



Carbon Footprint of Batteries in Accordance with the EU Battery Regulation

Challenges and unintended consequences

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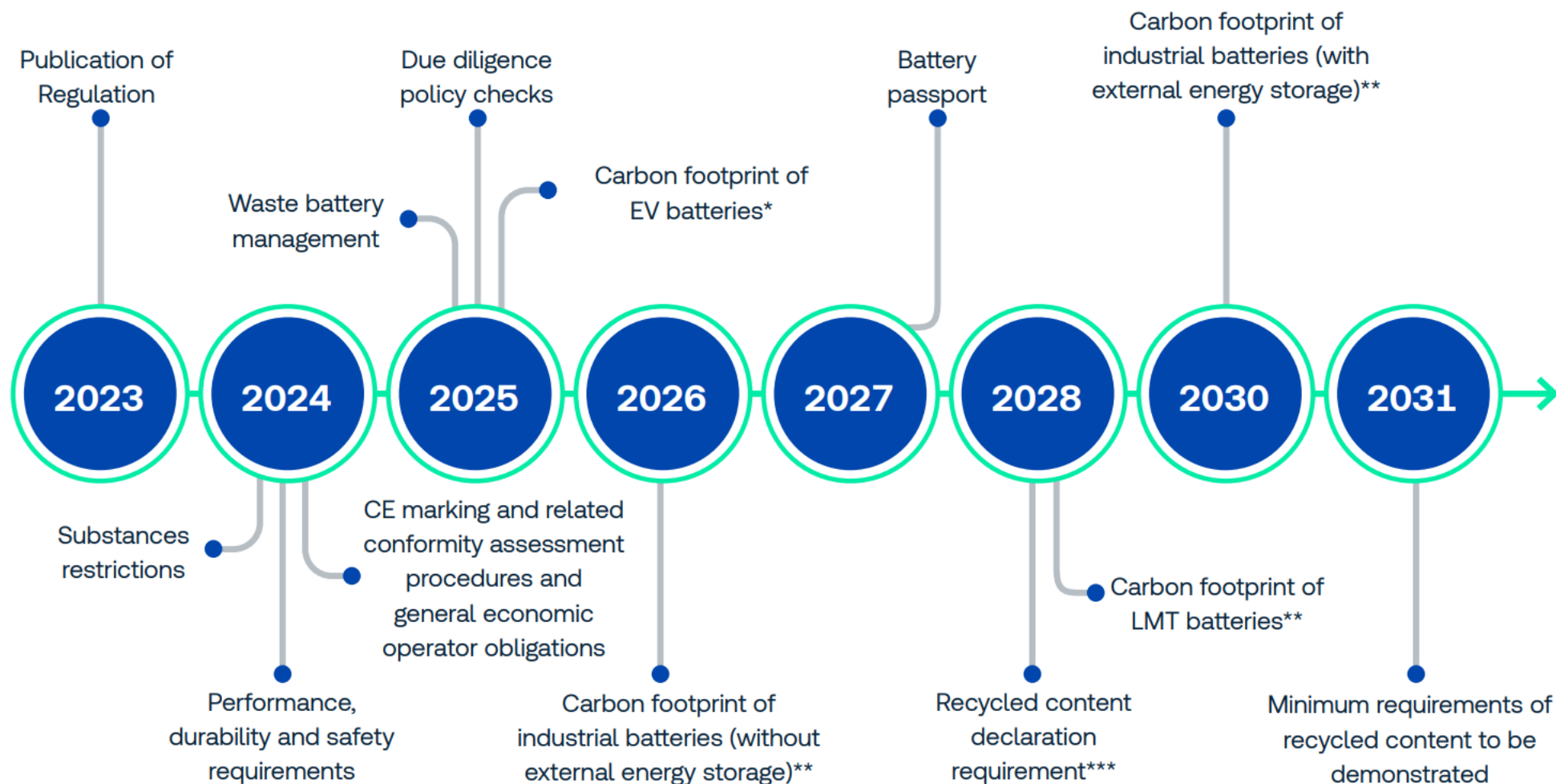
**Add value.
Inspire trust.**

