EUROBAT
ASSOCIATION OF EUROPEAN AUTOMOTIVE AND INDUSTRIAL BATTERY MANUFACTURERS

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Roadmap pre-launch event - 1 June 2026 – Q&A session

QUESTIONS DURING Q&A

Towards Conrad Szczuka / JRC – EU Policy & Standards

Q1. In your opinion what is the impact of standards in the implementation of the Batteries Regulation and what is the role of JRC?"

Standards are a key part of the overall picture. While standards have traditionally been developed at the international level, the European Union is now encouraging industry to actively participate in the National Standardization Committees in order to bring the work at European Level. This provides companies with the opportunity to contribute their technological expertise and work with the standardization community to develop standards that support the objectives of the European Commission.

Beyond the technical dimension, there is also an important legal aspect. The European Commission has requested the development of standards under Mandate M/579 because many of these are intended to become harmonized standards. Harmonized standards provide a presumption of conformity, meaning that compliance with the relevant standard is generally considered sufficient to demonstrate conformity with the applicable EU legislation. This represents a significant opportunity for industry to facilitate market access for its technologies.

The Joint Research Centre (JRC) is seeking evidence-based knowledge to support EU policymaking. One of the keyways it gathers this information is through the standardization bodies, where it conducts research and engages with industry stakeholders to develop a coherent technical framework that policymakers can rely on. In this context, Conrad referred to the overview of the relevant standardization groups presented earlier in his slides.

Q2. What are your expectations of standards for the implementation of the different Battery Regulation topics? Do you see gaps at the level of the standardization bodies.

Their is a certain lack in industry involvement indeed. The picture is very different for each technology. Lithium-ion technologies being most represented, however, for niche applications it is also difficult to find the experts to work at European level. So for sure there are gaps. JRC hopes to work in the future together with industry to close such gaps. JRC asked the question if the industry fully understand the power industry has been given and what impact they can have via harmonized standards under M/579.

Towards Bernhard Riegel / EUROBAT - Technology & Market Trends

Q1: Will lithium remain dominant?
Yes, lithium will clearly dominate in the medium term up to 2035, but other technologies will grow in parallel, for example we expect the sodium technologies will grow substantially to

address the need in specific applications. There are even predictions that the in China the lithium market by 2050 might be replaced for 50% by sodium, so the answer is very nuanced.

Q2: How relevant is sodium-ion?
The European Industry is aware of the potentials of this technology. Sodium-ion is the first new technology entering the market at scale, particularly in stationary storage and selected mobility segments, with strong future potential. It will compete both with Lithium, due to sustainability aspects, and with lead-based, such as for SLI and niche markets were highest energy density is not needed. It may be an opportunity for Europe to catch up in time with this technology

Towards Nadia Acerbi / EUROBAT - Drivers for Innovation & Applicatons

Q1: What are the drivers for battery innovation in Defence application?
Military sector, with its technological advances, increased spending and growing demand, will create a massive opportunity for battery innovation. The fastest growing markets relates to portable systems and communications, unmanned systems, and propulsion/platform power and back-power for operational continuity. In terms of applications, the market is very diversified so that will also trigger the use of different technologies and sizes of batteries.

Q2: How tools such as the Battery Booster Strategy could support the industry?
The Battery Booster Strategy, adopted by the European Commission in December 2026, as part of a broader European automotive and industrial policy package, will support the European battery production to help reaching commercial scale, by funding industrialization and ramp-up phases and sustaining demand. This will provide opportunities for innovation along the battery value chain and at manufacturing processes level.

Towards Franz Geyer / BMW – Power Train, Battery & Chargers

Q1: Why do we need a diverse range of battery technologies in the future from the automotive perspective under consideration of the different applications
There are different options because different requirements, which are the drivers to make a choice among the different technologies, whether it is energy density, costs or safety. Regarding the different geological spread, certain regions may force more towards LFP and sodium, while Europe is more driven by range anxiety and fast charging times, which is then more NMC based lithium batteries.
With regards to SLI batteries, it is driven on requirements that need to be fitted to your application, reason why we need all technologies.

Q2: What are the requirements of European automotive producers, considering the circular economy requirements in the automotive sector
The requirements will be set by the regulatory framework that is coming. Recycled content and local content suppliers shares will be part of that, which we will take into account when we are developing our products to be compliant as a premium OEM, in case there is not enough material, we would like to extend this framework. The legislative framework should not be a

burden of idealism for industry but to be developed to keep the competitiveness high of the European producers.

