

ONLINE WORKSHOP: FUNDING TOMORROW'S RAW MATERIALS SECTOR

D6.1 Proceedings from workshop targeting ESIF and regional investments

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ABOUT MIREU

The project MIREU aims to establish a network of mining and metallurgy regions across Europe with a view to ensure the sustained and sustainable supply of mineral raw materials to the EU. The network will help the regions to share knowledge and experiences when facing the challenge to establish and maintain an extractive industry. MIREU will facilitate an exchange between all interested stakeholders in the regions, namely regulatory authorities, political and administrative bodies, development agencies, mining companies, non-government organisations, as well as the general public. The project will develop a shared knowledge base, taking into account the region-specific geographic and economic features, cultural, societal and language diversity, and their historical developments. The network will also learn from experience in other regions of the World. This knowledge base will allow to understand what has been conducive and what hampering to the development of extractive and metallurgical industries. It will also provide the context for a bottom-up integration of these activities into their respective socio-economic and socio-cultural context. Development is about people and, therefore, bringing people into the decision-finding procedure in order to achieve a 'social license to operate' will be a key aspect of the project. Guidelines and recommendations for actions to be taken to foster a sustained and sustainable development of the extractive industries will be developed in close co-operation with a range of selected regions from the European Union. These regions will form a nucleus and multipliers for a more extensive network beyond the life-time of the project.

FOREWORD BY THE ORGANISER

Investment in exploration in Europe is lacking despite all efforts, especially of the EC grant programmes to improve data base, framework conditions, technologies etc. With its ambitious grant programme HORIZON 2020 the European Commission considered for the very first time raw materials a societal challenge, securing raw materials supply side by side with climate action, clean and efficient energy, health, just to name a few. Several hundreds of millions of Euros have been spend so far. Little money compared to the subsidies given to the agriculture sector but sufficient to have funded a number of new small mines.

To date it would appear that these efforts have not had much impact on new mining or the exploitation of additional indigenous raw materials whether by small or larger scale mining. Many projects are still stuck waiting for funding to move forward. And it is recognised that the purpose of the EC grant programmes is not to specifically fund industrial projects.

If theory and practice are reviewed we often find that the framework conditions and policies of the EC and EU member states are not aligned and raise doubts about how a new mining venture in Europe can be encouraged whilst acknowledging that there is often an uneven level playing field compared to global raw material sourcing in terms of regulations, permitting, financing, and financially support mine development. Each of the given factors determine the competitiveness of a Region and of the mining project. More than this the ambitious policy making and agenda setting towards a circular economy leads to misunderstandings promising that the raw materials sourcing loop can be closed. It simply cannot be achieved based on the laws of physics.¹

¹ Reuter, A. M. & Kojo, V. I. (2012): Challenges of metals recycling. Retrieved on 01.09.2020 from: https://www.researchgate.net/publication/270048511_Challenges_of_Metal_Recycling

Additionally, In the same way stakeholders are asked to achieve synergies by networking in order to establish coordinating and support actions to foster mining in EU the same programme encourages empowerment of the public to participate in mine project implementation something that many mining companies regard as a burden to further investment rather than something that will speed it up, since the separation and impact of legislation and additional public consultation is not quite clear.

To make the situation even more complicated it is worth understanding the process of the generation of guidelines and policies at MS level and in the Regions and the background conditions needed to attract investments:

- Policies, such as raw material strategies, are almost always subject to a political deal of, in many cases a coalition agreement, and can live and die following new elections and changes in (political) priorities.
- A mining project can take over 15 years from discovery to commencement of mining. During this time there is no cash flow but social engagement as well as technical development needs to be financed. A time, investors who not only develop a mine project but intend to even implement the mine need a socio-economic reliable framework of their investment!

Consequently, the life time of the validity of policies is rather short against the time horizon of a mining project. It is questionable how this attract investors of new mines in a global environment of capital flow and revenues and different investment conditions.

The overall question asked by the workshop is:

How can we improve the current condition and attract investors to Europe in a global setting?

Dr Wolfgang Reimer, GKZ

26 May 2020



WHAT IS MIREU?

MIREU is a H2020 European Union (EU) project with the aim to fostering cooperation between mining and metallurgy regions across Europe. Its main objectives are to establish coordination and support measures to network and to improve the framework conditions of ensuring the sustained and sustainable supply of domestic mineral raw materials, to maintain downstream infrastructure in processing and metallurgy and to promote investment, innovation and growth in the sector.



WHAT IS THIS REPORT ABOUT?

According to the given task best practises and experiences of regions in research and innovation (R&I) and in attracting investors will be analysed. The background information is based on previous studies of MIREU project and by the implementation of a two day workshop with participation from the both target groups (i.e. research and consultancy as well as investors). The analysis focuses on the nature and impacts especially of the European Structural and Investment Funds (ESIF) and how they (can) contribute to improve the framework conditions for new mining in EU.

R&I play an essential role in triggering smart and sustainable growth and job creation. With ESIF the European Commission (EC) provides a funding programme that allows Regions to stimulate the development of their raw materials sector. The precondition to make use of ESIF is the regional policy making. An analysis of the utilisation of ESIF by the Regions revealed that not all of the regions use ESIF in fostering their industrial growth in the raw materials sector or they are they are not familiar with the financial instrument.

Necessary background research and analyses to prepare the workshop have been carried out by MIREU Work Package 6, R&I investment and ESIF. In order to a) disseminate its findings and b) generate more discussions on this topic, c) learn from regions and investors experiences made on financing the raw materials sector, but specifically d) to introduce regions into the opportunities given by the financial grants from the EC. The Work Packages 6 and 2 titled the workshop: Funding Tomorrow's Raw Materials Sector. The Workshop was held online due to the given restrictions concerning the Covid 19 pandemic and was held on the mornings of 25th and 26th May, 2020.

Day one of the workshop introduced a number of approaches and best practices using public funding sources to strategically develop the mining and metallurgy sector as the step one of stimulating upstream operations of a region's industrial economy. Day two invited experts from mineral raw materials industry to understand their experiences from investing in Europe and worldwide, how the current EC and member states' (MS) policy framework and the public funding framework affected and may affect their decisions and how competitive European regions are in comparison to other places in the world. Both days' agendas consisted of plenary lectures and an open panel discussion that answered questions raised by the participants.

