



# Chalk and cheese? The Mismatch between the EU Policies and Legislation on Critical Raw Materials

Topi Turunen, Johanna Suikkanen, David Lazarevic



Suomen ympäristökeskus  
Finlands miljöcentral  
Finnish Environment Institute

# Introduction

- CRMs are important for many different uses – they are highly relevant for e.g. advanced battery technologies, fuel cells and robotics.
- EU is not self-sufficient in CRMs and its industry is dependent on the importation of CRMs. Increasing geopolitical instability has increased the need to improve CRM self-sufficiency in Europe.
- One way to address this is to create a secondary stock of CRMs via more efficient recovery. However, the recovery rate for most CRMs remains extremely low.
- This study examines the EU policies on CRM management and assesses whether they have been implemented into EU legislation. The study consists of three main parts:
  - 1) Identifying CRM-related objectives that are laid down in the EU policy documents,
  - 2) systematization of legal instruments concerning CRMs management and identification of shortcomings in the regulatory framework,
  - 3) analysis of the proposed EU Batteries Regulation and CRMs Regulation (2023) and how it addresses the identified shortcomings.

# EU Policies affecting CRM management

- The EU policy review showed that in the last 15 years CRMs have emerged as an important policy topic across different policy areas, including circular economy, clean mobility, batteries and industrial policy.
- There appears to be a consensus about the paramount importance for measures that address domestic market creation for extraction- and recycling- based measures in Europe.
- The objectives across different policy fields are coherent in promoting secondary raw materials markets, resource efficiency and circular economy to reduce dependency on importation.
- The policy documents suggest that the objectives could be promote through addressing the legal frameworks eco-design, batteries and waste.
- Proposed legal instruments include recycling targets, mandatory recycled material content targets and addressing recyclability of products.

# Regulation on CRMs

- Despite the quite coherent objectives laid down in the policy document, the regulation on CRMs is scattered and the secondary stocks of many CRMs remain mostly unregulated.
- The regulation on most CRMs focused on trade, tariffs, custom duties and product safety. There are only few instruments directly supporting the recovery of CRMs.
- CRMs are also quite vaguely mentioned in some product group specific ecodesign criteria.
- WEEE and Batteries are CRM-rich waste streams and their recovery can contribute to more efficient CRM management. Directives on waste electronics and batteries have some provisions (overall collection and recycling targets) promoting more efficient recovery of CRMs
- The EU Commission has proposed new regulations concerning Batteries and CRMs to put more emphasis on CRM management.

# Regulating WEEE and Batteries

- The WEEE Directive (2012/19/EU):
  - WEEE is separately collected through EPR schemes. The collected waste electronics shall be treated, recycled or recovered in accordance with the best available techniques.
  - Minimum collection rate of 65 % of the average weight of EEE placed on the market in the three preceding years in the Member State concerned, or alternatively 85 % of WEEE generated on the territory of that Member State. Member States shall ensure that all separately collected WEEE undergoes proper treatment.
  - Recovery targets for WEEE ranging from 55 to 85 %
- Batteries Directive (2006/66/EC):
  - Requires separate collection and safe treatment of waste batteries and accumulators. The batteries and accumulators that are collected with WEEE streams shall be removed from the WEEE.
  - Minimum collection rate of 45%. The collection rate is calculated by comparing the amount of sold batteries to the amount of the ones collected for recycling. The batteries and accumulators that are collected should undergo treatment and recycling.
  - Minimum recycling efficiencies: (a) recycling of 65 % by average weight of lead-acid batteries and accumulators, (b) recycling of 75 % by average weight of nickel-cadmium batteries and accumulators and (c) recycling of 50 % by average weight of other waste batteries and accumulators.
- Shortcomings: Overall recycling targets can lead to more efficient CRM management but does not necessarily do so as CRMs are often used in small quantities! There are no provisions that are specifically targeting CRMs.



# Proposed Batteries Regulation

- The proposed Batteries Regulation (2020, still in legislative process) lays down binding recycling targets and minimum recycled content requirements for some CRMs.
- The collection targets of 45 % by 31 December 2023, 65 % by 31 December 2025 and 70 % by 31 December 2030. All waste batteries collected shall enter a recycling process and they shall not be landfilled or incinerated.
- Recycling targets (a) recycling of 75 % by average weight of lead-acid batteries by 2025 and 80 % by 2030, (b) recycling of 65 % by average weight of lithium-based batteries by 2025 and 70 % by 2030, and (c) recycling of 50 % by average weight of other waste batteries by 2025.
- In addition to these targets, all recycling processes shall achieve the following levels of materials recovery: (a) 90 % for cobalt by 2026, 95 % by 2030, (b) 90 % for copper by 2026, 95 % by 2030, (c) 90 % for lead by 2026, 95 % by 2030, (d) 35 % for lithium by 2026, 70 % by 2030, (e) 90 % for nickel by 2026, 95 % by 2030
- Minimum recycled content targets are as follows: (a) 12% cobalt by 2030, 20% by 2035, (b) 85% lead by 2030, 85% by 2035, (c) 4% lithium by 2030, 10% by 2035, (d) 4% nickel by 2030, 12% by 2035
- First recycling targets that are not merely weight-based by take into account the different materials in the respective waste stream!

