Battery Pass ready

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Get Ready Now: Updated Test Environment, New Guidance, and Industry Perspectives

22 October 2026

Battery Pass *ready*

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Welcome & Introduction

Thomas Knothe
Fraunhofer IPK

Agenda for today

Time	Topic
09.00 – 09.05	Welcome, Introduction & Survey
09.05 – 09.10	BatteryPass-Ready Project Status
09.10 – 09.50	BatteryPass-Ready Project Update • Overview Regulatory and Standardization Processes • Update Test Environment • Publication Enterprise Model
09.50 – 10.00	Industry Perspective – Patrick Heininger, Smart Battery Solutions
10.00 – 10.25	Live Q&A Session
10.25 – 10.30	Outlook & Closing Remarks

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Feel free to use the **Teams Q&A to submit your questions**. During the dedicated Q&A session, you can also **raise your hand** to **ask your question live**.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Project Status

Patrick Gering
Fraunhofer IPK

BatteryPass *ready*

Delivering a test system to advance battery passport readiness

Key Facts on BatteryPass-Ready

Pre-competitive project to **support industry & SMEs** in implementing battery passports **by delivering a test system & guidance,**

- **Evolved from** the **Battery Pass** project
- **co-funded by the Federal Ministry for Economic Affairs and Energy (BMWE)**
- **2-year timeframe** from April 2025 to March 2027

CONSORTIUM LEAD

Fraunhofer IPK

CONSORTIUM PARTNERS

acatech

GEFEG Passion for Standards

Technische Universität Berlin

ASSOCIATED PARTNERS

bitkom VDA VDMA ZIV Zweirad-Industrie-Verband

100+ Supporting Partners

Purpose of BatteryPass *ready*

Support compliance

The digital product passport requires transparent and verifiable data exchange between all actors.

Safeguard interoperability

Different systems (Economic Operator, registry, Backup Provider) must interact reliably.

Enable early testing

A dedicated test environment allows early validation before large-scale implementation.

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Our outputs so far

Data Attribute Longlist

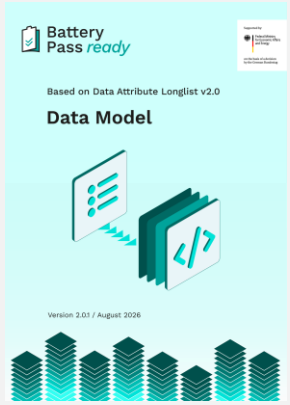
Which data needs to be included?

(V2.0 Published in August 26)

Data Model

How to represent the data in a machine-readable form?

(Published in August 26)



User Stories

What needs to be tested?

(Published in June 26)

Test Environment

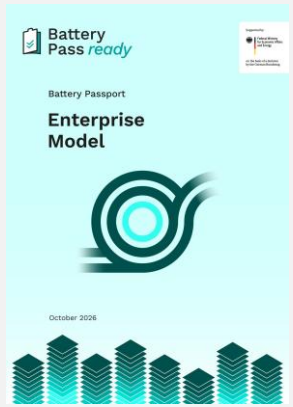
How do we test?

(Updated in October 26)

