GLOBAL BATTERY ALLIANCE
BATTERIES POWERING SUSTAINABLE DEVELOPMENT

WHITE PAPER:

How the Global Battery Alliance's Battery Passport helps companies prepare for compliance with the EU Batteries Regulation

February 2026

Executive Summary: Global Battery Alliance and the Battery Passport

- The Global Battery Alliance (GBA) is the world's largest pre-competitive multi-stakeholder partnership, convening over 150 partners across the battery value chain from mining to recycling with a mission to scale a sustainable, responsible and circular battery value chain by 2030 through collective action.
- The GBA's flagship programme, the Battery Passport, is an efficient and robust tool for *economic operators* to prepare for upcoming requirements of Regulation (EU) 2023/1542 on batteries and waste batteries (EU Batteries Regulation) on supply chain mapping, *due diligence* and *carbon footprint*.
- The data assurance system of the Battery Passport helps *economic operators* to prepare for verification of data attributes related to *carbon footprint* and *due diligence* by *notified bodies* and other decision makers. By cross-recognising existing supply chain *due diligence* schemes, the GBA Battery Passport aims to become an officially recognised scheme for EU Batteries Regulation *due diligence* requirements in the future.
- The GBA Battery Passport hedges against regulatory uncertainty. Its benchmarks for responsible sourcing and production use the EU Batteries Regulation as a foundation – augmented by input from a diverse range of global stakeholders. By taking a comprehensive, consensus-driven approach, the Battery Passport offers a *due diligence* framework that will have lasting credibility with regulators. Legal requirements may change and evolve, but good practices run deeper.

This white paper focuses on the Battery Passport as a tool to prepare for EU Batteries Regulation compliance. For *economic operators* it covers requirements for material *traceability, carbon footprint,* and *due diligence*. For *raw material suppliers*, it offers templates for efficiently responding to *due diligence* and *carbon footprint* queries, reducing duplication and preserving data confidentiality. Stakeholders such as regulators, consumers and impacted communities, can use the white paper to understand how to use data generated by GBA Battery Passports as a tool for transparency, accountability and dialogue.

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Implementing the GBA Battery Passport delivers a range of benefits and efficiency savings in a single, integrated package. Alongside compliance, the Battery Passport offers an option for sustainability certification on batteries - an opportunity for *economic operators* to translate their *traceability, carbon footprint* and *due diligence* efforts into tangible business and market advantages. Benefits include improved supply chain visibility and resilience, proactive risk management, product comparability, reporting efficiencies based on digital interoperability and cross-recognition of existing standards, as well as fulfilment of stakeholder expectations and corporate goals, for *due diligence*, decarbonisation and more.

This white paper has been developed in consultation with the GBA's membership and governance bodies. The GBA thanks White & Case LLP for their support on an earlier version of the guidance as a pro bono GBA member contribution. An earlier draft outlining areas of alignment has also been reviewed by the Directorate General for Internal Markets (DG Grow) of the European Commission. The GBA's Battery Passport is not formally affiliated with the European Commission nor does the GBA receive funding or a mandate from the European Commission in the development of the scheme.

The guidance in this white paper should not be interpreted as legal advice. Responsibility for compliance with the EU Batteries Regulation, including the accuracy, completeness, and verification of reported data, remains with the economic operator placing batteries on the EU market.

1. INTRODUCTION

The GBA is the world's largest pre-competitive multi-stakeholder partnership, convening over 150 partners across the battery value chain from mining to recycling with the mission to scale a sustainable, responsible and circular battery value chain by 2030 through collective action. The GBA is uniquely positioned to build common understanding on diverse stakeholders' expectations on sustainable batteries, setting the global benchmarks for transparency and accountability in the battery value chain. The GBA was among the organisations that first conceived the idea of a digital product passport as a means of providing more transparency, *traceability* and data on battery value chains. Subsequently, the European Commission and Member States took forward the concept in the EU Batteries Regulation, adding various reporting and performance requirements for battery *manufacturers*[1] and sellers in Europe. The Ecodesign for Sustainable Products Regulation (ESPR) (2024) also mandates that Digital Product Passports be progressively introduced in various sectors.

The EU Batteries Regulation establishes a data-driven compliance system requiring *economic operators*[2] placing batteries on the European Union market to gather, verify and maintain information across the entire battery value chain, and present it under a *battery passport*[3], i.e., a data package accessed *via a quick response (QR) code*[4] placed on batteries.

The GBA's **Battery Passport** is an emerging product-level sustainability scheme for batteries, implemented on digital product passport infrastructure. It uses the EU Batteries Regulation as a baseline for the data that is gathered from the supply chain. Part of our value proposition is to offer an efficient, harmonised and interoperable data architecture to meet compliance requirements on *traceability, carbon footprint*[5] calculation and *due diligence*[6], underpinned by a robust 3rd party assurance scheme and *grievance mechanism*[7], all developed in a consensus-based multistakeholder environment.

The GBA Battery Passport was piloted in 2023 as a proof of concept, and in 2024 by 10 battery value chain consortia representing 80 % of global *electric vehicle battery*[8] market share. The next step for interested companies is to participate in the **2026 Operational Trials** to test readiness against EU Batteries Regulation requirements, and for interested companies to trial a prototype GBA battery certification.

[1] Regulation (EU) 2023/1542, Article 3, point (33).
[2] Regulation (EU) 2023/1542, Article 3, point (22).
[3] Regulation (EU) 2023/1542, Article 77 and Annex XIII.
[4] Regulation (EU) 2023/1542, Article 3, point (24).
[5] Regulation (EU) 2023/1542, Article 3, point (21); Article 7 and Annex II.
[6] Regulation (EU) 2023/1542, Article 3, point (42); Articles 48–52 and Annex X.
[7] Regulation (EU) 2023/1542, Article 49(1), point (f).
[8] Regulation (EU) 2023/1542, Article 3, point (14).

