



【欧州】【Common】【自動車】

Common - Environmental Issues/Road - New legal instruments on environment for vehicles: New Regulation (EU) 2023/1542 on batteries and waste batteries comes into force

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【概要:Summary】

The European Green Deal aims to transform the EU's economy into a sustainable economy, including a net-zero GHG emissions target, which should be achieved by 2050.

In road transport, which is responsible for about 25% of the EU's total GHG emissions, the Green Deal sets a target of reducing the GHG emission by 90% by 2050, which implies a shift from the use of fossil fuels to electric vehicles (EVs) or other zero emission vehicles (ZEVs). Based on the amendments to Regulation (EU) 2019/631 in Regulation (EU) 2023/851, the reduction of GHG emissions from newly registered passenger cars and vans should reach 100% by 2035, based on 2021 figures. The introduction of this 100% GHG emission reduction target forces automobile manufacturers to put exclusively GHG emission neutral new passenger cars and vans in the market from 2035 onwards. Realistically, this 100% GHG emission reduction target of 2035 can only be achieved by using full battery electric vehicles, fuel-cells and other hydrogen powered vehicles, and vehicles powered by CO₂ emission neutral e-fuels. While the share of BEVs in the fleet of newly registered passenger cars has reached 23% in 2022, it can be expected that this share of BEVs will further grow, and that BEV will eventually represent the majority of newly registered passenger cars and vans in the next decade.

Accordingly, the batteries value chain plays a strategic role in meeting the e-mobility targets and to reduce GHG emissions from road transport. However, all steps along the life cycle of batteries have a potential negative impact on the environment and human health. Since 2006, batteries and waste batteries have been regulated at EU level under the Batteries Directive (Directive 2006/66/EC).

However, based on the targets of the European Green Deal and the expected significant increase in the demand for batteries for EVs, the European Commission presented a proposal for the revision of Directive 2006/66/EC concerning batteries and waste batteries (COM/2020/798 final).

The new Regulation (EU) 2023/1542, which came into force on 17 August 2023, covers the entire battery life cycle and waste batteries. It lays down rules to improving the batteries' sustainability and Regulation (EU) 2023/1542 requirements will be gradually introduced from 2024 onwards.





【記事: Article】

The background of the need to revise the legislation on batteries in the EU

In the EU, the transport sector is responsible for about 25% of the EU's total GHG emissions and road transport has a 77% share in the transport sector's GHG emissions. (European Commission n.d.).

The uptake of electric vehicles (EVs) is seen as the best option for reducing the sector's GHG emissions. The Regulation (EU) 2023/851 amends Regulation (EU) 2019/631 regarding the CO_2 emission performance standards for newly registered passenger cars and vans in line with the EU's increased climate target and the target of reducing GHG emissions of these vehicles by 100% by 2035, based on 2021 figures (Regulation (EU) 2019/631, Regulation (EU) 2023/851). This 100% GHG emission reduction target for new passenger cars and vans can be achieved by using battery electric vehicles (BEVs), fuel-cell and other hydrogen powered vehicles, and vehicles powered by CO₂ emission neutral e-fuels to reach the zero-emission fleet-wide target (Regulation (EU) 2023/851). However, the BEVs can be expected to reach a wider market share, as it is currently the mostly spread technology for zero-emission vehicles (ZEVs) (Regulation (EU) 2023/851).

In fact, the European Environment Agency (EEA)'s preliminary data for 2022 shows that share of electric car registrations, including BEV and PHEVs, reached 23% in 2022, and fully electric BEVs reached 13.45% of the newly registered passenger cars in 2022 (EEA 2023). The share of electric vehicles, including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), registrations nearly tripled in four years, from about 3.5% in 2019 to 10.7% of new registrations in 2020, then 17.8% in 2021 and finally 23% in 2022 (EEA 2023). Therefore, a continuously strong increase in the electrification of passenger cars, vans, buses, and - to a lesser extent - trucks in Europe between 2020 and 2030 can be expected, and it is considered necessary to significantly reduce GHG and other emissions from road transport (COM(2020) 798 final). Battery electric vehicles (BEVs) and plug-in hybrid electric vehicles are expected to reach 30 million in 2030 (Council of the European Union 2023a, 2023b). In fact, the European Commission expects the demand for batteries to increase 14-fold by 2030 (European Commission 2022a).

Since there does not exist a battery production of significant size in Europe so far, the battery production will become an increasingly strategic element in the automobile manufacturing industry at European but also at global level (Council of the European Union 2023a).

