



SCIENTIFIC OPINION PAPER // JULY 2023


Ensuring a secure AND sustainable supply of critical raw materials


Recommendations on how to take forward the EU Commission's proposal for a Critical Raw Materials Act

Imprint

Publisher

Umweltbundesamt
Wörlitzer Platz 1
06844 Dessau-Roßlau
Tel: +49 340-2103-0
Fax: +49 340-2103-2285
buergerservice@uba.de
Internet: www.umweltbundesamt.de

 [/umweltbundesamt.de](https://www.facebook.com/umweltbundesamt.de)

 [/umweltbundesamt](https://twitter.com/umweltbundesamt)

Responsible unit:

Section III 2.2 Resource Conservation, Material Cycles, Minerals and Metals Industry

Disclaimer

Any views expressed are the views of the German Environment Agency and may not under any circumstances be regarded as stating an official position of the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection or the Federal Republic of Germany.

Publication as pdf:

<http://www.umweltbundesamt.de/publikationen>

Dessau-Roßlau, July 2023

German Environment Agency: EU News

Do you want to receive updates on our latest publications, statements and events that are relevant for EU environmental policy? Our newsletter covers EU policies on climate mitigation and adaptation, zero pollution and circular economy and is tailor-made for policy makers, experts and journalists.

Subscribe to our newsletter at www.uba.de/eu-news.

SCIENTIFIC OPINION PAPER // July 2023

Ensuring a secure AND sustainable supply of critical raw materials

Recommendations on how to take forward the EU
Commission's proposal for a Critical Raw Materials Act

by

Jan Kosmol, Oliver Weber, Regina Kohlmeyer, Carsten
Alsleben and Jörg Rechenberg

German Environment Agency, Dessau-Roßlau

On behalf of the German Environment Agency

Executive Summary - Main Recommendations

Chapter 1 – General provisions (Art. 1-2)

- ▶ Double check each and every line of the proposal, e.g. Art. 7 (2) and Art. 30 (4b), whether sustainability and security of supply are equally ranked, in line with the overarching objective of the proposal for a Critical Raw Materials Act (CRMA-P).

Chapter 2 – Critical and strategic raw materials (Art. 3-4)

- ▶ In order to achieve more policy coherence and to strengthen the CRMA-P's objective of a sustainable supply (cf. 1), all strategic raw materials listed in Annex I section 1 CRMA-P should be included within the scope of the revised Industrial Emissions Directive (IED).

Chapter 3 – Section 1 – strategic projects (Art. 5 – 7)

- ▶ Delete Art. 7 (2) – no fiction of an overriding public interest of strategic projects, especially with regard to competition with public water supply in light of more frequent drought.

Chapter 3 –Section 2 – permit granting process (Art. 8 – 13)

- ▶ Delete Art. 10 (4) – fictitious permits for industrial installations are to be rejected for precautionary reasons and fundamental constitutional considerations.
- ▶ We propose a supplemental clause that in atypical or particularly complex cases or circumstances for which the competent authority is not responsible it is also possible to exceed the deadline extension in Art. 10 (3).

Chapter 3 –Section 4 - exploration (Art. 18)

- ▶ Amend Article 8 to extend the scope to anthropogenic deposits:
*“The national exploration programmes referred to in paragraph 1 shall include measures to increase available information on the Union’s critical raw material occurrences, including **anthropogenic and deep ore deposits**”*

Chapter 4 – Risk monitoring and mitigation (Art. 19 – 24)

- ▶ Art. 19 (1): Extend supply risk analysis “related to critical raw materials **and products containing critical raw materials**”.
- ▶ Include potential adverse effects on people (local communities, especially indigenous people) and their environment in the list of parameters in Art. 19 (1).

Chapter 5 – Section 1 – Circularity (Art. 25 – 28)

- ▶ Amend Art. 25 (1) on the content of national programmes on circularity by including all ten “R-strategies” of the “R-ladder”.¹

¹ PBL 2021: Integral Circular Economy Report 2021 Assessment for the Netherlands. Direct Link: pbl.nl/sites/default/files/downloads/pbl-2021-integral-circular-economy-report-2021-4582.pdf

- ▶ Restrict critical and strategic raw materials (CRM/SRM) in packaging, especially in single-use packaging (to be implemented either in the EU Packaging Regulation, which is currently revised, or in the CRMA).
- ▶ Labelling: Introduce a revision clause in Art. 27 (e.g. via implementing or delegated acts) to update the product list.
- ▶ "Design for Repair and Recycling": Removability and replaceability requirements for the products listed in Art. 25 should complement the labelling requirement.
- ▶ Enable long-term interim storage of CRM containing waste, by not legally hampering the installation and operation of these interim storages and considering obligations to store certain CRM wastes until recycling capacities are available.

