Cobalt Blue Holdings Limited ABN 90 614 466 607
Level 17, 100 Miller Street, North Sydney, NSW 2060
www.cobaltblueholdings.com
Facebook: www.facebook.com/Cobalt.Blue.Energy/
LinkedIn: www.linkedin.com/company/cobalt-blue-holdings

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27 February 2023

PRESENTATION FOR LIVE WEBINAR

Further to the Company's announcement of 23 February 2023, please see attached Webinar presentation. Details of the webinar are set out below.

TOPIC: Update on cobalt market developments and the outlook for NCM battery cathodes amid rising market share of LFP cathodes.

Date: Tuesday 28 February 2023
Time: 5:00 PM AEDT
Format: Presentation update followed by Q&A
Duration: 45 minutes

Please register in advance for this free webinar:
https://us06web.zoom.us/webinar/register/WN_QFpOrEx3Rw2dgDhE_A5n7A

After registering, you will receive a confirmation email containing information about joining the webinar.

For enquiries, please email allysia.robinson@cobaltblueholdings.com

Questions may be submitted ahead of time at registration or during the event using the webinar software.

This announcement has been authorised for release by the Company's Board of Directors.

Danny Morgan
Chief Financial Officer
(02) 8287 0660

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28 February 2023

Investor Webinar

ASX: COB

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Webinar Agenda

1. COB update
2. The cobalt market
3. Developments in NCM and LFP Market Share
4. Influence of the Inflation Reduction Act/ Green Deal Industrial Plan response

Source: Cobalt Blue Holdings Limited

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Recent Key Milestones

1. **Capital raise:** Placement and shareholder entitlement raised A$22m.
2. **Feasibility Study (FS) progressing:** Contracted engineering firms engaged, EIS fieldwork continues.
3. **Demonstration Plant:** Underground mining and concentrate processing complete. First large scale MHP expected shortly.
4. **Project Partner discussions ongoing:** Targeting OEMs, manufacturers and traders across the battery supply chain.
5. **Critical Minerals Accelerator Grant:** (A$15m) funds contributing towards FS delivery.

Source: Cobalt Blue Holdings Limited

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BHCP: Demonstration Plant

Underground Portal

Concentrator Circuit

Source: Cobalt Blue Holdings Limited

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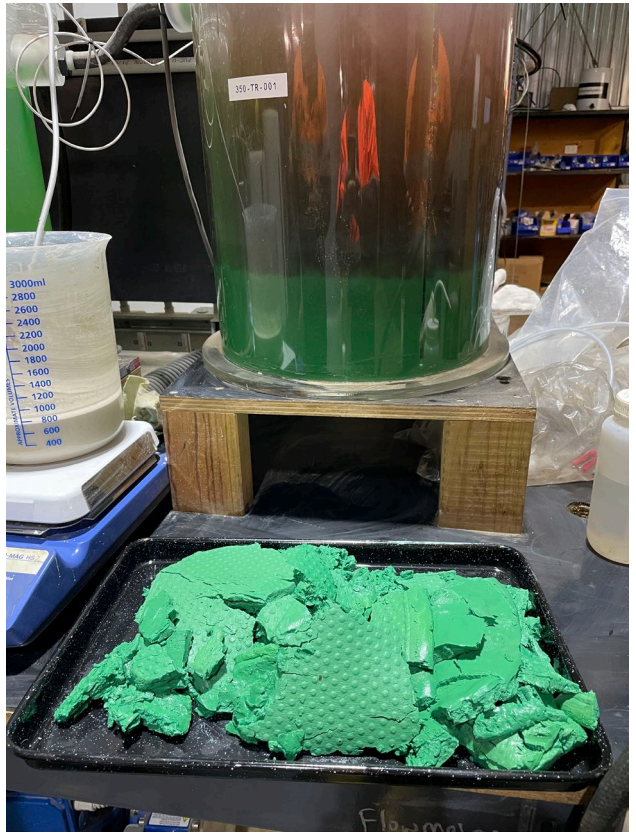
BHCP: Demonstration Plant

Horizontal vacuum filter belt & Pressure oxidation leach circuit

MHP (30% Co, 7% Ni) & Cobalt Sulphate (20% Co)



Source: Cobalt Blue Holdings Limited

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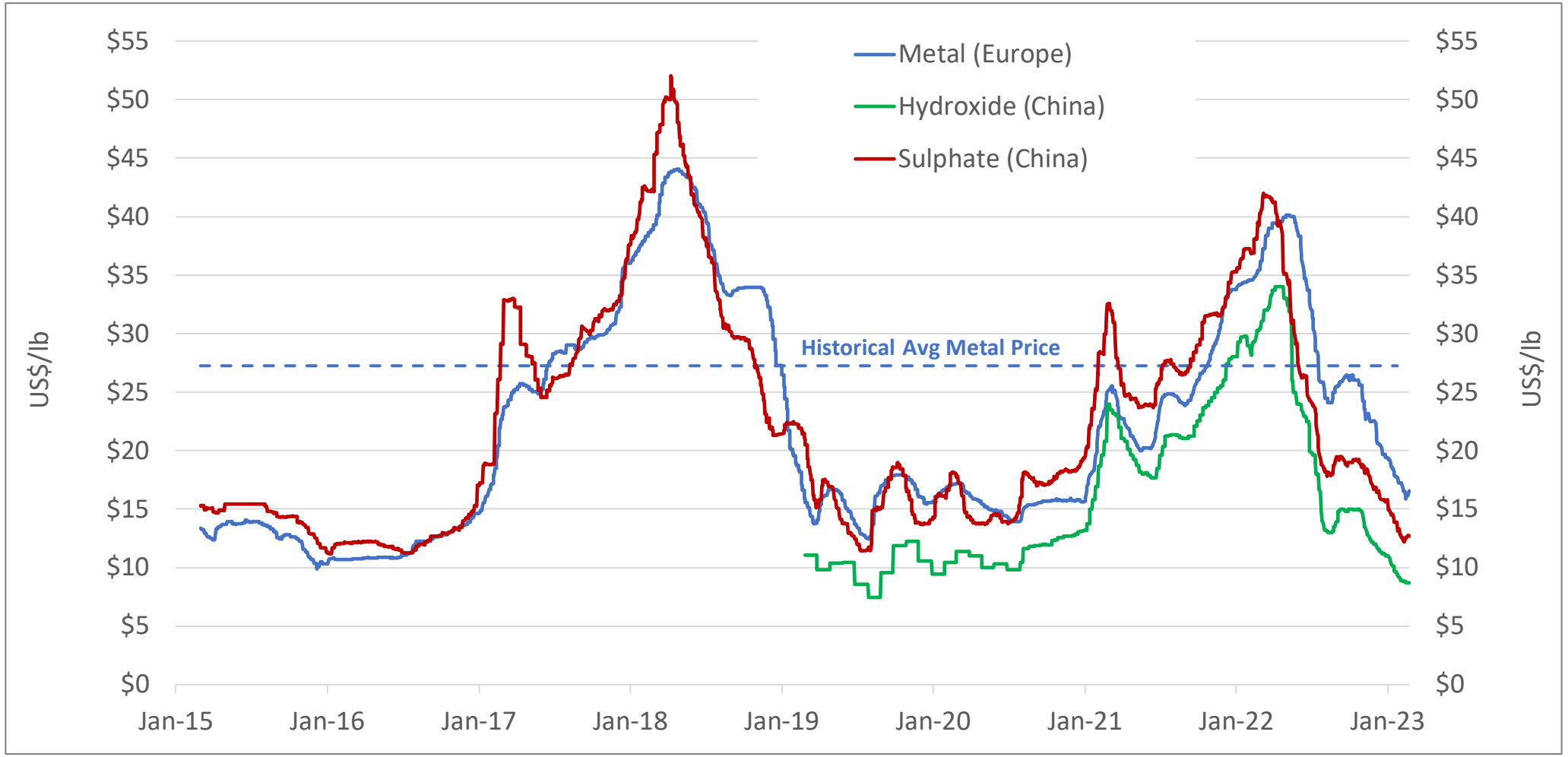
Cobalt Prices: Supply outpacing demand



