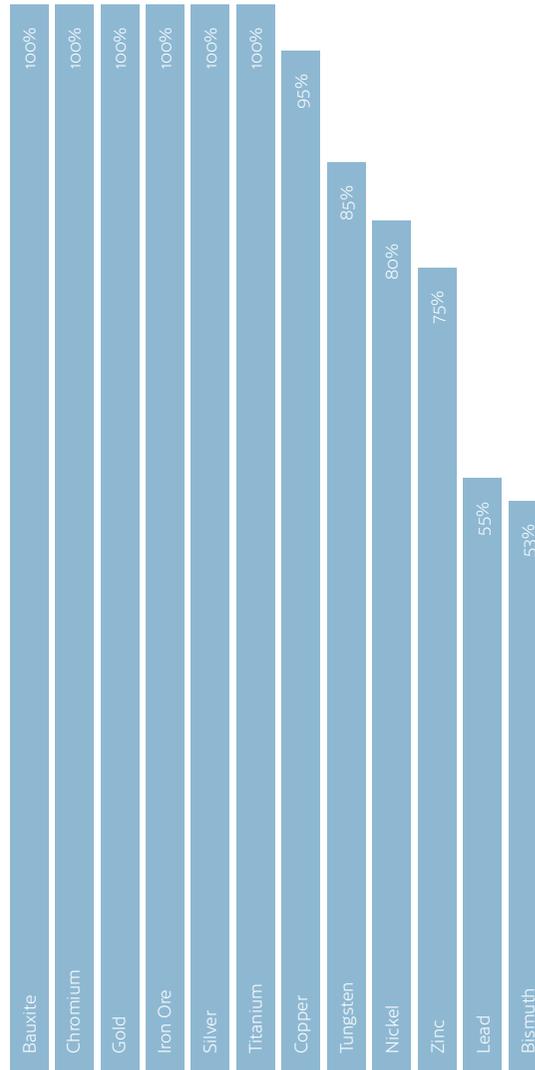
A viable and responsible minerals and metals industry providing the essential economic, social and environmental assets to society's sustainable development.

Euromines Mission

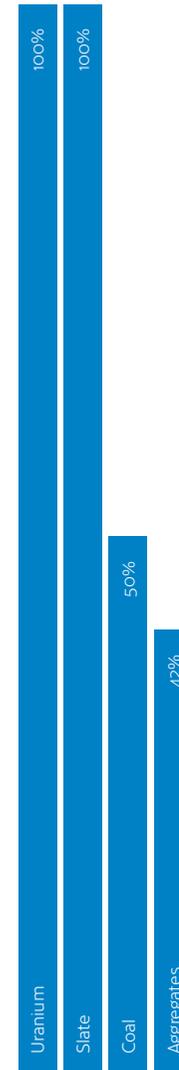
- Euromines' mission is to promote a sustainable and prosperous European mineral raw materials industry in Europe through operational excellence;
- As the recognised representative of the European mineral raw materials industry which serves as a network for cooperation and for the exchange of information throughout the sector within Europe;
- Foster contacts with the mining community throughout Europe and the world where appropriate in order to achieve its objectives.

Euromines Representativity Graph

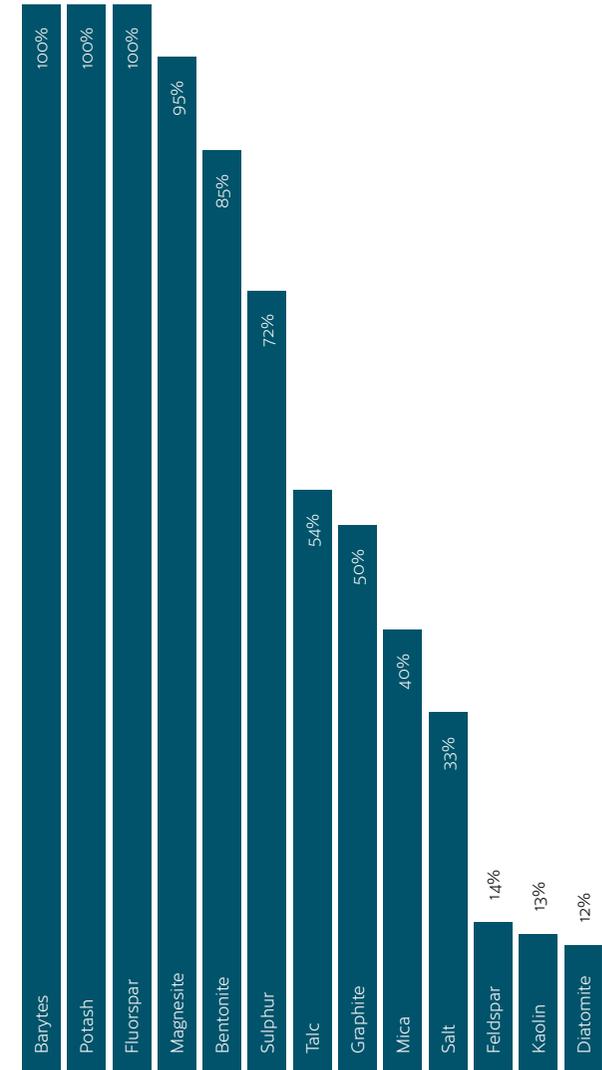
Euromines Representativity in Metals Mining
in % of EU production



Euromines Representativity in Other Minerals
in % of EU production



Euromines Representativity in Industrial Minerals
in % of EU production



Steering Committee Members

Mark Rachovides

President – Dundee Precious Metals

Thorsten Diercks

Vice President – Vereinigung Rohstoffe und Bergbau

Roman Stiftner

Vice President – Austrian Mining and Steel Association

Leif Boström

Treasurer – LKAB Minerals

Andor Lips (resigned Nov 2019)

Member – Eldorado Gold

Jani Lösönen

Member – Agnico Eagle Finland OY

Stefan Romedahl

Member – Boliden AB

Carlos Saavedra Gonzalez

Member – ICL Group – Iberia

Mikael Schauman

Member – Lundin Mining

Radostaw Żydok

Member – KGHM Polska Miedź S.A.

Ex officio:

Dr. Corina Hebestreit

Euromines

Euromines Team

Dr. Corina Hebestreit

Director

Johannes Drielsma

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Veronika Sochorova

Communication Manager

Mirona Coropciuc

Environment, Energy & Climate Change Manager

Kasia Palaczanis

CSR and Communications Manager

Alexandre Marin

Legal Officer for the Environmental Issues

Jaap van Nes

Environment and Water Manager

Azi Bairami

Office Manager

Securing European Supply Chains



Securing European Supply Chains

Expected Rise in DEMAND for Raw Materials

- The demand for raw materials is continuously increasing in Europe and globally.
- By increasing mineral domestic production, Europe becomes less dependent and improves its sustainable supply chain.