Chapter 5 – Section 2 – Certification (Art. 29)

- ▶ The function of certification schemes in recognising strategic projects (SP) should be clearly defined in Art. 5 or Art. 6 and be guided by recital 85 of the EU Battery Regulation, which assigns certification schemes only a purely supporting function.²
- ▶ ILO 169, ISO 14001 and EMAS should be added to the list of relevant responsible business conduct/environment, social and government issues (RBC/ESG) standards in Annex III No. 4.
- ▶ The criteria for the recognition of certification systems are also very general and should be made more concrete. The following aspects should be added: Multi-stakeholder governance, Indigenous rights, OECD Alignment Assessment³, inclusive audits at the site, comprehensive audit reports published, complaint mechanisms (UNGP).

Chapter 5 – Section 2 – Environmental Footprint (Art. 30)

- ▶ Extend the possible obligation for an environmental footprint declaration to indirect imports of CRM embedded in semi-finished and finished products. The most relevant product groups for each CRM should be defined in the delegated acts.
- ▶ The declarations should include the three most important impact categories to be defined accordingly in the respective delegated act (DA) in order to avoid burden shifting to other environmental categories.
- ▶ Include the absolute magnitude of the environmental impact of the EU demand for the CRM as additional information in the declaration. It should also be taken into account in the COM's assessment of the significance of a CRM's footprint during the preliminary assessment.
- ▶ In case of CRM as by-products, the associated main product (raw material) needs to be declared. And, due to its potentially significant influence on the valuation result, the allocation method to be applied should be clearly specified and described in the DA. ANNEX V should be adapted to this effect.

² "While private sector due diligence systems can assist economic operators to fulfil their due diligence obligations applicable to batteries in accordance with the OECD Guidelines for Multinational Enterprises and the United Nations Guiding Principles on Business and Human Rights, economic operators should be responsible for complying with the due diligence obligations applicable to batteries set out in this Regulation."

³ Cf. <https://www.oecd.org/corporate/industry-initiatives-alignment-assessment.htm>

Table of content

What's in here and how to use of it	7
1 Chapter 1 – General provisions (Art. 1-2).....	8
2 Chapter 2 – Critical and strategic raw materials (Art. 3-4).....	9
3 Chapter 3 – Strengthening the Union raw materials value chain	10
3.1 Section 1 – strategic projects (Art. 5 – 7).....	10
3.2 Section 2 – permit granting process (Art. 8 – 13)	10
3.3 Section 4 – exploration (Art. 18)	11
4 Chapter 4 – Risk monitoring and mitigation (Art. 19 – 24)	12
5 Chapter 5 – Sustainability.....	13
5.1 Section 1 – Circularity (Art. 25 – 28)	13
5.2 Section 2 – Certification and Environmental Footprint (Art. 29 – 30)	15
List of abbreviations	19

What's in here and how to use of it

The European Commission (COM) has proposed to establish a framework for “ensuring a secure and sustainable supply of critical raw materials” to the European Union’s Economy with a new Regulation (COM(2023) 160 final), the proposal for Critical Raw Materials Act (CRMA-P)⁴. The COM thus addresses the issue of critical raw materials (CRM), which has been on the European political agenda with varying attention since 2010, with the stringency it deserves in light of the ongoing green and digital transformations as well as geopolitical shifts.

This paper aims to support political decision-makers in the ongoing legislative process by providing recommendations to further develop the EU commission’s proposal from an environmental perspective. Our recommendations are based on our analysis of the proposal and our research.

To ensure practicable use, the paper is structured along the chapters of the CRMA proposal. For each chapter resp. section, we provide brief analyses and assessments and close with our recommendations for amendments in a textbox.

⁴ https://single-market-economy.ec.europa.eu/publications/european-critical-raw-materials-act_en

1 Chapter 1 – General provisions (Art. 1-2)

The general objective of the proposed “Regulation is to improve the functioning of the internal market by establishing a framework to ensure the Union's access to a secure and sustainable supply of critical raw materials”.

Definitions (Art. 2):

"Strategic project" is not explicitly defined, although it is a central concept of the proposed legislation. The definition is implicit in Art. 2 (15) "raw material project" and Art. 2 (3): "strategic raw materials", as well as Art. 2 (6) "extraction", (9) "processing", (11) "recycling".

Definition of "raw materials value chain" (Art 2 (4)) is inconsistent: exploration is the beginning of the life cycle of a mining project, but not the beginning of the value chain⁵. If exploration is defined as part of the value chain, it is logical that construction, closure and aftercare should also be included, especially with regard to their relevance for environmental protection and nature conservation over the lifecycle of a mining project.⁶

Although the two goals are on equal footing and not in a hierarchical relationship, some wording in this proposal suggests that security of supply is given priority over sustainability. For example, the fiction of an overriding public interest for strategic projects (Art. 7 (2)) potentially conflicts with UN sustainable development goal (SDG) 6 "Ensure availability and sustainable management of water and sanitation for all." (Cf. section 3.1.). Another example can be found in Art. 30 (4b): The requirement to ensure that the introduction of an environmental footprint declaration obligation must not disproportionately affect the cost and supply of the industry - even if the CRM has a significant environmental footprint – ranks costs (disregarding externalities) and security of supply over sustainability.

