

# RECHARGE

ADVANCED RECHARGEABLE & LITHIUM BATTERIES ASSOCIATION

## The Battery Value Chain Explains: Modernization of the EU battery legislation

By mid-November, the European Commission is going to publish its legislative proposal for a revised batteries legislation. A major novelty will be the shift from Directive to Regulation. Also new will be additional requirements for social responsibility and sustainability. In total, fourteen new measures are expected to form the basis for a new batteries framework in Europe.

In the first issue of "The Battery Value Chain Explains", RECHARGE – the industry association for advanced rechargeable and lithium batteries in Europe – wishes to explain the impacts of the contemplated Commission measures on the industry, and, where applicable, on the environment and users. Step by step, measure by measure.

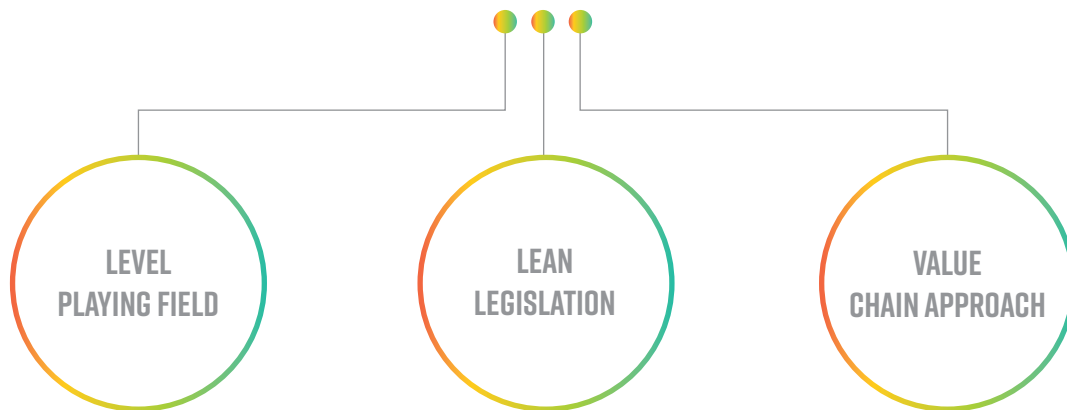
**“ The Commission’s plan to modernize the EU battery legislation is a unique opportunity to deliver at product level on the EU’s 2050 climate-neutrality and global industrial leadership objectives by better demonstrating the increasing role of batteries in a decarbonized Europe, and helping to establish a level playing field due to legislative adjustments that create a net environmental and social benefit. ”**

## Background

In October 2017, the European Commission launched the EU Battery Alliance to create a competitive and sustainable battery manufacturing activity in the European Union, contributing to both growth and sustainability objectives. In parallel, the Commission initiated the review of Directive 2006/66/EC (the "Batteries Directive") and intended to complement the existing legislation with key sustainability measures under the EU Sustainability Legislation on Batteries Initiative. Under an extended Batteries Regulation, the current Directive and Sustainability Initiative will now come together to form the future legislative framework for batteries in the EU.

A strong supporter of the European sustainability agenda, RECHARGE participates with scientific evidence and industry knowledge in the respective institutional work programs to help establish a regulatory framework that will enable European actors to execute on the technological, environmental and social leadership ambitions of the Strategic Action Plan on Batteries.

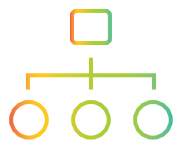
## A successful EU Batteries Legislation



In line with the ambitions of the European Battery Alliance, the legislation should support a prosperous European battery industry that will substantially contribute to the achievement of the emission reduction targets while being capable of competing against strong, existing markets outside of the EU on a fair basis. Measures must, hence, apply to EU as well as imported batteries, and be meaningful and effective.

Industry, long-term investments and cutting-edge innovations depend on a legislative framework that is capable of providing predictability and flexibility likewise. The coherence between the different legislative instruments regulating batteries and their components should be taken into account when modernizing the batteries legislation. Overlaps, as well as over-regulation, must be avoided. Measures should be balanced and based on a sound, scientific argumentation.

For battery-enabled decarbonization and innovations to succeed, it is essential to ensure that the battery industry in and outside of Europe is socially and environmentally sustainable throughout its entire value chain. All steps, from materials extraction to manufacturing and recycling should ensure human, social, and labor rights and contribute to the CO2 reduction objectives. A sustainable and internationally competitive industry cannot be provided otherwise.



