



Care
Adaptation
Responsibility
Engagement

Annual Report 2018

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Colours

Some months ago my young daughters asked me if the world was black and white when I was their age. This delicious question is equally apposite today. I grew up with "town gas" leaded gasoline, coal fires, widespread tobacco smoking and many, many blackened landmark buildings. Today, we are again on the cusp of new and major changes to the way we live in Europe.

Yes, the Electric Vehicle age is dawning but the whole story is much more than cars. To build a sustainable future in a decarbonised world we need the materials that Euromines members produce. To build batteries yes, but to build the transmission and distribution networks to allow homes to be heated and cooled, cars driven, energy stored in new ways and places. But we must do that in a sustainable way.

European mining is environmentally sustainable and Euromines is committed to contribute substantially to climate change mitigation.

European mining companies not only continuously explore methods of decarbonisation in order to fulfil the increasing demand for resources effectively and efficiently, they also enable other economic activities to improve their own environmental performance.

European miners are already reducing mining-related emissions and have embraced the future

already by investing in their own alternative electricity generation and supply or switching to 100% renewable energy sources. Most major mines in Europe are currently heavily investing in electrification and remote operations.

Other contributions include the use of both conventional and technological innovations to improve energy recovery and saving. Together with downstream industries, our industry is investing in new and exciting research to develop raw material feeds that will allow reduction in carbon.

Euromines works closely with EU institutions and other industries and stakeholders toward these shared goals. Responsible engagement towards a sustainable future is the only option we have if we are to change successfully.

Last November's Raw Materials Week in Brussels saw the new edition of the Raw Materials Scoreboard. The scoreboard's purpose is to provide useful data in the raw materials policy context. It presents relevant and reliable information that can be used by a variety of stakeholders and includes five thematic chapters covering 26 indicators. It illustrates where the policy debate is trying to achieve and we must be part of it, we have no other choice.



I commend this Annual Review to you. Europe must lead the way.

Mark Rachovides, President

Euromines in Brief

Who we are

Euromines is the recognised representative of the European metals and minerals mining 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 mining 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.

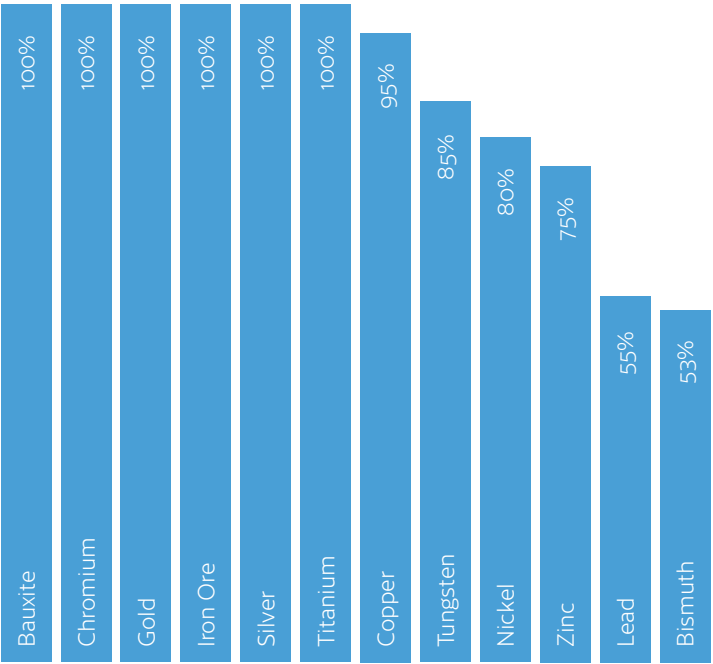
Why we do it

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.

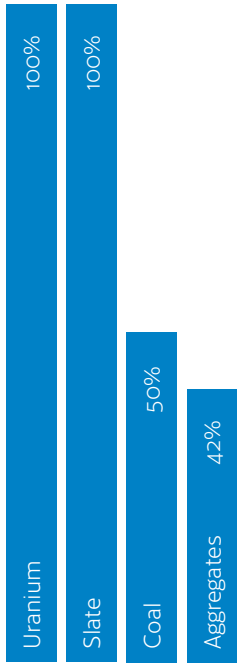
|| Our vision is a viable and responsible European raw materials industry, which provides the essential economic, social and environmental assets for society's sustainable development.

Euromines Representativity graph

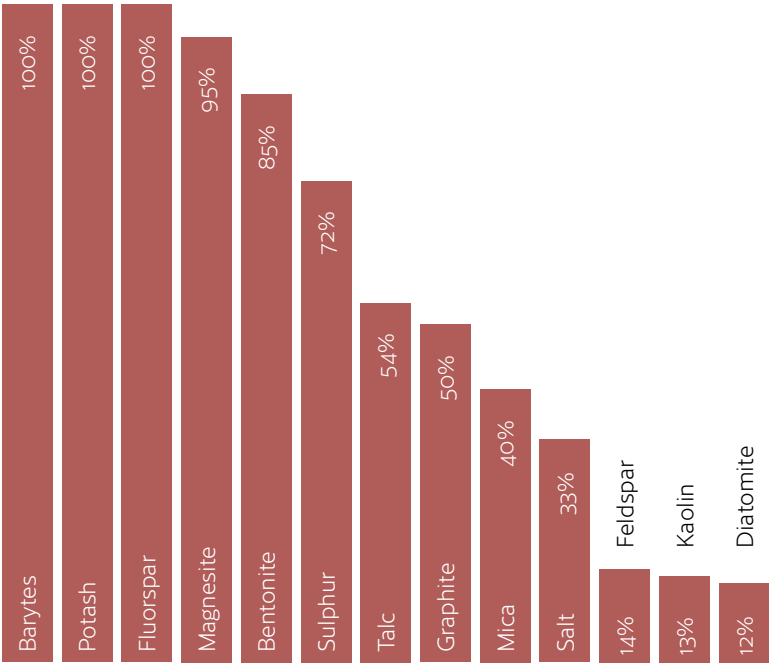
Euromines Representativity in Metals Mining
in % of EU production



Euromines Representativity in other Minerals
in % of EU production



Euromines Representativity in Industrial Minerals
in % of EU production



Euromines Vision & Mission

Vision for European mineral raw materials industry

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

Mission

- To promote a sustainable and prosperous European raw materials industry in Europe through operational excellence;
- To serve as a network for cooperation and for the exchange of information throughout the sector;
- To foster contacts with the mining community internationally to achieve its objectives;
- To participate in European and international policy-making.

