

IMA-Europe Annual Report 2019

Industrial Minerals Europe – your world is made of them

About IMA-Europe

IMA-Europe is an umbrella organisation that brings together a number of European associations specific to individual minerals.

IMA-Europe provides sector-based representation for industrial minerals. The association is particularly focused on providing representation at European Union (EU) institutional level, and coordinates communication with national and international authorities.

IMA-Europe is involved in all non-commercial issues relating to the properties of minerals and their safe use, from extraction and processing through to end-use applications. Health and safety at the workplace, environmental protection, product safety, and awareness about the importance of industrial minerals for society are at the core of IMA-Europe's priorities.

IMA-Europe ensures that the industrial minerals industry at large benefits from the sharing of non-sensitive information, and plays a supporting role in the promotion of best practices.



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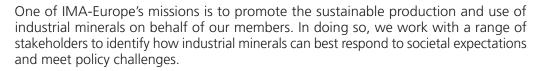
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Foreword

Without industrial minerals, modern life would not be possible. Minerals form the cornerstone of many products and industries: paint, electronics, metal casting, paper, plastics, glass, ceramics, detergents, cosmetics and construction materials, to name just a few. They are used as raw materials and as processing aids, and are increasingly important in environmental engineering.

The European industrial mineral industry makes a vital contribution to the European economy, providing jobs and resources at the start of the industrial supply chain. And unlike other mining sectors,

our industry and its markets are largely self-sufficient in terms of resources and do not rely on imports.



This report provides a brief overview of our sector and the wide range of initiatives we have coordinated or taken part in during 2019. Through projects such as NEPSI, Safe Silica, the Dust Monitoring Programme and Zero Injury Target we have continued to develop tools and gather data that is improving workers' health and safety. At the same time, taking an active part in initiatives such as FineFuture, MinLand and MIREU demonstrate our commitment to the circular economy and responsible land use. This year we also celebrated the seventh edition of European Minerals Day, a project that provides an opportunity for our industry to inform, educate and enthuse European citizens about the importance of the minerals sector.

Looking forward, IMA-Europe is committed to building on these initiatives and delivering real impact for our members, the wider European industrial value chain, and European society as a whole.

Dr Roger Doome

Director General

IMA-Europe

During my third year as President of IMA-Europe, we have continued to strengthen our strong foundations. We are advancing our wide-ranging health and safety projects, have expanded our data collection to assist policymakers better, and have linked with other industries to develop tools and discuss how can we make our industry more sustainable, widely accepted and ready to respond to tomorrow's challenges.



Catherine Delfaux

President IMA-Europe

Catherine Delfaux, CEO Provencale SA, was elected President of IMA-Europe in 2017.

Key facts and figures

Industrial minerals make a very positive contribution to the European economy

250
member companies





750 processing plants



180 million tonnes

of minerals produced per year

42,500 people

employed in 28 European countries (30 million jobs in downstream industries)

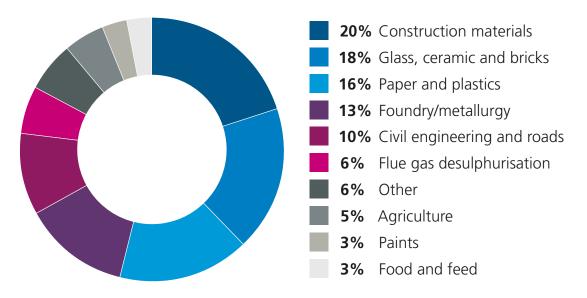


€14 billion

annual contribution to Europe's GDP



Main markets for industrial minerals in Europe

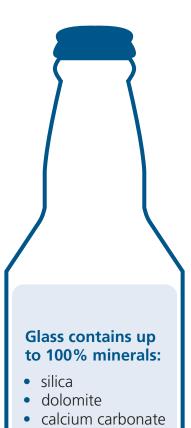


Industrial minerals are also increasingly essential to high-tech sectors through the production of wiring and fibre-optic cables, as well as environmentally friendly products and technologies such as wind turbines and photovoltaic panels.