# 01

## CLASSIFICATION AND DEFINITION

Currently, batteries are classified in portable, automotive<sup>1</sup> and industrial (incl. EV and stationary storage system) categories. The Commission is now looking at creating a specific classification for EV batteries, and portable batteries used in industrial or consumer equipment. Small, industrial batteries may be differentiated on their weight.

## THE BATTERY VALUE CHAIN EXPLAINS

The three classifications have existed since 2006 and collection organisms, take-back and recycling systems – together with the respective administrative and financing procedures – have been established around them. Changes to these classifications have hence substantial implications on the different value chain actors. Nevertheless, the industrial EV battery sector and certain small industrial batteries should become subject to modifications within their existing classifications: Industrial EV batteries are bound to become such a predominant segment of the industrial family that it is indeed necessary to create a sub-category for them. Small, industrial batteries that are not only used but also maintained and disposed of by consumers should also be collected according to their consumer profile. A weight limit for the latter battery type should not be the way forward, however: Weights for one and the same product type can significantly differ. Obliging consumers to dispose of their batteries via different means would only create confusion and would eventually hinder correct collection. For safety reasons, specialized industrial products (incl. some light-weight batteries) should only be handled via professional collection schemes and not mixed with portable products in turn. These are just some examples of how a change in classification can impact the environment, the user and the industry.



# 03 04

## COLLECTION RATE FOR PORTABLE AND AUTOMOTIVE/INDUSTRIAL WASTE BATTERIES

Under Measure 3 and 4, the Commission is looking at ensuring a high collection rate for a) portable batteries and b) automotive and industrial batteries. For portable batteries, the current collection rate shall increase from today 45% to either 55, 65 or 75% by 2025. Today, collection rates are calculated based on batteries put on the market; to better represent the waste available for collection, the Commission plans to introduce a new calculation concept.

## THE BATTERY VALUE CHAIN EXPLAINS

Defining targets and achieving targets can be very different things. At RECHARGE, we believe that efforts should be put into effectively helping to improve reality. Automotive and industrial waste batteries are already collected to nearly 100% because they are installed in non-disposable equipment and professional take-back schemes exist at car dealers, installers of home storage solutions or other industrial actors.

Not collected batteries either remain in the possession of the owner, are collected with the equipment, or are otherwise transferred with the equipment (such as exporting cars). Introducing a new concept for what can be collected is therefore a real game changer. Further sensitizing battery owners will also contribute to improving the collection performance in the EU.

<sup>1</sup> Automotive batteries are batteries used for starting, lighting and ignition of vehicles. Automotive batteries usually are lead-based batteries.



05 06

### RECYCLING EFFICIENCIES AND RECOVERY OF MATERIALS

Under Measure 5 and 6, the Commission is looking at increasing the existing recycling efficiency values and defining a new one for lithium-based batteries. In addition, specific recovery rates for selected substances shall be introduced.

#### THE BATTERY VALUE CHAIN EXPLAINS

Recycling is one of the most effective ways towards an efficient use of our resources in the battery industry. Especially the recovery of high-impact materials brings a true improvement to the environmental and social profile of batteries. RECHARGE is involved at scientific level in developing models for identifying high-quality recycling, strategies for harnessing urban mines, and defining criteria for end-of-waste and end-of-recycling.

Nevertheless, recycling measures must also reflect the technological feasibilities in the recycling industry. One main characteristic of the recycling industry is its dependence on volumes and buyers of secondary raw materials. While more and more industry actors are keen to purchase recycled materials, secondary materials are a result of available waste. In the advanced battery technologies sector, waste volumes are currently far from enabling an economically viable recycling. Specific recovery rates on selected materials are therefore a real challenge. While a combined-substances target would allow for high rates as well as economic feasibility - thus more market players, higher competition and more innovation -, a dedicated recovery rate leaves no flexibility to adapt and develop. At industry level we fear that too inflexible rules might encourage waste export, potentially resulting in a loss of valuable raw materials and control over waste treatment under equivalent conditions.



10

### RECYCLED CONTENT

In view of the Circular Economy Action Plan, the Commission puts increased focus on the circularity of materials in various value chains, including the battery market. Under Measure 10, the Commission plans to set an information requirement for secondary lithium, cobalt and nickel in batteries so as to implement mandatory levels of recycled content as from 2030.

