

The background of the slide features a glowing green battery, possibly a cylindrical cell, with a bright green light emanating from its center. The battery is set against a dark blue background with intricate, glowing green circuit patterns and lines, suggesting a high-tech or energy-related theme.

The Future of Energy in Our Hands

2nd SEBA Battery Conference

November 19, 2024, Ljubljana, Slovenia
Triglav Lab, Dunajska c. 20, 1000 Ljubljana



The First Conference Was Successful

- The first Battery Conference took place in Belgrade and was highly successful.
- Therefore, Emobility has decided to organize a second one, continuing the initiative.
- Our goal is to host the conference annually in different countries across the Southeast European region.



Introduction

- Batteries as Key Elements of the Modern Energy Transition
- Enable the electrification of transport and the integration of renewable energy.
- Support energy independence and sustainability goals.



Purpose and Goals

- Knowledge Exchange: Share insights and experiences in battery technology.
- Expert Collaboration: Unite industry, science, and policy experts to discuss future directions.
- Regional Cooperation: Promote collaboration in the Adriatic region for common objectives.



Conference Participation



- Participation in the conference is free of charge.
- Only invited delegates may attend the conference.
- We will invite various organizations, including companies, research institutes, universities, business associations, and NGOs ...



Conference Agenda

- 9:00 AM: Opening and welcome speeches from key figures.
- 10:00 AM - 2:00 PM: Presentations and panel discussions on battery advancements.
- 2:00 PM: Lunch break and networking opportunities for participants.
- Format:
 - Lectures
 - Panel Discussions



Key Themes

- Innovative Materials: New materials for anodes and cathodes (e.g., graphene, silicon, magnesium, sodium).
- Solid-State Electrolytes: Exploration for enhanced performance.
- Silicon Anodes Research: Focused on extending battery lifespan.



New Battery Technologies

- Battery Cell Chemistry: Solid-state, LFP, NMC, and emerging technologies.
- Battery Pack Engineering: Design and optimization of battery packs.
- Battery Management Systems: Innovations in BMS technology.
- Manufacturing and Marketing: The future of production and market trends.
- LFP Batteries: Longer life with safer applications.
- Solid-State Batteries: Higher energy density and improved safety features.
- Lithium-Sulfur Batteries: Potential energy density exceeding 500 Wh/kg.



Latest Trends in Battery Technology

- **Solid-State Batteries:** Batteries using solid electrolytes instead of liquid ones. They promise higher energy density, increased safety (no risk of electrolyte leakage), and faster charging.
- **Improvements:** Longer lifespan, reduced weight, and greater resistance to temperature changes.
- **Challenges:** High production costs and challenges in commercializing the technology.

