

New EU regulatory framework for batteries

Setting sustainability requirements

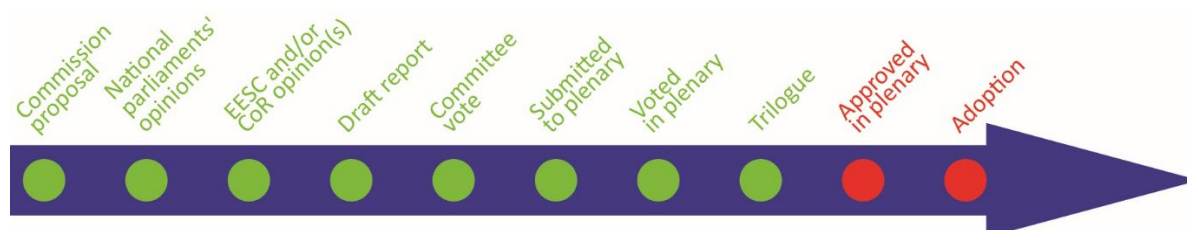
OVERVIEW

Given the important role they play in the roll-out of zero-emission mobility and the storage of intermittent renewable energy, batteries are a crucial element in the EU's transition to a climate neutral economy. On 10 December 2020, the European Commission presented a proposal designed to modernise the EU's regulatory framework for batteries in order to secure the sustainability and competitiveness of battery value chains. The proposal seeks to introduce mandatory requirements on sustainability (such as carbon footprint rules, minimum recycled content, performance and durability criteria), safety and labelling for the marketing and putting into service of batteries, and requirements for end-of-life management. It also includes due diligence obligations for economic operators as regards the sourcing of raw materials.

The European Parliament and the Council reached a provisional agreement on the file on 9 December 2022. The text agreed in trilogue negotiations amends the original Commission proposal substantially, notably by including batteries for light means of transport, such as e-bikes and e-scooters, within the regulation's scope, and by strengthening due diligence requirements. It awaits formal adoption by Parliament, with a plenary vote scheduled during the June 2023 session.

Proposal for a Regulation of the European Parliament and the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020

<i>Committee responsible:</i>	Environment, Public Health and Food Safety (ENVI)	COM(2020) 798 10.12.2020
<i>Rapporteur:</i>	Achille Variati (S&D, Italy)	2020/0353(COD)
<i>Shadow rapporteurs:</i>	Jessica Polfjärd (EPP, Sweden) Karin Karlsbro (Renew, Sweden) Sven Giegold (Greens/EFA, Germany) Alexandr Vondra (ECR, Czechia) Sylvia Limmer (ID, Germany) Silvia Modig (The Left, Finland)	Ordinary legislative procedure (COD) (Parliament and Council on equal footing – formerly 'co-decision')
<i>Next steps expected:</i>	Final first-reading vote in plenary	



Introduction

The issue of batteries is relevant to many policy areas, from transport, climate action and energy to waste and resources. The development, production and use of batteries are key to the EU's transition to a climate neutral economy, given the important role they play in the rollout of zero emission mobility and the storage of intermittent renewable energy. Batteries are also instrumental in helping power the rising digital economy and an [ever-growing number](#) of portable electronics. Driven by the electrification of transportation and the deployment of batteries in electricity grids, global battery demand is expected to increase [14 fold by 2030](#). The EU could account for [17 %](#) of that demand. According to some forecasts, the battery market could be worth of [€250 billion](#) a year by 2025. Batteries' manufacturing, use and end-of-life handling, however, raise a number of environmental and social challenges. As the market grows, so does the importance of the sustainability and environmental and energy performance of batteries.

Owing to the strategic importance of batteries for the EU, in October 2017 the European Commission set up the [European Battery Alliance](#) to support the scaling up of innovative solutions and manufacturing capacity in Europe. In May 2018, as part of the third 'Europe on the move' mobility package, it adopted a dedicated [strategic action plan on batteries](#), with a range of measures covering raw materials extraction, sourcing and processing, battery materials, cell production, battery systems, reuse and recycling.

Building on this, the [proposal for a regulation on batteries and waste batteries](#) adopted on 10 December 2020 is geared towards [modernising](#) EU legislation on batteries in order to ensure the sustainability and competitiveness of EU battery value chains. The proposal is part of the [European Green Deal](#) and related initiatives, including the [new circular economy action plan](#) and the [new industrial strategy](#). The circular economy action plan identified batteries among resource-intensive sectors with high potential for circularity to be addressed as a matter of priority.

Context

Batteries can be either primary (non-rechargeable) or secondary (rechargeable) (see box). They can also be classified according to use, technology or size. The most common differentiation, also used in the Batteries Directive, is between portable batteries (used mainly in consumer electronics, communication and computing, known as '3C'); automotive batteries (used for automotive starter, lighting or ignition power and traction batteries used in electric and plug-in hybrids); and industrial batteries. There are major variations in chemical composition and construction between different battery types. Batteries contain a wide variety of materials, such as base metals, critical raw materials and chemicals, which can raise issues in terms of resource availability, toxicity, safety, production and recycling or disposal impacts.