#### THE BATTERY VALUE CHAIN EXPLAINS

Minimum recycled content requirements intend to address resource savings and carbon emission credits from using secondary raw materials. But the burdens on industry to implement recycled content obligations at a time when volumes of available secondary raw materials are insufficient, risk jeopardizing the competitiveness of European batteries. A step-wise implementation of such measure is therefore crucial. Nonetheless, it is questionable if such obligation would truly result in a better environmental performance. Studies, including the European Commission's assessment study on this measure, have shown that the environmental benefits of recycled content are very limited – until 2030 at least. Overall, implementing and controlling a recycled content obligation seems a disproportionate burden on the industry when recycling efficiencies and recovery rates already exist.



## 02

### SECOND LIFE<sup>2</sup> OF EV BATTERIES

To facilitate the creation of a viable second life market, the Commission intends to implement new concepts that will better enable the transition of spent (compared to waste) batteries to second life applications. A clarification of the waste status will be necessary as well as a legal basis for the transfer of the EPR from the original battery Producer to the second life marketer. A contractual basis between the original OEM and second life operator could ensure that the R&D and IP efforts of the original battery manufacturer are respected.

### THE BATTERY VALUE CHAIN EXPLAINS

Batteries can, under certain conditions, be suited for second life use. And safety must be the key criterion for defining this suitability. While batteries are used in various applications and sectors, they are energy storing devices. Their electro-chemical and electronic features are the result of intensive application-performance optimization. Imposing a totally different performance profile on such carefully designed electro-chemical devices can, under certain conditions, lead to severe safety risks. Especially unqualified and inexperienced personnel must be prevented from manipulating and re-building batteries.

Overall, it must be highlighted that the second life business still needs to show that they are an environmentally and economically viable option. Energy needs, repair or replacement works as well as likely underperformance of second life batteries (compared to a new, more efficient battery) may quickly offset the initial benefits of extending the lifetime of a battery.



## 11

### EXTENDED PRODUCER RESPONSIBILITY

Extended Producer Responsibility (EPR) refers to the Waste Framework Directive and sets out financing, reporting, take-back and recycling obligations for Producers<sup>3</sup> that put a battery, i.a., on the EU market. Within the revision of the existing batteries legislation, the Commission intends to apply additional fair practice standards on Producer EPR organizations and plans to create EPR rules for EV and industrial battery Producers.

### THE BATTERY VALUE CHAIN EXPLAINS

Declaration obligations for EV batteries are a meaningful instrument to prepare for the future take-back of these batteries at their end of life. Equally meaningful are new provisions for industrial batteries that are used, maintained and disposed of by consumers. These small, industrial batteries feature a different user and waste management profile than industrial batteries used by private persons but maintained and disposed of by professionals (example home storage). Relevant to remember is that Producer obligations already exist for industrial (including EV) batteries. Industrial batteries are subject to authorized treatment facilities and take-back schemes, and Producers must ensure their collection and recycling. Creating thus new obligations would only create new administrative – and financial – burdens without impacting the reality. Collection leakages under the automotive and industrial battery categories can only be associated with undeclared waste shipments, such as for end-of-life vehicles. Improving, hence, end-of-life declaration must be top of the measures list.

<sup>2</sup> different usage from initial application

<sup>3</sup> A Producer is defined as the first in the value chain to place a battery on a Member State market (domestic manufacturer or importer).



## 09

### ADDRESSING NON-RECHARGEABLE PORTABLE BATTERIES

Measure 9 represents a substantial change. In view of limiting single-use products in Europe, the Commission intends to restrict non-rechargeable portable batteries partially or totally from the EU market. A partial restriction would apply to low-performing batteries, for example.

#### THE BATTERY VALUE CHAIN EXPLAINS

Contrary to popular belief, primary (or non-rechargeable) batteries are not single-use products with a short lifetime. Some can last up to twenty years or are designed to serve for the entire use life of the device they power. Moreover, in many instances, replacing these batteries is technically not feasible and would not result in an improved environmental footprint. At RECHARGE, we believe that the restriction of products should exclusively be based on an assessment of the alleged environmental and technical benefits.



## 12

### DESIGN

Under Measure 12, the Commission wants to strengthen current removability obligations and introduce new replaceability requirements.

Removability is expected to be a way to better allocate different waste streams from one device to the respective treatment sectors. Replaceability allows replacing a component of a product with a new or different component.

#### THE BATTERY VALUE CHAIN EXPLAINS

In sectors such as food packaging, easy-to-remove design has successfully contributed to increased recovery rates through more specific collection. Contrary to packaging, batteries are electro-chemical devices that are designed to not only meet user expectations in a product but to also comply with very high safety, performance and life duration criteria. Default removability requirements of complex articles should therefore be subject to a careful assessment. The same condition should apply to the concept of replaceability, where each product type should be analyzed based on the technical feasibility and safety risks for the end-user.