Lithium-Ion



Hybrid Nickel-Metal



Nickel-Cadmium

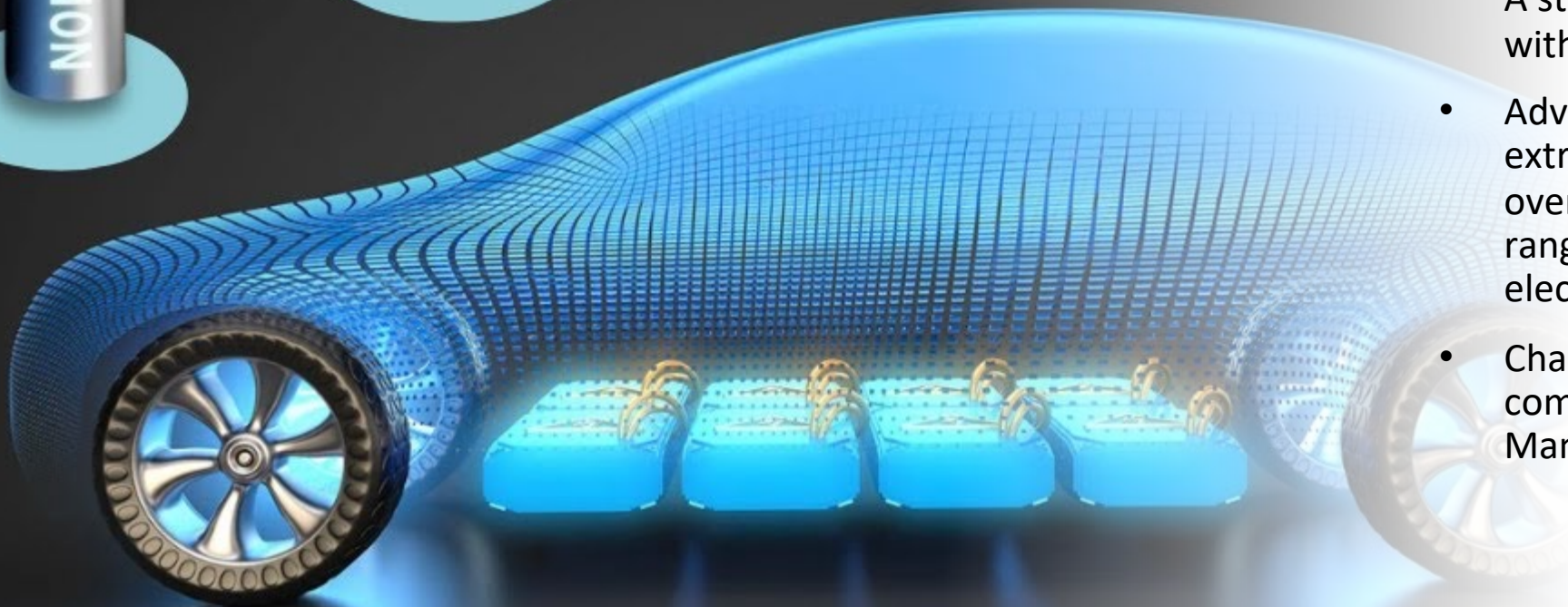


Lead-Acid



LFP

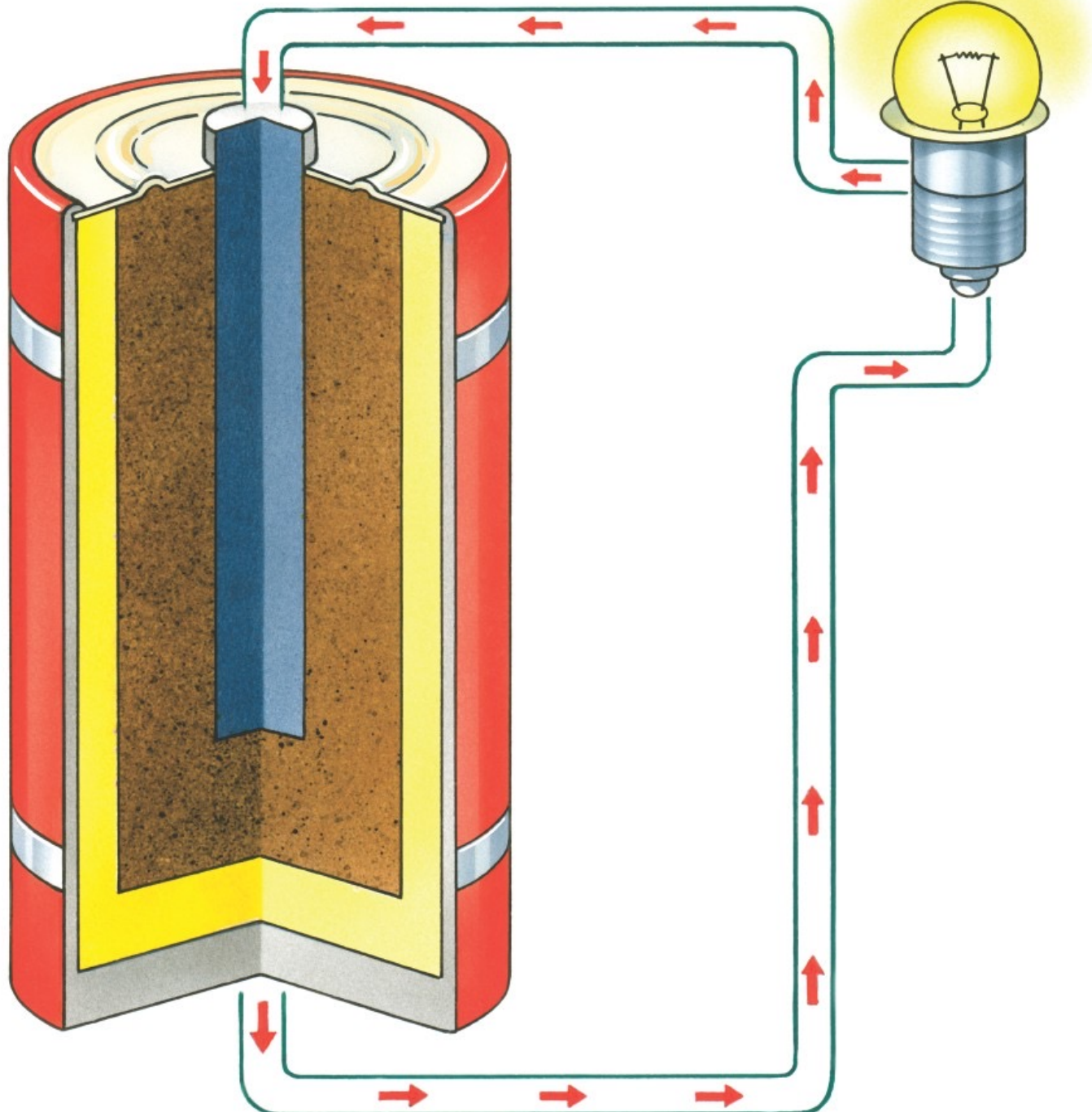
- LFP (Lithium-Iron-Phosphate): A stable and affordable technology with a long lifespan and high safety.
- Advantages: Greater stability under extreme conditions, resistance to overheating, and suitable for a wide range of applications, especially in electric vehicles.
- Challenges: Lower energy density compared to NMC (Nickel-Manganese-Cobalt) batteries.