This report contains the key findings from the MIREU research work, the results from the presentations and the discussions of the online workshop with the following aims:

- To introduce the EU funding landscape,
- To identify bottlenecks,
- To learn about the competitiveness of the European financial grants and framework conditions to foster the raw materials sector,
- To unlock the domestic raw materials wealth, and
- To establish value chains to meet the sourcing requirements of the European agendas such as the Green Deal, and the new Industry Strategy.

The report is divided into five sections, current EU funding landscape and regional approaches in developing mining and metallurgy sector, the importance of consistent policies in attracting private mining investments for the benefit of regions, future EU policy and funding landscape from the perspective of mineral raw materials sector, the recommendations, the future collaboration through the Council of Mining and Metallurgy European Regions (CoMMER).

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CURRENT EU FUNDING LANDSCAPE AND REGIONAL APPROACHES IN DEVELOPING MINING AND METALLURGY SECTOR

In the period 2014-2020, to achieve the EU's objectives of smart, sustainable, and inclusive growth, the Europe 2020 strategy included five headlines that target employment, research and development, climate and energy, education, and the fight against poverty and social exclusion. This policy was then implemented by means of an EU funding, the Multiannual Financial Framework (MFF). The MFF includes a wide range of programmes and funds, which provide

financial support to hundreds of thousands of beneficiaries. During its research, MIREU found that there are a number of EU grant programmes in the period 2014-2020 that can directly and indirectly be used to fund the regional mining and metallurgy sector. Table 1 presents the programmes and explains how they support topics related to the raw materials sector.

Table 1 MFF 2014-2020 funding landscape

EU FUNDING PROGRAMME

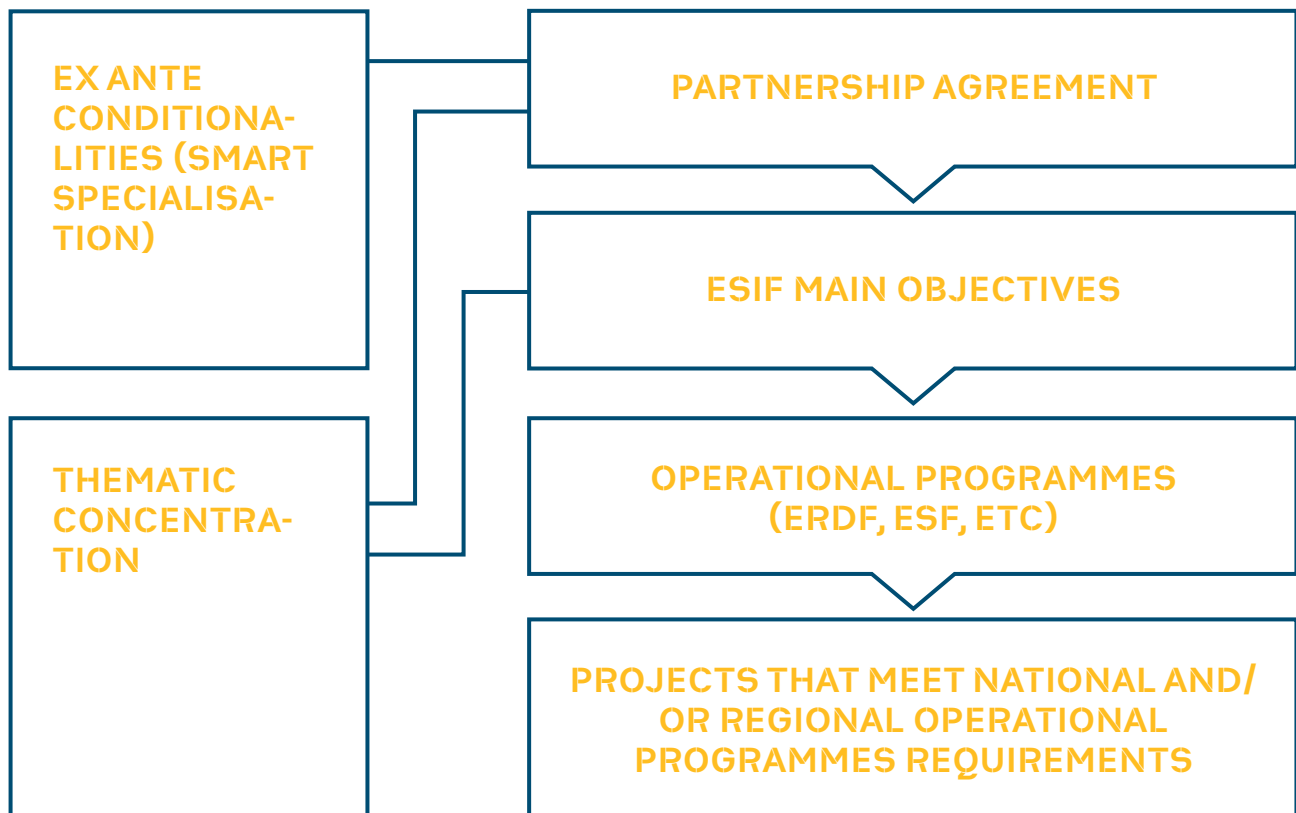
Share managed by MS and EU	ESIF	ERDF (European Regional Development Fund)
		CF (Cohesion Fund)
		ESF (European Social Fund)
		EAFRD (European Agricultural Fund for Rural Development)
		“European Territorial Cooperation” (ETC) (Interreg)
Direct managed by EU	HORIZON 2020	EIT RM
		CSA (Coordination and Support Action)
		IA (Innovation action)
		RIA (Research and Innovation Actions)
		MSCA (Marie Skłodowska-Curie Actions - training and career development)
		SME-Inst 1
		RFCS – Research for coal and steel
		COSME
		ERASMUS +
		LIFE

SUPPORT TO KEY TOPICS RELATED TO MINERAL RAW MATERIALS

Regional development and cohesion funds for:
<ul style="list-style-type: none"> • Industry 4.0 • Environment and circular economy • Business & Financing • Policy & Networking
Education and skills
Rural development for: Business, tourism, heritage
Policy & Networking
Funds innovative products and services that can produce an impact and education awareness in mineral raw materials value chain
R&I focused fund on different topics:
<ul style="list-style-type: none"> • Industry 4.0 • Policy & Networking • Environment and circular economy
(SC5 is strictly related to Climate action, environment, resource efficiency and raw materials)
Innovation in SMEs
Industry 4.0, Environment
Competitiveness of SMEs
Education and skills
Environment and circular economy

In total, around 80% of the EU budget goes to ESIF (and its five main funds) that are jointly managed by the EC and the EU MS. Depending on how the MS formulates the Partnership Agreements and the Operational Programmes (OP) at national and regional levels, there are different ways of how MS take use of ESIF to support their raw materials sector. To better understand how the allocation of national and regional ESIF is determined, two important concepts must be introduced: ex-ante conditionality and thematic concentration. Both work as pre-requirements for ESIF assignment (Figure 1).