Raw materials

[Critical raw materials](#) embedded in batteries include for instance antimony in lead-acid batteries; rare earth elements in nickel-metal hydride batteries; and cobalt and natural graphite in lithium-ion batteries. For [electric vehicle](#)

Rechargeable batteries

Rechargeable battery types include lead-acid, lithium-ion, nickel-metal hydride, and nickel-cadmium batteries. In 2018, lead-acid batteries (LABs) provided approximately 72 % of global rechargeable battery capacity (in GWh). LABs are used mainly in automotive applications (around 65 % of global demand), mobile industrial applications (e.g. forklifts and other automated guided vehicles) and stationary power storage. According to [some forecasts](#), at global and EU level, lead-acid technologies would still prevail in 2025 in terms of volume, but the lithium-ion market would become greater in terms of value from 2018 onwards. Between 2018 and 2030, global lead-acid battery demand [would grow](#) by a factor of around 1.1.

Offering a better power and energy performance than LABs, lithium-ion batteries (LIBs) are the fastest growing technology on the market. Used for some time in portable electronics, and the preferred technology for e-mobility, they also frequently operate in stationary energy storage applications. Demand for LIBs is expected to sky-rocket ([yearly by more than 30 %](#)) for the next decade. While the EU has a [strong presence](#) in downstream segments of the value chain (battery pack assembly, recycling and re-purposing), cell manufacturing capacity lies mainly in Asia.

[batteries and energystorage](#), the EU will need up to 18 times more lithium and 5 times more [cobalt](#) by 2030, and nearly 60 times more lithium and 15 times more cobalt by 2050, compared with the current supply to the whole EU economy. Mining and exploitation of some battery minerals can be associated with adverse environmental impacts (e.g. local water, soil and air pollution; ecosystem and landscape degradation), human rights violations and poor worker protection.¹ Cobalt is a case in point. Nearly half of the world's cobalt reserves lie in the Democratic Republic of Congo (DRC), which accounts for over two-thirds of global cobalt production. Around [20% of the cobalt](#) sourced from the DRC comes from artisanal mines, where child labour and human rights issues have been documented. While risks, especially concerning conflict, child labour, forced labour and governance, are highest in the DRC, a 2020 [report](#) by the European Commission's Joint Research Centre identified other EU suppliers of one or more materials for batteries raising concerns in terms of responsible sourcing. Examples include China (which accounts for 47 % of the EU's supplies of both natural graphite and nickel), South Africa and Brazil (which provide 26 % and 17 % of EU manganese supply respectively).

Carbon footprint

According to World Economic Forum and Global Battery Alliance [calculations](#), the most greenhouse gas (GHG) emission-intense steps in the [battery value chain](#) are the manufacturing of active materials and other components, and the manufacturing of cells. The carbon footprint of batteries very much depends on the energy source used in manufacturing. Production of lithium-ion batteries, or at least the cells they contain, generally takes place in Asian countries, with an energy mix relying on more polluting sources. Research² shows, for instance, that NMC³ lithium-ion cells for electric vehicles manufactured in South Korea with an electricity mix dominated by coal, nuclear and gas, have a global warming potential that is 60 % higher than if they were manufactured using electricity based on hydroelectric power.

End-of-life handling

More than [1.9 million tonnes](#) of waste batteries are generated annually in Europe. The collection and recycling rates, the profitability of recycling and the environmental and health impacts depend heavily on the battery technology or type. The highest collection and recycling rates are achieved for automotive lead-acid batteries (99 %, according to a study by Eurobat). [Between 90 % and 100 %](#) of lead is recovered, with most Member States reporting rates of 97 % and higher.

The average collection rate for portable batteries in the EU is much lower. In 2018, [nearly 48 %](#) of portable batteries sold in the EU were collected for recycling. This means that large amounts of valuable resources are lost. Of these, [some 35 kilotonnes](#) of portable batteries end up in municipal waste annually (with possible leaching of hazardous substances).⁴ The remainder is either stored in consumers' homes, exported outside the EU in used products or ends up in e-waste recycling.

Collection rates for Li-ion batteries are [low](#), and recycling is [technologically challenging](#) and costly. Today, [almost no lithium](#) is recovered in the EU because it is deemed not cost-effective compared with primary supplies. Recycling is geared towards recovering cobalt, nickel and copper, considered more economically valuable. [Recycling efficiencies](#) are estimated at about [95 %](#) for cobalt and nickel, and 80 % for copper, depending on the specific process. Graphite is not recovered.

