

# BATTERY BACYCLING SUMMIT EUROPE

SCALING CIRCULARITY, SECURING SUPPLY: THE FUTURE OF EV BATTERY RECYCLING IN EUROPE



40+ SPEAKERS



350+ ATTENDEES



TECHNICAL CONTENT



EXPO SHOWCASE

WHERE POLICY, TECHNOLOGY, AND INDUSTRY CONVERGE TO BUILD A CLOSED-LOOP BATTERY FUTURE

EUROPE'S CRITICAL FORUM FOR BATTERY CIRCULARITY, COMPLIANCE & COMMERCIAL VIABILITY

## FEATURING SENIOR-LEVEL PARTICIPANTS FROM:

OEMs | Cell & Pack Manufacturers | Recyclers Regulators | Raw Material Suppliers | Circular Economy Leaders

### **NEW FOR 2025**

- Lessons from China's Battery Recycling Leadership
- Harnessing Data Analytics to Optimize Battery Recovery and Process Efficiency
- Using AI to Forecast Battery Lifecycles and Future Recycling Volumes
- Battery Passport & Digital Twin Integration
- Next-Gen Hydromet/Direct Recycling Tech
- Combining Pyrometallurgy and Hydrometallurgy for High-Efficiency Material Extraction









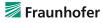












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# DRIVING CIRCULARITY, INNOVATION & MARKET READINESS IN EUROPE'S BATTERY ECOSYSTEM

Join us in Stuttgart, September 25th, for this year's definitive event focused on scaling, optimizing, and commercializing electric vehicle battery recycling across Europe. With new EU regulations, rising end-of-life battery volumes, and a growing demand for critical materials, the European market faces both unprecedented challenges and extraordinary opportunities.

# Powering Circularity, Profitability & Independence in Europe's Battery Ecosystem

Step into the heart of Europe's battery recycling transformation—where breakthrough technologies, strategic partnerships, and policy momentum are reshaping how we reclaim critical materials and close the loop. Join the industry's leading recyclers, OEMs, policymakers, and innovators as they unlock scalable, sustainable solutions for the electric mobility revolution.

From direct recycling and green hydrometallurgy to battery passports, second-life repurposing, and modular plants—this is where Europe's circular battery economy becomes reality.

Gain the insights, tools, and connections to scale capacity, meet EU regulatory targets, and compete globally. Whether you're investing in new infrastructure, optimizing recovery processes, or navigating complex feedstock flows, EV Battery Recycling Summit EUROPE delivers the intelligence and partnerships to move from pilot to industrial impact.

This is more than a conference—it's where circularity meets competitiveness.

# Define the Future of Circular Battery Innovation

Our agenda is built around the real-world needs of battery recyclers, OEMs, policymakers, and materials experts driving Europe's transition to a circular battery economy. We're inviting technical leaders, solution developers, and sustainability pioneers to share practical innovations, industrial breakthroughs, and next-generation strategies.

Are you advancing safe and scalable battery recycling, green hydrometallurgy, automated disassembly, or regulatory compliance? This is your opportunity to present alongside the industry's foremost experts and help shape the solutions that will define Europe's battery value chain.

The EV Battery Recycling Summit EUROPE offers a platform to showcase your technology, insights, and impact to a senior audience of recyclers, engineers, regulators, and circularity strategists.

Join a community of thought leaders accelerating battery innovation, material recovery, and sustainable supply chain design.

Submit your proposal today and help lead the charge toward a more resilient, circular battery future.

### Scaling Circularity, Securing Supply: The Future of EV Battery Recycling in Europe

The EV Battery Recycling Summit EUROPE agenda is engineered to address the critical technical, economic, and regulatory challenges shaping Europe's battery circular economy. Co-developed with industry leaders—from recyclers and OEMs to policymakers and technology pioneers—the program delivers actionable insights to scale capacity, close material loops, and compete globally.

Dive into solution-focused sessions on advanced recovery technologies, feedstock security, cost optimization, digital traceability, and compliance with EU Battery Regulation. Explore cutting-edge innovations in direct recycling, hybrid pyro-hydro systems, green hydrometallurgy, and second-life battery deployment—supported by real-world case studies and industrial-scale pilots.

Designed for battery value chain decision-makers, technical leaders, and circular economy strategists, this agenda offers the tools, partnerships, and strategic intelligence you need to future-proof your business, meet regulatory targets, and secure Europe's role in the global battery race.

# Power the Future of Circular Battery Recovery

Position your company at the forefront of Europe's most focused event dedicated to EV battery recycling, material recovery, and circular supply chains. The EV Battery Recycling Summit EUROPE brings together decision-makers from OEMs, recyclers, policymakers, battery producers, and technology innovators who are driving investment and industrialization in next-generation recycling systems.

Whether you're delivering advanced sorting solutions, green hydrometallurgy technologies, robotic disassembly, digital traceability tools, or scalable modular plants—this is your opportunity to demonstrate your impact where it counts: live, in front of the stakeholders shaping Europe's battery ecosystem.

Showcase your solutions, forge strategic partnerships, and gain direct access to senior-level buyers and technical decision-makers building the infrastructure for a circular battery economy.

Be part of the technology showcase accelerating clean energy, critical raw material recovery, and closed-loop battery design.

The **EV Battery Recycling Summit EUROPE** brings together the entire battery value chain—from OEMs and cell manufacturers to recyclers, regulators, researchers, and technology developers—to explore technical breakthroughs, business model innovation, and regulatory alignment driving the next phase of the battery circular economy.