Recommendations

- ▶ Double check each and every line of the proposal, e.g. Art. 7 (2) and Art. 30 (4b), whether sustainability and security of supply are equally ranked, in line with the overarching objective of the CRMA-P.
- ▶ Add a definition for “strategic project” (Art. 2)
- ▶ Add a definition for "project lifecycle": exploration (incl. prospecting) - development (feasibility, design, construction) - operation - closure – post-closure (Art. 2)
- ▶ Amend definition for “value chain”: start with "extraction" and delete "exploration" accordingly. (Art. 2)

⁵ Hodge, R.A., Ericsson, M., Löf, O. *et al.* The global mining industry: corporate profile, complexity, and change. *Miner Econ* **35**, 587–606 (2022). <https://doi.org/10.1007/s13563-022-00343-1>

⁶ Hodge, R.A., Brehaut, H. Towards a positive legacy: key questions to assess the adequacy of mine closure and post-closure. *Miner Econ* **36**, 181–186 (2023). <https://doi.org/10.1007/s13563-022-00339-x>

2 Chapter 2 – Critical and strategic raw materials (Art. 3-4)

The Industrial Emissions Directive (IED) is currently under review and, in particular, aims to extend its scope to installations for the extraction and processing of raw materials in order to ensure a high level of environmental protection within the meaning of Article 192 TFEU. This extension of scope covers the extraction and on-site processing of selected industrial minerals: **apatite, barite, bentonite, diatomite, feldspar, fluorspar, graphite, gypsum, kaolin, magnesite, perlite, potash, salt, sulphur and talc** as well as of selected metal-bearing ores: **bauxite, chromium, cobalt, copper, gold, iron, lead, lithium, manganese, nickel, palladium, platinum, tin, tungsten and zinc**. Extractive activities targeting these materials will have to apply BAT, to ensure comprehensive participation of public interest groups as well as more public participation and transparency in the permitting procedures than before. In order to implement the IED on a 1:1 basis, the federal legislator would be obliged, among other things, to adapt the mining law framework, at least for the mineral resources and activities mentioned, in order to ensure an adequate level of protection within the meaning of Article 192 TFEU.

Unlike the IED the CRMA proposal serves to harmonise legislation in the internal market (Art. 114 TFEU) with regard to increasing the security of sustainable supply of critical and strategic raw materials (SRM).

There are overlaps in the raw materials covered by the IED with the list of strategic and critical raw materials in Annex I to Art. 3 and Annex II to Art. 4 CRMA-P. This applies in particular to the strategic raw materials **cobalt, copper, lithium, graphite, nickel, platinum group metals and tungsten**. However, the following materials are in the list of strategic materials, but not within the scope of the IED: **bismuth, boron, gallium, germanium, rare earth elements, silicon metal, titanium metal**.

Given their status as regulation and respective directive, the requirements of the CRMA-P with regard to the strategic mining projects would be applicable immediately after the entry into force of the regulation and those of the IED with transitional periods (in particular for the development of BAT) only after transposition into national mining law.

The objectives of the CRMA-P and the IED are not fully consistent with regard to the raw materials and projects covered. It can be assumed that the requirements for the approval of mining projects under the amended IED will tend to increase and that, at least for a transitional period, more time-consuming procedures can be expected. This poses an additional obstacle to the CRMA-P's already ambitious aim to accelerate permit granting processes. This especially applies to strategic mining projects targeting **cobalt, copper, lithium, graphite, nickel, platinum group metals and tungsten**.

For strategic mining projects targeting **bismuth, boron, gallium, germanium, rare earth elements, silicon metal, titanium metal**, the provisions of the IED would not apply, at least not directly: For gallium and germanium, IED could apply indirectly, as they are only mined and processed as by-products of the non-strategic raw materials bauxite and zinc⁷.

Recommendations

- In order to achieve more policy coherence and to strengthen the CRMA-P's objective of a sustainable supply (cf. 1), all strategic raw materials listed in Annex I section 1 CRMA-P should be included within the scope of the revised IED.