Figure 1 ESIF implementation process



An ex-ante conditionality (smart specialisation) is one or more conditions which are regarded as necessary for the effective and efficient use of ESIF. The MS need to show there are policies in place that can contribute to achieve specific objectives. The choice of the key sectors must be based on perceived → *competitive advantages of the countries or regions concerned following what is designated as “Smart Specialisation Process”*. During this process, MS make choices for public investment and support a limited number of well-identified priorities for knowledge-based investments and/or clusters.

Thematic concentration means that most of the resources must be concentrated on just a few thematic objectives with regard to the key sectors. It is up to the MS to determine which of the thematic objectives the funds will be allocated to.

Both, ex-ante conditionality and thematic concentrations are part of the Partnership Agreement stipulated between the EC and MS. According to Figure 1, on the basis of the two or more specific objectives chosen by MS (i.e. thematic concentration) and of the national or regional smart specialisation strategies, the next step is to prepare corresponding Operational Programmes (OP)

for each Fund. OP can be national, regional, or focused on a certain topic (e.g. cross-regional). In each MS, a designated managing authority prepares the OP, provides information on the programme, manages projects calls and monitors the implementation.

After understanding the process of determining the allocation of ESIF, it can be inferred that if a smart specialisation strategy (RIS3) and the following OP target raw materials sector, the managing authorities will allow to spend the EU budget in the sector accordingly. In that case, as illustrated in the last box of Figure 1, the beneficiaries (e.g. stakeholders in raw materials sector) may access the EU funds, as long as their project proposals meet the terms of the relevant OP.

As an example, some MIREU regions do not have mining and metallurgy prioritised in their national or regional RIS3 (e.g. Saxony, Ireland, Styria, Cornwall and Sterea Ellada) which may pose some difficulties to obtain EU funding for raw materials sector at the regional level. On the other hand, stakeholders in some regions that do not prioritise mining and metallurgy can still enjoy EU funding if the regions defined a more horizontal thematic priority across sectors in their RIS3, for instance, Lapland.



I believe that the regional and municipal commitment to highlight mining activities as a strategic brand industry, also in the future, plays a very important role in the question on where the mining is focusing and where is the potential.

Mika Riipi, County Governor of Lapland, Finland



With regard to the value chain of industry and production it is interesting to note that less than half of the regions participate in MIREU explicitly named raw materials extraction (i.e. mining) as their priority sector in RIS3. Upstream activities such as raw materials extraction and supply, including sourcing from secondary sources are in general less considered. At all, this results in an imbalance of key sectors in terms of

close value chains at European level which can lead to a critical situation with regard to supply security. It is interesting that with the Covid-19 related impact on global supply chains, MS have been questioning that system concerning a number of key sectors, including raw materials, which resulted in a first paradigm shift e.g. in in the key sector of pharmacy.

DISCUSSION ON “STAKEHOLDERS' RESPONSIBILITY – AWARENESS BUILDING”

At MS and regional levels, ESIF allocation depends on, for instance, OP, public policies, and smart specialisation strategies. The comparatively small share of upstream thematic objectives in the OP reveals not only the declining role of raw materials supply in the regional economic setting but possibly also the declining awareness of the political decision makers about the meaning of raw materials. Hence, raising raw material awareness is not only subject to the civil society but critical for policy decision-makers so that they will take (again!) this key sector into consideration. However, awareness does not build up by itself, it relies also on the mineral raw material sector to actively reach out and disseminate information, such as, how this sector is and will be developing in terms of the many political, economic and societal challenges world-wide. The same approach should be applied to raising the awareness of the general public in a fact-based and ideology-free discourse to improve their acceptance of the mineral raw materials sector and to be aware about its meaning to the societal wealth. In this sense, ESIF funds could be more widely used as a programme offering collaboration between many stakeholder groups.

At the EU level, to make impact on or be considered in raw materials policies as a region, the regional government's support, involvement or even leadership in the process is indispensable. In times of a declining knowledge and awareness of the meaning of raw materials and metallurgy in manufacturing and recycling up to circular economy the messages conveyed to the European level should not only centre on concerns but also what mineral raw materials sector can offer, for instance, to energy transition and the European Green Deal.

Other funds such as H2020, RFCS, COSME, ERASMUS+ and LIFE, are managed directly by the EU. Opportunities on the availability of the funds managed by the EU can be found on the EU Funding and Tenders portal². Also, here we find a number of funds that directly or indirectly support raw materials awareness as a major instrument to improve the framework conditions for exploitation of results. For instance, H2020 R&I action calls and project implementation frequently demand life cycle assessment, impact assessment in exploitation and accompanying measures to include civil society, such as focus group meetings, to raise raw material awareness.

Much concern is raised from stakeholders and applicants about the practicability of

the funding schemes, for example, regarding application process, accounting, and impact. Apart from the user experience, studies have highlighted that the plethora of funding schemes causes confusion for recipients (Evans, 2013³). Furthermore, the lack of human capacity of the management authorities (MA), regional authorities or even small and medium enterprises (SMEs) regarding structural funds (ESIF), may constrain using the funds effectively. To tackle some of the challenges listed above, a cross recommendation from the studies to all stakeholders is to find out regional barriers in accessing the funds, such as language barrier and to increase collaboration by strengthening local clusters and their interaction at European level.

² EU Funding & Tenders portal (2020) retrieved on 20.07.2020 from: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

³ Evans, D J (2013) Access to Finance Review: Stage 1 Report & Stage 2 Report, Welsh Government



European funds and the language is very difficult for the stakeholders and everyone. It is important for the local cluster to support the SMEs and stakeholders to understand the opportunities created by the EU funds.