Industrial minerals:

Your world is made of them

Industrial minerals are remarkably versatile materials – ideal for a wide range of consumer and industrial applications



Paper contains up to 50% minerals:

- calcium carbonate
- talc
- kaolin
- bentonite

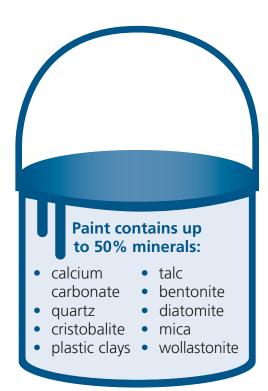
- lime
- feldspar
- borates

Houses

contain up to 150 tonnes of minerals

Ceramics contains up to 100% minerals:

- feldspar
- lime
- clay
- talc
- kaolin
- silica



Cars

contain up to 150kg of minerals





Smartphones contain up to 50% minerals:

- **cover** calcium carbonate, mica and talc
- **battery** calcium carbonate, silica and clays
- reinforced steel silica, andalusite and lime
- glass 47g of silica sand



Health and safety as a core value

No bargaining on health and safety

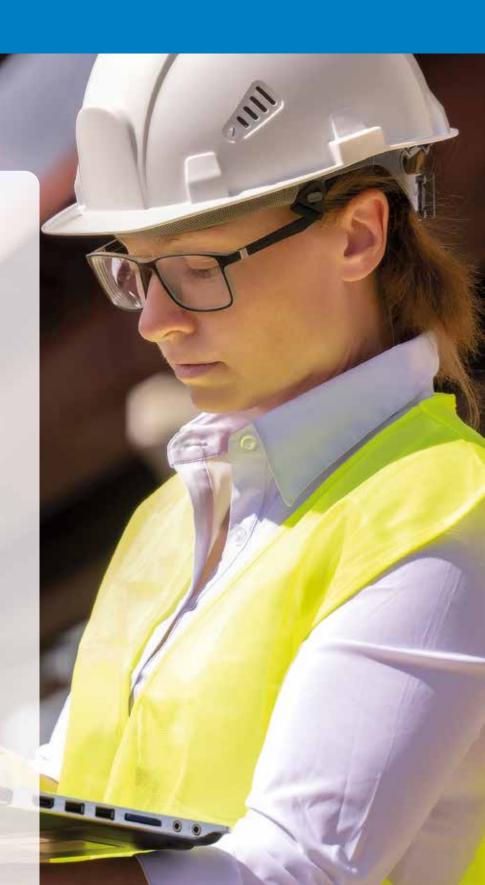
As a sector that represents heavy industry and operates in challenging settings, health and safety is our absolute priority, and for many years our members have agreed that this is an entirely non-competitive sphere.

Our data helps policymakers

Health and safety are not absolutes, and one can never say that they have been totally 'achieved'. Instead, improving health and safety represents an ongoing journey. That is why we share information across the industry and with European Institutions, agencies and national governments to find new and better ways to ensure the health and safety of our workers, customers and communities.

Positive results

The industrial minerals industry has significantly improved health and safety over the past decade. However, we know there is always more to do, which is why we have set ourselves a Zero Injury Target for safety across the industry, and continue to invest heavily in projects to protect workers from occupational health hazards. It is also why as an industry we go beyond legal requirements on health and safety, and continue to develop and implement voluntary codes of conduct to address specific issues.



Safe Silica

Safe Silica is a recent IMA-Europe project designed to enhance awareness of crystalline silica and manage the risks it can pose in industrial workplaces.

Silica is a mineral made up of silicon and oxygen, two of the most common elements on the planet. It exists in several forms, although by far the most common is crystalline silica. Crystalline silica is so abundant that it makes up over 12% of the earth's crust, making it the second-most common mineral on earth.

Crystalline silica comes in the forms of quartz, cristobalite and tridymite. Quartz is the most common of the three, being transformed into cristobalite when heated at high temperatures (over 1.450°C). It is an extremely useful mineral. Crystalline silica is present in thousands of different raw materials and in almost all materials that are quarried, including sand, clays, gravel and metallic ores. It is hard, chemically inert, and has a high melting point: qualities which make it a valuable raw material for many industrial and manufacturing processes.

In everyday contexts, crystalline silica is safe. It is inert, meaning that it does not react with any chemicals, and it is not harmful to health. However, when rocks containing crystalline silica are cut, crushed, ground, drilled or used in similar industrial processes, dust particles are produced. Some of these particles are very fine, and are known as respirable crystalline silica or RCS. If high quantities of this very fine RCS dust are inhaled regularly over many years, the cumulative effects can potentially cause a lung disease known as silicosis, followed in severe cases by lung cancer. That is why the EU has recently updated



the Directive on Carcinogens and Mutagens in the Work-place to implement a legal RCS occupational exposure limit of 0.1 mg/m 3 in industrial workplaces (more commonly written as 100 μ g/m 3).

