



Topic: Future needs in Europe for a sustainable raw material supply: issues and challenges along the value chain

Dear **COBALT** Community,
Dear participants,

Primary raw material extraction - challenges and needs

Whatever the origin of our concerns, we are here today at this COBALT closing conference because we acknowledge the importance of raw materials for notably housing, mobility, infrastructures, health care, communication, education, knowledge and excellence in Europe. Raw Materials also serve as a basis for the materials of the future society needs for high-tech and green applications and eco-systems services such as water purification. To set the scene let say that 70% of the EU manufacturing production depends on mined substances, which provides 30 million jobs in the EU.

In the last decade, due to demographic changes we observed an **increasing demand for unprocessed minerals and metals in emerging markets, while we experienced increasing constraints on extraction in mature markets, such as Europe**. As a consequence the question of raw materials became central.

Acknowledgement of a high dependency on imports of crucial raw materials, the relative price volatility of certain resources, as well as the market distortions imposed by some countries on raw materials, have shed light on the importance of raw materials for our economy and society, and led to the development of the **Raw Materials Initiative, the European Innovation Partnership on Raw Materials (EIP-RM)**, and consequently the launch of raw materials commitments and a series of related projects funded under the Horizon 2020 programme to assist in the **implementation of the Strategic Implementation Plan (SIP)**.

Import dependency however is not equal across all raw materials and hopefully it can be decreased thanks to appropriate initiatives. The **EU is self-sufficient in the production of construction minerals that means aggregates, like sand, gravel, and crushed natural stone, various brick clays, gypsum and natural ornamental stone**. Europe's production of aggregates is approximately 3 billion tons per year. Extracting these materials locally is an absolute necessity: it reduces their carbon footprint, and their transport costs which due to their relative low price cannot be passed on in their applications. The average road transport distance for aggregates is typically is in the range of ~50 km.

The EU also has a **large production of industrial minerals** such as magnesite, fluorspar, bentonite, kaolin and potash, supplying a very wide range of industries. For **many industrial minerals, global leaders are still European companies**. IMA-Europe represents a wide variety of industrial minerals and for each of them more than 95% of the European production. All together the 500 IMA-Europe member companies produce 180 million tpa of IM, for a turnover value exceeding € 10 billion.

Due to their adaptability to various market needs, large quantities of construction and industrial minerals produced and used in various applications it is essential to improve the sector overall sustainability performance, to increase the materials range of the primary production and to ensure a higher proportion of recycling at products end-of-life stage.

Let's look at some value chain challenges

The stakeholders of the Innovation Partnership on raw materials have identified a number of challenges along the entire raw materials value chain composed of exploration, extraction, processing/refining, recycling as well as substitution. Lluís Fontbonté will address in his presentation the challenges related to exploration, reserves and resources in Europe.

However I would like to already say that the EIP concluded on a non-optimal knowledge base on both primary and secondary raw materials leading to **under-exploration of the mineral potential** in Europe. It is obvious that in Europe we want to preserve and better implement the objectives of our environmental legislation, notably through a high raw materials sectors' sustainability and resource efficiency, however the regulatory **framework conditions for primary raw materials** can represent a challenge to exploration, mining and processing, including for metallurgy. The Strategic Implementation plan of the EIP RM clearly identified the need for:

1. **Clearer and more effective minerals policies,**
2. **Shorter and more transparent permitting procedure for mining,**
3. **Improved access to land by safeguarding deposits of public interest.**

In addition to access to domestic resources there are a couple of other identified economic, technological & environmental mining challenges to be addressed, one may mention:

1. Adapting processing & refining to more complex and low-grade feed stocks;
2. Developing complex and integrated technologies, systems and processes;
3. Leading to high investment in sustainable installations;
4. Reducing high investment costs and making financing accessible to mining;
5. Improving flexibility, automation, and safety of operations.

In that respect, Industrial Minerals sector has launched a Zero Injury Target initiative through which Frequency Rate of Accidents are collected across the sector. In its Roadmap published in September 2014 the IM sector commits to a 50% reduction in the IMA Lost time injury frequency rate (LTIFR) by 2016 and a further 50% reduction by 2020.