### This high-impact, solutions-driven event will feature:

- 40+ expert-led sessions covering process innovation, automation, hydrometallurgy, direct recycling, modular infrastructure, second-life systems, battery passports, Al, and more...
- First-hand case studies from Europe's most advanced recycling facilities and pilot projects
- Panels on policy, regulation, cost competitiveness, and industrial scaling
- Unmissable networking with senior decision-makers, innovators, and investors across the battery ecosystem

### **Key Topics Include:**

- Scaling recycling capacity: from pilot lines to industrial plants
- OEM-led circularity and closed-loop partnerships
- Design for disassembly and improving recyclability

- Solving collection, transport, and feedstock availability challenges
- Innovations in hydrometallurgy, direct recycling, and hybrid recovery systems
- Data analytics, AI, and robotics to optimize material yield and efficiency
- Regulatory compliance, EPR schemes, and digital traceability tools
- Cost reduction, profitability, and investment strategies

### Who Should Attend?

- EV and battery OEMs
- Cell and pack manufacturers
- Battery recyclers and material recovery firms
- Chemical/process engineers and technology developers
- Energy storage integrators and second-life solution providers
- Investors, policymakers, and sustainability professionals

Whether you're looking to de-risk recycling operations, explore new partnerships, or stay ahead of market-shaping legislation, **EV Battery Recycling Summit EUROPE** is where the circular future of batteries comes to life.

# **AGENDA 2025**



### 07:30 | Morning Registration

### 08:00 | Chair's Opening Remarks

### **Building a Resilient and Circular Battery Ecosystem**

### Christopher Hug, Founder, NantoSuelta\* **Circular Economy Consulting**

To date, economically viable recycling of traction batteries remains a challenge in Europe. Key cost drivers include high transportation expenses, the capital intensity of hydrometallurgical facilities, and the energy demands of thermal treatment processes. Lasting solutions require a shift in perspective: from optimizing isolated steps to designing an integrated system that aligns stakeholders and processes across the entire battery value chain.

Europe's ambition to lead in battery innovation and sustainability is being tested by complex economic and logistical realities. Today, the recycling of traction batteries remains economically strainedburdened by high transport costs, energy-intensive processes, and the capital demands of large-scale hydrometallurgy.

But solving these challenges isn't just a technical question-it's a systems challenge

Christopher will open the summit with a call to rethink how we design, collaborate, and scale. He will outline why isolated optimizations-whether in recycling technology or regulation—are not enough. Instead, we must reimagine the battery value chain as a connected, circular ecosystem: one that builds in resilience, local value creation, and material recapture from the start.

The opening remarks set the stage for two days of dialogue, innovation, and cross-sector actionaimed at accelerating a battery ecosystem that is not only circular, but truly built to last.

### 08:20



### **EV Battery Recycling in Europe: Market Dynamics, Capacity Outlook** & Competitive Landscape

### Jie (Jessie) Xu, Senior Research Analyst, Benchmark Minerals Intelligence

A comprehensive overview of installed and planned recycling capacity across the region, breaking down trends in feedstock availability, technology adoption, and market positioning.

Gain data-driven insight into the volumes of manufacturing scrap vs. end-of-life batteries, the shifting economics of recycled materials, and how policy and regulation are influencing investment. innovation, and strategic partnerships.

Map the current and future capacity of recycling facilities across Europe.

- Compare feedstock streams: process scrap from gigafactories vs. retired batteries from EVs.
- Evaluate the economic and technical trade-offs of mechanical, pyro-, and hydrometallurgical processes
- Understand how EU regulations are driving investment and shaping the recycling business
- Gain insight into the competitive landscape-key players, partnerships, and technology positioning.
- Analyze revenue models, material pricing trends, and where investor interest is flowing.

### 08:40

Co cylib

Scaling for Impact: From Pilot Lines to **Industrial-Scale EV Battery Recycling** by 2030

### Speaker tbc. Cylib

As battery retirement rates surge, Europe's recycling infrastructure faces an inflection point. Most current facilities remain pilot-scale or semiindustrial, unable to process the expected flood of end-of-life batteries projected for the 2030s. Explores how industry leaders are bridging the gap between today's limited capacity and tomorrow's volume demands through process optimization, modular plant design, and data-driven planning.

- How to scale up safely, economically, and sustainably-without compromising recovery rates or regulatory compliance.
- **Discussion Points:**
- How to design recycling plants that can scale modularly without full redesign.
- Understand how simulation, data analytics, and battery lifecycle forecasting drive capacity
- Explore industrial partnerships between OEMs, recyclers, and infrastructure providers to finance and accelerate expansion.
- Examine how automation and flexible process lines can future-proof facilities for evolving chemistries.
- Review case studies from Europe's most advanced battery recycling scale-up projects.

### 09:00



### Competing with Scale, Collaborating with Strategy: Lessons from China's **Battery Recycling Leadership**

Robert Burrell, PhD, Research Manager, Project

China boasts unmatched capacity, advanced hydrometallurgical processes, and seamless vertical integration from raw materials to cathode production. For Europe to remain competitive and secure its own circular battery ecosystem, it must strike a balance between building local scale and selectively collaborating with Chinese players. This session explores how European OEMs, recyclers, and material suppliers can learn from China's industrial model while preserving strategic autonomy. Topics include technology benchmarking, licensing vs proprietary IP, supply chain integration, and how Europe can shape a regulatory and investment environment that supports domestic innovation and global competitiveness.

- Benchmark China's recycling technologies against emerging European processes in hydrometallurgy and direct recycling.
- Understand how China scaled capacity and throughput efficiently-and how Europe can avoid underutilization.
- Explore strategic options: Should Europe license mature Chinese tech or develop its own IP base?
- · Identify opportunities for joint ventures, feedstock supply agreements, and collaboration on circular value chains.
- · Assess how China's state-backed investment strategies and export controls affect Europe's battery ambitions.
- Learn how European recyclers can differentiate through ESG, traceability, and compliance with the EU Battery Regulation.

### 09:20



### **Design for Disassembly: Engineering Batteries for a Circular Future**

### Julius Müller, Strategy Lead, CIRCU LI-ION

The gap between battery performance optimization and end-of-life recyclability is a major barrier to circularity. Current cell-to-pack and structural battery designs, while advantageous for weight

and range, complicate safe and cost-effective disassembly, material separation, and recycling. This session addresses how OEMs, battery designers, and recyclers can rethink battery architecture for easier end-of-life processing-without compromising performance.

Actionable design-for-disassembly strategies, including reversible adhesives, standardized fasteners, modular packs, and material labeling—all while maintaining structural integrity and thermal performance.