Source: S&P Global Commodity Insights, Cobalt Blue Holdings Limited

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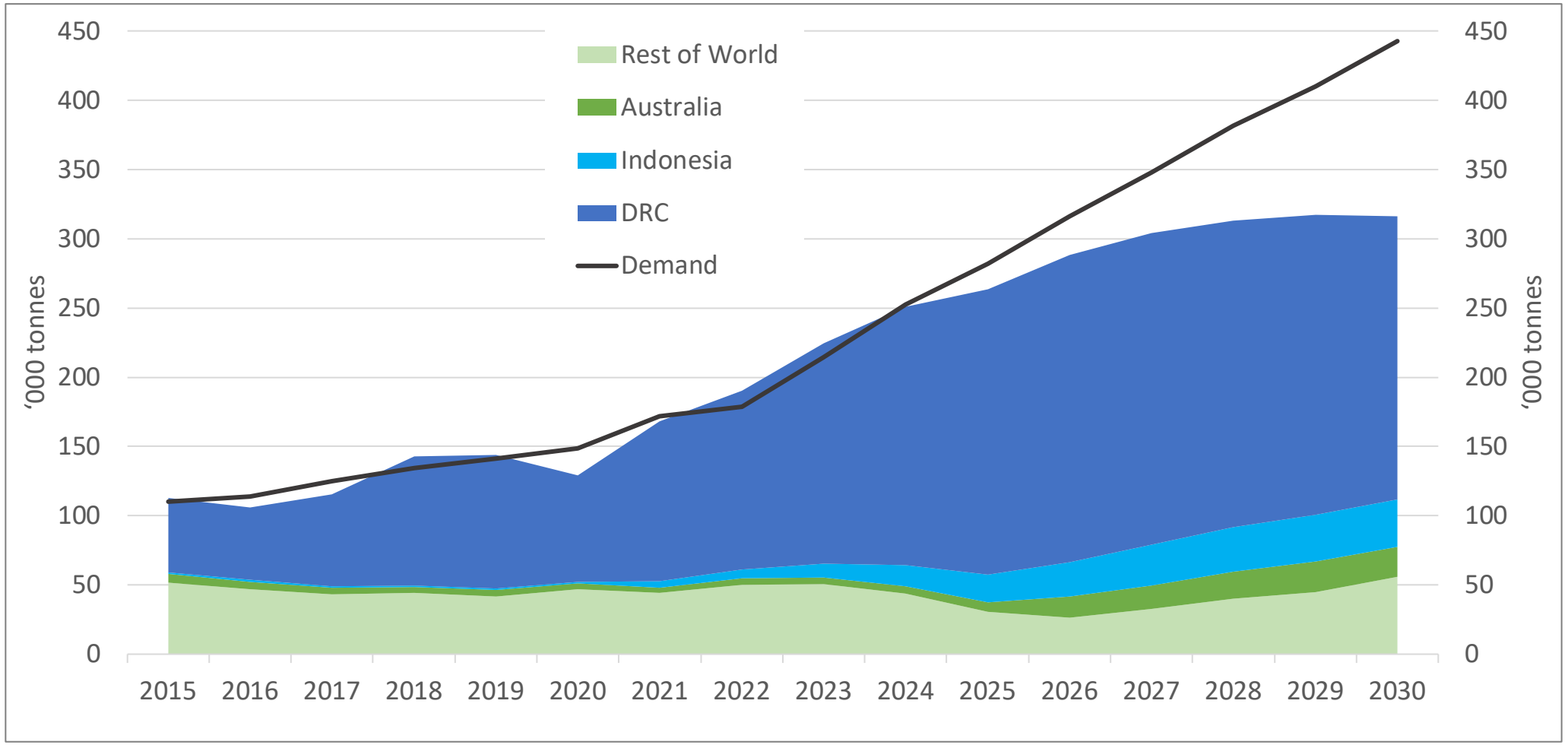
Cobalt Prices: Supply outpacing demand



Source: Wood Mackenzie, Rho Motion, Cobalt Blue Holdings Limited

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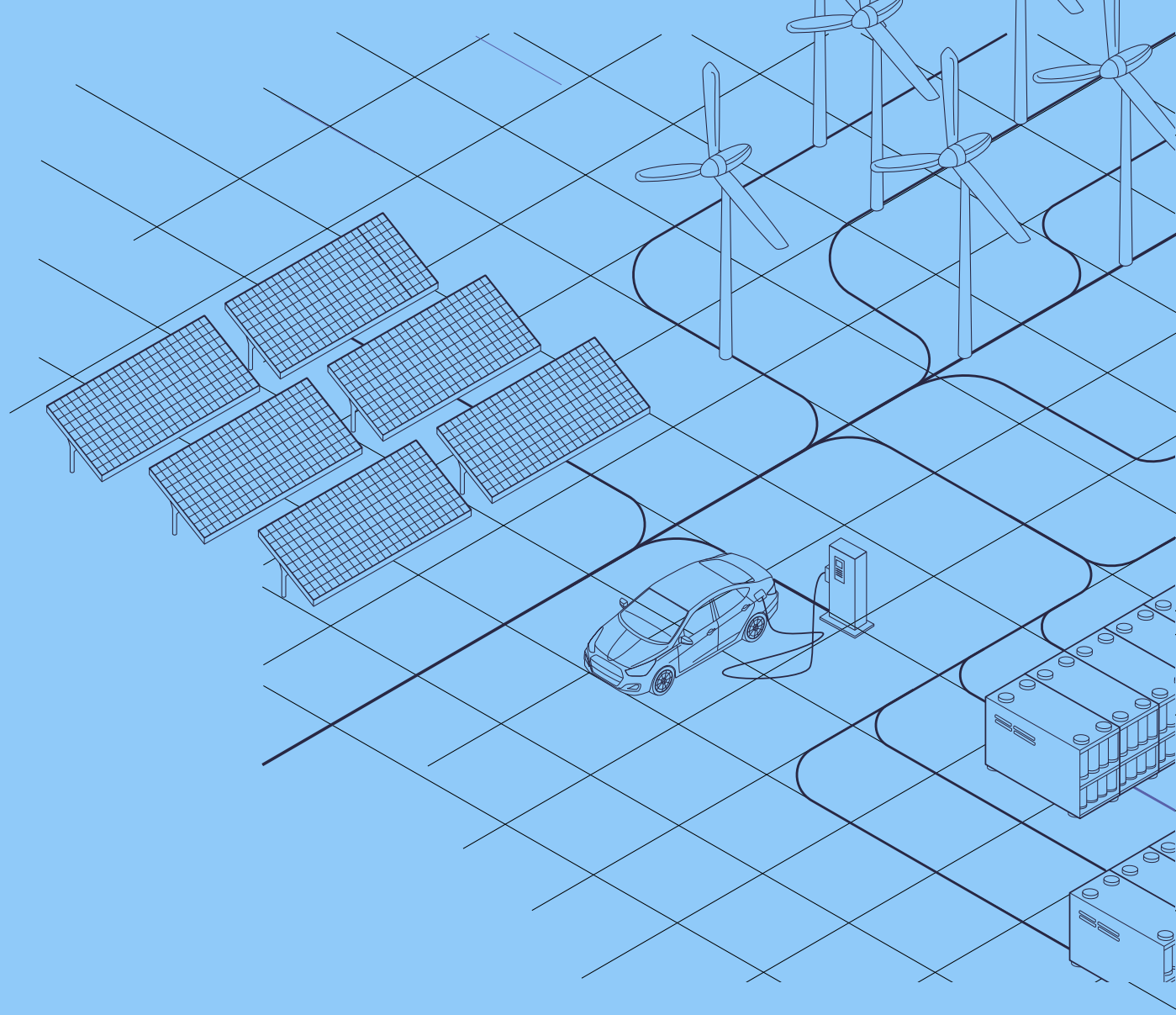

