



umicore
materials for a better life

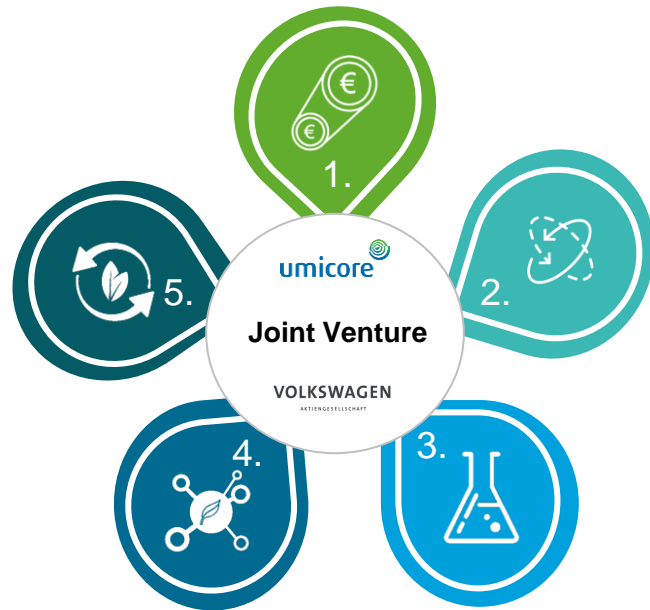
Umicore and Volkswagen AG creating a European EV Battery Materials Joint Venture

8th Dec 2021



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First-of-its-kind partnership in the European automotive market



First European EV battery materials Joint Venture¹ to build cathode material production capacities in Europe

1. Significant economies of scale in precursor and cathode production
2. Benefit from complementarity of technology, innovation and industrial knowhow
3. Strong framework to further accelerate battery technology innovation
4. Collaboration on sustainable and responsible sourcing of raw materials
5. Ambition to include refining & battery recycling at later stage

Strong contribution to European Green deal and the EU's ambition to establish a sustainable European battery value chain



Brings considerable first-mover advantage to both partners in fast-growing European EV market



VOLKSWAGEN

AKTIENGESELLSCHAFT

- Secured access to an important part of the European demand for EV cathode materials

- Scale effects and shared investments in battery materials

- Confirmation of Umicore's strong technology offering and capabilities in battery materials



**Shared
sustainability
convictions**

- Security of supply for roll-out of ambitious electrification plan

- Access to sustainably sourced, high performance, tailor-made and cost competitive cathode materials

- Benefiting from Umicore's strong expertise and unique position in battery materials value chain, from sourcing to recycling



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Attractive market for cathode materials

High-tech market with high barriers to entry requiring large R&D and capacity investments

Extremely high growth in battery materials demand driven by increasing EV penetration

Umicore well positioned as a technology leader

Product technology leadership



- 20+ years of cathode R&D activity and diversified portfolio from mid to Hi-Ni cathode chemistries (e.g. NMC, HLM, NCA)
- Long-term understanding of car industry via Automotive Catalyst business

Process technology leadership



- Vast experience in producing at scale while ensuring product performance stability
- Focus on production efficiency and cost optimization, allowing competitive pricing

Global, industrial presence with local capabilities



- First manufacturer with footprint in both Asia (Korea & China) and Europe (Poland)
- Unique position, from sourcing to recycling

Sustainability



- Low emissions leadership - net zero GHG by 2035
- Pioneer in sustainable sourcing and environmentally friendly production

Technology leader with superior product and process technology can achieve sustainable margins and value creation



Outlook for Energy & Surface Technologies



Faster than anticipated shift to high nickel chemistries in the market

Lower volumes & higher fixed costs hampering ST earnings in battery materials

- Demand projections for certain mid-Ni platforms scaled back to minimum commitment: **lower volumes for 2022-23**, beyond semiconductor shortage impact.
- **Combined with higher fixed costs** to prepare for mid-term growth, likely **lower-than-expected earnings growth in Rechargeable Battery Materials in 2022-23**.
- Assuming no repeat of exceptional performance of Cobalt & Specialty Materials, **earnings of Energy & Surface Technologies not expected to show significant uplift in 2022-23**

Umicore uniquely positioned to disproportionately benefit from extremely high growth in EV battery materials demand

Strong mid-term earnings growth potential in E&ST confirmed

- Agile reaction to rapidly evolving customer voice resulting in **industry-leading hi-Ni NMC**
- Planned JV with Volkswagen AG **further enhances competitive positioning**
- Unique position to **disproportionally benefit** mid-term from extremely high anticipated growth in EV battery materials, based on strong technology roadmap in line with customers' requirements
- Strong economies of scale, technology differentiation and process excellence will allow to **create sustainable shareholder value** in Umicore's fast-growing battery materials activity.



Q&A



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