- Examine how battery architecture affects recyclability and total lifecycle cost.
- Discover new technologies enabling nondestructive pack opening and component separation.
- Learn how modular design, labeling systems, and common interface standards can accelerate disassembly.
- Understand the role of early collaboration between OEMs, battery designers, and recyclers in design specification.
- Explore best practices for balancing energy density, safety, and circularity in next-gen pack

### 09:40



### **Extended Producer Responsibility &** Take-Back Systems: Building Scalable, **Cost-Efficient Collection Networks** for End-of-Life EV Batteries

Matteo Bonanno, Supplier Relationship Manager, European Recycling Platform (Landbell Group)

Extended Producer Responsibility (EPR) frameworks across Europe and globally are demanding more from OEMs and battery manufacturers. From regulatory mandates to environmental accountability, producers must now implement efficient, auditable, and scalable take-back systems-despite fragmented infrastructure and rising logistics costs.

This session will share real-world insights from the front lines of designing global battery take-back programs, focusing on how to meet compliance while optimizing reverse logistics. Drawing on field experience in cross-border collection, transport safety, partner coordination, and cost modeling, the presentation will offer practical strategies for building a robust EV battery collection supply chain that aligns with both regulatory expectations and business economics.

How to build or improve a compliant take-back infrastructure tailored to EV batteries

Ways to reduce logistics and collection costs while improving safety and traceability

Strategies to collaborate effectively with recyclers, 3PLs, and collection partners

How digital tools can increase visibility and reduce administrative complexity

Actionable ideas to scale take-back operations profitably ahead of the volume surge expected post-2030.

### 10:00



### From Black Mass to Battery-Grade: Closing the Loop with Recovered **Materials**

Thomas Bibienne, Battery Materials and Recycling Lead, Hatch Manufacturing

Shifting from basic metal recovery to the production of high-purity, battery-grade materials that can re-enter the supply chain. This session examines

the technical, chemical, and industrial challenges involved in refining black mass into precursor cathode active materials (pCAM) and cathode active materials (CAM) suitable for next-generation lithium-ion batteries.

Insights into material separation techniques, impurity control, and chemical purification processes that are enabling the shift from commodity-grade outputs to closed-loop, circular material streams. Special attention will be given to the integration of hydrometallurgical and thermal processing pathways, the development of industrial partnerships between recyclers and cathode manufacturers, and the performance validation of recycled materials in real battery cells.

- Processing black mass into battery-grade precursors (pCAM and CAM)
- Hydrometallurgical and thermal purification routes: pros, cons, and combinations
- Controlling impurities to meet OEM performance standards
- Quality assurance, traceability, and analytical benchmarks for recycled materials
- Techno-economic challenges in scaling production from lab to gigafactory scale
- Strategic partnerships between recyclers, cell manufacturers, and OEMs
- The role of recycled materials in meeting EU circularity and ESG targets

### 10:20



### Direct Recycling: Bridging the Gap Between Innovation and Industrial Application

Marilena Mancini, Team Leader, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW)

Direct recycling holds immense promise for preserving the structure and value of cathode materials, offering a lower-energy, lower-emission alternative to traditional pyrometallurgical and hydrometallurgical processes. Yet despite its potential, direct recycling remains largely confined to lab-scale projects due to unresolved technical challenges-including the ability to recover active materials without degrading performance or purity. This session presents solutions that are pushing direct recycling toward commercial readiness. Topics include validation of recycled materials in electrodes and cells with commercially valid standards, cathode relithiation advancements, graphite recycling, open challenges and opportunities for industrialization pathways.

- Explore recent breakthroughs in healing cathode and anode functionalities and chemistry during recycling.
- Understand the engineering requirements for scaling direct recycling from pilot to industrial plants.
- Review techniques for quality control and postprocessing (e.g., relithiation, purification).
- Learn how solvent-free processes can improve efficiency and scalability.
- Identify secondary Li resources for cathode recycling closed-loop

### 10:40

### Morning Networking Break

### 11:20

Duesenfeld

### Direct Recycling & Electrolyte Recovery: From Pilot Success to OEM Collaboration

**Andrea Mirandola,** Sales Director, **Duesenfeld GmbH** 

A call to action to scale next-gen low-temperature battery recycling solutions.

This session explores how Duesenfeld GmbH's cutting-edge, low-temperature direct recycling process recovers high-value materials—including

electrolyte solvents—in a form suitable for reuse in new cells.

Building on recent R&D breakthroughs and successful pilot-scale validations, Andrea Mirandola will share insights into the technical challenges and solutions involved in recovering and rebalancing complex cathode chemistries and electrolytes. Attendees will gain a transparent view of what works, what doesn't, and why collaboration is critical to bridging the gap between lab-scale success and industrial-scale implementation. This is more than a technical update—it's a strategic call to OEMs, cell manufacturers, and system integrators: let's co-develop the next phase of circular battery recovery. With the foundation proven, the opportunity now lies in joint scaleup efforts that can help the entire industry meet regulatory demands and sustainability goals.

- Advantages of low-temperature direct recycling for material recovery and carbon reduction
- Electrolyte recovery: addressing the complexity of solvents and additives
- Pilot results: material purity, yield, and reuse potential
- Barriers to commercialization and where OEM support is essential
- Outlook on meeting EU recycled content targets through strategic partnerships.

### 11:40

# Recycled Graphite: Closing the Loop in Europe's EV Battery Ecosystem

Robin Hansson, Recycling Manager, Vianode

As Europe moves to enforce minimum recycled content targets for EV batteries, OEMs, recyclers, and material suppliers must work together to industrialize solutions that are both technically and commercially viable. This session will examine how recycled graphite is emerging as a strategic lever for decarbonising the battery value chain and meeting evolving EU regulatory demands.

This session may explore how OEMs, recyclers, and material innovators are overcoming technical, regulatory, and commercial hurdles to make recycled graphite a scalable, high-performance alternative to virgin materials.

- Integrating recycled graphite into commercialscale anode material production
- Vianode's proprietary technologies and CO<sub>2</sub>e reduction strategy
- Collaboration with Fortum and lessons learned in scaling a circular supply chain
- Meeting EU requirements for recycled content and future market outlook.