The only locations where these levels come close to being reached is in the direct vicinity of industrial processes – typically within 1–10 metres. Outside this immediate radius, RCS disperses very rapidly, reducing concentrations to background or near-background levels.

Thankfully, crystalline silica-related diseases can be prevented through the application of good practices in the workplace, ensuring – and going beyond – regulatory compliance. Effective control of those industrial processes also helps to ensure that any release of dust into the surrounding environment is kept to a minimum. The NEPSI Social Dialogue Agreement initiated more than ten years ago by IMA-Europe (see page 6) provides relevant good practices for a large variety of industries.

www.safesilica.eu

Protecting workers' health and preventing diseases such as silicosis is of paramount importance. That is why governments, unions and those industries where RCS dust exposure poses a risk are working to implement measures to protect workers.

NEPSI

NEPSI is the first European multi-sectoral social dialogue agreement of its kind and covers the safety of more than two million employees from 19 industry sectors.

Back in 2006, IMA-Europe brought together a wide range of industrial sectors along with labour unions concerned by occupational exposure to respirable crystalline silica (RCS). Together they founded NEPSI (the European Network on Silica) to implement good practices in the field.

Crystalline silica (SiO₂) is an essential component of many materials with a wide range of uses in industry, and which are vital in many products and objects we use every day. Although ubiquitous in nature, the inhalation of fine dust containing a proportion of crystalline silica may constitute a hazard in certain workplace settings. As such exposure can be controlled, the main industries affected by possible exposure to respirable crystalline silica have agreed appropriate and achievable measures to improve working conditions.

At the cornerstone of the agreement is a risk-assessment procedure to help determine which measures and good practices are required to improve protection for workers. To this end, a set of detailed task sheets corresponding to the specific industrial settings encountered by the signatory industries was drafted and compiled into a good practice guide, annexed to the agreement. This also provides recommendations on dust monitoring, health surveillance and training.



In 2018, information relating to exposure to RCS generated by a work process, was included in the European Carcinogens and Mutagens at Work Directive (Directive 2017/2398) with a binding occupational exposure limit value of 0.1 mg/m³. In the Directive, the European Commission recognises that NEPSI good practices are valuable and necessary instruments to complement regulatory measures, and in particular to support the effective implementation of limit values.

The European Commission has recently granted a substantial budget to update the good practice guide and develop guidance and training tools for new generations of workers, as well as micro- and small enterprises.

www.nepsi.eu

NEPSI is still going strong after 14 years. Its signatories are committed to continuing to implement measures to safely manage respirable crystalline silica, and to ensure full compliance with the Carcinogens and Mutagens Directive and all local regulations.

Dust Monitoring Programme

As with all extractive industries, dust is an issue and must be managed carefully, because if it is not monitored and controlled it can have adverse effects on our workers' health.

Since 2002, IMA-Europe has been collecting exposure data relating to respirable dust and crystalline silica from its members. This has been achieved with the support of a professional occupational exposure institute that is part of Utrecht University. We are proud to say that this now represents the biggest industry exposure database in Europe and probably in the world, with almost 40.000 data points.

IMA-Europe facilitates the sharing of information between companies in a confidential and non-competitive way, in order to reduce dust exposure and improve the conditions



of the workers in our sector. Every two years, IMA-Europe's members meet to discuss the results of the dust monitoring database and share general best practices in occupational health and safety. The dust monitoring programme serves as an excellent example of how the minerals industry embraces health and safety as a core value.





The Dust Monitoring Programme has helped us to consistently decrease exposure levels for the last 17 years, and we are committed to continuing on this improvement path.

Zero Injury Target

Ensuring healthy and safe working conditions for employees is one of the most critical issues for the minerals industry, and the sector has put a significant amount of energy and effort into improving safety at work. Despite this, we still have more to do.