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

Member– Eldorado Gold Corporation

Jani Lösönen

Member – Agnico Eagle Finland OY

Stefan Romedahl

Member – Boliden AB

Carlos Saavedra Gonzalez

Member- ICL Group – Iberia

Mikael Schauman

Member – Lundin Mining

Radosław Żydok

Member – KGHM Polska Miedź S.A.

Ex officio:

Dr. Corina Hebestreit

Euromines

Euromines team

Dr. Corina Hebestreit

Director

Johannes Drielsma

Deputy Director

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

CARE



The EU mineral raw materials industry is committed to continuously improving its performance, following the highest environmental and social standards. Responsible care has long been known as a feature of the chemicals industry, but it has also been a long-standing practice in the mineral raw materials industry. Health & Safety, for example, is an absolute priority for the sector as it concerns the well-being of its employees and communities. The sector strives for continuous improvements in this area. Mining companies are making continuous strides in improving working conditions through digitalisation and automation and removing its workforce from dangerous situations and exposure to hazardous substances.

In 2018 the sector organisation and its members therefore engaged in a number of activities and projects:

On the one hand, Euromines was involved in the Social Dialogue Committee on the extractive industries (SSDCEI) to discuss issues of concern with the European social partners. Equally, it engaged actively in the sector specific tri-partite Health and Safety working group (SWPEI) where it has held the position of rapporteur since 2016. Both working groups followed the legislative proposals actively such as the inclusion of respirable crystalline silica and diesel engine emissions in the Carcinogens Directive.

Standing Working Party on Extractive Industries

The Advisory Committee for Safety and Health at Work (ACSH) assists the Commission in the preparation, implementation and evaluation of activities in the field of occupational safety and health (OSH) and facilitates cooperation between national administrations, trade unions and employers' organisations. A number of Working Parties (WPs) are working under the Advisory Committee on Safety and Health. The Standing Working Party on Extractive Industries (SWPEI), established by the Council, deals with specific technical issues of the extractive sector. In December 2018, the mandate of SWPEI was renewed for years 2019-2021. Dr. Corina Hebestreit was the rapporteur of the SWPEI.

II The Standing Working Party on Extractive Industries (SWPEI) deals with specific technical issues of the extractive sector.

Euromines' active participation in the EU legislative process resulted in obtaining a 5 years transitional period for implementing the new Diesel Exhaust Emissions (DEE) limit value, allowing the sector to adapt its machinery and further optimising processes aiming at DEE exposure reduction.

With the active support of Euromines (NEPSI signatory) and its members, the 2018 NEPSI reporting was concluded with an overall progress and the NEPSI agreement was recognised in the updated Carcinogens Directive as a model for effective employer employee cooperation on managing risks to worker health.

Euromines held internal workshops to address monitoring, assessment and evaluation of health and safety issues as well as exchange of best practice.

Parallel to this, Euromines actively contributed to the EU funded Horizon 2020 project VERAM in establishing a roadmap for the sector till 2050, which of course also included goals and ambitions in the area of health and safety and related technological improvements.

II Health & Safety is an absolute priority for the sector as it concerns the well-being of its employees and communities.

Updating of the EU's Carcinogens and Mutagens Directive

Diesel Exhaust Emissions

In October 2018, the European Parliament and Council came to an agreement on the Commission's second wave proposal to revise the Carcinogens Directive. Eight additional cancer-causing chemicals were covered by the Carcinogens and Mutagens Directive, including diesel engine exhaust emissions, which, given the large number of heavy diesel machines in operation in mines and quarries, was of relevance. In general, the limit value for DEEE was set for 0,05 mg/m³ (measured as elemental carbon) to apply 2 years after the end of the transposition period.

The sector obtained an extended implementation period due to a number of factors, including:

- Lack of reliable measurement techniques underground,
- Lack of machinery of required types and numbers,
- Specific mining conditions of roadways underground, which cannot be serviced with existing electric machinery in the medium time horizon,
- The investments required to exchange whole fleets for underground mining and tunnel construction.

The limit value shall apply 5 years after the end of the transposition period, which gives the sector a total of 7 years (February 2026) to upgrade and replace its fleet.

Respirable Crystalline Silica

Exposure to respirable crystalline silica has long been monitored and managed in the sector where the presence of quartz in the mineral deposits leads to occupational exposure when processing the minerals.

In 2018, respirable crystalline silica dust was added to Annex I of the Carcinogens Directive: Work involving exposure to respirable crystalline silica dust generated by a work process with the limit value of 0.1 mg/m³. Member States have now until 17 January 2020 to transpose the new rules into national laws. The Commission will, as part of a future evaluation of the implementation of the Directive (New Article 18a), assess modifying the limit value for respirable crystalline silica dust and, if appropriate, propose the necessary amendments at a later stage.

Years ago (25th April 2006), an industrial alliance (NEPSI) was created to monitor and reduce exposure through best practice. NEPSI signatories, who include Euromines, are pleased with the recognition of the NEPSI alliance as an instrument to complement regulatory measures for effective employer-employee cooperation on managing occupational health risks.

In 2018, the bi-partite NEPSI Council again conducted its reporting of quantitative data that allow the partners to monitor the state of application of the original agreement. The results of the reporting exercise were presented

in 2018 in an excellent summary report which reflected an increase in reported sites by 20%, and 85% of the sites actually provided their KPIs, which is a major improvement compared to 2016. Encouraged by the successes of NEPSI, the signatories have agreed on a 5-year roadmap starting from 2018 to further develop the Agreement.

II The Commission might, as part of a future evaluation of the implementation of the Directive, assess modifying the limit value for respirable crystalline silica dust and propose the necessary amendments at a later stage.

Exposure to Chemicals: EU Reach Registration Deadline 2018

The last registration deadline for small tonnages of existing chemicals being placed on the EU market under the EU Chemicals Policy was 31 May 2018. This deadline concerned companies that manufacture or import substances in low volumes, between 1-100 tonnes a year. REACH aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals.

One of the main reasons for developing and adopting the REACH Regulation was that a large number of substances have been manufactured and placed on the market in Europe for many years, sometimes in very high amounts, and yet there was insufficient information on the risks that they pose to human health and the environment. Most naturally occurring minerals were exempted from the registration exercise from the very beginning, however, some substances, having undergone some treatment, did require registration. Euromines accompanied two groups of producers and managed their consortia, their technical dossiers and the data management with fellow registrants: the Magnesium Hydroxide Consortium and Calcium Carbide Consortium, the latter could factually be dissolved in 2018.

