At the CORE of Umicore's
Battery Materials

Mobility electrification in full swing

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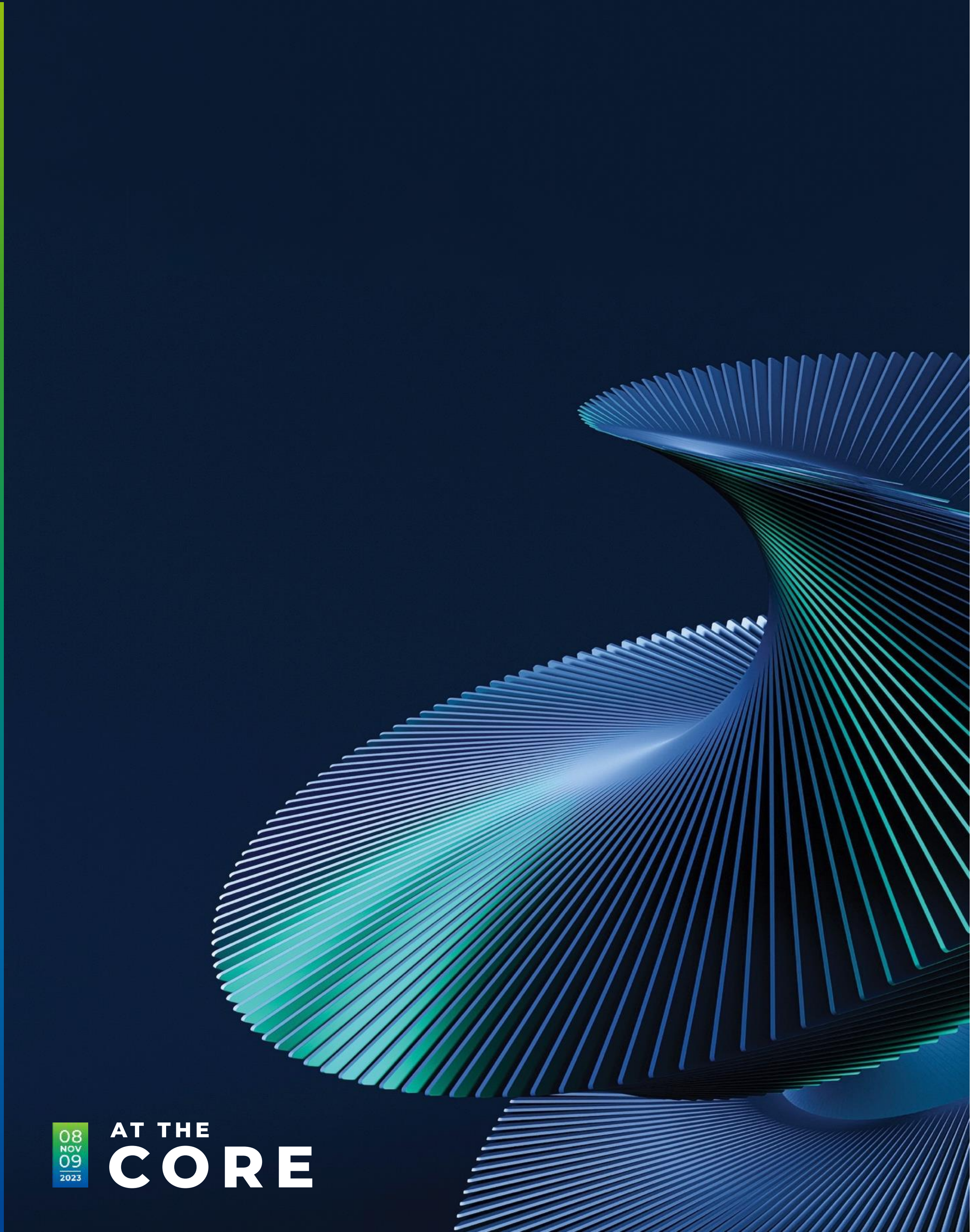

Agenda

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Electrification drivers stronger than ever

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No one-size-fits-all

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Local-for-local approach

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Key take-aways

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Electrification drivers stronger than ever

Accelerating market demand

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EV penetration further accelerating on the back of key drivers

- Strong **regulatory push**
- Progress on **price parity and TCO**
- Expanding **charging infrastructure**
- Increasing **electric model portfolio** of OEMs

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Examples of key regulations across regions

EU: ICE car ban by 2035, Green Deal, Green Industrial Plan, NZIA, CRMA

UK: ICE car ban by 2035

US: IRA, ZEV program adopted in 10 states

Canada: ZEV regulation proposal, strong subsidy schemes in place

China: NEV regulation

NZIA: EU Net Zero Industry Act - **CRMA**: EU Critical Raw Materials Act - **IRA:** Inflation Reduction Act - **ZEV**: Zero Emission Vehicles
NEV: New Energy Vehicles