Enterprise Model

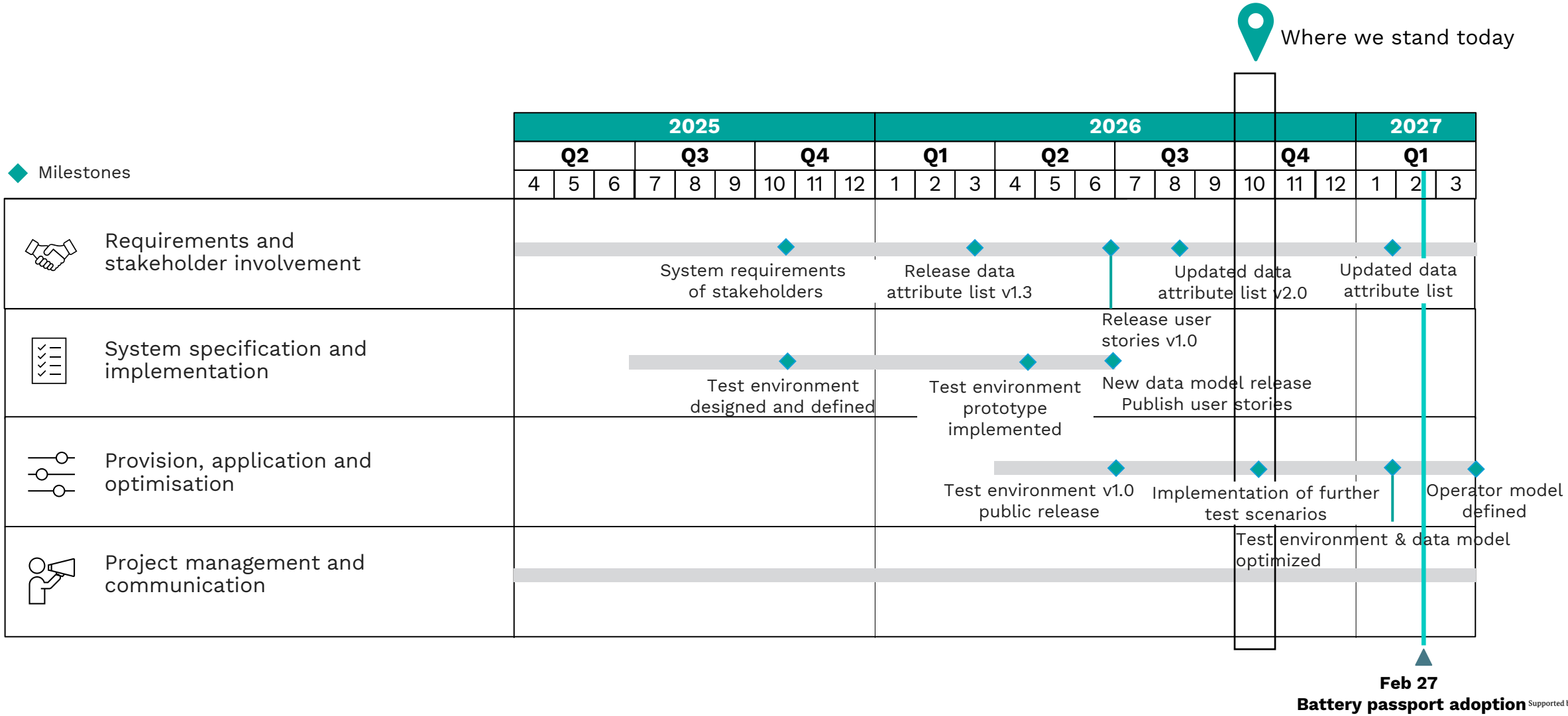
How do the parts work together as a whole?

(To be published in October 26)



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

BatteryPass *ready* timeline



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Feel free to use the **Teams Q&A to submit your questions**. During the dedicated Q&A session, you can also **raise your hand** to **ask your question live**.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Overview: Regulatory and Standardisation Processes

Johannes Simböck
acatech

Data longlist and validation in the test environment

The Longlist provides the details – the JSON Schemas check the data against them

1 Data Attribute Longlist v2.0 · the details

91 attributes	8 categories	NEW DPP header

- **Mapped to Commission Guidance**
- **New column: mandatory from Feb 2027**
- **Context for conditional requirements (“where applicable”)**
- **Access rights groups for “persons with a legitimate interest”**

2 Test environment · the checks

- **Completeness & structure by battery category**
- **Measurement units**
- **Data types & formats**
- NEXT STEP **Data plausibility**

The Longlist will be updated whenever the Commission publishes significant changes

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Missing pieces and the bigger picture

The Battery Passport is the beginning – pieces are still missing, and the picture keeps growing

1 Missing pieces for the Battery Passport

Access rights and implementing acts

Details on **access** still in draft, also **labelling**

Specification of data requirements

Standardization: performance & durability (industrial/LMT)
- ‘**where applicable**‘

Registry: Data and semantic repository

- **DPP header** from JTC-24 (?)
- **Semantic repository**
- **Voluntary data**

Registry: implementation for batteries

- **Transfer of responsibility & linking** battery passports
- **Handling versioning / updates**

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery-passport access: who, what and open questions (published 20.10.2026 - preliminary analysis)

1 Who has legitimate interest?*

A Composition & dismantling (2a, c)
-> Repairers, remanufacturers, repurposers, waste-treatment operators, recyclers and vocational training centres.

B Part numbers+sources of spares (2b)
-> Repairers, remanufacturers, repurposers and purchaser.

C Individ. battery data (Annex XIII 4)
(Dynamic data from usage and statua)
-> Purchaser/third party acting on behalf

D Safety measures (2 d)
Everyone in A or B, + authorised end-of-life vehicle and e-waste treatment facilities.

2 What may they do with it?

A + B + C | Purpose-bound use

- **Assess condition and residual value**
- **R-strategies (see on the left)**

A + C + D | Sharing with Emergency services

C | Make available to independent aggregators or market participants (energy)

D | Unrestricted safety-data use

3 Clarification needed

1. **Verification of roles**
   How to verify professional role, purchase and actor on behalf

2. **Definitions / Scope**
   e.g. Scope of **purchase** sufficient? E.g. Buy, lease, rent ,.. ?