## 07

### **CARBON INTENSITY FOR INDUSTRIAL AND EV BATTERIES**

With a carbon footprint requirement for EV and industrial batteries, the Commission sets a new provision addressed at working towards the EU's general climate-neutrality ambition. Measure 7 foresees an initial reporting/information requirement on the carbon content of an EV or industrial battery, followed by value limits in a second phase.

#### **THE BATTERY VALUE CHAIN EXPLAINS**

Batteries play a pivotal role in the decarbonization of the transport and energy sector and are crucial to the achievement of the EU's 2050 climate-neutrality objective. Defining the carbon footprint of a battery as a key sustainability indicator is hence logical and effective. Our work in establishing the Product Environmental Footprint for rechargeable batteries has also shown that batteries can indeed differentiate on one meaningful environmental criterion: the carbon footprint. The carbon footprint stands for both high-quality batteries as well as environmentally sound value chain steps. It is a known indicator for consumers and allows them to identify batteries with a superior environmental profile easier. It also gives the necessary signals to poorly performing industry actors to improve the carbon profile of their product. In conjunction with a battery passport and a coherent carbon border adjustment mechanism, measure 7 has the potential to not only prevent underperforming batteries from entering the EU market but to also incentivize best-in-class manufacturers.



## 08

### **PERFORMANCE AND DURABILITY**

Measure 8 is a novelty to the European battery legislation and would foresee an information requirement on battery performance and durability for both original and second life applications. In a second phase, this measure could be extended to a value limit, prohibiting underperforming batteries to be placed on the EU market.

#### **THE BATTERY VALUE CHAIN EXPLAINS**

Specifying generic performance requirements can theoretically protect against the marketing of underperforming products. Still, it may as well just push manufacturers to concentrate on the specified requirements instead of improving their overall product. In a young, fast-paced market like e-mobility, this measure may lead to quickly obsolete or even counter-productive performance indicators, and could reduce the innovation potential for an overarching improvement of the technical and environmental performance of vehicles. At RECHARGE, we believe that the carbon footprint is a better indicator for the (environmental) performance of batteries because it is based on a lifecycle assessment, including the use phase.



# 13

## PROVISION OF RELIABLE INFORMATION

Information and labelling requirements already apply to the battery market in Europe. Under Measure 13, the Commission plans to establish additional obligations and introduce a so-called battery passport for industrial batteries. Measure 13 should also allow for new channels of information providing, such as websites or QR codes.

### THE BATTERY VALUE CHAIN EXPLAINS

Case studies show that for consumers to effectively use labels, indicators or other types of information, meaningful, clear, simple and consumer-oriented communication provisions are needed. A QR code or a virtual database for datasets that create a true value for the targeted group are a meaningful provision. In turn, too much information, information that is not relevant or is not understood is expected to turn consumers and value chain actors away from information.



# 14

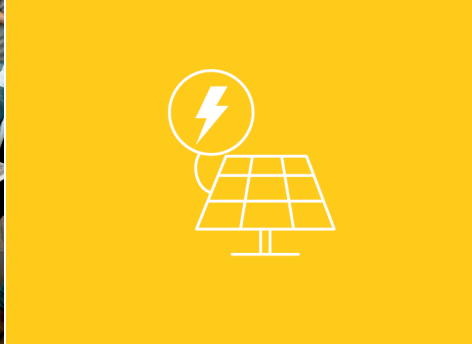
## DUE DILIGENCE FOR THE ORIGIN OF RAW MATERIALS

Under Measure 14, the European Commission intends to place due diligence obligations on battery manufacturers. The prime focus of this measure is on EV and industrial batteries that are expected to present the majority of the battery market development. Measure 14 shall require a tracing of materials based on the model of the Conflict Minerals Regulation.

### THE BATTERY VALUE CHAIN EXPLAINS

A socially sustainable battery value chain, covering all steps from raw materials extraction to battery manufacturing, is a key objective of the European advanced rechargeable batteries industry. This objective is achieved through corporate governance, best practice sharing, and mandatory regulatory instruments. At RECHARGE, we believe that social sustainability must incorporate human, labor and social rights, and shall reach from raw materials sourcing to the manufacturing of a final product to truly help improve working conditions at all stages of the value chain. Measure 14 is a unique opportunity to extend the scope of existing due diligence legislation to a full value chain approach.





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 by enabling decarbonized electricity and mobility, and cutting-edge consumer products. 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 and original equipment manufacturers (OEMs), to logistic partners and battery recyclers.

#### Imprint

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