LFP and its future beyond China

Will Roberts

28th February 2023

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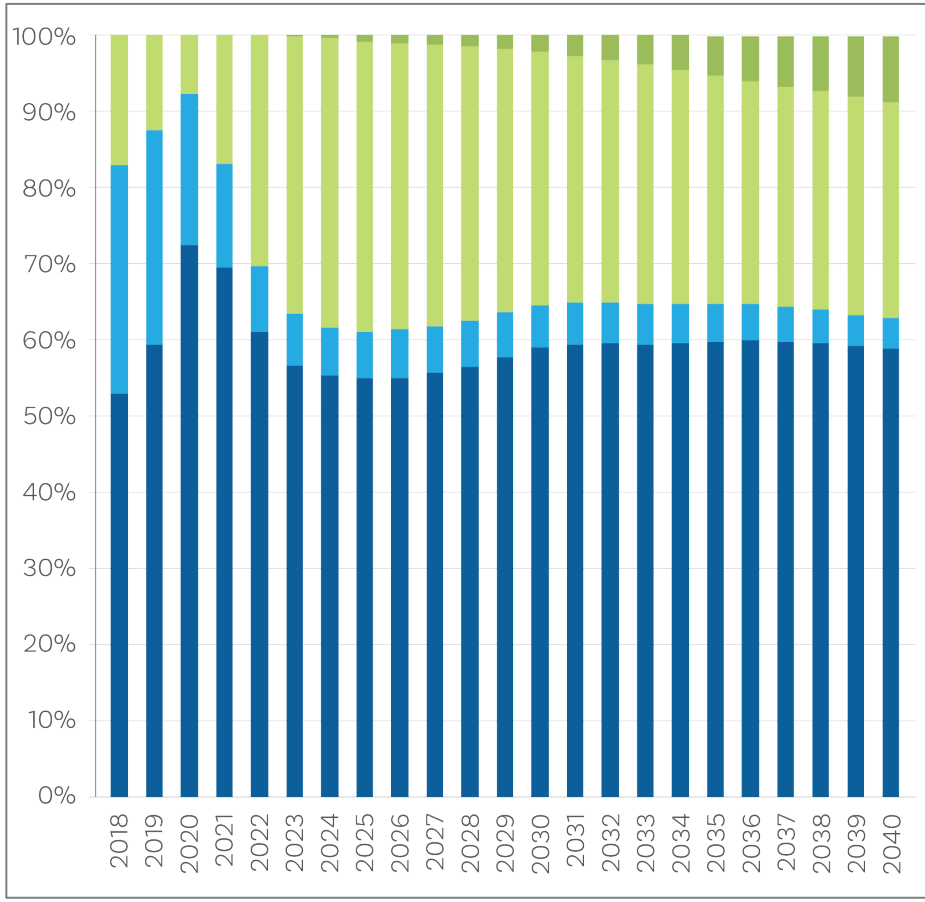
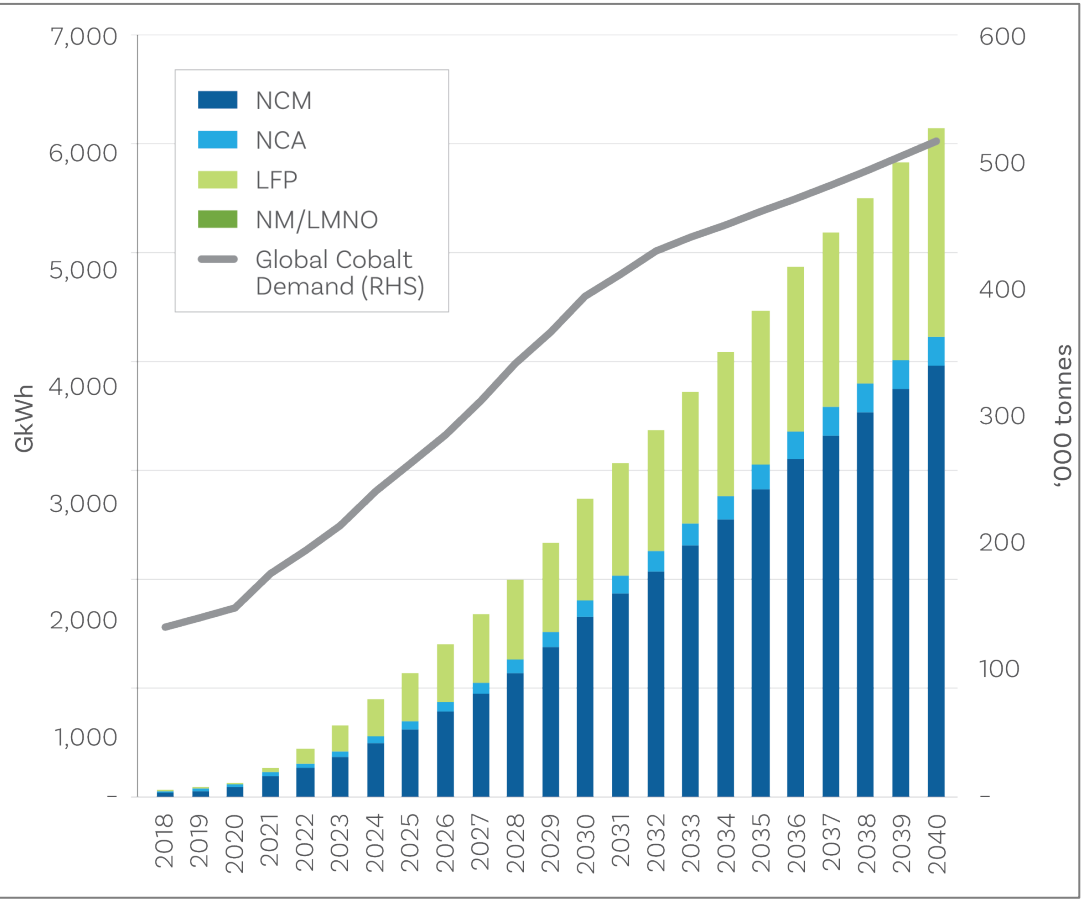
LFP share rising, so is cobalt demand