EV penetration further accelerating on the back of key drivers

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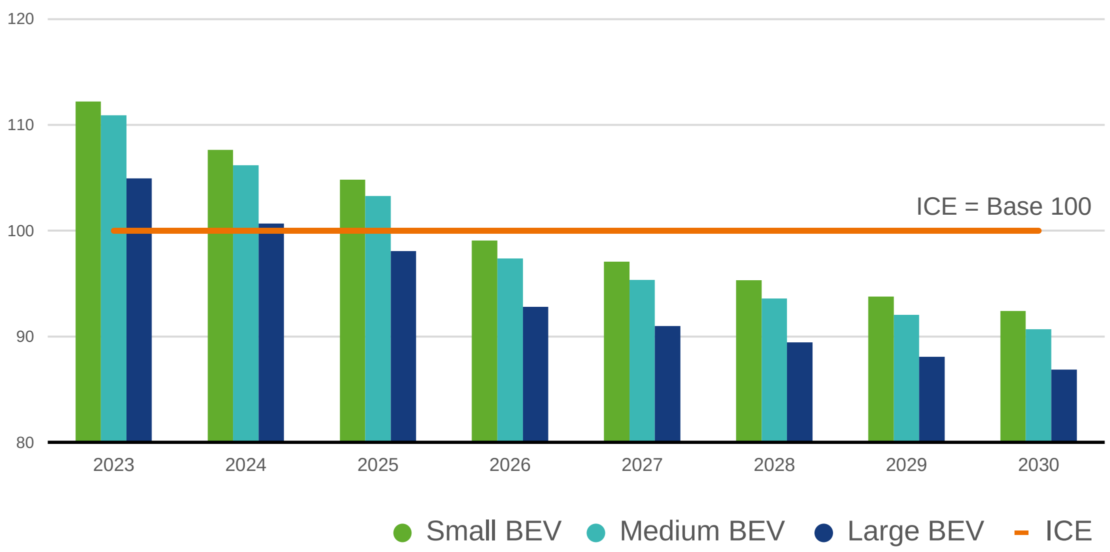
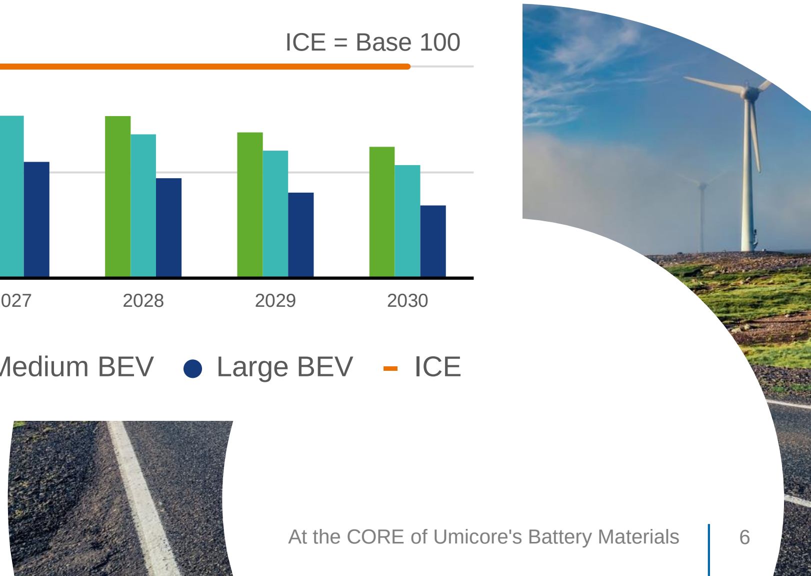
Price parity between BEV and ICE already expected in 2025 for large EVs, for medium and small segment by 2026

EU BEV price versus ICE (Base 100)





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Source: BloombergNEF
Note: Pre-tax estimate, no subsidies included. Upfront price parity based on assumption of vehicles with standard range and battery pack size, depending on the region.