### 12:00 Deloitte.

# Beyond Battery Passports: Enabling Sovereign Data Sharing Across the EV Lifecycle

**Dhananjay Tamhankar,** Consultant, Product & Systems Engineering, **Deloitte** 

As the EV industry embraces digital product passports, the conversation must move beyond the concept of battery passports to the trust infrastructure that enables them. This session focuses on the compliance frameworks, open standards, and technology stack - such as GAIA-X, IDTA, and International Data Spaces (IDS), that make secure, sovereign data sharing possible across the entire product lifecycle. Rooted in European values of data sovereignty, transparency, and interoperability, the session provides attendees with a clear understanding of how semantic technologies and governance models support regulatory compliance and scalable implementation.

The session concludes with a call to action for stakeholders to actively contribute to shaping and deploying trusted data ecosystems for battery lifecycle transparency.

Key Discussion Points:

• Navigating the Compliance Landscape: Decipher

- emerging regulations mandating secure, standardized battery lifecycle data.
- Leveraging Open Standards for Interoperability:
   Explore how GAIA-X, IDTA, and IDS facilitate trusted and sovereign data exchange.
- Unpacking the Technology Stack: Discover the semantic tools, connectors, and identity management systems powering battery passport infrastructure.
- Fostering Ecosystem Collaboration: Understand the crucial role of collaboration between OEMs, recyclers, technology providers, and policymakers in developing scalable solutions.
- Joining the Movement: Receive practical guidance on implementing data strategies, systems integration, and change management - and become a part of shaping the future of battery passports. Join the movement!

### 12:20

# Rethinking Scale: From Centralized Giants to Decentralized Pyro Micro-Hubs

Lukas Wiszniewski, PhD Researcher

Battery recycling today faces two major challenges: Decentralized accumulation of end-of-life (EoL) lithium-ion batteries, which are typically transported over long distances to large, centralized hydro- or pyrometallurgical plants. This creates significant safety risks, including thermal runaway and fire hazards during storage and transport. Lack of flexible processing technology that can handle mixed battery chemistries in a single waste stream.

Our Solution: Modular Pyro-Micro-Hubs We address these challenges with a containerized, small-scale pyrometallurgical system that safely and efficiently transforms critical battery waste into stable metal alloys-directly at the source. Using targeted pre-treatment steps and a rotary kiln-based reactor, our process drastically reduces transport weight and mitigates safety risks. The resulting alloy-enriched with Ni, Co, Mn, and Cu-is an ideal feedstock for centralized hydrometallurgical refining, cutting both transport and processing costs and improving overall system efficiency. Meanwhile, volatile elements like lithium and phosphorus are evaporated in a controlled environment and recovered locally from the offgas in high purity—overcoming a key limitation of traditional pyrometallurgy. Key features:

- Rotary kiln-based reactor with patented advancements in gas handling and heat integration, enabling a modular, low-CAPEX solution.
- Technology can process mixed chemistries: NMC, LCO, NCA, and LFP can be processed together.
- >95% recovery rates for lithium and phosphorus from off-gas treatment.
- Up to 99% recovery of nickel, cobalt, manganese, and copper.
- Easily scalable, leveraging proven industrial technologies.
- Cross-sector synergy potential for processing phosphorus-rich sewage sludge ashes and higharsenic copper ores alongside black mass.

### 12:40 rexrot

### Intelligent Sorting: Leveraging AI for Automated Battery Identification and Separation

**Dr. Andreas Letsch,** Director Center of Competence Factory Automation Battery, **Bosch Rexroth** 

With the growing diversity of EV battery formats and chemistries entering the recycling stream, manual sorting has become a bottleneck—leading to inefficiencies, safety risks, and contamination. Advanced Al-powered sorting systems now offer a scalable solution, enabling automated identification,

classification, and separation of batteries based on format, chemistry, state-of-health, and manufacturer.

Explore the deployment of machine vision, robotics, and sensor fusion technologies to optimize pretreatment and improve material recovery outcomes. This session will showcase how real-world facilities are integrating these systems into their operations to increase throughput, reduce labor dependency, and safely process mixed battery waste.

- Learn how computer vision and machine learning algorithms are being trained to recognize battery types, sizes, and labels in real time.
- Explore how Al is integrated with robotics and conveyor systems for fully automated sorting and feeding.
- Understand the role of spectroscopy, X-ray, and thermal imaging in chemistry-specific identification.
- Discover how automated systems improve safety by detecting damaged, swollen, or hazardous battery units.
- Review examples of scalable deployments and modular AI solutions being adopted by leading recyclers.

### 13:00

### Safe from Start to Shred: Mitigating Fire and Thermal Runaway Risks in Battery Transport and Processing

The risk of fire, thermal runaway, and hazardous incidents during the collection, storage, and processing of end-of-life EV batteries remains one of the most pressing safety challenges for the recycling industry. With limited visibility into the state-of-health of retired batteries, recyclers often operate with uncertainty—raising operational risks and insurance costs.

Proactively manage and mitigate safety risks across the entire battery recovery chain. From advanced diagnostic tools and fire-resistant packaging to thermal detection, inerting systems, and improved safety protocols, how to safely handle batteries from pickup to processing.

- Discover diagnostic technologies for rapid stateof-health assessment and hazard classification of incoming batteries.
- Learn about new standards and certifications for safe battery packaging, storage, and transport.
- Explore fire detection and suppression innovations within shredding and disassembly facilities.
- Understand how AI and IoT can be used to monitor temperature and voltage anomalies in real-time
- Review regulatory guidance and best practices for safe handling of lithium-ion batteries in transit and on-site.

### 13:40 | Networking Lunch Break

### **13:20** tozero

# Breaking the Cost Barrier: Strategies to Improve Profitability and Competitiveness in Battery Recycling

### Sarah Fleischer, CEO and Co-Founder, tozero

EV battery recycling faces a significant economic hurdle: high operational costs for pre-treatment, logistics, and labor-intensive disassembly, combined with volatile and often lower pricing for recovered materials—especially when competing against low-cost virgin materials from China. For recycling to scale sustainably, the economics must improve across the value chain.