Caring for communities: the EU's MIREU project for greater cooperation between Mining and Metallurgy Regions

MIREU aims to create a 'bottom-up' climate for improved acceptance of the extractive industries. Although certain decisions are made at "high-level", the actual mining and processing takes place in the regions, and it is also the regions that must carry the impact and, in consequence, the ones that should profit from it. The primary goal of MIREU is to engage stakeholders at all levels - the policy makers at the EU Commission, national governments, regional authorities, and the general public at the local level - in order to initiate and further enhance the cooperation and discussion across all levels.

The MIREU network also supports regions in maintaining and initiating extractive activities as part of their business plan for sustained and enhanced development. The vision is to foster synergies that benefit the EU mining and metallurgy sector as a whole by promoting investment, innovation and growth in the sector. With MIREU we are sending a stronger unified message to represent the mining and metallurgy industry from the perspective of the regions, who recognise the extractive industries not only as important to their own development but also to meet the raw materials needs of Europe.

In October 2018, the MIREU project organised a workshop focusing on 'SLO and Regional Development Perspectives' in Leoben, Austria, as the second in a series of three Social License to Operate workshops that explore the concept of SLO and the linkages between SLO and regional development. The objectives of the workshop were twofold; on the one hand, the aim was to exchange best practices and learn from other participating regions, while, on the other hand, insights into the SLO guidelines and toolbox as future parts of the MIREU project were gathered.

Euromines is part of the advisory board of this project and tries to support the regions with relevant information about the sector.

|| *The vision is to foster synergies that benefit the EU mining and metallurgy sector as a whole by promoting investment, innovation and growth in the sector.*

ADAPTATION



Adapting to new challenges is a continuous feature of the minerals industry. Not one deposit is like another, not one geological formation is the same, not one mine or quarry is identical to another. Equally, markets and customer and technological demands are continuously changing, and with the change in human understanding of our earth, every industry needs to adapt.

With the current challenge of shifting to societies with lower-carbon emission, raw material companies need to explore methods of decarbonisation in order to still efficiently and effectively match the continued increasing demand for resources. Raw materials will remain the fundamental and critical physical component to building a future sustainable society that, in order to ensure the well-being of an ever growing population of humans, will have to heavily rely on new infrastructures as well as new, greener “roofs over our heads”.

Halting climate change is a challenge to all, and in many ways, the mineral raw materials industry has to be at the forefront of sustainability – limiting the impact of its operations and investing in new technologies aimed at increasing energy efficiency, but also providing products that can assist the downstream value chains and the consumer to leverage improvements.

Clean Energy and Climate for All Communication Package

Despite improvements, adaptation to better performance and step-changes will have to continue. On 30th November 2017, the European Commission published its “Clean Energy for All Europeans package” focusing on the following themes:

- (1) Putting energy efficiency first;
- (2) Achieving global leadership in renewable energies;
- (3) Providing a fair deal for consumers.

Each of these categories outlines the main aims and elements of the Commission's proposals on: (a) energy efficiency; (b) energy performance of buildings; (c) renewable energy; (d) revision of the Agency for the Cooperation of Energy Regulators; (e) security of electricity supply; (f) governance of the Energy Union; (g) electricity market design.

In this context, in 2018, the EC concentrated its efforts around the following topics:

- The adoption in early 2018 of the reform of the post-2020 Emissions Trading System;
- Achieving the objectives of the Paris Agreement with the adoption of the Energy Union and Climate Action Governance Regulation in December 2018.
- Ambitious targets for renewable energy and energy efficiency for 2030, acting as a solid foundation for the EU to achieve a climate neutral economy by 2050.
- Strengthening the internal energy market in order to ensure secure, sustainable, competitive and affordable energy.
- Shifting to an international outlook, the Energy Union has allowed the EU to act as a global player and take the lead on climate action.

II Halting climate change is a challenge to all, and in many ways, the mineral raw materials industry has to be at the forefront of sustainability.

The Emissions Trading System (ETS) - phase IV: 2021-2030

The ETS Directive (EU) 2018/410 amending Directive 2003/87/EC entered into force on 8 April. It was published in the EU Official Journal on 19 March 2018. The Directive, which sets the general framework for 2021-2030, makes the following key changes to the EU Emission Trading System (ETS).

Euromines' ETS-related priorities during the 2021 – 2030 period include:

- Ensuring mining sectors are included in the Carbon Leakage List (CLL) 2021 – 2030 and are eligible to receive free allowances for their direct CO₂ emission.
- Increasing as much as possible the number of free allowances received for direct CO₂ emissions.
- Ensuring indirect costs compensation for the indirect CO₂ emissions incurred as part of the electricity prices.

Safeguarding the competitiveness of European industries in this context on the world market is a challenge for industry and policymakers/legislators alike. 2018 saw major efforts in this area with Euromines on behalf of its members providing substantial input into the discussions of the EU ETS so-called “carbon leakage list”. Following involvement and input provided to the Commission's expert group on climate change, all of the metals and minerals represented by Euromines have fulfilled the criteria and have been included on the carbon leakage list. It demonstrated that the world market is

still not a level playing field and that European companies making considerable efforts could easily be marginalised by non-European producers not having to comply with comparable rules.

Regulation on the Free Allocation Rules

Commission Delegated Regulation (EU) 2019/331 revising EU rules for free allocation of emission allowances in Phase 4 (2021-2030) of the EU Emissions Trading System (EU ETS) was elaborated, negotiated and adopted in 2018 and entered into force on 28 February 2019.

The measure sets out rules on how transitional free allocation of emission allowances should take place between 2021 and 2030. It includes provisions on the monitoring, reporting and verification of data in order to determine the level of free allocation at installation level, and to provide data to determine the 54 benchmark values that applies for the period of 2021-2030.

Following Euromines involvement and input provided to the Commission's expert group on climate change, the two main objectives of keeping the highest possible level of allocation as well as a free allocation factor for process emissions at 0.97 have been achieved.



A Climate-Neutral Europe by 2050

On 28 November 2018, the Commission presented its strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050 – A Clean Planet for All. The strategy shows how Europe can lead the way to climate neutrality by investing into realistic technological solutions, empowering citizens, and aligning action in key areas such as industrial policy, finance, or research – while ensuring social fairness for a just transition. It will build on the new energy policy framework established under the Clean Energy for All Europeans package.

