

NAVIGATING THE GREEN ROAD AHEAD: THE IMPACT OF THE NEW EU BATTERY REGULATION ON THE AUTOMOTIVE INDUSTRY

In recent years, the electric vehicle (**EV**) market has experienced unprecedented growth, driven by the urgent need to reduce greenhouse gas emissions and combat climate change. As governments worldwide take ambitious steps to address the environmental challenges associated with the automotive industry, car manufacturers are racing to keep up with the surging demand for electrified mobility. With the ban on new internal combustion engines due to come into force in 2035 in the UK, hybrid and electric vehicles are accelerating in popularity, accounting for around 40% of the new car market in 2022 alone.¹

However, while hybrid and electric vehicles are cleaner to run than diesel or petrol vehicles, their batteries come with a significant carbon footprint resulting from the energy-intensive manufacturing process, as well as broader environmental and social impacts associated with the supply chains for raw materials and components. Those operating in the automotive industry will soon need to meet stricter environmental, social and economic requirements introduced by the recent *Regulation (EU) 2023/1542 concerning batteries and waste batteries* (the **New Battery Regulation** or the **New Regulation**), which entered into force on 17 August 2023. As the New Regulation applies directly in all EU Member States without the need for implementation into national law, there will be no delay in the relevant provisions taking effect. The first obligations under the New Battery Regulation will apply uniformly throughout the EU from 18 February 2024, with the remainder coming into force over the course of the next 8 years.

With regards to Europe, automotive battery manufacturers have been operating under end-of-life management responsibilities since 2006, in accordance with the European Battery Directive (2006/66/EC) the New Regulation has substantially expanded those obligations. Under the New Regulation, producers and those placing batteries on the market are now required to assess and report on supply chain due diligence as well as the environmental impact and risks associated with the production of batteries at every stage of the battery's lifecycle.

Whilst the UK remains subject to the historic EU battery legislation implemented by domestic regulations², the New Battery Regulation will not apply as a consequence of withdrawal from the EU. However, the UK Government has just issued a Call for Evidence³ seeking the industries' views on the scope of priorities for the UK updating battery legislation. This comes with a view to publishing a Battery Strategy in the coming months. Any new legislation emerging from the strategy review is likely to be some considerable way off being implemented and not in less than a year and a half.

In this article, we explore the key requirements of the New Battery Regulation and consider what the automotive industry can expect as this far-reaching legislation is set to impact everyone in the supply chain from manufacturers and producers, to importers and distributors.

¹ https://store.mintel.com/report/uk-electric-and-hybrid-cars-market-report?https://store.mintel.com/&utm_source=google&utm_medium=cpc&cid=19847890533&agid=147400515539&utm_term=&d=c&gad=1&qclid=EAAlaQobChMI0KGg2bidgQMVC4tQBh0H5AStEAAAYAiAAEgJTIPD_Bw

² *End-of-Life Vehicles Regulations 2003 and End-of-Life Vehicles (Producer Responsibility) Regulations 2005; Batteries and Accumulators (Placing on the Market) Regulations 2008; and Waste Batteries and Accumulators Regulations 2009.*

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1181232/battery-strategy-call-for-evidence-2023.pdf

WHAT'S NEW?

Quite a lot! The New Regulation seeks to make batteries more sustainable throughout their entire lifecycle, from sourcing raw materials and sustainable production, to end of life management including recycling and repurposing materials. Not only does this seek to address the strategic importance and increased use of batteries in society, it is also another step towards meeting one of the key objectives of the EU's Green Deal of establishing a circular economy and the long-term competitiveness of the EU with the rest of the world.

Although batteries used in electric vehicles were previously captured by the EU Batteries Directive (Directive 2006/66/EC), they were treated as industrial batteries. This meant the Directive didn't reflect new developments in the electrification of transportation and the significant growth in this market since 2006. A major development in the New Battery Regulation has been to extend the scope of the existing provisions to include all batteries sold in the EU regardless of shape, density, volume or weight and sets specific requirements and timeframes for electric vehicle batteries, batteries that supply power for the starting, lighting or ignition of vehicles and machinery (**SLI batteries**) and light means of transport (**LMT**) batteries commonly used in electric bikes, e-scooters, and e-mopeds. This broader scope means obligations imposed by the New Regulation vary depending on the type of battery in question.

Its wide-ranging application also extends to parties impacted by the New Regulation as it applies to a broad group of industry participants described as 'economic operators', which the European Commission (**EC**) has defined as anyone manufacturing, supplying, importing, distributing, repurposing, remanufacturing or selling batteries online or in person (article 3(22)).

