ADVANCED RECHARGEABLE & LITHIUM BATTERIES ASSOCIATION

Battery Regulation: The essential role of manufacturing scrap for the European batteries value chain

RECHARGE recommendations for the trilogue discussions

September 2022

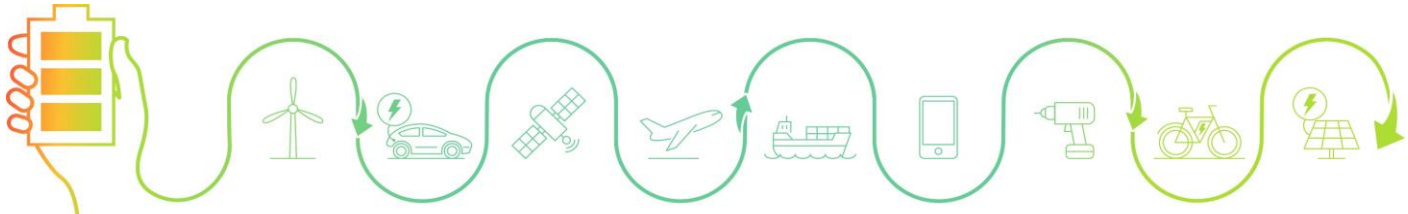
RECHARGE, the industry association for advanced rechargeable and lithium batteries in Europe, supports the objectives of the new Batteries Regulation in order to truly guide the European batteries industry to a circular economy. Advanced rechargeable batteries play an essential role in achieving the EU Green Deal and climate neutrality objectives. They are key in enabling the electrification and digitalisation of our economies.

The EU Batteries Regulation has a real potential to translate the EU's vision for batteries into a meaningful legislative framework. It is essential that all measures in the Regulation deliver on advancing the energy transition and ensuring the European batteries value chain becomes a competitive global leader, setting sustainability standards for the rest of the world.

Given the strategic role of batteries and the relevance of the Batteries Regulation to EU industrial and sustainability policies, RECHARGE encourages the trilogue negotiating teams from the European Commission, Parliament and Council to pay particular attention to the following industry concerns and recommendations related to the discussions on manufacturing scrap and the required recycled content. RECHARGE calls on the negotiators to:

1. **Include manufacturing scrap in recycled content targets (Art. 8 of the Batteries Regulation),**
2. **Use the recycled content targets to incentivise domestic recycling.**

In a changed geopolitical context, the EU must increase its autonomy in strategic value chains to ensure that potential future crises are not detrimental to the bloc's ambitious climate objectives and its crucial industries. Batteries are a key technology for the energy and digital transitions, yet Europe is particularly dependent on imported batteries and battery metals from non-EU countries, while today the European battery value chain is still nascent. The window of opportunity is short, as the next three to five years will be vital for developing a strong and competitive European batteries value chain.



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Retaining valuable metals from production waste in Europe

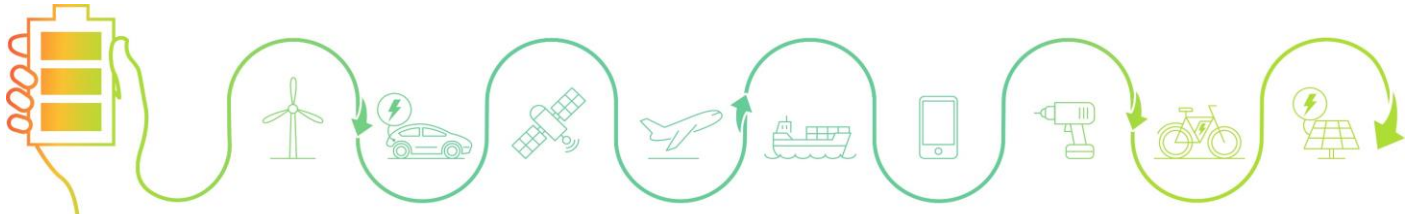
The industry's key concern relates to Recital 20 and the revised Article 8 of the Batteries Regulation four-column document (dated 02.09.2022): If production scrap cannot be included in the Recycled Content (ReCo) targets (new Art. 8) and is defined as by-product and not as waste (new Recital 20), there will be no incentive to retain and recycle production scrap in the EU. Instead, it is likely that it will be shipped to countries outside of the EU where recycling may be cheaper due to less constrained high EHS standards for recycling and lower energy prices. As such, the production scrap, containing valuable metals such as cobalt, nickel, lithium and manganese, will either be lost completely and never used in batteries, or be imported to Europe in the form of new batteries, creating an unfair competitive advantage for non-EU recyclers, materials producers and battery manufacturers. On the contrary, the EU battery industry aims at keeping the valuable materials in Europe in order to ensure that valuable recycled materials derived from production scrap are used in battery materials and consequently batteries produced in Europe. RECHARGE calls on EU policy makers to establish regulatory conditions which enable the development of an EU battery recycling and processing industry today, which is needed to absorb the volumes of waste batteries returning for recycling in 10-15 years from now.