3. **Updates / Write access**
   update from third party ,e.g. repair information

Draft/Have your say is open for your feedback

Missing pieces and the bigger picture

The Battery Passport is the beginning – pieces are still missing, and the picture keeps growing

1 Missing pieces for the Battery Passport

Access rights and implementing acts

Details on **access** still in draft, also **labelling**

Specification of data requirements

Standardization: performance & durability (industrial/LMT)
- '**where applicable**'

Registry: Data and semantic repository

- **DPP header** from JTC-24 (?)
- **Semantic repository**
- **Voluntary data**

Registry: implementation for batteries

- **Transfer of responsibility & linking** battery passports
- **Handling versioning / updates**

2 The bigger picture

Environmental omnibus (draft)

Battery Regulation: (almost) all info digital

European Product Act (draft)

DPP as key part for other product legislation

Standardization: JTC-24 and JTC-5

Further development in EU and global

EU Business wallet (draft)

Unique digital identity across the EU

Many moving parts beyond February 2027: the DPP ecosystem just started to develop

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Feel free to use the **Teams Q&A to submit your questions**. During the dedicated Q&A session, you can also **raise your hand** to **ask your question live**.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Update Test Environment

Dogan Efe
TU Berlin

Praveen Dhingra
Gefeg

What's new in Test Environment

Roles and Profiles

- **My profiles:** define which role may view or edit specific parts of a battery passport.
- **Main Service Provider role:** SP managing passports in the name of an EO.

Test Execution

- **Additional test cases:** for create, delete, earlier versions and lookup by product identifier.
- **Confirmation or batch run:** run mulitple tests required for a system role.

Results and reporting

- **Dedicated result page:** for each run with overview, filters and used settings.
- **Download results:** individually as JSON or together as ZIP.
- **Test run history:** filter, reopen and delete previous runs.

Extended Scope

- **Knowledge section:** with background information, regulation overview and FAQs.
- **Changelog page:** with notices for new entries.

Important for integration

Key changes to ensure compatibility with the latest tests.

- Data Schema: Version 2.0.1
- Archived Passports: Accessible by DPP ID
- Passport Versioning: New ID for content changes
- Registration: EN 18222 field names

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

From User Stories to Test Implementation

User Stories

Failure Scenarios

Test Scenarios

Implemented 55 tests so far

- Read API: All endpoints covered, role-based access control, and error handling
- Update API: Valid and invalid updates, version management, and backup handling
- Backup on Placing on the Market: Backup Provider mock integration, including the createDPP endpoint
- Deletion API: Basic deletion test scenarios

Test cases	Economic Operator	Main Service Provider	Backup Provider
Place on the market	7	8	5
Read	17	17	10
Update	22	18	0
Delete	9	9	2

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Future Scope

Extended Validation Scope

- Audit trail accessibility
- Concurrent updates and multi-tenant scenarios
- Advanced search: pagination, authentication, rate limits, response formats
- Backup failure handling and cross-system synchronization
- End-to-end deletion: authorization, backup selection, hard vs. soft deletion
- QR code validation

Work on the test environment continues
We are creating and evaluating additional tests.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Live Demo Test Environment