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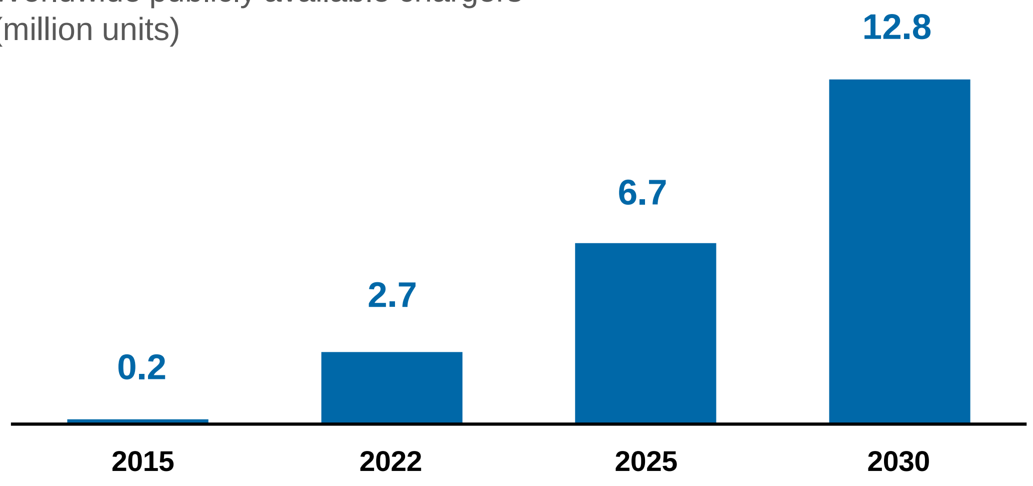
Public chargers grew ~50% p.a. between 2015 and 2022, forecasted to grow in line with electrification growth

Worldwide publicly available chargers (million units)



Source: IEA

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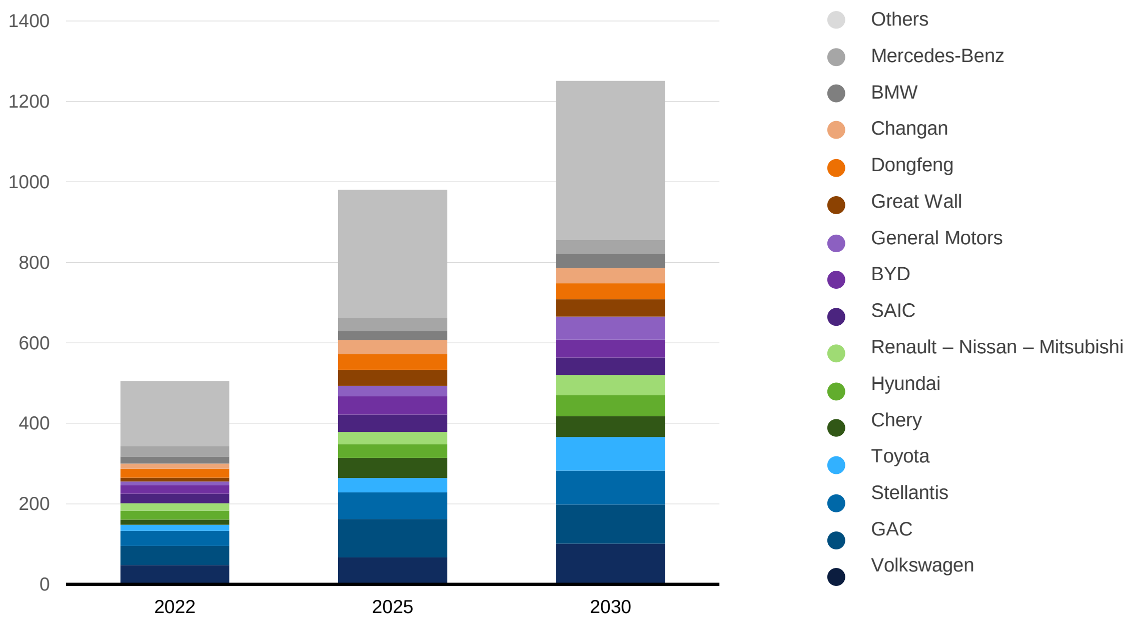
Rapidly expanding EV portfolio, with already ~500 models globally in 2022, heading to >1,200 in 2030

Number of BEV and PHEV models produced (unit, Global)