Building on EU Batteries Regulation compliance

The GBA Battery Passport represents an opportunity for *economic operators* to translate their *traceability*, *carbon footprint* and *due diligence* efforts into tangible market assets alongside their compliance efforts, including by:

- Establishing supply chain visibility and reporting on attainment of the GBA Benchmarks and *carbon footprint* calculations, by all supply chain actors, including battery and cell makers.
- Utilisation of a scoring system that produces comparable metrics across supply chain phases, minerals and batteries.
- Demonstrating responsible practices against client, investor or procurement requirements beyond the EU Batteries Regulation, and accessing the burgeoning market for sustainability-certified batteries.
- Making visible the segregation of supply chains to fulfil the *due diligence* requirements of banks, clients and other stakeholders.
- Progressively meeting compliance requirements across a range of jurisdictions, using the same templates for:
  - **EU Forced Labour Ban** and **U.S. Uyghur Forced Labor Prevention Act (UFLPA)**: The Forced Labour module guides companies to collect and report on data in line with applicable regulations.
  - **EU Conflict Minerals Regulation**, U.S. Dodd-Frank Act Section 1502 and Organisation for Economic Co-operation and Development (OECD) Guidance on Minerals Sourcing from Conflict-Affected and High-Risk Areas (CAHRAs) are embedded in the Supply Chain Due Diligence and risk assessment of the Battery Benchmarks
  - **EU Corporate Sustainability Due Diligence Directive (CSDDD)** and **EU Corporate Sustainability Reporting Directive (CSRD)** initial alignment with 2027 final Battery Benchmarks to be fully aligned with final directives of December 2025.
  - United States Executive Order on **mineral traceability** and Section 45X tax credits and other incentives, leveraging the SAE J3327 standard.
  - The **China Battery ID** system for collecting circularity, *carbon footprint* and end-of-life (EoL) data.
  - **Shanghai Stock Exchange environmental, social and governance (ESG) disclosure** requirements.

2. WHAT THE EU BATTERIES REGULATION REQUIRES

The **EU Batteries Regulation**, adopted in July 2023, introduces a lifecycle-based regime governing the *traceability*, performance, and sustainability of all batteries placed on the EU market. It applies progressively from 2024 to 2033 across electric *vehicle* (EV), *light-means-of-transport*[9] (LMT), *industrial batteries*[10] > 2 kilowatt-hour (kWh) and rechargeable industrial batteries. From 18 February 2027 onward, every EV, LMT and *industrial battery* with a storage capacity greater than 2 kWh must have a unique digital battery passport accessible via QR code, containing:

- **Battery *carbon footprint*** (Article 7 and Annex II)
- **Data on recycled content** (Article 8 and Annex VI)
- **Performance and durability parameters** (Articles 10–11 and Annexes III–IV)
- **Labelling and information requirements** (Articles 13–17 and Annex V)
- **Raw materials composition, *traceability* and *due diligence*** (Articles 48–52 and Annex X)
- **Digital Product Passport** (Article 77 and Annex XIII) providing digital access to all relevant data via a unique *QR code*.

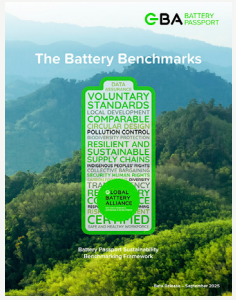
The EU Batteries Regulation requires the above data to be submitted to regulators for verification, and elements of the data to be included in public reports to make battery information available for users, demonstrate progressive reduction of carbon emissions from battery production, and assure stakeholders of risk-based and continuously improved *due diligence* on battery material sourcing to counter environmental and social risks. However, the EU Batteries Regulation does not standardise the format of data collection, reporting and presentation, rendering the information difficult to verify, compare and analyse, and risking inefficient and costly collection, with duplication of efforts along the value chain.

> **This is where the GBA Battery Passport steps in: It offers an efficient tool for establishing compliant, efficient and assured systems vis-à-vis the EU Batteries Regulation's requirements on supply chain mapping, chain of custody and *traceability*, *due diligence* and *carbon footprint* calculation. This generates the information required to prepare for compliance with the EU Batteries Regulation. For a summary of the GBA resources to support preparation, see Table 1.**

[9] Regulation (EU) 2023/1542, Article 3, point (11).

[10] Regulation (EU) 2023/1542, Article 3, point (13).

TABLE 1: EU Batteries Regulation and the GBA Battery Passport

EU Batteries Regulation Article, implementation date and status	EU Batteries Regulation Requirements	GBA Battery Passport features and alignment *(Full alignment with the EU Batteries Regulation will be implemented once relevant delegated acts, standards and guidance are adopted.)*	GBA Battery Passport Resource
Battery Carbon Footprint 18 Feb 2025 Delayed **and performance classes (Article 7 & Annex II)** 18 Aug 2026 Delayed	• *Manufacturers* of LMT, rechargeable industrial and EV batteries > 2 kWh must calculate the **battery carbon footprint (BCF)** from cradle-to-gate, according to the Commission methodology. • Progressive obligations, depending on battery type: – **Carbon footprint declaration** (e.g. from 18 Feb 2025 for EV batteries). – **Performance classes** displayed (e.g. from 18 Aug 2026 for EV batteries). – **Maximum life cycle carbon footprint thresholds** (e.g. from 18 Feb 2028 for EV batteries). • Calculation must follow data-quality rules and be **verified by a *notified body***[11].	• **Greenhouse Gas (GHG) Rulebook v2.1** defines a harmonised **Battery Carbon Footprint methodology,** consistent with ISO 14067 and **Product Environmental Footprint (PEF) Category Rules**.[12] • Uses **cradle-to-gate plus recycling** boundaries and supplier-specific primary data quality scoring aligned to Annex II. • **Verification and assurance guidance** ensures third-party validation. • GHG Rulebook v2.1 is also a best-practice framework to demonstrate convergence to corporate decarbonisation goals and **alignment with the Science Based Targets initiative (SBTi)**.	
Due Diligence Policy (Articles 48–52 & Annex X) 18 Aug 2027 Postponed	• *Economic operators* placing batteries on the market must establish and implement a ***due diligence* policy in line with international standards, management systems and controls for chain of custody and transparency and reporting** covering the sourcing, processing and trading of cobalt, lithium, nickel and natural graphite, and secondary raw materials required for battery manufacturing. • They must identify and mitigate social and environmental risks in accordance with the **OECD Due Diligence Guidance for Responsible Supply Chains** and establish a grievance mechanism based on the United Nations UN Guiding Principles on Business and Human Rights (UNGP). • Requires **third-party verification and public disclosure** of due-diligence performance.	• **Battery Passport Data Exchange rulebook (upcoming)** offers a chain of custody model for raw-material origin, country of extraction and refining and active material production; and a data exchange model of digital credentials for mapping transactions up to the point of mineral production, and secure sharing of data between supply chain actors on mineral origin and associated *carbon footprint* and *due diligence* data, using the **United Nations Transparency Protocol (UNTP)** interoperable with other data exchange protocols such as Catena-X. • **Battery Passport Assurance rulebook** defines two levels of data verification: 1) Recognition of facility-level audits and assurance of *traceability* and *due diligence* data where available; 2) GBA-approved, independent, document-based 3rd party verification. • **Battery Benchmarks due diligence and ESG framework** defines benchmarks across 18 topics directly mapped to the *due diligence* requirements for *economic operators* in line with the *due diligence* policy and reporting requirements and the underlying OECD Responsible Business Conduct 6-step framework, and for suppliers operationalising responsible business practices related to Annex X risks in line with the underlying international frameworks cited in the EU Batteries Regulation • **Recognition of existing voluntary sustainability standards:** Interoperability and cross-recognition embedded in the Battery Benchmarks and Data Assurance models offers an opportunity to use existing schemes for verification of *due diligence* information, in anticipation of the approach that will be adopted for EU Batteries Regulation *'recognised schemes*[13]'	

