What Changes When Automakers Become Digital Battery Passport Owners? OEMs and the New Battery Operating Model

Date: 03.02.2026
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Executive Summary

The introduction of the Digital Battery Passport (DBP) under the EU Battery Regulation 2023/1542 marks a structural shift in how automotive OEMs will manage battery information, risk, and value creation across the entire lifecycle.

Contrary to early expectations, the challenge is not primarily technical; data formats, APIs, and standards will stabilise. What will matter is organisational structure: ownership, continuity, interpretation, and accountability.

As BASE begins consolidating early technical and operational insights, one pattern is unmistakable: OEMs are moving from battery integrators to full lifecycle data stewards. This role brings new responsibilities in procurement, after-sales, sustainability, financing, and supplier coordination – and reshapes how OEMs design, validate, service, and repurpose batteries.

This shift carries clear P&L implications: DBP-verified data reduces warranty exposure, improves diagnostic efficiency, strengthens supplier assurance, and enables new circular revenue pathways. The DBP is therefore emerging as a digital asset, not just a compliance requirement. OEMs that prepare structurally – not only technically – will transition faster and gain early competitive and financial advantage.

A New Role for OEMs: From Integrator to Lifecycle Data Steward

Historically, automotive manufacturing has treated batteries as high-value components governed by design contracts, performance thresholds, and warranty rules. With the DBP, this model changes fundamentally.

OEMs become the primary owners of battery identity and lifecycle continuity, meaning:

- They must keep the battery's data story intact from material sourcing to end-of-life
- They become accountable for upstream information they do not generate
- They must merge operational, safety, sustainability, and diagnostic data into one traceable record

In other words, the DBP turns the battery into a regulated digital asset and this shift will force OEMs to rethink workflows that were never designed to intersect – procurement, compliance, BMS engineering, warranty, service networks, logistics, and recycling partners.

Automotive Data Was Never Meant to Flow Across the Lifecycle

BASE analysis confirms a structural reality: OEMs do not lack data – they lack data continuity. The automotive environment is full of valuable information:

- Manufacturing data: cell provenance, module genealogy, testing results
- BMS operational data: cycling profiles, thermal stress, event logs
- After-sales data: workshop actions, diagnostics, repairs
- Circularity & sustainability data: LCA, ESGE, recycled content
- End-of-life data: dismantling, sorting, materials recovered

But these datasets live in separate ecosystems, owned by different functions and governed by incompatible standards. The DBP forces these silos to become interoperable for the first time in automotive history.

OEMs who master this early will unlock faster root-cause analysis, more accurate warranty decisioning, deeper visibility into supplier performance, stronger circularity strategies, and higher-confidence second-life pathways.

The Hidden Bottleneck: Ownership, Not Technology

BASE partners repeatedly demonstrate that DBP bottlenecks emerge long before any API or platform problem. The true blocker? Interestingly, no one knows who owns lifecycle data:

- Procurement assumes suppliers hold ESG data
- BMS teams assume after-sales holds diagnostic histories
- After-sales assumes engineering holds safety records

- Recyclers assume no one holds end-of-life profiles

This diffusion of responsibility is a structural legacy of linear manufacturing.

The DBP disrupts this by informally introducing a new requirement: Lifecycle Data Stewardship – a clear, organisation-wide assignment of who owns what, when, and why.

OEMs who build this internal accountability model early will experience the smoothest compliance path and the fastest circularity gains.

Circularity, Safety, and RUL: Data Fails on Interpretation not on Method

BASE's work on SoH, SoS, SoP, LCA, ESGE and RUL estimation reveals a sharp insight:

The challenge is the organisational meaning behind these elements:

- A SoS percentage that is actionable for a safety engineer may be unusable for a workshop technician
- An LCA impact score may be technically correct but impossible to integrate into procurement decisions
- A Remaining Useful Life estimate may be accurate but irrelevant if service teams cannot convert it into maintenance plans

For OEMs, DBP readiness requires not only producing indicators but ensuring shared understanding across functions and partners.

The Invisible Interfaces: Where OEM Risk and Opportunity Will Concentrate

DBP value is created – or lost – in the transitions between lifecycle stages. These handovers often involve:

- Data loss (information not transferred)
- Context loss (information transferred without meaning)
- Responsibility loss (no clarity on who owns the next step)

Examples include:

- When a battery leaves the factory and enters fleet operation
- When service centres perform diagnostics but do not push results upstream
- When logistics incidents occur without linking them to future failures
- When second-life operators cannot interpret first-life performance

As these interfaces were not designed for circularity, the DBP forces OEMs to redesign these flows – and doing so will define competitive advantage for the next decade.

The P&L Dimension: Why DBP Is Becoming a Financial Lever for OEMs

One of the strongest signals emerging from BASE's early work is that the Digital Battery Passport – apart from the data governance – will also reshape the P&L. Verified lifecycle data reduces warranty claims by preventing unnecessary pack replacements; improves diagnostic accuracy, reducing workshop hours and immobilisation time; strengthens supplier management by exposing ESG, quality, and performance gaps; and increases downstream value through certified second-life eligibility and

more precise recycling pathways.

In practice, this means the DBP becomes a digital asset with measurable commercial impact, influencing revenue protection, cost control, risk exposure, and lifecycle profitability. OEMs that treat the DBP as part of their financial (and compliance) architecture – will gain a structural advantage in the next phase of electrification.

The Most DBP-Ready OEMs Are Already Moving

At the top end of the market, the most advanced OEMs already operate internal battery passport systems – not yet regulatory DBPs, but mature digital twins covering battery genealogy, diagnostics, traceability, and warranty analytics. They enter the EU Battery Regulation era with an architectural head start.

Just beneath them, a second tier of OEMs is now accelerating: they are mapping data ownership, aligning suppliers to DBP-compatible reporting models, preparing after-sales networks for new SoX and safety signals, and piloting early circularity workflows with recyclers and second-life operators. In practice, they are laying the foundations of a *new battery operating model,* where DBP alignment supports cost optimisation, warranty reduction, and lifecycle profitability.

As regulation approaches, one reality is becoming clear: OEMs that treat the DBP as software will fall behind. OEMs that treat it as a lifecycle transformation will move ahead.

Technology will stabilise. Standards will converge. The real advantage will belong to organisations that reorganise early around lifecycle data stewardship, cross-functional interpretation, supplier alignment, and seamless end-to-end traceability – unlocking the earliest gains in efficiency, safety, sustainability, and residual value.

At Seraph, we help companies use circularity indicators not just to comply – but to compete. Whether it is redesigning for faster disassembly or benchmarking data flows for traceability, the future belongs to those who translate sustainability into smart economics.

Ready to harness the DBP for operational advantage?

Do you need support, guidance and insights on automotive manufacturing excellence??Let’s talk? https://seraph.com/contact-us/

About Seraph?

Seraph is a global operations and strategy consulting firm, that leads value chain improvements, restructurings, and turnarounds. We unite the disparate roles in operationally intensive businesses to create efficient operations, bridging the divide from concept to production. High-level decision-makers in manufacturing and industrial organizations rely on us to solve complex issues and launch initiatives that ensure success and sustainable?change.

Seraph is a member of the BASE Battery Passport for Transparency and Circularity consortium.

Co-funded by the European Union

The BASE project has received funding from the Horizon Europe Framework Programme (HORIZON) Research and Innovation Actions under grant agreement No 101157200

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