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## Research Report

# In search of critical raw materials: What will the EU Critical Raw Materials Act achieve? An analysis of legal and factual implications of the CRMA

Research Reports, No. 18/2024

## Provided in Cooperation with:

Austrian Foundation for Development Research (ÖFSE), Vienna

*Suggested Citation:* Tröster, Bernhard; Papatheophilou, Simela; Küblböck, Karin (2024) : In search of critical raw materials: What will the EU Critical Raw Materials Act achieve? An analysis of legal and factual implications of the CRMA, Research Reports, No. 18/2024, Austrian Foundation for Development Research (ÖFSE), Vienna, <https://doi.org/10.60636/2024-rr18> , <https://doi.org/10.60636/2024-rr18>

This Version is available at:

<https://hdl.handle.net/10419/300693>

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18/2024 RESEARCH REPORT



# In search of critical raw materials: What will the EU Critical Raw Materials Act achieve?

An analysis of legal and factual  
implications of the CRMA

Wien, Mai 2024

Bernhard Tröster, Simela Papatheophilou, Karin Küblböck

## **Acknowledgement**

We appreciate all the valuable comments and reviews.

### **IMPRINT**

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## Executive Summary

The Critical Raw Materials Act (CRMA) emerges as a pivotal legislative tool for the European Union's (EU) green and digital transformation and defense capacities. It aims to enhance the supply of critical raw materials (CRMs) for relevant industries and strategic technologies by fostering extraction, processing, and recycling within the EU. While it sets concrete and ambitious benchmarks for the first time, they are legally non-binding.

Key elements of the CRMA include legal changes to expedite permitting processes for Strategic Projects linked to strategic raw materials (SRMs), a newly introduced sub-group of CRMs designated as essential for strategic technologies. The regulation aims to streamline approval procedures by granting Strategic Projects "public interest" status and by imposing stricter permitting timelines.

Our legal assessment suggests that permit processes in Austria requiring an Environmental Impact Assessment (EIA) may be abbreviated, while those not subject to an EIA already exhibit shorter average processing times than those outlined in the CRMA. The CRMA has the potential to expedite permit processes for SRM projects in some EU member countries. Nevertheless, the permitting process represents only a fraction of the overall lead time required to establish extraction projects and will therefore not significantly reduce the total time required to implement a project.

A notable change is, however, the shortened public consultation periods in EIAs, limiting opportunities for participation by NGOs, citizen initiatives, and neighbors. Ultimately, whether the public interest status of Strategic Projects will result in an increased number of projects being initiated and to higher permission rates, depends on potential profitability for investors, future permitting practices, and the decisions of administrative courts.

The CRMA also introduces obligations related to recycling and circularity, national exploration programs, data collection, risk monitoring, and increased transparency. These measures serve various aims, including securing CRMs from secondary sources, gaining a better overview of potential supply shortages, and fostering public acceptance of raw material projects.

The potential of the CRMA to increase mining, processing, and recycling in the EU is uncertain due to several challenges: Firstly, a lack of emphasis on research and exploration has resulted in inadequate information about the EU's mineral reserves, hindering efforts to develop viable projects. Secondly, mining faces low social acceptance, and it is questionable whether higher transparency and information requirements will make a difference. Thirdly, while recycling and circularity targets are ambitious, the concrete obligations of member states remain vague. Moreover, energy and labor costs, along with competitive disadvantages in technological expertise, pose further obstacles to achieving the CRMA's targets.

Implementing the CRMA's obligations entails significant administrative and budgetary burdens for member countries. Even with expedited permit processes, thorough examination of new raw materials projects needs to be guaranteed given their profound impacts on the environment and society. Adequate staffing, expertise, and financial resources are therefore imperative to effectively oversee permitting, exploration, and other regulatory processes.

Certain aspects of the CRMA raise concerns regarding political influence and transparency deficiencies in decision-making processes. For instance, the absence of clear criteria for selecting SRMs or determining the assignment of Strategic Projects could potentially favor specific interests at the expense of broader societal and environmental considerations.

Ultimately, a notable gap in the CRMA lies in its insufficient emphasis on reducing resource use. This omission is particularly concerning given the significant social and ecological costs associated with resource extraction and processing. Consequently, even if the CRMA achieves its benchmarks, the EU will continue to rely on external sources for the majority of its critical raw materials use, unless it adopts stringent and comprehensive policies aimed at reducing societal energy use and resource consumption.

# 1 Introduction

European countries heavily rely on imports of raw materials for their industrial production. Intensified competition for mineral resources due to China's economic development since the 2000s and the imperative for energy transformation have exacerbated the urgency of securing access to raw materials in the EU. Consequently, policies on Critical Raw Materials (CRMs) have been formulated since 2008.

The EU Critical Raw Materials Act (CRMA) marks a significant milestone as the first legal act on CRMs in the EU. It underscores the pressing need for Europe for a stable supply of CRMs, recognizing the inadequacy of relying solely on imports. Europe is the only continent where mining has decreased over the past decades (WMD 2024), posing a significant challenge for the EU to reverse this trend. While the EU has historically outsourced its demand for raw materials, along with the associated negative consequences such as land use, environmental impacts, and adverse working conditions, the CRMA seeks to address this issue by encouraging increased domestic extraction and processing.

The CRMA has garnered considerable attention in recent months. Since the proposal by the European Commission (EC) in March 2023, numerous studies, comments, and blog articles have surfaced from research institutions, think tanks, consultancies, law firms and NGOs, addressing various aspects of the CRMA (Findeisen/Wernert 2023; González 2023; Hool et al. 2023; Höra 2024; Oger 2024; Oger/Watkins 2023; Petitjean/Verheecke 2023; Schulze 2024; Tansey 2023; Watkins 2023).

This ÖFSE Research Report is based on the final regulation (EU) 2024/1252, which was published on 03/05/2024 and entered into force on 23/05/2024.<sup>1</sup> It provides an overview of the various elements of the Act and offers a legal assessment, which serve as the basis for evaluating its potential implications on the supply of CRMs from the EU. We exclude implications of the new regulation on the supply from non-EU countries, as this is addressed by other EU policies and initiatives. The CRMA specifically targets the internal sources of CRMs within the EU.

The remainder of this research report is structured as follows: Chapter 2 gives an overview of the background and context of the formulation of CRM policies in the EU. Chapter 3 outlines the content of the CRMA. Chapter 4 conducts a legal analysis of the modifications introduced by the CRMA and their potential implications. Chapter 5 evaluates the CRMA's capacity to increase the supply of CRMs from European sources. The final section presents conclusions.

## 2 Background and Context

For decades, the reliance on imports of raw materials from third countries has been a matter of concern for European countries.<sup>2</sup> The European Commission, for instance, identified potential risks for the industrial sectors of the European Community in 1975 after the first oil shock with many similarities with current communications (Commission of the European Communities 1975; Risch 1978). However, securing access to mineral resources was not a strategic priority for the EU, as the resources needed for EU industrial production were readily available in sufficient quantities until the 1990s (Montanuniversität Leoben 2004).

However, the rapid economic growth of China in the early 2000s led to a significant increase in its demand for resources in a short period, and China began to emerge as a new player in resource-rich countries (Küblböck et al. 2019). Not only has China's demand on international

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<sup>1</sup> In the following, we refer to the regulation as CRMA, Act or Regulation, respectively.

<sup>2</sup> This part is largely based on Küblböck (2023).

resource markets increased, but in many cases, China also monopolizes the supply of processed minerals. Several resources required for the energy transition and digitization are predominantly mined, smelted/refined, and processed into intermediate products in China.

The increasing competition for mineral resources has become a growing cause for concern in the EU and its member states, but also for business interests (Curtis 2010: 9). Resource supply has become an increasingly important goal of EU foreign and trade policy, for instance in the EU trade policy strategy 'Global Europe' of 2006 (European Commission 2006). In 2008, the European Commission formulated the first EU-wide resource strategy with the European Raw Materials Initiative (European Commission 2008).

The EU Raw Materials Initiative (RMI) was launched in 2008 during the German EU presidency and was based on three pillars: 1) ensuring the supply of raw materials from global markets, 2) fostering supply of raw materials from European sources, and 3) boosting resource efficiency and promoting recycling (European Commission 2008).

The strategy primarily focuses on the first pillar, which encompasses various policy areas contributing to securing access to resources: resource diplomacy and international cooperation, trade, and development policies. Trade-related measures include free trade agreements, WTO accession negotiations, dispute settlement procedures, and anti-dumping measures. EU development policy aims to secure resource access by creating "win-win situations", such as supporting partner countries in improving their resource exploration and governance (Küblböck 2013). Linked to the RMI is also the publication of a list of so-called "critical raw materials" by the EC in 2011, which has been updated every three years since (see details in section 3).

The other two pillars, fostering internal supply and boosting resource efficiency, face obstacles due to the crosscutting nature of resource policies across multiple governance levels responsible for regulation. For instance, trade and environmental policies, along with a considerable portion of research funding are within the EU's jurisdiction, while various other domains, such as infrastructure, spatial planning, and permitting processes, are subject to regulation at national or regional levels. Consequently, strategies require a diverse array of measures and a high level of coordination and collaboration with member states and stakeholders.

In the 2010s, the EU has therefore initiated and financed several programs and initiatives aimed at enhancing collaboration among stakeholders, promoting projects and research on minerals' exploration, extraction, recycling, regulation and data management.<sup>3</sup> This was facilitated particularly through the Horizon 2020 program and initiatives like the [European Innovation Partnership \(EIP\) on raw materials](#) and the [EIT RawMaterials](#).

In 2020, the European Commission released the Critical Raw Materials Action Plan. Its four goals are: developing resilient value chains in the EU, reducing dependence on primary raw materials through a circular economy, expanding raw material supply within EU member states, and diversifying raw material sourcing from third countries while eliminating trade distortions. The goals and the ten concrete action proposals are largely reflected in the CRMA.

Compared to the initial RMI, the Action Plan places a stronger emphasis on resilient value chains and the circular economy (European Commission 2023a; Rietveld et al. 2022), which was also influenced by the onset of the COVID-19 pandemic. Aligned with the EU Green Deal and the Industrial Strategy for Europe, it aimed to increase the EU's strategic autonomy in key sectors. The industrial policy strategies and associated resource strategies mainly aim to build production capacities for products needed for energy transition and digitization such as permanent magnets for wind turbines, batteries for electric cars, or ICT hardware, and to diversify the source countries of raw material imports. In addition, the Action Plan and an EU

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<sup>3</sup> For instance, projects to produce minerals policy (MIN-GUIDE) and minerals permitting profile (MINLEX), which are available for all EU member states at <https://rmis.jrc.ec.europa.eu/member-states-legislation-08b84e>



foresight study (Bobba et al. 2020) connected access to raw materials with defense and space already before this issue became more urgent with the war in Ukraine.