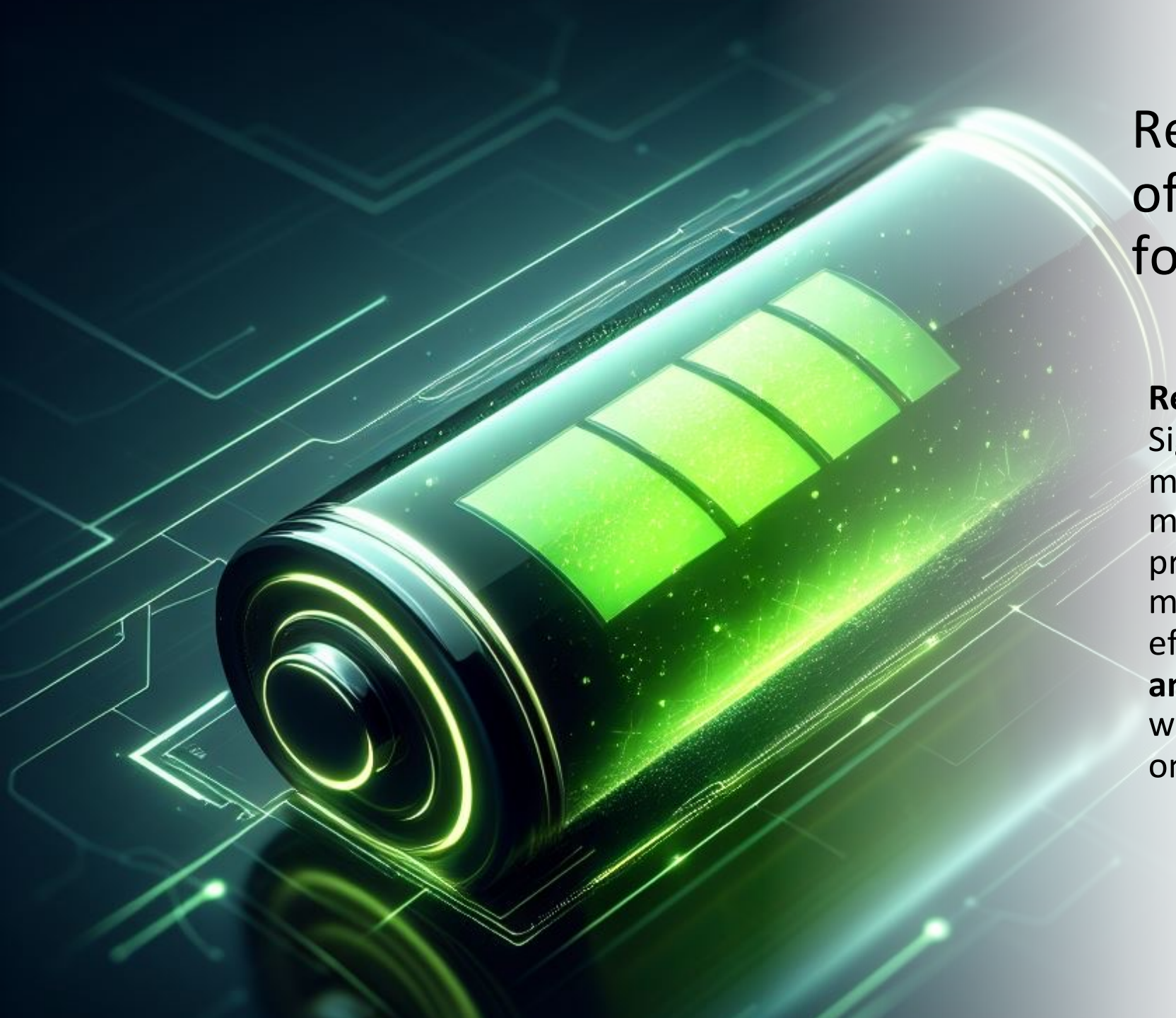
NMC, NCA

- NMC (Nickel-Manganese-Cobalt) and NCA (Nickel-Cobalt-Aluminum) :
 - These batteries offer higher energy density but are more expensive and have greater environmental impact.
 - Trend: Research is focused on reducing cobalt content due to ethical and environmental concerns.



Emerging Technologies

- **Silicon Anodes:**
Replacing graphite with silicon to increase energy density.
- **Sodium-Ion (Na-ion) Batteries:**
These offer a cheaper alternative to lithium with good potential for energy storage, though they have lower energy density.

A glowing green battery with circuit patterns in the background. The battery is cylindrical and has a bright green glow emanating from its center. The background is dark blue with glowing green circuit lines and a grid pattern.

Research and Mining of Essential Materials for Battery Production

Research:

Significant investment is being made into developing alternative materials and improving recycling processes. The focus is on finding more sustainable and cost-effective solutions, such as **silicon anodes** and **solid-state batteries**, which could reduce dependence on rare materials.

Mining

The extraction of key materials, including **lithium, cobalt, nickel, and manganese**, is essential for battery production. However, there are growing concerns about the environmental and social impacts of mining. As a result, there is an increasing push for ethical sourcing, recycling, and reducing reliance on scarce or environmentally harmful materials, such as cobalt.



Manufacturing Processes

- Cost Optimization: Streamlining production lines to reduce manufacturing costs.
- Automation: Implementing advanced technologies for increased efficiency.
- Sustainability Solutions: Enhancing the sustainability of battery manufacturing processes.