Li-ion battery cell chemistry market share



Li-ion battery cell chemistry growth vs cobalt demand



Source: Rho Motion, Cobalt Blue Holdings Limited

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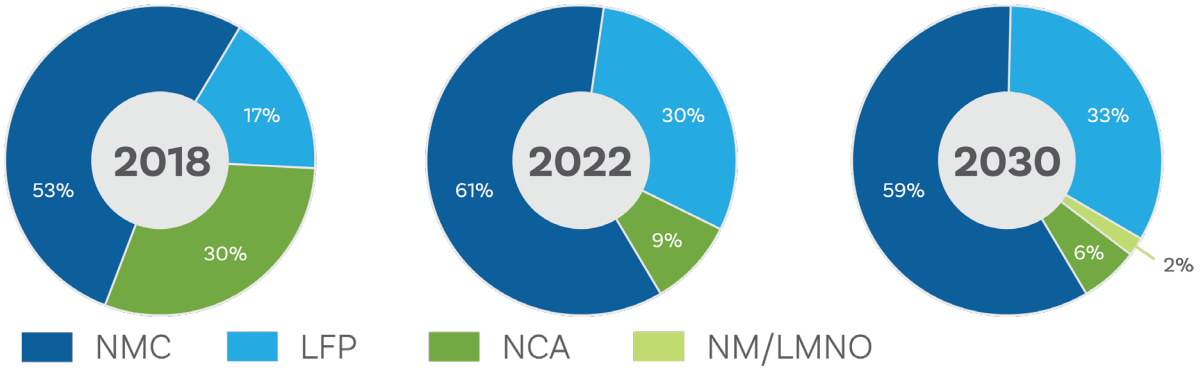
NCM vs LFP

Most EV batteries today use one of two types of cathodes:

- Nickel Cobalt Manganese (**NCM**) cathodes:
  - Capable of storing more energy
  - Superior life spans
  - Superior thermal stability, thus safer
  - Use costly materials (nickel, cobalt).

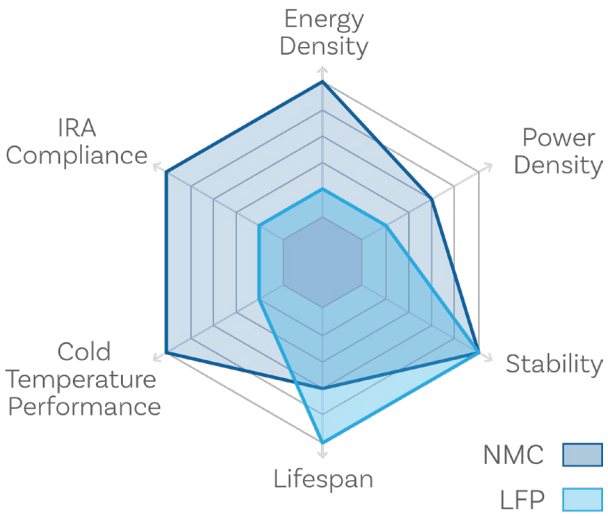
- Lithium Iron Phosphate (**LFP**).
  LFP cathodes:
  - Less energy efficient (due to weight)
  - Slower cold-weather charging
  - Little capacity ex-China
  - Safer in higher temperatures or demanding conditions
  - Use less costly materials (iron, phosphate)

Li-ion EV battery cell chemistry market share



	LFP	NMC
Energy Density	●	●●●
Power Density	●	●●
Stability	●●●	●●●
Lifespan	●●●	●●
Cold Temperature Performance	●	●●●
IRA Compliance	●	●●●

●●● Excellent ●● Good ● Poor



Source: Rho Motion, Cobalt Blue Holdings Limited

Chemistry deployment varies significantly between regions

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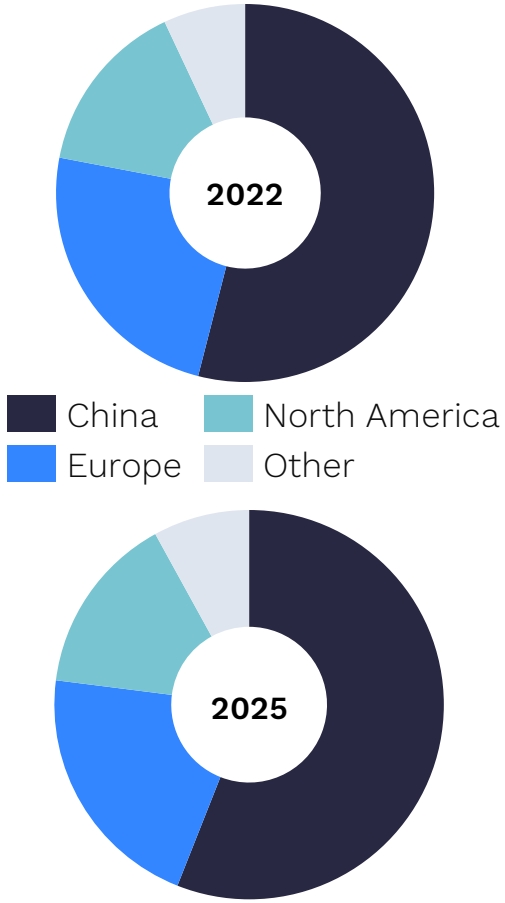
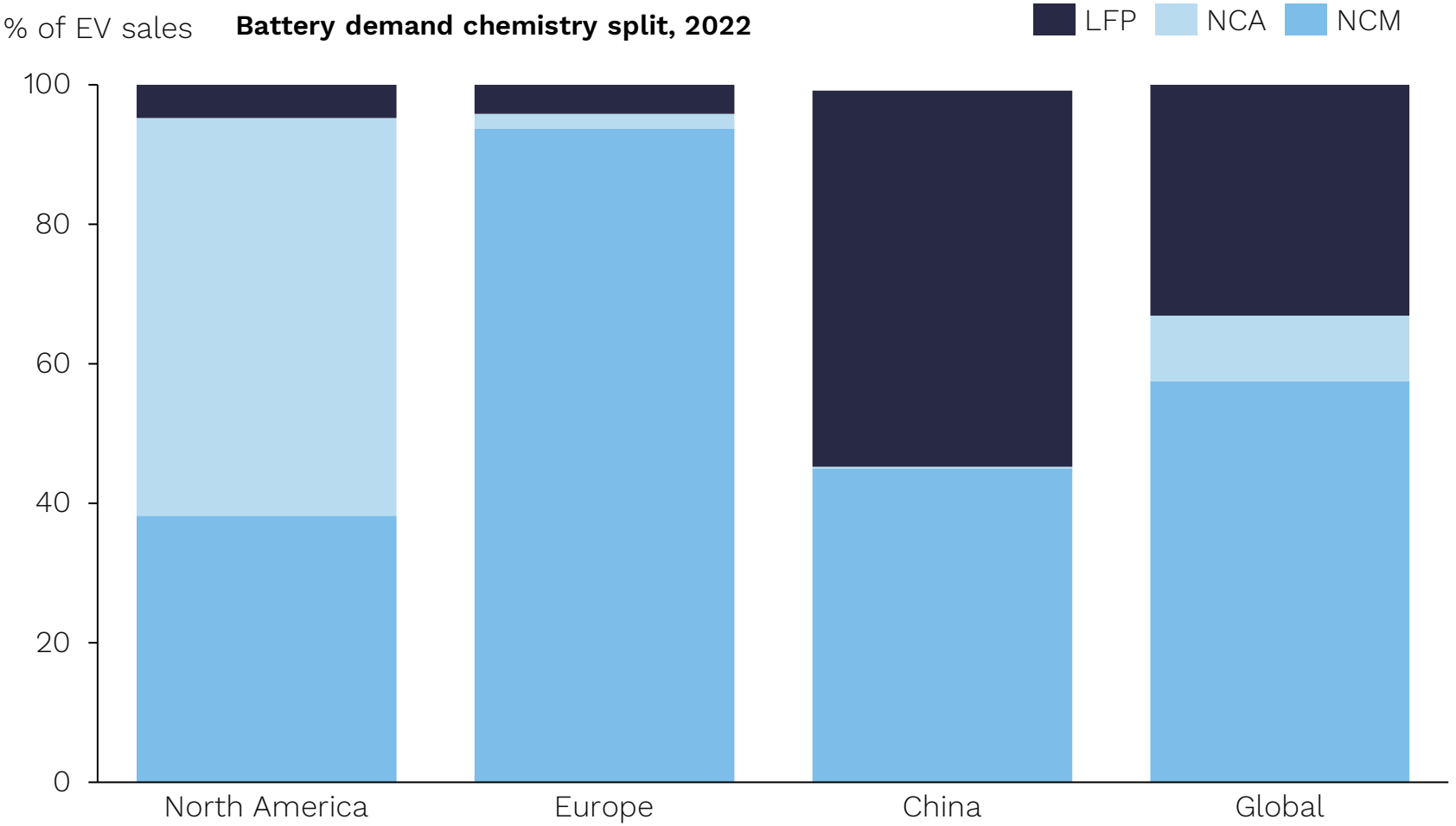
Battery demand by region