In 2022, the European Commission announced the Critical Raw Materials Act (CRMA), a binding legal act on CRMs. The major difference to prior initiatives is its form as a legal act, since “non-regulatory actions have not been enough to ensure the EU’s access to a secure and sustainable supply of critical raw materials” (European Commission 2023b). It creates a regulatory framework entailing changes in the national laws of the member states (e.g. concerning permit procedures) and derogating several EU legislations.<sup>4</sup>

The CRMA was finalized in a remarkably fast procedure. The draft for the CRMA was published by the EU Commission in March 2023 and the final version was ready by April 2024 and was published in May 2024.<sup>5</sup> This indicates that the Act was widely consensual between and within the different EU institutions, even though mining projects within the EU are a controversial issue (Petitjean/Verheecke 2023). All parties were able to agree on the general objectives of the regulation to “ensure the Union’s access to a secure, resilient and sustainable supply of critical raw materials, including by fostering efficiency and circularity throughout the value chain” (Art 1 (1)).

Support for the CRMA should be viewed in conjunction with other initiatives for green and digital transitions, such as the Battery Directive and the Circular Economy Action Plan, and along with efforts to establish production capacities for new technologies under the Net-Zero Industry Act. Together with these complementary efforts, the CRMA aims to mitigate supply disruptions for EU industries and to increase the resilience of the EU economy.

### 3 Content of the Critical Raw Materials Act

The Critical Raw Materials Act (CRMA) consists of two parts. On the one hand, a regulation introducing legal changes and implementation tasks for the EU and its member states at different levels. On the other hand, it contains a communication by the EU Commission that explains the overall strategic vision and has a policy-guiding function.

In a nutshell, the CRMA contains various policy instruments to enhance the reliable supply with raw materials. These range from legal adjustments to information and transparency requirements. In Figure 1, we depict the components of the CRMA, grouping various articles and sections into four main topics.

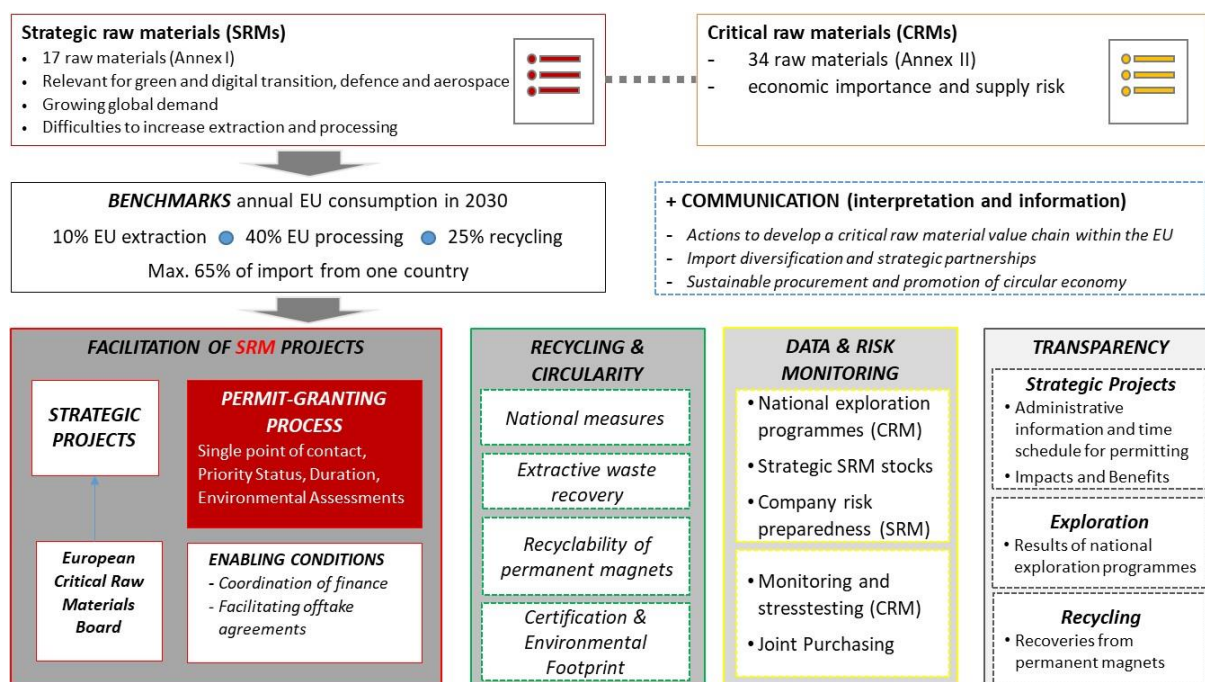
Firstly, one core element of the CRMA is the establishment of so-called Strategic Projects for extraction, processing and recycling of strategic raw materials (SRMs) through legal changes in the permitting process and the creation of enabling conditions. Secondly, the CRMA requires the implementation of national measures for recycling and circularity, which apply to the full list of CRMs. The gathering and analysis of data, for instance for risk monitoring and mitigation are a third instrument. And finally, the CRMA seeks to use transparency as a tool to advance strategic projects and exploration activities. Most issues around imports of CRMs from third countries are not covered by the CRMA and remain in other EU and member state policy domains.

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<sup>4</sup> Changes were made to Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020.

<sup>5</sup> See details on the procedure 2023/0079/COD [EUR-Lex - 2023\\_79 - EN - EUR-Lex \(europa.eu\)](#)

**Figure 1: Overview of CRMA regulation**



Source: own elaboration

### 3.1 Strategic and Critical Raw Materials

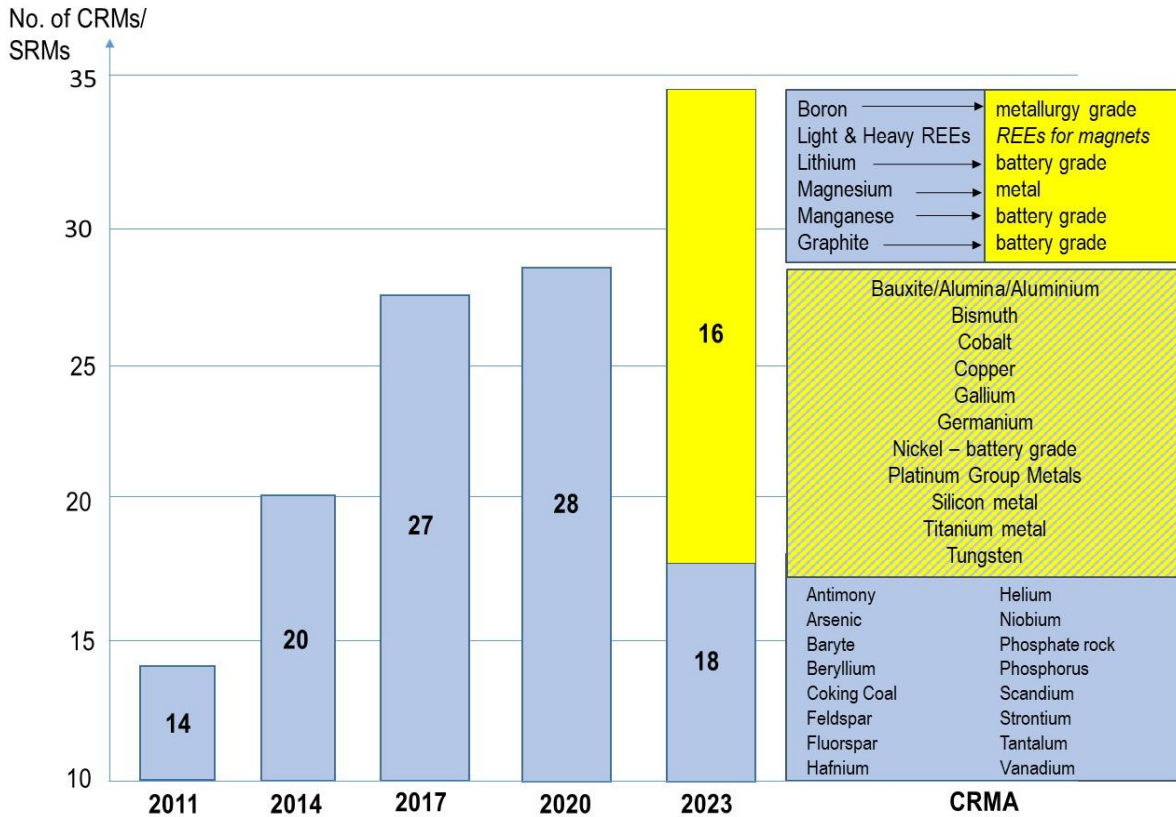
The starting point of the CRMA are two lists: A list of 17 strategic raw materials (SRMs, Art 3 and Annex I) and a list of 34 critical raw materials (CRMs, Art 4 and Annex II), including the 17 SRMs.

Lists with CRMs have been published by the EC since 2011 and updated every three years.<sup>6</sup> Raw materials are deemed "critical" when they show higher economic importance to the EU industry and higher risks of supply shortages compared with most of the other raw materials. The number of raw materials assessed as critical by the EU has more than doubled, from 14 in 2011 to 34 in 2023 (see Figure 2).

The reasons for this increase are that the number of materials assessed has grown from 41 in 2011 to 87 in 2023. Moreover, the threshold values for defining the higher economic importance and supply risk of CRMs are not set relative to the economic importance and risk metrics of all materials in the respective assessment (for instance above the average). Instead, the threshold values are maintained consistently across all CRM lists as defined by the EC (Zhang et al. 2023). As formulated by the EC (2010: 32) “[a]ssessing criticality of raw materials is not an absolute science”. It relies on available data and involves some level of judgment on the part of the authors.

<sup>6</sup> See <https://rmis.jrc.ec.europa.eu/eu-critical-raw-materials> for a comprehensive overview of the CRM list.

**Figure 2: Number of CRMs over time**



Note: blue bars indicate CRMs and yellow bars indicate SRMs; to enhance the readability of the figure, the y-axis with the number of CRMs starts at 10.  
 Source: own elaboration

The latest CRM list of 2023 introduces a new category of strategic raw materials. This new category is a core element of the CRMA as several provisions only apply to SRMs, such as changes of permitting benchmarks, strategic stock monitoring, stress tests, and joint purchasing.

A material is assessed as strategic based on its significance for so-called relevant strategic technologies for the green and digital transition or for defense and aerospace. In addition, the assessment takes into account the projected global demand growth for these materials and potential production constraints (Annex I, Section 2). Thus, the SRM criteria incorporate forward-looking elements, which are absent in the CRM assessment metrics so far (Blengini et al. 2017).

Given the high importance of the SRM list in the CRMA, it is important to note that it is the Commission’s task to designate SRMs. This remains an inherently political task, given that it is a primarily a political decision to classify certain technologies as strategic (Zhang et al. 2023). There is further some discretion for the Commission in defining and calculating the assessment metrics of the SRMs about the needs for strategic technologies and the expected global demand. However, details about the underlying data and calculations of the SRM metrics are not published in the CRMA.

