



# Minerals and Metals Enabling Sustainable Development Goals

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The Briefcase Project game is an interactive, online tool that teaches students ranging from 6 to 14 years of age about minerals and metals used to make items they interact with every day.

Using an innovative method, it teaches students to match minerals to corresponding objects and encourages reflection on issues like conflict minerals, consequences of purchase decisions, as well as the importance of recycling and climate change, making it useful in a number of disciplines ranging from geology to economics.



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# Minerals and Metals Enabling Sustainable Development Goals



The Sustainable Development Goals (SDGs) are a total of 17 global sustainable development goals that were adopted by the United Nations (UN) in September 2015 and came into force in January 2016. Ecological, economic and social challenges such as climate change, inequality and poverty are to be solved by 2030 by means of this strategy. Here's how the European mineral raw materials industry is contributing to these goals.

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**1** NO  
POVERTY



# 1. No Poverty

The EU is host to an abundance of mineral wealth that can help ensure poverty does not become a widespread issue in our borders. Mining already provides employment and income for many thousands of citizens, and there are still many valuable, untapped mineral deposits across Europe. These minerals and metals are critical to maintaining current standards of living.

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2 ZERO HUNGER



## 2. Zero Hunger

Minerals play an important role both in ensuring proper nutrition and in helping to produce enough food for a growing population. Minerals and metals such as potash, zinc and phosphorus and rocks such as gypsum and limestone are commonly used to increase crop yields, which will be increasingly critical as our population grows.



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**3** GOOD HEALTH AND WELL-BEING



## 3. Good Health and Well-being

Our bodies need minerals and metals such as calcium, magnesium, iron and many more to function properly. These nutrients are often added to foods during production to boost public health. They are also available as nutritional supplements and medications to fill gaps in consumption, fight disease or aid healing. Many pharmacological products also contain a variety of materials such as calcium carbonate as support of an active principle.

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## 4 QUALITY EDUCATION



# 4. Quality Education

Quality education is already accessible to all European citizens, which includes learning about geology. Minerals and metals can be used for hands-on learning that increases engagement and retention. The very minerals and metals that students learn about are also used to build the structures in which they attend classes (i.e. clays in bricks, limestone and clays in cement, different rocks in concrete mixes). A large variety of materials such as indium, copper and silicon are essential to computers and other modern technological tools that enhance learning methods.



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## 5. Gender Equality

Minerals and metals may not seem related to gender equality, but this is a top priority in the industry that finds, collects, processes and distributes these precious resources. This is especially important as a STEM (Science, Technology, Engineering and Mathematics) sector where gender inequalities have been common in the past. Mining and related companies in Europe promote gender equality through efforts to place women in visible leadership roles.

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## 6 CLEAN WATER AND SANITATION



# 6. Clean Water and Sanitation

Minerals play a critical role in water processing to ensure safe drinking water for citizens. For example, calcite, limestone or magnesia can be added to water to raise pH to safe levels, silica sand is used in water filtration and you can't get clean water from your faucet without pipes, which are made from a variety of materials such as cast iron, copper, steel or concrete.



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**7** AFFORDABLE AND  
CLEAN ENERGY

## 7. Affordable and Clean Energy

Utilising sustainable energy sources such as wind, solar and water is completely dependent on minerals and metals. Without the raw materials, we cannot build the structures and devices necessary for transforming power into electricity. Foundational materials include steel and concrete for wind turbines, and silicon, gallium, lithium and cobalt (among many others) for solar panels. Many of these minerals and metals are also essential in batteries used to store energy and make it useful in vehicles and portable devices.

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## 8 DECENT WORK AND ECONOMIC GROWTH



# 8. Work and Economic Growth

A major factor in continued economic growth is the development of new technologies. Many high-tech devices, including new innovations and ones we're already accustomed to like smartphones, require materials such as indium, neodymium, silver, tin, gallium and many more. A smartphone alone contains up to 50 different materials. The production of these devices also provides excellent, well-paid employment all around the world.

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**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

# 9. Industry, Innovation and Infrastructure

Minerals and metals are the raw materials that feed a wide variety of industries. They are the literal building blocks of infrastructure development and a significant area of innovation as materials are constantly made stronger, more durable and more efficient. Mining operations are usually accompanied by urban development and planning programs developed together with the local community, providing or improving infrastructures and contributing with population growth.

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10 REDUCED INEQUALITIES



# 10. Reduced Inequalities

Mineral wealth is a resource that can boost economies in regions where deposits are located – or be exploited in ways that cause serious harm to people and environments. Our modern way of life is dependent on these minerals and metals, and the EU is committed to ensuring that these materials are collected and processed in ways that boost wealth and equality and decrease inequalities, both within Europe and globally.



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**11** SUSTAINABLE CITIES AND COMMUNITIES



# 11. Sustainable Cities and Communities

It is impossible to have sustainable cities and wealthy communities without mineral raw materials. More durable types of steel and concrete used in infrastructure will last longer and require less maintenance. Some materials, such as specially developed concrete, not only last longer, they aid carbon capture. Even transitioning to LED lights requires materials such as indium, gallium and nickel.

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12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



## 12. Responsible Production and Consumption

Production processes of minerals and metals are constantly being improved to provide materials that will last longer, perform more efficiently and are easier to recycle. This means the industrial and everyday products these mineral raw materials are used for cause less waste and energy consumption.



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**13** CLIMATE ACTION



# 13. Climate Action

As the world increasingly transitions to clean energy sources (e.g. solar energy, hydro energy and wind energy), the production of minerals and metals will grow exponentially. Graphite, lithium, cobalt and others are essential for deploying wind, solar and geothermal power, and for energy storage and carbon capture efforts. All this is absolutely critical for halting global warming.

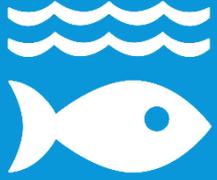
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14 LIFE BELOW WATER



# 14. Life Below Water

Our actions on land directly impact the health of our oceans. The EU is firmly committed to improving marine pollution, and utilising easily recyclable materials such as aluminium and many other metals will reduce the amount of waste that makes it to the ocean, especially unrecycled plastics that are a significant danger to marine life.



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15 LIFE ON LAND



## 15. Life on Land

As many materials become more durable, efficient and easier to recycle, there will be significantly less waste produced in Europe. This means less waste to manage as well as reduced health concerns for both people and animals that live on land. Additionally, some land previously used for mining minerals and metals has been transformed to green spaces that serve as wildlife habitats, some even increasing biodiversity.

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**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



# 16. Peace, Justice and Strong Institutions

In the past, producing minerals has been the cause of much contention in Europe, and there are still regions in the world where “conflict minerals” are a problem. The European mineral raw materials industry strives to be peaceful and beneficial to all citizens, including working to secure supply of raw materials in a transparent way and reducing our dependency on imported raw materials from regions where these issues persist.



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17 PARTNERSHIPS FOR THE GOALS



# 17. Partnerships for the Goals

Achieving the Sustainable Development Goals requires full commitment in all industries and areas of life, and how we use and produce our mineral raw materials is no exception. The European mineral raw materials industry sector is among the most sophisticated partners in addressing a range of sustainable development challenges.

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**RawMaterials**  
Connecting matters



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