Battery demand chemistry split, 2022



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Average pack sizes are smaller for LFP for nearly every vehicle segment in which it appears

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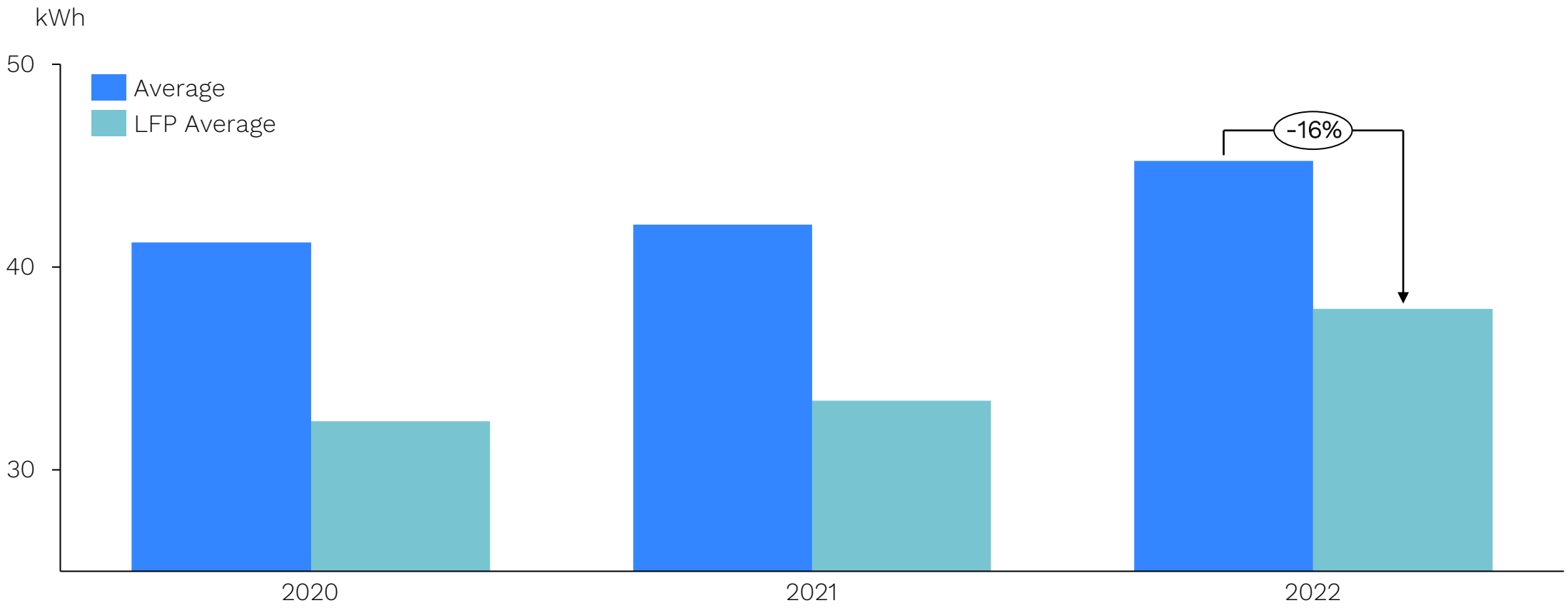
Average pack size comparison: LFP vs all Chemistries



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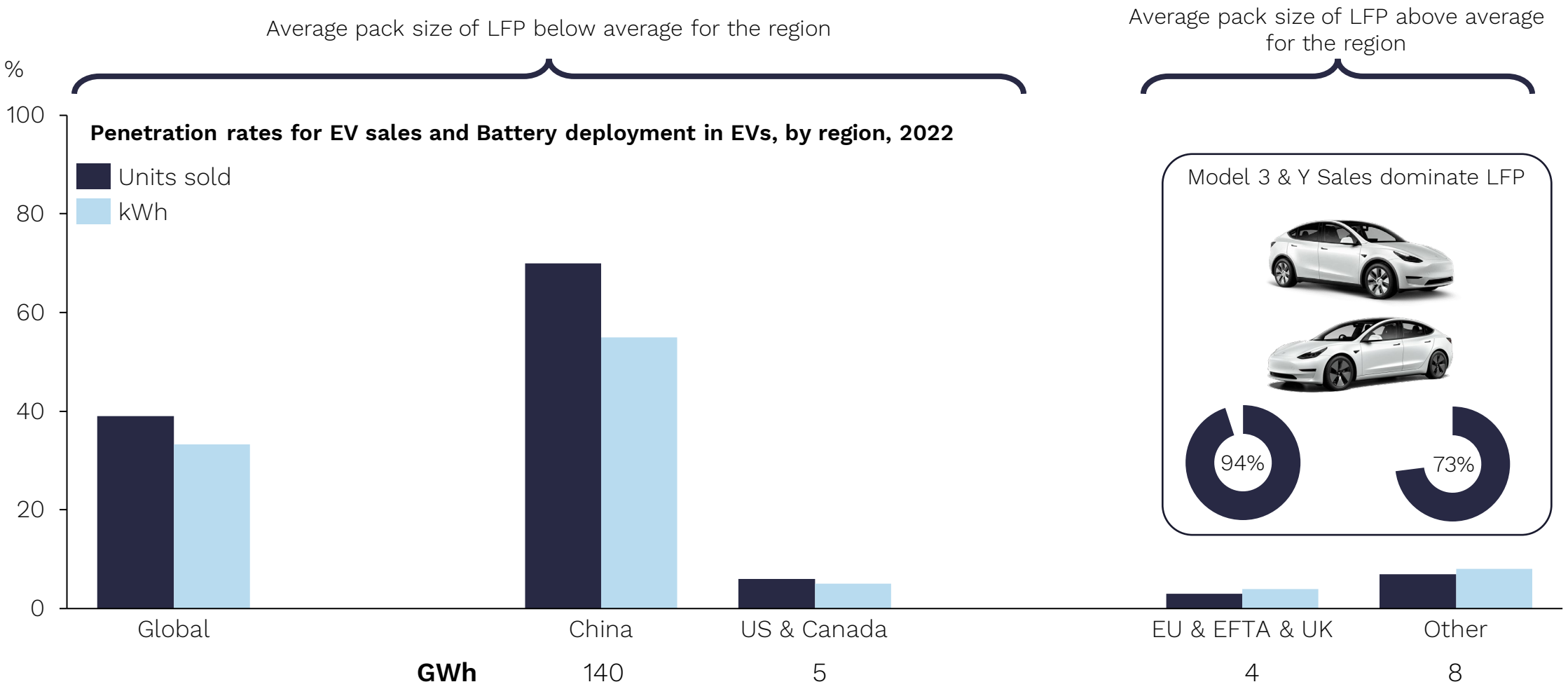
LFP penetration in vehicle sales is higher than in battery deployment, heavily weighted by China