For selected CRMs only specific grades are designated as strategic (see top boxes in CRMA column in Figure 2). This distinction is potentially based on their utilization in critical technologies and defense. For example, while all types of lithium qualify as critical, only the high-purity battery grade is defined as strategic. However, also copper is part of the SRM list

despite its wide variety of uses beyond strategic technologies. Moreover, copper would not be classified as a CRM due to its low supply risk. According to the study on the CRM list 2023 (European Commission 2023c), the expected demand growth of copper justifies, however, the classification of copper as strategic. Furthermore, SRMs are CRMs by definition (ibid.). Overall, this may potentially open doors to industry lobbying in the formation of the SRM list, which is updated every three years (Petitjean/Verheecke 2023; Tansey 2023).

### 3.2 Benchmarks

An important element of the CRMA is the introduction of concrete benchmarks for extraction, processing and recycling capacities as well as for import dependence in relation to the annual consumption within the EU (Art 5). By 2030, the CRMA aims to achieve that

- EU extraction capacity meets 10 % of annual strategic raw material consumption, considering reserves;
- EU processing capacity covers 40 % of annual consumption;
- EU recycling capacity handles 25 % of annual consumption and increases recycling from waste;
- No third country should account for more than 65 % of imports for the EU's annual consumption.

These benchmarks, however, exclusively apply to SRMs and are non-binding and therefore not legally enforceable. The benchmarks are set for every single SRM, but SRMs with limited reserves in the EU are exempted.

The benchmarks can be interpreted as a signal to the member states and the industry that the EU prioritizes the development and support for extraction and processing. Moreover, the increase in the benchmark for recycling to 25 % compared to 15 % in the Commission's proposal underscores the importance of recycling for the supply of SRMs in the long term (Gregoir/van Acker 2022).

Achieving all benchmarks would enhance the resilience of strategic technology value chains. However, a rough calculation suggests that even with full benchmark compliance, imports would remain the primary source of raw materials. For example, if 10 % originates from EU extraction, unprocessed raw material equivalent to 30 % of processed materials would still need to be imported. Similarly, with 25 % from recycling and 40 % from processing, 35 % of processed materials would still need to be imported. In total, even when all benchmarks are reached, 65 % of SRM supply would still rely on third countries.

### 3.3 Facilitation of Strategic Projects

One of the key instruments introduced by the CRMA are the so-called "Strategic Projects" (Chapter 3, section 2) which are defined as projects aimed at strengthening the EU's security of SRM supply. The key prerequisites are that the projects involve mining, processing or recycling (but not exploration) of SRMs. The projects may be conducted in EU member states as well as in third countries.

Additional criteria for the definition of a project as "strategic", are its technical feasibility, sustainable implementation, cross-border benefits, and, in the case of a project outside the EU, added value in the third country (Art 6). The criteria are to be assessed by the Commission, taking into account the opinion of the EU Critical Raw Material Board (Art 35 and 36). If the project is proposed within an EU member state, that member state retains the authority to refuse the designation of Strategic Project status. Conversely, for a project intended in a non-EU member state, the respective government must explicitly approve the Strategic Project status before the Commission can grant it (Art 7).

If a project is recognized as a Strategic Project, it is defined as being in the “public interest”. Moreover, if it aligns with other criteria in the relevant EU legislation, it gains the status of “overriding public interest” (Art 10 (2)). As a result it can, but does not automatically, obtain simplifications of the permitting process (Art 9 to 14, as discussed in section 4 in detail) and benefits from the enabling conditions that the CRMA aims to establish (Art 15, 16, 17 and 18). These include, however, no direct incentives but focus on transparency activities for national authorities and supporting actions, for instance, coordination of financing through the EU Critical Raw Material Board with respect to existing EU financing facilities. Notably, the CRMA does not create a new European financing instrument for strategic projects. Nevertheless, single member states such as Germany, Italy, and France have announced national raw material funds (Olk 2024).

According to representatives of the Commission, strategic projects are intended to have signaling effects for European industry and the general public, emphasizing the importance of mining and processing for resilient supply chains and for creating “real jobs” and a “viable economy” (BenchmarkSource 2024). Therefore, the EC aims to designate the first strategic projects by the end of the year 2024.

### **3.4 Recycling and Circularity**

A central focus of the CRMA is the promotion of recycling and circularity, addressed in Chapter 5 of the CRMA. This focus applies to the full list of CRMs. The CRMA mandates the establishment of national measures on circularity (Art 26). Further actions are required for the recovery of extractive waste (Art 27) and for enhancing the recyclability of permanent magnets through a new labeling system (Art 28 and 29). The act also includes the recognition of sustainability certification schemes (Art 30) and the potential creation of environmental footprint declarations (Art 31).

As analyzed in more detail below, member states have considerable scope in determining the level of ambition for their circularity regulations. These national regulations are also related to the EU Circular Economy Action Plan and require coordination among the authorities within the member state.

### **3.5 Data and Risk Monitoring**

The CRMA also emphasizes the role of information and data for analyzing the risks associated with raw materials supply and for developing mitigation tools. Most importantly, the Regulation obliges member states to establish a national program for general exploration with a focus on CRMs and their carrier materials within a year (Art 19). Member states are obliged to gather data on the strategic stocks (Art 22 and 23) and on companies that produce strategic technologies. These companies are also required to perform risk assessments for their supply chains of SRMs (Art 24). The CRMA also establishes risk monitoring by the Commission and requires the collection of relevant information from member states (Art 20 and 21). Joint purchases, similar to the experiences with gas, are included as a mitigation tool (Art 25).

### **3.6 Transparency**

The CRMA includes several elements to increase transparency, particularly related to strategic projects. Project promoters are required to publicly disclose all relevant information about their projects (Art 8). Additionally, authorities need to provide more information during the permit granting process (Art 18). Further, information for instance on the national exploration programs (Art 19) and the recycling initiatives (Art 29) must be made public. Overall, transparency should support the permit granting process, but also foster the acceptance within local communities toward new mining, processing and recycling projects.

## 4 Legal consequences of the Critical Raw Materials Act

The principal legal amendments brought about by the CRMA that directly entered into force on 23/05/2024 include (1) modifications to the permit granting process for Strategic Projects and (2) obligations imposed on member states and the Commission, particularly concerning national exploration programs or circularity measures. The initial section of this chapter outlines the modifications made to permit granting processes, followed by an assessment of the implications of these changes. Subsequently, the latter section similarly begins with a summary of other obligations introduced by the CRMA, before proceeding to assess their potential implications.

### 4.1 Modifications of permitting processes for raw material projects

While the Commission has published several policy documents on CRMs since 2008 (EC 2008), the CRMA for the first time includes a regulation, i.e. a legal act that binds member states directly and is directly applicable (Art 288 Treaty on the Functioning of the European Union). As such, the regulation introduces changes to national laws that govern the permitting process of raw material projects, prompting lawmakers to adjust the affected national laws. In Austria, this affects for instance the Austrian Mineral Raw Materials Act (Mineralrohstoffgesetz, MinroG) and the Environmental Compatibility Assessment Act (Umweltverträglichkeitsprüfungsgesetz, UVP-G).

By definition, mining projects and minerals processing projects inherently affect nature in various ways, posing risks to the environment, flora, fauna and the local population. They therefore require several permits in order to ensure compliance with all relevant national and regional laws. For a better understanding of the changes introduced by the CRMA to the permit granting process, we first give a general overview of existing permitting procedures and subsequently elaborate on the modifications.

For all raw materials projects in Austria, the permits that have to be obtained for mining and mineral processing projects include construction permits<sup>7</sup>, permits regarding the usage of waterways and bodies of water<sup>8</sup>, regional environmental permits, permits for impact on forest<sup>9</sup>, permits for specific chemicals<sup>10</sup>, noise protection plans<sup>11</sup> and immission protection plans<sup>12</sup>. Extraction projects also require a mining permit<sup>13</sup>, processing projects mandate a plant permit<sup>14</sup> and recycling projects necessitate a permit for waste facilities<sup>15</sup> (see also Figure 3).

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<sup>7</sup> Pursuant to the regional provisions.

<sup>8</sup> Pursuant to the Water Law Act 1959 (Wasserrechtsgesetz 1959, BGBl I 215/1959 as amended by BGBl I 73/2018).

<sup>9</sup> Pursuant to the Austrian Forest Act (Forstgesetz 1975, BGBl I 231/1977 as amended by BGBl I 144/2023).

<sup>10</sup> Pursuant to the Chemicals Act 1996 (Chemikaliengesetz 1996, BGBl I 53/1997 as amended by BGBl I 186/2023).

<sup>11</sup> Pursuant to the regional provisions.

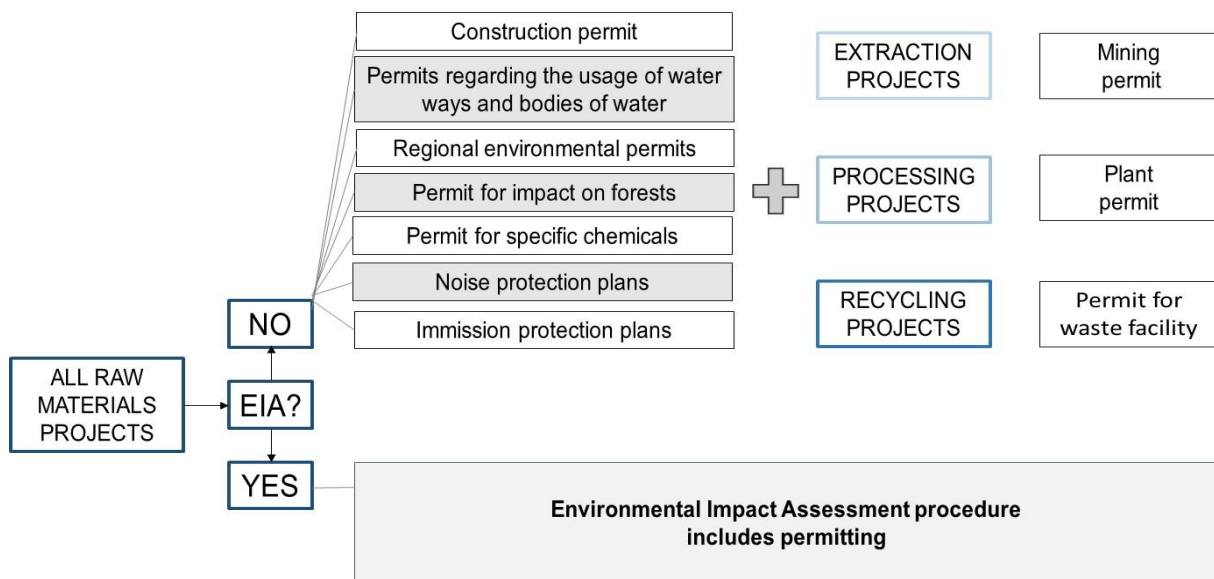
<sup>12</sup> Pursuant to the regional provisions.