A key feature of the new rules is the imposition of significant information sharing obligations, as well as strict sustainability criteria that need to be met over the next two to eight years.

INFORMATION SHARING

- **Carbon Footprint Declaration: climate accountability**

To mitigate the impact of batteries on the environment, manufacturers will need to have a carbon footprint⁴ declaration for each EV and LMT battery produced at each manufacturing plant. This will provide information to consumers about the location of the manufacturing plant, the carbon footprint of the battery and a link to access the study supporting those carbon footprint values.

The EC still needs to agree how operators should calculate the carbon footprint of these batteries and has until 18 February 2024 to agree a methodology for this. Ideally operators will already have testing facilities to apply this methodology to its batteries so they can confirm the carbon footprint of a battery and which class it falls within by 18 August 2026. Operators will then have until 18 February 2028 to ensure the carbon footprint of their batteries fall below the maximum life cycle threshold; those thresholds to be set by the EC by 18 August 2026.

Until the EC sets out its approach to calculation, classification and maximum lifecycle limits, EV batteries will only need to be accompanied by administrative information about the manufacturer and the battery model, a requirement that should be relatively easy to satisfy. However, operators should start thinking about the testing facilities that this analysis will require, where they should be established, what data they will likely need so they can undertake the necessary analysis in a methodical way without rushing.

Although operators will have three to five years until this element of the Regulation applies, the timeline and requirements regarding carbon footprint declarations necessitates significant preparations and investments for those operating in the EV market. Proactive planning, resource allocation and adherence to compliance deadlines will be essential to navigate these changes effectively and maintain a competitive edge in an evolving market.

Key dates are as follows:

	EVs	LMTs
Commission to establish methodology for calculating and verifying batteries' carbon footprint	18 Feb 2024 (Article 7(1))	18 Feb 2027 (Article 7(1))
Battery carbon footprint declaration required	18 Feb 2025 (Article 7(1))	18 August 2028 (Article 7(1))

⁴ This means the "sum of greenhouse gas emissions and greenhouse removals in a product system, expressed as carbon dioxide equivalents and based on Product Environmental Footprint (PEF) study using the single impact category of climate change".

	EVs	LMTs
Commission to establish the carbon footprint performance classes	18 Feb 2025 (Article 7(2))	18 Aug 2028 (Article 7(2))
Carbon footprint performance class requirements apply	18 August 2026 (Article 7(2)(a))	18 Feb 2030 (Article 7(2)(c))
Commission to set the maximum carbon footprint thresholds	18 Aug 2026 (Article 7(3))	18 Feb 2030 (Article 7(3))
Maximum life cycle carbon footprint thresholds apply	18 Feb 2028 (Article 7(3)(a))	18 Aug 2031 (Article 7(3)(c))

- **Due Diligence: supply chain transparency**

Manufacturers grossing over EUR 40 million will need to implement due diligence policies, which will need to be verified and periodically audited by a notified body (article 48). As part of their due diligence obligations, manufacturers will need to ensure transparency throughout their entire supply chain to enable materials to be traced both upstream and downstream.

The Regulation is specific about the level of detail required. For example, article 49 requires manufacturers to name the supplier of any raw materials included in batteries, their location and a description of the market transactions taking place from the extraction of the raw material until the battery reaches the 'economic operator'. Not only will downstream purchasers be given access to this information, but the New Regulation also calls for a battery due diligence report to be published annually detailing the adverse social and environmental risks associated with their battery production and how those have been addressed (article 52).

- **Performance and Durability Parameters: battery longevity**

As early as 18 August 2024, LMT and EV batteries will need to be accompanied by a document detailing the values for electrochemical performance and durability of the battery. This will require manufacturers to share detail about the quality of their batteries and how long a consumer could potentially expect them to last. By 18 February 2027, the Commission will establish minimum values for performance and durability parameters that LMT batteries will need to achieve.

- **New Battery Passports: empowering consumer choice**

A new digital battery passport will collate important lifecycle data and will convey information about sustainability and lifecycle credentials of EV batteries. The passport will have to have "transparent, reliable and clear information" and cover the entire supply chain, from mine to manufacture, as well as waste. The battery passport will include the carbon footprint declaration, information relating to supply chain due diligence, resource efficiency, durability and materials utilised. This will need input from each link in the supply chain. Commercial sensitive information will only be available to "a limited number of persons with a legitimate interest" such as notified bodies, the Commission, second-life operators and recyclers.