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LFP adoption in Europe and North America

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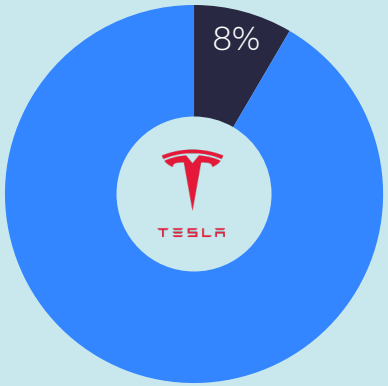
North America

Ford

- 35GWh LFP plant
- Online 2026
- LFP Mach-e option 2023
- LFP F-150 option 2024



TESLA

- 100GWh Nevada Facility – Nickel
- Cells needed for CT and Semi
- Potential future LFP – for ESS

Peak penetration: 12-15%

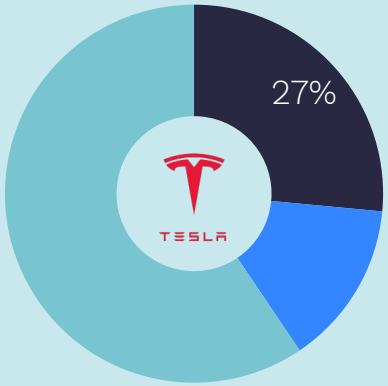
LFP NCA NCM

Europe

- LFP for 'Entry Level'
- VW to 'focus on premium'

Mercedes-Benz

- LFP for 'Entry Level'
- A and B class vehicles retired



TESLA

- Cell Prod. Moved from DEU to US

Peak penetration: 16-18%

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ESS Battery demand is ~10-15% relative to the EV market and is quickly moving to LFP

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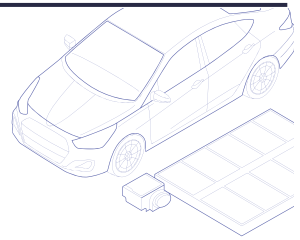
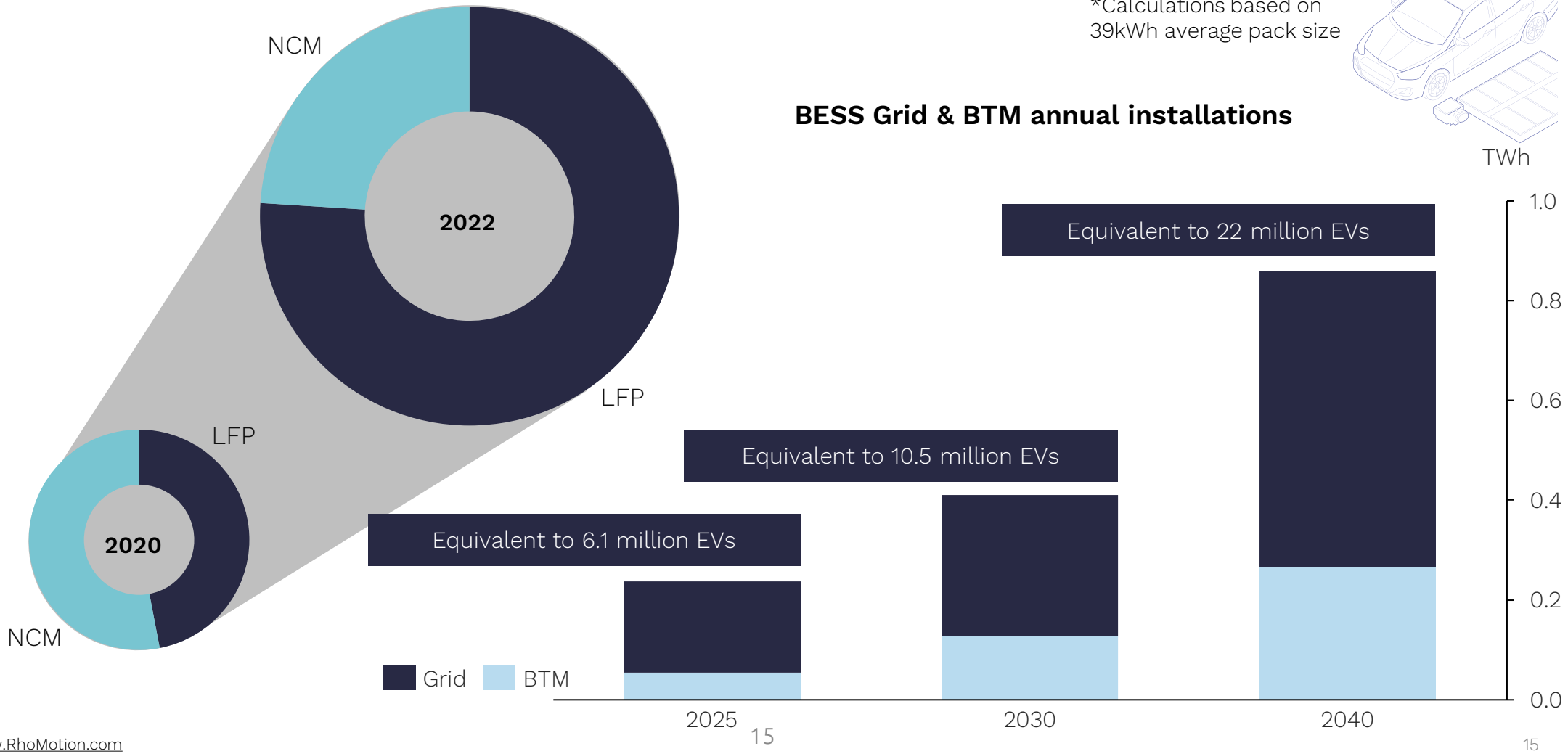
*Calculations based on 39kWh average pack size





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LMFP technology spotlight

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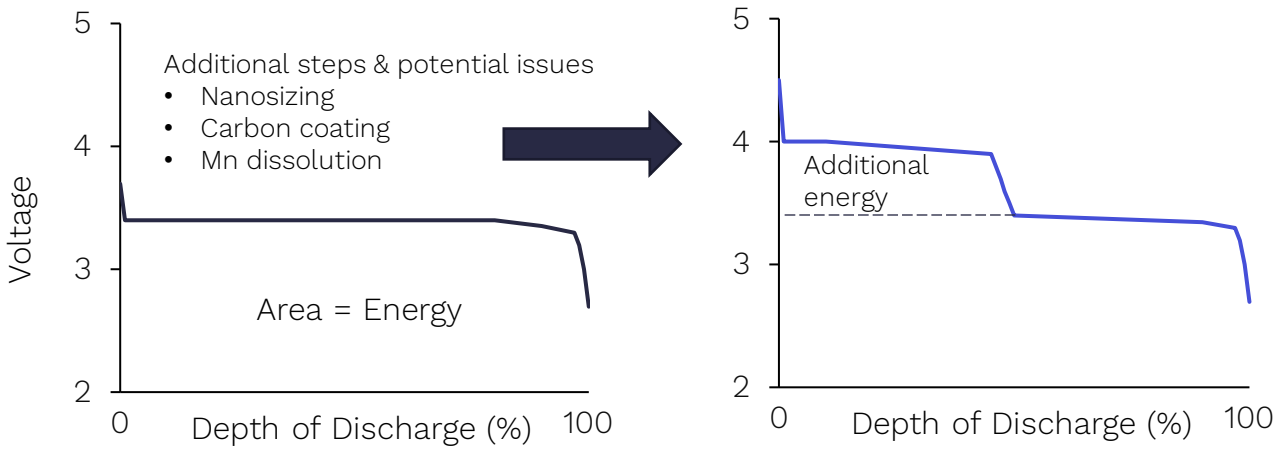
Next Generation LFP