Since 2010, IMA-Europe has implemented the Zero Injury Target strategy based on the following four pillars:

- 1. Obtaining commitments from member company leaders
- 2. Reinforcing data collection across the industry
- 3. Identifying learnings and sharing them across companies
- 4. Organising the IMA-Europe Safety Awards to further embed the culture of safety across our membership base

IMA-Europe accident statistics 2010–2018

Based on lost-time incidents frequency rate (LTIFR)



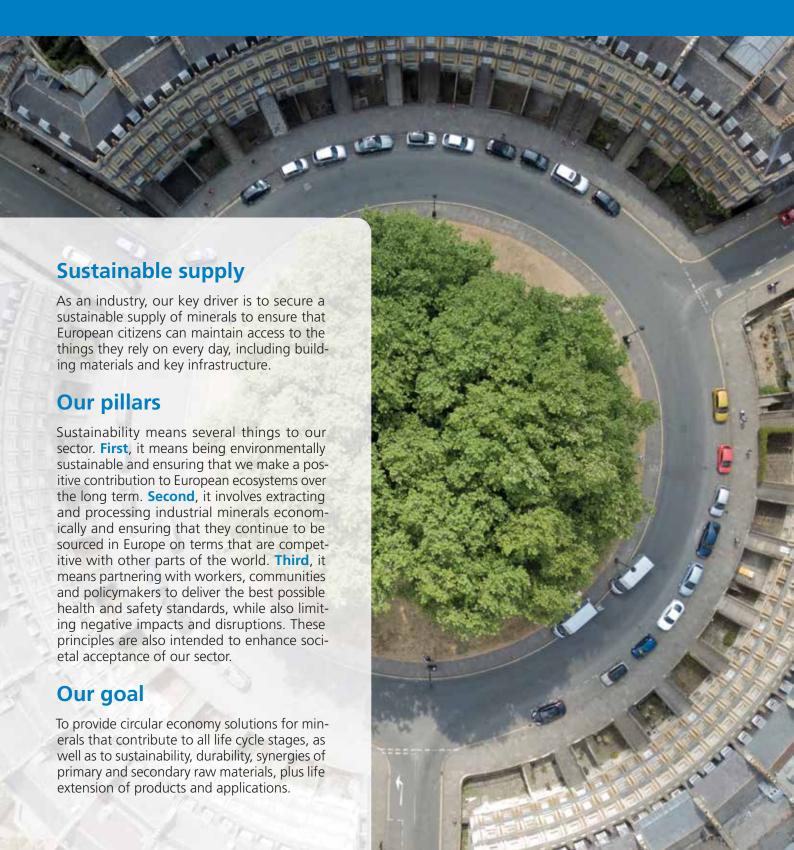


ZERO INJURY TARGET

awareness*prevention*exchange

Since the launch of the strategy, we have witnessed strong positive results, with the numbers of accidents halving over the period 2010–2019. However, this is still too high, and we will continue on the journey by developing and sharing best practices across the sector.

Contributing to resource optimisation and the circular economy



FineFuture

FineFuture aims to increase the supply of critical raw materials (CRMs) in Europe for rapidly developing industrial sectors such as energy storage systems and industrial robotics.

This EU funded project (No. 821265) focuses on creating new scientific knowledge that will enable the development of ground-breaking technologies to exploit fine particle fractions. The key objectives of FineFuture are to:

- Improve the recovery of valuable ultrafine particles in primary and secondary resources.
- Help increase the supply of critical raw materials in Europe, in particular copper, kaolin, nickel, magnesite, phosphorus and rare earth elements.
- Assess technology transfer to other raw material particle-based processes within the circular economy objectives..
- Generate additional value from resources, along with improved competitiveness through much higher energy efficiencies, thereby delivering on multiple United Nations Sustainable Development Goals (SDGs).

FineFuture is a consortium of 16 partners led by HZDR (Germany), and IMA-Europe is in charge of the communication and dissemination work package.

FineFuture

Separating very fine particles is essential in maximising the value of multiple mineral resources including kaolin, magnesite and talc.

www.finefuture-h2020.eu



OECD: Mining Regions and Cities

The OECD has implemented a global project on Mining Regions and Cities to develop recommendations for improving regional development outcomes for regions and cities specialising in mining and extractive industries.

The main objectives of this initiative are to:

- Develop a 'global toolbox' with recommendations and supporting evidence to benchmark and inform regional development policies relating to mining and extractive industries.
- Produce a series of case studies that deliver placebased recommendations and help regions and cities to implement better local development policies.

