

EARTO Answer to the EC Consultation on Towards a Secure and Sustainable Critical Raw Materials Supply for Europe

16 May 2023

EARTO welcomes the European Commission's [proposal](#) for a regulation to establish a Framework for ensuring a secure and sustainable supply of Critical Raw Materials and the accompanying [Communication](#). EARTO members are ready to contribute to the definition and subsequent implementation of the Critical Raw Materials Act (CRMA), and hereby put forward the following key messages.

The CRMA must facilitate a systemic change to deliver on its goals. They can only be achieved to their full extent based on cutting-edge research and innovation

The CRMA signals the need for a systemic change. Establishing a secure and sustainable supply of critical raw materials for Europe is clearly the overarching priority. However, the CRMA's strategic goals should be aligned with a transformation of the manufacturing sector to steer clear of establishing additional dependencies on suppliers outside of Europe.

Research and innovation (R&I) are instrumental in achieving systemic change by providing the required data, methods, processes, technologies, know-how, and evaluation in lockstep with policymakers and industry. Increased domestic extraction will be inevitable to contribute to a responsible and secure CRM supply. RTOs can support the industry to work in a more sustainable and resource efficient way (e.g., waste and GHG emissions reduction, work safety, water, energy, materials and waste management), and to facilitate the scaling up of sustainable extraction processes. Further, circularity is a key tool to ensure a secure and sustainable CRM supply. RTOs can provide much needed know-how for a circularity approach, including added value through close ties to industry.

However, due to strong demand growth, establishing a circularity approach and improving primary raw materials production will not be enough to ensure long term sustainable CRM supply. Additional tools at our disposal include minimizing dependencies through alternative technologies, increasing CRM efficiency (e.g. decreasing the amount of critical material used per unit of functionality), reducing CRM demand (e.g. shifting to more abundant material including by substitution) and providing open-source and shareable data. R&I plays a key role in providing all these solutions.

There are immense benefits for the CRMA to be reaped from building upon and engaging with ongoing European initiatives such as EU partnerships under Horizon Europe. EARTO members coordinate their insights to support these initiatives in alignment with the CRMA's goals. For example, the [AMI2030 initiative](#) has laid the groundwork for CRM substitution across Europe. Finally, we need to make sure that the CRMA is implemented in coordination with other EU policy initiatives such as the Net-Zero Industry Act and that it simultaneously delivers on Europe's climate goals.

A stable long-term investment in research and innovation is key for an impactful and timely fulfillment of the CRMA

To address European materials resilience in an impactful and yet realistic manner, the subject of R&I on materials substitution should be prioritised to industrial sectors where its implementation meets the lowest technology and cost barriers. However, with material substitution to cheap, abundant, and non-critical materials, comes an additional obligation to develop 1) the relevant recycling technologies combined with 2) the design for recycling solutions which can ensure sustainable and highly efficient recycling of corresponding future low-value waste. Focus on material substitution also implies a realistic evaluation and identification of those technologies/sectors for which substitution of critical raw materials is more challenging.

EARTO welcomes the measures outlined in the regulation proposal, among others: establishing more efficient, simplified, and predictable permitting processes, strategic projects, stock-flow analysis, applying the United Nations Framework Classification (UNFC) indicator, and more flexible rules for state aid. A lean process and reduced administrative burden need to be guaranteed. To enhance CRMA's impact, there is a clear need to establish links to R&I going well beyond the scope of the accompanying Communication. For example, strategic projects can be required to include RD&I in their scope. This needs to be accompanied by a stable long-term investment in RD&I along with a balanced approach towards all TRLs (see [EARTO paper explaining the TRL ladder](#)). Such an approach will allow us to address any challenges we might face in the next several decades while at the same time upscaling the available technological solutions and bringing them to market as quickly as possible. Circularity of CRM use (including: wider use of secondary

raw materials, substitution by advanced, abundant, or renewable materials, more effective and sustainable mining and refining processes, and recycling and valorisation technologies) must remain an integral RD&I part in the CRM domain, underpinned by a stable financial commitment in the long term.