The global population is forecast to reach 9 billion by 2030, including 3 billion new middle-class consumers. All of these wish to secure their livelihoods and, if possible, increase their standards of living. This will increase demand for products and their related raw materials. In order to meet this challenge and to satisfy it with sustainably sourced raw materials, a shift towards more resource efficient production, increased recovery and reprocessing along the value chains and at the end of life of products will be important. Latest developments have also illustrated how important it is to have resilient supply chains, and therefore Europe's economy also needs increased supply of raw materials from European sources and needs to reduce its dependencies on imports.

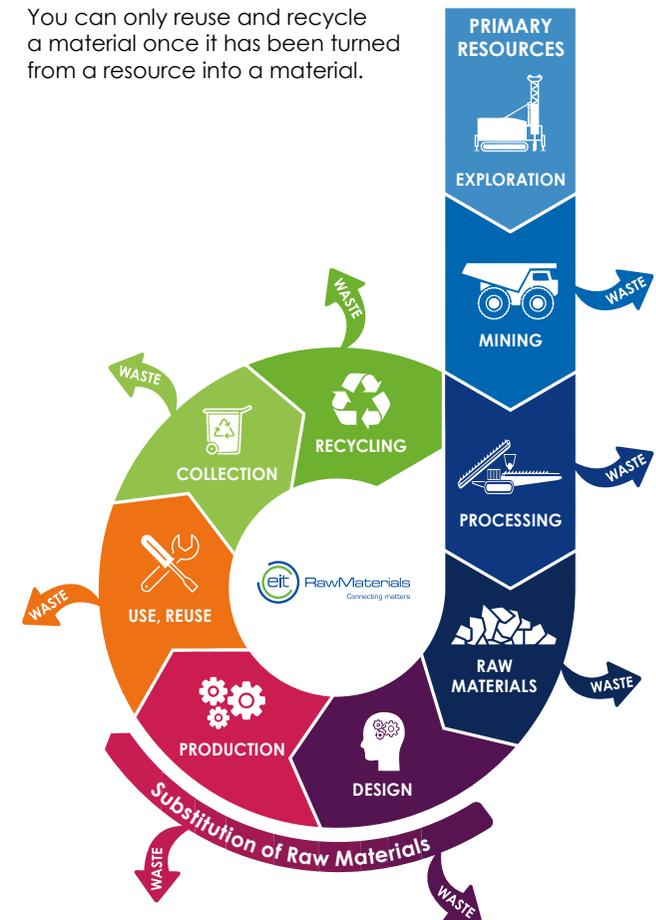
Mineral Raw Materials in modern society are the lifeblood of the economy. They are the basis for many sectors:



The raw materials value chain

The entire loop represents the circular economy.

You can only reuse and recycle a material once it has been turned from a resource into a material.



Source: EIT Raw Materials

Raw materials are the key enablers of many important policies that will shape our future, such as adaptation to and mitigation of the climate change challenges.

Securing European Supply Chains

Euromines Working with the Whole EU Industrial Value Chain

In November 2019 Industry4Europe, a coalition of 149 sector Associations representing the diversity of the EU's industrial base and led by UNIFE, The European Rail Supply Industry Association, published its Joint paper '[A long-term strategy for Europe's industrial future: from words to action](#)'. Through cross-sectoral recommendations, the Industry4Europe coalition contributes to the future EU industrial strategy announced by European Commission President Ursula von der Leyen.

The joint position is taken forward into the discussions on the economic recovery strategy following the Covid-19 lock-down in 2020 and represents concrete industrial policy recommendations in seven priority fields; business-friendly policy environment, sustainability at business core, upgraded skills and training, enhanced research and innovation, investment and improved access to finance, reinforcement of the European Single Market and strengthened trade and international market access.

Euromines has been a member of the Industry4EU coalition from the beginning and has been very active in developing its positions in many of these areas, and lately in particular with regard to sustainability questions and skills and training issues.

In 2019 the Czech Mining Association and Euromines took the opportunity to contribute to the debate by organising a conference specifically on raw materials and its value chains.



Securing European Supply Chains

Sustainable Mining for Sustainable Development Conference, November 2019, Brno, Czech Republic

More than 110 experts met in Brno, Czech Republic, to participate in this International Conference on Sustainable Mining organised by Těžební Unie (Czech Mining Association) in cooperation with Euromines, under the auspices of the Ministry of Industry and Trade of the Czech Republic and the Czech Mining Authority.

Stakeholders representing industry, policy makers and governmental institutions, regional authorities, NGOs, the innovation community and universities discussed growing public and political urgency around sustainability that has resulted in wide-ranging and ambitious global policy measures. Policies discussed were amongst others the raw ma-

terials contributions to the UN Sustainable Development Goals, the Framework Convention on Climate Change (including the Paris Agreement) as well as the European Commission's strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050 laid down in its Clean Planet for All Communication published in November 2018 as well as its updated Action plan for the Circular Economy. Conference participants discussed existing and future contributions and solutions the raw materials sector can deliver to achieve these policy goals through state-of-the-art technologies.



Securing European Supply Chains

Energy-Intensive Industries Enabling a Climate-Neutral, Circular Economy by 2050

Following an intensive consultation with 11 industrial sectors, the 2050 Masterplan for energy intensive industries was published in November 2019. The recommendations include actions that could provide the right market signals to attract new investments and assist companies implementing cost-effective solutions towards climate-neutrality. They also focus on the need to ensure a just transition, underline the importance of equipping workers with the right skills for the future and of helping communities that depend on these industries to manage the transition. In particular, the recommendations highlight key success factors under three main priorities:

- Creating markets for climate-neutral and circular products,
- Developing large-scale pilot projects on clean technologies,
- Switching to alternative climate-neutral energy and feedstock sources.

Key for all of these sectors is of course the secure and sustainable supply of raw materials.



Securing European Supply Chains

Availability of Europe's RESOURCES

- Europe still has rich mineral resources which can be mined sustainably.

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.

The Mineral Raw Material Industry's Contribution to Achieving Carbon Neutrality Goals

The European Commission's strategic long-term vision ['A Clean Planet for all'](#) as published on 28 November 2018 outlines Europe's transition towards a climate-neutral economy by 2050 in line with the objectives of the Paris Agreement. In this context, it invited all EU institutions, businesses and the entire European society to join forces for a sustainable, climate-neutral economy.