While closing the material loops as much as possible would help reduce raw material supply risks, within the EU, the [volume of recovered metals](#) that are used in battery manufacturing is currently low. Only 12 % of aluminium, 22 % of cobalt, 8 % of manganese, and 16 % of nickel used within the EU is recycled.

Existing situation

[Directive 2006/66/EC on batteries and accumulators](#) (the Batteries Directive), last amended in [2018](#), is the main legal act regulating batteries at EU level.⁵ With some exceptions,⁶ the directive applies

to all types of batteries, no matter their chemical nature, size or design, and classifies them according to their use. [Categories of battery](#) include:

- portable batteries (e.g. those used in laptops or smartphones, or typical cylindrical AAA- or AA-size batteries);
- automotive batteries (excluding traction batteries for electric cars); and
- industrial batteries (e.g. for energy storage or for mobilising electric vehicles or bikes).

The primary objective of the directive was to minimise the negative impact of batteries and waste batteries on the environment, while ensuring the smooth functioning of the internal market. To cut the amount of hazardous substances (in particular mercury, cadmium and lead) entering the environment, the directive laid down rules to:

- 1 reduce the use of such substances in batteries. In particular, it prohibited the marketing of certain batteries with a mercury or cadmium content above a fixed threshold (0.0005 % by weight for mercury and 0.002 % by weight for cadmium);⁷
- 2 ensure the proper management of waste batteries.

It also sought to improve the environmental performance of batteries and the activities of those involved in their lifecycle (producers, distributors and end-users), including their treatment and recycling.

To ensure a high level of collection and recycling, the [directive](#) required Member States to ensure that appropriate collection schemes were in place for waste portable batteries and set targets for collection rates (25 % in weight of the amount placed on the market by September 2012, rising to 45 % by September 2016). Member States were also required to set up collection schemes for waste automotive batteries and to ensure that producers of industrial batteries did not refuse to take back waste industrial batteries from end-users. Under the extended producer responsibility (EPR) principle, producers of batteries and producers of other products that incorporate a battery became responsible for the waste management of batteries that they placed on the market, in particular the financing of collection and recycling schemes.

In order to attain a high level of material recovery, the directive also established obligations in relation to the [efficiencies](#) of the recycling processes to which batteries are subject, depending on their chemical composition (i.e. recycling of 65 % by average weight of lead-acid batteries; 75 % by average weight of nickel-cadmium batteries; and 50 % by average weight of other batteries).

The directive also set out requirements for the labelling of batteries and their removability from equipment, and regarding information for end-users.

The Commission was required to draw up a report assessing the implementation of the directive and its impact on the environment and the functioning of the internal market by the end of 2018, and to submit proposals for revision if necessary. Released in April 2019, the [implementation report](#) and the [ex-post evaluation](#) of the directive that fed into it identified a number of [shortcomings](#). They related in particular to its incapacity to incorporate technological novelties and new usages of batteries, the unsatisfactory collection of waste batteries and the insufficient recovery of materials.

Parliament's starting position

In its [resolution](#) of 10 February 2021 on the new circular economy action plan, the European Parliament called for the creation of competitive and resilient value chains for battery production, reuse and recycling in the EU. It stressed that the new EU regulatory framework for batteries should cover at least sustainable, ethical and safe sourcing, ecodesign including measures to address recycled content, substitution of hazardous and harmful substances where possible, improved separate collection, reuse, refurbishment, remanufacturing, repurposing and recycling – including higher recycling targets, the recovery of valuable materials, extended producer responsibility, and consumer information. The framework should tackle the full lifecycle environmental impacts, with dedicated provisions on batteries relating to mobility and energy storage.

In its July 2020 [resolution](#) on a comprehensive European approach to energy storage, the Parliament urged the Commission to address the EU's dependence on imports of raw materials for battery production, including from sources where their extraction involves environmental degradation, violation of labour standards and local conflicts over natural resources. As regards future legislation on batteries, Parliament called for lifecycle analysis of batteries, the introduction of circular design, safe management and handling during the treatment of hazardous substances in cell manufacturing, and the introduction of a carbon footprint label declaring the environmental impact of all battery value chains placed on the EU market. It specifically asked the Commission to propose ecodesign requirements for batteries in order to enhance their recyclability by design; and to propose ambitious collection and recycling targets for batteries based on critical metal fractions when revising the Batteries Directive, based on an impact assessment. It also called on the Commission to develop guidelines and/or standards for repurposing batteries from electric vehicles, including testing and grading processes, as well as safety guidelines.

In its January 2020 [resolution](#) on the Green Deal, the Parliament endorsed the Commission's plans for legislative proposals to ensure a safe, circular and sustainable battery value chain for all batteries. It expressed the expectation that the proposal include at the very least measures on ecodesign, targets for reuse and recycling, and sustainable, as well as socially responsible, sourcing. It also stressed the need to form a strong and sustainable battery and storage cluster in Europe.