Santiago Cuesta-López, ICAMCyL

Key is active communication out to the stakeholders and vice versa to inform the stakeholders on what is available, in terms of when and in what terms.

Reetta Laakkonen, Regional Council of Lapland, Finland



DISCUSSION ON “STAKEHOLDER ENGAGEMENT AND CAPACITY-BUILDING”

There are plenty of funding schemes available at different levels (e.g. the EU level, national level and regional level) but stakeholders in the raw materials sector are not always aware of the opportunities or they regard them as inappropriate or not effective for their needs. Regional clusters are an appropriate multiplier to bridge EU/EC and Regions in this context. The clusters can introduce the regional stakeholders about the opportunities and advantages to consider European Agendas in raising Regional competitiveness by cross-European collaboration, and how to take advantage of MFF for regional development. The clusters can also activate communication and networking e.g. by match-making of project partners and assisting in development of new projects.

In turn, the clusters can generate and convey feedback to the funding programme owners about the impacts and how to improve the implementation of the programme. Through stakeholder engagement and capacity-building especially, investors and regional stakeholders in the raw materials sector with only little lobbyism could become more robust as a whole and even find alliances across regions to support their common interests in the future at regional, national level and within the EC and the European Parliament. This is also important for better alignment of policy-making of the three levels and the acceleration of the decision-making on elementary requirements to foster the re-industrialisation of Europe.

THE IMPORTANCE OF CONSISTENT POLICIES IN ATTRACTING PRIVATE MINING INVESTMENTS FOR THE BENEFITS OF REGIONS

The previous section introduced the current funding landscape and how the raw materials sector can take advantage of it. However, only the EU funding opportunities do not necessarily attract mining companies and investors. This section will discuss what other factors that affect their investment decisions apart from EU funding and policy frameworks.

Mining projects require large initial investments and have typically a long life cycle (see Info box).⁴ Because of this, many aspects need to be evaluated before an investment decision can be made. The aspects include, for instance, geologic setting, reserves, infrastructure, consumer markets, tax policies, and especially in the critical phase of exploration and mine planning, permitting procedures.

In most of the EU MS mining is being regarded as a private business and not as a subject

of public service. While the state cares about appropriate framework conditions to attract and implement mining any private entrepreneurship in raw materials sector at all follows the principle investment and return. If there is no revenue in a given time and amount to be expected other regions offering mineral wealth to be exploited will be investigated or even different investment opportunities will be taken into consideration. Since many regions around the world have mineral potential and competitive policies, investors tend to shift away from jurisdictions with unattractive investment environments.⁵ Consequently, regions are in a competition with each other to attract investment. As mentioned in the previous chapter, the more they consider the raw materials extraction and beneficiation as a key sector in their policy making and smart specialisation the more attractive they are for investments. The investments can generate complete value chains up to manufacturing.

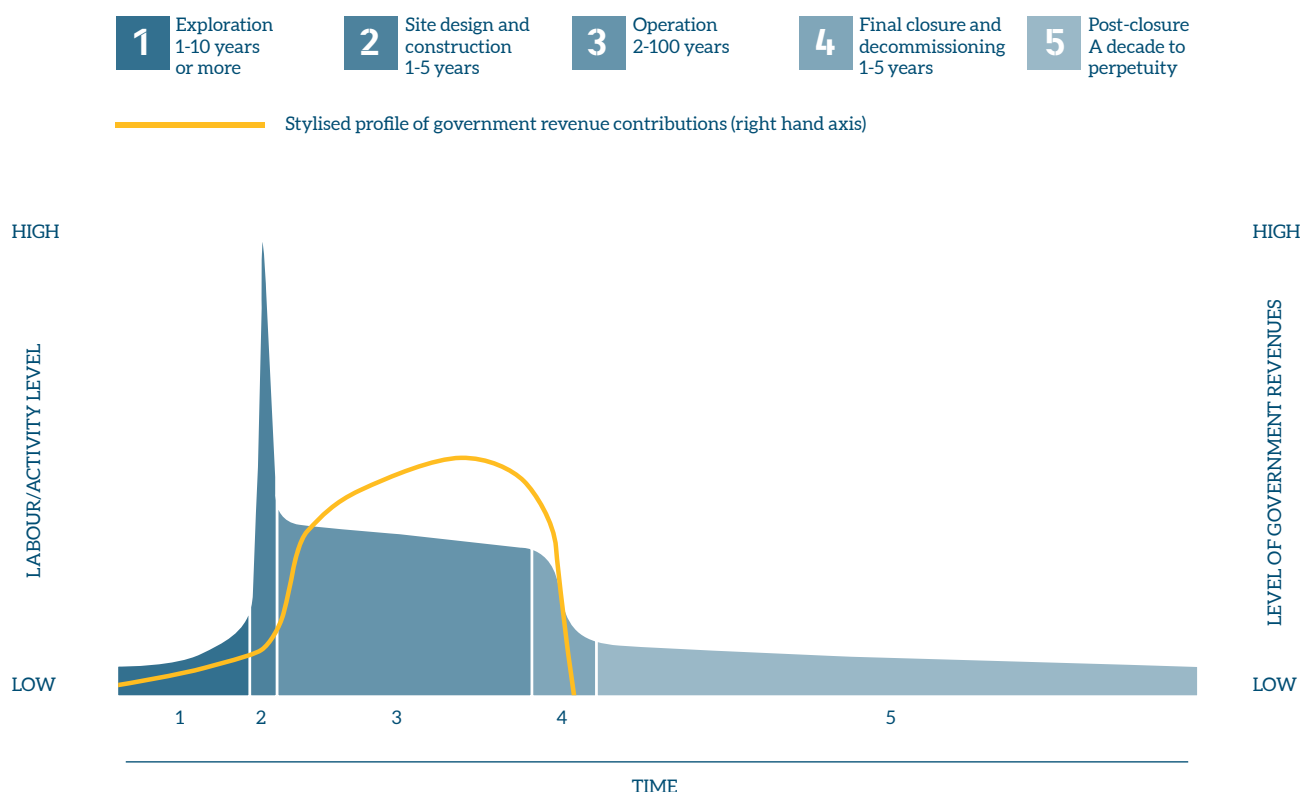
⁴ International Council on Mining & Metals (2016): Role of Mining in National Economies, 3rd edition, 2016, retrieved on 17.07.2020 from: <https://www.icmm.com/romine/index>