The European Commission underlined the importance of continuing European exploration and extraction: "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."

The European mineral raw material industry plays a critical role in underpinning economic growth and reaching a low carbon, sustainable economy. The development of mineral resources is a pillar for many national economies, in terms of contribution to gross domestic product, foreign direct investment, tax and royalty revenues as well as other governmental revenues. Modern extraction and processing of minerals and metals has brought huge benefits to society while reducing pressures on the environment, addressing green-house gas emissions, tackling pollution, minimising waste and improving efficiency in the use of natural resources. Even more, the mineral industry will continue to enable downstream sectors to put their own improvements into practice. Euromines illustrated this by providing best case practices in its 2019 brochures ["Providing Metals and Minerals for Carbon Neutrality"](#) and ["The European Magnesite/Magnesia Industry: enabler in the transition to a low carbon economy"](#).



The sector's contribution to mitigating climate change

Mineral raw materials are indispensable enablers of carbon-neutral solutions in a wide variety of economic sectors. As the first segment of most value chains, the minerals sector is a supplier of critical and essential materials and products and generates added value. In recent years the mineral raw materials industry has continuously optimised its productivity and energy efficiency and is still implementing new solutions toward further reducing energy consumption/unit and reducing the carbon-intensity of its operations wherever possible.

Securing European Supply Chains

European Minerals Day 2019

Every two years, European Minerals Day allows the European public to explore the world of minerals and its companies. It is a pan-European awareness initiative by the European minerals sector and related organisations.

Events marking the 7th European Minerals Day took place between May and November of 2019, with most activities concentrated between 20–22 September. During this period, 128 events at 109 sites took place across 22 coun-

tries. Between 10.000 and 15.000 visitors engaged with the initiative. In 2019, a significant number of visitors were children. Minerals exhibitions in museums as well as sustainable mining conferences in universities were hosted. The European Minerals Day's closing event took place on 21 November during Europe's Raw Materials Week.

Euromines and its members actively participated in welcoming many visitors.



Securing European Supply Chains

The Briefcase of Mineral Applications

The Briefcase Project explores innovative ways to attract the general public to minerals and mining. It aims to transform issues around mining – such as conflict minerals, sustainability and environmental consequences of mining – into more relatable and tangible to the everyday person, namely our young students. Using a number of innovative methods, it teaches students to identify minerals they use in their everyday life and encourages them to reflect on the problems and topics surrounding the mining industry.

Euromines is one of the partners in this EIT Raw Materials Project that focuses on education and aims to increase public knowledge and awareness about minerals and metals, along with their relevance and importance for the course of our society.

In 2019 our project partners created five new thematic Briefcases: Gold, Cobalt, Tin, Platinum and Secondary Raw Materials, and the project team is currently working on developing a 3D/Augmented Reality Briefcase Tool, which aims to appeal to older students, as well as the general public, and prompt them to take deeper interest in mining by visiting places such as museums and science centres.

The game of "[The Briefcase of mineral applications](#)" aims to familiarise the player with minerals that are used in the manufacture of everyday objects. Given the era of growing prevalence of online teaching and learning, we believe tools such as this one could prove to be effective and beneficial for the education of young people. After all, it is now that their sense of responsibility and consciousness is forming.

Our main objective is to point out the indispensability of minerals and mining, focusing on their wide range of uses, as well as their consequences for society and the environment. Our project addresses production systems, sustainability questions around mining operations, and the importance of the consumer's behaviour, namely as it pertains to consumption and approach to activities such as recycling.



**Sustainability and
Competitiveness**



Sustainability and Competitiveness

The European Mineral Raw Materials Industry Enabling SDGs

The EU has the potential to increase its capacity to source raw materials domestically and sustainably. It is not a lack of resources; it is a lack of exploration with the latest technology that feeds the myth of depleted resources. By increasing mineral domestic exploration and production, Europe could become less dependent and improve its sustainable supply chains.

European mineral raw materials industry contributes to:

ECONOMIC SUSTAINABILITY by:

- Staying financially strong in order to be an innovative and responsible sector and contributing to prosperity.
- Maintaining high returns on equity.
- Having a healthy net debt/equity ratio.
- Maintaining high ordinary dividends.

SOCIAL SUSTAINABILITY by:

- Maintaining secure and attractive workplaces and exerting positive influences on our business partners and our immediate environment.
- Reducing accidents.
- Working to improve gender equality.
- Working to increase diversity.

ENVIRONMENTAL SUSTAINABILITY by:

- Being resource-efficient and environmentally efficient.
- Reducing carbon emissions.
- Reducing energy intensity.
- Reducing discharges to water.
- Reducing emissions to air.



SDG PYRAMID

The first 10 goals align with **people** and social issues and represent the foundation that should be covered before the next five goals on ecological challenges and two final spiritual goals on peace and partnership can be achieved.

SPIRITUAL



ECOLOGICAL



PEOPLE



Engaging in Documenting Sustainability: Environmental Footprint Calculations

Circular Economy is a central part of the Commission's Green Deal. Euromines has worked consistently since 2011 to provide an understanding of the discovery and use of mineral resources to environmental policymakers as a better basis for sound resource efficiency, circular economy and sustainable product policies. In particular, Euromines has led a global industry effort to improve the scientific basis for the EU's Environmental Footprint (EF) methodology and is also an invited contributor to the [United Nations Environment Life Cycle Initiative](#), a global focal point of life cycle practitioners and stakeholders fostering the global use of credible life cycle knowledge for more sustainable societies.

However, many of the proposed indicators for Circular Economy and Sustainable Consumption and Production are not suitable to inform about the sustainability of products or sectors. Particularly, the practice of Life Cycle Assessment has often relied on an incorrect application of poorly understood concepts, sometimes leading to suggestions that politicians should artificially increase the cost of metals and minerals in the EU market to reduce their use; exclude metals and minerals from some products; or even to exclude primary production of metals and minerals from the range of approved economic activities in EU. To a certain extent this is still reflected in the EU Commission's, 2020 Circular Economy Action Plan proposal, announcing legislative initiatives on sustainable finance, substantiating green claims, sustainable product policy and a global agreement on the management of natural resources.

In a nutshell, Euromines' participation in the EU's environmental footprint discussions has been to correct the Malthusian myth that metal and mineral resources could soon be entirely depleted. Significant progress was made during 2019 with broad industry support on two fronts:

1. The Sustainable management of PRIMARY raw materials through a better approach in Life Cycle Sustainability Assessment ([SUPRIM](#)) Project with funding from the [European Institute of Innovation & Technology Raw Materials](#); and
2. The post-pilot phase of European Union Product Environment Footprint method development including a commitment to operationalise consideration of dissipation (rather than extraction) of valuable resources.