This call is in line with the findings of the recent KU Leuven study "Metals for Clean Energy". The study points out that "**Europe's recycling potential is also dependent on prevention of scrap leakage"**. The study, which evaluates how Europe can fulfill its goal of "achieving resource security" and "reducing strategic dependencies" for its energy transition metals, establishes that recycling capacity from first-generation electric vehicle batteries "will start reaching end-of-life in significant volumes after 2035. Until then, recycling volumes will mainly come from process scrap during battery production".

The RECHARGE recommendation is to follow the ISO definition of 'Recycled content' (ISO 14021):

Only pre-consumer and post-consumer materials shall be considered for the calculation of recycled content, consistent with the following usage of the terms:

Pre-consumer material: Material diverted from the waste stream during a manufacturing process. **Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it**.



Post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

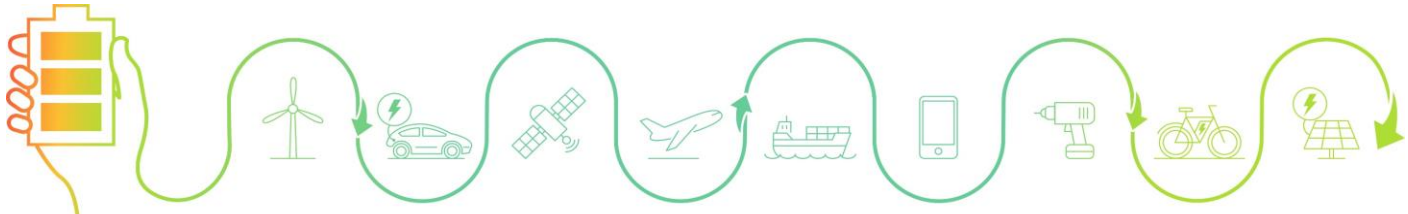
If battery production scrap is being reprocessed through the same process as they were produced, it is excluded from the recycled content calculation by ISO 14021. However, if these waste materials are recovered through a different process, they are to be considered in the calculation of recycled content according to the ISO standard.

Enabling and incentivising closed-loop recycling

Battery production, especially in the start-up phase, generates a lot of production waste until the processes are optimised. The battery manufacturing industry has a natural incentive to convert the raw materials into final products and minimize scrap rates, because the profit margins of sold finished products are considerably higher than scrap sales to recyclers. Although industry expects scrap rates to decrease significantly over the next 10 years (in light of the technological learning curve of the battery manufacturers), in the meantime, it is expected that most of the waste available for recycling will come from manufacturing scrap (see estimates here). RECHARGE strongly recommends incentivising to keep these valuable recycling resources inside the EU and available for the battery value chain in Europe. It will allow EU recyclers to secure reliable access to valuable battery recycling resources in Europe (justifying envisioned multi-billion-dollar EU investments) and to develop the capacity and operational excellence that is needed to recycle massive volumes of EV end-of-life batteries starting in the mid-2030s.