⁷ See N. T. Nassar et al. By-product metals are technologically essential but have problematic supply. *Sci. Adv.* 1,e1400180(2015). DOI:10.1126/sciadv.1400180

3 Chapter 3 – Strengthening the Union raw materials value chain

3.1 Section 1 – strategic projects (Art. 5 – 7)

The Art. 7 (2) fiction of an overriding public interest of strategic projects (SP) in the Union with regard to the environmental impacts addressed in Articles 6(4) and 16(1)(c) of Directive 92/43/EEC (Habitats Directive), Article 4(7) of Directive 2000/60/EC (Water Framework Directive) and Article 9(1)(a) of Directive 2009/147/EC (Birds Directive), provided that all conditions set out in these Directives are met, is problematic at least for water extractions related of these strategic projects. Relevant water withdrawals may occur during the extraction of SRMs, especially in mining (extraction Art. 2 (6)): Mine water is pumped out during mining to drain the pits (dewatering/sewering), i.e. groundwater is converted into surface water, which has an influence on the regional water balance (quantitative status of groundwater, evaporation); Furthermore, water-intensive processes (flotation) are commonly used in ore processing, which usually takes place at the mining site. In addition to pyrometallurgical processes (smelting), hydrometallurgical processes with significant water requirements are also used in metal processing (cf. Art. 2 (9)).

An overriding public interest for water withdrawals for industrial production purposes would contradict the priority of public water supply expressed so far in German law (§§ 6 and 50 WHG) in the case of competing uses on site. The dry years 2018-2020 and 2022 have shown that these competing uses are increasing. This is why the German Federal Government has underlined the importance of public drinking water supply in its National Water Strategy. Other competing uses should therefore not a priori be attributed an overriding public interest.

Recommendations

- Delete Art. 7 (2) – no fiction of an overriding public interest of strategic projects, especially with regard to competition with public water supply in light of more frequent drought.

3.2 Section 2 – permit granting process (Art. 8 – 13)

Art. 10 (4) CRMA-P provides for a fictitious permit for strategic projects involving the recycling or processing of critical raw materials. From the point of view of environmental precaution and for fundamental constitutional considerations, fictitious authorisations for industrial installations must be rejected. This regulation is not intended to apply to procedures specifically named in (4), in which an environmental impact assessment (EIA) is required or in which an EIA preliminary assessment has yet to be carried out, so that it can be assumed that the most problematic cases for the environment (which fall within the scope of the EIA or at least the EIA preliminary assessment) would not be covered by this. Nevertheless, it cannot be ruled out that, in the absence of final regulatory control and the establishment of protective and preventive measures, risks or hazards for the environment, including humans, arise that would have been avoided if the authorisation procedure had been carried out regularly. This is diametrically opposed to the precautionary principle as one of the basic principles of environmental law.

It can be doubted that the competent licensing authorities and, incidentally, also the developers (whose performance in practice is also a factor for the duration of a permit granting process that should not be underestimated) are capable of carrying out licensing procedures within the framework of the legal requirements within the time limits specified in Article 10 (1 and 2) CRMA-P, without the authorities having been specially equipped for this task, especially as this is

likely to be at the expense of other licensing procedures and other official tasks. This also applies in consideration of the slight possibility to extend the procedures in special cases as mentioned in Art. 10 (3) CRMA-P.

According to Article 11 (1) CRMA-P, the competent authority shall establish the scope of the environmental impact assessment within 30 days. Careful scoping can shorten the duration of the environmental impact assessment and is one of the essential procedural steps of the environmental impact assessment. Therefore, sufficient time should be planned for this step. The proposed deadline is too short for the preparation of a sound assessment framework. In particular the EIA Directive regulates the participation of other authorities in this procedural step. It does not provide for such a deadline.

Recommendations

- ▶ Delete Art. 10 (4) – fictitious permits for industrial installations are to be rejected for precautionary reasons and fundamental constitutional considerations.
- ▶ Extend the deadlines in Art. 10 appropriately.
- ▶ We propose a supplemental clause that in atypical or particularly complex cases or circumstances for which the competent authority is not responsible it is also possible to exceed the deadline extension in Art. 10 (3).
- ▶ Extend the deadline for issuance of the opinion of the competent authority in Art. 11 (3) to at least 60 days.

3.3 Section 4 – exploration (Art. 18)

In the sense of an integrated approach to strengthen a secure and sustainable EU supply of CRMs and with a view to the recycling objective in line with Art. 1 (1 and 2), the national exploration programmes under Art. 18 should not be limited to geological deposits, but should also include anthropogenic deposits (urban mining)⁸. Art. 18 (2) should be adapted accordingly. The UNFC scheme mentioned in Art. 18 (5), according to which the deposits are to be classified provides specifications for the classification of anthropogenic deposits.⁹

Recommendations

- ▶ Amend Article 8 to extend the scope to anthropogenic deposits:
*“The national exploration programmes referred to in paragraph 1 shall include measures to increase available information on the Union’s critical raw material occurrences, including **anthropogenic and deep ore deposits**”*

⁸ [Urban Mining – Resource Conservation in the Anthropocene | Umweltbundesamt](#)

⁹ [United Nations Framework Classification for Resources \(UNFC\) | UNECE](#) - Direct link:
https://unece.org/fileadmin/DAM/energy/se/pdfs/UNFC/Anthropogenic_Resources/UNFC_Antropogenic_Resource_Specifications.pdf

4 Chapter 4 – Risk monitoring and mitigation (Art. 19 – 24)

Art. 19 (1) obliges the European Commission to “monitor related to critical raw materials”. As in Art. 30 regarding the Environmental Footprint (cf. 5.2), risks related to indirect CRM imports in form of semi-finished and finished goods are neglected.