PRIMary raw materials through a better approach in Life Cycle Sustainability Assessment (SUPRIM) Project

In 2019, the EIT SUPRIM project first proposed its new LCA impact category (Environmental Dissipation Potential (EDP)). Potential use of the EDP was demonstrated with case studies of copper cathode production from Euromines member companies Boliden and Cobre Las Cruces. After incorporating feedback from the scientific community at the EIT Raw Materials Summit in May, the SUPRIM Final Conference for policymakers was hosted in Brussels on 22 October.

Euromines was responsible for events and communication of the SUPRIM results. A SUPRIM product brochure and

Final Conference report were produced summarising the project's key outcomes, including recommendations from all stakeholders to be considered for integrating into the Commission's product policy.

Meanwhile, the UN Environment Life Cycle Initiative used input from the SUPRIM project team in publishing an update of its guidance in the International Journal of LCA, which also endorsed shifting to consideration of dissipation of valuable resources (rather than only their extraction).



Sustainability and Competitiveness

European Product Environmental Footprint (PEF)

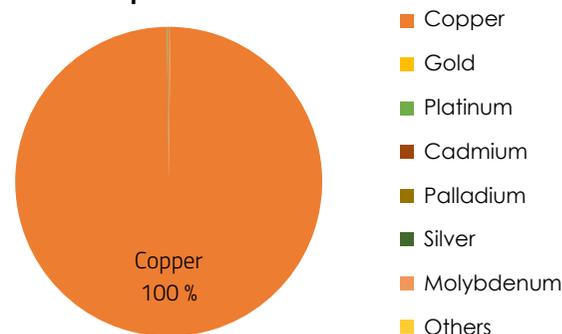
The PEF project is important because according to the European Commission proposals Circular Economy should be the backbone of the future EU industrial strategy, and Life Cycle Assessment of products should be the norm. There is a relatively high public support for development of new policies that uncover and communicate environmental performance of products and supply chains.

During the 2013-2017 piloting phase, the European Commission changed its recommended Product Environment Footprint (PEF) to take better account of the Earth's full potential as a natural stock of metals and minerals. The Commission recognised that such resources are not necessarily depleted once extracted and, to reflect this, committed to developing a new impact assessment model based on resource dissipation .

With that in mind, Euromines and several ICMM member associations worked with the Danish Technical University and Quantis GmbH throughout 2019 to deliver a fully implementable dissipation-based method by the end of 2020. Towards the end of the 2019, the European Commission Joint Research Centre (JRC) published its own implementation ideas on the same topic. The progress of both these projects has been consistent with the findings of the EIT SUPRIM project (see above), though the JRC's preliminary proposal is significantly more complicated to apply.

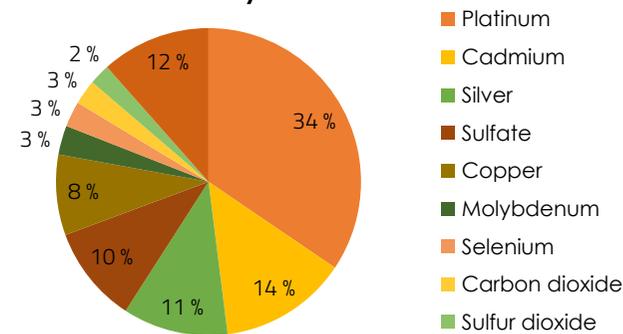
In the meantime, Euromines maintains the view that the PEF methodology needs to be further developed before it can be used for decision making and that the European Commission needs to work with stakeholders to revise its current shortcomings and make sure that the methodology will be sufficiently robust.

From Depletion



From No Response

To Inaccessibility



To options for Resource Efficiency

Case studies by Euromines member companies have demonstrated the potential for the SUPRIM method to better inform environmental performance of products and incentivise changes in the supply chain (EIT SUPRIM, 2019). Whereas current PEF rules determine that copper mines extract copper (100% of depletion impact), dissipation methods highlight opportunities to improve resource efficiency at copper mines (e.g., indicating potential losses of platinum, cadmium or silver that are worth investigating further).

Sustainability and Competitiveness

Health & Safety

Health and safety is a key element of the Sustainability goals, and Euromines members seek continual improvement of good, safe and positive working conditions taking all protection measures necessary. In 2019 the association therefore carried out a number of activities and published some guidance.

Euromines H&S Seminar: Safety First - Industry 4.0

Modern mines are being increasingly digitized and automated. "Industry 4.0" offers new possibilities to combine increased productivity with stimulating workplaces in a good work environment. But even more importantly for the sector, it improves workplace safety. Automation in mining means development of autonomous vehicles (autonomous dump truck, autonomous excavator, autonomous drills etc.), digitalization of the mining processes, smart connected mines, the Internet of Things ("IoT"), wireless network technology. By utilizing integrated automation services and control systems, mineral raw materials industries can employ driverless trucks, real-time monitoring of productivity data and supervisory control of mining operations from remote operations. Smart connected mines are becoming the new trend in mining industry. The involvement of IoT in the mineral raw materials industry has also led to improvement in workplace safety. A Connected Mine establishes networks among machines, humans and the Internet that leads to better energy efficiency, optimized productivity and higher profitability. Wireless network technology that allows the use of IP telephones and data traffic underground, advanced positioning technology and monitoring systems have been installed in several mines. Such solutions allow communication and access to information throughout the mines and can quickly estab-

lish where workers and equipment are located at any time. Collective control systems and demand-controlled ventilation systems are other examples of mine automation technologies that some mines have installed.

In November 2019 Euromines organized a seminar aiming at showcasing the current, future technological development contributing to eliminating the physical hazards in the mineral raw materials industry. Mining companies are making continuous strides in improving working conditions through digitalization and automation and removing its workforce from dangerous situations. The event was an excellent opportunity for networking with the industry representatives, academia representatives, trade unions, governmental representatives.

The event was held back-to-back with the Standing Working Party for Extractive Industries meeting on 18-19 November 2019.



Occupational Safety and Health (OSH) Project - status

The OSH Project on *Development and Promotion of Soft Skills and Competences for OSH Management System Tailor-made to Extractive SMEs* is a joint project between Euromines and IndustriAll and is co-funded for 2 years (02/2019 - 02/2021) by the EU. The project focuses on identifying the current OSH status of the sector in five EU Member States (Bulgaria, Czech Republic, Hungary, Poland, Spain) in order to deliver supporting material for employees which assists in complying with OSH requirements. Other objectives of the project include raising awareness and creating a network of collaboration among the extractive industry.