[11] Regulation (EU) 2023/1542, Article 3, point (41).

[12] Full alignment with the EU Batteries Regulation will be implemented once relevant Delegated Acts are finalised. The GBA GHG Rulebook is designed to align with regulatory developments, and will be adjusted once the final EU methodological requirements are published. In the interim, the GBA GHG Rulebook includes an EU Module (Annex B) to bridge anticipated methodological gaps and to ensure that companies can remain fully compliant when placing batteries on the EU market.

[13] Regulation (EU) 2023/1542, Article 53.

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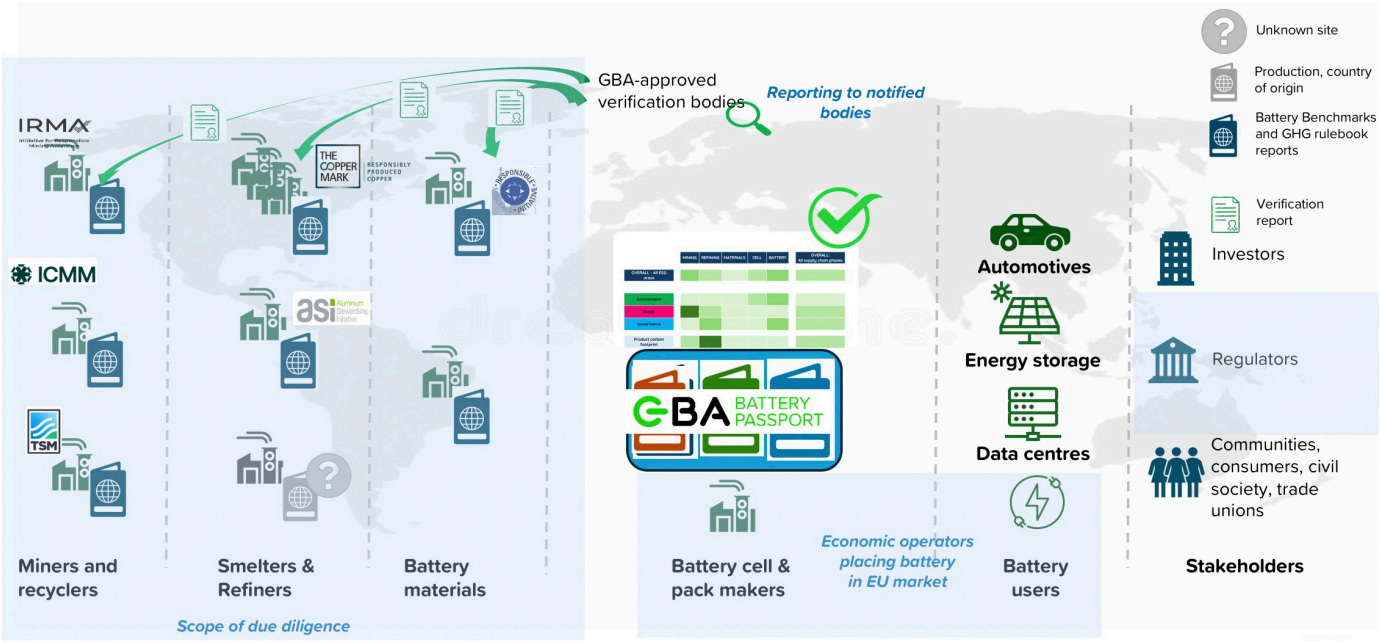
Battery Passport (Articles 13, 77, 78, Annex XIII) 18 Feb 2027	• From **18 Feb 2027,** all EV, LMT and industrial batteries > 2 kWh must have a **battery passport** accessible via *QR code*. • Data must be digitally accessible and updated throughout the life cycle.	• **The GBA Battery Passport prototype certification can be presented as part of the *QR code* to provide additional assurance and comparability to mandatory EU Batteries Regulation data, including:** • Designed to comply with the minimum data quality, disclosure, and governance requirements of Article 77, enabling plug-in compatibility with the EU digital passport. • **A unique battery ID** designed for interoperability with upcoming implementing acts and standards on digital product passports, including possible EU Digital Wallet technology. • **Embeds the tiered access to data between public, legitimate interest and regulators** of Articles 14, 77 and Annex XIII. • **The unit of GBA battery sustainability certification** is in line with the EU Batteries Regulation definition of a battery pursuant to Article 3, including a battery pack.	
Labelling, marking and Information (Articles 5, 13–17, Annex V, & Annex XIII) Labelling from 2025 onwards *QR code from 18 Feb 2027*	• Labels must display battery type, capacity, chemistry, separate-collection symbol, safety information and *QR code* linking to the battery passport. • Progressive information obligations; requirement for *QR code* linking to battery passport applies from 18 Feb 2027.		
Performance and Durability (Articles 9–11 & Annexes III–IV) Technical documentation in 2024, with minimum requirements from 2027 onwards	• Batteries must meet defined **performance and durability parameters**, including energy efficiency, capacity retention, and expected lifetime under specified test cycles. • *Manufacturers* must declare and verify results as part of type-approval and passport data.	• **The Battery Passport will allow presentation of *GHG* and *due diligence* data alongside other data attributes required by the EU Batteries Regulation requirements.** The GBA Battery Passport can accommodate full EU Batteries Regulation data attributes through the potential incorporation of digital credentials that follow templates developed by the EU or 3rd parties.	*Bespoke GBA resources to be determined*
Recycled content (Article 8 & Annex VI) Disclosure of recycled content in 2028, minimum percentages from 2031 to 2036.	• Minimum shares of recycled cobalt, lead, lithium and nickel to be contained in new batteries placed on the market (phased 2031–2036). • Verification by third parties and reporting through the passport. Recycled-content disclosure for cobalt, lead lithium and nickel from 2028		