EU Battery Regulation

- Battery **directive** 2006/66/EC
- The new EU Battery Regulation: **entered into force** on 18 August 2023
- **First set of specific requirements** applied in practice from **18 February 2024**
- **Further adjustments** by secondary legislation (**delegated/implementing acts**)
- The EU Battery Regulation will **replace** the current Battery Directive 2006/66/EC
- Regulation applies **automatically** and **uniformly** across the EU



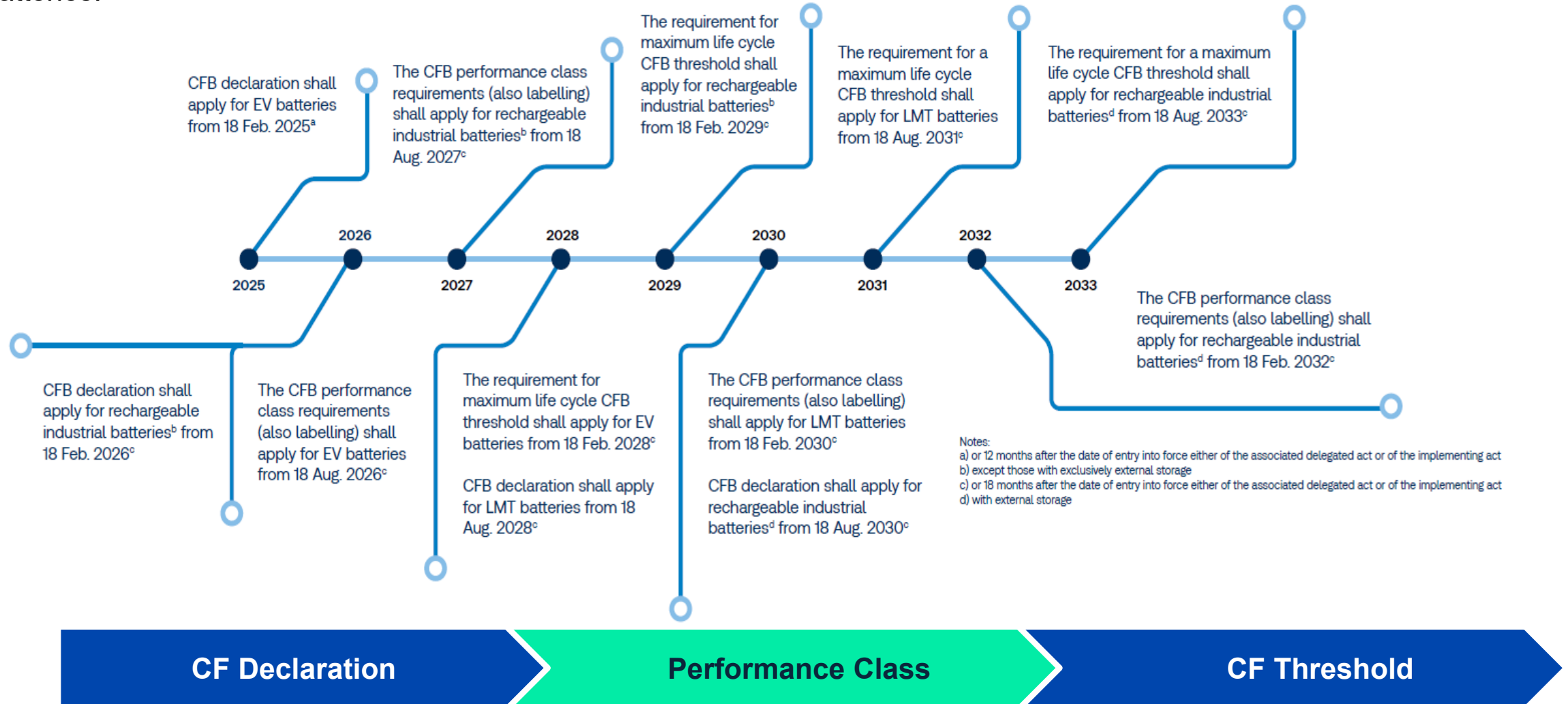
EU Battery Regulation: Timeline



Article 7 – Carbon Footprint (CF)



This article applies specifically to electric vehicle (**EV**) batteries, **industrial** batteries, and light means of transport (**LMT**) batteries.