Towards Sarah Scharfen / INTILION – Stationary Energy System Integrator

Q1: What are the most common bottlenecks for High Voltage BESS projects today?
The biggest bottlenecks are permitting and grid access. Environmental and building permits can take 6–24 months depending on jurisdiction. Also access is also difficult at the moment as grid-connection capacity is often constrained and subject to detailed grid impact studies. These factors frequently extend timelines and add carrying costs.

QUESTIONS remaining in the Q&A chat box which were not tackled during the session

Q1: What is the role of Europe compared to Asia?
Europe must strengthen its own value chains – especially in raw materials, manufacturing and recycling – to reduce dependencies and remain competitive.

Q2l: Can you tell us a bit more about the current status on the EU Regulation about the battery storage (battery packages/ lose batteries/ batteries in bulk). Where to find the building specs which will comply with the future EU Regulation?
The first thing to clarify is that there are **two different regulatory tracks** that are often mixed:

1. **EU Battery Regulation (EU) 2023/1542**: governs batteries as products (manufacture, placing on market, sustainability, labeling, bat. passport, recycling, due diligence, etc.).
2. **Fire safety and building requirements for battery storag:** governs *where and how batteries may be stored*. This is **not yet harmonized at EU level**. It remains largely regulated through national building codes, fire regulations, insurance requirements, and European standards under development.

This distinction is important because many people expect the Battery Regulation to introduce warehouse or building specifications—it does not.
The Battery Regulation (EU) 2023/1542 introduces requirements such as:

- Sustainability requirements
- Carbon footprint declarations
- Battery passports (industrial batteries >2 kWh and EV batteries)
- Due diligence for raw materials
- Collection and recycling targets
- CE conformity
- Performance and durability requirements
- Digital labeling and QR codes

These requirements are being introduced gradually between 2024 and 2027 (and beyond).
However, the Regulation does not specify how many pallets of lithium batteries may be stored in a warehouse, required fire compartment sizes, separation distances, or building construction.
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Q3: As Na-Ion is an emerging battery technology with the main components carbon and sodium salt which are easy available everywhere: are there any activities maybe supported by EUROBAT to generate such products in Europe ?
Sodium-ion is indeed a promising emerging battery technology, particularly because it relies on widely available materials such as sodium salts and carbon, which can help diversify the battery supply chain. To seek for Battery-related EU funding opportunities (all technologies), we invite you to take a look in the presentation slides of Federico Spadaro/CLERENS, who presented his findings during the Joint Cluster Session at the EUROBAT Annual Event in Brussels on 17 June, the slide deck can be consulted via the link HERE (slides 46 to 68).
More information on initiatives supporting battery manufacturing in Europe, including opportunities relevant to emerging technologies such as sodium-ion batteries, we encourage you to refer to the 'European Commission's Battery Booster Facility', which aims to strengthen battery production capacity in Europe. You can find more information here: European Commission Battery Booster Facility.

Q4i: I didn't see anything about flow batteries. Is there something specific related to those batteries in the roadmap and regulation?
Although EUROBAT is the association of all the mainstream battery technologies, the roadmap also covers the most promising high-TRL emerging battery technologies, under which we identifies Redox Flow Battery systems for large stationary applications like ESS batteries. Although we do not have internal experts within EUROBAT, the technology is covered to a certain extend in the roadmap.

Q5: Thanks a lot for the overview : For utility grid-scale and the use of flow batteries : Which flow chemistry is right now the best suited for this application ?
Vanadium Redox Flow are most mature and in small scale production with good results in ESS applications. The Battery systems can demonstrate excellent efficiency and good lifetime results. A drawback of the Vanadium Redox flow technology is that Vanadium has been categorized as a critical raw material, Despite the reliance on vanadium, ongoing efforts focuses on alternative chemistries, improved system design and material circularity.
For more information EUROBAT refers to the Flow Batteries Europe Association via HERE

Q6: How can Storage developers reduce risk around grid connections and approvals?
Start early with the DSO/TSO, run pre-feasibility grid studies, and choose sites near substations or lines with available capacity. Standardize documentation, use proven technology packages, and sequence permits in parallel where possible. Clear stakeholder mapping and regular coordination with authorities and landowners helps prevent late-stage surprises