Improving resource efficiency along the value chain to increase the circularity of the economy is amongst the challenges which require the formation of integrated industrial clusters to allow waste from one process to become a valuable raw material for another. The Industrial Minerals industry is committed to work towards a zero-waste business model by making waste a resource, developing new uses for mined materials and using by-products in new applications.

Some recent EU funded projects (such as [STOICISM](#), [ExPerl](#)) or company initiatives (IMERYYS 2014 [innovation](#) award, innovative recycled polyolefin compound) provide concrete responses to these challenges.

Industrial minerals are often embedded in the matrix of the numerous products they help to manufacture. While they cannot be retrieved in their original state through the recycling of these products because their physical and mineralogical properties have been adapted to the application, they may be recovered for producing the same products or be downgraded through their recycling contributing so anyway to resource savings. Currently an estimated 60% of all industrial minerals consumed in Europe are already recycled through the recycling of glass, paper, plastic and concrete in which they are used. In its Roadmap, the industrial minerals industry committed to increase recycling by 20% by 2050 and to improve its productivity by 1% per year, thanks to new technologies, new applications and full use of resources. We are also committed to enhance overall energy efficiency by decreasing specific consumption by a factor of up to 2 by 2050 through improved equipment and processes, reduced transportation and developed local access to the resource.

Generally, the waste related recovery schemes are complex and imply different steps, including collection and logistics, disassembly and mechanical pre-treatment to selectively remove hazardous from valuable components; mechanical and/or chemical processing to concentrate the desirable materials; finally refining/metallurgy and purification of the desirable materials. The major challenge is to avoid losses appearing in different recovery steps and ensure recycling of high quality. This implies, among others, to provide technological solutions as well as the right economic and regulatory framework conditions and incentives to improve waste recovery.

To obtain the required level of quality and efficiency all along the value chain, it is absolutely essential to increase collection rates for certain end-of-life consumer products, particularly those containing precious and critical raw materials, but first and foremost to develop standards and regulations, including indicators, specific to each value chain. A one-size fits all approach will never deliver the expected outcome. This is why we have great hopes in the Commission new Circular Economy Package which aims at proposing ambitious, but should aim at developing more country, sector and value chain specific objectives.

Last, but not least, the **awareness of the importance of raw materials** for society is crucial to gain public acceptance of mining operations. Due to the inherited legacy of some mining operations and a few large accidents widely publicised, the sector suffers from a-priori and lack of confidence whatever its performances. **IMA-Europe has initiated the European Minerals Day ([EMD](#))** a pan-European event aiming at raising awareness about the importance of minerals, with a focus on young people in 2007. From 2007 IMA in partnership with other European mineral raw materials sectors and their organisations, welcomes citizens **every two years to quarry open days** and in a series of public cultural, educational and entertaining events to explore and experience the world of minerals. The **open-days allow to demonstrating in a transparent way how the operations are planned and managed in respect of regulations and beyond, according to corporate social responsibility and sustainable development principles**. Over the years, the EMD has involved other European mineral raw materials



sectors and their organisations, towards an inclusive value chain approach. The EMD has been acknowledged by the Commission as one of the key channels for the promotion of the European Innovation Partnership on Raw Materials. Subsequently, the EMD Partnering Sectors submitted a Raw Material Commitment under the EIP on RM on the European Minerals Day (from 2015 till 2020), and it has been validated, reinforcing the support by the European Commission to this cross sectorial initiative.

To conclude, I will make use of the **Industrial Minerals Roadmap conclusions, Europe's industrial minerals sector is ready to face the challenges ahead. To face the demand for minerals, industry will continue to use best available technologies and step up its efforts in terms of safety, optimising energy efficiency, resource efficiency and recycling while developing its business model based on an integrated, value chain approach.**

Responding to society's future expectations and needs will only be possible through strong partnership with downstream users, dialogue with communities and commitment to the workforce.

The sector will seek to strengthen its global competitiveness and, with fair access to raw materials, it will be well placed to supply Europe's innovative industries with the materials they need to build a sustainable future for us all.

I thank you for your attention

Michelle Wyart

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