<sup>13</sup> Pursuant to the Austrian Mineral Raw Materials Act (Mineralrohstoffgesetz, BGBl I 38/1999 as amended by BGBl I 60/2022).

<sup>14</sup> Pursuant to the Business Regulation (Gewerbeordnung 1994, BGBl I 194/1994 as amended by BGBl I 75/2023).

<sup>15</sup> Pursuant to the Waste Economy Act (Abfallwirtschaftsgesetz 2002, BGBl I 102/2022 as amended by BGBl I 66/2023) and the Landfill Directive (Deponieverordnung, BGBl II 39/2008 as amended by BGBl II 144/2021).

**Figure 3: Permits required for all raw materials projects in Austria**



Note: This is a general overview and does not fully represent the permitting process  
 Source: Own elaboration

However, the approval procedure depends on whether an environmental impact assessment (EIA) is required (see also info box 1). If this is not the case, the general permitting process becomes cumulative. This means that an applicant must obtain all permits listed above (and illustrated in Figure 3) from various authorities before starting operations. Due to the federal structure of Austria, this necessitates applying for permits from various government levels. Even for obtaining the mining permit under the Austrian Mineral Raw Materials Act (MinroG) alone, different administrative authorities can be involved, depending on the type of production and the location of the project (§§ 170 f MinroG).

If an Environmental Impact Assessment (EIA) procedure is required, these permits are encompassed within that process. The EIA procedure operates as a "concentrated permitting procedure," meaning that the responsible authority is mandated to address all relevant requirements for various permit types (in detail see Schmelz/Schwarzer 2011; Vogelsang 2016). Consequently, the authority overseeing the EIA procedure functions as a one-stop-shop for all administrative permits. However, the approval of mining operation plans and the business licenses required for operating a processing or recycling plant fall beyond the jurisdiction of the EIA authority and thus must be obtained from a separate authority.

## **INFO Box 1**

### **Environmental Impact Assessment (EIA) Procedure as a concentrated permitting procedure**

The EU's Environmental Impact Assessment Directive (Directive 2011/92/EU) and its amendment (Directive 2014/52/EU) were incorporated in the Austrian Environmental Compatibility Assessment Act (Umweltverträglichkeitsprüfungsgesetz 2000, BGBl 697/1993 as amended by BGBl I 26/2023, "UVP-G"). It determines that projects with the potential to cause significant environmental effects must undergo an environmental impact assessment (EIA).

The necessity for conducting an EIA depends on the type and location of the project. For instance, the extraction of mineral raw materials in open-cast mining requires an EIA, if the surface of the site is 20 ha or more (for loose material) or 10 ha or more (for solid rock). Underground mining requires an EIA if the respective overground installations and operating facilities cover an area of 10 ha or more. If the projects are located in protected areas, EIAs are required also for smaller sites (for a complete list of projects with EIA requirements see Annex I of the UVP-G). The responsibility for determining whether a project requires an EIA rests with the EIA authority, which may be the regional governments, or the administrative district authorities, depending on whether the regional government has delegated this authority to them.

The CRMA introduces several modifications to the permit granting process, but exclusively in the context of SRMs. These modifications include the acceleration of the (1) permit granting and (2) the Environmental Impact Assessment (EIA) procedures, (3) the establishment of a predetermined public interest criterion for Strategic Projects, and (3) the introduction of additional information obligations on the Single Points of Contact. These changes are analyzed below.

#### **4.1.1 Acceleration of the Permit-granting Process**

For Strategic Projects in an EU member state, the permit granting process as modified by the CRMA will be limited to 27 months for extraction projects and to 15 months for processing or recycling projects. Exceptions are allowed where they are warranted by the nature, complexity, location or size of the proposed project. Notably, this time limitation does neither include the (administrative or court) appeal procedures (see Art 11 (10)) nor the time needed to obtain an EIA in which permitting is integrated.

In theory, the applicable Austrian law already sets faster permitting processes than the CRMA: Mining authorities are currently given six months to approve (or deny) mining permits (§ 72 General Administrative Procedural Act, Allgemeines Verwaltungsverfahrensgesetz 1991, BGBl 51/1991 as amended by BGBl I 88/2023).

#### **4.1.2 Acceleration of the Environmental Impact Assessment Procedure**

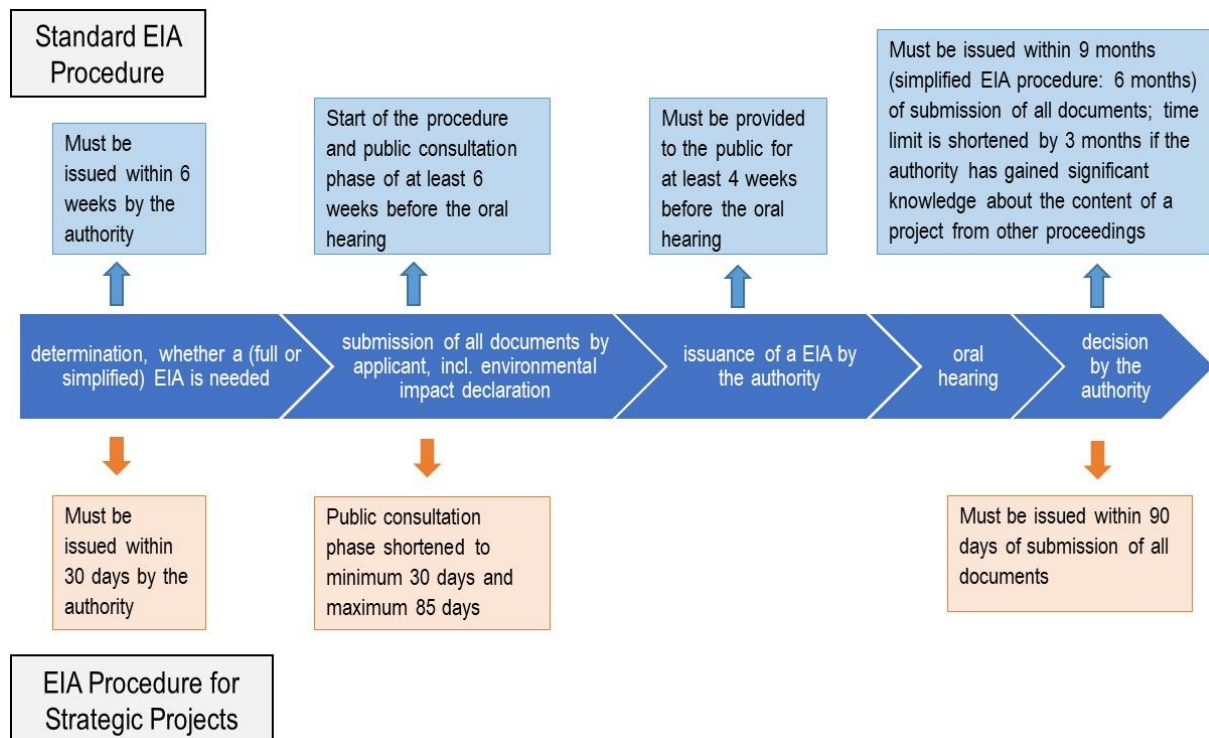
Three modifications affect the timeline of specific stages within the EIA procedure for Strategic Projects (see Figure 4). Firstly, the CRMA shortens the period for evaluating the need for an EIA from 42 days (6 weeks) to 30 days.

Secondly, if an EIA is deemed necessary, the CRMA specifies that the corresponding public consultation period should range from 30 to 85 days. This necessitates an amendment to Austrian law, which presently does not foresee an upper time limit for public consultation. Currently, it only mandates its start upon submission of all documents to the authority and its conclusion one week before the oral hearing.



Thirdly, the CRMA limits the EIA decision period for Strategic Projects to 90 days, as opposed to the current nine-month period stipulated by Austrian law<sup>16</sup>.

**Figure 4: Changes in the EIA procedure through the CRMA**



Note: EIA decisions of the authority can be appealed in the administrative court  
Source: Own elaboration

#### 4.1.3 “Overriding Public Interest” of Strategic Projects

The CRMA introduces a change to the legal status of Strategic Projects. These projects are to be regarded a-priori as being in the “public interest” or “serving public health and safety” due to their contribution to the security of supply of SRMs in the EU (Art 10 (1) and (2)).

In general, in order to obtain a project permit, nature protection regulations have to be observed. This entails that projects cannot be situated in special areas of conservation according to the Habitats Directive (Directive 92/43/EEC), and that they meet the directive’s stipulations for the protection of flora and fauna, as well as the requirements outlined in the Birds Directive’s requirements (Directive 2009/147/EC) for the protection of birds. Similarly, to be granted a permit under the Austrian Water Law Act, projects must adhere to the rules protecting water set out in the EU Water Framework Directive (Directive 2000/60/EC).<sup>17</sup>

Derogations of those rules are possible under certain conditions. One such condition is the demonstration of the “overriding public interest” of the proposed project (Art 6 (4) and Art 16 Habitats Directive and Art 4 (7) lit c Water Framework Directive).<sup>18</sup> In the case of the Birds Directive, the derogation is possible if it is “in the interests of public health and safety” (Art 9

<sup>16</sup> Depending on the project type and the availability of substantial information from other permit procedures, the existing decision period can be further reduced to three months (§ 7 UVP-G).

<sup>17</sup> These EU legal acts are incorporated in the Austrian Water Law Act and the regional nature protection regulations (e.g. the Species Protection Regulation of Styria (Stmk. Artenschutzverordnung, LGBl 40/2007), the Nature and Landscape Conservation Act of the Burgenland (Burgenländisches Natur- und Landschaftspflegegesetz, LGBl 29/1991 as amended by LGBl 20/2016 or the Act on Operator Duties for Environmental Protection in Vorarlberg (Gesetz über Betreiberpflichten zum Schutz der Umwelt, LGBl 3/2010).

<sup>18</sup> The derogation through overriding public interest would also apply to the proposed EU Regulation in Nature Restoration (COM/2022/304).

(1) lit a Birds Directive). According to the CRMA, Strategic Projects “may be considered to have an overriding public interest” if they meet the “conditions set out in those Union legislative acts” (Art 10 (2)). In practice, it is highly probable that projects involving raw materials mining or processing will have some degree of adverse effects on nature conservation. With this provision, the CRMA emphasizes that the public interest of a Strategic Project may outweigh those other interests, within the merits of the existing EU legislation.

Strategic Projects are, therefore, given greater consideration in the individual case assessments during permitting processes. Yet it is important to note that they do not hold absolute priority over other interests. The weighing of interests by public authorities will therefore not automatically be in favor of the projects, since the interests in nature protection (water protection, protection of flora and fauna or ecosystems as a whole) can still outweigh the public interest (or public health and safety) in the conduct of the project. Nevertheless, the a priori determination of Strategic Projects as being in the public interest (or serving public health and safety) supports their standing in this weighing of interests (see also detailed discussion below).