The purpose of this long-term strategy is not to

set targets, but to create a vision and sense of direction, plan for it, and inspire as well as enable stakeholders, researchers, entrepreneurs and citizens alike to develop new and innovative industries, businesses and associated jobs. It looks into the portfolio of options available for Member States, business and citizens, and how these can contribute to the modernisation of our economy and improve the quality of life of Europeans. The long-term strategy also seeks to ensure that this transition is socially fair and enhances the competitiveness of EU economy and industry on global markets, securing high quality jobs and sustainable growth in Europe, while also helping address other environmental

challenges, such as air quality or biodiversity loss.

Raw materials are seen as a key driver of the above-mentioned strategy. In past years the mineral raw materials industry has radically progressed in productivity and energy efficiency and is still implementing new solutions aiming at further reducing the energy consumption/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.

Circular Economy

The EU Circular Economy policy is focussed on maintaining the value of resources rather than necessarily reducing their use; it explicitly acknowledges the important role that primary raw materials will continue to play; and is structured to reflect the different needs and capacities of sectors when it comes to resource use, waste generation and waste management. The transition to an even more circular economy will increase the critical need for a sustainable and secure supply of non-energy raw materials.

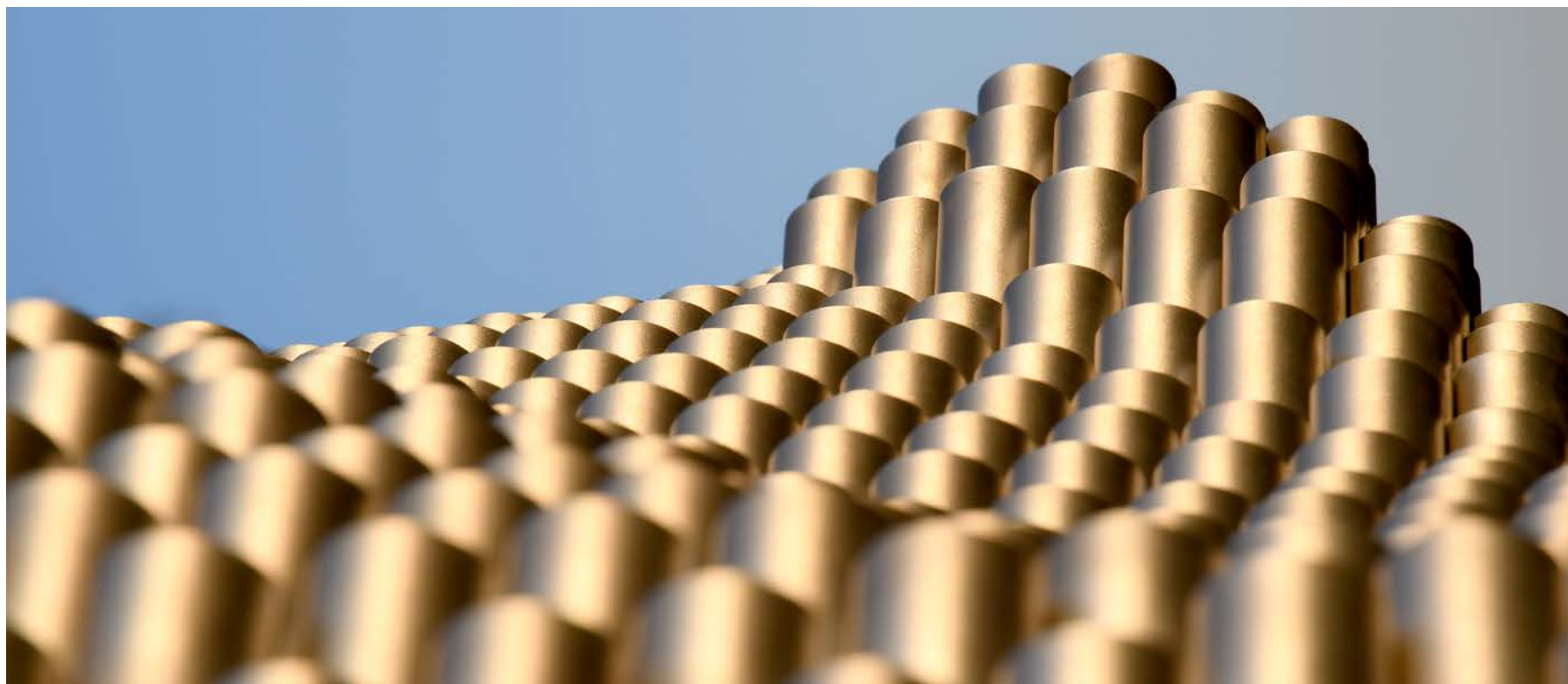


Product Environmental Footprint and its place in EU product policy

The European non-ferrous metals industry produces and recycles strategic and valuable metals for transport, buildings, packaging, electronics, batteries and other applications. As of 2013, Euromines was actively engaged in the European Commission's Environmental Footprint Pilot Phase by developing the 'Product Environmental Footprint Category Rules (PEFCR) for Metal Sheets in Various Applications'. We are also looking forward to being an active stakeholder during the so-

called Environmental Footprint (EF) Transition Phase (2019 – 2021): a process that will focus on further improving the EF methodology and defining its place in the EU's product policy. We are aware that the European Commission is evaluating the potential of including EF methods to support the implementation of future policy initiatives; for example the Action Plan on Sustainable Finance and its taxonomy part. There is a potential for EF methodologies to be used in other future policies on products and

their lifecycle assessment, which is why it was very important that, under the leadership of Euromines, the Resource Use impact category of the EF methodologies was modified and then, with financial support from ICMM, updated in 2018. Still, Euromines maintains the view that the Resource Use impact category of the European Commission's EF remains inadequate for its stated purpose – to quantify the environmental performance of products or organisations.



EIT Raw Materials: SUPRIM Project

SUPRIM stands for Sustainable Management of Primary Raw Materials through a better approach in Life Cycle Sustainability Assessment. It is a 3 year-funded EIT Raw Materials Project running from April 2017 until December 2019 that offers solutions to address impacts of resource use in sustainability assessments in the raw materials sector.