⁵ Stedman, A., Yunis, J. & Aliakbari E. (2020): Fraser Institute Annual Survey of Mining Companies 2019. Fraser Institute. <http://www.fraserinstitute.org>, ISBN 978-0-88975-592-5

INFO BOX - MINING LIFE CYCLE

Mining projects typically have a long life cycle. The life cycle of a mine can be divided into five phases, including exploration phase (1-10 years), site design and construction phase (1-5 years), operation phase (2-100 years), final closure and decommissioning (1-5 years) and post-closure phase (over 10 years) as illustrated in Figure 2. Although mining projects generate nil revenue during the first two phases, they usually do not become profitable until seven to eight years into the operation phase (break even).⁶

Figure 2 Typical mining life cycle prepared by International Council on Mining & Metals (2016)



The break even, which is when the balance of investment and earnings is nil is nowadays much more determined by the social, environmental and economic regulations, like social and environmental impact assessments, SLO, permitting, than in former times. The policy factors, that determine the extension of above mentioned framework conditions, according to the Fraser Institute, play an important role in attracting private investments for mining industry. The annual survey of mining companies conducted by the Fraser Institute in 2019 indicated that while 60% of their investment decision is based on the mineral potential of a jurisdiction, 40% of it depends on the policy factors, similar to the result of previous years. The Fraser Institute Policy Perception Index built on the survey results serves as a report card to the governments on the attractiveness of their policies to mining industry, especially exploration companies. It is worth noting that European countries ranked within the top 15 worldwide include Finland (no.1), the Republic of Ireland (no. 2), Portugal (no.11) and Sweden (no.12).⁷

⁶ Ibid. 3.

⁷ Ibid. 4.

EU policies may tend to originate restrictions the MS have to implement into their legislation, for instance the European Waste Directive. In this case all MS are affected in the same way. On the other hand, the need for the industry to engage in responsible sourcing and responsible business conduct and to perform relevant due diligence goes beyond legislative obligations – it is rooted in the growing expectations of consumers, civil society, governments and procurement managers (buyers). This can lead to uneven investment burdens in terms of the type of mining (open pit / underground) and/or the public / consumers perception of the type of raw material being mined (eg lignite or lithium) while in general it is very difficult for individual operators to meet such expectations.

The uncertainty of legislations and policies is regarded as one of the serious mining project risks.⁸ In the KPMG report: Risk and opportunities for mining, outlook 2019, both political instability and regulatory and compliance changes/burden were considered to be among the top ten risks by executives in the mining industry.⁹ Similar finding can be found in the PwC report: Mine, tempting times 2018, where geopolitical and regulatory risk was perceived as top ten risks by the global top 40 mining companies.¹⁰ Despite not knowing where the mining executives were situated and the presence of the top 40 mining companies was rather low in Europe, if there is an intention to promote raw materials industries and attract international investors to a jurisdiction in EU, this global trend should be taken into consideration.



We initially thought Europe has clear guidelines but if you go into the details, you find that they are sometimes contradicting.

Marco Roscher, Saxore Bergbau GmbH



DISCUSSION ON “MINING IN EUROPE”

The reasons why the rest of the world seems more attractive to investors in comparison to Europe, might be the existence of relatively large deposits, the perception that permitting was quicker to obtain and the feeling that one can get away with things one could not in Europe.

With the emergence of concepts such as Environment, Social and Corporate Governance (ESG) and Principle of Responsible Investment (PRI), the world of mining has changed. There were more elements of responsibility as people started to pay attention on where material comes from and how it is acquired. This might increase the attractiveness of mining in Europe. Nonetheless, it would have to go hand in hand with a commitment of the customer to pay a higher price, which in turn will lower the competitiveness of European economy. Furthermore, it is also true that for a mining company, obtaining acceptance, or Social License to Operate (SLO) in Europe requires a lot of effort and will possibly delay the development of a mining project, which must be financed. Additionally, the delay of the sourcing can be a disadvantage of the developments of new manufacturing plants and, subsequently lead to the cancellation. In contrast to many mining regions in the rest of the world, mining companies in the EU also need to demonstrate that what

8. Badri, A., Nadeau, S. & Gbodossou, A. (2012): A mining project is a field of risks: A systematic and preliminary portrait of mining risks

9. KPMG International (2019): Risks and opportunities for mining. Retrieved on 17.07.2020 from: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/risks-and-opportunities-for-mining.pdf>

10. PwC (2018): Mine: Tempting times 2018. Retrieved on 17.07.2020 from <https://www.pwc.com/gx/en/mining/assets/pwc-mine-report-2018.pdf>

they are doing is for the benefit of the society, be serious about their obligations in environmental and social aspects and perform in a transparent way. To some extent this new image can help new mining to settle in Europe, but the global sourcing follows different convictions. As long as the consumers do not share the same opinion about “responsible sourcing” the difference remains. Mining companies are also suffering from plenty of misunderstandings, especially for those who suggest that the cycle can be closed for almost all present and future commodities. It simply cannot be achieved based on the laws of physics.¹¹ In public, where the discussion about the societal challenges is driven by ideology more than in the past makes the development and proceeding their operations very difficult.

For example, a study about the acceptance of industry conducted by the Chamber of Commerce Chemnitz¹², Germany in 2016 stated that mining among tobacco, pharmacy, automotive, and chemical industry ranks among the top five industries with lowest reputation. The Chamber interpreted this as a dramatic sign of lack of understanding of the society to the base of their wealth, considering that at least four out of the five industrial sectors belong to the backbone of German Economy.

The workshop highlighted another aspect discussed while on the topic of “Mining in Europe”. That is the economic and job opportunities lost in one’s jurisdiction when another purchases cheaper mineral raw materials from elsewhere. Taking electric vehicle as an example, it is essential to find ways to remain competitive along the value chain in order to avoid the production completely disappearing in Europe.



Potential delays from environmental and social sensitivity could be the difference between a positive return on investment and a negative one.