This session explores practical strategies to reduce costs, unlock higher-margin material recovery, and increase financial viability. Topics include automation to reduce labor costs, modular plant designs to reduce CAPEX, offtake agreements to stabilize material pricing, and policy tools to create a

level playing field for recycled content.

- Discover how automation and modularity are lowering operational and capital costs in new recycling facilities.
- Learn how long-term supply contracts and offtake agreements can stabilize revenue streams.
- Explore approaches to maximize the value of recovered materials through quality control and post-processing.
- Understand how European policy and procurement strategies can incentivize the use of recycled content over cheaper imports.
- Review successful business models that combine second-life repurposing with recycling for value optimization.

### 13:40 | Networking Lunch Break

### 14:20

### FORD OTOSAN

### OEM-Led Circularity: Building Closed-Loop Battery Recycling for Cost and Supply Security

**Ali Uğur Tülüoğlu,** Product Sustainability Engineer, **FORD-OTOSAN** 

Major automakers are no longer relying solely on third-party recyclers—instead, they are internalizing circular economy strategies to take control of battery material flows. Companies like Volkswagen, Renault, and Stellantis are investing in in-house recycling capabilities or forming strategic partnerships to develop closed-loop systems that ensure long-term access to critical raw materials while reducing environmental impact and cost volatility.

This session highlights how leading OEMs are designing vertically integrated recycling models, embedding circularity into battery design, and working with recyclers to build dedicated recovery pathways. Attendees will gain actionable insights into how circular strategies enhance supply chain resilience, regulatory compliance, and ESG performance.

- Explore how OEMs are integrating recycling infrastructure directly into their production and battery value chains.
- Learn how closed-loop systems can reduce raw material costs, logistics emissions, and reliance on foreign-sourced virgin materials.
- Understand how OEM-recycler partnerships are structured to balance risk, cost, and innovation.
- Discover how circularity is being embedded in battery design to enable future recovery and reuse.
- Review real-world case studies of OEM-led recycling hubs, pilot plants, and digital traceability platforms.

### 14:40

### **SIEMENS**

### Automation in Action: Scaling Battery Recycling with Robotics and Al-Driven Diagnostics

**Dr. Dominik Budday,** Product Owner, Battery Solutions – Adaptive Recycling, **Siemens** 

Labor-intensive disassembly and manual sorting remain key cost and safety bottlenecks in EV battery recycling. However, recent advances in robotics and Al-driven diagnostics are enabling a new generation of automation solutions—from robotic arms that safely dismantle packs and modules, to intelligent systems that evaluate battery state-of-health and chemistry in real time.

This session demonstrates how automation is transforming the economics, throughput, and safety of battery recycling operations. Industry pioneers will showcase how robotic systems and AI platforms are being deployed in pilot and industrial-scale facilities, reducing labor dependency and improving recovery outcomes.

 Learn how robotics is enabling fast, safe, and repeatable disassembly of complex battery packs

- and cell formats.
- Explore Al-powered diagnostic tools that assess remaining capacity, chemistry, and safety risks pre-disassembly.
- Understand how automation improves plant efficiency, material yield, and workplace safety.
- Review integration challenges and cost-benefit models for deploying robotics in recycling environments.
- Discover emerging use cases, from smart screw removal and module separation to Al-guided sorting and triage.

### 15:00



### Unlocking Second-Life Value: Making the Economics of Stationary Energy Storage Work for End-of-Life EV Batteries

**Kilian Sagner,** Manager, Energy Storage Systems & Circular Battery Strategy, **FEV Consulting** 

Not all EV batteries at the end of their vehicle life are ready for recycling—many retain significant capacity and can be repurposed into valuable second-life applications. From grid support and commercial storage to off-grid and residential systems, reusing batteries before recycling can dramatically enhance sustainability and ROI across the battery lifecycle. Yet despite the promise, making second-life applications economically viable—especially with true end-of-life (EoL) batteries—remains a major hurdle.

This session presents a practical framework for overcoming the technical and financial barriers to second-life battery deployment at scale. Backed by real-world data from FEV's CycleBat lifecycle calculation tool, it introduces a novel approach that enables the economic use of EoL batteries—not just 'second-chance' near-new units—and demonstrates how profitability, performance, and sustainability can be aligned through better grading, diagnostics, and circular business modeling.

- How automated diagnostic tools assess remaining battery health and match assets to appropriate second-life applications
- Real-world performance and business case data supporting the economic viability of second-life energy storage systems
- Why current reuse models are limited—and what's needed to scale beyond small-batch or startup concepts
- Testing, certification, and monitoring strategies for safe and reliable second-life deployment
- How second-life use cases defer recycling costs and increase lifecycle value
- Partnership models between OEMs, utilities, and reuse platforms driving closed-loop success By shifting the conversation from theoretical value to commercially viable execution, this session outlines the path to scalable, profitable second-life ecosystems in Europe and beyond.

### 15:20

### L'i Hydrovolt

### Black Mass with a Low Carbon Footprint – How Hydrovolt is Setting New Standards

### Helge Refsum, CTO, Hydrovolt

One of the most critical outputs—black mass—is a precursor to the recovery of valuable materials like lithium, cobalt, and nickel. But how it's produced matters just as much as what it contains. This session showcases Hydrovolt, one of Europe's leading battery recyclers, and its pioneering approach to producing black mass with one of the lowest carbon footprints in the industry. Now fully owned by Hydro, Hydrovolt operates one of Scandinavia's most advanced EV battery recycling plants and is setting new benchmarks in emission reduction, material recovery rates, and circular integration.

Through this case study, attendees will learn how

Hydrovolt combines renewable energy, highefficiency mechanical processing, and strategic material partnerships to set new standards in sustainable black mass production.