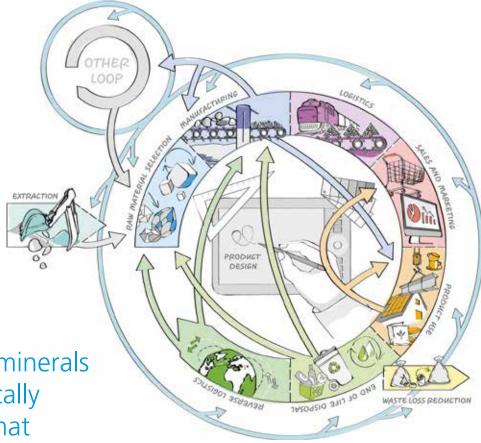


 Develop a global platform for mining regions and cities through events and peer-review processes that enable knowledge-sharing, advocacy and dialogue between the public and private sectors and local communities.

IMA-Europe took part in the third OECD event which was organised in Skelleftea (Sweden), giving two presentations: one on the circular economy by Dr Aurela Shtiza and one on biodiversity by Francesca Girardi.

Project website:





Circularity for minerals is an economically viable model that involves the integrated

management of resources along with all life cycles, carried out when technically, environmentally and economically practicable.

Access to land and permitting



MinLand

MinLand aims to secure access to areas with actual or potentially valuable resources for mineral exploration and exploitation activities within the EU.

This EU-funded project (No. 776679) focuses on the integration of mineral resource policies into land-use planning at different scales and levels to facilitate mineral and land-use policymaking; strengthening transparent land-use practice; and meeting the goals of the Raw Materials Initiative (RMI). IMA-Europe was a proud partner in the project.

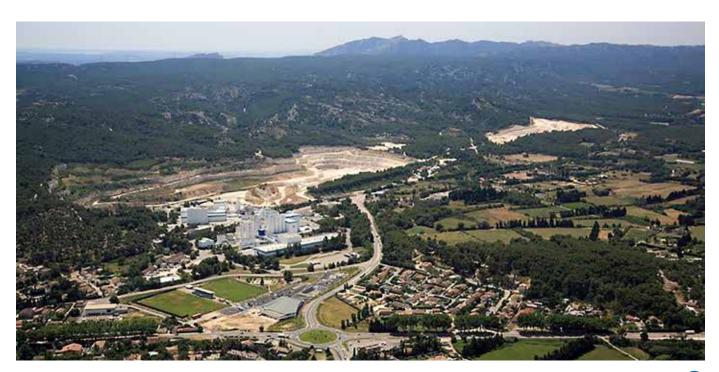
The closing event for MinLand took place on 22 November 2019 during Raw Materials Week. Dr Aurela Shtiza contributed to the panel discussion together with the Associations of European Non-Energy Extractive Industries (NEEIP) and other permitting authorities from Finland, Ireland, Portugal and Sweden.



The final project database included case studies from Omya (France) and Tolsa (Spain). These two cases illustrate that it is possible to obtain mineral resources in combination with sustainable land-use planning practices, with the cooperation and inclusive involvement of multiple stakeholders.

www.minland.eu

IMA-Europe provided several case studies illustrating how land use management can integrate mining alongside other activities – such as agriculture and tourism – within the same area.



ENSQM

The European Network for Sustainable Quarrying and Mining (ENSQM) is a raw materials commitment under the European Innovation Partnership, linked with the Strategic Implementation Action Plan under the non-technological pillar, Improving Europe's raw materials framework conditions and public awareness.

ENSQM commitments are joint undertakings that are signed up to by several partners who commit to activities aimed at achieving European Innovation Partnership (EIP) objectives. They aim to deliver innovative products, processes, services, technologies, business models or ideas that can be brought to the market or that would bring wider societal benefits. Some of the key objectives of the ENSQM are to:

- Encourage dialogue
- Enhance sustainable extraction practices
- Promote cooperation between stakeholders
- Ensure and promote biodiversity and conservation
- Manage environmental and social impacts and provide transparency on these issues



In March 2019, ENSQM held a national event organised by the German Building Materials Association (BBS) at the German Industry Association (BDI). Dr Aurela Shtiza opened the event on behalf of the network and presented the raw material commitment objectives and actions undertaken so far, along with the partners. Presentations by representatives from the German Ministry of Industry and Ministry of Environment, as well as from the European Commission DG ENVI, introduced the different viewpoints and the implementation of EU directives (for example, habitat, bird-life, water) and the implications they have for the mining sector. Presentations by the Nature and Biodiversity Conservation Union (NABU) and Prof. Rodemacher illustrated the added value of mining in improving biodiversity. Around 100 experts attended the event to facilitate dialogue and create awareness of the role of minerals in our daily lives, along with the biodiversity benefits the sector can produce.

www.ensqm.weebly.com

ENSQM is promoting cooperation, encouraging dialogue, and enhancing sustainable practices while supporting appropriate legislation and law enforcement.



