Transforming Batteries into Smart, Traceable Digital Assets with **Battery Passports**





Do you really think that Battery Passports are the missing link between trust, sustainability, and real innovation in the battery industry?

Imagine owning an EV or energy solution, and you want to be sure that your battery is-

- Sustainably sourced
- Designed for reuse and recycling

Battery Passports provide the answer:

A secure digital twin for every battery-linked by a QR codeunlocking a complete record of origin, chemistry, carbon footprint, use history, repair events, and recycling performance.

From Source to Recycling: Empowering Transparency and **Optimization Across the Battery Lifecycle with Battery Passports**

Lifecycle Phase	What Battery Passports Reveal & Enable
Mining & Refining	Authentic Origin Verification & Carbon Emission Tracking
Manufacturing	Chemistry Insights & Recycled Material Accountability
In Use (EV/Industry)	Real-Time Health Monitoring & Maintenance Transparency
Second Life	Unlocking Value Through Repurposing & Energy Storage
End-of-Life	Ethical Collection & Responsible Battery Dismantling
Recycling	Maximizing Resource Recovery & Recycling Efficiency

Serial number, manufacturer, and batch

What Data Do Battery Passports Actually Deliver?

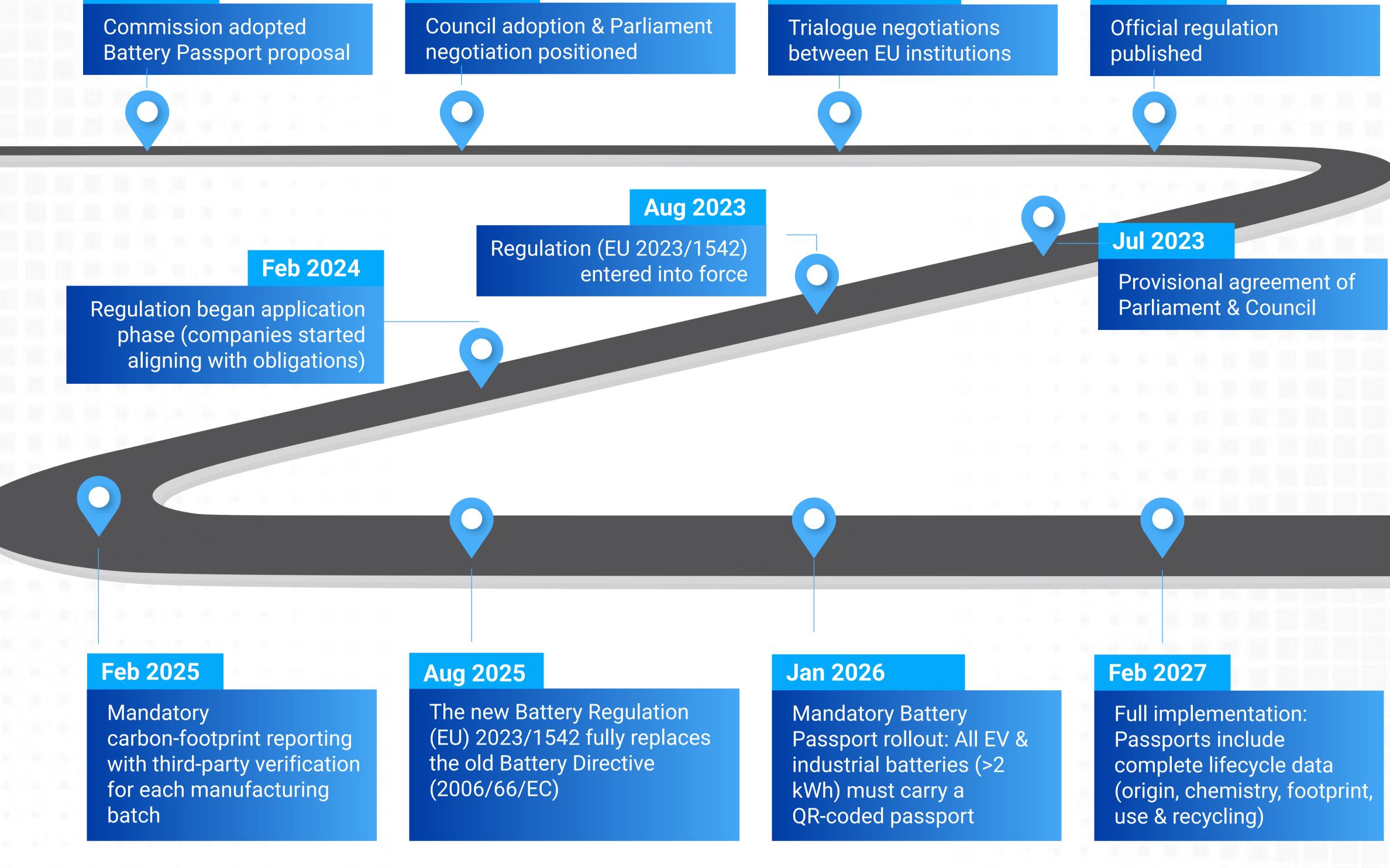
- Cell chemistry, lifetime performance
- Verified site-specific emission stats
- Recycled versus new material breakdown
- Full health checks and replacement records
- Repurposing and mineral recovery stats