Battery Pass *ready*

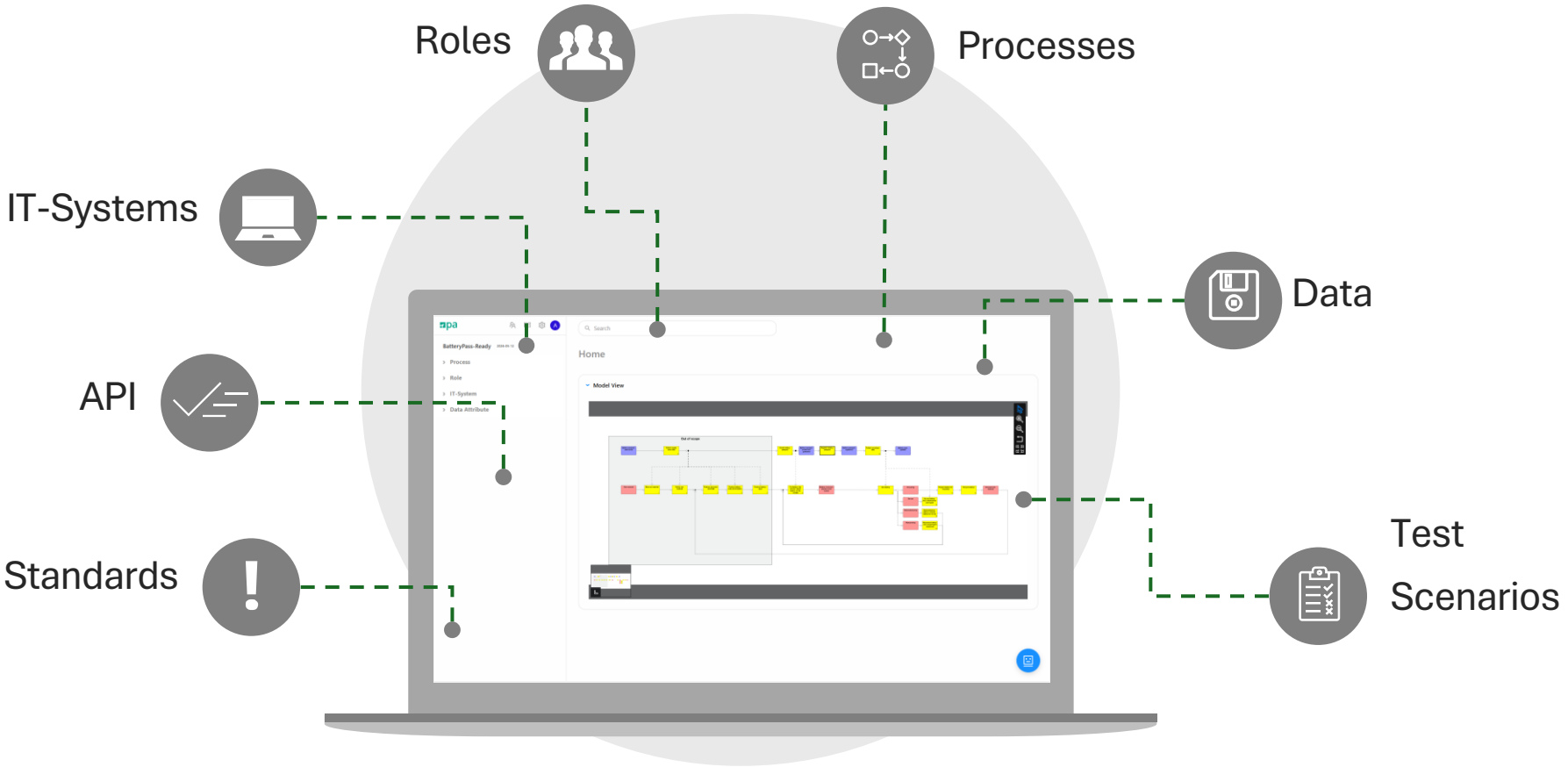
Feel free to use the **Teams Q&A to submit your questions**. During the dedicated Q&A session, you can also **raise your hand** to **ask your question live**.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Enterprise Model

Patrick Gering
Fraunhofer IPK

An enterprise model as the shared reference to implement the holistic ecosystem



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Live Demo Enterprise Model

Battery Pass *ready*

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Industry Perspective
Smart Battery Solutions