In 2019 data identifying the OSH status of SMEs in the extractive industry has been collected including legislation and management approaches for compliance with legal requirements, literature identifying the most common risks for the SMEs in the area of health and safety. The partners of the project completed a questionnaire which outlined gaps and needs in soft skills and competences. Analysis of the completed questionnaires helped the project team to produce tools and material to better suit the needs of employees. In October 2019 a workshop was organised to discuss results of the circulated questionnaires. The event allowed for an interesting exchange of experiences and approaches of the participants from the five Member States.

Implementation of best practice guide for CO and NO_x

Keeping workers healthy is essential to the success of mining companies, and Euromines members are driven to meet the highest standards for worker health and safety. For this to happen, hazards such as toxic substances in the workplace need to be identified, and the risks from any possible exposure associated with them need to be adequately con-

trolled. The concentration of NO, NO₂ and CO at workplaces in underground mines arises predominately from the use of explosives and from mobile machines equipped with diesel engines. In the past years significant amounts of research and improvements were made in the area of electrification, diesel engine upgrades etc. Through its active involvement in Sectorial Social Committee for Extractive Industries, Standing Working Party on Extractive Industry, and the BusinessEurope Employers Network, Euromines continued the dialogue with policy makers and trade unions on the relevant issues around health and safety of the employees.



Sustainability and Competitiveness

The EU's Sustainable Finance Action Plan for a Greener and Cleaner Economy and the Raw Materials Needs

In principle, Euromines welcomed the Commission's Sustainable Finance Action Plan for a greener and cleaner economy and agreed that a socio-economically efficient, sustainable and flexible financial system is essential for long-term value creation.

The European mineral raw materials industry plays a critical role in underpinning economic growth. The development of mineral resources is a pillar for many national economies, in terms of contribution to gross domestic product, foreign direct investment, tax and royalty revenues as well as other governmental revenues. Modern extraction and processing of minerals and metals has brought huge benefits to society while reducing pressures on the environment, addressing green-house gas emissions, tackling pollution, minimising waste and improving efficiency in the use of natural resources. Even more, the mineral industry will continue to enable downstream sectors to realise all these improvements.

In this context, Euromines formulated its views on the [Sustainable Finance Action Plan](#) which should ensure an integrated approach, providing consistency, stability and predictability along the whole value chain by:

- Continuing to fulfil our current needs without compromising the ability of future generations to meet theirs;
- Keeping finance and investment available to all, both to those that are trailblazers and to those that are in need of finance to modernise and upgrade toward achieving these targets, including SMEs;

- Markets, industries and companies in transition need assistance if we are to achieve our shared goals;
- Integrating the research, development and innovation potential in sustainability reporting;
- Maintaining the system's flexibility and dynamism according to the social, economic and environmental evolution;
- Using accurate definitions and methodologies that are both aligned and coherent with existing principles;
- Fostering transparency and providing clarity to the markets through a common understanding of sustainable investments and their environmental impacts;
- Keeping reporting duties to an efficient and functional minimum;
- Using relative and not absolute indicators or even qualitative ones as metrics of selection. An absolute value is a value compared to an absolute standard which currently does not exist or cannot be uniformly applicable in assessing how different mining sectors contribute to the development of low carbon technologies.
- Encouraging investments into generic new business developments such as sustainable exploration, which would secure the supply of resources for the future.



The Balance Between Climate Change Efforts and Competitiveness

The sector's adaptation to climate change

A changing climate will affect the mineral and metals sector in various ways, both directly and indirectly. Extreme weather events and longer-term shifts in climate patterns have the potential to damage fixed assets and disrupt supply chains.

Typical impacts are: Flooding, drought, increased storm intensity, greater variability of water supply and an increasing number of high-temperature days. These have led to reduction in or shut-down of production, increases in capital expenditure, health and safety impacts and made vulnerable communities more prone to social unrest.

The industry has always responded to the challenges of working in varied physical environments and has developed robust engineering approaches to address those. These internal processes are often reviewed regularly so that they remain 'fit for purpose', and periodic updates may provide opportune moments to consider greater integration of climate change considerations.

Euromines members are committed to substantially contributing to climate change adaptation. European mining companies not only continuously assess climate risks, but also adapt their operations to expected climate changes and provide materials that will assist other industries and society as a whole to adapt to climate change. Key areas of concern for the mineral raw material sector are water management, the performance of facilities with long lifespans

where the design criteria may include certain climate-related assumptions (e.g. rainfall) and how climate change may impact closure and post-closure. Many mineral companies already have approaches, tools, data, resources and people in place to identify and manage risks and opportunities.

Key elements are:

- 1.** Reliability and availability of meaningful climate data: To address this, companies are modelling their resilience to increased frequency and severity of many extreme events using various sources of data.
- 2.** Adequate monitoring systems and record-keeping: Companies are systematically collecting and analysing information on how weather and climate are impacting operations and performance.
- 3.** Translating changes in climate parameters into specific asset and operational impacts and financial consequences: Companies are conducting detailed site-specific analyses to assess flood depth, extent and duration at a facility and to estimate damage and disruption to the facility and the financial impacts, including downtime, loss of revenue, and repair/upgrade costs incorporating climate resilience.
- 4.** The inclusion of climate change adaptation considerations in asset design.

A mineral company's environmental performance and social license to operate may be affected as climate change begins to impact host communities and local environments. Companies therefore also involve external stakeholders – particularly host communities – in discussions about how to jointly build resilience and manage climate risk.

The EU's Emission Trading Scheme and ensuring global competitiveness

The policy approaches

To achieve the EU's overall greenhouse gas emissions reduction target for 2030, the sectors covered by the EU Emissions Trading System (EU ETS), must reduce their emissions by at least 43% compared to 2005 levels. The revised EU ETS Directive, which will apply for the period 2021-2030, will enable this through a mix of interlinked measures. The system of free allocation has also been prolonged and revised to focus on sectors at the highest risk of relocating their production outside of the EU. These sectors, including the mining ones, listed in the Carbon Leakage List adopted in 2019 will receive 100% of their allocation for free. For less exposed sectors, free allocation is foreseen to be phased out after 2026 from a maximum of 30% to 0 at the end of phase 4.