Whilst sustainable management of raw materials through the product life cycles and the various value chains is now more than ever on the European agenda, this is still largely due to misunderstandings about scarcity of metal and mineral resources within and outside of Europe. These misunderstandings are reflected, for example, in the way that Life Cycle Assessment (LCA) is implemented for the European Commission's Environmental Footprint calculations (see above). Industries as well as academia are therefore continuously trying to improve the methodology to assess the sustainability of products and their use of the materials they are made of.

Not only should LCA allow assessing inputs and outputs in a transparent and scientific way, but it should allow communicating the results in a reasonably comprehensible way.

Resource accessibility, exploration and supply are the starting phases of all product life cycles and are therefore key elements that need to be adequately understood and reflected in the LCA or Environmental Footprint. The SUPRIM project is about enhancing the existing methodology and ensuring exactly that. Euromines' role is to develop the communication strategy, organise the workshops and provide industry advice for development of the methodologies.

On the 11th December 2018, a second SUPRIM workshop was organised in Brussels. This industrial stakeholder workshop was a unique opportunity for the industry to contribute to the discussion on LCA methodology, establishing a better agreement of the problem definition, and assisting to develop an amended Life Cycle Impact Assessment (LCIA) method.

SUPRIM Workshop, Brussels, 11th December 2018



RESPONSIBILITY



Since time immemorial, in addition to adaptive management of sources and consumption of energy, mining has primarily been about cost-efficient handling of land, water and waste. Now, in modern times, we all expect mining companies to exercise value-adding and responsible management practices in accordance with what we often call a Social Licence to Operate (SLO). By increasing mineral domestic production, Europe becomes less dependent and improves its sustainable supply chain. Europe has rich mineral resources which can be sustainably mined. In 2018, Euromines' Environment Committee engaged primarily with the European Union's efforts to create a more Circular Economy (see above); ensure best practice management of mining wastes; and reform the regulatory component of SLO - environmental permitting:

BAT document for the Management of Waste from the Extractive Industries

The European Commission has now finalised the Best Available Techniques document for the Management of Waste from the Extractive Industries, in accordance with Directive 2006/21/EC, abbreviated as MWEI BREF. This document is a review of the Reference Document for Management of Tailings and Waste-Rock in Mining Activities (MTWR BREF), which was drafted in 2004 and adopted in 2009. This review is

the result of an exchange of information among experts from EU Member States, industries concerned, non-governmental organisations promoting environmental protection and the European Commission. The reviewed document presents updated data and information on the management of waste from extractive industries, including information on BAT and associated monitoring. It is published by the European Commission pursuant to Article 21(3) of Directive 2006/21/EC on the management of waste from extractive industries.

Elaboration of technical guidelines for the inspection of extractive waste facilities

As has most recently been seen in other parts of the world, tailings dam failures present a significant social, environmental, economic and reputational risk for mining companies, the broader industry and downstream communities. The European Commission confirmed in its implementation report of 2016 that EU Member States have adopted the measures needed to implement the Extractive Waste Directive (2006/21/EC), but that development by the European Commission and Member States of technical guidelines for inspections was still to be completed. The European Commission committed in that report to adopting mining-specific guidelines on inspections of extractive waste facilities as required by the law in 2018. The content

of these guidelines shall address inspections by the competent authority in accordance with the EWD and their drafting, offering an opportunity to ensure that our authorities apply the appropriate skills to strengthening the application of good practice tailings storage facility management by Euromines members across the life of their mines. Euromines supports a strong inspections regime ensuring full compliance with Directive 2006/21/EC and has consistently called upon the European Commission to adopt sector specific guidelines for inspections in accordance with Article 17 of that Directive. The Commission and Member States are expected to adopt the technical guidelines through the course of 2019.

Study supporting the elaboration of guidance on best practices in the extractive waste management plans

Since the entry into force of the Directive 2006/21/EC (Extractive Waste Directive) on 1 May 2008, extractive waste facility operators have had to submit Extractive Waste Management Plans (EWMPs) as part of their permit applications. However, the Directive also set a number of different transposition deadlines for Member States to observe, and the latest set of implementation reports from the Member States (due in February 2018) is the first to be prepared after the deadline for all activities to be reported. The European

Commission therefore commissioned a study to support the identification of practices described in Euromines members' EWMPs that contribute to a Circular Economy. The resulting guidance document focuses on the prevention or reduction of mine waste production and its harmfulness; and the recovery of mine waste by means of recycling, reusing or reclaiming such waste. Euromines contributed through a stakeholder workshop and written review of the draft guidance in the autumn of 2018.

In 2018 Euromines under the leadership of VITO and together with other partners was awarded a contract by DG Environment that will foster the implementation of the EU Mine Waste directive and its provision. This provides an excellent opportunity to review the various provisions of the directive and to compare and discuss the national specificities with the national authorities in charge of the implementation on the one hand and inconsistencies and practicalities with operators on the other

hand. The project will run for 24 months and conclude in 2020.



Permitting Issues

Study program on an improved analytical method for the monitoring of natural background concentrations of free cyanide in surface waters

A quadripartite study program whose main objective was the developing of an improved analytical method for the monitoring of natural background concentrations of free cyanide in surface waters was finalised by Fraunhofer IME on behalf of the joint industry consortium including CONCAWE, CEFIC, Eurofer and Euromines in July 2018.

Until July 2018 there was no reliable information on the background levels of free cyanide in surface waters. When trying to assess whether free cyanide poses a significant EU-wide risk to surface water bodies, free cyanide has not been differentiated or assessed separately from “total” cyanide, which includes sequestered and thus relatively harmless cyanide species. Additionally, no analytical method has been efficiently implemented to ensure the measurement of free-cyanide at the suspected risk concentrations.

In this context, the above-mentioned project aimed at the development of a sufficiently sensitive analytical method to measure free cyanide in low concentrations expected in natural surface waters and at gathering data about the free cyanide natural background concentrations and their influencing factors.

Following the conclusion of the Study, a sufficiently sensitive analytical method was developed – a meth-

od able to detect very low natural background levels of free cyanide in freshwater. The method was presented by Euromines and Fraunhofer to the member states and the European Commission, which recommended its use in future water testing.

Water Framework Directive

Throughout 2018, Euromines participated in the Common Implementation Strategy of the European Commission and Member States for the Water Framework Directive.