#### **4.1.4 Single Points of Contact**

The CRMA aims to strengthen transparency and information duties by authorities. Member states have to establish one point of contact per administrative level and stage of the CRM value chain. These authorities must provide information to all promoters of CRMs projects. In addition, the Single Points of Contact are given additional information duties towards promoters of Strategic Projects, including the notification of specific document submission deadlines. This has the potential to improve the situation for project promoters during the EIA procedure<sup>19</sup>.

#### **4.1.5 How will the CRMA effectively change permitting processes?**

As described above, the CRMA introduces several legal modifications aimed at facilitating the establishment of Strategic Projects. Will these newly introduced modifications significantly alter current processes? Generally, it is worth noting that the existing European legal framework is not inherently considered unfavorable to mining (cf the results of Mejía/Aliakbari 2022; Johnson et al. 2023).

In the case of Austria, the CRMA’s limit of 27 months for the duration of a general permit granting process for extraction projects considerably exceeds the six-month limit previously set by Austrian law. However, the CRMA time limit more accurately reflects the actual duration of permitting processes in practice. In Austria, permitting processes typically take six months for nature conservation permits, up to two years for water permits and an average of 1 to 2 years for approvals related to the Mining Law (MinPol and partners 2017: 55). Contrary to Austria, many other EU member states do not set a specific time limit for permits (Ericsson/Löf 2021). Across other EU member states, the actual duration of permitting processes varies considerably, ranging from 11 months in Portugal to three years in France and up to seven years in Spain (ibid.). Thus, the CRMA implications on the permitting procedures in the different member states will vary.

The CRMA expedites the permitting pathway for Strategic Projects via EIAs by imposing stricter time limits. Generally, EIAs in Austria take in total 18 months for all cases (Umweltbundesamt 2023) and three years for mining projects in particular (MinPol and partners 2017: 27). Only when applicants have submitted all the required documents, the approval period begins. The CRMA reduces this approval period for Strategic Projects to 90 days, which is equivalent to the current time frames for specific cases of simplified EIAs in the

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<sup>19</sup> Currently, late or incomplete submissions of documents cause average delays of seven months in environmental impact assessment procedures (Umweltbundesamt 2021: 41).

Austrian law. Approval periods in Austria take an average of 10.9 months (in the case of a simplified EIA 7.7 months) (Umweltbundesamt 2023), however, there are no specific data on raw materials projects available. Incomplete documentation by the applicants is therefore a significant factor contributing to prolonged EIA procedures (ÖKOBÜRO 2018; Umweltbundesamt 2021).

The CRMA seeks to support the acceleration of permitting processes in three ways. Firstly, it mandates additional funding for the relevant authorities to increase their capacities and to include necessary external expertise (Art 9 (9)). Given the differences in the current systems, necessary efforts for adjustments vary considerably among the different EU member states.

Secondly, the obligation to establish a system of single points of contact aims to streamline the lengthy process of document submissions. While Austria's EIA system already operates as a one-shop stop, expanding this approach to the general permitting process is crucial. Previously, project promoters in Austria not covered by EIA provisions had to coordinate with various authorities overseeing mining, water, forest, and nature protection. However, it is worth noting that the CRMA allows member states to establish different Single Points of Contact for various administrative levels (national and regional) as well as for different processing stages. Consequently, the implementation of the CRMA may not necessarily centralize all necessary steps under one authority, but could instead maintain multiple authorities with distinct geographical and material responsibilities.

Thirdly, the designation of Strategic Projects as being of "public interest" alters the balance of different interests in single permitting cases, even though it does not grant absolute priority to Strategic Projects. This change in legal status is unlikely to result in major changes to permitting decisions in Austria. For mining projects within areas designated for mining in the AUTMINPLAN<sup>20</sup>, the first-time approval rate is at 80 %, with the remaining 20 % of projects approved upon appeal (MinPol and partners 2017: 55). In cases that require EIAs, 97.2 % of these assessments resulted in a positive decision (Umweltbundesamt 2021: 30)<sup>21</sup>.

The discussion above shows that in Austrian administrative practices there is not much evidence that mining permits are denied due to a prioritization of other interests over mining interests.<sup>22</sup> The importance of "overriding public interest" could, however, play a pivotal role in future permitting cases, in particular for extraction projects in special conservation areas. Whether this will result in a prioritization of Strategic Projects over other interests, such as nature conservation, depends on the future permitting practices of the relevant administrative authorities and lastly the decisions of administrative courts.

Limiting legal modifications in permitting processes to SRMs has the potential to create tension with permitting processes for other raw material projects. The measures to accelerate and prioritize SRMs are legally not applicable to all other projects of a similar nature. Consequently, the relevant authorities must establish separate procedures for Strategic Projects and other projects.

The shortened public consultancy timeframe in EIA procedures affects parties and civil society. According to § 9 (5) UVP-G, written statements by environmental organizations, neighbors under certain circumstances,<sup>23</sup> and citizen initiatives on the project and its environmental impact can only be submitted during the period of public consultation. If a person or

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<sup>20</sup> Austrian Mineral Resources Plan, showing mineral occurrences in conflict-free areas.

<sup>21</sup> Those numbers pertain to all EIA procedures, not only mining-related ones, for which no separate data could be obtained.

<sup>22</sup> This has been made even clearer through the 2023 introduction of a clause in the Austrian UVP-G – independently of the CRMA – declaring that projects of the energy transition are considered as being "in high public interest" (§ 17 (5) last sentence UVP-G, as amended by BGBl I 26/2023).

<sup>23</sup> Neighbors are affected if more than 100 persons are expected to be involved in the procedure so that the procedure is conducted as a "major proceeding" [Großverfahren] according to § 44a AVG. In an ordinary procedure (where not more than 100 persons are expected to be involved), neighbors can submit their statement orally until the day before the oral hearing or during the hearing and are thus not affected by the shortening of the public consultation period.

organization does not submit a statement in this period, it loses its status as a party to the procedure (§ 9 (6) UVP-G) and its statement cannot be considered in the EIA. Furthermore, the right to appeal decisions in court is lost.

After the changes introduced by the CRMA, statements have to be submitted within 30 or at longest 85 days in EIA procedures of Strategic Projects. This affects especially citizen initiatives, as for their constitution, the submission of a written declaration with a minimum of 200 signatures from eligible voters from within the municipality is required during the public consultation period. As a consequence, EIAs for Strategic Projects will leave less room for the participation of NGOs, citizen initiatives, and neighbors. This presents the risk of accelerating procedures at the cost of both public consultation and public approval (EU Raw Materials Coalition 2023).

## **4.2 Further obligations introduced by the CRMA**

The CRMA assigns various obligations to the Commission and the EU member states in order to enhance the know-how about the supply and use of strategic and critical raw materials and to create more transparency. These obligations range from the development of exploration programs to the implementation of measures for circularity. A specific focus is on data gathering by the member states in order to establish and improve information about potential sources, the availability and potential bottlenecks in the raw materials supply. This section examines obligations introduced for EU member states and the Commission.

### **4.2.1 For EU Member States**

Beyond the changes in the permitting process, elaborated in detail above, the member states are tasked with several additional obligations: Key obligations include enhancing information about the availability of mineral reserves. To achieve this, member states are required to establish national exploration programs (Art 15) that gather information on the geological occurrences of CRMs in the EU through the promotion and regular updates of mineral mapping or geoscientific surveys.

Furthermore, the CRMA introduces obligations related to increased circularity and recycling: Member states have to adopt and implement circularity measures (Art 25), establish a database of closed extractive waste facilities and subsequently implement measures to promote the recovery of CRMs from extractive waste.

Other obligations include the collection of information and data about companies to be reported to the EU Commission. This involves identifying key market operators along the CRM value chain and monitoring their activities (Art 21). Member states are also mandated to name large companies using SRMs for specified products in the sectors electromobility, renewables, digitalization, and defense. These companies must conduct risk assessments on their sourcing of SRMs. Further, member states have to report their strategic stocks of SRMs (Art 22).<sup>24</sup>

To ensure compliance with the CRMA by third parties – such as waste management facility operators or large companies using SRMs – member states must also establish rules on penalties for infringements of the CRMA.<sup>25</sup>

If a member state fails to meet the obligations outlined in the Regulation, e. g. by not providing the requested information to the Commission or by refusing to adhere to the shortened time limits for permit processes of Strategic Projects, the Commission may initiate an infringement

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<sup>24</sup> The development of a potential strategy and actions to build up and hold SRMs in the future is described in Art 23.

<sup>25</sup> How effective those are will depend on the member states. If Austria (as it has done in the implementation of the Conflict Minerals Regulations, Regulation (EU) 2017/821) does not impose a fine but relies on the general fines determined in the Administrative Enforcement Act 1991 (Verwaltungsvollstreckungsgesetz 1991, BGBl 53/1991 as amended by BGBl I 14/2022), those fines would only amount to 2000 €.

procedure (Art 258 TEUF).<sup>26</sup> If the member state persists in non-compliance, the Commission can call on the European Court of Justice to assess a breach of EU law and impose financial penalties on the member state.

#### 4.2.2 For the Commission

In addition to its crucial task of designating Strategic Projects (see section 2.3), the Commission plays an important role in monitoring and mitigating risks related to CRMs, as well as in establishing provisions for circularity. Furthermore, the Commission determines the further role of certification schemes and environmental footprint declarations. Lastly, the Commission is responsible for updating the lists of critical and strategic raw materials.

Concerning risk monitoring and mitigation, the Commission is entrusted with a wide array of measures. First, the Commission must monitor supply risks related to CRMs by monitoring trade flows, demand and supply, concentration of supply, production and production capacities, price volatility, bottlenecks (including permitting bottlenecks) as well as potential obstacles to trade. Second, the Commission will support the national authorities in performing stress tests. Third, it is responsible for the creation of benchmarks “indicating a safe level of Union strategic stocks for each strategic raw material” (Art 32 (1) lit a) and based on that – together with the information obtained from the member states – issue opinions to the member states to increase the level of strategic stocks. Lastly, the Commission must set up and operate a joint purchasing system for SRMs. In such a system where the Commission seeks “offers from suppliers to match that aggregated demand” any interested company within the EU may participate (Art 25).

To promote circularity, the Commission must establish recycling capacity benchmarks as a share of the SRMs available in relevant waste streams by 2027. However, no legal consequences are associated with these benchmarks once established. In other words, they will serve as non-binding declarations of intent.

On the contrary, a measure with legal implications to be undertaken by the Commission involves the development of a new framework for the recyclability of permanent magnets. Permanent magnets, i.e. magnets that retain their magnetic properties once exposed to a magnetizing force, are utilized in a multitude of applications, including magnetic resonance imaging devices, wind energy generators, industrial robots, motor vehicles, cooling generators, heat pumps, electric motors, washing machines, tumble driers, microwaves, vacuum cleaners or dishwashers. Since most permanent magnets are made using various CRMs, in particular Rare Earth Elements, efforts are underway to substitute these materials in permanent magnet production, as well as to increase the recycling of permanent magnets (with further references to such projects: Parnitzke (2018)).