Battery Passports are a legal requirement across the EU, flipping the switch from guesswork to verified data in every battery supply chain.

Why Is Europe Leading the Battery Passport Revolution?

Dec 2020 Apr-Dec 2022 Mar 2022 **Dec 2022**



First mandated Digital Product Passport (DPP) for batteries under EU

Regulation (EU) 2023/1542.

Stakeholders Group

Economic

Operators

with Circulor.

pilots alongside Everledger.

Industry Concerns

Risk of non-compliance with EU

regulations

pressure for circularity

Growing push for digital product

Is the World Catching Up?Who's Next to Adopt Battery Passports?

China	Developing a national battery passport, mandatory disclosure of
	production emissions.
USA	Discussions tied to the Inflation Reduction Act (IRA), recycling
	optimization, and OEM pilots.
UK	Product Passport policy concept under resource strategy.
Global Trend	DPPs expanding to construction, textiles, plastics, and chemicals.
	Stakeholder Responsibilities

Manufacturers/ updates brands Sarvica/

Core Responsibility

Passport development & content

Battery Passports Solve These By

Ensuring regulatory compliance and

reuse, repurposing, and recycling

Creating a scalable blueprint for

future-proof operations

Key Entities

Volvo Cars				
The Power Players Driving Change				
End-Users	Consumers & fleets	Responsible for used battery transfer		
Recyclers	Recycling firms	Meet recovery targets, report vectors of the collection, and maintain recycles.		
Independent Operators	Service/ repair shops	Official updates post technica changes		

Audi & Tesla (Global Battery Alliance)

(Environmental, Social, and Governance) reporting.

Leading pilots for full supply chain traceability and ESG

Ford

Innovating with blockchain and Al-powered battery passport

Pioneered the first production battery passport in partnership

Volkswagen Group

Key participant in the Global Battery Alliance, advancing digital twin compliance frameworks.

Why It Matters: Battery Passports as the Answer to Industry's **Biggest Concerns**

Lack of credible ESG data for Delivering verified sustainability and carbon footprint insights investors & regulators Consumer distrust due to opaque Providing radical transparency across sourcing and manufacturing supply chains Rising costs of raw materials and Unlocking circular value through

global product passports regulation across industries

What's Next—Is Your Brand Ready to Join the Revolution?

Ready to lead the battery revolution? Partner with us to unlock sustainability, innovation, and competitive advantage for a cleaner energy future.

Battery Passports are more than compliance—they're the gateway to trust,

transparency, and circularity in the battery industry.