The main objectives within Euromines were related to the revision and formulation of a consensus position on the Water Framework Directive. Special focus was given to the legal consequences of the Weser ruling court case. Interaction with Euromines members took place during several Water Task Force meetings and telecommunications. Even more, together with other industrial alliances and Business Europe, joint statements were prepared. Answers to the EU Commission's public and targeted consultation were prepared in several iterations, and dialogues were initiated with those members of the Commission that are involved in water issues. Case studies that show difficulties with the WFD at mining projects were gathered from the members. The discussions clarified the problems with the WFD for several sectors and authorities on both EU and MS level.

In parallel, Euromines made a significant contribution to new European Commission guidance on taking account of natural background levels in EU surface waters.

Improving guidance and ensuring better coherence of Nature Directives with broader socioeconomic objectives

The EU's domestic supply of raw materials is currently very limited despite a good mineral potential in the EU. Even in the EU's biggest mining nation, no new mines have been opened in the last decade due to long delays in permitting procedures. At the same time, Europe is not on track to meet its overall target of halting biodiversity loss by 2020, even though some more specific targets are being met. A European Commission evaluation of the Nature Directives concluded in 2017 that they were fit for purpose and that it would address governance and cooperation among different parts of the Member State administrations in charge of permitting for mining mineral resources; and identify best practices on investment for non-energy mineral supply operations, in order to complement the existing guidance on non-energy European raw materials industry. During 2018, Euromines contributed to the related review of methodological guidance to Article 6§3 & 6§4 of the Habitats Directive, which should be brought more into line with the provisions of the Directive itself, and more clearly reference the European Court of Justice Rulings justifying interpretive statements made in the guidance.

ENGAGEMENT



Minerals and metals represent the basis for our lives and any industrial production process. They provide everyday products and new solutions for modern infrastructure and technologies. In 2018, the European mining industry actively engaged in promoting society's recognition that access to and use of mineral resources is essential to sustainable development for present and future generations. Whether through its publications (Book Before it's yours we mine it: Industry 4.0, newsletters), organisation of events (workshops, international conferences etc.) or through an active participation in industry alliances (Industry4EU, Battery Alliance), European Commission Working Groups (Climate Change, High Level Energy Intensive) and European projects (Veram), Euromines continued promoting the industry as an innovative, modern, environmentally friendly contributor to sustainable development.

Book Before it's yours we mine it: Industry 4.0

Virtually every single thing society consumes ultimately derives from a mine somewhere on earth. Without these raw materials, European citizens would be forced into lives that resemble our ancient ancestors more than the modern world. Not only do metals and minerals permeate our daily lives, but they also provide the material base for many other European business and industrial sectors, including both basic service and high-tech sectors.

Our first book, Before it's Yours, We Mine it, informed readers about raw materials and the mining sector, highlighting their critical roles in our daily lives. Now, Before it's yours we mine it: Industry 4.0 delves deeper into these roles, ex-

ploring the role of raw materials in our daily lives as well as how mining has shaped European history and present society, with a special emphasis on how Industry 4.0 is revolutionising the mining world.



Bulgarian Presidency Conference

The European Mining Business Forum was held on 18th of May 2018 in Sofia, Bulgaria. It is an event that was organised at the initiative of the Bulgarian Mining Chamber from 2010 onwards. It is a unique event in Bulgaria. Partners in organising the EMBF were the Ministry of Energy of the Republic of Bulgaria and Euromines. Patron of the event traditionally is the Minister of Economy and Energy of the Republic of Bulgaria. So far four successful editions of the EMBF have been conducted with nearly 900 participants from more than fifteen European countries. Speakers at the Forum included senior representatives of the European and national institutions responsible for the industry, prominent experts, scholars and heads of leading companies from the sector.



Austrian Presidency Conference

Automated cars, SMART technology, Internet of Things – the technological revolution will bring about a whole new range of products and innovative services in the coming decades. These developments will also have a significant impact on the added value of the mineral raw materials industry and its downstream branches. That is why the European raw materials initiative, EUMICON, in partnership with the Federal Ministry of Sustainability and Tourism of the Republic of Austria, organised an international raw materials conference in Vienna in autumn 2018, within the scope of the Austrian EU Council Presidency.

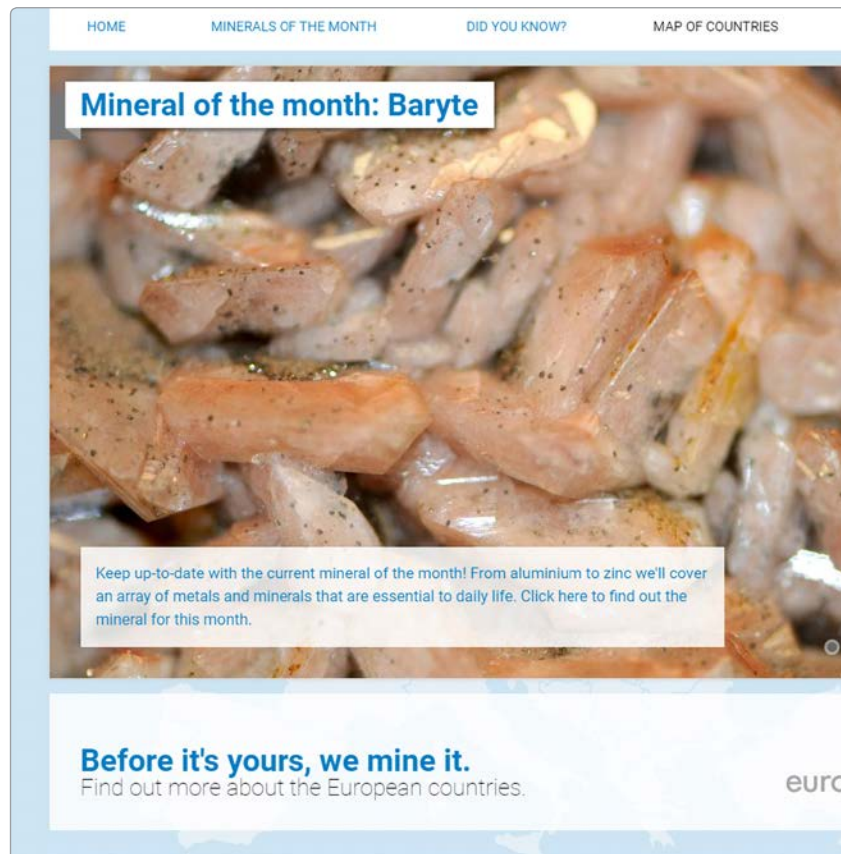
On 26-27 September 2018, more than 400 participants from more than 30 nations met at the 2018 EUMICON Conference in Vienna in the framework of Austria's EU Presidency. 60 top speakers from the industry, politics and science discussed the mega-trends digitalisation and energy transition that require the use of mineral resources, change entire value creation chains and affect downstream areas of the economy. The Raw Materials Charter with its four focal topics: Access & Trade, Skills & Employment, Energy & Climate and Technology & Innovation, which was presented in the Conference's framework, is a fundamental backbone of a competitive raw materials industry 'Made in Europe'.