Battery Economics

- Production Costs: Strategies to lower manufacturing expenses.
- Recycling Innovations: Extending battery life and minimising waste.
- Lifecycle Management: Promoting more sustainable battery use.
- Second Life of Batteries: Perspectives, Technology, and Economics





Battery Value Chain

- Raw Material Sourcing:
Identifying new sources for future production.
- Supply Chain Analysis:
Understanding global supply chain impacts on manufacturing.
- Sustainable Practices Integration: Ensuring sustainability throughout the battery lifecycle.



Environmental Impact

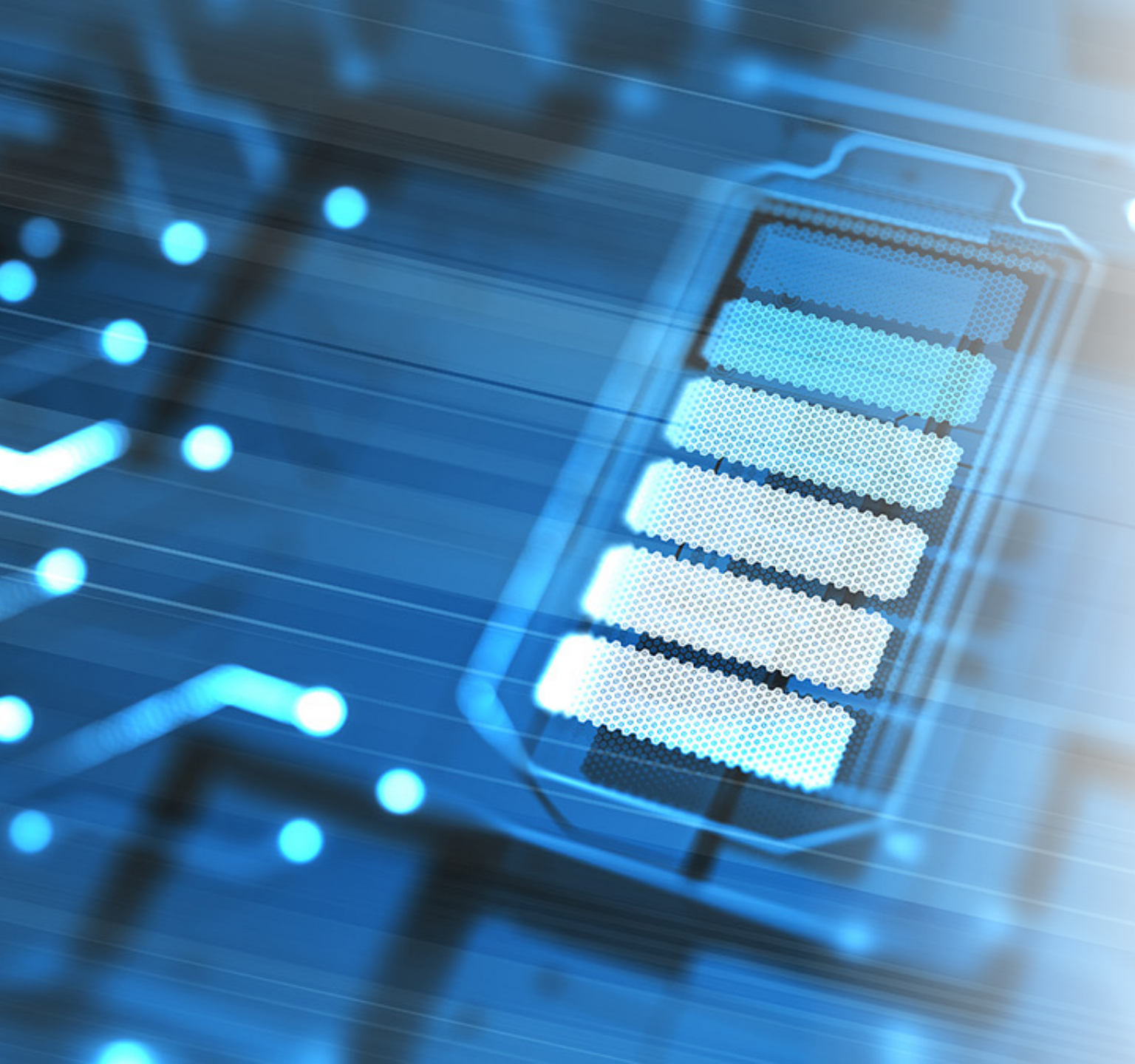
- Ecological Footprint: Assessing current production processes' environmental effects.
- Sustainable Sourcing Practices: Advocating for responsible raw material sourcing and mining.
- Recycling Initiatives: Reducing impact through eco-design and recycling efforts.

