

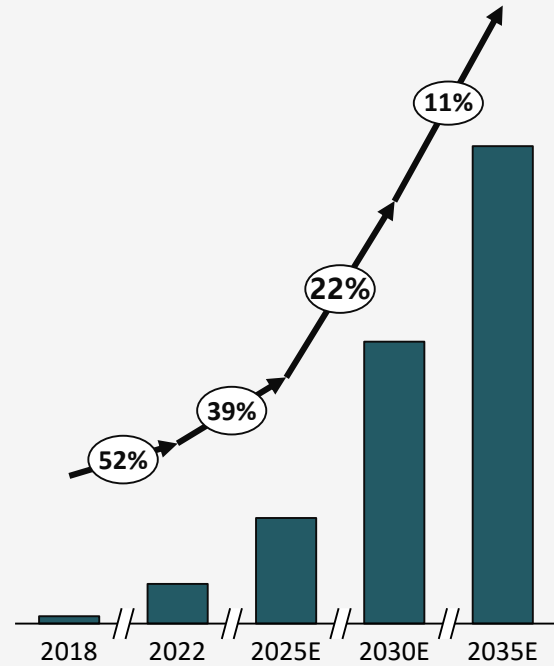
Lithium Downstream Market Assessment (lithium battery)

Global LIB Market Demand by Application & Region

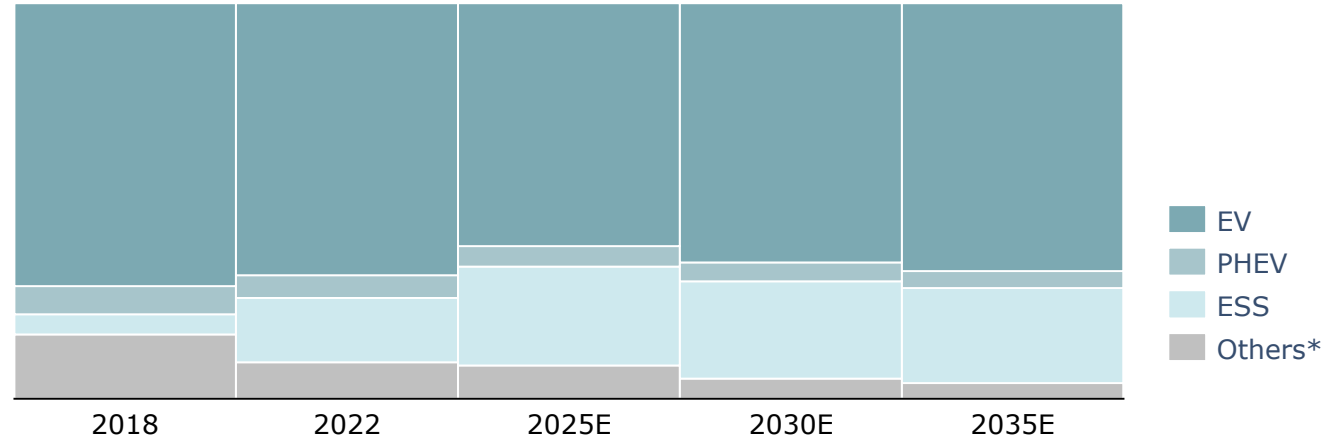
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Global LIB Market Sizing