Engagement with the general public

Eumining.org

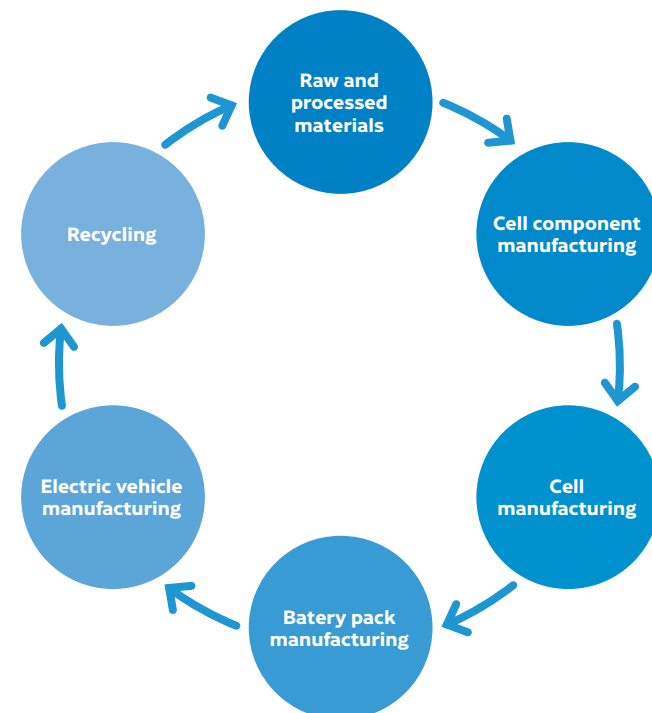
In addition to the main Euromines.org website, EUmining.org was launched to help improve the image of the mining industry and draw clear connections between the raw materials mined in the EU and the products and infrastructure where they go downstream the value chain. It is highly visual and written in a conversational manner that is more easily readable and appealing to the general public.



Engagement with the downstream industry

European Battery Alliance

For Europe, battery production is a strategic imperative for clean energy transition and the competitiveness of its automotive sector. Moreover, the Commission's 'New Industrial Policy Strategy' goal is to make the EU the world leader in innovation, digitisation and decarbonisation. One of the strategic actions of the alliance is to secure access to raw materials for batteries from resource-rich countries outside the EU and facilitate access to European sources of raw materials, as well as access secondary raw materials by recycling in a circular economy of batteries. Euromines has the observer position in the alliance and is also actively involved in the works through its members.



Sustainable supply of raw materials within the EU

The EU is dependent on the imports of many raw materials. Even though the potential for mining and quarrying in Europe is strong, the land area available for extraction is constantly decreasing.

EU Raw Materials Week

The third edition of the Raw Materials Week took place in Brussels from 12 - 16 November 2018. It was a good opportunity for the raw materials community to discuss and exchange on all relevant issues: policy, technology, international cooperation, framework conditions, etc.

About 800 people attended 12 core events and many side meetings during the week commencing November 12. The industry was represented as were our customers, service providers, financiers, academia, research bodies, EU Institutions and numerous governments.

|| Even though the potential for mining and quarrying in Europe is strong, the land area available for extraction is constantly decreasing.