The Commission has been assigned 18 months to develop the new framework for the recyclability of permanent magnets. Two years thereafter, any entity placing products typically containing permanent magnets on the market, must include a label indicating whether the product includes permanent magnets. If it does, it must include a data carrier providing information such as how to safely remove the magnet. In addition, the Commission must determine minimum shares for certain CRMs<sup>27</sup> sources from post-consumer waste to be used in the permanent magnets. However, the Commission has time until the end of 2031 to determine those minimum recycling shares (Art 29 (3)).

In order to introduce environmental footprint declarations for CRMs, the Commission must establish rules for calculating and verifying the environmental footprint, in accordance with Annex V. 18 months after the regulation comes into force, the Commission is required to submit a report to the European Parliament and the Council outlining the CRMs prioritized for

<sup>26</sup> Art 259 TEUF also conveys the right to initiate infringement procedures on other member states. However, in practice infringement procedures against a member state initiated by another member state are rare (see Lorenzmeier 2017).

<sup>27</sup> Neodymium, dysprosium, praseodymium, terbium, boron, samarium, nickel and cobalt

assessing whether “the obligation to declare the environmental footprint of a critical raw material is necessary and proportionate” (Art 31 (2)). For those CRMs, the Commission must present assessment conclusions one year after the report. As a result, any (natural or legal) person placing CRMs on the market (including processed or recycled), for which the Commission has adopted calculation and verification rules, must make the environmental footprint available (unless in the form of final or intermediate products).

The Commission is further tasked with recognizing certification schemes for the sustainability of CRMs according to the criteria outlined in Annex IV. NGOs have brought considerable criticism against bestowing business certification schemes with additional credibility by recognizing them (EU Raw Materials Coalition 2023; González 2023).

In addition to this criticism about the Commission’s task of recognizing sustainability schemes specifically, the scope of its delegated tasks, in general, should be viewed critically. Some of the Commission’s delegated duties in the CRMA give it considerable discretion. For example, the parameters for determining the necessity and proportionality of an environmental footprint requirement are vague and susceptible to considerable industry lobbying, as shown by “the associated economic costs and administrative burden for economic operators” (Art 31 (4) lit d) as a factor to be considered by the Commission.

### **4.2.3 Information and Transparency Requirements**

At various points, the CRMA establishes reporting duties of different actors including companies conducting strategic projects. Most of the information should be made public. Table 1 lists the information that is to be disclosed, categorized by the information to be provided and the actor obliged.

In addition to the information requirements to the public listed in Table 1, the CRMA also requires information from member states, which will not be publicly available and primarily be used by the Commission for risk analysis. Those information requirements concern information relevant for risk monitoring (Art 20 (2)), information on strategic stocks (Art 22 and Art 23 (5)) as well as information about CRM projects in the country (Art 21) and lists of large companies using SRMs for manufacturing in the strategic industries (Art 24 (1)).

**Table 1: Information requirements established in the CRMA**

Which information?	Who has to make the information available?	In which form?	To whom must information be available?	Source of law in the CRM Regulation
Maps from national exploration programs	Member states	Free-access website	Everybody	Art 19 (6)
More detailed information from national exploration programs	Member states	Non-publicly	Anybody upon request	Art 19 (6)
Information about impacts and benefits of a Strategic Project	Promoters of Strategic Projects	Free-access website	Local population	Art 8 (5)
Time schedule of permit-granting process	Promoters of Strategic Projects (developed by Single Point of Contact)	Free-access website	Local population (only in EU)	Art 11 (7)
Supply risk dashboard	Commission	Free-access website	Everybody	Art 20 (4)
Recovered CRM <sup>28</sup> in permanent magnets	anybody placing specific products including permanent magnets on the EU market	Free-access website	Everybody	Art 29 (1)
Recognized sustainability schemes for CRMs	Commission	Free-access website	Everybody	Art 30 (9)
Environmental footprint declaration <sup>29</sup>	anyone placing CRMs on the market	Free-access website	Everybody	Art 31 (6)
Database of closed extractive waste facilities with likely recoverable CRMs	Member states	Free-access website	Everybody	Art 27 (6)

#### 4.2.4 What will be the effects of the further CRMA obligations?

The obligations specified for EU member states, the Commission, and other stakeholders are aimed at increasing extraction and processing activities in Europe. This shall be achieved, among others, by enhancing the attractiveness for investors to participate in new mining, processing, and recycling operations.

Firstly, they seek to increase the availability of CRMs via recycling and circularity. Key obligations refer to the improved recyclability of permanent magnets and to the development of circularity measures by the member states. While the CRMA lists the aims of such circularity measures, member states are granted discretion regarding their implementation, also taking into account other related EU initiatives, such as the EU Circular Economy Action Plan or the EU Battery Directive.

Secondly, they aim to generate more information about the availability, demand and use of SRMs and CRMs in the EU. This includes in particular the national exploration programs on the geological occurrences of CRMs in the EU, and various obligations on data collection by the member states. These data shall also serve as the basis for risk assessments and for countering potential supply shortages.

Thirdly, they are designed to foster more transparency about SRM projects in order to gain better acceptance for raw materials extraction and processing in the population. The

<sup>28</sup> Neodymium, dysprosium, praseodymium, terbium, boron, samarium, nickel and cobalt.

<sup>29</sup> Included: contact information of the responsible natural or legal person, the country and region where the critical raw material was extracted, processed, refined, and recycled, the environmental footprint itself, the environmental footprint performance class that the raw material corresponds to, and the study supporting the environmental footprint declaration results.

information requirements about Strategic Project for local communities aim to avert mining conflicts through more transparency. The supply risk dashboard serves to highlight supply shortages and to raise awareness about the importance of raw materials. These efforts also seek to promote the public perception of CRM projects as essential to address supply challenges, potentially reducing opposition to mining and processing projects (BenchmarkSource 2024). However, whether these measures will successfully shift the conversation away from the negative environmental impacts of raw material extraction and processing toward recognizing their necessity for a more sustainable future is yet to be determined (see also 5.1.4. on social acceptance).

## 5 Will the CRMA increase the supply of CRMs from EU sources?

After describing the legal modifications introduced by the CRMA and analyzing their potential impacts, this chapter elaborates on whether the CRMA can effectively enhance the supply of CRMs from European sources. Firstly, it examines various factors influencing the availability of CRMs from mining. Secondly, it assesses the potential consequences of the CRMA on processing activities. Lastly, it evaluates its potential impact on recycling activities.

### 5.1 Consequences for mining CRMs in Europe

The CRMA stipulates the non-binding benchmark that 10 % of the EU-consumption of each of the 17 SRMs should be extracted in the EU by 2030. Critical to meeting this benchmark are, amongst others, existing reserves and the feasibility of their extraction, the development of future demand, timelines for project realization, social acceptance of extraction and available financial means. These aspects are elaborated upon below.

#### 5.1.1 Availability of CRM reserves

The availability of reserves in Europe faces significant uncertainties. Geological data in the EU remain scattered and incomplete (Lewicka et al. 2021; Wolf 2023), despite the efforts started in the 2010s in various Horizon 2020 projects. As Righetti/Rizos (2023: 70) sum the situation up: “a comprehensive and reliable assessment of EU geological potential is largely missing.”

Figure 5 illustrates several aspects of SRM reserves in Europe:

First, the map illustrates that the full geological data are not systematically available and recorded. No data are available in the EuroGeoSurveys for several EU countries. For instance, no occurrences of CRMs are shown for Germany, despite the extraction of strategic raw materials, such as Gallium, Germanium and Graphite (Bastian et al. 2023)

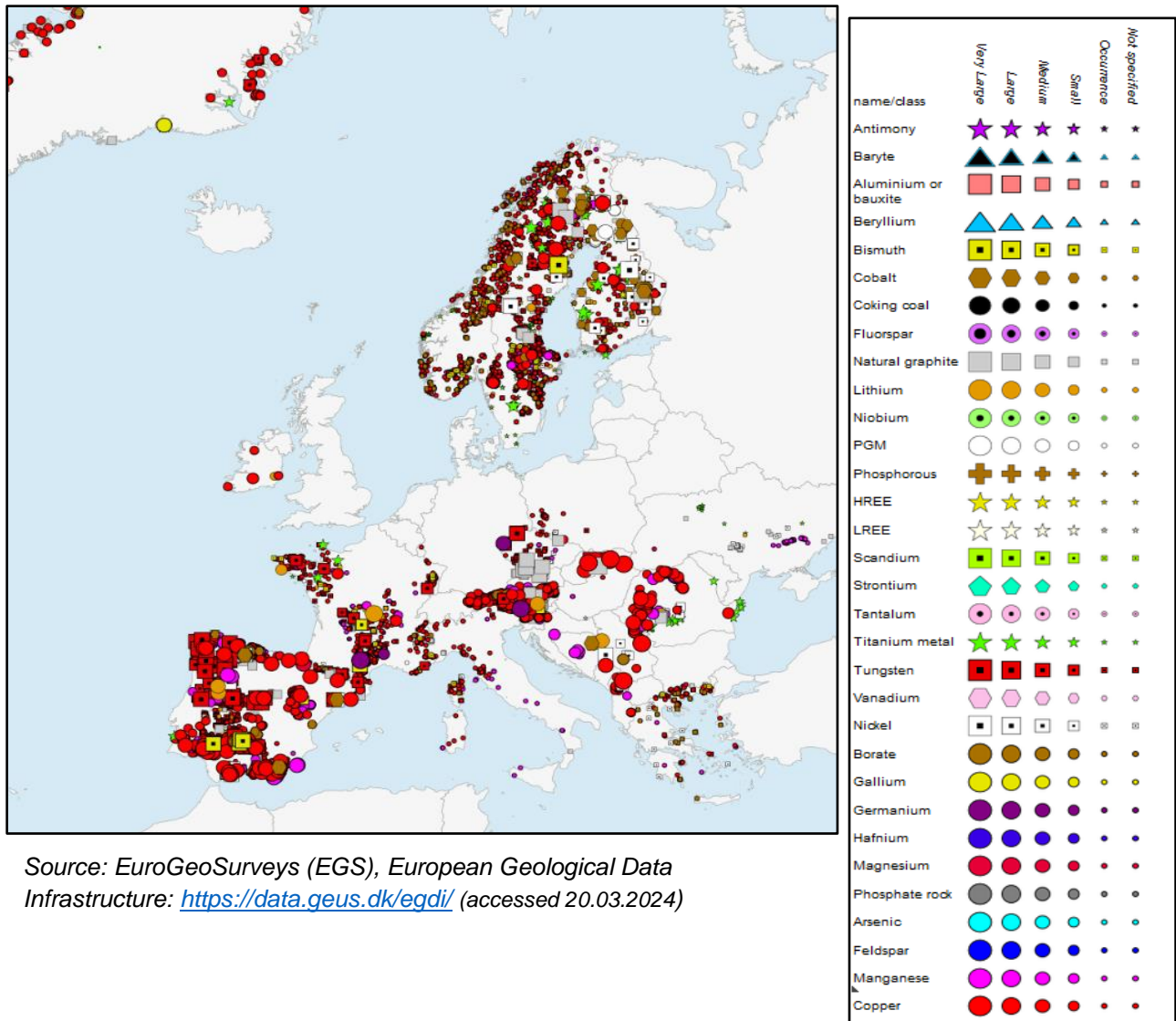
Secondly, the map shows deposits for all SRMs except for Light Rare Earth Elements.<sup>30</sup> The recorded deposits of those materials indicate that it is less the availability of SRMs that keep them in the ground, rather than the economic, environmental, and social costs associated with extracting them. Currently, the most promising potentials appear for lithium, cobalt, nickel, graphite, and manganese (Righetti/Rizos 2023). For lithium specifically, mining projects have been announced in Germany, Czechia, Finland, Portugal, and Austria, which could supply 130,000 tons by 2030, amounting to 55 % of European demand by 2030, thus by far exceeding the CRMA target of 10 % (Gregoir/van Acker 2022). However, these authors emphasize the uncertainty of those projects due to “community opposition, untested production processes, or economic challenges” (ibid.: 65).