After the adoption, publication and entering into force in 2018 of EU ETS Directive (Directive (EU) 2018/410) the process of adopting the related acts continued. The EU Free Allocation Rules (FAR) which entered into force on 28/02/2019 lays down the EU-wide allocation rules for the fourth trading period. The FAR contains EU-wide uniform provisions for the free allocation, the application procedure as well as the scope and methodological procedures for data collection. Data collection for the fourth trading period that took place until June 2019 is currently used to establish the free allocation amount for installations and to provide the data required for updating benchmarks by the European Commission. It contains specific provisions for monitoring, transfer and verification of data as well as allocation rules for incumbents and new entrants, rules on

the closure of an installation, the division and merger of installations and the possibility of waiving the free allocation.

In 2019 Euromines continued to work closely with the European Commission and provide the necessary input in ensuring that the extractive raw materials sector receives as many allowances as possible during phase IV.

— **The 2021 – 2030 Carbon Leakage List & Free Allocation Rules**

Euromines provided all necessary information to demonstrate that the mining sectors are exposed to the risk of carbon leakage and therefore should be included in the newly adopted Carbon Leakage list for the period 2021 – 2030. The carbon leakage indicator values calculated by the European Commission for post 2020 reveal that all mineral raw materials subsectors (NACE 07.10 - mining of iron ore, NACE 07.29 - mining of non-ferrous metals, NACE 08.99 - mining of magnesite part of the other mining and quarrying subgroup as well as NACE 08.91 - mining of chemical and fertiliser minerals) comply with the carbon leakage indicator of minimum 0.2 and will be eligible for free allocation during the period 2021 – 2030.

— **2021 – 2030 Process Emissions Free Allocation Factor**

- **the process emissions free allocations factor will be kept at 0.97**
- **no annual reduction factor used for product benchmarks will be applied to process emissions installations.**

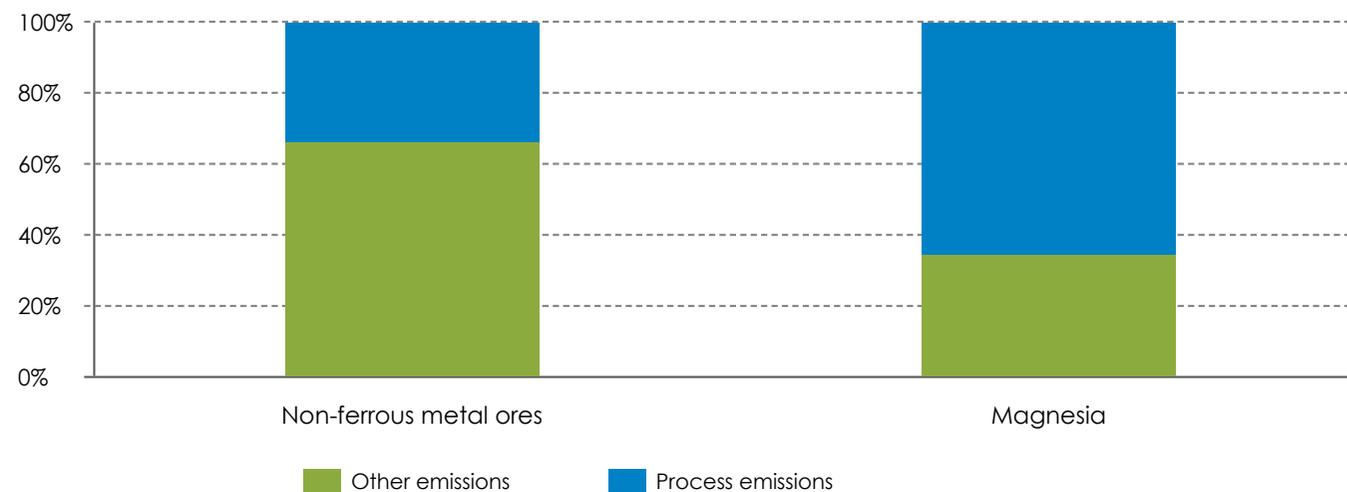
Sustainability and Competitiveness

Process emissions, inherent to the raw material used, are the unavoidable result of chemical reactions among the raw materials used in the production process including their thermal decomposition. These emissions, strictly correlated to the production level by a multiplication factor, the so-called stoichiometric factor (deriving from the CO₂ content of the used raw materials - geogenic emissions) are direct and unavoidable.

The mineral raw materials sectors for which the use of a product or a fall back benchmark is impossible (because either there are not enough installations for setting such a benchmark or because the Commission took the decision not to extend the product benchmark list during 2021-2030) would not have been granted the same treatment

with a less than 97% free allocation. Decreasing even more the 0.97 allocation factor would have only deepened this discrimination against the carbon leakage sectors.

Both Euromines objectives concerning the 2021 – 2030 ETS direct emissions were achieved. All mining sectors were included on the Carbon Leakage List and will be eligible for free allocation, and the allocation factor for process emissions has been kept unchanged at 0.97.



Source: Navigant Study assessing the direct and indirect carbon leakage for mineral raw materials sectors (2015)

The EU's transition to low-carbon energy supply and ensuring internationally competitive prices for the EU manufacturing industry

EU Member States can compensate some companies in sectors with high electricity consumption (electro-intensive users), for part of the higher electricity costs arising from the EU emissions trading scheme. The compensation granted in compliance with the ETS State Aid Guidelines minimises the risk of carbon leakage, which occurs when emission costs cause EU companies to relocate their production to non-EU countries that have less ambitious climate measures. The rules allowing for compensation will be updated to ensure that they are adapted to the new emissions trading scheme for 2021-2030.

The current Guidelines date from 2012 and will expire on 31 December 2020. They therefore must be revised for the next period starting on 1 January 2021 to comply with the latest ETS provisions. The revision process launched in 2019 included a series of targeted and general public consultations allowing interested parties to provide their feedback and experiences of the implementation of the State aid rules related to the Emission Trading System (ETS) and their views regarding the design of the future ETS guidelines. The consultation also aimed at collecting on available policy options to address the risk of carbon leakage due to indirect emission costs, while preserving the incentive of the EU ETS for a cost-effective decarbonisation of the economy and minimising competition distortions in the internal market.

Euromines participated at all public consultations (February and May 2019) as well as in the targeted consultation (April 2019) by providing the necessary information for the determination of sectors exposed to carbon leakage risk due to the indirect emissions costs and the empirical information enabling for the determination of the level of compensation that should be granted to sectors exposed to carbon leakage risk due to indirect emissions costs.