Patrick Heininger
Smart Battery Solutions

Implementing the Battery Passport at SBS

22.10.2026

AGENDA

01 About SBS

02 Make or buy

03 Current status & what’s next

04 Implementation of the battery passport

ABOUT SBS

2010

founded in Kleinostheim near Frankfurt am Main

~100

experts across all departments

≤ 60 V

low-voltage lithium-ion battery systems

360° from one source

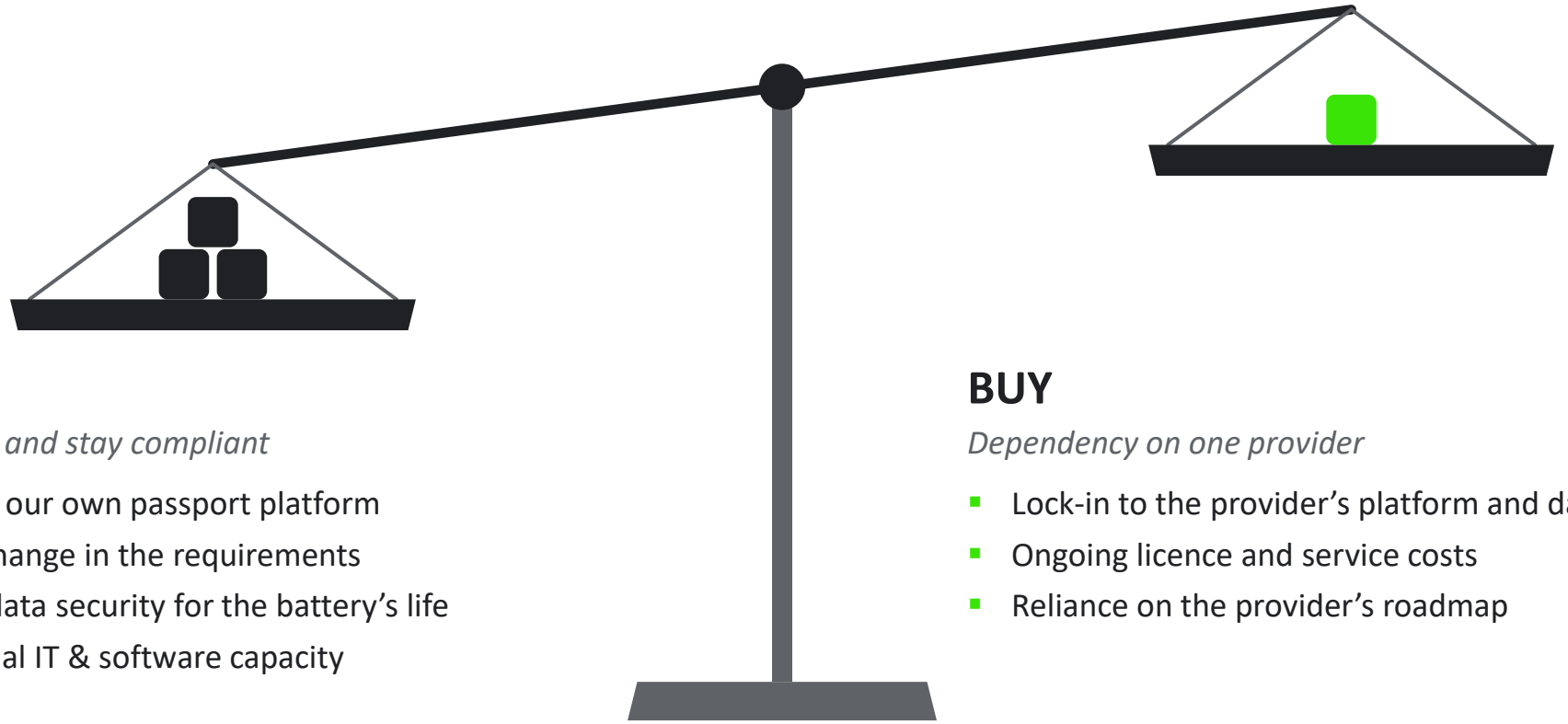
- Battery design and mechanical construction
- Hardware and software development (incl. BMS)
- Testing and external certification
- Semi-automated small and large series production
- After-sales service, maintenance and failure analysis

Portfolio and markets

- Universal batteries UniPower 24 V / 48 V (NMC) and CUBE (LFP)
- Customer-specific battery packs

- Warehouse and agricultural robotics, industrial drones, rehab technology
- E-bikes, e-scooters, e-cargo, micro-mobility and e-watercraft

MAKE OR BUY



MAKE

Effort to become and stay compliant

- Build and run our own passport platform
- Track every change in the requirements
- Hosting and data security for the battery's life
- Ties up internal IT & software capacity

BUY

Dependency on one provider

- Lock-in to the provider's platform and data model
- Ongoing licence and service costs
- Reliance on the provider's roadmap

Our decision: Buy. Staying compliant on our own outweighs the dependency on a provider.

MAKE OR BUY: THE PROVIDER LANDSCAPE

Every provider has a different focus – comparing offers meant comparing apples with oranges.

Focus: Digital Product Passport

The platform

- Unique identifier and data carrier (QR code)
- Hosting, access rights and availability
- Interfaces to ERP and production systems
- Generic DPP, not battery-specific

≠

Focus: Battery passport content

The data

- Which data points are required per battery
- Collecting data from cell and component suppliers
- Battery-specific content and calculations
- Less focus on the technical platform

Most providers cover either the DPP platform or the battery passport content – rarely both.

CURRENT STATUS

Status: in implementation

1

Provider selected

Done

- Make-or-buy decided
- Passport provider in final alignment

2

Product portfolio

In progress

- Analysing which products and variants are affected
- Calculating and plan needed adjustments

3

Implementation planning

In progress

- Data points from suppliers
- Creation of the battery ID
- Design changes to fit the labels

4

Customer alignment

Started

- Talks with customers on implementation
- … and on who covers the costs

LOOKING FORWARD

The battery passport touches almost every department – not only IT.

Development

Design for labels and data carriers; passport data is defined from the first design stage on.

Purchasing

Passport data points become part of supplier requirements and contracts.

Production

A unique ID per battery; labelling and production data linked to the passport.

Quality & service

Passport data kept up to date across the lifecycle: service, repair, second life.

Sales

Passport as part of every offer; responsibilities and costs agreed with customers.

IT & data

Stable interfaces between our systems and the passport provider.