Charles Gibson, head of Mining at Edison Investment Research



It can be summed up from the aforementioned information that not only a reliable **regulations** (including EU/MS, federal/state etc.) and their administrative implementation are important to attract investors of mining projects but also **the recognition of an even level playing field**. In the context of public funding schemes, including EU funding managed by EU, ESIF at national and regional levels and other national and regional funding programs (e.g. in the framework of raw materials strategy), it must be recognised that investment decisions are subject of a Regional competition. The strategic use of EU funding for raising the Regions competitiveness in developing the raw materials sector is and will be an individual decision of the respective Regions in context of the exploitability of its resource inventory and other economic key sectors that will be given priority by policy making of the government.

For example, the MIREU study found that most of the current EU funding instruments apart of ESIF supports the experimental research stage and the applied research stage but there is little

¹¹. Ibid. 1.

¹². Goedecke, M. (2017): Presentation: Rohstoffbewusstsein und gesellschaftliche Akzeptanz sind unverzichtbare Grundlage des modernen Bergbaus on 16.11.2017 at Konferenz „MineLife – Leben mit dem Bergbau“. Retrieved on 01.09.2020 from: https://www.oba.sachsen.de/download/9_DrManfredGoedecke.pdf

for the technology implementation stage to achieve full commercialization (Figure 3).¹³ Many stakeholders of EU mining and metallurgy regions argue, that the exploitation of results from R&I lacks commercialisation as a matter of fact that the funding programmes aim does not essentially consider add-on incentives for upscaling and market up-take or reimburses expenditures for licensing or filing a patent. Especially industry is missing appropriate add-on tools for a long-term and sustain commercialisation of the results and funding of managing IP such as in form of patenting and licencing. ESIF, on the one hand, does not generally harmonise with other R&I programmes, such as HORIZON 2020 in this way. And on the other hand it is being applied very differently among the EU27.

Looking into more detail on the ESIF funding conditions of a number of EU regions, such as funding rate, project implementation and auditing it must be stated that ESIF is not always an appropriate tool for funding technological research. Other programmes, such as HORIZON 2020 offer far better opportunities. In this context, some national or regional managing authorities do not consider the raw materials sector in defining thematic objectives in their key sectors under ESIF in the OP. This has also something to do with the impact the raw materials sector (upstream) has on the economic vision and strategy of a Region: In terms of creating jobs and establishing manufacturing and production mining is not comparable with the impact generated by other industry, such as manufacturing, on the regional development. More than these politicians need a quick success of their political agenda. Compared to setting up a new battery plant or semiconductor manufacturing the establishment of a new mine takes too much time.

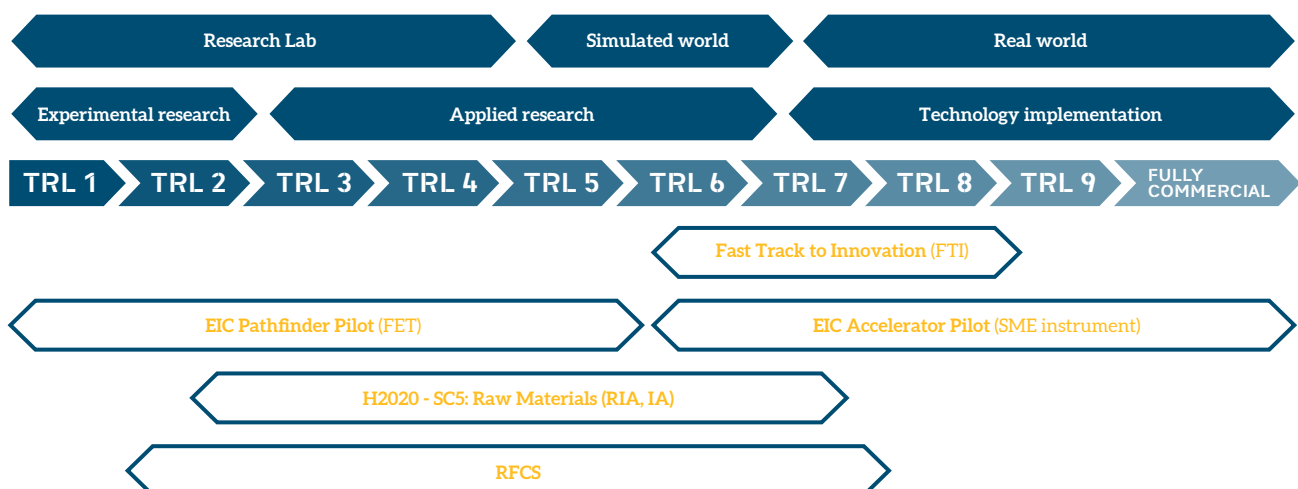


The problem could be that the R&I objectives are slightly too academic and perhaps do not address the problems mining companies need to address. Another factor could be the time-consuming bureaucratic process. Without a bigger participation by industry, there is always going to be a lack of exploitation of project results.

Chris Broadbent, Wardell Armstrong International



Figure 3 Relation between EU programmes and TRL



13. Martins, R., Ribeiro, A., Kullberg, J. C. & Amaro, S. (2020): MIREU Deliverable 6.2: Matrix of R&D investments and ESIF funds with framework conditions and financial models

FUTURE EU POLICY AND FUNDING LANDSCAPE FROM THE PERSPECTIVE OF RAW MATERIALS SECTOR

EC launched the European Green Deal in 2019. Its aim is for Europe to become the world's first climate-neutral continent, leading in circular economy, clean technologies and decarbonise energy-intensive industries. Private mining and metallurgy industry are assigned for delivering materials needed for this transition in Europe and ensuring EU's resource security and reliable access to strategic raw materials. Compared to other governments in the world, the EC does not consider raw material supply a public service. On the one side EC claims the Green Deal as a guiding agenda in responsibility of the governing bodies. And on the other side one of the key preconditions to implement the agenda, raw materials supply, is left to the responsibility of private entrepreneurship. In between is the consumer who makes most likely his own decision.



We've forgotten about raw materials and conveniently allow them to come from China or elsewhere and make it somebody else's problem. There is a cost associated to decarbonization that we have to bear in mind for transition.