The mineral raw materials industry is one of the most electrified industries in the global industrial production, exposed to a significant risk of indirect carbon leakage, and should therefore be eligible for indirect emission costs compensation. The mineral raw materials sectors are 'price-takers' operating in a competitive global marketplace, unable to pass through indirect emissions costs to downstream consumers. For most of these subsectors such as the mining of iron ore and the mining of non-ferrous metals, prices are set at global market level and fall outside the company control. Additionally, to the internationally set prices, Europe has a significant import dependency for all metal ores and concentrates, including 100% import reliance for several specialty metals and rare earths¹.

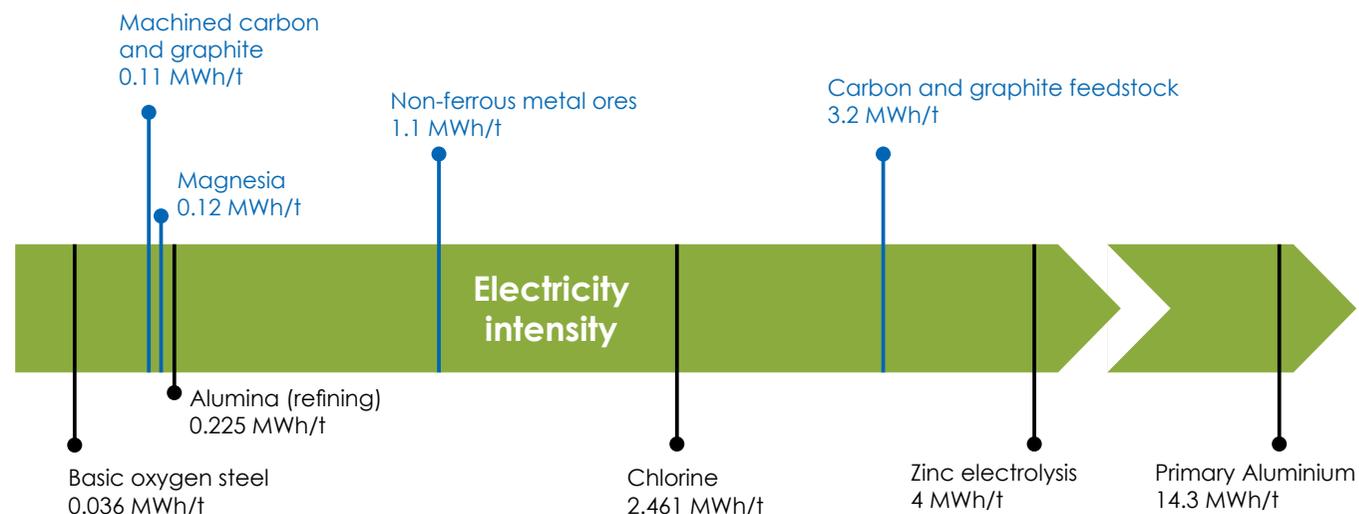
¹ European Commission Critical Raw Materials factsheet, 17 OECD – Measuring distortions in international markets: the aluminium value chain, 2019

Sustainability and Competitiveness

With mineral raw materials sectors unable to pass through costs and the prospects of investment in the EU ETS area worsening simultaneously with a stagnation or even decrease in domestic demand, the EU raw materials sector, competing at international levels mainly on costs, is legitimately concerned that the decision not to reimburse indirect emissions costs will undermine the international competitiveness of the industry through the loss of market share and profit margins to competitors who do not face similar indirect carbon emissions costs.

The indirect costs compensation represents an essential element non only in coping with carbon leakage but also in achieving climate goals. Compared to competing production in emerging markets such as China, the European

mining of ferrous and non-ferrous metals is highly energy efficient and has a low carbon footprint. The European mineral raw materials sector also enhances the availability of the critical materials needed for current and future technologies to create a climate-neutral, circular and resource-efficient economy, while sourcing raw materials in a sustainable and responsible way. It can be considered both a 'greening by' and a 'greening of' activity: minimising its impacts makes a significant contribution to climate change mitigation in the EU.



Source: Navigant Study assessing the direct and indirect carbon leakage for mineral raw materials sectors (2019)

Environment

The Mineral Raw Materials Industry takes great care to minimise the environmental and visible impact of its operations. Waste management, water protection, air emissions, and biodiversity are key issues in the sector. In 2019 water, waste and biodiversity issues took much of Euromines' attention.

Water (Framework Directive)

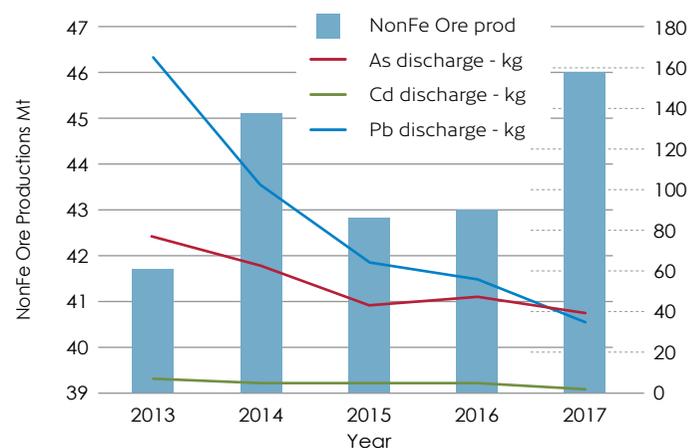
Throughout 2019, Euromines participated in the EU's Common Implementation Strategy for the Water Framework Directive with DG Environment and the Member States, mainly on topics related to the recent evaluation of the Water Framework Directive (a Fitness Check).

Over the last decades, before and after the adoption of the WFD, industry, including mining, has reduced discharges to water dramatically leading to a significant improvement of the status of European waters. One example is from

Sweden where in the period 2013 to 2017 the discharge of heavy metals has been reduced despite increasing Non-ferrous ore production (sources: Swedish National Emission Register www.naturvardsverket.se, and Swedish Geological Survey <https://apps.sgu.se/geolagret>).

[Euromines released a position paper in March](#) expressing both support and concern about the currently ongoing implementation of the Directive. Special focus was given to the legal interpretation of the concept of "deterioration" and a 2015 judgment of the European Court of Justice of a German ruling (C-461/13: Bund für Umwelt und Naturschutz Deutschland e.V. v Bundesrepublik Deutschland: "the Weser Ruling"). A Euromines Water Task Force met several times and interacted intensively with officials from DG Environment and DG Grow, in co-operation with other industrial sectors. Euromines provided real case studies from members that demonstrated the difficulties that the Weser Ruling had created for industrial and public infrastructure projects.