THANK YOU!

Patrick Heininger

linkedin.com/in/patrick-heininger

Battery Pass *ready*

Feel free to use the **Teams Q&A to submit your questions**. During the dedicated Q&A session, you can also **raise your hand** to **ask your question live**.

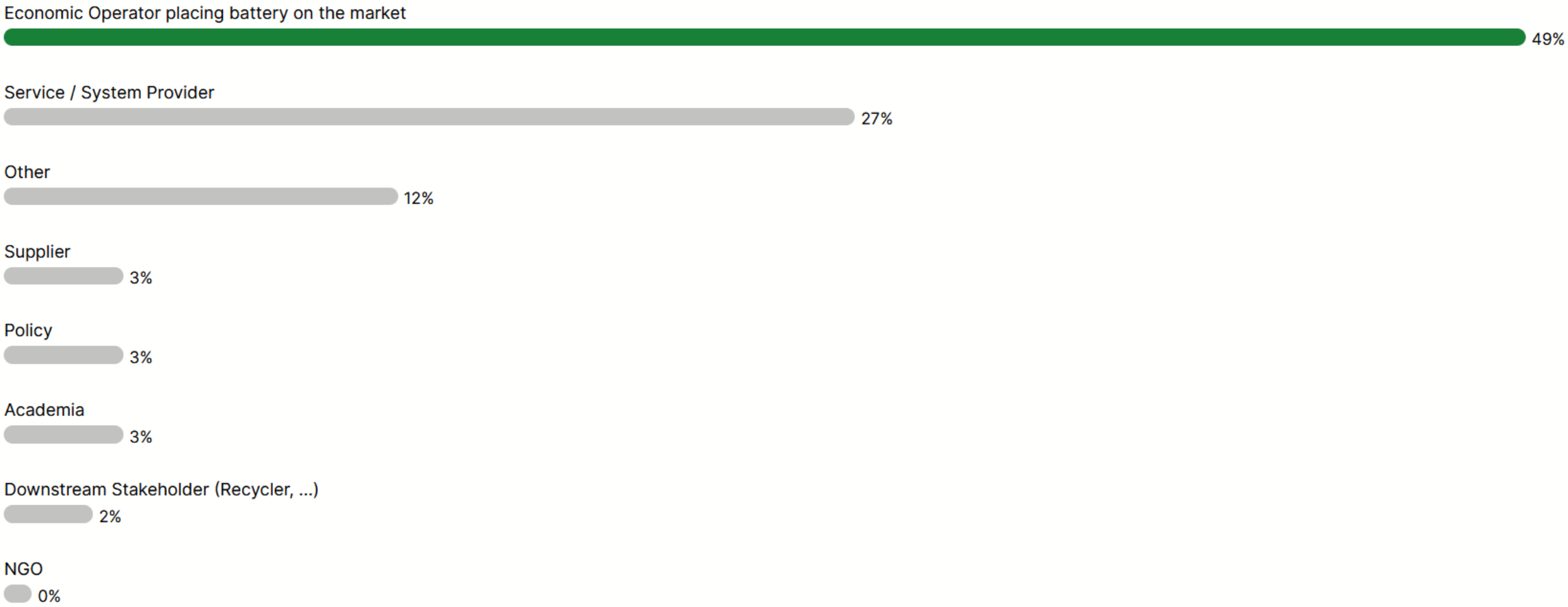
Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Survey Results

Johannes Simböck
acatech

Survey Results – 62 survey respondents

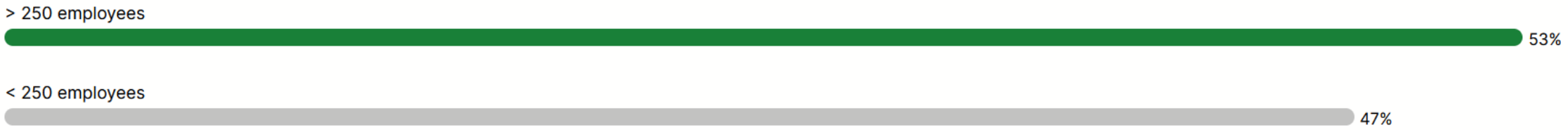
What is your background?



