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# The EU Battery Passport: From regulation to reputation

## Executive summary

The EU Battery Regulation (2023/1542) redefines how organizations manage transparency, circularity, and sustainability across the entire battery value chain.

From 18 February 2027, a Digital Battery Passport (DBP) will be mandatory for light means of transport (LMT), electric vehicle (EV), and industrial batteries exceeding 2 kWh placed on the EU market.

Each passport will be accessible via a QR code and will form part of the product's traceable digital identity.

The DBP complements CE marking and conformity assessment, serving as auditable proof of compliance for EU market access and regulatory credibility. It captures data on origin, composition, carbon footprint, and lifecycle performance, bridging regulatory obligation with business opportunity.

While most see compliance complexity, leaders recognize a strategic inflection point a chance to build data-driven trust and competitive differentiation. Cognizant positions the Battery Passport not as a burden, but as the digital DNA of circular manufacturing.

## Phased requirements overview

The regulation introduces a staged rollout to help enterprises align investment and compliance planning:

- Carbon footprint: applies first to EV batteries, progressing from declaration classification threshold limits in later phases.
- Recycled content: binding targets for cobalt, nickel, lithium, and lead take effect in 2031, with stricter thresholds in 2036.
- Due diligence obligations: from August 2025, companies handling high-risk materials must demonstrate environmental and social due diligence, directly impacting supplier enablement strategies.

# Why leaders should care

01

## Transparency & trust

The Battery Passport creates verifiable ESG proof enabling companies to demonstrate responsible sourcing, carbon transparency, and ethical operations to regulators, investors, and customers.

02

## Performance tracking

Continuous lifecycle data on capacity, degradation, and safety turns compliance into operational intelligence improving reliability and warranty economics.

03

## Circular economy

Full traceability unlocks reuse, repurposing, and recycling opportunities, extending asset life and reducing material costs.

04

## Reputation

In a data-driven market, credibility is earned through evidence. Batteries with traceable, auditable histories strengthen brand trust and customer preference.

## Key challenges we see

Battery Passport implementation exposes structural data and ecosystem challenges across the value chain each with measurable business impact and a clear path where Cognizant can help.

- Data Fragmentation Compliance Risk: Disparate ERP, PLM, and supplier systems create blind spots in traceability. Cognizant integrates data architectures across platforms using our Data Fabric and AI-driven lineage tools.
- Supplier Readiness Value Chain Gaps: Tier-2/3 suppliers often lack digital maturity, delaying full compliance. Our Supplier Digital Enablement programs accelerate onboarding through standardized templates and low-code connectors. Environmental and social due diligence obligations effective August 2025 makes supplier readiness a critical success factor.
- Evolving Standards Investment Uncertainty: Regulatory frameworks from the EU and GBA continue to evolve. Cognizant's regulatory intelligence layer ensures real-time alignment and future-proof compliance design.
- Data Trust Reputational Risk: As ESG data becomes auditable, authenticity and cybersecurity are non-negotiable. We embed blockchain-backed validation and zero-trust security principles to ensure verifiable ESG proof.

## Inside the Battery Passport: Key Data Element

A typical Digital Battery Passport includes the following core fields:

- Unique Battery ID and manufacturer details
- Carbon footprint and recycled content data
- State of Health (SoH) and State of Energy (SoE)
- Material composition and origin
- Dismantling and recycling instructions
- Lifecycle event log (use, second life, end-of-life)

These standardized fields ensure consistent data interoperability across OEMs,suppliers, and recyclers.

## 2. The battery passport lifecycle

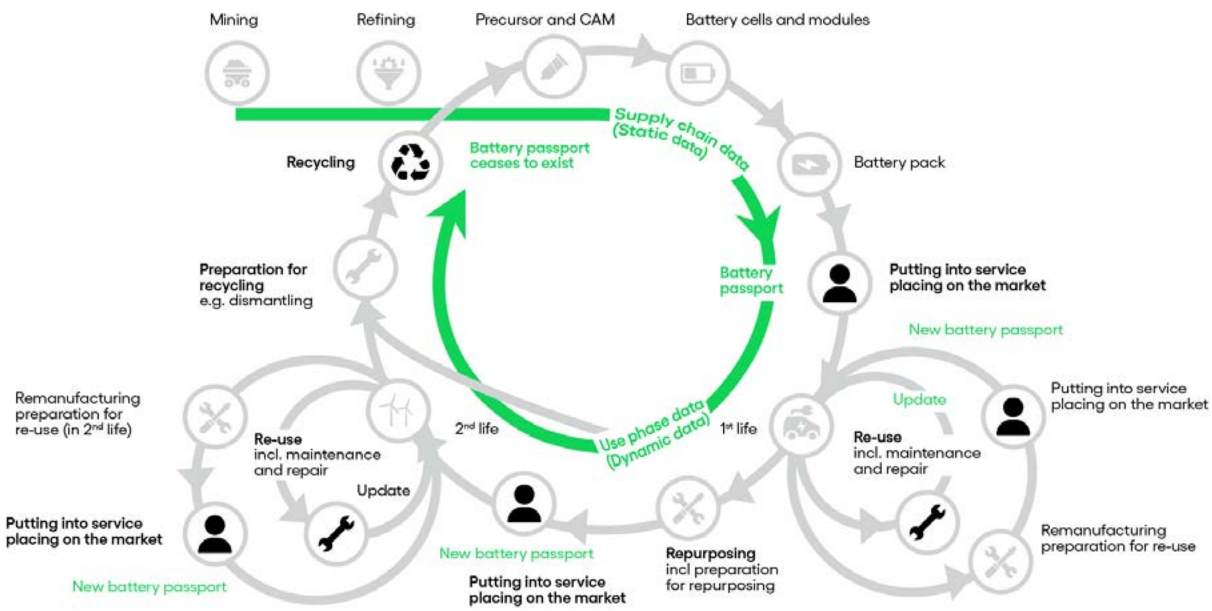


Figure1: acatech – Deutsche Akademie der Technikwissenschaften e.V.