2.1 SUPPLY CHAIN MAPPING AND TRACEABILITY WITH THE GBA'S DATA EXCHANGE AND ASSURANCE RULEBOOKS

The EU Batteries Regulation Article 48 and consultation draft of the *due diligence* guidance stipulate the requirements on supply chain mapping and *traceability*. *Economic operators* must establish and operate a system of controls and transparency regarding the supply chain, including a chain of custody or *traceability* system, identifying upstream actors in the supply chain.

The GBA's Data Exchange rulebook and its chain of custody system from raw material production or recycling, to refining and active material production, outline a model for the required supply chain *traceability* for the four minerals in scope of the EU Batteries Regulation, covering the required information of country of origin; quantity of raw material; information on third-party verification and additional information as set out in the, **OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas** including for recycled materials.

FIGURE 1: An illustration of the GBA Battery Passport ecosystem: chain of custody model for mineral *traceability*, with roles of economic operators, third-party verification bodies and possible future recognised schemes



The EU Batteries Regulation does not stipulate which chain of custody model (mass balance, full physical segregation, etc.) must be used. The GBA chain of custody model is based on mass balance and can additionally support and interoperate with physical segregation models. The EU Batteries Regulation does not define a *de minimis* rule for coverage of the supply chain, and there is no minimum content threshold for the specific raw materials listed in point 1 of Annex X, i.e. cobalt, natural graphite, lithium and nickel. The GBA's decentralised system of data exchange enables and incentivises progressive coverage of the supply chain through public visibility of coverage of reporting. The key components of this system are elaborated in Figure 1 above.

Figure 1 demonstrates how the GBA Battery Passport enables progressive transparency of the supply chain and *due diligence*, in line with continuous improvement. The figure represents a supply chain map from the perspective of the battery *manufacturer* as the *economic operator.* In the scenario depicted in the figure, the

battery *manufacturer* has succeeded in mapping most of its supply chain, but uncertainties remain over the identity of a supplier at the refining stage and the identities of the mines that supply this refinery are consequently also unknown. In Figure 1, some suppliers whose identity is known, have not passed sustainability reports on to the next site in the supply chain. After mapping the supply chain, the next step is to attach *due diligence* and *carbon footprint* reports to facilities, which can be done with digital credentials attached to facility level reports.

Pre-competitive digital enablement of efficient, secure data exchange

The GBA adopts a technology-neutral approach to digital data exchange. In implementing supply chain *traceability, due diligence,* and *carbon footprint* reporting, *economic operators* may rely on a range of digital services, including in-house solutions and third-party technology providers to support data collection, exchange, digital credential management, interoperability with existing enterprise systems, and secure data sharing across supply chain actors.[14] The GBA Battery Passport does not prescribe or endorse specific digital service providers. The GBA works with an ecosystem of commercial providers that offer digital implementation of various aspects of the Battery Passport, under GBA governance. Additionally, the GBA is developing open-access digital infrastructure in partnership with the International Trade Centre (ITC), building on the United Nations Transparency Protocol (UNTP), to lower technological barriers for supply chain actors to exchange data in an interoperable format and a secure digital environment.

[14] The implementation guidelines of the EU Batteries Regulation may elaborate on and include criteria for use of neutral third parties. Trialling pre-competitive and interoperable digital systems with the GBA Battery Passport is an opportunity to prepare for efficient and secure engagement with third party solution providers.