The parameters for supply risk analyses ignores the environmental dimension of criticality. Actual or potential environmental impacts are in many cases a reason for low public acceptance of raw material projects or even socio-ecological conflicts which can cause supply disruptions.¹⁰ An integrated and equal-ranking consideration of security of supply and sustainability aspects of the EU's raw material demand in line with Art 1 (1) (cf. 1) needs to include environmental and social aspects of raw material production in the analyses of the supply situation.¹¹

Recommendations

- ▶ Art. 19 (1): Extend supply risk analysis “related to critical raw materials **and products containing critical raw materials**”.
- ▶ Include potential adverse effects on people (local communities, especially indigenous people) and their environment in the list of parameters in Art. 19 (1).

¹⁰ Jowitt, S. M., G. M. Mudd and J. F. H. Thompson (2020). "Future availability of non-renewable metal resources and the influence of environmental, social, and governance conflicts on metal production." *Communications Earth & Environment* **1**(1): 13.

¹¹ A) Dieuwertje Schrijvers et al. 2020: A review of methods and data to determine raw material criticality, *Resources, Conservation and Recycling*, Volume 155, 2020, <https://doi.org/10.1016/j.resconrec.2019.104617>;
B) Dehoust et al. 2020: *Environmental Criticality of Raw Materials* | Umweltbundesamt

5 Chapter 5 – Sustainability

5.1 Section 1 – Circularity (Art. 25 – 28)

10 “R-ladder” for national programs on CRM circularity

Art. 25 asks the member states to adopt and implement national programs on circularity. Art. 25 (1) focuses on re-use, waste collection, recycling, and secondary material use in production and therefore only partially reflects core strategies of a circular economy in line with the 10-step “R-ladder”¹², which is increasingly gaining acceptance as a compass for the Circular Economy:

Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover.

Economical and targeted use of CRMs and SRMs

The draft CRMA does not yet adequately address the economical and targeted use of CRMs and SRMs. To ensure a secure and sufficient SRM supply for strategic applications (cf. Art. 2 (31)), these very applications should primarily be supplied with SRMs. In non-strategic applications they should only be used in a very deliberate and responsible manner. Their use in single-use products, such as single-use packaging, should therefore be avoided as far as possible, especially when they can be easily substituted and when no recycling takes place.

Rare earth magnets are used in packaging, e.g. in magnetic closures on packaging for cigarette papers and on superior quality packaging (e.g. for chocolates, watches, whisky). The estimated neodymium quantities in European packaging of several tonnes per year comprise a relevant amount in comparison to other rare earth magnet applications, particularly from the field of green transition (wind turbines, electric bicycles, hub dynamos, room air conditioners).¹³

Art. 27: Recyclability

Despite headed “Recyclability”, Art. 27 solely contains labelling requirements and no requirements for “Design for Recycling” or “Design for Repair”. To facilitate repair (cf. “Right to repair” -Directive) and recycling, removability and replaceability requirements for the products listed in Art. 25 should complement the labelling requirement.

Art. 27 (1) lists a number of devices/products with permanent magnets to be labelled. Considering technical progress and product innovation, a revision clause to update this product list (e.g. by implementing act) should be added, or, alternatively, the labelling requirement should be linked to the size/ mass of the magnet (e.g. larger than 20 g or a total magnet quantity per motor larger than 200 g), not to the specific product type.¹⁴

CRMs beyond magnets

Articles 27 (Recyclability) and 28 (Use of recycled materials) only set requirements for permanent magnets and not for other critical raw materials. A revision clause would allow to include other CRMs, e.g. by delegated acts.

¹² A) Zhang et al. 2022: An overview of the waste hierarchy framework for analyzing the circularity in construction and demolition waste management in Europe, *Science of The Total Environment*, Volume 803, 2022, <https://doi.org/10.1016/j.scitotenv.2021.149892>.