Article 7: Challenges



Delegated Act(s)-Implementing Act(s)				
EV batteries	➡	DA for Carbon footprint	DA for Performance class	DA for maximum life cycle CFB
Rechargeable industrial batteries except those with exclusively external storage	➡	DA for Carbon footprint	DA for Performance class	DA for maximum life cycle CFB
LMT batteries	➡	DA for Carbon footprint	DA for Performance class	DA for maximum life cycle CFB
Rechargeable industrial batteries with external storage	➡	DA for Carbon footprint	DA for Performance class	DA for maximum life cycle CFB

Delay in the publication of some Delegated Acts

Article 7: Challenges

Methodological uncertainties:

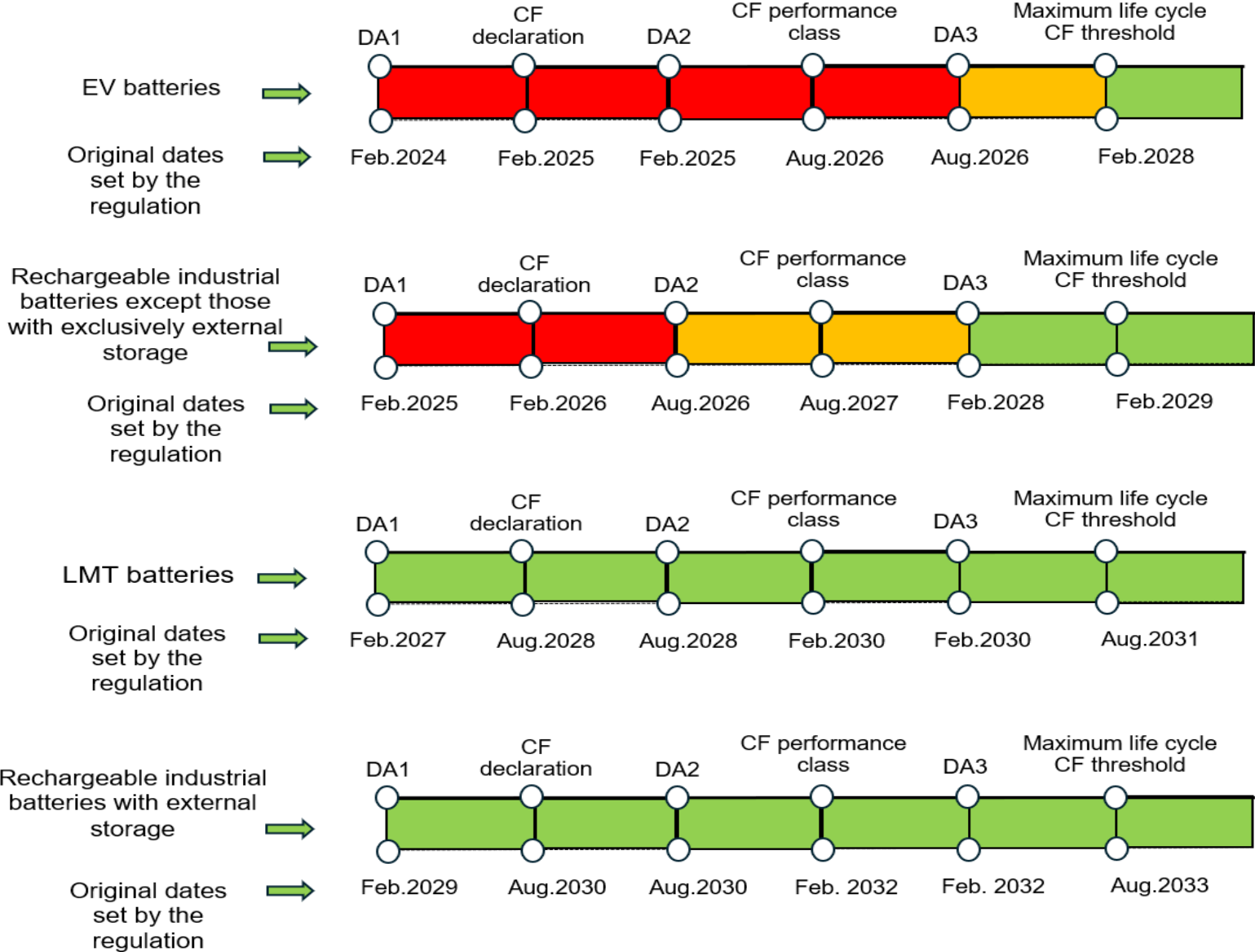
- Unclear rules for **system boundaries** and **emission allocation**
- Ambiguity in **data** quality, ownership, and availability
- Lack of detail on **responsibilities** for data collection and reporting
- Vague **verification rules** with no operational guidance