What is Environment Impact Assessment in India



Policies & Incentives

- Government Support: Overview of policies fostering battery development and innovation.
- Incentives Overview: National and European incentives for research in battery technology.
- Industry Participation
Encouragement: Regulations and subsidies to boost industry involvement.



Industry Status Overview

- The global battery market was valued at \$150 billion in 2023, projected to reach \$400 billion by 2030.
- Key drivers include mobility, renewable energy storage, and supply chain challenges.



Advances in Lithium-Ion Technology

- Energy density improvements from 265 Wh/kg to over 300 Wh/kg.
- Enhanced safety through advanced Battery Management Systems (BMS).
- Cost reduction targets below \$100/kWh by 2025.



Sustainable Battery Design

- Establishing recycling targets by 2030 through new regulations.
- Developing processes to recover valuable materials from used batteries.
- Implementing eco-design principles to facilitate recycling and reduce waste.



Energy Storage for Renewables

- Batteries play a crucial role in stabilizing energy grids.
- Stationary systems for homes and large-scale networks are essential.
- Long-term storage solutions are necessary for managing fluctuating renewable sources.



Batteries in E-Mobility

- Expected to capture a 30% market share of electric vehicles in Europe by 2030.
- Vehicle-to-grid (V2G) technology's benefits and drawbacks will be discussed.
- Expanding battery applications beyond EVs to heavy transport, aircraft, and maritime sectors.