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Source: IHS 2023

Significant BEV market growth spurring global demand for CAM

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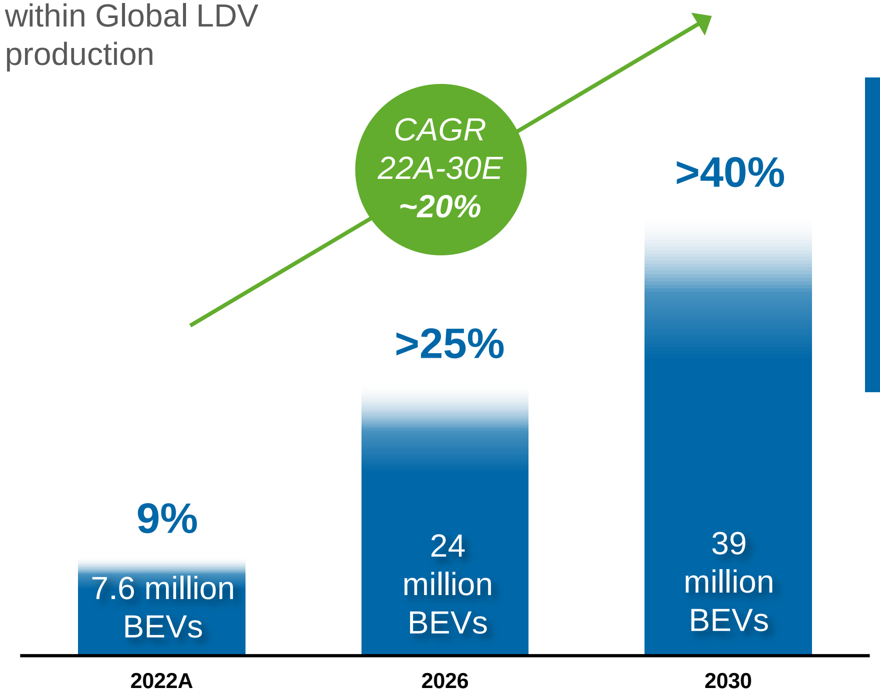
Accelerating growth in BEVs

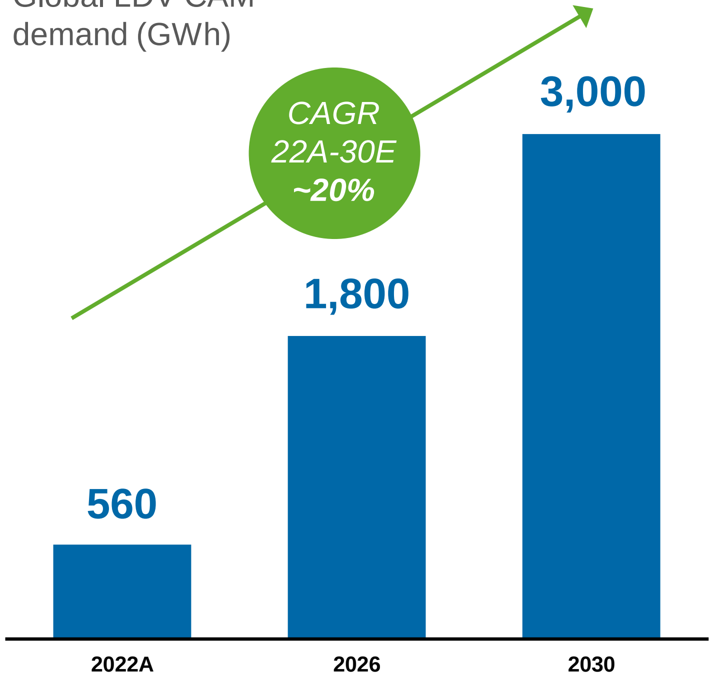
% of EV production within Global LDV production



EV production **>50%** of global LDV production in 2035

Global LDV CAM demand accelerating fast

Global LDV CAM demand (GWh)



EU and NAM biggest growth drivers

CAGR 22A-30E
EU: 25%
NAM: 29%

EU, NAM and China accounting for ~90% of global market in 2030

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Source: internal data and IHS 2023

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No one-size-fits-all

Diverse customer needs & solutions

BEV model offering is diverse and expanding

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Note: EV models shown are non-exhaustive and exemplary only
Source: Internet research, internal data and IHS 2023

BEV model offering is diverse and expanding

ENTRY	MASS	PREMIUM


Note: EV models shown are non-exhaustive and exemplary only
Source: Internet research, internal data and IHS 2023