Swedish annual NonFe ore production (Mt) and As/Cd/Pb discharge (kg) 2013-2017



At completion of the Fitness Check, the Commission returned to the process of revising the Watch List for potential priority substances under the Environmental Quality Standards (EQS) Directive for surface waters. Euromines engaged in the discussions emphasising the need to follow the agreed criteria for watch-listing of substances as set down in the EQS Directive. This process has continued into 2020.

In parallel, Euromines made a significant contribution to new EU guidance on taking account of natural background levels in [EU surface waters](#). The final version was delivered to DG Environment mid-year and is expected to be published during 2020.

Mine waste

Already in 2018, Euromines joined a consortium of experts to undertake a study commissioned by DG Environment to support the development of further guidance for the implementation of the Extractive Waste Directive (2006/21/EC). During 2019, Euromines played an important role in leading the dialogue with Member States to understand how key concepts of the Directive are being applied and to clarify statistics on extractive waste.

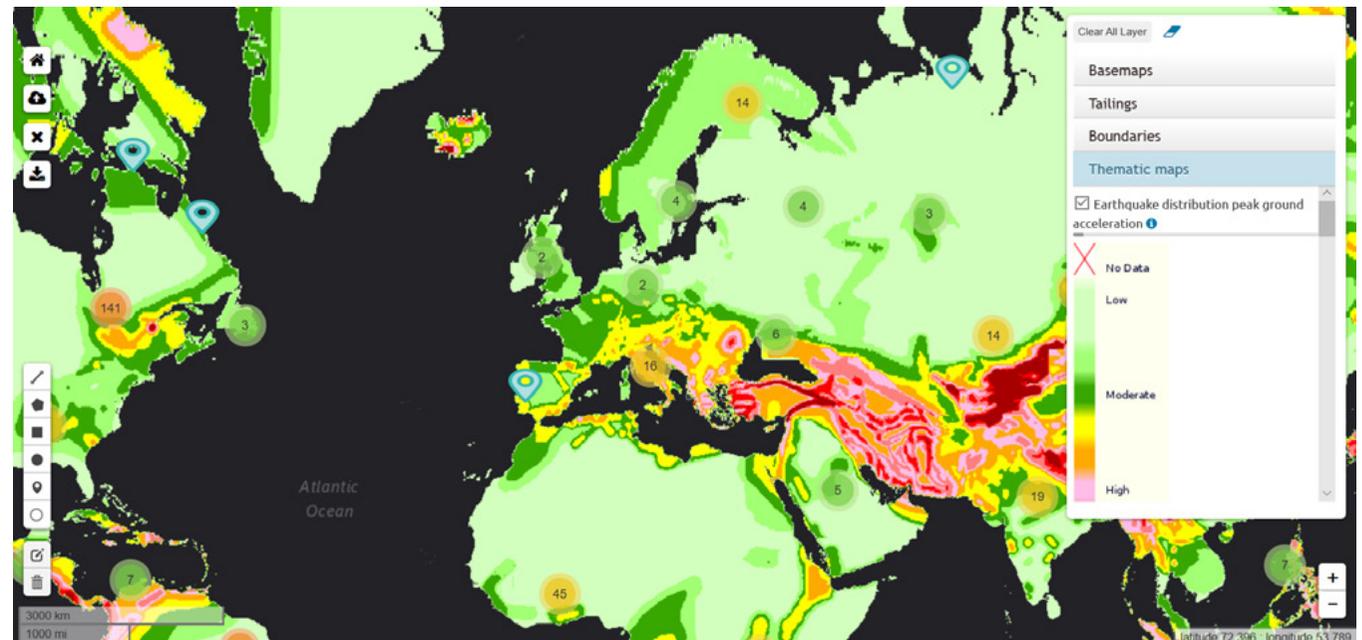
The detailed study data served to further underline how ore body characteristics drive significant differences between mining operations across the EU Member States, whilst achieving the same level of environmental protection in all. As mining and quarrying activities cover many different sectors with very different waste categories and management objectives, prescriptive EU-level guidance will not be meaningful, and must instead accommodate a wide range of techniques that may or may not be applicable in specific geological settings. At the same time, the study has revealed an inspiring menagerie of best available techniques that have been applied to comply with the EWD and the rigours of competition on international commodity markets. Through regular consultation of the Euromines network of members and other contacts, production and waste generation data were also estimated for all European metal mines. The project is due to be completed in October 2020.



Global Tailings Review

In 2019 the International Council on Mining and Metals (ICMM), the United Nations Environment Programme (UNEP) and the Principles for Responsible Investment (PRI) committed to adopt a new Global Tailings Standard under the leadership of Dr Bruno Oberle, a former State Secretary for the Environment in Switzerland (see www.globaltailingsreview.org). In parallel, most mining companies in Europe undertook an accelerated review of current practices. Euromines played an intermediate role between the Global Tailings Review and Euromines mem-

ber companies and federations. Meanwhile, Euromines also spear-headed an ad-hoc critical review of the ongoing work to finalise a European standard on hydraulic placement of extractive waste in light of the Brumadinho incident. Both the Global Tailings Standard and the European Standard are expected to be finalised in 2020.



Map of European responses to the Investor Mining and Tailings Safety Initiative (launched by The Church of England Pensions Board and The Council on Ethics of the Swedish National Pension Funds in 2019) in relation to earthquake hazard distribution (GRID-Arendal, 2019).

Biodiversity

The European mining sector actively supports the conservation of endangered species and habitats. Throughout 2019 the European Commission continued work on revising methodological guidance to carry out or review the assessments required under Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Such assessments are required where a project or plan may give rise to significant effects upon a Natura 2000 site. Euromines provided feedback on the draft proposals as required. Also, as the year progressed, it became increasingly clear that a new EU Biodiversity Strategy would be delivered as part of the European Green Deal. With its international partners, Euromines also contributed to preparations for the next Conference of the Parties to the UN Convention on Biological Diversity in 2020.

Opportunities for mining projects to enable Member States to meet EU legal obligations to restore ecosystems or waterways abound in Europe, but such opportunities are missed if the Habitats Directive and the European Commission Guidance for minerals extraction are not correctly applied. Working together, stakeholders in a region can ensure the balance of social and conservation needs are considered and co-benefits are identified to address long-term pressures on biodiversity. Euromines members have suggested that EU funding of Member States' Natura 2000 sites should be conditional upon implementation of the Commission's vision for compatible land-uses and its various pieces of sector [guidance](#) (e.g., non-energy extractives, ports, aquaculture, wind-power etc).





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