EARTO Position Paper
Towards an Impactful Implementation of the Critical Raw Materials Act: Threading the Needle on Benchmarking and Circularity

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Following six months of intense negotiations, the Critical Raw Materials Act (CRMA) entered into force in April 2024. Tasked with its implementation, the European Commission and Member States face various challenges. This paper focuses on benchmarking and circularity under the CRMA, highlighting avenues for action and the contribution of Research and Technology Organisations (RTOs) to CRMA's successful implementation.

Challenges to Implementation

Implementing the CRMA requires both comprehensive top-down coordination and targeted grassroots initiatives. The European Commission and Member States should closely align their efforts, leveraging existing frameworks. The latter includes the Ecodesign for Sustainable Products Regulation (ESPR), Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), the Waste Framework Directive (WFD) and the Net-Zero Industry Act (NZIA).

The CRMA needs to be further integrated into industrial policy. To achieve this, technical aspects need to be embedded into the broader economic impact. Challenges like high energy costs and other negative effects can weaken competitiveness, influencing sectors such as automotive and semiconductors globally.

Furthermore, the insufficient data on raw materials in supply chains, the lack of testing and demonstration infrastructure, and unaligned standards pose significant challenges. A focused effort on extraction, processing, recycling, and alternative solutions is essential to meet the benchmarks set by the CRMA, in line with EU climate, energy, and digital targets. For instance, by 2030, the CRMA envisions supplying at least 40% of the EU's annual consumption of strategic raw materials through an enhanced processing capacity, a target that presents various challenges due to disparities in applications, volumes, and demand. Efforts to increase resource extraction from primary CRM sources should be complemented by developing separation techniques to ensure resilience and circularity. It is crucial to understand benchmarks as baseline metrics for comparison and not as targets.

The CRMA aims to improve the internal market by ensuring access to CRM and promoting circularity throughout the value chain. It requires Member States to act on circularity, establish a European Critical Raw Materials Board with a dedicated subgroup on circularity, and facilitate regular discussions on cooperation with EU partnering countries.

While circularity is no silver bullet, it plays a crucial role in demand mitigation. Integrating the CRMA with the Circular Economy Action Plan (CEAP) is essential for a coherent EU approach. Aligning and mapping EU legislation can emphasize the importance of circularity in legislative measures in the fields of information and communication technology, digitalisation, and life cycle management. Establishing legislation for specific waste streams (like those for batteries), with clear targets and requirements for end-of-life products is vital. Industry standards that reflect quality and sustainable resource extraction from primary and secondary resources are important to level the playing field for market actors.

Additionally, changing consumption patterns and reducing demand are key strategic necessities.

RTOs' Contribution

With a fragmented RD&I landscape, aligning initiatives in the field is vital to preventing duplication and maximizing efforts towards greater circularity. **RTOs play a crucial role in meeting the benchmarks established by the CRMA and advancing circularity efforts.** They contribute, among other things, to setting up and managing national materials observatories and participate in defining stress tests. Their expertise in developing digital product passports and managing data significantly boosts supply chain efficiency and transparency. RTOs excel in identifying and addressing technological gaps in CRM substitution, secondary materials usage, advanced recycling techniques, and design for recycling and processing.

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Achieving the CRMA's objectives requires leveraging expertise in:

1. Developing technologies with a systemic approach and enhancing cooperation within institutions and European associations.
2. Collaborating with Member States and other stakeholders to ensure effective CRMA implementation.
3. Supporting the industry in adopting CRMA provisions, considering the broad spectrum of players in supply chains.
4. Utilising RTOs' technological infrastructures as platforms for testing and demonstrating, to accelerate the creation of new industry-relevant value chains.
5. Pilot lines as key infrastructures to support the creation of technology-based start-ups in future, not yet established value chains.
6. Developing relevant standards in the area.
7. Adapting existing tools and developing new methods for mapping and evaluating CRM streams for techno-economic benefits, environmental sustainability, and social acceptance.
8. Conducting advanced research in recycling technologies and alternative raw materials.
9. Facilitating technology transfer programs.

This is where RTOs can step in and provide the required expertise. Embedding such capabilities into the development and implementation of circular economy strategies is key to addressing pressing benchmarking and circularity challenges.

EARTO and its experts remain available for further discussion with EU institutions on CRMA's successful implementation.

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 228,000 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.

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