Battery requirements differ across segments

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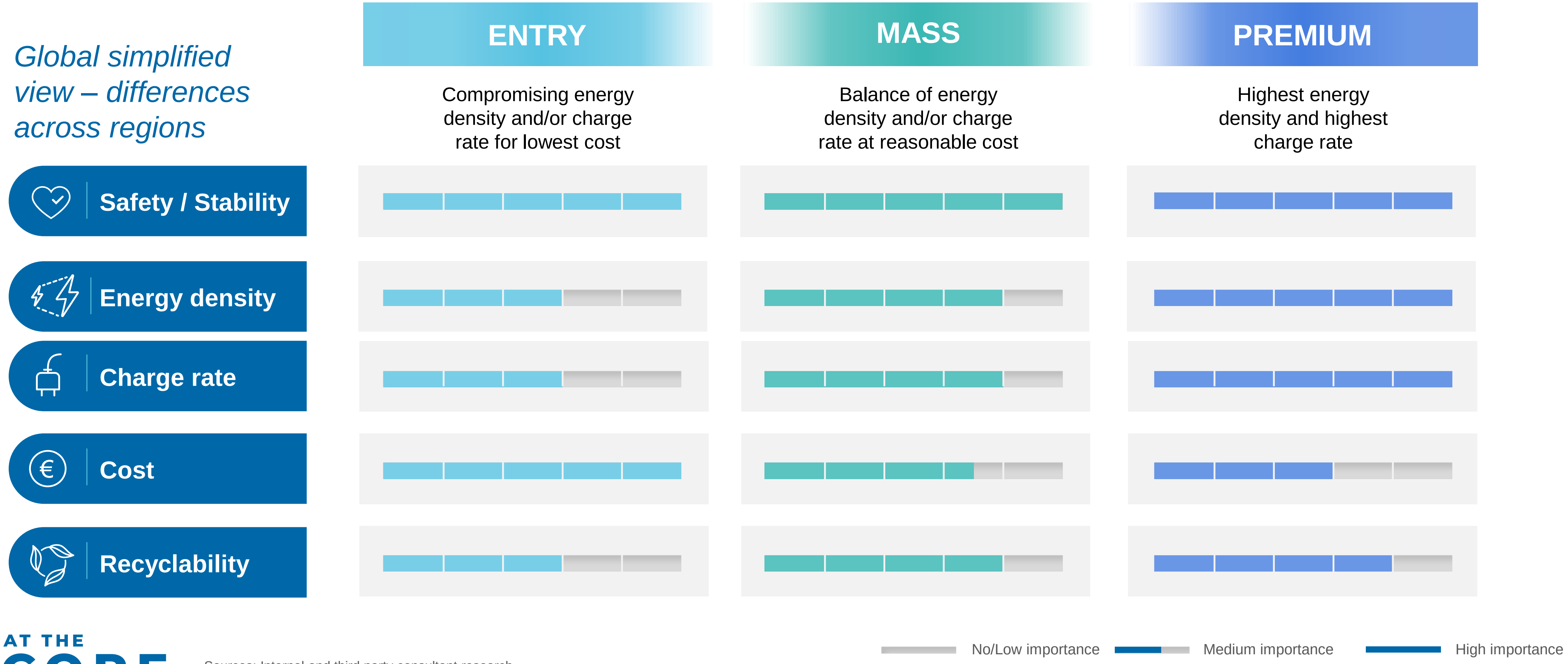
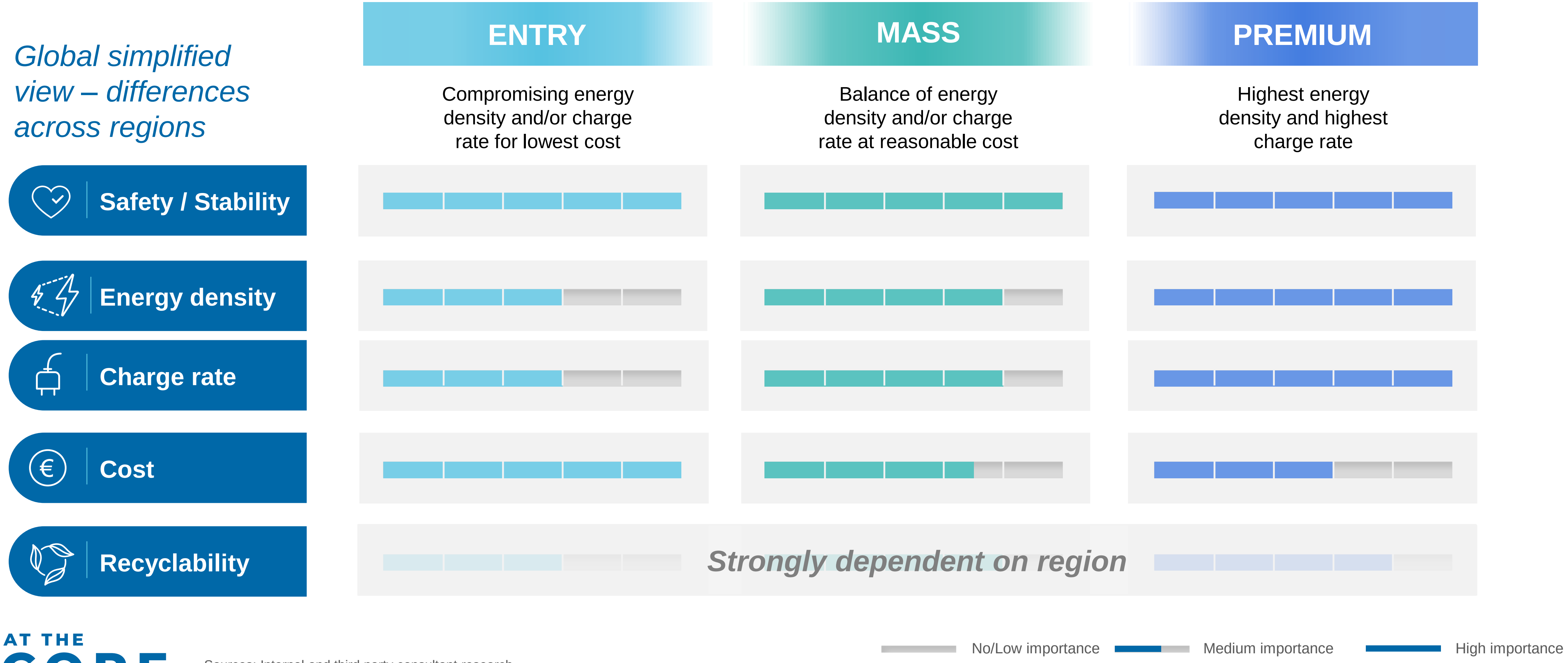