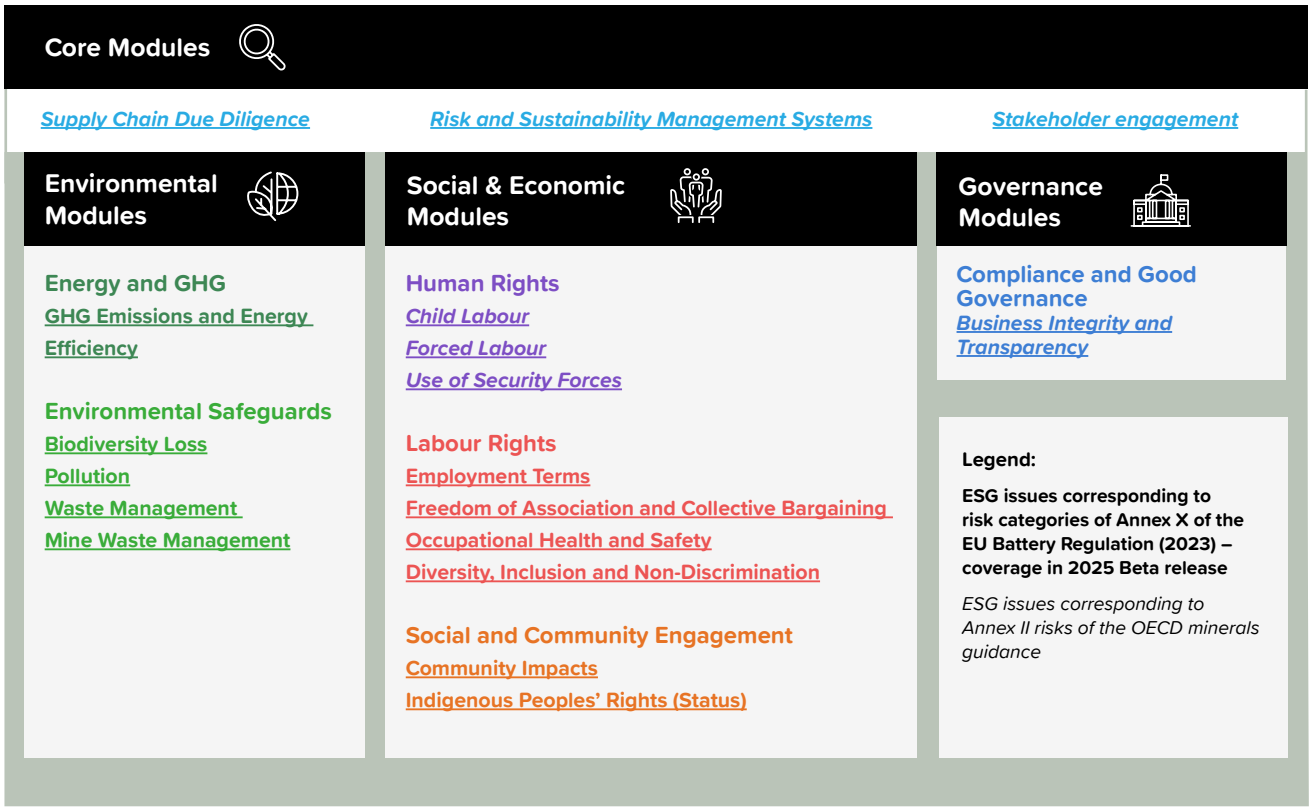
2.2 RISK-BASED DUE DILIGENCE USING THE GBA BATTERY BENCHMARKS

The EU Batteries Regulation Articles 48-52, Annex X and upcoming guidance and Delegated Act on recognised schemes set requirements for *due diligence,* including the establishment of a battery *due diligence* policy and management systems, conducting risk-based *due diligence* and third-party verifications, continuous improvement and stakeholder engagement.

The **GBA Battery Passport** uses a sustainability benchmarking framework – **the Battery Benchmarks** - to determine performance expectations for supply chain *due diligence* for *economic operators,* and environmental, social and governance risk management systems for suppliers. These expectations mirror those of the **EU Batteries Regulation**'s Articles 48-54 on *due diligence* and Annex X on risk categories, its underlying international frameworks, and the **OECD Guidance for Responsible Business Conduct's 6-step process**, as referred to in the regulation. It draws upon as existing voluntary sustainability standards, which are among the candidates for potential recognised schemes under the EU Batteries Regulation.

A relevance assessment mechanism is included with the Battery Benchmarks, to guide companies to focus reporting on relevant risks and prioritise the most material risks first.

FIGURE 2. GBA Battery Benchmarks modules for gathering *due diligence* data on Annex X risk categories[15]



[15] Note on coverage of certain risks defined in Annex X of the EU Batteries Regulation: Energy use is included in the GHG emissions and Energy efficiency module. Plant safety is included across Risk & sustainability management systems, Waste management, and Occupational Health & Safety modules, given that it is related to the physical stability and safety of plants as well as employee safety.

Supply Chain Due Diligence module for preparing compliant due diligence policies and management systems in line with (Art. 48-52)

Aligned with Articles 48-52, the Supply Chain Due Diligence module sets out responsibilities for *economic operators.* Drawing on standard equivalency across key *due diligence* standards, and allowing recognition of existing Conflict Minerals-aligned *due diligence*.

FIGURE 3. GBA Battery Benchmarks – Supply Chain Due Diligence Module – Step 1, Level A, in line with OECD 6-step guidance and EU Batteries Regulation requirements

CORE MODULE

Supply Chain Due Diligence

Intent: Have the policies and management systems in place to identify, prevent, mitigate and account for how a company addresses actual and potential risks and adverse impacts in its supply chain, excluding its own operations.

Applicability: Full value chain, excluding mining facilities

International frameworks: The internationally recognized *due diligence* instruments applicable to the *due diligence* requirements laid down in Chapter VII of the EU Batteries Regulation:

(a) the International Bill of Human Rights, including the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights;

(b) the UN Guiding Principles on Business and Human Rights;

(c) the OECD Guidelines for Multinational Enterprises;

(d) the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy;

(e) the OECD Due Diligence Guidance for Responsible Business Conduct (OECD RBC);

(f) the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD DDG).

Additional guidance: European Partnership Responsible Minerals Due Diligence Hub; Doing Business with Respect for Human Rights: A guidance tool for companies; Drive Sustainability Battery Supplier Assessment Questionnaire; Draft Due diligence implementation guidelines for the EU Batteries Regulation.

Due diligence step	Benchmark level	The facility…
1. Embed supply chain *due diligence* into policies and management systems	Level A	[3]Adopts and makes publicly available a board-approved ***due diligence*** policy for the **facility's** supply chain committing to address ESG risks covered under EU BR **Annex X,** in alignment with the UN Guiding Principles (UNGP) and OECD Due Diligence Guidance for Responsible Business Conduct. Reviews the policy on an annual basis and updates it as risks in the company's supply chain emerge and evolve, in alignment with applicable regulatory requirements. Establishes a traceability or chain-of-custody system along the value chain, taking into account business confidentiality and competitive concerns (EU BR Art.52(4)). Establishes **management systems** for assessing and mitigating adverse ESG risks and impacts in the supply chain and implements risk-based ***due diligence*** measures. Allocates resources to management systems commensurate with the scale of organisation, including senior management staff responsible for overseeing ***due diligence*** processes. Clearly communicates ***due diligence*** policies to suppliers and integrates adherence to these policies, as well as risk management measures, into supplier contracts and agreements.

Risk-based *due diligence* is built into the indicator framework by guiding companies through the OECD framework. All companies should respond to Step 1 (embedding *due diligence*, responsible business conduct, and any specific thematic commitments as outlined in the thematic rulebooks) into their *due diligence* policies, and Step 2 (assessing risks – for which they can use the **Battery Benchmarks issue modules** as an aid). Based on areas where relevant risks have been identified, companies are guided through responses on Steps 3-6 (risk prevention and mitigation, tracking progress and continuous improvement, public reporting, and remediation). In case of identified risks, economic operators may ask suppliers for higher-level performance or enhanced *due diligence*, in line with additional good practices in existing voluntary standards.