# Proposed CRM Regulation

- The EU CRM Act (2023) includes a proposal for EU Regulation on CRMs, its Annexes, Commission report and couple of SWD documents and a new list of CRMs
- Regulation sets out objectives for EU: (i) Union extraction capacity is able to produce at least 10%, (ii) Union processing capacity is able to produce at least 40% and (iii) Union recycling capacity is able to produce at least 15% of the Union's annual consumption of strategic raw materials. In addition, objective to diversify imports and to improve the Union's ability to monitor and mitigate the supply risk and ensure the free movement of CRMs while ensuring a high level of environmental protection, by improving their circularity and sustainability.
- CRMs are divided into two: Strategic Raw Materials and Critical Raw Materials. CRM list includes SRM although they do not necessarily meet the CRM threshold (copper and nickel)
- Regulation includes multiple provisions on strategic projects, monitoring supply risks, joint purchasing etc. However, this presentation focuses on the circularity of the CRMs (especially regarding household waste i.e. WEEE and batteries)

# CRM Regulation and circularity

- Article 25: Each Member State shall adopt and implement national CRM programmes focusing on CRMs from waste streams that are not separately regulated (not WEEE and batteries). For separately regulated products and waste, the measures shall be implemented in coherence with existing Union legislation.
- Article 26: Operators obliged to submit extraction waste management plans shall provide a preliminary economic assessment study regarding the potential recovery of CRMs from: (a) the extractive waste stored in the facility and (b) the extractive waste being generated or from the extracted volume prior to it becoming waste. The study shall include an estimation of the quantities and concentrations of CRMs contained in the waste and in the extracted volume and an assessment of their technical and economic recoverability. This is outside the scope of Urban Symbiosis (not household waste).
- Article 27: anyone placing on the market certain products including permanent magnets shall ensure that those products bear a conspicuous, clearly legible and indelible label indicating: e.g. whether those products incorporate permanent magnets and if those magnets belong to any of the following types: Neodymium-Iron-Boron, Samarium-Cobalt, Aluminium-Nickel-Cobalt or Ferrite. They shall also ensure that a data carrier (inc. information on the magnets) is present.
  - This obligation is about labelling → Enables to identification of magnets to be recovered.
- Article 28: Anyone that places on the market products which incorporate big (total weight of which exceeds 0.2 kg) permanent magnets (of types mentioned in Art 27) shall make publicly available on a free access website the share of neodymium, dysprosium, praseodymium, terbium, boron, samarium, nickel and cobalt recovered from post-consumer waste present in the permanent magnets incorporated in the product. → Making the information available.
  - After 31 December 2030, the Commission may adopt delegated acts on minimum shares for mentioned CRMs recovered from post-consumer waste that must be present in the permanent magnet incorporated in the products → **EU can start laying down minimum recycled content requirements!**



# Conclusions: Breaching the gap?

- The proposed Batteries Regulation sets out significant improvements and concrete obligations towards recovery of CRMs and minimum recycled CRM content for batteries. However, the new provisions are only targeting CRMs in batteries.
- The recovery targets for WEEE are completely weight-based and do not effectively promote the recovery of CRMs that are usually utilized in small quantities in EEE → Part of the CRMs in WEEE will be regulated under the proposed provisions on CRMs in permanent magnet, otherwise the WEEE legislation needs to step up!
- The proposed CRM Regulation is very focused on virgin CRMs and EU's self-sufficiency (which is crucial but misses the scope of this paper). The new rules on circularity mainly are increasing the data available on CRMs but do not lay down obligations towards their recovery. The provisions create a foundation to built on but do not offer fast solutions to increase the secondary CRM stocks.
- It is likely that the proposed Ecodesign Framework will bring forth new requirements concerning circular economy. It opens the possibility to regulate on the minimum performance standards of a wider array of different product-groups more comprehensively. However, the development of product-specific acts has been slow → no reason to expect fast solutions from here!

# Thank you! Questions?

[topi.turunen@syke.fi](mailto:topi.turunen@syke.fi)



Suomen ympäristökeskus  
Finlands miljöcentral  
Finnish Environment Institute