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<sup>30</sup> For Light Rare Earth Elements too, there are however occurrences shown on the map. This means that they are available, but not in economically viable amounts for extraction.



**Figure 5: European CRM occurrence points 2023**



Source: EuroGeoSurveys (EGS), European Geological Data Infrastructure: <https://data.geus.dk/egdi/> (accessed 20.03.2024)

### 5.1.2 Development of future demand

Generally, the CRMA benchmarks are linked to the future consumption of CRMs globally and in the EU. Taking the example of cobalt, demand is expected to rise nearly seven-fold by 2035 (Ancygier et al. 2023: 13). While the EU is currently able to meet the 10 % extraction benchmark, the growing demand will require a significant expansion of extraction within the EU.

These demand forecasts come with large uncertainties. For example, forecast scenarios for the increase in demand of graphite range from a factor of 8 to 25 between 2020 and 2040 (ibid.). Much depends on technical developments and the degree to which states adhere to their energy and mobility transition goals (Coulomb et al. 2015; Mänberger 2023). However, even the most conservative of the IEA scenarios for the expected development of mineral demand for clean energy technologies expects a doubling of demand by 2040 (Allianz Research 2023: 6).

In this context, it is noteworthy that the CRMA does not address the issue of demand reduction or the sustainability of high consumption of CRMs in general, a matter that has garnered widespread criticism within civil society (Petitjean/Verheecke 2023: 8; Tansey 2023: 7).

**5.1.3 Evaluating Timeframes and Permitting Processes**

The feasibility of the 10 % mining target can also be questioned in light of its time frame until 2030 (Righetti/Rizos 2023). Especially the acceleration of permitting processes through the CRMA might give a wrong impression about the potential to shorten the development of mining projects. The permitting process is only one part of the overall development of mining projects, of which the discovery and exploration time is the longest.

According to the International Energy Agency, the global average time from discovery to first production of mining projects is over 16 years (IEA 2021: 12). An analysis of 127 mines globally shows similar lead times of average 15.7 years (Manalo 2023) (see Figure 6). The discovery, exploration and studies part takes almost 12 years. The permitting process can only commence once the feasibility studies, outlining the specifics of mining operations, are completed. This permitting process can often run concurrently with other tasks involved in mine development. The construction decision phase, which is also related to the permitting and financing is relatively short, even though there are also negative examples of long permit-granting processes (ibid.).

The analysis of mining lead times reveals that these long lead times are not unique to Europe. Mines in Canada, Chile or Australia have development periods above the global average (Manalo 2024). Moreover, timeframes can vary significantly between different materials and even within projects of the same material. For lithium mines, for instance, the duration from exploration to output stage can take up to 17 years (Ancygier et al. 2023: 23). However, reports also indicate lead times as short as four years for Australian lithium mines (IEA 2021), highlighting the diverse technical challenges associated with extraction projects.

**Figure 6: Average lead times of mines from discovery to extraction, 2002-2023**



Source: Manalo 2023

In addition to the technical necessity of feasibility studies, lead times are sometimes prolonged when mining operators wait for higher price levels for the respective raw materials, i.e. a high demand and low supply of the raw materials before initiating mining operations in order to increase profits from the project (IEA 2021).

While the CRMA’s reduction of the permit procedure to a maximum of 27 months will shorten the time from the discovery of SRMs to their exploitation, it will not diminish the much longer time period required for exploration and feasibility studies. In essence, while shorter permitting times will contribute to shorter lead times overall, this measure alone will not enable the EU to meet its strategic raw materials demand by 2030, as factors unrelated to permitting primarily drive long lead times.

#### **5.1.4 Social acceptance of mining and processing projects**

The costs associated with mining disproportionately affect land-connected peoples, particularly in densely populated regions with SRM deposits, such as the high north of Europe with the Sámi indigenous people. Owen et al. (2022) estimate that more than half of Europe's energy transition minerals and metals deposits are located on indigenous peoples' or peasant-held land, with increased mining arguably to "impose unprecedented pressure" on these communities (ibid.: 204).

Even in regions where land is not held by indigenous or peasant populations, mining in Europe will occur in areas much more densely populated than the major mining regions of the world (Wolf 2023). It is evident that with increasing mining activity, associated conflicts will also escalate (Guzik et al. 2021). Some consider the lack of acceptance of mining as the primary obstacle to mining in Europe (Schäfer 2024). However, the CRMA only marginally addresses the social risks of mining projects, primarily aiming to prioritize mining for political authorities (BenchmarkSource 2024).

The requirements for the sustainable implementation of Strategic Projects mention factors such as "where appropriate, measures to facilitate the meaningful involvement and active participation of affected communities" (Art 7 (1) lit d). However, the status of Strategic Project is ultimately granted by the Commission, with no possibility for appeals from affected local communities, environmental NGOs or other civil society actors (ÖKOBÜRO 2023). As discussed earlier, while a Strategic Project still needs to apply for national (and local) permits, the process is shortened as the public interest of the project is already assumed.

In essence, the CRMA addresses potential resistance against mining by introducing more transparency requirements and reducing the opportunities for objection. Local resistance can take the form of participation as an opposing party in permitting procedures, but also the form of legal action against already permitted projects, and lastly of open political protests. It is therefore important to note that shorter permit issuance times do not necessarily reduce local resistance. In the case of Lüzerath, a village in Germany, which was ordered to be demolished to make space for an already permitted mine, the resistance persisted despite all permits had been issued (Deutschlandfunk 2023).

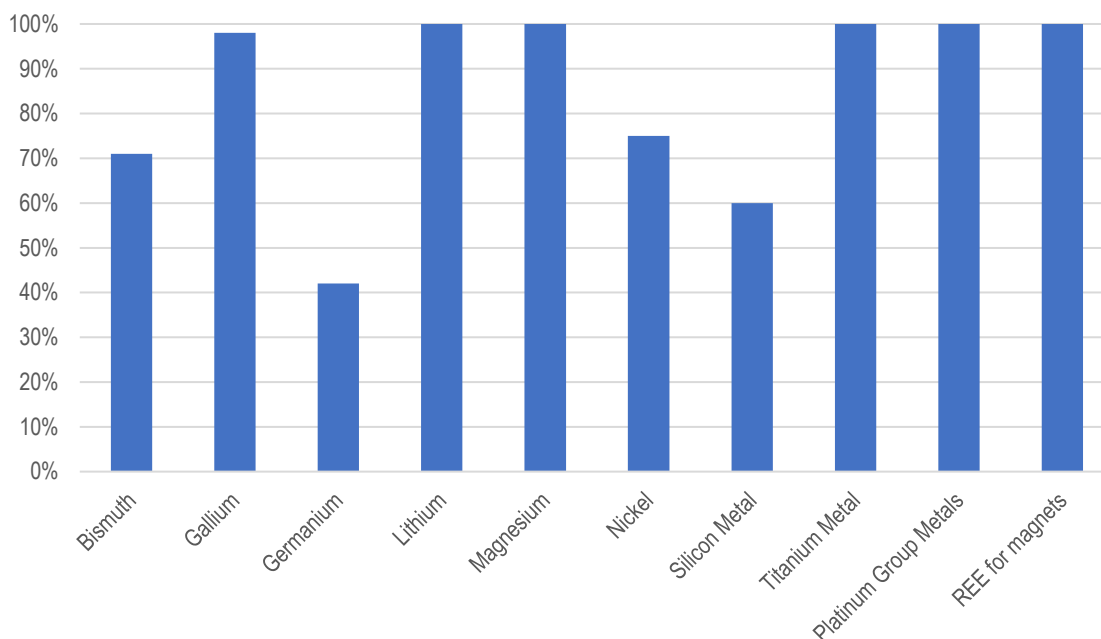
#### **5.1.5 Financial support dependent on member states**

While the Communication refers to various existing funding instruments, the CRMA does not commit any new funds to raw materials projects in Europe (Findeisen/Wernert 2023). The option to introduce a new CRM fund was discussed at length in the impact assessment (EC, SWD(2023) 161), but ultimately not included in the CRMA. Whether more state funding will be available for mining projects will depend on the member states. Some countries have already committed to funds to support mining in Europe, with France pledging EUR 500 million and Germany pledging EUR 1 billion (Olk 2024), both hoping for equivalent investments from the private sector in the endorsed projects.

### **5.2 Consequences for processing CRMs in Europe**

The CRMA sets forth the objective for at least 40% of the EU's annual consumption of SRMs to be processed in the EU by 2030. Figure 7 shows how much of selected SRMs are currently imported to the EU in processed form.

**Figure 7: Import reliance on selected SRMs in processed form of the EU**



Source of data: European Commission (2023b)

Note: Import reliance is calculated as  $(\text{Import} - \text{Export}) / (\text{Domestic production} + \text{Import} - \text{Export})$  (ibid.: 47), in other words as the share that net imports contribute to the amount of domestically available supplies.

Even without factoring in the anticipated increase in demand for these materials, the disparity between current domestic production and the EU's envisioned levels is significant for many SRMs. The feasibility of achieving the 40 % target varies for each material. For instance, for titanium metal, processing 40 % of its annual consumption (which is approximately 12 tons according to Georgitzikis et al. (2022: 4)) might be feasible (European Commission 2024c).

Conversely, when considering magnesium, attaining a 40 % processing target in the EU appears impractical, not only due to the expected surge in demand. The EU has not produced magnesium since 2001, and industry estimates suggest a production capacity of only 15 % of the EU's demands by 2030, contingent upon an investment of 1 to 2 billion euros (European Commission 2022).