FIGURE 4. Alignment of GBA Battery Benchmarks with the EU Batteries Regulation and its underlying international frameworks

Level	Definition
A	Practices reflecting: a) *due diligence* as outlined in the EU Batteries Regulation no. 2023/1542 (EUBR), the underlying OECD Guidance for Responsible Business Conduct, and OECD Due Diligence Guidance for Responsible Supply Chains of Minerals (where applicable); and b) environmental, social, and governance (ESG) requirements of international frameworks referenced in EUBR and OECD guidance, as operationalised in a wide range of benchmarked voluntary sustainability standards (VSS), in particular, their core, critical, or foundational requirements, where applicable.
AA	Practices that reflect additional expectations referenced in some, but not all VSS, and/or that go beyond Level A.
AAA	Practices reflecting additional, emerging, or aspirational expectations in individual VSS, voluntary international guidance, or innovative benchmarks, as agreed by the GBA's membership to advance its vision for sustainable battery value chains, and/or that go beyond Levels A and AA.

Issue modules for conducting due diligence on battery supply chain risks in line with Annex X

The EU Batteries Regulation does not set performance expectations vis-à-vis the risk categories of Annex X to raw material producers, beyond reference to international frameworks. However, it stipulates that *economic operators* should base their risk assessments on credible data.[16] While this can mean industry and country risk reports, stakeholder and expert feedback on a particular operating context, and other desk-based methods, gathering real data from the supply chain can significantly strengthen and give credibility to an economic operator's risk assessment.

The Battery Benchmarks issue modules allow the gathering of such data using a structured format across the supply chain. They guide companies on enhanced *due diligence* where risks have been identified. They also guide suppliers on operationalising expectations against issue-specific frameworks, good practices and considerations.

[16] Regulation (EU) 2023/1542, Article 50.

FIGURE 5. GBA Battery Benchmarks – Example of a thematic module: Pollution

ISSUE MODULE: Pollution

Due diligence step	Benchmark level	The facility...
3. Cease, prevent and mitigate adverse impacts of pollution	Level A	Deploys on-site controls to monitor and address potential and actual negative impacts from air, land and soil, noise, vibration and water **pollution** on people and the environment, using a **risk-based approach** and following a materiality assessment. Has an emergency spill/leakage response plan.
	Level AA	Implements the **mitigation hierarchy** to address actual and potential impacts of **pollution** in line with set reduction targets.
	Level AAA	[42]Reduces light, radiation and odour **pollution** levels below baselines defined using credible frameworks.
4. Track implementation of pollution prevention and reduction and results	Level A	Establishes monitoring procedures and protocols to track the implementation of **action plans** to prevent, reduce, and mitigate **adverse impacts** from air, land and soil, noise, vibration and water **pollution,** measured against baseline levels. Documents and monitors negative impacts of **pollution** on **affected stakeholders** and **affected communities.**
	Level AA	Engages affected stakeholders and community representatives, alongside qualified managers and workers and their representatives and/or trade unions, to track monitoring implementation and review results.
	Level AAA	Monitors **pollution** levels and impacts to stakeholders, including light, radiation and odour **pollution,** to ensure they remain below the baseline levels.
5. Communicate and report on pollution impacts, risks and improvement actions	Level A	Publicly discloses potential and actual impacts from land and soil, noise, vibration and water **pollution** originating at the **facility,** along with planned actions, progress, and results related to **pollution.**
	Level AA	Publicly discloses spill/leakage impact assessments and any subsequent legal actions or financial penalties. Engages stakeholders in participatory monitoring and consults **affected stakeholders** during any post-incident internal reviews.
	Level AAA	Makes light, radiation and odour **pollution** data available to **affected stakeholders.**
6. Provide for and cooperate in remediation of adverse pollution impacts caused or contributed to	Level A	[43]Establishes a **grievance mechanism** available to internal and external stakeholders to lodge complaints related to **pollution.** Remediates negative impacts from air, land and soil, noise, vibration, and water **pollution** and spills/leakages in consultation with **affected stakeholders.**
	Level AA	For residual significant impacts from pollutants arising from operational activities, when all other measures have been taken to prevent, minimise, and rectify such impacts, implements remedial steps in consultation with **affected stakeholders.**
	Level AAA	Remediates negative impacts from light, radiation and odour **pollution** in consultation with **affected stakeholders.**

The efficiency gains for *economic operators* and their suppliers are realised through the GBA Battery Passport's recognition framework of existing voluntary standards commonly used in the mining and refining industries. Suppliers that have already been assessed against these recognised standards can demonstrate meeting the equivalent of Level A benchmarks in the Battery Benchmarks framework, without having to do additional reporting – see Figure 6. The list of recognised standards and the detailed equivalency mapping can be found in the Annex of the Battery Benchmarks.

FIGURE 6. GBA Battery Benchmarks – Example of the standard equivalency and automatic recognition framework in a thematic module: Pollution

ISSUE MODULE: Pollution

Due diligence step	Benchmark level	The facility...
3. Cease, prevent and mitigate adverse impacts of pollution	Level A	Deploys on-site controls to monitor and address potential and actual negative impacts from air, land and soil, noise, vibration and water **pollution** on people and the environment, using a **risk-based approach** and following a materiality assessment. Has an emergency spill/leakage response plan.
	Level AA	Implements the **mitigation hierarchy** to address actual and potential impacts of **pollution** in line with set reduction targets.
	Level AAA	[42]Reduces light, radiation and odour **pollution** levels below baselines defined using credible frameworks.