Council starting position

In its conclusions from October 2019 on '[More circularity – Transition to a sustainable society](#)', the Council called for the transition to electro-mobility to be accompanied by coherent policies supporting the development of technologies that improve the sustainability and circularity of batteries. It called for urgent revision of the Batteries Directive with a special focus on improving the definitions of different types of batteries; enhancing separate collection and recycling of all types of batteries; and stimulating the replacement of single-use batteries with rechargeable ones and the reuse of batteries. It also noted that the revision should include all relevant battery materials and consider, in particular, specific requirements for lithium and cobalt, as well as a mechanism to adapt the directive to future changes in battery technologies.

In its conclusions on '[Making the recovery circular and green](#)', adopted on 17 December 2020, the Council welcomed the Commission proposal for a new regulatory framework for batteries.

Preparation of the proposal

The proposal builds in part on the European Commission [ex-post evaluation](#) of the Batteries Directive; the [report](#) on the implementation and impacts of the Batteries Directive on the environment and the functioning of the internal market; and the [report](#) on the implementation of the strategic action plan on batteries, all published in April 2019. The [implementation appraisal on the Batteries Directive](#) issued by the European Parliamentary Research Service (EPRS) provides an overview of the content and findings of those [reports](#) and their respective supporting studies.

The Commission carried out a series of [public and stakeholder consultations](#), and ordered several external studies to support [preparation](#) of the impact assessment for the new regulatory framework for batteries. The three-part [impact assessment](#) accompanying the legislative proposal looked at [four main policy options](#). On 18 September 2020, it received a '[positive opinion with reservations](#)' from the Commission's regulatory scrutiny board. The [initial appraisal](#) of this impact assessment (IA) by EPRS found that the IA proposes a sufficiently broad range of policy options that are linked to the problems and objectives defined. The IA's assessment of the individual measures' economic and environmental impact appears generally well reasoned and grounded in evidence, with sufficiently robust figures. The appraisal noted, however, that small and medium-sized enterprises (SMEs) are hardly mentioned, and that an overarching assessment of the proposed regulation's impact on

competitiveness is lacking. It found that the proposal seems to be aligned with the analysis carried out within the IA.

The changes the proposal would bring

The [proposed regulation concerning batteries and waste batteries](#) would replace the Batteries Directive. It has three interlinked objectives: strengthening the functioning of the internal market (including products, processes, waste batteries and recyclates), by ensuring a level playing field through a common set of rules; promoting a circular economy; and reducing environmental and social impacts throughout all stages of the battery lifecycle. It would establish requirements for sustainability, safety and labelling to allow the placing on the market and putting into service of batteries, as well as requirements for their end-of-life management.

The main innovations envisaged by the Commission proposal include:

- the introduction, in the battery classification, of a **new category** of electric vehicle (EV) batteries, alongside the existing portable, automotive and industrial battery classes;
- progressive requirements to minimise the **carbon footprint** of EV batteries and rechargeable industrial batteries: a carbon footprint declaration requirement, applying as of 1 July 2024, complemented by classification in a carbon footprint performance category and related labelling (as of 1 January 2026); and a requirement to comply with maximum lifecycle carbon footprint thresholds (as of 1 July 2027);
- a **recycled content** declaration requirement, which would apply from 1 January 2027 to industrial batteries, EV batteries and automotive batteries containing cobalt, lead, lithium or nickel in active materials. **Mandatory minimum levels** of recycled content would be set for 2030 and 2035 (i.e. 12 % cobalt, 85 % lead, 4 % lithium and 4 % nickel as of 1 January 2030, increasing to 20 % cobalt, 10 % lithium and 12 % nickel from 1 January 2035, the share for lead being unchanged);
- minimum **electrochemical performance and durability** requirements for portable batteries of general use (applying from 1 January 2027), as well as for rechargeable industrial batteries (from 1 January 2026). The Commission would assess the feasibility of phasing out non-rechargeable portable batteries of general use by the end of 2030;
- a new obligation of **battery replaceability** for portable batteries;
- **safety requirements** for stationary battery energy storage systems;
- supply chain **due diligence** obligations for economic operators that place rechargeable industrial batteries and EV batteries on the market. For this requirement on responsible raw material sourcing (as well as for those related to the carbon footprint and the recycled content levels), the Commission proposal envisages mandatory third-party verification through notified bodies;
- increased **collection rate targets** for waste portable batteries, excluding waste batteries from light means of transport (65 % by the end of 2025, rising to 70 % by the end of 2030);
- as regards **recycling efficiencies**, increased targets for lead-acid batteries (recycling of 75 % by average weight of LABs by 2025, rising to 80 % by 2030) and new targets for lithium-based batteries (65 % by 2025, 70 % by 2030). The proposed regulation also envisages specific **material recovery targets**, namely 90 % for cobalt, copper, lead and nickel, and 35 % for lithium, to be achieved by the end of 2025. By 2030, the recovery levels should reach 95 % for cobalt, copper, lead and nickel, and 70 % for lithium;
- requirements relating to the operations of repurposing and remanufacturing for a **second life** of industrial and EV batteries;
- **labelling and information** requirements. From 1 January 2027, batteries should be marked with a label with information necessary for the identification of batteries and of their main characteristics. Various labels on the battery or the battery packaging would also provide information on lifetime, charging capacity, separate collection