It is hoped that providing this information will enable consumers to make informed decisions when buying batteries, and from 18 February 2027, consumers will be able to access the battery passport by using a QR code printed or engraved on the battery or included in the packaging (article 13(6)).

For LMTs and SLI batteries, from August 2025 the passport will include a symbol indicating they require separate collection at the end of their life, information about their capacity will have to be included by August 2026 and details relating to recycled raw materials used in the battery by February 2027 (SLIs only).

Unless this information is readily available prior to purchase, it is not yet clear how consumers will make informed decision when choosing an electric vehicle if access to the battery passport is only provided at point of sale. Hopefully as manufacturers feel more comfortable with the vulnerability that inevitably comes with information sharing, the industry will maximise on its ability to enable consumers to prioritise sustainability.

- **Reporting requirements: driving recycling**

As electric vehicles increase in popularity, so does the demand for EV and LMT batteries, leading to an ever-increasing reliance on raw elements such as cobalt, lithium, copper and magnesium which are used in those batteries.

From possibly as early as 18 August 2028, EV and SLI batteries will need to be accompanied by documentation that confirms the amount of recycled cobalt, lead, lithium and nickel recovered from battery manufacturing waste, post-consumer waste or waste in each battery model in each manufacturing plant (article 8). The Commission still needs to establish how this information is to be calculated and verified by so operators still have a little bit of time before this information sharing requirement will apply.

To add to this, EV and SLI batteries will need to contain minimum levels of recycled raw materials by 18 August 2031⁵, which will rise again on 18 August 2036.⁶⁷

Traditional methods of documenting raw materials mined and used in manufacturing was a manual process that involved data gathering and in-depth audits where a vast amount of information would be analysed. In order for manufacturers to report on how much recycled raw material is used in each battery model, manufacturers will need to utilise technology applications to track, measure and report on its raw material use.

- **State of Health Information: identifying value**

From 18 August 2024, manufacturers will need to allow enable read-only access to data relating to battery health, such as the remaining capacity and power capability of the battery, as well as its lifetime expectation for LMT and EV batteries (article 14). The purpose of making this information available is to allow owners or third parties acting on their behalf such as a mechanic or waste management operators to assess the battery and determine what, if any, residual value it holds.

SUSTAINABILITY

- **Waste Management: lifecycle responsibility**

Already, article 8 of the *European Battery Directive (2006/66/EC)* enforces 'take-back' schemes whereby distributors and producers had requirements to take back waste accumulators and portable batteries from end-users at no charge. This is alongside article 20 which ensures that end-users are to be informed by distributors about the possibility of these 'take-back' schemes. However, with the introduction of the New Regulation, the take-back obligations surrounding batteries have become wider and more onerous.

For the first time, all manufacturers, producers, importers and distributors placing batteries on the EU market will have extended producer responsibility (**EPR**) (article 56-58). This aims to support the ambition of repurposing, reusing or remanufacturing batteries at their end of life rather than simply discarding them. Interestingly, anyone placing repurposed batteries on the market will also be captured by the Regulation.

The Regulation requires LMT battery producers to collect, free of charge, all waste batteries, regardless of composition, condition, brand or origin (article 60). A minimum collection rate has been set for LMT batteries, being 51% by 31 December 2028 and 61% by 31 December 2031 (article 60(3)). A similar obligation applies to those placing SLI or EV batteries on the market, however no minimum collection rates have been set.

Not only will the revised 'take-back' scheme add an additional layer of cost to the industry, it will also require additional infrastructure to be set up that will have to take into account the hazardous nature of batteries and comply with the storage and treatment requirements set out in Annex XII of the New Regulation.

Specific recycling targets have been introduced that will require 65% of the average weight of a lithium-based battery to be recycled by 31 December 2025, before increasing to 80% on 31 December 2030. Higher rates have been set for lead-acid batteries with 75% of the battery's weight needing to be recycled by 31 December 2025 and 80% by December 2030. Nickel-Cadmium batteries have the highest recycling requirement, set at 80%. Although lead-acid batteries are not commonly used in electric vehicles/hybrids, operators will still need to achieve these recycling targets once those batteries reach the end of their life if they haven't done so already.

Producers have also been set raw material recovery targets so 50% lithium and 90% of the cobalt, copper, nickel and lead used in a battery is recycled by that no later than 31 December 2027 before rising to 80% and 95% respectively by 31 December 2031 (Annex XII, Part C).

⁵ Those minimum requirements are 16% cobalt, 85% lead, 6% lithium and 6% nickel (article 8(2))

⁶ The minimum requirements will rise to 26% cobalt, 85% lead, 12% lithium and 15% nickel (article 8(3))

⁷ Article 8(4) does give the Commission authority to reassess these targets, no later than 31 December 2028, and decide whether to revise these targets in light of scientific and technical progress at that time.