B) PBL 2021: Integral Circular Economy Report 2021 Assessment for the Netherlands. Direct Link: pbl.nl/sites/default/files/downloads/pbl-2021-integral-circular-economy-report-2021-4582.pdf

¹³ Schöler (2018): “Aufkommen und Verwertung von Verpackungsabfällen in Deutschland im Jahr 2016”, chapter 3.7, <https://www.umweltbundesamt.de/publikationen/aufkommen-verwertung-von-verpackungsabfaellen-in-11>

¹⁴ Kreibe et al. 2020: „ILESA - Smart steering of waste streams containing precious and minor metals: pooling, temporary storage, recovery rate” (UBA-Texte 179/2020), pages 25 and 27, recommendation M1. <https://www.umweltbundesamt.de/publikationen/ilesa-smart-steering-of-waste-streams-containing>.

Beyond permanent magnets, effective legislative and non-legislative measures to establish recovery processes and capacities for indium from flat panel displays and PV panels are important.

Due to the expected strong increase in (waste) quantities of silicon-containing PV modules, the expected ecological benefit of a recycling obligation for silicon from PV panels would be high. By recovering silicon, its highly polluting extraction and processing can be saved. The production of silicon is very energy-intensive. Silicon recovery contributes strongly to the reduction of the global warming potential (GWP) as well as to the reduction of the ozone depletion potential (ODP).

Storage for CRM-containing waste until recycling capacity available

Recital (36) of the draft CRMA emphasises the importance of raw material stocks in order to avoid interruptions in the supply of raw materials. Against this background, Articles 21 to 24 regulate reporting obligations and coordination, among other things, on the level of stocks available for each strategic raw material.

The CRMA should not only focus on storages for primary raw materials, but should also consider the long-term storage of CRM-containing waste. The recovery rates of many critical raw materials from post-consumer waste are close to zero and investments in large-scale, industrial recycling processes and capacities are still lacking. An important prerequisite for investments in an industrial recycling plant is the generation of relevant and reliable quantities of waste containing critical metals. A feasible approach to creating the required volume streams and for bridging the time until the plant capacity is available may be the interim storage of waste streams containing critical metals, such as waste magnets containing rare earth metals, phosphors containing rare earth metals.¹⁵

At least, European (waste and/or raw materials) legislation should not hamper the installation and operation of (public or private) interim storages for waste containing critical raw materials. E.g. possibly required proofs of subsequent proper recovery cannot be provided without an existing facility.

If in line with the European raw materials strategy and the requirements of the CRMA, an obligation to store certain CRM wastes could be a useful complement to separation and recovery obligations for CRM waste.

Recommendations

- ▶ Amend Art. 25 (1) by including all ten “R-strategies” of the “R-ladder”.
- ▶ Restrict CRM/SRM in packaging, especially in single-use packaging (to be implemented either in the EU Packaging Regulation, which is currently revised, or in the CRMA).
- ▶ Labelling: Introduce a revision clause in Art. 27 (e.g. via implementing or delegated acts) to update the product list or, alternatively, the labelling requirement should be linked to the size/mass of the magnet instead of the product type.
- ▶ "Design for Repair and Recycling": Removability and replaceability requirements for the products listed in Art. 25 should complement the labelling requirement, (unless these products are covered by respective specific requirement under Union legislation, e.g. ESPR, end-of-life vehicle legislation currently being revised).

¹⁵ See footnote 14, chapters 1.3 and 5.

- ▶ Introduce separation and recycling obligations for rare earth magnets, at least from linear motors of hard drives and from motors of e-bikes and from motor vehicles before mechanical shredding with subsequent feeding to a recycling process (to be implemented either in the CRMA or the revisions of the ELV and WEEE Directives)
- ▶ Introduce revision clauses in Articles 27 (Recyclability) and 28 (Use of recycled materials) to allow to extend the requirements to further CRM-applications beyond magnets.
- ▶ Enable long-term interim storage of CRM-containing waste, by not legally hampering the installation and operation of these interim storages and considering obligations to store certain CRM wastes until recycling capacities are available.
- ▶ Introduce a recycling obligation for silicon from PV panels.

5.2 Section 2 – Certification and Environmental Footprint (Art. 29 – 30)

Certification (Art. 29)

Recital 49 describes that actors applying for recognition as a strategic project can prove that their project will be implemented in a sustainable manner (cf. Art. 5 (1c) and Annex III No. 4) by participating in a certification system recognised under Art. 29. Art. 29 describes the process of recognising certification systems and refers to the criteria to be applied in Annex IV.

Neither in Art. 5 (criteria for SPs) nor in Art. 6 (application and recognition of SPs) is there a reference to Art. 29 and the function of the certification systems. Art. 5 only describes general criteria for the recognition of SPs by the European Commission, its powers and duties and refers to further requirements for the recognition process of SPs in Annex III. There, at the end of No. 4, the function of the certification systems in fulfilling the sustainability criteria according to Art. 5 (1c) is also described. According to this, these are fulfilled if the project is certified according to a recognised certification system or if the applicant undertakes to have the project certified and demonstrates that the project in question will be able to fulfil the criteria for such certification after its implementation. Furthermore, Annex III No. 4 contains a list of relevant standards for responsible business conduct (RBC) and environment, social and government issues (ESG) to be taken into account when considering the recognition of the SP.