While end-of-life battery collection and recycling are already regulated, waste from battery manufacturing and the recycling thereof are not. The cheapest recycling process available will 'win' the battle for recycling. The pull effect expected from the ReCo[1] requirement should be applied to the production scrap to incentivise **recyclers to refine lithium, cobalt and nickel to battery quality, enabling closed-loop recycling**.

[1] ReCo : Recycled Content



If the recycling of production waste is not incentivised and cannot be included in the accounting for reaching recycled content targets, there is a real risk that these materials will not be recycled optimally and will never return for production of batteries in Europe, and likely be exported and no longer be available to the European battery industry. **ReCo is a driver for quality recycling, including recycling of waste from battery production**.

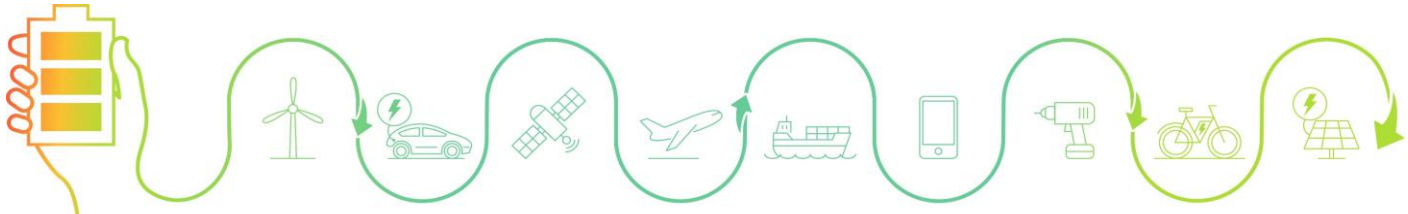
Coherence with the Critical Raw Materials Act: By including the recycled materials from manufacturing scrap in the 'recycled content' targets, quality recycling can be stimulated, and the valuable materials can be kept in Europe. This fits perfectly into the European raw materials strategy and would be coherent with the upcoming Critical Raw Materials Act and its objectives.

The best way to avoid the loss of critical raw materials used in batteries, is to include recovered scrap materials in the ReCo targets. Today, as reducing Europe's dependencies in value chains of strategic importance becomes an increasing necessity for the EU's economy and the fight against climate chain, exports of valuable key materials for the battery value chain must not be encouraged. **It is essential to keep battery metals in the European circular economy**.

The case for supporting the early launch of a robust EU battery recycling industry:

Time is of the essence in establishing a sustainable and competitive batteries value chain in Europe. The European battery recycling industry must be developed now to be ready for the larger volumes of end-of-life batteries that can be expected beginning in 2035. The soon-to-be-constructed recycling plants need to be confident in the supply of secondary raw materials which in the next 10-15 years will essentially come from production waste. Therefore, we need measures in the Batteries Regulation that incentivise recycling production scrap in Europe.

The ReCo targets by 2030 and 2035 as defined in the Batteries Regulation are yet to be achieved by the industry. Contrary to the Commission's own assessment, the Circular Energy Storage research and consultancy agency established (here) that *"…the bold targets by the European Union to ensure recycled content in batteries will for most material producers be impossible to obtain if only end-of-life*



batteries sourced in Europe were used." Article 8 allows the Commission to amend the targets in a delegated act in 2027 if justified and appropriate due to the availability of the metals recovered from waste. **This important part of the ReCo Article 8 of the Regulation allows the Commission to set more ambitious targets should there be enough material available from pre- and post-consumer waste**.

ABOUT RECHARGE

RECHARGE is the European industry association for advanced rechargeable and lithium batteries. Founded in 1998, it is our mission to promote advanced rechargeable batteries as a key technology that will contribute to a more empowered, sustainable and circular economy. RECHARGE's unique membership covers all aspects of the advanced rechargeable battery value chain in Europe: from suppliers of primary and secondary raw materials, to battery, equipment and original equipment manufacturers (OEMs), to logistic partners and battery recyclers. www.rechargebatteries.org

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