Jeremy Wrathall, Cornish Lithium



Thus, the raw materials sector plays a crucial role in driving the development of other industries and businesses and enable the EU to achieve the aim of the Green Deal. However, Europe's manufacturing is still highly dependent on import to secure the raw materials the Green Deal requires. Innovative solutions to lower costs in mineral extraction and processing and metallurgical refining as well as balanced regulations on their operation are pre-conditions to reduce Europe's dependence on import and to give way to restart domestic production. To support this, the EU industrial strategy published in 2020 sets out future actions that are the key drivers for Europe's industrial transformation, including enhancing Europe's industrial and strategic autonomy by securing the supply of critical raw materials through an Action Plan on Critical Raw Materials and establishment of raw materials Alliance(s).



The new EU industrial strategy is all about that (the mineral raw materials sector) because the strategy cannot be put into practice without sustainable mineral raw materials production and that is the core for supporting the strategic value chains.

Kristiina Jokelainen, SmartNorth



Such a transition of Europe's industry will require support from EU funding in order to initiate raw materials business despite all the challenges mentioned above. The gain and result of this new deal must be seen in the long-term development: the forthcoming transition is expected to not only help the EU achieving the targets of the European Green Deal, but also to show the EU as a role model in setting up a new type of market economy which could exemplarily to the rest of the world. The next MFF 2021-2027 sets the maximum level of resources ('ceiling') for each major category ('heading') (Figure 4) of EU spending, which is now in negotiations. Within the seven headings, the programmes are grouped into 17 policy clusters, designed to show how the programmes are distributed. However, as can be seen in European Commission's MFF 2021-2027 draft, neither headings nor policy cluster explicitly mentions raw materials.

Figure 4 The seven headings of the next MFF (under negotiations)

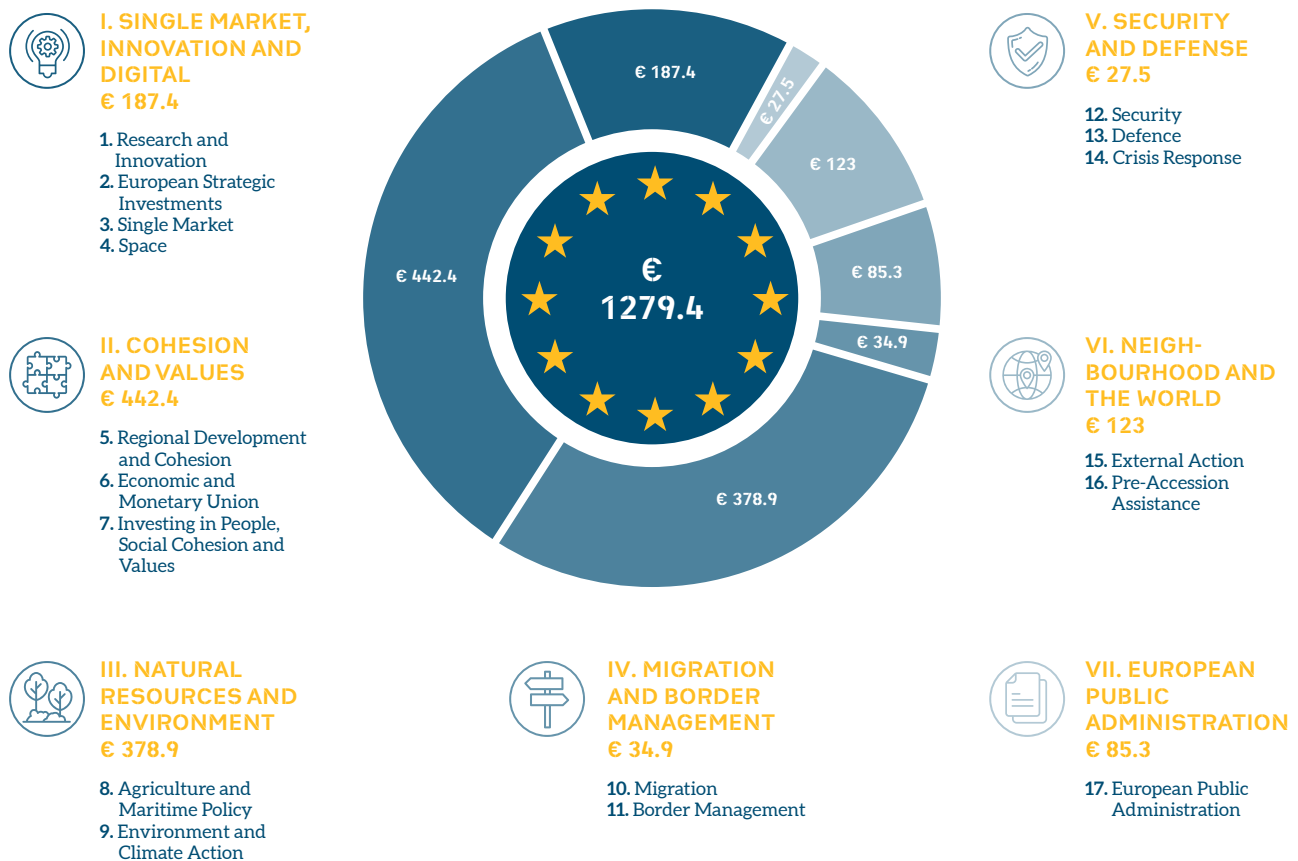


Figure 5 Preliminary structure of Horizon Europe



Horizon Europe, the main R&I programme within the next MFF 2021-2027, will incorporate research and innovation missions to increase the effectiveness of funding by pursuing clearly defined targets (Figure 5). The former societal challenges (including the SC5 Climate action, environment, resource efficiency and **raw materials**) of H2020 were replaced by global challenges under Pillar 2 in Horizon Europe as clusters: Health, Culture, Creativity and Inclusive Society, Civil security for Society, Digital, Industry and Space, Climate, Energy and Mobility, Food, Bioeconomy, Natural Resources, Agriculture and Environment. According to the new draft for Horizon Europe (summer 2019), new and emerging technologies are one of the key focus areas for the current EU investments in R&I and raw materials is included as part of the Cluster Digital, Industry and Space. Therefore, it can be seen that raw materials was earlier an explicit society challenge (i.e. SC5) but now raw materials is hidden within the Cluster Digital, Industry and Space. This implies that raw materials have been given less priority in Horizon Europe comparing to H2020 which could limit the implementation of the EU Green Deal and EU industrial strategy.