Q7: Can mature battery technologies better leverage funding opportunities? Many European funds are only open to emerging technologies but there is R&D&I happening in the mature technologies too.
We fully agree with your statement that a lot of R&D&I is happening in the mainstream technologies too. The drivers for innovation in the mainstream technologies are:

- Further electrifying mobility, energy and other sectors

- Advancing sustainability and the circular economy
- Leveraging opportunities from digitalization and the introduction of the Battery Passport
- Strengthening Europe's resilience and strategic independence

Q8: Will recycled material content in Lithium (& Sodium) products change in the next 5 years
es, recycled material content in both lithium-ion and, in the future, sodium-ion batteries is expected to increase over the next five years.
This is driven primarily by the implementation of the EU Battery Regulation (EU) 2023/1542, which introduces mandatory targets for recycled content in new industrial, electric vehicle, and light means of transport batteries.
As end-of-life batteries become increasingly available for recycling and recycling technologies continue to mature, manufacturers are expected to incorporate higher levels of secondary raw materials into new batteries.
For sodium-ion batteries specifically, the market is still at an early stage, so recycled content is currently limited. However, as production volumes grow and dedicated recycling streams develop, recycled material content is also expected to increase over time.
The exact pace will depend on the availability of recyclable feedstock, the scaling of recycling capacity, technological developments, and market demand. Overall, the trend across Europe is towards greater circularity and increased use of recycled materials in battery production.

Q9: Why do you not believe advanced Pb will fit into residence or C&I apps
We expect the lead-based battery share in the European Battery Storage market Behind-the-Meter (BTM) to remain very small, but we keep the technology in the loop as today lead is fully recyclable and has the economies of scale in place due to its larger presence in the Global technology mix in regions with weak grids and in rural area, relevant for backup-oriented systems. Inevitably, there is a trade-off between technology capability and cost, which is tied to the market conditions for cost / kWh of grid supplied energy. Further advancements in energy density and cycle performance, lead-based solutions could become more attractive in future indeed.

Q10: Many OEMs and cell manufacturers are planning to operate their future battery factories based on LFP chemistry. In your opinion, can this transition be successfully achieved despite the current limited number of LFP producers in Europe?
The transition towards LFP chemistry is certainly achievable, but it will require continued investment across the European battery value chain.
LFP batteries are becoming increasingly attractive for many applications due to their safety, long cycle life, and lower reliance on critical raw materials such as nickel and cobalt. While it is true that Europe currently has a limited number of large-scale LFP cathode and cell producers, several projects are underway to establish local production capacity.
Achieving this transition will depend not only on expanding cell manufacturing but also on developing a competitive European supply chain for active materials, refining, recycling, and precursor production. In the short term, Europe is likely to continue relying on imports for part of its LFP supply. However, the combination of industrial investment, innovation, and supportive EU policies is expected to strengthen domestic capabilities over the coming years.

Ultimately, the success of the transition will depend on Europe's ability to build a resilient and competitive battery ecosystem across multiple chemistries, including LFP, rather than relying on a single technology or source of supply.

Q11: Thanks to acknowledge the potential of bi-pole tech which complements other tech improvements. We recommend EUROBAT to consider highlighting the first major global bi-pole use, that being Toyota's NMH use in >500k hybrid vehicles each year. Also there has been a zinc based solution from EOS, and more recently SiliconJoule from my company.
The request will be considered within the TF Innovation

Q12: On Pb's role in stationary residential and C&I, the %'s for the world seem very low when you consider just India and Africa, where today the markets for that sector are larger than Europe in demand in the sector, and those markets are dominant Pb (>90%) and adapting to AGM and better solutions, so to go to 3%+ for global seems to reflect the European bias of mostly Li.

We follow the reasoning and agree that the 3–8% figure for lead appears low. However, this value originates from the KPMG Study Report of September 2025, commissioned by ILA/CBI, and we agreed to use the lead-related figures from this report consistently throughout the roadmap. The figure has also been reconfirmed been CBI. Therefore, at this stage, we have no alternative but to retain it.

Q13: CAGR worldmarket growth of 50%+ between 2030 and 2035 is most likely a mistake as it should be max in the 20% range for a cagr out to 2035.

You are absolutely right to flag the issue. Unfortunately, it is an error. The absolute figures in the report remain unchanged; however, the CAGR for 2025–2030 should be **16%**, and the CAGR for 2030–2035 should be **9%** (instead of +50%). We will correct the figure accordingly in the document. Thank you for bringing this to our attention.