Public awareness and acceptance need to go beyond public consultation processes

EARTO appreciates the notion of promoting public awareness and acceptance as stated in the EC Communication. However, this effort should go well beyond public consultation processes paired with transparent and continuous communication. To gather public support for the CRMA, it is indispensable to provide solid scientific evidence and success stories to highlight how technologies, processes, and business models deliver solutions for society's biggest challenges. RTOs can not only provide the required technological solutions for the CRMA, but can also offer invaluable insights into how society deals with systemic change, including means to facilitate acceptance of the measures proposed. RD&I has already generated significant knowledge on means to ensure socially acceptable and environmentally friendly policy's implementation. Further relevant domains for uptake include evolving skillsets among the workforce, circularity aspects such as the right to repair or second use, digital product passports, and the acceptance of expedited permitting procedures.

Resilient CRM supply for Europe must build upon sustainable partnerships with third countries

The proposed regulation defines ambitious targets for the supply chain. They can only be achieved if the supply chain is monitored and analysed in its entirety, with the involvement of all relevant stakeholders in compliance with high sustainability standards. We need to ensure a balanced monitoring process and response mechanisms to possible bottlenecks in any part of the supply chain. RTOs can strengthen the security of supply through digitalization technologies for material flows as well as insights into future supply and demand thanks to prospective studies based on scientific, technological, and economic knowledge.

As outlined above, the systemic change ahead of us requires the involvement of the manufacturing industry, which is largely not present in Europe anymore. In addition, the EU needs to find a balance between overcoming its structural supply dependencies and leveraging partnerships with third countries. We welcome the creation of Strategic Projects as a means for stronger engagement with third countries. Clearly there is a need to base such partnerships on respect for Environmental, Social and Governance (ESG) principles and human rights. Additional added value is to be found in terms of upskilling and reskilling.

The CRM supply chain requires leadership in standard setting and ensuring interoperability at the EU level. RTOs have long-standing experience in national, EU, and international standardization efforts. Notably, most new EU standards for the green and digital transitions are initiated by EU RD&I projects demonstrating once again the clear need to couple CRMA with RD&I efforts. Policymakers should leverage such efforts towards the establishment of an innovation friendly and evidence-based regulation.

Skills are the currency of the transition towards a secure and sustainable CRM supply

The materials transition hinges on access to a specialized and highly skilled workforce. Frequent "brain exchange" between RTOs and industry not only brings both sides closer together, but also bridges the gap between disciplines and knowledge along the whole TRL scale. Further, RTOs strongly contribute to on-the-job training at the forefront of industry's technology needs. It's a mutually beneficial relationship that strengthens market uptake. We welcome the initiatives regarding skills outlined in the EC Communication, in particular the Raw Materials Academy. Leveraging synergies with existing activities under Batteries European Partnership Association ([BEPA](#)), European Institute of Innovation and Technology ([EIT](#)), to name a few, promises extra added value for all stakeholders involved.

EARTO is ready to provide additional input on each topic mentioned above: our experts are available for further discussion with EU institutions to ensure a successful implementation of CRMA.

EARTO - European Association of Research and Technology Organisations

Founded in 1999, EARTO promotes RTOs and represents their interest in Europe. EARTO network counts over 350 RTOs in more than 31 countries. EARTO members represent 150,000 highly-skilled researchers and engineers managing a wide range of innovation infrastructures.

RTOs - Research and Technology Organisations

From the lab to your everyday life. RTOs innovate to improve your health and well-being, your safety and security, your mobility and connectivity. RTOs' technologies cover all scientific fields. Their work ranges from basic research to new products and services' development. RTOs are non-profit organisations whose core mission is to produce, combine and bridge various types of knowledge, skills and infrastructures to deliver a range of research and development activities in collaboration with public and industrial partners of all sizes. These activities aim to result in technological and social innovations and system solutions that contribute to and mutually reinforce their economic, societal and policy impacts.

EARTO Working Group on CRM: *is composed of more than 30 experts. This WG is looking at the implementation of the CRM Act, mainly focusing on promoting the role of RTOs in its development and implementation and related initiatives in Europe, maximising the benefit of participating of RTOs.*

EARTO Contact: www.earto.eu