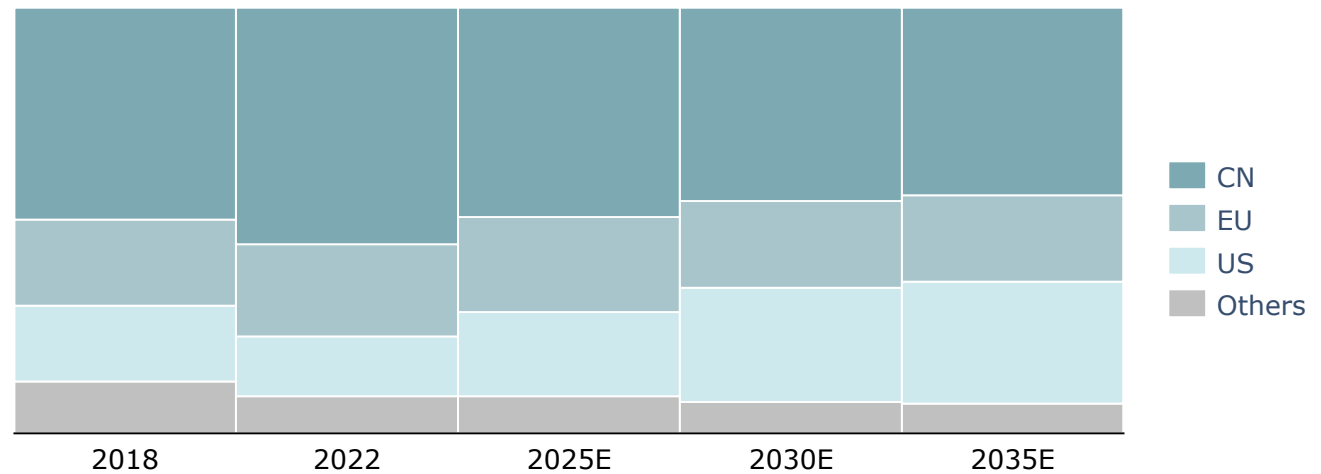
Unit: GWh



2018-2035E Global LIB Demand by Application



2018-2035E Global LIB Demand by Region



Global LIB Market Demand by Battery Type

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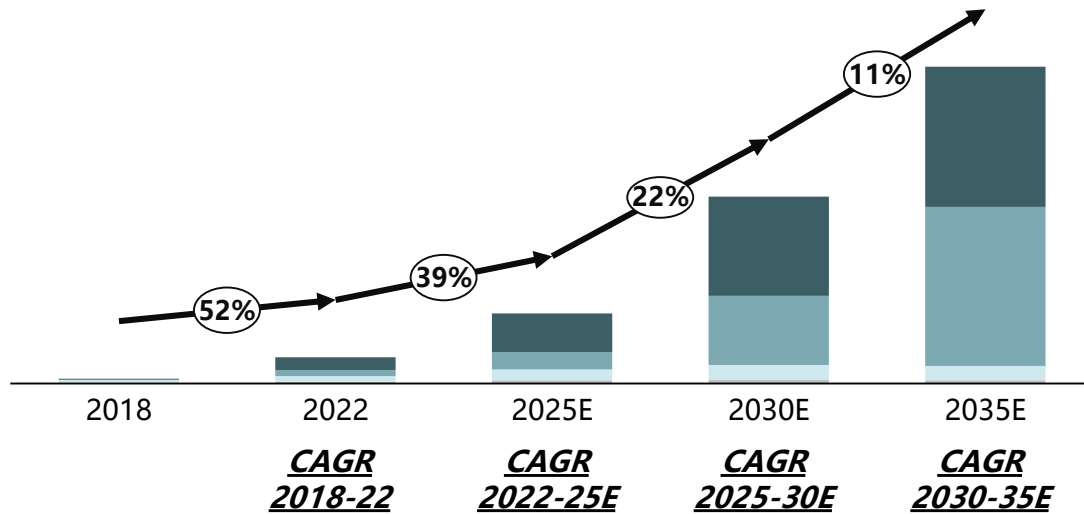


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Comments

2018-2035E Global LIB Battery Market Demand by Battery Type

Unit: GWh

■ LFP* ■ High nickel NCM ■ Mid nickel NCM ■ Others*



LFP*	90%	xx%	xx%	xx%
High-nickel NCM	xx%	xx%	32%	xx%
Mid-nickel NCM	xx%	xx%	xx%	xx%



LFP with demand explosion, NCM dominated high-end market (Y2018 - Y2022)

- xxxx
- Xxxx

LFP still dominant market, NCM continue to enhance performance (Y2022 - Y2025E)







- xxx
- Xxx

High-nickel NCM become mainstream battery (Y2025E - Y2035E)