WHAT THIS MEANS FOR THE FUTURE

The New Battery Regulation is set to shape the automotive industry both now and in the future. With provisions coming into force at different times depending on the type of battery in question, manufacturers and others in the supply chain will need to stay up to date with the latest developments and legislative requirements to remain compliant in the European market. Those not already preparing for the new rules could find themselves in breach of the legislation and so at risk of enforcement action, with significant cost and reputational implications. Member States will determine their own sanctions regime for contravention of the New Regulation, which may include administrative fines and even criminal penalties.

As the EV market is expected to accelerate rapidly in the near future, the industry must swiftly address its sustainability credentials to continue placing vehicles on the European market. Addressing these new regulatory obligations now will enable ongoing compliance with developing EU battery legislation. Providing easy access to battery credentials will empower consumers and enable market leaders to differentiate their offering and ultimately gaining a larger market share.

The price premium of electric and hybrid cars remains a major challenge for the automotive sector and so any further price increases will potentially hamper growth across the sector in the medium term. In addition to this, meeting the sustainability requirements further down the supply chain is likely to require investment in new mining practices and processing facilities. One solution might be for manufacturers to switch to alternative lower cost materials that are more widely available. Balancing safety and performance will be challenging.

The increased focus on emissions may result in a manufacturing win for Europe. At present, most batteries are manufactured in Asia using emission-intensive processes. Over recent years, more producers have established production facilities in Europe, which has helped drive down the emissions per kWh as Europe has a higher share of renewable energy sources compared to Asia.⁸ This means manufacturers and producers with a low carbon production will have a competitive advantage. Those that don't could face increasing consumer pressure to reduce the emissions embedded in their supply chain.

While product longevity, reuse and recycling are at the heart of the New Regulation, significant uncertainty remains as to what the EV industry will look like in the future. Recycling batteries is technically challenging, and the technologies involved are far from settled or standardised. A number of industry players have cited a lack of collective experience, particularly in Europe, that will allow manufacturers to build the much feted "closed loop" systems that will allow them to maximise the value available to be claimed throughout the battery life cycle. Operators will also need to consider whether to opt for recycling facilities that are close to their supply chain or close to their customers.

WHAT NEXT?

The New Regulation is a substantial overhaul of the current battery landscape that will have a serious impact on businesses operating in this space. It requires the industry to start discussing these issues with everyone in their supply chain to better understand how the products they place on the EU market have been manufactured and what evidence they have, or could have, that supports their practices. Operating practices, durability, raw material content and chain of custody requirements will all have to be explored so that automotive and EV brands are able to create a due diligence policy that will meet notified body approval.

Operators should prepare a readiness report setting out how their business, and their suppliers, compare with the requirements of the Regulation. A gap analysis may prove helpful in identifying those areas where further work needs to be done in order to meet the sustainability and environmental requirements. Only once these steps have been taken will an operator be able to set out a roadmap to achieve compliance and adapt legacy systems to meet these new and innovative requirements. Manufacturers should ensure they are monitoring developments in the recycling industry and that any partners they choose to work with are not only able to meet the technological and logistic challenges set by the New Regulation, but also that they can meet the onerous reporting requirements that will soon be required. All levels of the supply chain will need increased data collection and transparency. If they're not already doing so, those operating in the EV industry should speak to those in their supply chain about the extensive information required under the New Regulation. Creating a certified network of providers along the entire supply chain will ensure greater alignment and allow operators to rely on a network of suppliers without compromising their sustainability and environmental credentials.

The automotive industry is a vital part of the UK economy. However, with three quarters of cars produced in the UK being exported overseas to 130 different markets⁹, in order to maintain access to the EU market, the UK automotive industry will need

⁸ <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-race-to-decarbonize-electric-vehicle-batteries>

⁹ <https://www.smmmt.co.uk/industry-topics/uk-automotive/>

to comply with the New Regulation if it wants to continue placing products on the EU market. Additionally, we can anticipate new 'whole life-cycle' batteries legislation coming from the UK Government's current consultation.

KEY CONTACTS



CÉCILE BURGESS

Partner

Head of Product Safety & Disputes

+44 20 7160 3299

+44 7864 602 513

cecile.burgess@addleshawgoddard.com



ELAINE BARKER

Managing Associate

Product Safety & Disputes

+44 20 7788 5174

+44 7388 718 209

elaine.barker@addleshawgoddard.com



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