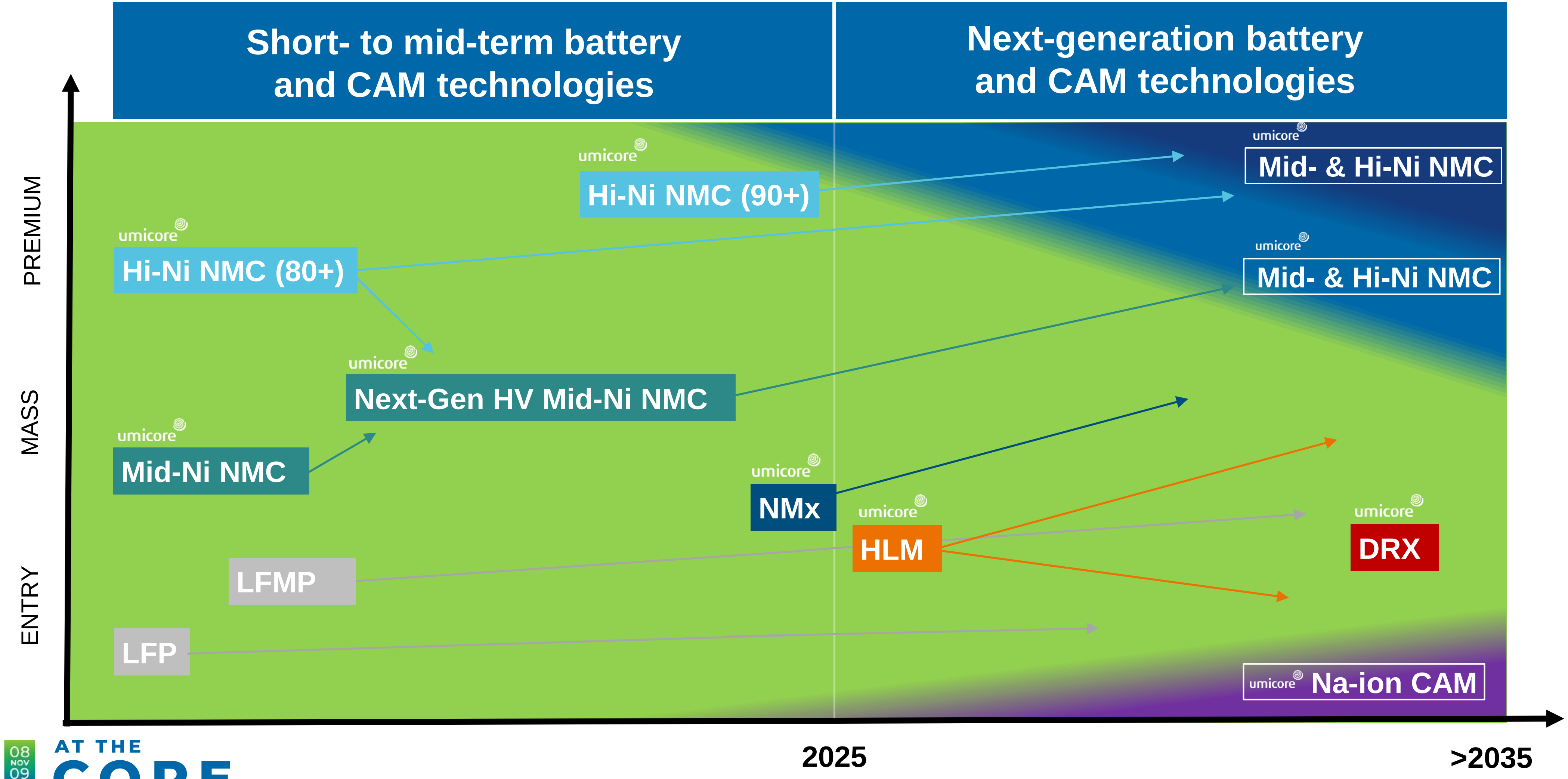
Sources: Internal and third party consultant research
Note: Gravimetric energy density for CAM material only, excl. other battery or cell components