Unintended Consequences



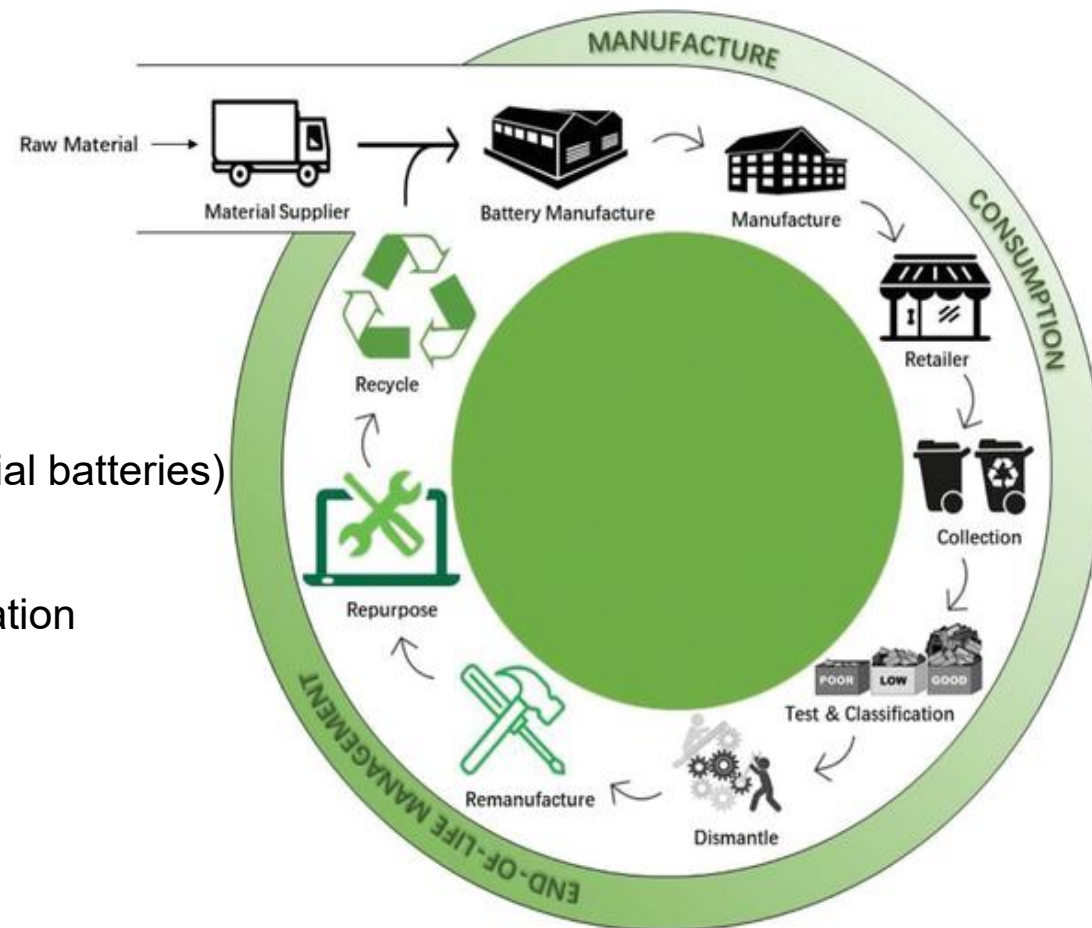
Immediate Consequences:



Unintended Consequences

Main Consequences: **Impacts on the battery supply and value chain**

- **Legal uncertainty** for OEMs, battery suppliers, and verifiers
- **Disruption** in supply chain planning and contract commitments
- **Slowed regulatory alignment** for other battery types (e.g., industrial batteries)
- **Loss of momentum** in EU climate and industrial policy implementation
- Risk of **inconsistent carbon footprint results** across companies