To support the establishment of a European battery production industry, the European Commission launched the European Batterv Alliance in 2017 to build an innovative, sustainable, and globally competitive battery value chain in Europe (European Commission 2022a). The European Battery Alliance's aim is to achieve strategic autonomy and efforts are centred on building a sustainable and vertically integrated battery value chain in Europe. Currently, the Alliance counts over industrial and innovation members, which intend to secure supply of green, safe, and highperforming batteries, while also gaining a significant share of the global battery market (European Commission 2022b). The aim is to meet 69% and 89% of the EU's increasing demand for batteries by 2025 and 2030 respectively, and to supply the batteries for up to 11 million cars per year (European Commission 2022b).

However, concerns are not limited to the dependence on the battery cell production in third countries, but also extends to the limited availability of raw materials for battery production and to the need to consider solutions for an environmentally friendly recycling of end-of-life batteries. Therefore, the batteries





need to become sustainable throughout their life cycle and supply chains (Council of the European Union 2022a). The entire life cycle of batteries must be considered, when establishing an independent European battery production industry for the increasing electric vehicles production in the EU (COM/2020/798 final). It is also necessary to update the EU law on batteries and the management of waste batteries by preventing or reducing negative environmental impacts of waste batteries (European Union 2023). As one of the key actions related to the European Green Deal, the European Commission confirmed its commitment to implement the Strategic Action Plan on Batteries and to propose legislation to ensure a safe, circular, and sustainable value chain for all batteries (Council of the European Union 2023a).

Since 2006, batteries and waste batteries have been regulated at EU level under the Batteries Directive (Directive 2006/66/EC). Due to the increasing uptake of electric vehicles, and the expected future increasing demand for batteries, the European Commission proposed to revise the Directive 2006/66/EC (Directive 2006/66/EC).

2. The provisional agreement on the new rules for production, recycling, and repurposing of batteries

The "Proposal for a Regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EII) No 2019/1020 " (COM/2020/798 final) includes new rules for batteries and waste batteries and intends to gradually introduce mandatory requirements under a new "cradle-tograve" approach for the production, utilisation, and recycling of batteries of all categories (COM/2020/798 final).

The European Commission presented proposal COM/2020/798 final, which aims to promote the circular economy, and reduces the environmental

and social impact throughout all stages of the battery life cycle (Council of the European Union 2023a). The proposal COM/2020/798 final includes requirements such as using responsibly sourced materials with restricted use of hazardous substances, a minimum content of recycled materials, carbon footprint, performance and durability and labelling, as well as meeting collection and recycling targets.

The new Regulation on batteries and waste batteries will contain measures to consider the environmental impacts of batteries over their entire life cycle to ensuring that such environmental impacts of the batteries in or imported to Europe are kept to a minimum.

Based on the proposal (COM/2020/798 final), the Commission intends to introduce mandatory requirements for a11 batteries including industrial, automotive, electric vehicle and portable, placed on the EU market (European Commission 2020). Accordingly, the Regulation will include the introduction of a more precise categorisation of battery types, including industrial, automotive, electric vehicle, light means of transport and portable batteries, among others (COM/2020/798 final).

Automotive or EV batteries must be collected in full. All collected batteries must be recycled and high levels of recovery must be achieved, regarding materials such as cobalt, lithium, nickel, and lead (European Commission 2020).

All these requirements are essential for the development of more sustainable and competitive battery industry across Europe and beyond (European Commission 2020, COM/2020/798 final). The proposed measures intend to lead to a circular economy of the battery value chain and promote more efficient use of resources with the aim of minimising the environmental impact of batteries. Thereby a more sustainable battery production industry and more sustainable utilisation of batteries should be achieved in Europe and beyond (COM/2020/798 final).





On 10 February 2022, the European Parliament's ENVI Committee adopted its report on the proposal COM/2020/798 final, raising the level of ambition compared to the Commission's original proposal (European Parliament 2022). The ENVI Committee's report included batteries for light means of transport (LMT), such as e-bikes and escooters into the scope of the proposed regulation, among others (European Parliament 2022, ENVI 2022). The MEPs also backed the proposed rules on a carbon footprint declaration and label, a maximum value for the life cycle carbon footprint, as well as minimum levels of recovered cobalt, lead, lithium, and nickel from waste for reuse in new batteries, but also called for more stringent targets for waste collection, recycling efficiency and material recovery (ENVI 2022). On 10 March 2022, the draft legislation was adopted by the European Parliament's Plenary with 584 votes in favour, 67 against and 40 abstentions (European Parliament 2022). On 17 March 2022, the Council of the European Union adopted a general approach on the proposal (Council of the EU 2022b). The Council's general approach retained key elements Commission's initial proposal including the extension of producer responsibility on recycled materials, reinforcing the due diligence of supply chains, and the battery passport (Council of the EU 2022b).