- What makes black mass "low-carbon"?
- Hydrovolt's facility in Fredrikstad: design choices that reduce emissions
- Strategies for minimizing waste, emissions, and transport impacts
- Scaling up: regulatory, logistical, and economic challenges
- How Hydrovolt's model compares with traditional recycling routes

### 15:40 | Panel

### Policy in Action: How the Circular Economy Action Plan and EU Battery Regulation Are Shaping a Circular Battery Value Chain

Christopher Hug, Founder, NantoSuelta\* Circular Economy Consulting

**Dr. Tom Vöge,** Director Public Policy, **GRS Service** 

As electric vehicles become integral to Europe's decarbonization goals, building a circular and resilient battery value chain is no longer optional—it's a strategic and regulatory necessity. This session will examine how European policy instruments—from the EU Battery Regulation to national end-of-life strategies—are reshaping industrial practices and market dynamics in battery recycling, reuse, and raw material recovery.

Framed by the EU's Circular Economy Action Plan, which seeks to decouple economic growth from resource consumption and achieve climate neutrality by 2050, the discussion will explore how legislation is enabling the transition to a truly circular battery economy.

Key discussion points will include:

- How EU and national policies incentivize innovation and scale-up of recycling technologies
- The role of extended producer responsibility (EPR) and traceability mechanisms
- Lessons from national programs in countries like Norway, Germany, and France, including collection schemes, economic incentives, and public-private partnerships
- Strategies to reduce reliance on imported critical raw materials and ensure secure, local supply chains
- How policy coherence across Member States can support long-term investment and industrial resilience
- Featuring perspectives from policymakers, regulatory experts, OEMs, and recyclers, this session will provide a multi-stakeholder view of how legislation can drive both environmental and economic value in Europe's emerging battery ecosystem.

### 16:00 | Networking Break

### 16:20

### Green Hydrometallurgy: Low-Impact, High-Purity Recovery of Critical Battery Materials

Hydrometallurgy has emerged as an alternative to pyrometallurgical recycling—but recent advancements are pushing it even further. Green hydrometallurgy applies low-temperature leaching and closed-loop chemical separation using nontoxic solvents, enabling the recovery of lithium, nickel, cobalt, and manganese at battery-grade purity with minimal environmental impact. This session investigates the latest innovations in green hydrometallurgical processing—from replacing sulfuric acid with greener alternatives to recovering reagents in a closed loop. Attendees will gain insight into how these processes are being scaled

commercially and how they fit into a sustainable, circular battery economy.

- Understand how green hydrometallurgical processes differ from traditional leaching and smelting methods.
- Explore low-temperature, low-emission leaching techniques and solvent systems that eliminate hazardous chemicals.
- Learn how closed-loop reagent recovery reduces chemical use and wastewater generation.
- Evaluate the quality of recovered materials and their direct reuse in cathode production.
- Gain insight into commercial-scale deployments and integration with upstream and downstream recycling systems.
- Discover how green hydro processes support regulatory compliance, EU Battery Regulation targets, and ESG reporting.

### 16:40



### Solving the Waste Management Puzzle: Practical Solutions for Handling EV Battery Recycling Residues

### Philipp Brunotte, Co-Founder, LiBCycle GmbH

As EV battery recycling scales up, so too does the volume of complex waste streams—ranging from hazardous by-products to non-recoverable materials. Improper handling of these waste outputs poses serious environmental, regulatory, and safety risks. Addresses the most pressing waste management challenges recyclers face and analyse real-world solutions to improve compliance, sustainability, and operational safety. From segregating hazardous waste and managing black mass residues, to leveraging automation for safe handling and developing circular use cases for non-critical materials, attendees will gain a toolkit for transforming waste management from a liability

 Identify and categorize the main waste streams in EV battery recycling, including hazardous, electronic, and residual materials.

into a value-generating process.

- Understand the environmental, health, and economic risks of improper waste handling and disposal.
- Explore advanced strategies for waste segregation, treatment, and recovery—including mechanical, thermal, and chemical methods.
- Learn how automation and AI can enhance safety, tracking, and compliance in waste processing.
- Discover best practices for worker training, facility protocols, and safe storage.
- Navigate regulatory frameworks at the EU and national level—and gain insights into building compliant, future-proof waste management systems
- Review innovative approaches to repurposing residual battery materials, reducing landfill dependency and creating new circular opportunities.

### 17:00

### Hybrid Recovery Systems: Combining Pyrometallurgy and Hydrometallurgy for High-Efficiency Material Extraction

While pyrometallurgy offers scalability and robustness, it falls short in recovering lighter and more volatile elements such as lithium and manganese. To overcome these limitations, leading recyclers are now deploying hybrid pyro-hydro systems, where pyrometallurgy acts as a high-throughput pre-treatment step, followed by hydrometallurgical refinement of metal-rich slags into battery-grade materials.

This session explores how integrating both approaches enhances metal recovery efficiency, enables closed-loop circularity, and reduces overall waste. Attendees will gain insight into

process design, material flows, and real-world implementation of this hybrid model—balancing throughput with purity and sustainability.

- Understand how hybrid systems work: pyrometallurgy for safe, bulk processing and hydrometallurgy for precision metal recovery.
- Learn how this model enables efficient recovery of lithium, manganese, and other low-volatility elements often lost in pyro-only systems.
- Explore system integration challenges and how operators manage slag chemistry, energy use, and yield optimization.
- Review case studies of commercial-scale implementations, including Umicore's integrated refining process.
- Gain insight into the environmental and economic benefits of combining pyro and hydro including reduced chemical use and improved material circularity.

### 17:20



### Scaling Smart: Modular, Decentralized Battery Recycling for Regional Circularity

Myeongjin (MJ) Choi, Strategic Lead, Modular Recycling & Regional Circularity Programs, **Green** Li-ion

Large centralized recycling facilities often face high transport costs, regulatory delays, and logistical complexity—especially as EV battery volumes surge and chemistries diversify. Modular, decentralized recycling plants offer a flexible, scalable solution by enabling material recovery close to battery takeback, gigafactories, or OEM service hubs. The technological design, integration, and realworld deployment of small-footprint recycling units that bring processing closer to the source. Attendees will gain insights into how modular systems lower costs, reduce emissions, and support localized closed-loop supply chains.