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Survey Results

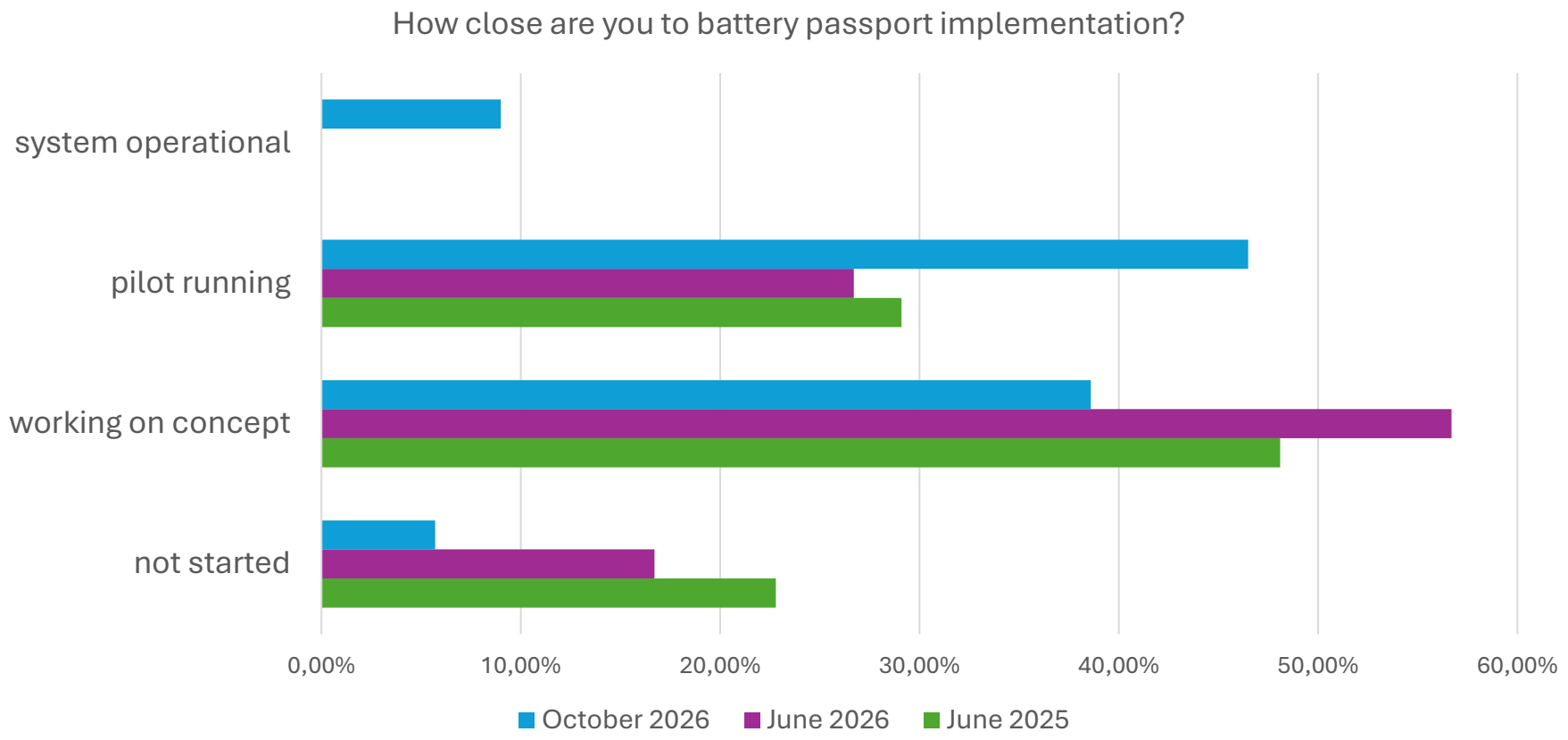
What is the size of your organisation?



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Survey Results

If applicable: How close are you to Battery Passport implementation?