Similar to extraction, the CRMA permits production projects to seek the designation of Strategic Project, facilitating expedited permits. However, analogous challenges may arise, to those encountered in mining: Processing projects can engender conflicts with local communities regarding land use, pollution, and environmental impact. An example is silicon production. China presently dominates silicon production, which is highly energy-intensive, as China powers its silicon production with coal. Efforts to establish silicon production in Europe faced a temporary setback when energy prices in 2021 and 2022 rendered EU-based silicon production economically unviable (Gregoir/van Acker 2022: 64).

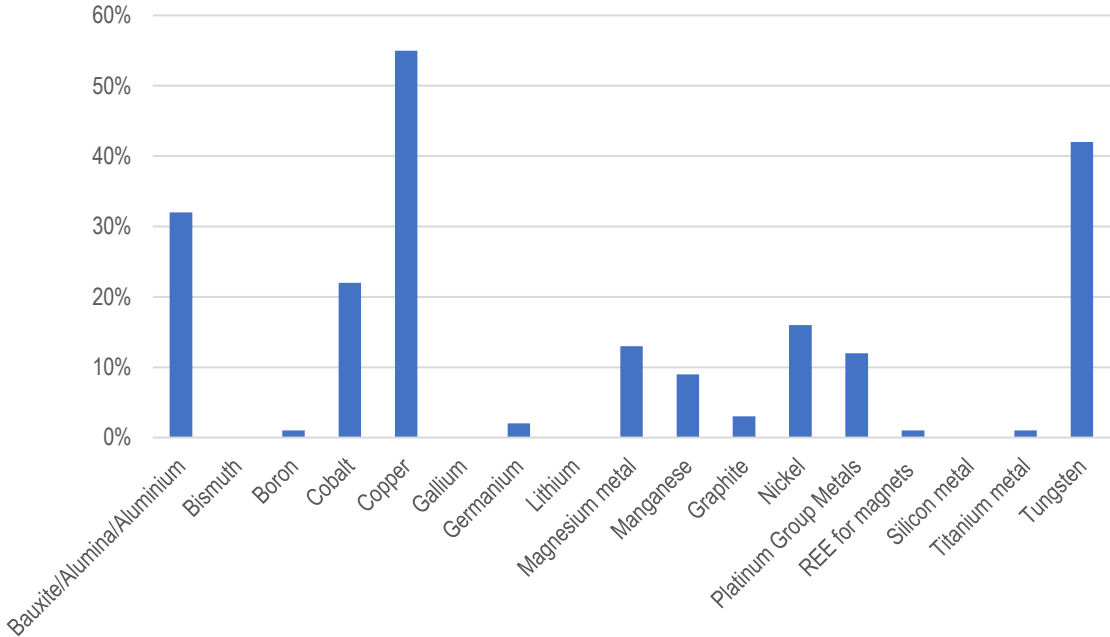
Hence, the primary obstacle to expanding processing activities within the EU is likely the cheaper costs of energy and labor required for raw material processing in other regions. Processing raw materials in Europe is generally not financially viable, aside from being challenging to align with progressively stringent environmental regulations. A case in point is the proposed lithium extraction project in Wolfsberg, Austria, which intends to transport lithium to Saudi Arabia for the energy-intensive refining process (Arnold 2023).

### 5.3 Consequences for recycling CRMs in Europe

The CRMA sets a target for recycling to account for at least 25 % of the EU’s annual consumption of strategic raw materials by 2030. This target is notably more ambitious than the initial 15 % target outlined in the Commission’s proposal or the subsequent 20 % target proposed by the European Committee of the Regions (European Committee of the Regions 2023).

As Figure 8 shows, there are only three SRMs that currently have end-of-life recycling input rates of 25 % or higher. Conversely, for four SRMs, the end-of-life recycling input rate is currently even below 1 %.

**Figure 8: End-of-life recycling input rates**



Source of data: European Commission (2023b)

Righetti/Rizos (2023: 72) judge the target to be “overall, realistic”, while relativizing that for some SRMs it will be less attainable until 2030 than for others. For some raw materials, new technical solutions might soon make recycling profitable (e.g. on Silicon metal: European Commission 2018). For others, such as aluminum and magnesium, recycling rates have already increased significantly in the past few years, raising expectations of more recycling in the future (cf end-of-life recycling input rates (EOL-RIR) according European Commission 2024a, 2024b and 2023b).

However, for some SRMs at least, the goal is out of reach in this short time frame due to the expected increase of consumption. For neodymium e.g., a rare earth metal for magnets, waste streams will not hold enough neodymium to supply 25 % of the expected consumption by 2030 (Hennings 2023). The same problem of inadequate waste streams to provide 25 % extends to the raw materials used in Lithium-ion batteries (LiBs), as few LiBs have reached their end-of-life stage (Ancygier et al. 2023). However, this scenario is likely to change, as the production of such products will increase, leading to a greater need for replacements (Gregoir/van Acker 2022: 60). A KU Leuven study suggests that extraction and imports will remain the primary source of critical minerals until the decade between 2030 and 2040. By 2050, the study estimates that “secondary supply will be the biggest source for all metals but silicon” (ibid.).

For some minerals, their usage currently makes recycling difficult or too costly. For instance, Bismuth is used mostly for pharmaceuticals and other chemicals, making it improbable to recycle. Gallium is also hardly ever recycled due to the difficulty and cost associated with recycling it from highly dispersed end products (European Commission 2018).

Since the situation is so diverse for different SRMs, the Commission has been tasked to delivering recycling capacity benchmarks for shares of the different SRMs available in relevant waste streams until 2027 (Art 5 (3)) Specifically, the Commission will focus on end-of-life vehicles, waste management systems, waste electrical and electronic equipment, batteries and waste batteries.

Within the CRMA, there are few provisions geared towards achieving the recycling benchmarks including waste management plans (Art 27) and the labeling system for permanent magnets (Art 29). Measures on circularity primarily place responsibility on member states (Art 26). However, the goals are set in vague language, and seldom entail specific actions. Sometimes actions to achieve the goals are only suggested (e.g. Art 26 (1) lit d: “through measures such as [...] or [...]”). Similarly, the obligation in Art 27 for member states to “adopt and implement measures to promote the recovery of CRMs from extractive waste” (Art 27 (5)) lacks specificity. The extent of the ambition by member states to implement such domestic measures will ultimately determine their effectiveness.

An illustration of this evidence is copper: Copper has the highest recycling rate of all SRMs, as illustrated in the graph above. However, currently, copper scrap is exported outside of Europe for recycling, while unprocessed copper is imported into the EU. If domestic measures would redirect waste streams containing copper to domestic recyclers, the import demand for copper “would decrease to minor levels after 2040” (Gregoir/van Acker 2022: 64).

In addition to these legal measures, the CRMA (specifically the accompanying communication) highlights existing measures to support and finance efforts, research and innovation around recycling, such as the Horizon Europe framework or the forthcoming delegated act of the Commission under the Taxonomy Regulation, which will also cover recycling and potentially enhance the profitability of investments in recycling projects. However, as noted earlier, the CRMA does not introduce new funding sources. Thus, in cases where recycling is not implemented due to low profitability, few incentives for change exist.

In summary, for raw materials used in permanent magnets, legal changes will impact their recycling rate. For other SRMs, the future recycling rates crucially depend on the national measures adopted by the member states under Articles 26 and 27 of the Regulation, which afford member states considerable scope in the level of ambition of their regulations as well as other related EU regulations.

## 6 Conclusions

The CRMA results from the European demand to secure a stable supply of CRMs to realize the green and digital transformation as well as for the EU's military industry, based on own products produced within the EU. It recognizes the inadequacy of relying primarily on imports in the context of rising global demand, intensified competition and geopolitical tensions. With Europe being the only region worldwide where mining has decreased over the past decades, the EU faces the challenge of reversing this trend. While the EU has historically outsourced its raw materials production, along with the associated negative consequences such as land use, environmental impacts, and adverse working conditions, the CRMA seeks to rectify this trend by encouraging increased domestic extraction and processing.

Revitalizing mining and processing in Europe, however, presents several challenges. Higher energy and labor costs, coupled with competitive disadvantages in technological expertise pose significant obstacles. Furthermore, mining activities face low social acceptance, particularly in densely populated areas. Additionally, a lack of emphasis on research and exploration in the past decades has resulted in inadequate information about the EU's mineral reserves, hindering efforts to develop viable projects.

The CRMA's efforts to streamline permitting processes may not significantly shorten the lead times needed to realize SRM projects, as they constitute only a small part of the overall preparation time required for projects. However, shortening consultation periods in environmental impact assessments of permit-granting procedures reduces opportunities for participation in the permitting processes by NGOs, citizen initiatives, and neighbors. Despite more transparency and information, the high water- and energy-intensity of SRM projects, the waste generated, and the adverse effects on biodiversity are considerable and will engender resistance in Europe, as elsewhere.

Similarly, the CRMA's objectives to enhance processing and recycling activities within Europe face considerable challenges. Insufficient incentives and high energy prices limit the attractiveness of investing in processing projects within Europe. Achieving the ambitious 40 % processing benchmark set by the Regulation is unrealistic under current conditions. Regarding recycling, while it holds promise for meeting future demands, significant hurdles persist, which are mainly targeted through policies beyond the CRMA.

Implementing the CRMA's obligations entails significant administrative and budgetary burdens for member countries. Even with expedited permit processes, a thorough examination of new raw materials projects is essential due to their profound impacts on the environment and society. Adequate staffing, expertise, and financial resources are therefore imperative to effectively oversee permitting, exploration, and other regulatory processes.

Certain aspects of the CRMA's implementation raise concerns about political influence and transparency. The lack of clarity in selecting SRMs and the Commission's exclusive responsibilities on several issues through the CRMA could potentially enable the prioritization of specific interests at the expense of broader societal and environmental considerations. This warrants close scrutiny, as the European Commission's decision-making process lacks democratic legitimacy and is not subject to appeal by citizens or civil society organizations.

It is important to note that all of the benchmarks promulgated in the CRMA are set in relation to the EU's consumption of SRMs, which is expected to increase significantly. This exemplifies a recurring pattern in the CRMA that does not address the sustainability of the high consumption of CRMs in the EU. This omission is particularly concerning given the significant social and ecological costs associated with resource extraction. Prioritizing the utilization of existing raw materials to facilitate the transition to renewable energy sources should be paramount. There is a need for a comprehensive approach to sustainability within the Regulation, incorporating policies aimed at curbing resource consumption and promoting principles of a circular economy.

The vagueness of the provisions concerning circularity and the lack of legal enforceability of the targets on extraction, processing, and recycling make it clear that despite the language of the CRMA, the most important pillar for the security of raw material supply in the EU remains sourcing from outside the EU. In the absence of stringent and decisive policies aimed at reducing societal energy use and resource consumption, the EU will continue to rely on external sources for the majority of its critical raw materials.

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