- This quarter we have split out LMFP in the cathode chemistry forecast on the back of increased interest and announcements from cell manufacturers and OEMS.
- LFP is favoured by Chinese cell manufacturers, with its benefits in safety, cost and cycle life. Whilst there has been advancements optimising cell-to-pack, like with the BYD Han blade module-less design (~140Wh/kg, 210Wh/L) there are still fundamental material limitations.
- The next opportunity is represented by $LiM_xFe_{1-x}PO_4$ (LxFP), where iron (Fe) is partially substituted by other metals such as Mn, Zn and Al. CATL has claimed that M3P is ready for mass-production in 2023 and aims to supply the ~700km range BEVs with M3P cells in CTP 3.0 (Qilin) battery packs.
- In preparation for the future demand, CAM suppliers, such as Easpring and Dynanonic, have started to invest in LMFP cathode material projects.

Energy improvements – LFP (left) vs. LMFP (right)



Next Generation LFP cells – Short term, roadmaps

SAFT a company of TOTAL — Planned 2023, 60-80% Mn, Targeting ~ 400-500Wh/L.

CATL — M3P, more complex than LMFP, doped with 2 metals (including Mn, Zn, Al). Aiming for 210–230Wh/kg.

SUNWODA, Gotion, BYD, EVE — Others working on development of LMFP cells, some pilot production,

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US Bipartisan Infrastructure Law and Inflation Reduction Act

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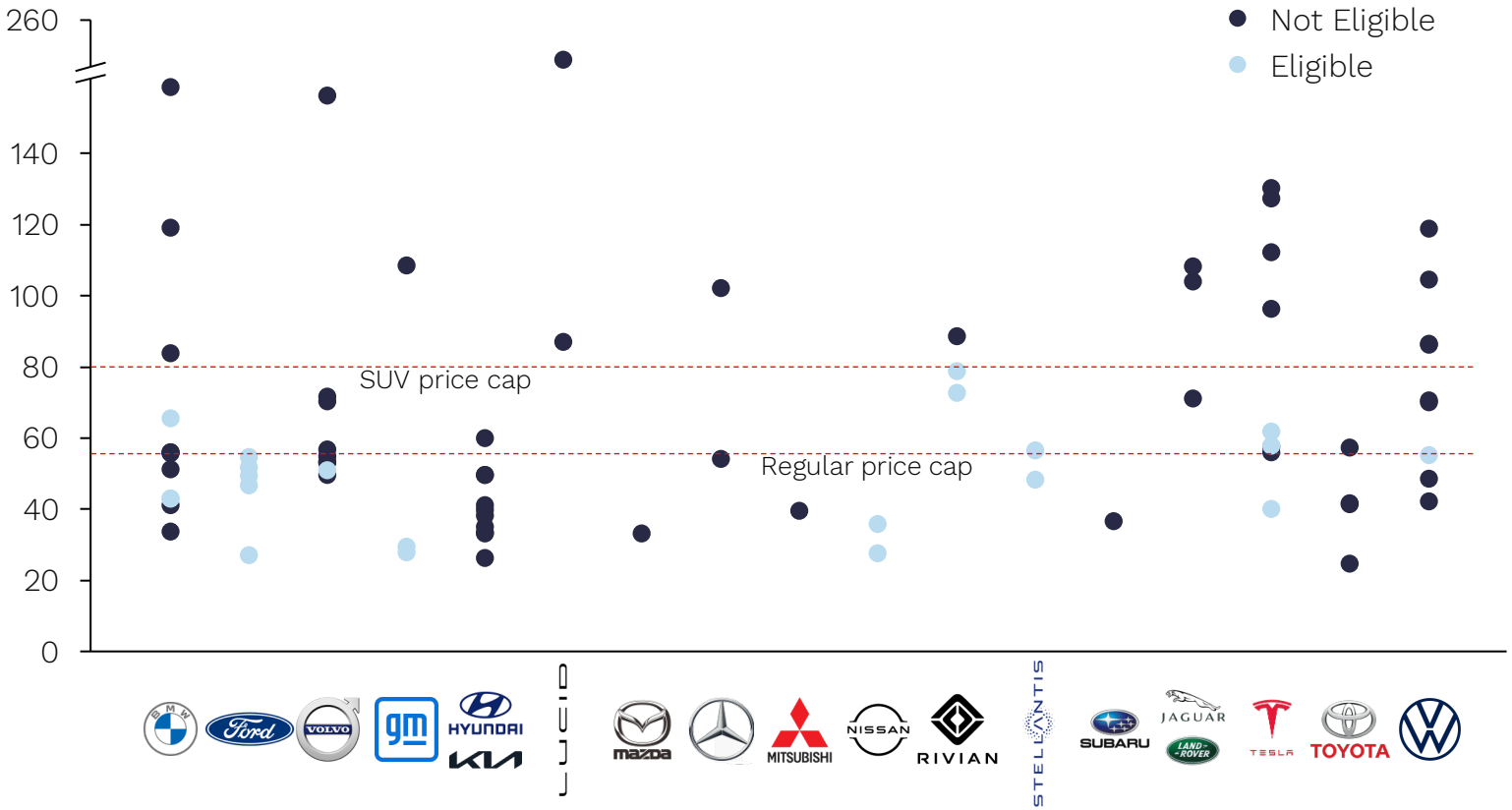
EV purchase price by OEM and IRA eligibility

Based on just the assembly location and vehicle price criteria a majority of EVs on sale in the US right now will not be eligible for the new tax credits under the IRA



20 companies awarded USD2.8 billion funding from the Infrastructure Law

Metal concentrates, salts

TALON METALS CORP, ABTC, PIEDMONT LITHIUM, ALBEMARLE, Lilac

Cathode precursors

ASCEND ELEMENTS

Recycling

Cirba Solutions

Electrodes, binder, separator, electrolyte

APPLIED MATERIALS, microvast, ENTEK, Koura

NMC, LFP cathode active materials

6K, ASCEND ELEMENTS, ICL

Graphite anode active materials

NOVONIX, SYRAH TECHNOLOGIES, ANOVION BATTERY MATERIALS

Silicon anode active materials

Sila, amprius, GROUP14

Projects could provide:	
Lithium	2 million EVs
Graphite	1.2 million EVs
Nickel	400,000 EVs
Binder	45% US demand