MIREU

The MIREU project brings together European mining and metallurgy regions to improve conditions for the responsible development and secure supply of raw materials in the EU. The regions share their experiences and knowledge to help tackle the fundamental challenges of establishing and maintaining an extractive industry.

MINING AND METALLURGY REGIONS OF EU

In the last couple of years, the European Commission has been looking into the topic of social acceptance relating to the extraction of raw materials. Several events were organised to gather experiences from multiple EU Horizon 2020 projects. The main objectives were to share tools that had been developed in different local contexts; to exchange best practices; and to identify participatory engagement practices and measures to build trust.

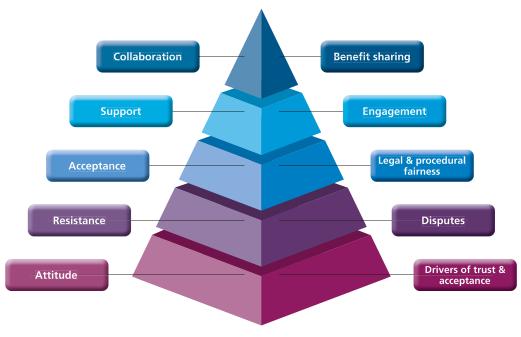
MIREU is also exploring the possibility of developing a Social Licence to Operate (SLO). The project aims to provide

local authorities and other stakeholders with a range of options for understanding, discussing, negotiating and resolving difficult issues that arise between communities, local authorities and mining companies. As regulating this discourse might impact the way companies currently operate, IMA-Europe is following the ongoing discussion closely, while also participating in MIREU's working group on the topic, alongside experts from academia, research institutes, industry and NGOs.

www.mireu.eu

MIREU brings together European mining and metallurgy regions to improve conditions for the responsible development and secure supply of raw materials in the EU.

SLO in Europe



United Nations Sustainable Development Goals as overarching drivers for actions



United Nations Sustainable Development Goals

IMA-Europe has assessed the contribution of its members to the sustainable development goals (SDGs), and each of the 200 projects identified contribute to 2.3 SDGs on average. The SDGs where minerals are contributing the most are:

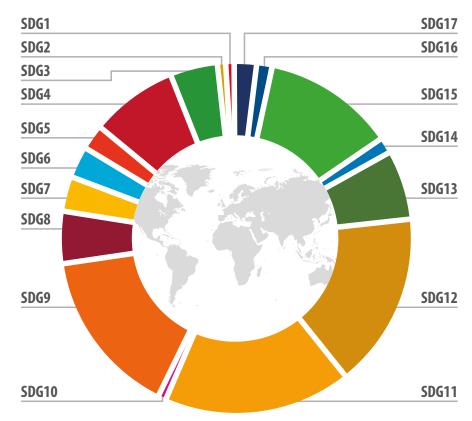
- SDG11: Sustainable Cities and Communities
- SDG12: Responsible Consumption and Production
- SDG9: Industry, Innovation and Infrastructure
- SDG15: Life on Land
- SDG4: Quality Education
- SDG13: Climate Action

To find out more about our industry's commitment to the SDGs, please visit: www.ima-europe.eu/commitments/sustainable-development



The number of industrial mineral company projects delivering on SDGs













Responding to the new European Climate Law



Industrial minerals and the Green Deal for Europe

In December 2019, the European Commission announced the EU Green Deal. The European institutions have set the policy scene for the next five years and established the foundations for future policy developments with a horizon of 2050. 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. The industrial mineral industry (where relevant) supports and engages with the EU emissions trading system (EU ETS).

"The general direction in which the mineral industry has been operating in 2019, and will continue in the following years, requires a forward-thinking manner for business development, considerable efforts to modernise through investments in new technologies and innovation, and transformation of existing energy and carbon-intensive processes to empower the industry to be an enabler of the carbon-neutral economy in the long-term."