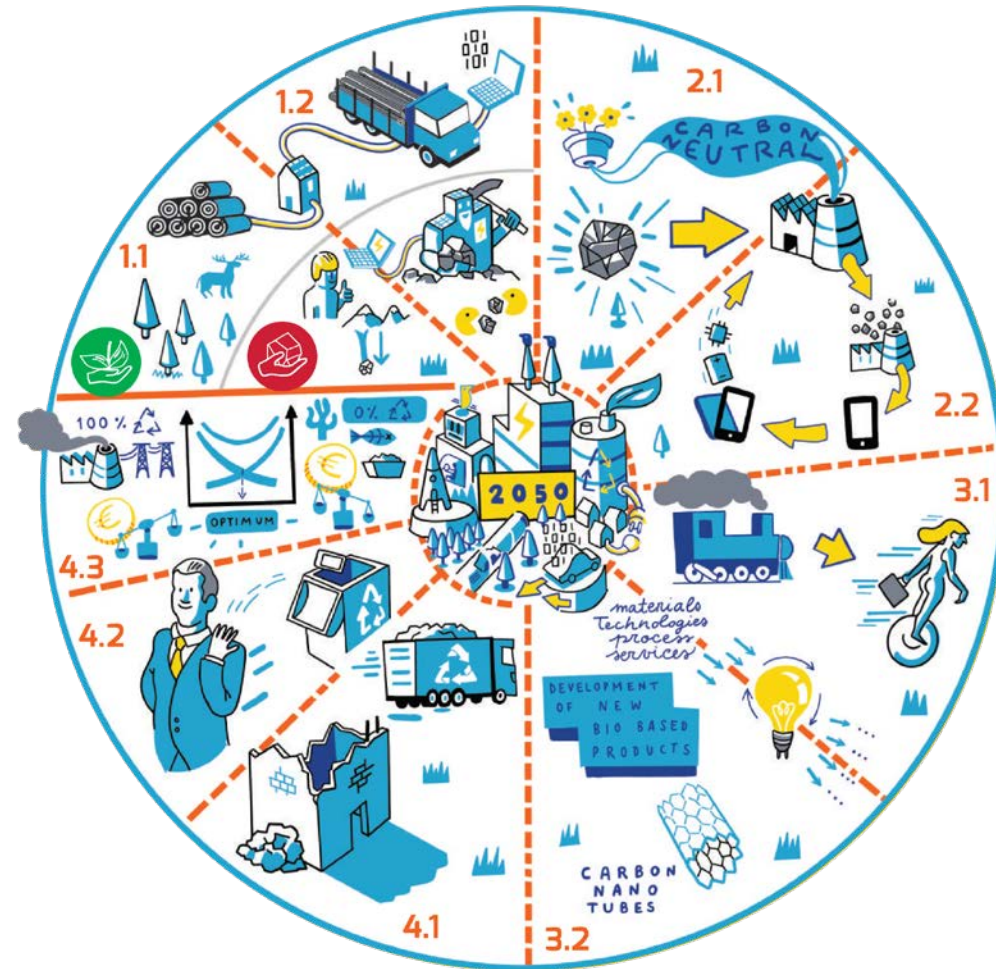
VERAM Project

On 17 April 2018, the final conference of the VERAM project marked the dissemination of a common Research and Innovation Roadmap 2050, jointly developed by the European raw material-related sectors. With close to 180 concrete activities, crosscutting minerals, metals and the biotic raw materials and value chains, it is the only European research and innovation roadmap for 2050 agreed between non-food, non-energy raw material sectors in Europe. The roadmap embraces future trends shaped by digitalisation, sustainability and evolution of consumer behaviour while aiming to boost the European technological leadership, competitiveness of the industry and innovation capacity of the sector.

Spanning over two years, VERAM was a unique coordination project bringing together five European Technology Platforms in the field of raw materials. As the key outcome, the roadmap encompasses the entire raw material value chain from primary raw material exploration, mining, management and harvesting and their transformation through processing or refining, and the valorisation of waste into secondary raw materials to closed loops material flows and the development of new products and applications.

The roadmap consists of altogether four inter-linked priorities and nine research and innovation areas, including a number of activities that address the key concerns of the raw materials community, as well as society and citizens at large.

The coordinator of the project was the European Technology Platform on Sustainable Mineral Resources, whose president was Dr. Corina Hebestreit.



Engagement outside of Europe

Fair and sustainable access to raw materials on global markets is the first pillar of the EU Raw Materials Initiative. The EU has committed to pursue a Raw Materials Diplomacy, reaching out to third countries through strategic partnerships and policy dialogues.

EU-Latin America Mining & Exploration Convention and Trade Show – METS 2018

On 10-12 April, the first Ever EU-Latin America Mining & Exploration Convention and Trade Show (METS 2018) took place in Madrid, Spain. METS 2018 was part of the EU-Latin America

Mineral Development Network Platform (MDNP) project, which aims to boost a continuous and structured cooperation between the EU and Latin America, strengthening the dialogue, promoting top-notch technologies, tightening business, institutional and academic ties and opening new business perspectives, leading to win-win situations between the two strategic partners. As one of the project partners for the MDNP, Euromines was one of the main organisers of METS 2018.

METS 2018 provided an opportunity for EU and Latin American stakeholders to meet in person to further realise the vision of a mutually ben-

eficial and continuous cooperation in mining and all related sectors. The conference featured speakers who are at the forefront of the non-energy European raw materials industry, including experts in fields such as technology, consulting services, infrastructure, investment, trade, training and skills, health and safety, good governance and other relevant areas of the mining value chain. The corresponding trade show provided the opportunities for partners to gather first-hand information and promote their technologies, companies and organisations.



EU-Canada Mineral Cooperation

This project's objective was to assess the form and feasibility of structured cooperation that will serve to promote two-way investment and stronger business ties between the European Union (EU) and Canada across the non-energy European raw materials industry. In order to be successful, the Cooperation addressed all components of the mining value chain, including exploration, mining, equipment manufacturing, mining services, mining technology, governance and others. The project also developed an operational network to build a future self-sustainable platform.

The EU-Canada Mineral Cooperation was present at the 2018 PDAC Event which attracted 25,000 visitors. It held the Mineral Investment Seminar on the impacts and benefits of upcoming CETA legislation for the mining sector and it was present at the EU PDAC Booth.

In March 2018 the paper on CETA and the NEEI Benefits and Opportunities was published. The Canada-European Union (EU) Comprehensive Economic and Trade Agreement (CETA) is a free-trade agreement between Canada, the EU, and its Member States. The agreement is designed to boost trade between the EU and Canada and thus create new jobs, facilitate

business operations by abolishing customs duties, streamline goods checks, and eliminating various other restrictions to goods, services, and investments, facilitate mutual recognition of diplomas and regulate investment disputes by creating a new Investment Court System. This paper summarises the commitments made by the EU and Canada under CETA that target increased market access and reduce non-tariff barriers to trade that are relevant to the non-energy extractive industries (NEEI).

Euromines was the adviser in the project and provided the network for EU stakeholders.

Euromines active participation in organisation of these two events served our members that have already invested/are interested in Canada and Latin America:

- Increasing association's reputation,
- Political support for new investments,
- Attracting new members to Euromines (from mining or suppliers site).



Industrial policy & raw materials Industry4Europe

Industry4Europe is a large and unprecedented coalition of organisations dedicated to campaigning for an ambitious EU industrial strategy. With 142 member organisations – particularly industry associations – from across the EU and spanning most sectors of the economy, Industry4Europe is helping to set the vision for the long-term future of the EU's industrial and manufacturing strategy.

Europe is the cradle of the manufacturing industry and has been at the forefront of industrial revolutions and technological innovations. This industry directly employs over 34 million people across all Member States, in supply chains comprising hundreds of SMEs and suppliers. It also indirectly accounts for millions of additional jobs in related sectors.

In January 2018, the report was issued, highlighting what Europe's world-leading manufacturing industry needs to succeed. In April 2018 the coalition presented the joint paper proposing a short list of indicators that can be used to both assess the health of the European industry and monitor the progress made by the EU on the implementation of its industrial strategy. It is crucial for the EU to understand its position within the global market place and, as with above, individual indicators only paint a partial picture. On 14 June, a plenary meeting on EU Industrialisation took place with speakers representing developments on the agenda, and the special focus of industry in the new Multiannual Financial Framework (MFF). In November 2018, the Austrian EU Presidency issued a "Report on Industrial Policy – Governance and Mainstreaming". The report explicitly references the Industry4Europe coalition and takes on board a lot of the coalition recommendations. Notably, it "calls on the next European Commission to appoint a Vice-President dedicated to industrial policy. In December 2018, Industry4Europe presents joint papers at ministerial lunch, messages of the coalition in front of the 28 Ministers of Economy/Industry, European Commission Vice-President Katainen and Commissioner Bienkowska.

Dr. Corina Hebestreit was the co-rapporteur for Skills and Training section. Euromines will continue to align positions with the Industry4Europe coalition and engage in discussions with policy makers.





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