Art. 6 (1) describes the contents of the application, including (1a) a "relevant demonstration in relation to the fulfilment of the criteria in Art. 5(1)", but without reference to Art. 29 or Annex III.

The sustainability requirements for strategic projects (Art. 5 (1c)) are of a general nature and hardly objectively verifiable; according to Annex III No. 4, they can be undermined by certification of the project or even by a declaration of intent to certify. This strong role of certification systems in the fulfilment of sustainability requirements is to be questioned, as it has been shown many times in the past in various sectors that certifications are no guarantee for compliance with standards. One example of many is the Brumadinho 2019 dam-break disaster.

Recommendations

- ▶ The function of the certification schemes should also be clearly defined in the main body of the legal text, for example in Art. 5 (1c) and/or Art. 6 (1a), not hidden in a recital and an annex as in the current draft.

- ▶ The function of certification schemes in recognising SP should be guided by recital 85 of the EU Battery Regulation, which assigns certification schemes only a purely supporting function.¹⁶
- ▶ Accordingly, the references to EU laws with RBC/ESG reference should be anchored more strongly in the main body of the legal text, first and foremost the Corporate Sustainable Due Diligence Directive (CSDDD) and the EU Corporate Sustainable Reporting Directive (CSRD), but also the Battery Regulation. For example, the due diligence (DD) requirements of the CSDDD could be referred to in Art. 5, or the recognition of SPs could be linked to the condition that the applicant does not have a pending procedure for compliance with the DDs according to the CSDDD.
- ▶ ILO 169 as well as ISO 14001 and EMAS should be added to the list of relevant RBC/ESG standards in Annex III No. 4.
- ▶ The criteria for the recognition of certification systems are also very general and should be made more concrete. The following aspects should be added:
 - ▶ Multi-stakeholder governance (the steering committee should have equal representation from industry, civil society, and government representatives),
 - ▶ Indigenous rights should be explicitly addressed,
 - ▶ An OECD Alignment Assessment¹⁷ should be carried out,
 - ▶ Inclusive audits at the site with the involvement of the local population, civil society, workers, trade unions.
 - ▶ Comprehensive audit reports are publicly available
 - ▶ Complaint mechanisms according to UNGP are installed.

Environmental Footprint (Art. 30)

The proposal to introduce a mandatory environmental footprint statement is generally to be welcomed as it provides market actors with information against which they can assess the environmental impact of their raw material use decisions. Furthermore, as the declaration is publicly available, the public can be made aware of the environmental relevance of the CRM demand of the EU economy.

The following aspects should be taken into account:

- ▶ No declarations are required for indirect CRM imports in semi-finished and finished goods, a large part of the EU demand for CRMs is thus excluded and possibly even incentives are given to relocate raw material production to other EU countries, which would counteract the purposes and objectives of the Directive (Art. 1).

¹⁶ "While private sector due diligence systems can assist economic operators to fulfil their due diligence obligations applicable to batteries in accordance with the OECD Guidelines for Multinational Enterprises and the United Nations Guiding Principles on Business and Human Rights, economic operators should be responsible for complying with the due diligence obligations applicable to batteries set out in this Regulation."

¹⁷ Cf. <https://www.oecd.org/corporate/industry-initiatives-alignment-assessment.htm>

- ▶ The declarations are limited to a single impact category (cf. Art. 30 (1)). This is questionable, especially in view of the classification per each CRM into performance categories (Art. 30 (7)). A better performance in one impact category can be accompanied by a worse performance in other impact categories.
- ▶ In view of the purely informational function¹⁸ of the environmental footprint statement - no limit values or similar are set - the requirements for the preliminary assessment of the need for delegated acts (DAs) with raw material-specific calculation and testing requirements (Art. 30 (3 and 4)) appear inappropriate or disproportionate:
 - It is unclear what significance the existence of international standards and guidelines or the mere prospect of an international agreement on standards already has for the necessity of issuing regulations that condition a purely informational obligation to declare an environmental footprint (cf. Art. 30 (3b)).
 - The requirement to ensure that the introduction of an environmental footprint declaration obligation must not disproportionately affect the cost and supply of the industry (cf. Art. 30 4b) - even if the CRM has a significant environmental footprint - is contrary to Art 1 (1), which places the safety and sustainability of CRM supply on an equal footing as the objectives of the Regulation.
 - Since no limits are set, but only an obligation to provide data, it is not clear why suppliers in third countries should not be able to comply with this declaration (Art. 30 4b). Even CRMs with poor environmental performance can still be imported into the EU.
- ▶ The possibility to vary the unit 1kg CRM for each CRM is to be questioned with regard to uniform documentation in databases.
 - Nevertheless, it should be noted that EU demand for the 34 CRMs listed in Annex II varies by up to 5 orders of magnitude; according to the JRC Foresight Report (2023), demand for aluminium in 2020, for example, was 322,900 t, while 1,103 t of neodymium and less than 1 t of platinum were in demand. The forecast for 2030 and 2050 widen this gap even further (6 orders of magnitude).
 - Moreover, many of the 34 CRMs are obtained as by-products of mining or refining and the environmental footprint result can depend significantly on the allocation choices made. Co-production is the rule in the metal system, not the exception!¹⁹