Battery requirements differ across segments



Sources: Internal and third party consultant research
Note: Gravimetric energy density for CAM material only, excl. other battery or cell components

Broad chemistry portfolio meets markets needs



Liquid Li-ion battery

All-solid-state battery

Semi-solid-state battery

Na-ion battery

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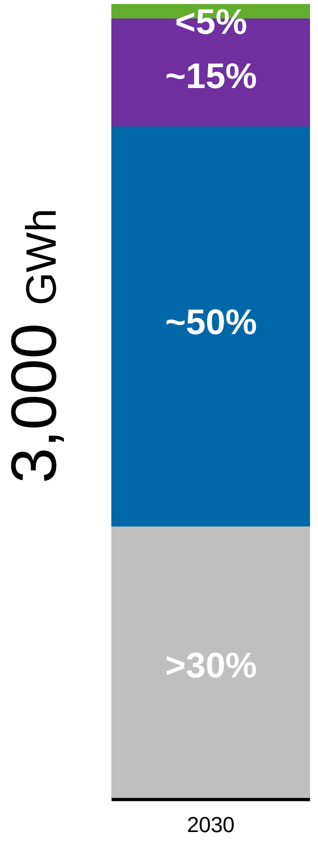
Chemistry in Umicore portfolio

Source: Umicore

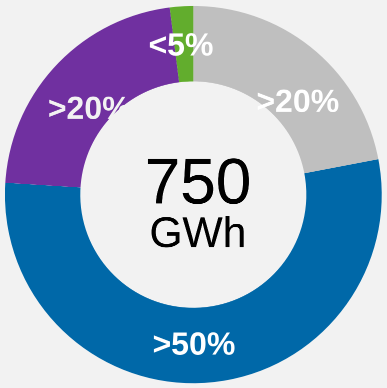
Demand for chemistries differs across regions

LDV CAM demand by region and chemistry (2030, GWh)

Global

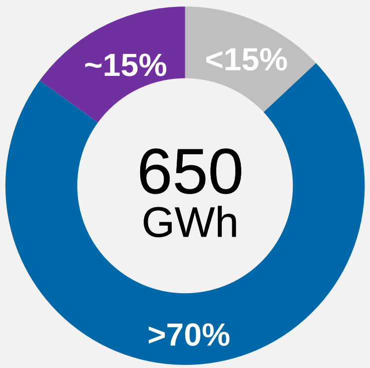


Europe



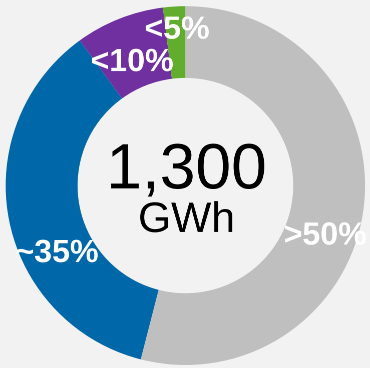
CAGR ’22-’30
25%

North America



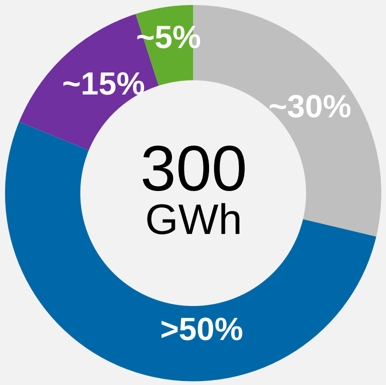
CAGR ’22-’30
29%

China



CAGR ’22-’30
20%

Rest of the world



CAGR ’22-’30
29%

Europe and North America dominated by NMC and HLM

LFP to remain major chemistry in China – Rest of the world mixed

● LF(M)P ● NMC family (incl. SSB) ● HLM ● Others

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Source: Internal and third-party consultant research

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Local-for-local approach

Regionalization of value chain

CAM market will be won at regional level

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OEMs seek regulation-proof, more resilient and local supply chain

Regulatory pressure & geopolitical independency

- Increasing share of locally produced EV batteries
- Push for more local supply chains

Supply chain robustness

- Geopolitics and supply chain disruptions pushing OEMs to local supply chains
- OEMs reduce dependency on single LiB supplier (with >75% of today's cells coming from China)