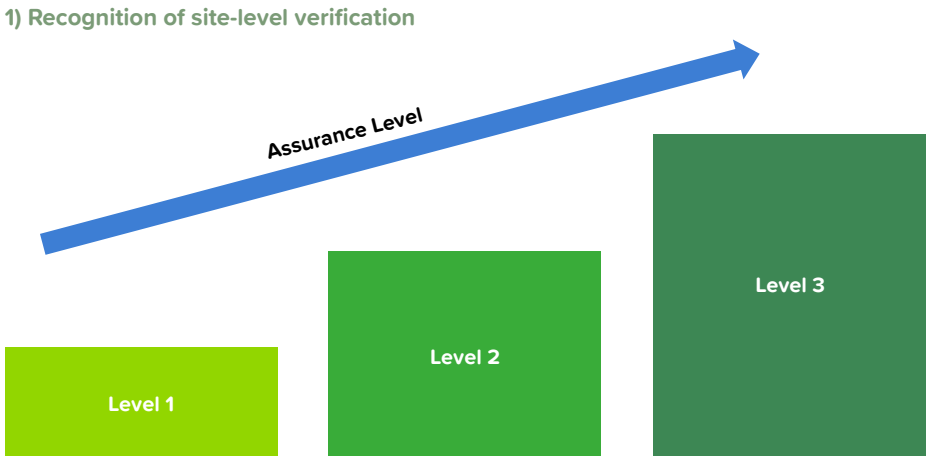
		Regulations and international frameworks					Recognised Voluntary Sustainability Standards							
Due diligence step	**Benchmark level**	**EU Batteries Regulation (2023)**	**EU Conflict Minerals Regulation (2017)**	**EU Forced Labour Regulation (2024)**	**Canada Supply Chain Forced & Child Labour Act (2023)**	**Uyghur Forced Labor Prevention Act (2022)**	**ASI Performance Standard v3.1 (2023)[247]**	**CopperMark/RMI RRA Criteria Guide (2023)[248]**	**IRMA Standard for Responsible Mining (2018)**	**RMI Facility Standard 2025**	**TSM (2021-2024)**	**Copper Mark JDDS (2022)**	**RMI RMAP All Minerals (2022)**	**RMI Supply Chain Due Diligence Plus (2025)**
POLLUTION														
1. Embed pollution prevention and reduction into policies and management systems	A	x						x	x	x	x			
	AA								x	x				
	AAA													
2. Identify and assess actual and potential adverse impacts of pollution from the enterprise's operations	A	x					x	x	x	x	x			
	AA							x	x	x	_			
	AAA							x			_			
3. Cease, prevent and mitigate adverse impacts of pollution	A	x					x	x	x	x	x			
	AA						x	x	x	x				
	AAA													
4. Track implementation of pollution prevention and reduction and results	A	x					x	x	x	x	x			
	AA							x	x	x				
	AAA													
5. Communicate and report on pollution impacts, risks and improvement actions	A	x					x	x	x	x				
	AA						x		x					
	AAA								x					
6. Provide for and cooperate in remediation of adverse pollution impacts caused or contributed to	A	x					x	x	x	x				
	AA							x	x	x				
	AAA													

Data assurance and verification to prepare for auditing by conformity assessment bodies

The EU Batteries Regulation requires batteries' adherence to the regulation to be assessed by *conformity assessment bodies*[17], which shall be registered under each Member state as competent, i.e. *notified bodies*. (Art. 21-36). *Notified bodies* will periodically audit the *due diligence* activities, processes and systems of *economic operators*. Facilities that have been audited against an existing standard are also recognised for third-party verification in line with the GBA's data assurance framework – see Figure 7. Using the GBA Battery Passport's recognition of existing facility standards, *economic operators* can prepare for the upcoming audits by knowing to what extent their own *due diligence* policies as well as their suppliers' ESG performance has already been audited independently. On the other hand, they may identify internal management systems or suppliers whom they can encourage to move from self-declaration to independent verification in accordance with the principles of continuous improvement.

They will further benefit from the GBA-approved independent desktop verification of reporting against the Battery Benchmarks and the GBA Greenhouse Gas rulebook.

FIGURE 7. GBA Battery Passport Data assurance framework: Two levels of verification



[17] Regulation (EU) 2023/1542, Article 3, point (40).

2.3 Carbon footprint declaration with the GBA's GHG Rulebook

EU Batteries Regulation Article 7 requires a *carbon footprint* declaration and progressive reduction of carbon emissions. Reporting is required from each cluster of the value chain. The GBA GHG Rulebook offers a facility-level *carbon footprint* calculation methodology which can be aggregated at the battery level, into a product *carbon footprint* (PCF) consistent with ISO 14067 and PEF Category Rules.

EU Batteries Regulation Requirement	GBA Battery Passport Contribution
Lifecycle GHG calculation methodology	The **GBA GHG Rulebook v2.1** specifies cradle-to-gate accounting consistent with the EU Delegated Act methodology (ISO 14067 and PEF rules).
Primary supplier data & data-quality grades	The Rulebook sets data-quality requirements and supplier data collection protocols identical to the EU Batteries Regulation Annex II data-quality scoring system.
Two calculation methods	The GBA's multi-stakeholder consensus produced a dual calculation method for Physically Modelled Approach (PMA) and Harmonised Market Approach (HMA), in anticipation of either of the two being adopted in the Delegated Act.
Supply chain clusters	The GBA chain of custody cluster typology is compatible with the typology used for PCF declarations in the EU Batteries Regulation.

2.4 Other data attributes

The Battery Passport will allow presentation of *GHG* and *due diligence* data alongside other data attributes required by the EU Batteries Regulation requirements. The GBA Battery Passport can accommodate full EU Batteries Regulation data attributes through the potential incorporation of digital credentials that follow templates developed by the EU or third parties.

- **Performance & Durability:** Captures round-trip efficiency, cycle life, capacity retention – needed for Articles 9-11, Annex III and Annex IV requirements.
- **Technical data:** Records voltage, energy content, chemistry, serial numbers – meeting Articles 13 and 77.
- **Labelling & *QR Code*:** Built-in unique identifier and digital access link aligned with Article 77.
- **Recycled content:** Recycled cobalt, lithium, nickel and lead consistent with Article 8 and Annex VI (verification starting 2027–2031).

In the future, the GBA may develop global interpretation guidance on key data attributes to respond to emerging requirements. The GBA will cooperate with other initiatives such as the European Commission's Joint Research Centre, CEN/TC and the **Battery Pass Ready** consortium to develop interoperability.