- Learn how modular recycling units operate from mechanical separation to chemical preprocessing.
- Understand how decentralization improves responsiveness, reduces transport risk, and simplifies permitting.
- Explore strategies for siting near OEM plants, collection centers, and manufacturing scrap hubs.
- Discover how modular plants are integrated into broader spoke-and-hub or closed-loop recycling networks.
- Review examples of commercial deployments and pilot projects from leading innovators.
- Examine economic models, CAPEX/OPEX considerations, and scalability for regional markets.

### 17:40

### Unsticking the Problem: Scalable, Safe, and Cost-Effective Solutions for Debonding EV Battery Pack

Bonded components are becoming increasingly difficult to disassemble, creating serious challenges for recycling, remanufacturing, and material recovery. Debonding adhesives, foams, and thermal interface materials requires precision, safety, and scalable methods that do not damage cells or compromise facility operations.

Innovative solutions to the industrial challenge of debonding, covering advanced thermal, mechanical, and chemical separation techniques. It will also address safety protocols, cost models, and how new technologies can be integrated into existing recycling lines to unlock value from tightly bonded battery architectures.

- Learn how advanced bonding methods (e.g. structural adhesives, polyurethane foams) complicate disassembly and recycling.
- Explore solutions such as thermal debonding, solvent-based separation, and robotic delamination for safe and selective dismantling.

- Understand how precision control prevents damage to adjacent cells and components, improving material recovery yields.
- Discover best practices for preventing thermal runaway during the debonding process.
- Evaluate the economic viability of different debonding techniques and their scalability for high-throughput operations.
- Review how new debonding technologies can be retrofitted into existing recycling or dismantling facilities.
- Examine environmental and regulatory considerations in handling adhesives and byproducts.

### 18:00



### Analytical Strategies for Safer and More Sustainable Process Water Management in Battery Recycling

**Dr. Sascha Nowak**, Head of Analytics & Environmental, Electrochemical Energy Technology, **University of Münster** 

Water-assisted recycling techniques—such as wet shredding and electrohydraulic fragmentation—are gaining traction for their safety and efficiency, but they generate significant volumes of contaminated process water. Managing this wastewater safely and sustainably is a growing challenge for recyclers, particularly due to the presence of dissolved electrolytes, heavy metals, and complex organics. This session focuses on analytical solutions for identifying, monitoring, and treating contaminants in process water to reduce hazardous waste classification, lower treatment costs, and improve environmental compliance. Attendees will gain insight into the role of advanced analytical techniques in optimizing water treatment strategies, ensuring regulatory alignment, and enhancing overall process sustainability.

- Understand the composition and origin of contaminants in process water from wet-based battery recycling.
- Explore analytical methods (e.g., ICP-OES, ion chromatography, LC-MS) for monitoring lithium, fluorinated compounds, and heavy metals.
- Learn how real-time analysis informs smarter filtration, neutralization, and closed-loop water reuse strategies.
- Discover how analytical data can reduce hazardous waste classification and disposal costs.
- Review best practices for wastewater treatment system design tailored to lithium-ion battery recycling.
- Gain insights into regulatory thresholds and how accurate characterization ensures compliance and permits scaling.

### 18:20



# Maximizing Profitability: Operational Strategies to Improve Cost Efficiency in EV Battery Recycling

Hans Eric Melin, Managing Director, Circular Energy Storage

Maintaining profitability while meeting regulatory, safety, and sustainability requirements remains a critical challenge. This session focuses on practical strategies for improving cost-efficiency across the value chain—from material handling and labor optimization to supply chain integration and datadriven process improvement.

- Identify major cost drivers in battery recycling—including labor, logistics, compliance, and energy—and how to manage them effectively.
- Explore automation and digitalization solutions that reduce operational costs and improve consistency.
- Learn how optimized material recovery processes can maximize value extraction and improve ROI.
- Review best practices for supply chain efficiency and continuous improvement using data analytics.

- Discover profitable business models that incorporate second-life applications, value-added services, and recovered material markets.
- Understand how partnerships, service diversification, and strategic positioning can expand revenue opportunities.
- Gain insight into financial planning, budgeting tools, and risk mitigation strategies tailored to recycling operations.

### 18:40

### Deloitte.

### Battery Passports Meet Cyber Security: Protecting Data Across the EV Lifecycle

**Florian Ebert,** Principal Consultant – Industrial Cyber Security, **Deloitte** 

As battery passports become a regulatory and operational standard, the focus on data collection has overshadowed the cyber security risks associated with storing and sharing highvalue battery data. This session explores the critical intersection of digital traceability, cyber resilience, and the circular economy. Florian Ebert will highlight how data vulnerabilities in battery passports and recycling systems can lead to IP theft, data manipulation, and real-world consequences including safety risks and reputational damage. From battery development to second-life use and end-of-life recycling, this presentation demonstrates how cyber security must be embedded across the full product lifecycle to ensure safe, compliant, and efficient recycling operations.

- Why battery passport data is a high-value cyber asset—and how it's being overlooked.
- Real-world incidents: How data exploitation (e.g., vehicle tracking via battery metadata) has exposed security gaps.
- The risks of data manipulation in recycling: fake usage history, incorrect thermal data, or spoofed lifecycle information.
- How to integrate cyber security into the entire battery lifecycle—from manufacturing to dismantling
- Best practices for ensuring data integrity, regulatory compliance, and IP protection.

### 19:00

### voltfang

### Extending Battery Lifespan through Second-Life Innovation: Safe, Compliant, and Scalable Energy Storage from Used EV Modules

### David Oudsandji, Co-Fouder & CEO, VoltFang

As electric vehicles continue to scale globally, the industry faces a critical challenge—and opportunity—in managing end-of-life EV batteries. This session presents VoltFang's innovative approach to repurposing decommissioned EV battery modules into safe, high-performance stationary energy storage systems. Leveraging advanced diagnostics, digital tracking, and stringent safety protocols, VoltFang delivers scalable solutions that extend battery lifespan and reduce environmental impact.