requirements, the presence of hazardous substances and safety risks. Depending on the type of battery, a quick response (QR) code would give access to the information relevant for the battery in question. Rechargeable industrial batteries and EV batteries should contain a **battery management system** storing the information and data needed to determine the state of health and expected lifetime of batteries. This system should be accessible to battery owners and independent operators acting on their behalf (e.g. to facilitate the reuse, repurposing or remanufacturing of the battery);

- the setting up, by 1 January 2026, of an electronic exchange system for battery information, with the creation of a **battery passport** (i.e. electronic record) for each industrial battery and EV battery placed on the market or put into service.

The proposal also envisages the development of minimum **mandatory green public procurement** criteria or targets. The chapters on conformity assessment, notification of conformity assessment bodies and market surveillance are, according to the Commission, made up mainly of standard provisions.

Advisory committees

In its [opinion](#) adopted on 24 March 2021 (rapporteur: Bruno Choix, Employers – Group I / France; co-rapporteur: Frank Uhlig, CCMI, Workers – Group II / France), the European Economic and Social Committee (EESC) supported the measures set out by the proposed regulation. It called, however, for more precise and functional governance instruments and arrangements to implement it, with all stakeholders involved. The EESC asked in particular for strengthening the role and resources of the European Chemicals Agency and the European Agency for Safety and Health at Work. It also called for supporting research and development on ecodesign. The Committee suggested introducing the 'end of use' concept in addition to 'end of life' in order to promote the reuse, renovation or second life and recycling of batteries. In its view, labelling requirements should include an obligation to better inform people about the potential risks of hazardous substances other than cadmium, lead and mercury and about other safety risks to allow for informed choices and better use of batteries.

The European Committee of the Regions (CoR) decided not to draw up an opinion.

National parliaments

The [deadline](#) for submitting reasoned opinions on the grounds of subsidiarity was 8 March 2021. No such opinion was delivered within the time limit.

Stakeholder views⁸

[Eurobat](#), representing European automotive and industrial battery manufacturers, has expressed concern regarding the high number of delegated and implementing acts included in the proposal. It suggests streamlining labelling provisions (e.g. through a colour coding of batteries) and refraining from setting recycled content targets at this stage. [RECHARGE](#), for the advanced rechargeable and lithium batteries industry, fears that the high level of complexity of the proposed measures might translate into over-regulating fast-paced, innovative industries. [Eucobat](#), the association of national collection schemes for batteries, stresses that the collection target should relate to the quantities of waste batteries available for collection, not to the volume placed on the market. It warns against the cost linked to double recycling targets (general target + target for specific materials). [FEAD](#), for the waste management sector, welcomes the mandatory recycled content rules, new recycling targets, and increase in portable battery collection targets. It calls for effective control and enforcement mechanisms for exports of used batteries to avoid illegal shipments. [EuRIC](#), the recycling industries' confederation, calls for the application of the recycled content requirement to all battery categories; for removability and replaceability of all batteries and not only of portable ones; and for a consistent adjustment of labelling obligation for all information until 2023, with information provided for all levels of batteries.

In a [joint position paper](#), the European Environmental Bureau, Deutsche Umwelthilfe, ECOS, and Transport & Environment, supported by 42 other non-governmental organisations (NGOs), ask for strong ecodesign requirements for performance and durability, replaceability, reparability and reusability, underpinned by appropriate technical standards. They call for higher battery collection targets and higher recycling targets for battery material recovery; mandatory tests to determine whether it is technically possible and economically reasonable for the battery to be reused for a second life; and more detailed due diligence requirements to ensure environmental protection and better protect vulnerable communities. They also demand more concrete signals for a phase-out of single-use batteries, the feasibility of which should be assessed by 2025 at the latest (rather than by end 2030, as outlined in the proposal). The consumer organisation [ANEC](#) stresses the need to have a single uniform size/shape for each battery voltage; and to address issues such as child-appeal of batteries; and the temperature limits of surfaces likely to be touched. The date set by the Commission for feedback on the proposal following its adoption was [1 March 2021](#). [135 contributions](#) were received.

