



Battery Pass

EXECUTIVE SUMMARY



Unlocking the Value of the EU Battery Passport

Opportunities, challenges, and a roadmap
for businesses and policymakers

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The EU battery passport is a tool for digital information transfer, designed to enable more informed decisions and efficient practices in the battery value chain. It reports key data like carbon footprint, material composition, and recycling rates to promote circularity.

This document summarises the findings of the Battery Pass consortium's 'Value Assessment', first published in April and expanded in November 2024.

New insights include details on required implementation efforts, Light Means of Transport (LMT) and industrial storage batteries, practical next steps for businesses and policymakers, and a synthesis of societal value. For more battery passport information, please refer to the [Content Guidance](#).



1. Battery passports: A valuable tool for businesses and consumers

Battery passports can contribute to value creation and value retention for businesses and consumers through verifiable and standardised data attributed to specific batteries. A number of direct use cases from implementing battery passports have been identified across the value chain, which provide evidence of:

- **Improved ESG data communication and informed purchasing decisions**, due to direct visibility to supply chain information.
- **Simplified residual value assessment**, with ~2-10% reduction of technical testing costs for independent operators.
- **More efficient recycling**, with ~ 10-20% reduction of pre-processing and subsequent treatment costs.
- **Streamlined servicing of batteries** and **easier trade of waste batteries**.

(Details on chapter 4, p. 43 of [Value Assessment – Full Document](#))



2. Current challenges of implementation

However, unlocking the full potential of the battery passports faces two challenges:

1. **Implementation requires efforts which companies need to start addressing:** 90%+ of required implementation tasks translate to fixed costs, with tasks such as software development largely independent of volumes of sold batteries, causing potential challenges for SMEs. Also, 50%+ of total implementation effort comes from data management tasks – a lack of automation could become challenging if left unaddressed.
 2. **Remaining regulatory uncertainties should be resolved**, such as the standardisation of data attributes and specification of how up-to-date dynamic data must be acquired and recorded.
- ➔ **Inaction from businesses and policymakers could significantly reduce the value opportunity of the battery passport.**

(Details on chapter 6, p. 137 of [Value Assessment – Full Document](#))



3. Business actions to capture full battery passport value

To fully capture the value offered by battery passports, businesses should:

1. **Mitigate regulatory risks associated with compliance requirements** by establishing their operational readiness for implementation.
2. **Secure competitive advantage** by identifying strategic business opportunities within the battery passport framework.
3. **Tackle four strategic implementation decisions** on which no-regret-actions to start immediately, which parts of the battery passport to build in-house or outsource, whether to limit efforts to compliance or aim for greater business value, and how to integrate the passport into processes like ERP systems to maximise its impact.

These steps will apply differently to the two types of companies: economic operators that are responsible for the battery passport, and the providers that will contribute to data sharing along the complex value chains. Despite differences, these businesses should ideally align their preparation across the value chain. In addition, both economic operators and data providers should consider evaluating **traceability systems in demonstrators to enable another potential battery passport use case: efficient upstream data exchange and reporting**. A traceability system improves data credibility and addresses the substantial data management effort described earlier.

(Details on chapter 7, p. 157 of [Value Assessment – Full Document](#))



4. Policymaker actions to maximise value and minimise uncertainty

To enable maximum battery passport value, policymakers should:

1. **Resolve regulatory uncertainties** quickly, such as finalising data attribute standardisation as well as key definitions regarding the technical system.
2. **Enable additional use cases by endorsing a “beyond regulation” section¹** to establish the passport as a B2B tool. This includes **facilitating data aggregation across passports** to provide market insights, industry benchmarks, and information for policy design, and **integrating battery passports into deregistration and export processes** to increase secondary material availability, potentially fulfilling 5-20% of projected primary European material demand by 2045.
3. **Take support action to overcome implementation efforts**, of battery passports and further DPPs especially for SMEs, by creating clarity and support (e.g. a European test-bed), ensuring interoperability, leveraging science and industry collaboration, and maintaining flexibility to adapt to insights.

(Details on chapter 7, p.166 of [Value Assessment – Full Document](#))

¹ “Beyond regulation”: Data reporting in addition to what is required by regulation, which could enable business transactions. EC needs to decide whether this is achieved in a separate section or reported as a separate file that is accessible through the UID of the battery passport.



5. Unlocking societal value across the value chain

If the above actions are taken, battery passports could become a new medium of digitalised data transfer for efficient and reliable information exchange. This would yield societal value by:

- **Improving the green economy** by improving access to capital, establishing cost savings and promoting resilient economic growth decoupled from resource consumption.
- **Strengthening the ability to reach climate neutrality** by 2050, with increased value chain awareness of sustainability and enabled circular economy practices.
- **Ensuring a just transition**, with job creation in green industries, more responsible supply chains, and less pollution.

These potential impacts of battery passports are expected to outweigh the challenges that implementation may present. In addition, the battery passport will **multiply its impact by servicing as a blueprint for other digital product passports** in value chains of other industries.

(Details on chapter 7, p. 153 of [Value Assessment – Full Document](#))

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