¹⁸ In the context of the CRMA, the obligation is purely informational, a cost effect could arise for embedded greenhouse gas emissions in connection with the Carbon Border Adjustment Mechanism (CBAM). Cf. https://taxation-customs.ec.europa.eu/green-taxation-0/carbon-border-adjustment-mechanism_en and <https://everledger.io/what-does-the-european-unions-carbon-border-adjustment-mechanism-indicate-for-the-future-of-international-trade/>

¹⁹ See N. T. Nassar et al. By-product metals are technologically essential but have problematic supply. Sci. Adv.1,e1400180(2015). DOI:10.1126/sciadv.1400180

- In the scientific determination of the relevant impact category²⁰ or better of the three relevant impact categories (see above), the communication needs of downstream companies must not play a role (cf. Annex V (5b)).

Recommendations

- Delete Art. 30 (3b) – the mere existence of or the prospects of agreeing on international standards and guidelines should not be decisive for the question whether an environmental footprint declaration is necessary or not.
- Extend the possible obligation for an environmental footprint declaration to indirect imports of CRM embedded in semi-finished and finished products. The most relevant product groups for each CRM should be defined in the delegated acts.
- The declarations should include the three most important impact categories to be defined accordingly in the respective DA in order to avoid burden shifting to other environmental categories through purchasing decisions and to reflect the multidimensionality of climate and environmental protection.
- To avoid confusion and to ensure uniform documentation in databases, the unit should be the same for all CRMs, e.g. 1 kg CRM.
- The environmental footprint statement should include, in addition to the specific environmental impact per unit mass, the absolute magnitude of the environmental impact of the EU demand on the CRM as additional information for the addressees of the statement. The absolute magnitude of the environmental impacts should also be taken into account in the COM's assessment of the significance of a CRM's footprint during the preliminary assessment.
- It should be mandatory to identify the main product (raw material) associated with the CRM in the declaration and, due to its potentially significant influence on the valuation result²¹, the allocation method to be applied should be clearly specified and described in the DA. ANNEX V should be adapted to this effect.
- The procedure of the "hot-spot analysis" for determining the relevant impact category(ies) in Annex V No. 5 should be specified and whether it is part of the preliminary assessment by the COM according to Art. 30 (4). We recommend an explicit reference to the EU International Life Cycle Data system (ILCD) life cycle impact assessment (LCIA) method with its 16 midpoint impact categories as a starting point for the hot-spot analysis²².
- The number of possible performance classes (e.g. A-F) should be clearly defined in Annex V.
- Delete Annex V (5b): A scientifically sound hotspot analysis to identify the most important impact categories should be independent of the communication needs of downstream companies.

²⁰ "The calculation rules shall specify the impact category that needs to be included in the environmental footprint calculation. The choice shall be based on the hotspot analysis performed in line with scientifically sound methodologies developed at international level".

²¹ See Nuss P, Eckelman MJ (2014) Life Cycle Assessment of Metals: A Scientific Synthesis. PLOS ONE 9(7): e101298. <https://doi.org/10.1371/journal.pone.0101298>

²² [European Platform on LCA | EPLCA \(europa.eu\)](https://eplca.europa.eu/)

List of abbreviations

BattR	EU Battery Regulation
CRM	Critical Raw Material
CRMA	EU Critical Raw Materials Act
CRMA-P	Proposal of the EU Commission for a Critical Raw Materials Act
CSDDD	EU Corporate Sustainable Due Diligence Directive
CSRD	EU Corporate Sustainable Reporting Directive
DA	Delegated Act
DD	Due Diligence
EIA	Environmental Impact Assessment
EMAS	Eco-Management and Audit Scheme
ESG	Environmental, Social and Corporate Governance
ILO 169	Indigenous and Tribal Peoples Convention of the International Labor Organization
ISO 14001	Environmental Management Standard of the International Organization for Standardization
LCIA	Life Cycle Impact Assessment
RBC	Responsible Business Conduct
SDG	Sustainable Development Goals of the United Nations
SP	Strategic Project
SRM	Strategic Raw Material
TFEU	Treaty on the Functioning of the European Union
UNFC	United Nations Framework Classification System for Resources
UNGP	United Nations Guiding Principles for Business and Human Rights