Thereafter, interinstitutional negotiations started and on 9 December 2022, the colegislators concluded a provisional political agreement on the new rules on batteries and waste batteries (European Parliament 2022). The new "cradle-to-grave" regulatory framework for batteries will include the entire life cycle of batteries from securing the raw materials over battery production to recycling and repurposing of batteries is a new approach to introduce sustainable requirements for hatteries. Different categories of batteries distinguished in accordance with their design and use, independent of the battery chemistry. The classification into portable batteries, on one hand, and industrial batteries and SLI (starting, lighting and ignition) batteries for automotive applications on the other hand under Directive 2006/66/EC is further developed to better reflect new developments in the use of batteries.

Batteries for EVs, which fell into the category industrial batteries under Directive 2006/66/EC, are now classified in a new category of electric vehicle batteries (Council of the 2023a). Union Furthermore, European also. batteries used for traction in light means of transport, such as e-bikes and e-scooters, which were not clearly classified under Directive 2006/66/EC, but constitute a significantly growing part of the market, will be included in the new category of LMT batteries (Council of the European Union 2023a). For batteries from light means of transport like e-scooters, the recycling targets will be 51% in 2028 and 61% in 2031 (European Commission 2022a).

All collected batteries must be recycled and high levels of recovery must be achieved, in particular of valuable materials such as copper, cobalt, lithium, nickel, and lead (European Commission 2022a). The new Regulation will also introduce minimum levels of recycled contents of batteries, which are initially set at 16% for cobalt, 85% for lead, 6% for lithium and 6% for nickel (Council of the European Union 2022).

The agreement also includes a recycling efficiency target for nickel-cadmium batteries of 80% by 2025 and other waste batteries of 50% by 2025 (Council of the European Union 2022a). The co-legislators also agreed to set the target for lithium recovery from waste batteries to 50% by 2027 and 80% in 2031 (European Commission 2022a). The target can be amended through delegated acts depending on market and technological developments and the availability of lithium (Council of the European Union 2022a).





These recycling targets will guarantee that valuable materials are recovered and brought back into the circular economy by adopting stricter targets for recycling efficiency and material recovery over time.

According to the Council of the European Union (2022a), the new Regulation will ensure that end-of-life batteries will be properly collected and recycled to recover useful materials and to treat toxic substances properly and repurposed (Council of the European Union 2022a).

Commission welcomed The the provisional political between the agreement European Parliament and the Council of 9 December 2022. political As next step, the provisional agreement on the new Regulation on batteries (COM/2020/798 final) had to be formally approved by the European Parliament and the Council of the European Union.

3. The new Regulation on batteries and waste batteries (Regulation (EU) 2023/1542)

On 14 June 2023, the European Parliament adopted by 587 votes to 9, with 20 abstentions, the proposal for a regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC, and amending Regulation (EU) 2019/1020, and the Council of the EU followed with its adoption on 10 July 2023 (European Parliament 2023, Council of the EU 2023c). By adopting the final text version of the Regulation, the Council of the EU cleared the way for the law to enter into force. The Regulation (EU) 2023/1542 on batteries and waste batteries came into force on 17 August 2023, on the 20th day after its publication in the European Union's Official Journal.

One basic and important aspect is that the former Directive 2006/66/EC on batteries will be changed to a Regulation. According to recital 10 of the draft regulation, which will guarantee the prompt and uniform application of the

Regulation in all EU Member States and all economic operators across the EU and there will be no room for divergent implementation by Member States (Council of the EU 2023b). An effective, sustainable battery supply chain can only happen if all actors are subject to the same requirements and therefore, based on the new Regulation (EU) 2023/1542, common rules will be introduced in all EU Member States, which will guarantee the uniform implementation requirements while avoiding fragmentation of the Internal Market from possibly diverging approaches used by Member States regarding recycled materials, the carbon footprint and labelling (Council of the EU 2023b, European Union 2023). The Regulation will ensure that the same rules will apply to all economic operators in the EU (Council of the EU 2023b).

This Regulation will apply to all categories of batteries including all waste portable batteries, EV batteries, industrial batteries, starting, lightning and ignition (SLI) batteries (used mostly for vehicles and machinery) and batteries for light means of transport (e.g. electric bikes, e-mopeds, e-scooters), placed on the market or put into service within the EU, regardless of whether they were produced in the EU or imported, whether the battery is incorporated into appliances, light means of transport or other vehicles or otherwise added to products or whether a battery is placed on the market on its own, among others (European Union 2023, Council of the EU 2023c).