Legislative process

Parliament

In Parliament, the Committee on the Environment, Public Health and Food Safety (ENVI), responsible for the file, appointed Simona Bonafè (S&D, Italy) as rapporteur on 1 March 2021 (Achille Variati replaced Ms Bonafè as rapporteur on 14 November 2022, when she left the European Parliament). The Committee on the Internal Market and Consumer Protection (IMCO) and the Committee on Industry, Research and Energy (ITRE), associated committees under Rule 57 of the Rules of Procedure, appointed Antonius Manders (EPP, the Netherlands) and Patrizia Toia (S&D, Italy), respectively, as rapporteurs for opinion.

On 10 February 2022, the ENVI committee adopted its [report](#) on the proposal, with 74 votes in favour, to 8 against, with 5 abstentions.

The report introduces the following main changes to the Commission's proposed text.

- It extends the scope of the proposed regulation to **batteries for light means of transport**, such as e-bikes and e-scooters, making them subject to the proposed sustainability requirements on carbon footprint, recycled content, performance and durability, removability and replaceability, and to the due diligence requirements.
- It **strengthens the proposed due diligence regime** and expands its scope. Due diligence obligations should apply to economic operators placing any batteries on the EU market, and cover the entire battery value chain, i.e. the sourcing, processing and trading of raw materials, chemicals and secondary raw materials for battery manufacturing and waste battery treatment, the manufacturing operations, and related other business relationships. The report specifies the internationally recognised due diligence standards applicable to the due diligence process, adding explicit reference to the United Nations [Guiding Principles on Business and Human Rights](#) and the Organisation for Economic Co-operation and Development (OECD) [Guidelines for Multinational Enterprises](#). Moreover, it includes additional battery raw materials (**copper, iron and bauxite**) in the scope of due diligence obligations, and defines further the environmental and social risks that due diligence policies should address. The report provides for civil liability of economic operators.
- The requirements regarding **carbon footprint** information, labelling and maximum threshold values should cover electrical vehicle batteries, batteries for light means of transport and industrial batteries.
- The report extends the requirements on **recycled material content** to all battery categories, with the exception of portable batteries of general use.

- **Performance and durability** requirements should apply to all portable batteries (and not only to those of general use), industrial batteries, electrical vehicle batteries, and batteries for light means of transport (last category added).
- The report requires the Commission to assess the feasibility of measures to **phase out** non-rechargeable portable batteries of general use by the end of 2027 (instead of 2030), including the setting of ecodesign requirements. From 1 January 2023, such batteries must be marked with a label informing the consumers that they are 'non-rechargeable'.
- The report allows for **battery replacement** by end-users. By 1 January 2024, portable batteries incorporated in appliances and batteries for light means of transport must be designed for easy and safe removal and replacement with 'basic and commonly available tools', and without causing damage to the appliance or the batteries.
- As regards **end-of-life management**, the report sets more ambitious collection targets for waste portable batteries (70 % by the end of 2025, instead of the proposed 65 %; and 80 % by end 2030, instead of 70 %). It also introduces minimum collection rates for waste batteries for light means of transport (75 % by the end of 2025 and 85 % by the end of 2030), and for waste portable batteries of general use (70 % by the end of 2025 and 80 % by the end of 2030).
- The report also calls on the Commission to assess, by the end of 2025, the feasibility and potential benefits of setting up EU-wide **deposit return systems for batteries**, in particular for portable batteries of general use.
- It sets a much higher material recovery target for **lithium**, raising it to 70 % in early 2026 (double the Commission-proposed figure) and to 90 % in early 2030 (instead of 70 %).
- On **recycling efficiencies**, the report introduces new targets for nickel-cadmium batteries (85 % by 2025).
- The report asks the Commission to look into the introduction of harmonised standards for **common chargers** applicable no later than 1 January 2026 for rechargeable batteries designed for electric vehicles, those made for light means of transport, and those incorporated into specific categories of [electrical and electronic equipment](#), respectively.

On 10 March 2022, Parliament's plenary adopted the report with 584 votes in favour, 67 against and 40 abstentions, constituting [Parliament's position](#) for interinstitutional negotiations.

Council

In the Council, the technical examination of the proposal was conducted within the working party on the environment. Environment ministers discussed the file at the meetings of the Environment Council on 10 June 2021, under the Portuguese Presidency, and 20 December 2021, under the Slovenian Presidency. The [progress report](#) presented ahead of the June 2021 Council identified some main issues requiring further work. These included the legal basis of the proposal (i.e. the possibility of having a double legal basis, by adding [Article 192 TFEU](#) as well as [Article 114 TFEU](#)); the approach to be followed regarding the batteries of light means of transport; the procedure for amending restrictions on hazardous substances; the deadlines proposed for the sustainability and safety requirements, together with the extensive work necessary regarding secondary legislation; interaction with the Waste Framework Directive and the level of flexibility for Member States regarding EPR for batteries; the level of ambition of the collection targets; and due diligence provisions, in the light of the proposal on [sustainable corporate governance and due diligence](#).