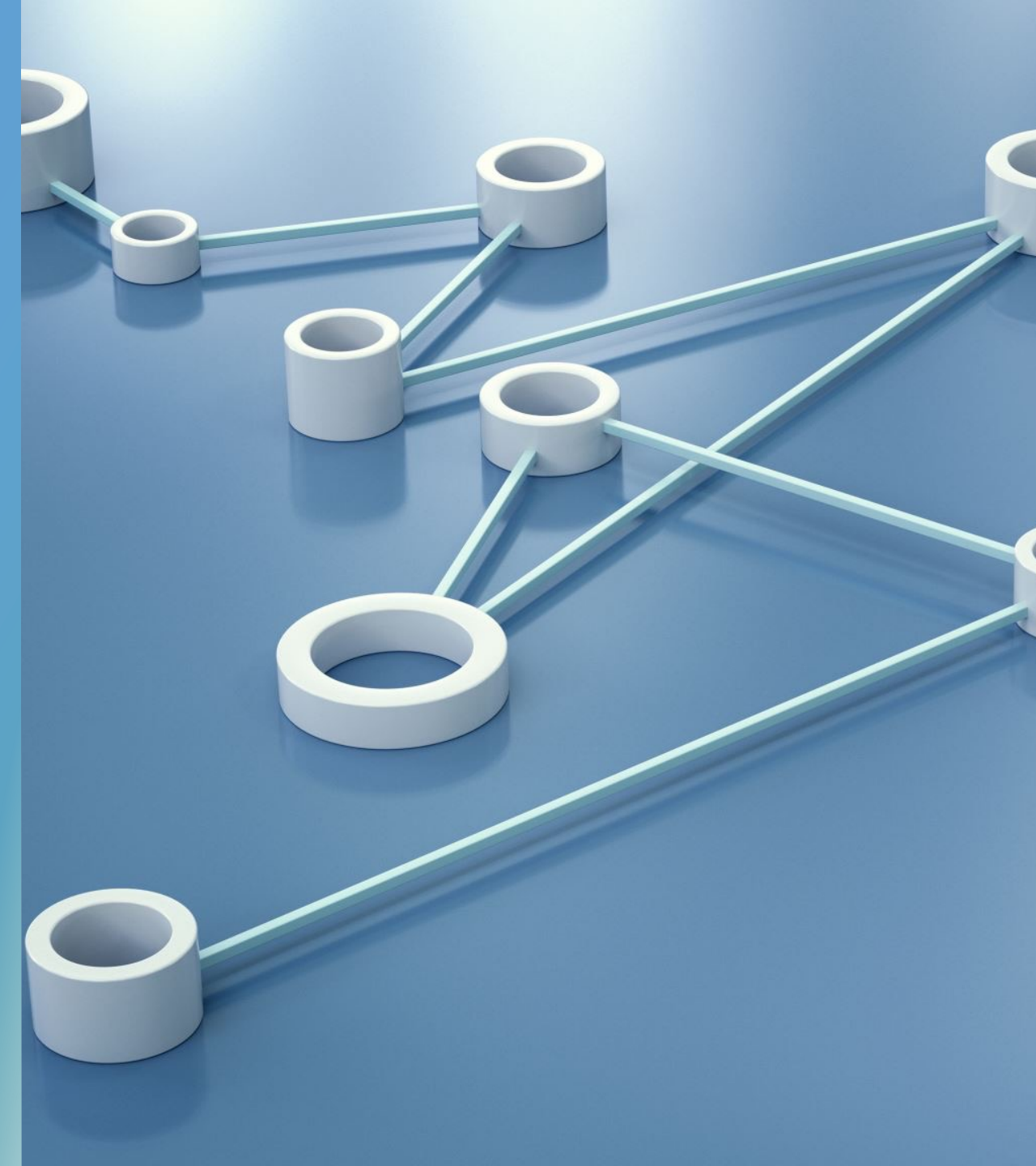
European Battery Initiatives

- The European Battery Alliance (EBA) plays a significant regional role.
- Horizon Europe has allocated €1 billion for battery research from 2021 to 2027.
- Important Projects of Common European Interest (IPCEI) focus on advancing battery technology.



SEBA Regional Cooperation

- SEBA's establishment aims to strengthen regional battery development efforts.
- Promoting collaborative research initiatives is a priority.
- Focus on securing public funding for regional projects is essential.



Closing & Call to Action

- Invitation to network and collaborate on joint projects during the conference.
- Opportunities for partnerships and sponsorships will be highlighted.
- Establishing long-term connections is vital for driving the energy transition forward.



Sponsorship Packages

Detailed presentation of sponsorship packages:

- Naming Sponsor: €10,000
- Diamond Sponsor: €7,500
- Gold Sponsor: €5,000
- Silver Sponsor: €3,000
- Bronze Sponsor: €2,000
- Friends: €1,000

BENEFITS



Sponsor Benefits

Naming Sponsor will have the opportunity to:

- Have the symposium named after them (e.g., 2nd Battery Conference— Emobility [Partner's Name]).
- Participate in the content preparation of the Symposium.
- Be involved in panel discussions and lectures.
- Display the sponsor's logo in all visual communications and advertisements.
- Use exhibition space and display banners on the speaker's stage.

All sponsorships offer various levels of participation and promotion depending on the package.

A close-up photograph of several people's hands and forearms, all clasped together in a supportive, huddled gesture. The hands are of various skin tones, suggesting a diverse group. The background is softly blurred, showing more of the group. A semi-transparent blue gradient overlay covers the left side of the image, where the text is placed.

Thank you for
your presence
and participation