Transportation, costs and carbon footprint

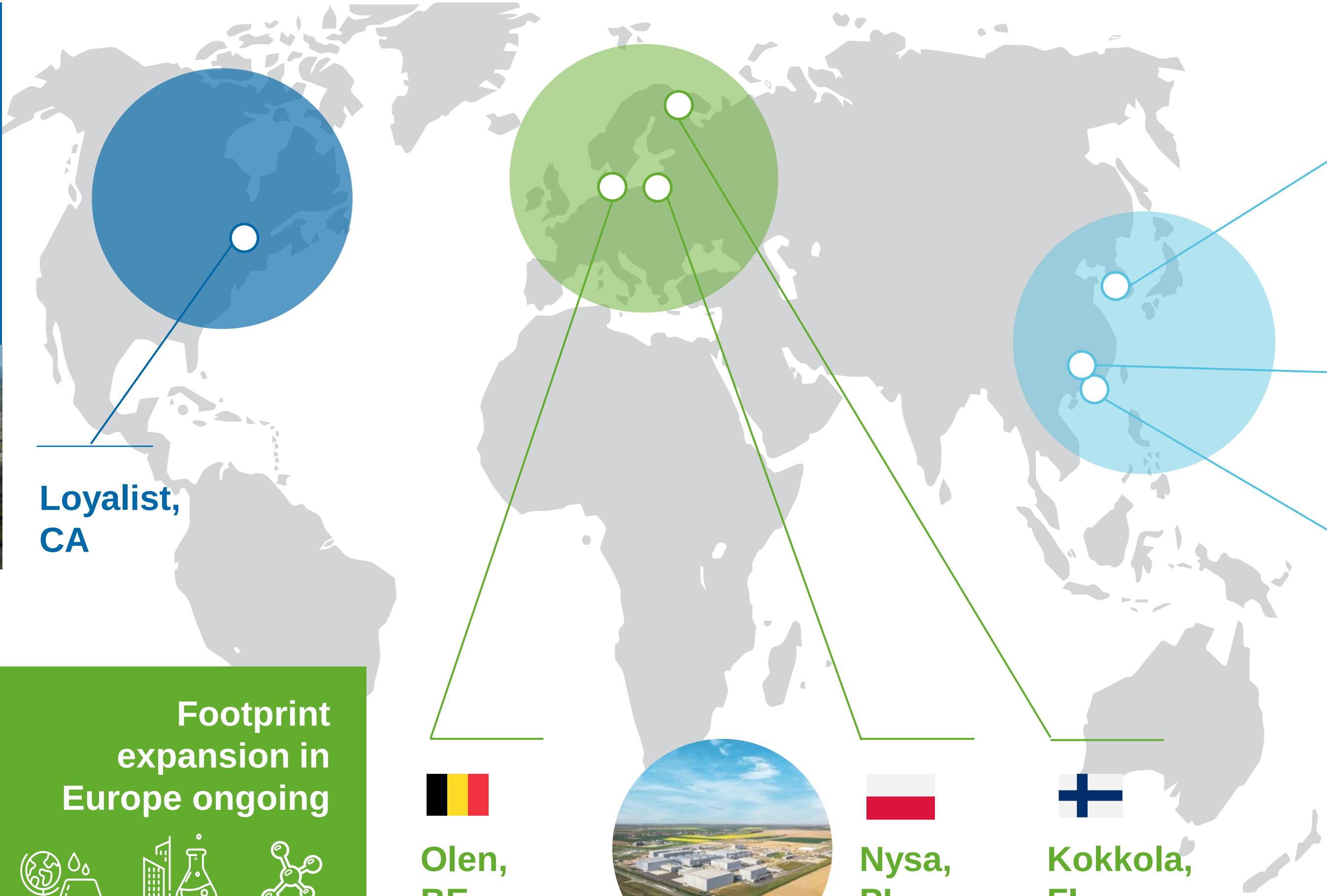
- Costly, time-consuming and carbon intensive inter-regional transportation of LiB cells & components
- OEMs push for regional sourcing to keep supply chains short

Strong regional strategy is critical for CAM manufacturers

Umicore’s truly global local-for-local footprint

Along the value chain, close to customers

Footprint expansion North America confirmed and started



Loyalist, CA

Footprint expansion in Europe ongoing

Olen, BE

Nysa, PL

Kokkola, FI

Cheonan, KR

Jiangmen, CN

Ganzhou, CN

APAC footprint providing regional flexibility

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Key take-aways

Electrification of mobility in full swing

Strong drivers pushing pace of electrification in fast forward

Addressable CAM market in key regions rapidly growing

Umicore well positioned

- Future-proof innovation set-up
- Broad technology portfolio covering all market segments
- Flexible and future proof operations set-up
- Truly global local-for-local production footprint

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