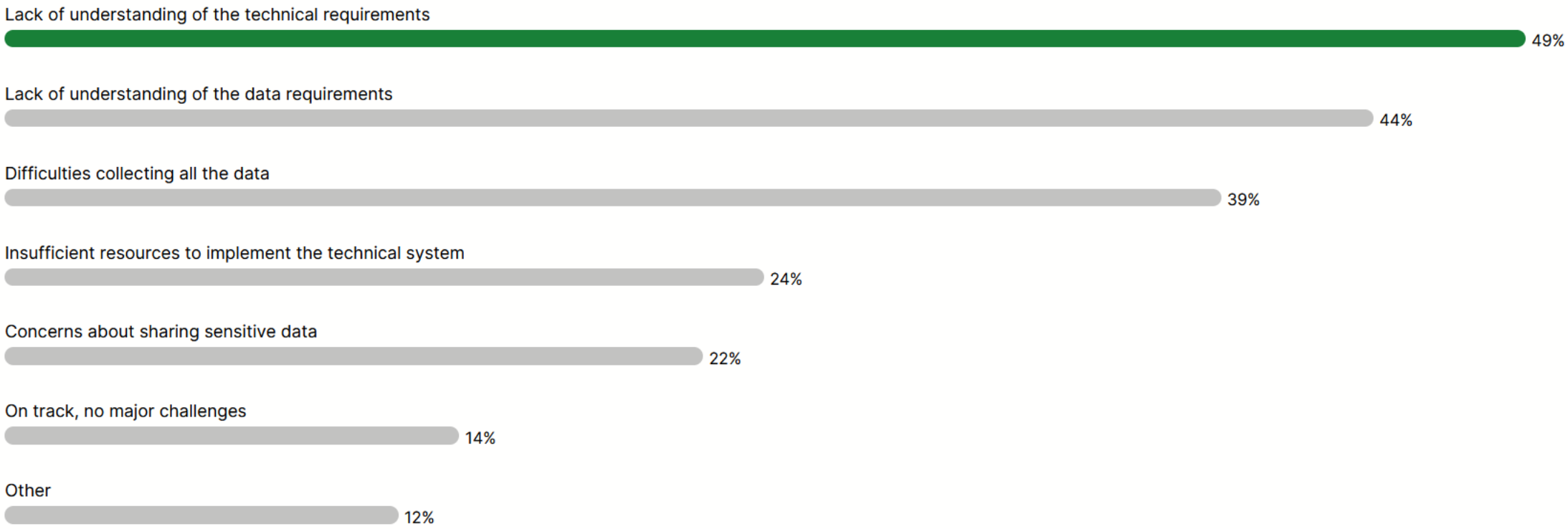


Battery Pass *ready*

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Survey Results

What are the main challenges you need to overcome to successfully implement the Battery Passport until February 2027?



Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Survey Results

If you chose “Other”, please specify

- Chasing a moving target which still isn't fully nailed down, with only a few months to go.
- need to have a conversation with our european battery supplier regarding our role in the battery passport and how we will deliver data to them.
- The data requirements by Feb 27 are quite clear now, since the EU started reducing the list of required attributes. What is completely unclear for us are the technical requirements by Feb 27. Will we be required to provide each passport as JSON or is HTML enough to start with? Will we need to register each passport with the registry? Will we need to provide all the interface endpoints from the technical standards? Will we need to have a backup provider in place. What is the status on all this? How will authentication and authorization of interested parties work. The EC registry is not usable at the moment, and Feb is only 4 months away.
- Contradicting information on battery passport requirements from the EU. No clear guidance on organisation independent Identity and access management as well as to data authentication
- Identify and calculating the Dynamic data. Which are all the dynamic data. How to calculate it. Is there any formula. How many dynamic data Which is mandatory, applicable for 2027.
- Understanding roles and responsibilities for implementation in the value chain.
- The time is major factor.
  Clearness about repository Form EU Side is needed (=Semantic Repository)
- Need of usage in the downstream is still unclear

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Battery Pass *ready*

Feel free to use the **Teams Q&A to submit your questions**. You can also **raise your hand** to **ask your question live**.

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Q&A Session

Patrick Heininger
Smart Battery Solutions

Thomas Knothe
Fraunhofer IPK

Patrick Gering
Fraunhofer IPK

Elena Andrushchenko
TU Berlin

Dogan Efe
TU Berlin

Praveen Dhingra
GEFEG

Sebastian Frielitz
GEFEG

Johannes Simböck
acatech

Battery Pass *ready*

Supported by:

Federal Ministry for Economic Affairs and Energy

on the basis of a decision by the German Bundestag

Outlook

Patrick Gering
Fraunhofer IPK

BatteryPass *ready* timeline

Data Attribute Longlist

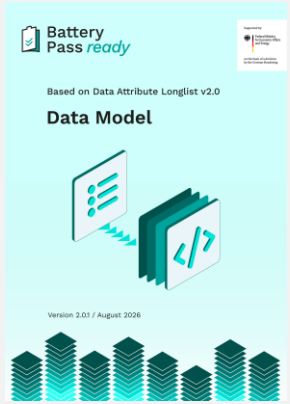
Which data needs to be included?

(V2.0 Published in August 26)

Data Model

How to represent the data in a machine-readable form?

(Published in August 26)



User Stories

What needs to be tested?

(Published in June 26)

Test Environment

How do we test?

(Updated in October 26)

Enterprise Model

How do the parts work together as a whole?

(To be published in October 26)

Monitoring of the regulatory process and alignment

Feeback & Exchange Sessions

Guidance

Closing Event

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

Thank you

This project receives funding from the German Federal Ministry for Economic Affairs and Energy by resolution of the German Bundestag under grant agreement No 16BZF363C.

Battery Pass *ready*

Supported by:
Federal Ministry
for Economic Affairs
and Energy
on the basis of a decision
by the German Bundestag