Source DoE

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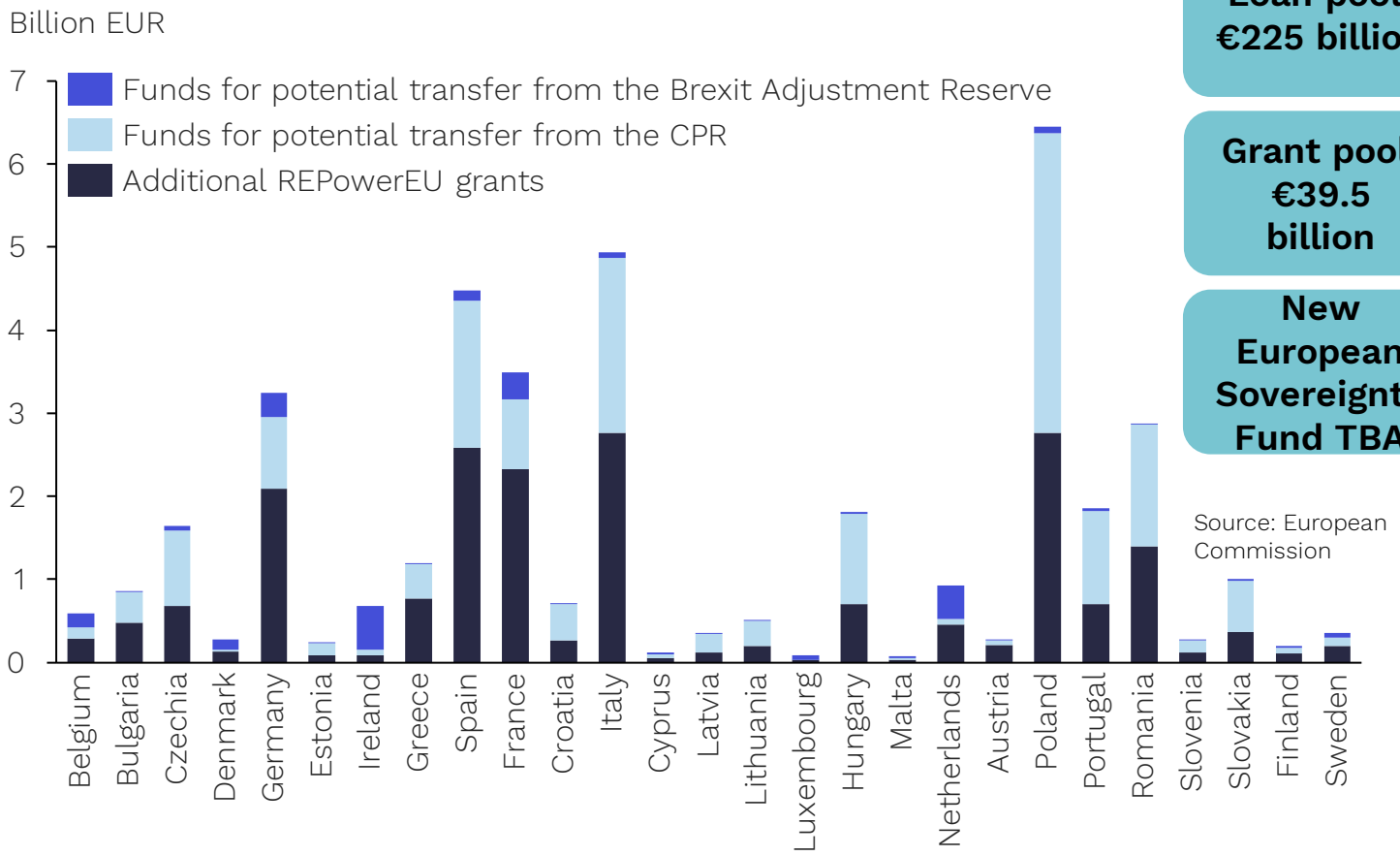
Europe responds to the IRA

The Four Pillars of the Green Deal Industrial Plan

- Simplify the regulatory environment – ease of **permitting**
- **Financing** through grants and loans
- Enhancing **skills** for net-zero related industries
- Facilitate open and fair **trade** to build supply chains

New Guidance of access to REPowerEU funds, by Member State



Source: European Commission

Loan pool: €225 billion

Grant pool: €39.5 billion

New European Sovereignty Fund TBA

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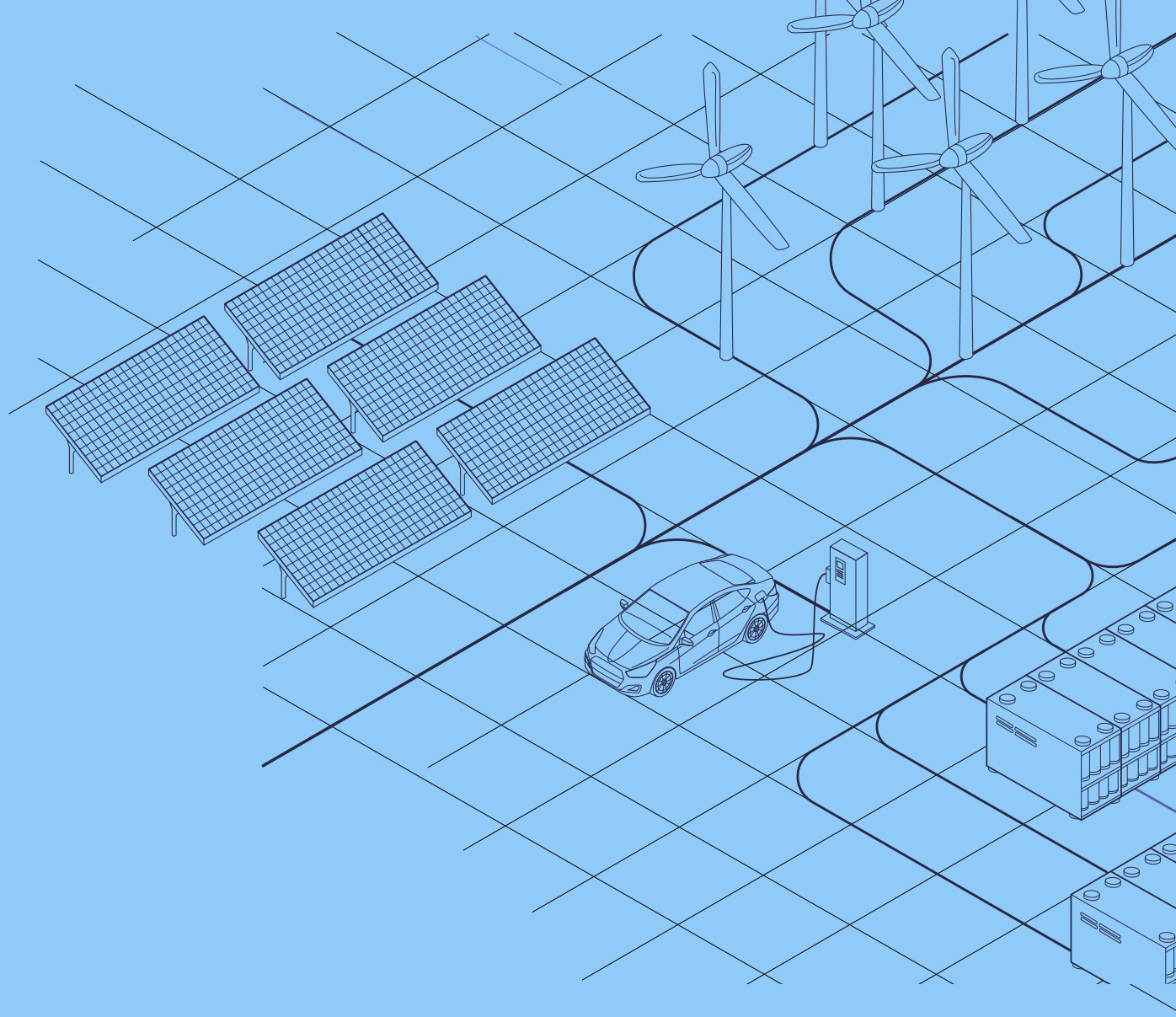

Any Questions?

Contact:
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