2.5 Cross-cutting EU Batteries Regulation data requirements

General requirements with regard to *conformity assessment*[18], reporting, disclosure and data governance are stipulated in the **EU Batteries Regulation** articles. The GBA Battery Passport supports preparation for third-party verification by notified bodies and mirrors data governance requirements of the regulation, whilst offering practical solutions for implementation via the digital exchange platform.

EU Batteries Regulation Implementation Need	Corresponding GBA Battery Passport feature
Conformity assessment* and verification by *notified bodies	The GBA's framework supports *conformity assessment* under Articles 21-36 by providing a model for recognising facility-level verification of *carbon footprint* and *due diligence* data. Employing a GBA-approved desktop verification system provides additional assurance, especially when data from facilities is not third-party verified, as well as on the *carbon footprint* data.
Data disclosure and confidentiality	Producers are responsible for the confidentiality of the data in their possession (Article 57(4)). The EU Batteries Regulation requires public disclosures with due regard to competitive concerns and business confidentiality, and establishes tiers of data disclosure requirements on a need-to-know basis, ranging from regulatory access to legitimate interest such as business partners, and the public (Article 77(2) and Annex XIII). Several other provisions underscore the importance of preserving commercially sensitive information (e.g. Art 52(2) and 52(3), Art. 73(3) and 74(7)) The GBA's data exchange model reflects these tiers and allows the data owner (the facility) to retain control of the level of anonymisation of performance reports and aggregated scores, enabling sharing information with supply chain partners and other stakeholders without compromising confidentiality concerns. The GBA Battery Passport unique battery ID is designed for interoperability with upcoming implementing acts and standards on digital product passports, including possible EU Digital Wallet technology.

[18] Regulation (EU) 2023/1542, Article 3, point (39).

3. NEXT STEPS FOR COMPANIES: TRIAL THE BATTERY PASSPORT IN 2026

GBA Battery Passport **Operational Trials** allow companies to test and validate management systems and supply chain data collection before enforcement, reducing compliance risk and strengthening market access.

1. **Conduct a self-assessment** to compare internal and supply chain data coverage with *due diligence* and *carbon footprint* requirements, using the upcoming GBA Battery Passport EU Batteries Regulation readiness self-assessment tool, to understand your readiness.
2. **Conduct supply chain mapping and *due diligence*** following the **GBA Battery Benchmarks framework** and **OECD Guidance**, and trial generating a due diligence report to meet the requirements of the EU Batteries Regulation.
3. Adopt the **GHG Rulebook** to **calculate your and your suppliers' *product carbon footprint,*** and trial the generation of a battery carbon footprint label supporting EU Batteries Regulation compliance.
4. Test data flows and assurance mechanisms in a multi-company collaborative environment, to **prepare for verification from 2027.**

GET INVOLVED AS AN EARLY ADOPTER AND SHAPE THE BATTERY PASSPORT!

Frequently Asked Questions about the Battery Passport and the EU Batteries Regulation

Can I use the GBA Battery Passport only to report on mandatory data attributes related to the EU Batteries Regulation?
Yes. By reporting on the mineral and supply chain scope, using the **GBA Benchmarks** and **GHG Rulebook** as a tool, you can prepare compliant *due diligence* systems and engage with your supply chain efficiently and benefit from the third-party verification by GBA-approved verifiers.

To pursue a prototype GBA sustainability certification based on Battery Benchmarks attainment, additional reporting is required on a voluntary basis.

How does the GBA Greenhouse Gas Rulebook define the calculation method for the *carbon footprint* of consumed electricity, in absence of an EU Delegated Act?
The dual reporting approach of two carbon accounting methodologies – the Physically Modelled Approach and Harmonised Market Approach - for disclosure is a temporary feature in the ongoing absence of clear electricity modelling requirements under the EU Batteries Regulation. This rule will be revisited following publication of an EU Batteries Regulation delegated act on the *carbon footprint* calculation methodology.

How does the GBA Battery Passport relate to EU Batteries Regulation *due diligence* guidance that is still under development, and the other sustainability regulations which are under consideration as part of the Omnibus IV simplification package?
Through alignment with underlying **OECD Due Diligence Guidance for Responsible Business Conduct**, multi-stakeholder interpretation, early trialling, and alignment after final texts are approved, the GBA resources maximise early preparation while allowing flexible adaptation to final requirements.

Will the GBA become a recognised scheme under the EU Batteries Regulation Art. 53?
The GBA is well positioned to become a recognised scheme under the criteria of the Delegated Act, building on cross-recognition of existing schemes, which may also apply to become *recognised schemes*. The equivalency system built on the Battery Passport creates an early testing mechanism for recognising and making multiple facility-level standards interoperable as means for assurance of *due diligence* information. The Battery Passport's full value chain and mineral scope and tiered assurance system with site-level as well as desktop verification of *due diligence* data from facilities that have not undergone assessment by future *recognised schemes*, can significantly complement and support *due diligence*.

My company already has EU Conflict Minerals Regulation compliant *due diligence* systems. Is this not enough for EU Batteries Regulation readiness?
The risk, supply chain and mineral scope of the EU Batteries Regulation goes beyond that of the **EU Conflict Minerals Regulation.** As an economic operator, you can conduct a gap analysis of EUCMR compliant *due diligence* systems against the GBA's Supply Chain Due Diligence module. As a supplier, audits against schemes which mirror the Conflict Minerals regulation will bring you a long way toward meeting the **EU Batteries Regulation**, whilst the GBA Benchmarks guide you on additional data inputs.

How does the GBA cooperate with other initiatives aimed at supporting EU Batteries Regulation readiness:

- **Battery Pass Ready:** The GBA BP extension of UNTP can embed data containers for EU Batteries Regulation technical indicators, such as one based on DIN SPEC 99100, or on future Battery Pass Ready template, whilst offering standardised reporting formats for *carbon footprint* and *due diligence*.
- **Catena-X:** GBA Battery Passport data exchange protocol is fully interoperable with data solutions operating in the Catena-X ecosystem. GBA Battery Passport data can be embedded into Catena-X native solutions to accompany the battery throughout its life.
- **Drive Sustainability Battery Supplier Assessment Questionnaire:** Data collected via the Battery SAQ can be used to conduct a first risk assessment against the Battery Benchmarks, or where suppliers already use the GBA Battery Passport, economic operators may fulfil internal SAQ questionnaires with this data.