The [progress report](#) prepared for the [Environment Council](#) on 20 December 2021 noted that there was general support for establishing a separate category of batteries for light means of transport, but questions remained as to the requirements that should apply to this category. While there was general backing for ambitious sustainability requirements, several Member States asked for reasonable deadlines to enable economic operators to adapt. The procedure on the restriction of chemicals was a major issue, with a number of countries taking the view that chemicals should

remain under the single 'umbrella' of REACH. Moreover, concerns were raised as regards the conformity of batteries; the obligations of the authorised representative; and the lack of clarity and the potential duplication of data and information requirements, among other things.

A general approach was reached on the file on [17 March 2022](#), under the French Presidency of the Council. In its [position](#), the Council introduced the following main changes to the proposal.

- The regulation would have a **dual legal basis**: Article 114 (internal market) of the Treaty on the Functioning of the European Union (TFEU), as proposed by the European Commission; and Article 192(1) (environment), in as far as rules on the end-of-life management of batteries are concerned (Chapter VII of the proposed regulation).
- The regulation's scope would be extended to **ready-made battery modules** and to **all electric vehicle batteries** (i.e. the 2 kWh capacity threshold in the proposal is removed).
- The application of the carbon footprint, recycled content, performance and durability, and supply chain due diligence requirements to **batteries for light means of transport** would be considered within 5 years of the regulation's entry into force, in a Commission report to Parliament and Council accompanied by a legislative proposal.
- A number of definitions are detailed and clarified. To differentiate remanufacturing from reuse, the Council proposes a **definition of remanufacturing**, the aim of which is to restore battery capacity to at least 90 % of the original rated battery capacity.
- The procedure for **restricting substances** in batteries is further specified to allow the Member States right of initiative to start a restriction process.
- Separate time frames are introduced for electric vehicle batteries and industrial batteries as regards the **carbon footprint** rules. The provisions would apply first to electric vehicle batteries, then to industrial batteries, 2 years later.
- Exemptions are added for **second life batteries** since operators cannot act on criteria determined by the original battery such as the carbon footprint or recycled content.
- The Commission would be required to assess the feasibility of measures to **phase out non-rechargeable** portable batteries of general use within 9 years of entry into force of the regulation (instead of end 2030).
- Provisions regarding supply chain **due diligence policies** are moved to a dedicated chapter VIa, and clarified. The Council also adds explicit reference to the UN Guiding Principles on Business and Human Rights and to the OECD Guidelines for Multinational Enterprises, and expands the social and environmental risk categories that due diligence policies should cover. Operators would have 3 years from the regulation's entry into force to comply with the supply chain due diligence obligations.
- Regarding **end-of-life management**, the Council seeks to ensure that the parameters for extended producer responsibility provided by the proposed regulation are defined in line with the provisions of the **Waste Framework Directive** (the Commission proposed to exclude batteries from the scope of articles 8 and 8a of the directive, which lay down general minimum requirements for EPR common to all waste streams).
- The collection rate targets for waste portable batteries proposed by the Commission are not modified, but the timeline is adjusted. In particular, the 65 % target would need to be achieved within 6 years of entry into force of the regulation (instead of end 2025). A **specific collection target** is introduced for waste batteries for light means of transport (54 %, to be achieved within 8 years of entry into force). A minimum **recycling efficiency** target is added for nickel-cadmium batteries (75 %, to be reached within 3 years of entry into force).
- A new annex setting out minimum requirements for **differentiating used batteries** from waste batteries in the context of export is added, with the aim of preventing waste batteries from being exported as second-hand products.
- The regulation's **chapter on end-of-life management** would apply from 1 January, 2 years after entry into force.

Interinstitutional negotiations

Negotiations started with a first trilogue on 20 April 2022. Two further trilogues took place on 30 June and 11 October 2022. The last trilogue on [9 December 2022](#) concluded with a [provisional agreement](#). The co-legislators agreed on the following main points.

As requested by the Council, the regulation will have a **dual legal basis**: Article 114 and Article 192(1) for the chapter on waste batteries management. It will apply to all categories of batteries: portable batteries, SLI batteries (designed to supply electric power for starter, lighting or ignition of vehicles), **batteries for light means of transport** (as advocated by Parliament), electric vehicle batteries and industrial batteries. Battery cells or battery modules made available for end use without further incorporation or assembly into larger battery packs or batteries will be regarded as batteries under the regulation, subject to the requirements for the most similar battery category.

The requirements on **carbon footprint** will apply to electric vehicle batteries, light means of transport and rechargeable industrial batteries, with different timelines according to the battery category. The **recycled content declaration** requirement will apply 5 years after the regulation's entry into force⁹ to industrial batteries above 2 kWh (except those with exclusively external storage), electric vehicle batteries and SLI batteries, and 10 years after entry into force to batteries for light means of transport. The **mandatory minimum levels of recycled content** are set at 16 % cobalt, 85 % lead, 6 % lithium, and 6 % nickel from 8 years after the regulation's entry into force; 26 % cobalt, 85 % lead, 12 % lithium, and 15 % nickel from 13 years after entry into force. Based on market developments in battery chemistry impacting the type of materials that can be recovered, the Commission may adopt delegated acts to bring further materials into scope. **Second-life batteries** are **exempt** from the carbon footprint and recycled content obligations (among others).