Unintended Consequences

Other Consequences: Impacts on the research community

Compliance Doubt



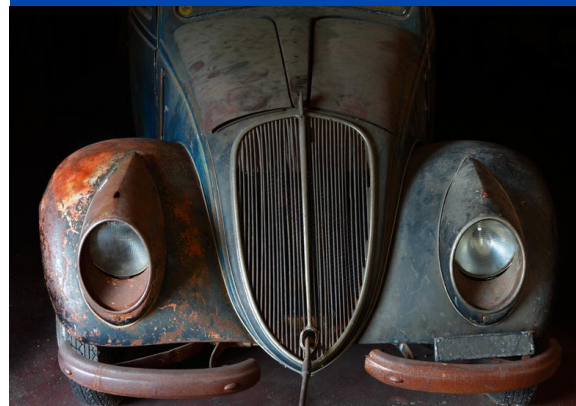
- Uncertainty about whether current research methods align with future regulatory requirements

Design Challenge



- Difficulty in designing battery technologies that are guaranteed to be compliant

Misalignment



- Risk of research outputs being rendered obsolete or misaligned once the Delegated Act is finalised

Innovation Slowdown



- Slowed development of commercially viable and regulation-ready battery innovations

Timely Publication



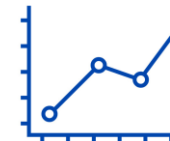
- Avoid further delays
- Publish the DA for CF declaration of EVs as soon as possible
- Publish the DA for other requirements on time

Resolve Ambiguities



- Clarify ambiguities and align with industry realities, e.g.
 - definition of the “main product production stage”
 - clarification of verification rules and alignment of audit requirements with industry realities
 - less complicated LCA rules that align with industry norms





Review data requirements



- Define shared data responsibilities across the supply chain
- Ensure Carbon Footprint Datastock is high-quality and accessible
- Clarify data quality, ownership, and availability

Reference: Rajaeifar MA, Müller DP, Hanton M, Heidrich O. **The EU Battery Carbon Footprint Rules Need Urgent Attention.** *Nature Energy*, August 2025.

How TÜV SÜD supports the automotive industry to get ready for the EU Battery Regulation Art. 7

Advisory	Gap assessment	Verification (ISO)	Ver./Val. Notified body
<p>Guidance towards achieving readiness for Battery Regulation Art. 7 “Carbon Footprint”</p> <ul style="list-style-type: none">• Trainings• Technical meetings• Data gathering support• PCF calculation support 	<ul style="list-style-type: none">• Individual assessment based on clients' needs• On-site audits possible• Focus on methodology and calculation rules• Standard gap assessment• Top-down approach in several iterations• Deviation report 	<ul style="list-style-type: none">• Verification based on ISO 14064-3• All currently released requirements from Battery Regulation Art. 7 and Delegated regulation drafts• Close to the final requirements and audit procedure• Advertisable verification statement 	<ul style="list-style-type: none">• Verification and validation based on the most recently released Delegated Acts.• Fulfilling all regulatory requirements.• Advertisable Notified Body statement 

End-to-end Technical Verification Services

TÜV SÜD's EU Battery Regulation service portfolio



Customer's journey to success

STEP 1: Gain understanding

STEP 2: Preparation/Assessment

STEP 3: Planning/Implementation

STEP 4: Declaration/Certification



1. Get an introduction to the legislation by your trusted partner TÜV SÜD.
2. Clarify any questions that arise during the introduction with our experts.
3. Interpret the regulatory requirements from your point of view.

1. Clarify your interpretation of the EU Battery Regulation with our expert team.
2. Discuss all the details regarding the initial assessment to check your individual EU Battery Regulation readiness status.
3. Execute the initial assessment with our expert team.

1. Create a detailed roadmap with review loops and milestones to become EU Battery Regulation ready in collaboration with our experts.
2. Benefit from our modular service offerings, tailored to your needs to achieve EU Battery Regulation readiness
3. Our support on your journey to success could include, for instance, the following services:
 - I. CE marking requirements
 - II. All CE marking requirements applicable to your battery regardless the timeline
 - III. individual services such as CFP verification

1. Reach your goal of regulatory compliance on time for self-declarations or Notified Body-assessed requirements
2. Stay up-to-date on upcoming secondary legislation.
3. Benefit from reduced effort in continuous re-compliance checks

Thank you

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