The Battery Passport travels with each battery through its entire lifecycle:

- Upstream (Static Data): Mining, refining, and cell production captured as immutable supply-chain data.
- Use Phase (Dynamic Data): Real-time updates on performance, degradation, and maintenance.
- Second Life: Data continuity enables reuse, remanufacturing, or repurposing with traceable provenance.
- End of Life: The passport records recycling and recovery events, and insights feed forward into next-generation battery design closing the circular data loop.

This closed-loop data architecture transforms sustainability into a measurable, auditable, and optimizable process.

## Role-based data access model:

The Battery Passport operates under a role-based data access structure separating public, restricted, and confidential data layers. OEMs, recyclers, and regulators access different information based on their authorization, ensuring transparency without compromising intellectual property or cybersecurity.

## 4. Cognizant's P.A.S.S. framework

Cognizant enables clients to transition from reactive compliance to proactive competitiveness through its four-phase P.A.S.S. Framework.

### Prepare

Assess data maturity, governance, and supply chain readiness. Map data sources to regulatory needs and identify integration gaps.
**Outcome:** A six-week readiness baseline and a clear traceability strategy.

### Automate

Integrate ERP, PLM, and IoT platforms to automate reporting and data collection. Use blockchain for immutable traceability and auditability.
**Outcome:** Up to 60% reduction in manual reporting and faster compliance cycles.

### Standardize

Align with GBA-compliant data models. Enable supplier portals and common data exchange formats for ecosystem-wide interoperability.
**Outcome:** 90% supplier onboarding and consistent regulatory alignment.

### Scale

Leverage AI and advanced analytics to predict degradation, optimize recycling, and unlock circular value creation.
**Outcome:** 15–20% cost savings and a measurable uplift in ESG performance.

Figure 2 – Cognizant P.A.S.S Framework

## 5. Business impact and outcomes

The EU Battery Passport is more than a compliance milestone it redefines how organizations create, capture, and communicate value. When implemented effectively, it drives measurable impact across five core performance dimensions.

**1. Operational Efficiency – From Manual Reporting to Integrated Intelligence**

By orchestrating data across ERP, PLM, and IoT platforms, companies eliminate manual reporting and redundant audits. Real-time traceability reduces effort and error, while analytics improve asset utilization. Early adopters report up to 60% reduction in reporting time and faster decision-making through unified lifecycle visibility.

**2. Regulatory Compliance – Turning Obligation into Assurance**

Automated data flows ensure that every regulatory requirement from carbon intensity to material provenance is auditable by design. This reduces compliance risk and provides continuous readiness for EU audits, giving organizations first-mover credibility with regulators and OEM partners.

**3. Brand Reputation – Competing on Verified Sustainability**

In the next phase of Europe's mobility ecosystem, brand differentiation will rest on proof, not perception. Battery Passport-enabled transparency allows companies to demonstrate verified ESG performance strengthening stakeholder trust, consumer preference, and investor confidence. Transparency becomes the new brand equity.

#### 4. Circular Value Creation – Extending the Economic Life of Every Battery

Lifecycle visibility enables reuse, repurpose, and recycling with traceable provenance. By capturing and feeding end-of-life data back into design and sourcing decisions, organizations unlock secondary-market value and reduce raw material dependency. This is how circular intelligence evolves from sustainability rhetoric into measurable ROI.

#### 5. Investor Confidence – From ESG Reporting to ESG Performanceinto Assurance

Auditable ESG data derived from the Battery Passport strengthens sustainability-linked financing opportunities. Banks and investors increasingly reward data-backed ESG leadership with preferential access to capital. For corporates, verified traceability translates directly into lower financing costs, improved valuations, and enhanced market credibility.

## The Cognizant advantage

Cognizant Consulting enables organizations to move from regulatory compliance to strategic differentiation turning the EU Battery Passport into a catalyst for enterprise transformation.

Our advantage lies at the intersection of strategy, technology, and sustainability execution:

- Strategic Expertise: Our consulting teams combine deep industry knowledge with sustainability and regulatory insight to help clients translate complex EU directives into actionable roadmaps and measurable business outcomes.
- Connected Ecosystem: Leveraging alliances with Microsoft, SAP, AWS, and leading blockchain and data-governance platforms, Cognizant orchestrates interoperable data ecosystems that unify ERP, PLM, and supplier networks into a single source of truth.
- Transformation Excellence: Through our P.A.S.S. Framework (Prepare, Assess, Scale, Sustain), we guide clients from strategy design to scaled delivery embedding circular intelligence, AI-driven traceability, and end-to-end auditability across the value chain.

Cognizant turns compliance into competitive advantage enabling leaders to operationalize transparency, unlock circular value, and strengthen trust with regulators, customers, and investors alike.

## References


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## Authors:

**Pramod Tiwari**

AVP MLEU Consulting Europe and ME

Zurich

pramod.tiwari@cognizant.com

+44 778 8224387

**Sibi Lakshmanan**

Senior Consultant

Frankfurt am Main

sibi.lakshmanan@cognizant.com

+49 172 4597342

**Vlatko Davidovski**

Associate Partner Consulting

Zurich

vlatko.davidovski@cognizant.com

+41 791 022883