This has raised lots of concerns in the EU27. And being reminded in the circumstances how raw materials have been considered in the H2020 as one (minor) out of a number of societal challenges which already dominated the agenda, fears arise that raw materials have not yet entered the brains of the members of EU parliament and responsible decision-makers in the EC the way it should.

DISCUSSION ON “POWER OF NETWORKING”

Different from many other industrial activities, mining projects are bound to where deposits are located and often the exploitation of the deposits is subject to the jurisdiction of the regional authorities. Therefore, opinions coming from regions should be heard by raw materials policy makers at the EU level. Both should be aware about their responsibility to serve not only local or regional value chains by permitting and fostering minerals extraction but to contribute to supply security in EU27. However, the way and role mining regions serve in a very special manner public needs, they may not generate a quick income compared with settling manufacturing industry or developing a touristic infrastructure. This justifies political and monetary aid and support from EU, MS and Regional level. If regions bring together their joint ideas, there is a higher chance that they could make an impact on the EU policy-making. This is one of the main reasons why projects facilitating the networking between mining and metallurgy regions such as REMIX¹⁴ and MIREU exist. This requires raising their voice in EU27 in a way that Regions will be given attention in Brussels. This will be achieved by the so-called Council of Mining and Metallurgy Regions in EU (CoMMER) as one of the major results of high sustainability and impact from the MIREU project.



RECOMMENDATIONS

Developing mining and metallurgy industry is part of a national or regional economic master plan and underlies - like the claiming of potential sites for wind energy generation - a consideration and evaluation of site demand and priority to the targets set out in the master plan by the regional planning. Like windmills mine development in a region requires commitment from different stakeholders who influence this part of the decision making. In return the investor requires a long-term and reliable investment climate. Additionally, the mine developer requires more: access to skilled labour forces, research, infrastructure and downstream industries. ESIF can play a vital role on developing the raw materials sector by considering all these compartments of a raw materials project in a way to fund and to improve the framework conditions in a sustainable way. In the context of R&I investments and ESIF, recommendations for stakeholders were summarised from previous sections and shown below. The recommendations are based on the research conducted in MIREU and an analysis of the experiences shared by regional industrial clusters, administration and investors in the online workshop. Through the recommendations, stakeholders might be able to unite their efforts to accelerate the development process.

- It is crucial for stakeholders well aware of raw materials' value to the industrial value chain development to raise the awareness of those who are not familiar with the concept. Particularly, in the context of R&I investments and ESIF, the decision makers' acknowledgement of the

14. Interreg Europe project REMIX homepage: <https://www.interregeurope.eu/remix/>

importance of the raw materials sector may increase the funding opportunities since they are normally in charge of, for example, operational programmes, public policies, and smart specialisation strategies. In order to promote ESIF more for funding the raw materials sector in a number of mining and metallurgy regions, the programme regulations must be reviewed, in order to better attract applicants from industry. Second, stakeholders from the raw materials sector must take more care in including “their thematic objective” in defining the Regions’ OP.

- Aside from raising the awareness of the decision-makers in the authorities, it is also important to convey what is needed in order to really attract investors of the raw materials sector. It should be kept in mind, that Regions compete with one another and the socio-economic agenda of the EU ends at its border. According to Fraser Institute, 40% of mining companies investment decision depends on policy factors. Therefore, it is important to have appropriate policies in place, for instance, coherent funding programmes (including EU/MS, federal/state and inter-department overlap, etc.), long-term and reliable strategies with minimised political impacts and corresponding consistent funding programmes.
- In order to fully exploit the available funding opportunities, it is recommended to increase communication and collaboration between all stakeholders of the raw materials sector, even across regions in order to maintain know-how, avoid technology drain and establishing strategic partnerships on key value chains (e.g. battery value chain, metallurgy in circular economy) which will generate more impact on the overall economic roadmap of individual MS and the EU27 as a whole. Especially exchanging experiences with other regions, bundling forces and to better participate in the national and European agenda setting require new coordination and support measures in the Regions and in Brussels.
- Clusters or organisation with similar objectives can contribute in activating the communication and stimulating the collaboration between all stakeholders. Furthermore, based on their experience, clusters may offer several additional benefits to stakeholders, for instance, introducing the available funding opportunities, supporting the development of R&I through exchanging knowledge, matchmaking of project partner and assisting in application processes. However, this will require further support to fund this.
- The image of the raw material sector and its reputation have been damaged in context of the deindustrialisation of Europe. Peoples’ empowerment and a public consultation very much influenced by social media and networking put a regional project into a global frame. Those who are affected tend to become a minority and voices with different opinions (e.g. pro mining) are not loud enough to be heard or accepted. From investigations in Germany it is known¹⁵, that the public is divided into three categories: 1. “resistant”, 2. “in favour” 3. “tolerate”. The latter is known as the silent mass, and is the majority. Interestingly, group 1 dominates the discussion and must be understood as influencers up to the EC. This is the reason why it is recommended to promote the networking between regions and to generate a joint message which will have a bigger impact on the policy-makers at the EU level.

15. Cramer, B. (2019): Presentation: Mining and a Social Licence to Operate, questions from a mining authority on 05.06.2019 at MIREU 3rd SLO Stakeholder Workshop. Retrieved on 02.09.2020 from <https://mireu.eu/events/3rd-slo-workshop-ensuring-slo-adaptive-and-resilient>

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HOW MIREU ASSISTS THE REGIONS IN THE FUTURE: THE COUNCIL OF MINING AND METALLURGY EUROPEAN REGIONS (COMMER)

The overall objective of MIREU is to launch the Council of Mining and Metallurgy European Regions (CoMMER). The CoMMER will be a professional task force working under the European Regions Research and Innovation Network (ERRIN), bringing together the MIREU consortium with other mining and metallurgy regions to ensure the network continues after MIREU ends.

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THE EDITORS AND SPEAKERS



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Rute collaborates in the MIREU project, which is analysing the EU budget distribution for research and development investments in mining and metallurgy across regions.

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Wolfgang participates in many national and EU raw material related R&I projects, fosters the exploitation of results and clusters and creates synergies in the commercialisation and business development.



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In the MIREU project, Meng-Chun is involved in initiating networking activities between MIREU partners. The online workshop on Funding Tomorrow's Raw Materials Sector is one of them.

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