The feasibility of measures to **phase out** the use of non-rechargeable portable batteries of general use will be assessed by the Commission by the end of 2030, as originally envisaged in the proposal. Batteries for light means of transport will be subject to the regulation's **performance and durability** requirements, as well as to the digital **battery passport** obligation. Three and a half years after the regulation's entry into force, portable batteries incorporated in products will have to be designed to be readily **removable and replaceable** by the end-user at any time during the product lifetime. Batteries for light means of transport should be removable and replaceable by an independent professional. Parliament successfully pushed for batteries to be **available as spare parts** of the equipment they power for a minimum period (set, in the negotiations, at a minimum of 5 years after placing the last unit of the model on the market), with a reasonable and non-discriminatory price for independent professionals and end users. Parliament also secured an agreement that software cannot be used to affect the replacement of the battery or key components with compatible one(s).

Economic operators placing batteries on the market, except for SMEs, will have 2 years from the regulation's entry into force to fulfil their due diligence obligations, detailed in the new chapter VI a. Their due diligence policy must follow internationally recognised due diligence guidance standards, notably the UN Guiding Principles for Businesses and Human Rights, and OECD Guidelines for Multinational Enterprises, and address an expanded list of social and environmental risks.

As regards **management of waste batteries**, extended producer responsibility for batteries should be in line with the requirements of Article 8 and Article 8a of the Waste Framework Directive and of the regulation's dedicated chapter. The minimum **collection targets** for waste portable batteries are set at 63 % by the end of 2027 and 73 % by the end of 2030. Specific collection targets are introduced for waste batteries for light means of transport (51 % by the end of 2028 and 61 % by the end of 2031). The material recovery target for **lithium** is set at 50 % by the end of 2027, raising to 80 % by the end of 2031. The new recycling efficiency target introduced for nickel-cadmium batteries is set at 80 %, to be achieved by the end of 2025. The Commission will be required to assess, by the end of 2027, the feasibility and potential benefits of setting up **deposit return systems for batteries**, in particular for portable batteries of general use, as advocated by Parliament. The new

annex proposed by the Council on minimum requirements for shipments of **used batteries** is retained. The chapter on the management of waste batteries will apply 2 years after entry into force.

Member States' ambassadors in the Committee of Permanent Representatives (Coreper) endorsed the provisional agreement on [18 January 2023](#). The ENVI committee did so on 24 January 2023. The agreed text now awaits a vote in plenary, scheduled for 13 June 2023.

EUROPEAN PARLIAMENT SUPPORTING ANALYSIS

Karamfilova E., [Batteries Directive](#), implementation appraisal, European Parliament, October 2020.

Vettorazzi S., [Updating the EU regulatory framework for batteries](#), initial appraisal of a European Commission impact assessment, EPRS, European Parliament, May 2021.

Szczepanski M., [Critical raw materials for the EU: Enablers of the green and digital recovery](#), EPRS, European Parliament, December 2020.

OTHER SOURCES

[Batteries and waste batteries](#), Legislative Observatory (OEIL), European Parliament.

ENDNOTES

- ¹ For a comprehensive overview, see United Nations Conference on Trade and Development, [Commodities at a glance, Special issue on strategic battery raw materials](#), July 2020.
- ² L. Ager-Wick Ellingsen et al, '[Life Cycle Assessment of a Lithium-Ion Battery Vehicle Pack](#)', *Journal of Industrial Ecology*, Volume 18(1), February 2014.
- ³ Nickel-manganese-cobalt oxide-based cathodes.
- ⁴ From ashes and slags (incinerated waste batteries) or, where relevant, from landfilled waste batteries.
- ⁵ The directive interacts with several other pieces of legislation, including the Waste Framework Directive; the Waste Shipment Directive ([proposal for revision](#) put forward in November 2021); the Waste Electric and Electronic Equipment Directive; the Restriction of Hazardous Substances Directive; the End-of-life Vehicles Directive (also [scheduled for revision](#)); and the Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- ⁶ The directive does not cover batteries used in equipment to protect EU countries' security or for military purposes, or in equipment designed to be sent into space.
- ⁷ With some exceptions for portable batteries used in emergency and alarm systems or medical equipment.
- ⁸ This section aims to provide a flavour of the debate and is not intended to be an exhaustive account of all different views on the proposal.
- ⁹ Or 2 years after the entry into force of the Commission delegated act establishing for the calculation and verification of the share of recovered cobalt, lithium, lead or nickel and the format for the documentation, whichever is later.

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