"Present in so many value chains, industrial minerals are enabling materials to realise the transformation. Our industry makes the utmost effort to be an innovative, global front-runner on sustainability and nature preservation, while maintaining EU added value by remaining competitive in Europe. The industrial minerals sector embraces the Green Deal principles and will work towards a transformation of the industry as required to comply with the newly announced era."



Turbine blades contain up to 95% minerals



Solar cells contain up to 95% minerals



Promoting and protecting biodiversity



Industrial minerals and biodiversity

While mineral raw materials play a vital and valuable role in our daily lives by providing products that meet the needs of today's society, the way they are extracted from the earth has a potential impact on biodiversity. The minerals industry is well aware of this and of its responsibility to support biodiversity, and is actively working towards its conservation and enhancement.

The sector takes great care to minimise the environmental and visible impact of its open-cast mine and quarry operations. Moreover, in terms of protecting nature, open surface mining often provides perfect conditions for unique habitat creation, especially for rare pioneer species, which thrive on the bare rocks and gravel of open-cast mines.

At many sites, enhancing biodiversity is part of the decision-making process and a foundation of land-restoration and water management policy. Biodiversity is taken into account before, during and after extraction and, in some cases, it has led to the creation of new natural habitats. Many quarry operators solicit the help of biodiversity specialists and work in partnership with government, universities, communities and other stakeholders on biodiversity.

"The members of IMA-Europe, representing more than 750 sites and directly employing around 42.500 people, are aware that biodiversity is crucial to the future of humanity and have agreed to actively work towards its recognition and enhancement."



Many amphibians and insects depend on open-cast mining for their habitats.





European Minerals Day 2019

Every two years, European Minerals Day allows the European public to explore the world of minerals. It is a pan-European awareness initiative by the European minerals sector and related organisations. The European Commission has recognised European Minerals Day as a communication channel that supports the European Raw Materials Initiative, the European Innovation Partnership on Raw Materials, as well as the EU Biodiversity Strategy.

Events marking the 7th European Minerals Day took place between May and November, with most activities concentrated between 20–22 September. We are happy to announce that during this period, 128 events at 109 sites took place across 22 countries. We estimate that between 10.000 and 15.000 visitors engaged with the initiative. This year, a significant number of our visitors were children. However, we also hosted minerals exhibitions in museums as well as sustainable mining conferences in universities. The European Minerals Day closing event took place on 21 November during Raw Materials Week, alongside two European projects: EUMICON and MIREU.

EuropeanMinerals Day

You use it. We provide it.





IMA-Europe's mission, vision and values

MISSION

IMA-Europe is the decisive EU voice of industrial minerals producers and importers.

Our mission is to contribute to the development of a thriving industrial minerals industry at the heart of a sustainable Europe.



IMA-Europe helps the industrial minerals sector to continuously improve its performance and enhance its reputation by tackling issues relating to the properties and safe use of minerals, from their extraction and processing through to the entire value chain.

Competitiveness, health and safety at the workplace, environmental performance, product safety, and awareness about the importance of industrial minerals for society are at the core of IMA-Europe's priorities.

VISION

IMA-Europe aspires to become a reference in the world of European industrial associations in terms of representing its industries through science and facts-based communications with authorities and the broader value chain.



VALUES

Trustworthy

Our positions and advocacy actions are science-based, consistent and supported by facts and figures.



Efficient

We are goal-oriented, committed and we always seek to use resources wisely. We apply high quality standards and respect deadlines.

Fair and non-discriminatory

All company members are treated in a fair and non-discriminatory way regardless notably of their size or geographical location.

Committed to well-being

We stimulate the safe and sustainable production and use of industrial minerals to improve the quality of life of all citizens in Europe and protection of the environment.

IMA-Europe team



Ms Catherine Delfaux President



Dr Roger DoomeDirector General



Ms Eleni DespotouDirector – Climate & Energy



Ms Florence LumenDirector – Health & Safety



Dr Aurela ShtizaDirector – Industrial Affairs



Ms Celia Gryspeirt Scientific Adviser – Health & Safety



Ms Antigoni Effraimidou Scientific Adviser – Health & Safety



Dr Carline PitzScientific Adviser – Environment



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