Based on the new Regulation (EU) 2023/1542, mining for battery raw materials should take place with due diligence of raw materials' origin, among others. Regarding the battery market, a circular battery industry is promoted with a market for secondary raw materials, clearer labelling, and information "battery passports" and QR codes (Council of the EU 2023b). More recycled content in new batteries and second life for industrial





batteries, performance and durability requirements, carbon intensity requirements are introduced for the production processes (Council of the EU 2023b).

Regarding the different categories of batteries, the EV batteries are defined in a new separate category of electric vehicle Batteries used for traction in light means of transport, such as e-bikes and e-scooters will be classified as a new separate category of batteries, namely light means of transport batteries (LMT batteries). Instead, batteries used for traction in other transport vehicles including rail, waterborne and transport, or off-road machinery, will continue fall under the category of industrial batteries under the new Regulation (European Union 2023, Regulation (EU) 2023/1542).

Regarding the end-of-life collection targets and obligations for batteries, targets for the recovery of materials and extended producer responsibility are introduced (Council of the EU 2023c). Strict collection schemes and recycling targets, better ways of re-using old batteries, battery traceability, more efficient recycling waste batteries and to ensure the environmentally sound treatment of waste batteries, as well as incentives for further recycling will be important improvements in the new rules (Council of the EU 2023b, Regulation (EU) 2023/1542).

Regulation (EU) The 2023/1542 provides for mandatory minimum levels of recycled content for industrial, SLI batteries and EV batteries. These are initially set at 16% for cobalt, 85% for lead, 6% for lithium and 6% for The recycling efficiency target for nickel-cadmium batteries is set at 80% by the end of 2025 and 50% by the end 2025 for other waste batteries (Council of the EU 2023c, Regulation (EU) 2023/1542).

The Regulation also introduces labelling and information requirements regarding the battery's

components and recycled content, and batteries will also have to hold a recycled content documentation, an electronic "battery passport" and a QR code. To give Member States and economic actors on the market enough time to prepare, labelling requirements will apply by 2026 and the QR code by 2027 (Council of the EU 2023c, European Parliament 2023, Regulation (EU) 2023/1542).

The new Regulation (EU) 2023/1542 sets minimum collection targets and also introduces specific collection targets for waste batteries for light means of transport (51% by the end of 2028 and 61% by the end of 2031) (Council of the EU 2023c). The target for the recovery of lithium from waste batteries is set at 50% by the end of 2027 and will raise to 80% by the end of 2031. Depending on market, technological developments and the availability of lithium, these targets can be amended by delegated acts (Council of the EU 2023c, European Parliament 2023).

Moreover, there will be tight restrictions for hazardous substances like mercury, cadmium and lead and mandatory information on the carbon footprint of batteries (Council of the EU 2023c). 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, mainly for portable batteries of general use (European Parliament 2023).

The vote by the Council of the EU closed the adoption procedure and thereafter, Regulation (EU) 2023/1542 was signed by the Council and the European Parliament and then entered into force on 17 August 2023, on the $20^{\rm th}$ days after its publication in the European Union's Official Journal (Council of the EU 2023c).

The Regulation's sustainability requirements for batteries of all categories will be introduced gradually from 2024 onwards, while provisions on extending the producer responsibility will start to apply in mid-2025 (European Parliament 2023).



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4. Conclusion

Batteries are at the centre of the expansion of e-mobility and their availability is a basic requirement for increasing the battery production and the share of EVs in the European automobile market. However, this also requires introduction of rules for creating a sustainable life cycle for batteries, including raw materials, production, utilisation, recycling as well as repurposing of batteries. Therefore, the new Regulation (EU) 2023/1542 aims to create a circular economy for batteries in the EU by targeting all stages of the life cycle of batteries, including waste batteries. Regarding the expected massive increase in the number of batteries for EVs, in particular, it is of major importance to make batteries sustainable throughout their entire life cycle, from "cradle-to-grave", including the sourcing of raw materials as well as the collection, recycling, and repurposing of waste batteries. Accordingly, Regulation (EU) 2023/1542 defines a framework for the entire life cycle of batteries, which will most importantly also include the batteries of the increasing number of electric vehicles, so that they can have a second life, for example as stationary energy storage systems. All batteries from electric vehicles must be collected, recycled, and repurposed and high levels of recovery must be achieved, particular of valuable materials such as cobalt, lithium, nickel, and lead.

After the provisional political agreement on the contents of the new Regulation was achieved between the European Parliament and the Council of the European Union, on 10 July 2023, the last step in the adoption procedure followed with the Council of the European Union adopting the new law. Regulation (EU) 2023/1542 entered into force in August 2023 and as of 2024, the Regulation's requirements on batteries and waste batteries will be gradually introduced.

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