The presentation will explore how secondlife systems are engineered for reliability and compliance with evolving EU Battery Regulations, including requirements for reuse, carbon footprint reporting, and design traceability. Technical insights will be shared on battery selection, module testing, system integration, and safety strategies that ensure performance in commercial and industrial environments.

By delaying recycling through intelligent reuse, VoltFang bridges the gap between vehicle end-oflife and material recovery, offering a critical pathway to true circularity in the battery value chain.

- Technical design and safety considerations in second-life battery systems
- How second-life solutions support compliance with EU End-of-Life and Circular Economy regulations

- Real-world deployment examples of VoltFang energy storage systems in commercial settings
- The role of digital tracking and diagnostics in enabling second-life viability
- Environmental and economic benefits of reuse before recycling

### 19:20



### Quantum Leaps in Circularity: How Blockchain and Quantum Computing Are Transforming Traceability in Battery Recycling

**Ravi Gade,** Founder & CEO, ES Technologies, **Bridge Green Upcycle** 

As the EV battery value chain grows more complex, ensuring transparent, tamper-proof, and real-time traceability from manufacturing through second life and end-of-life becomes mission-critical. This session explores how emerging digital technologies—namely blockchain and quantum computing—are poised to revolutionize traceability, compliance, and resource recovery across the battery recycling ecosystem.

We will dive into the role of blockchain as a decentralized ledger technology for securely tracking materials across international supply chains—capturing provenance data, recycling histories, and carbon intensity at every stage. From black mass classification to state-of-health data for reuse, blockchain enables a new level of data integrity and auditability, essential for meeting EU Battery Passport and Extended Producer Responsibility (EPR) mandates.

In parallel, quantum computing is opening new frontiers in real-time material flow optimization, process simulation, and cryptographic security for recycling infrastructures. Attendees will learn how quantum algorithms can accelerate material sorting, predictive disassembly, and complex logistics modeling, driving efficiency gains previously out of reach.

- Blockchain for secure material traceability and EU Battery Passport compliance
- Use cases for blockchain in managing carbon footprints, EPR reporting, and second-life certifications
- Quantum computing applications for black mass analysis, disassembly simulation, and supply chain optimization
- Challenges in system integration, interoperability, and digital infrastructure investment
- Real-world pilot projects and cross-industry collaborations leading the way in Europe
- Policy frameworks and funding mechanisms enabling adoption of these technologies

19:20 | Chair's Closing Remarks

19:30 | Drinks Party & Currywurst

# **EXHIBIT Categories**

# **EXHIBIT Packages**

Al-Based Yield Prediction for Recycling

**Advanced Sorting and Separation Technologies** 

**Automated Disassembly Line Integrators** 

**Battery Collection and Aggregation Services** 

Battery **Compliance** Auditing Solutions

**Battery Degradation Monitoring Systems** 

Battery Design for **Disassembly** 

Battery Handling PPE & Safety Gear Manufacturers

Battery Identification and Classification Technologies

Battery Lifecycle Management Platforms

**Battery Logistics Route Optimization Software** 

**Battery Logistics and Transportation** 

**Battery Management** and Safety

Battery Pack Design and Optimization

Battery Recycling Technologies & Processes

**Battery Remanufacturers** 

**Battery Sorting Robotics** 

**Battery Storage** Safety Solutions

Blockchain and Traceability Solutions

**Circular Economy** Integration Solution

Consulting and Advisory Services

End-of-Life Compliance and Regulatory Consulting

**Environmental Impact** Assessment Services

Fire Prevention and Suppression Technologies

Global Recycling Regulation Intelligence Providers

**Hazardous Waste Management Services** 

High Voltage Battery Handling Equipment

Hydrometallurgy and Pyrometallurgy Tech Suppliers

Insurance Providers for Battery Logistics

**IoT Sensors and Monitoring** for Battery Storage

Material Recovery and Refinement Technologies

Mobile Battery Collection and **Diagnostic Services** 

Modular Battery Enclosure Manufacturers

Raw Material Suppliers

**Recycling Equipment Providers** 

Reverse Logistics Software Providers

Robotic Automation and Al in Recycling

**Sustainability Solutions** Providers

**ESSENTIAL PACKAGE** €3,750

Logo placed on event website with company Logo and Hyperlink

x1 Roller Banner + Cocktail Table

(5ft. x 5ft) inc. Power, WIFI

2 Event Passes

**Evening All Attendee Networking Drinks** 

Attendee List - Name, Title, Company

**EXHIBITOR PACKAGE** €5.500

Logo placed on event website with product description and hyperlink

Exhibition Booth (10ft. x 10ft)

inc. Furniture, Power, WIFI

2 Event Passes

**Evening All Attendee Networking Drinks** 

Attendee List - Name, Title, Company

**COSPONSORSHIP PACKAGE** €7,500

Logo prominently visible on all event brochures, signage and literatures Logo placed on event homepage and listed with description and Hyperlink Speaker's profile picture and short bio. added to the online Speaker Faculty and within the onsite event brochure.

20 Minute Presentation

Prominent logo + branding throughout the event venue

TWO PASSES + 1 SPEAKER PASS

**Exhibition Booth (10ft. x 10ft)** 

All Attendee Networking Drinks Reception Attendee List – Name, Title, Company

# #SHOWCASE YOUR TECHNOLOGIES AND SOLUTIONS AT EV BATTERY RECYCLING USA 2025

### THOUGHT LEADERSHIP

Position your company as a thought leader by sharing your latest innovations, insights and best practices on the electric vehicle battery recycling stage. Demonstrate your expertise through presentations, panel discussions and technical workshops to establish your company as an innovative industry leader.

### MAXIMUM VISIBILITY

Showcase your brand to a highly targeted audience of battery manufacturers, OEMs, Tier 1 suppliers and recycling professionals from across the e-mobility sector. Enhance your visibility with prominent logo placement, booth displays, and speaking opportunities within the electric vehicle battery recycling community.

### NETWORKING OPPORTUNITIES

Build meaningful connections and collaborations with leading experts, decision-makers and potential customers invested in e-mobility, sustainability and circular economy. The conference provides ample networking opportunities, including dedicated networking breaks, receptions and meeting with key stakeholders.

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