- solid-state batteries...
- xxx

Comparison of NCM and LFP Battery - Performance

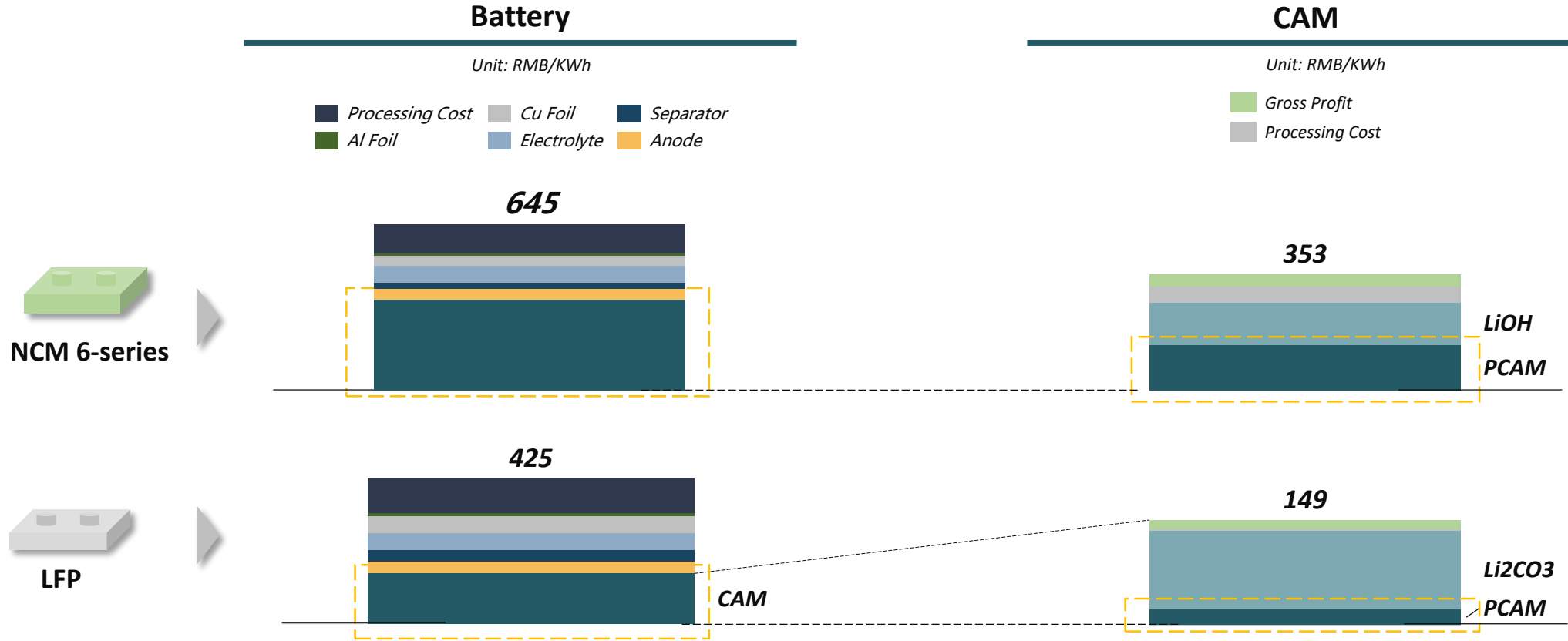
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Battery Type	 NCM 9-series	 NCM 6-series	 LFP
Cell Energy Density <i>(From 2023 to 2025)</i>	280 — 290Wh/Kg	240 — 260Wh/Kg	180 — 200Wh/Kg
Cycle Life <i>(From 2023 to 2025)</i>	1,x00 — 1,x00+times	2,x00 — 2,x00+ times	x,000 — x,x00+ times
Pack Capacity	Xx KWh	Xx KWh	Xx KWh
Distance	xx+ Km	xx-xx Km	xx-xx Km
Product Positioning	 High-end Long Range EV	 Mid-end Mid Range EV	 Eco-end Low&Mid Range EV

- **NCM 9-series:** NCM 9-series battery has highest energy density and can **support long range demand**.
- **NCM 6-series:** NCM 6-series battery has relative higher energy density and cycle life, which is **cost-effective**.
- **LFP Battery:** LFP cell has low capacity which leads to lower range, but due to the **production cost advantage**, it will be positioned mainly in the low&mid-end EV market.

Comparison of NCM and LFP Battery - Cost

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Battery Cost Structure:

- ✓ **Battery:** The CAM of LFP battery is composed of P, Fe, Li, the metal value is lower than NCM battery metal value (Ni, Co, Mn, Li), therefore the unit cost is much lower than the cost of NCM battery; Compared with NCM 6-series battery cost, the cost of LFP is >20% lower than NCM 6 series battery per Kwh cost
- ✓ **CAM:** Due to the higher value of Li₂CO₃ than PCAM (FP), which leads to the Li₂CO₃ value accounts for the majority parts (~74%) of CAM cost; therefore the **LFP CAM cost structure is more sensitive to Li₂CO₃ price fluctuation than NCM cost structure**

Comparison of NCM and LFP Battery - CAPEX

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NCM 9-series CAPEX

Unit: Million RMB/GWh

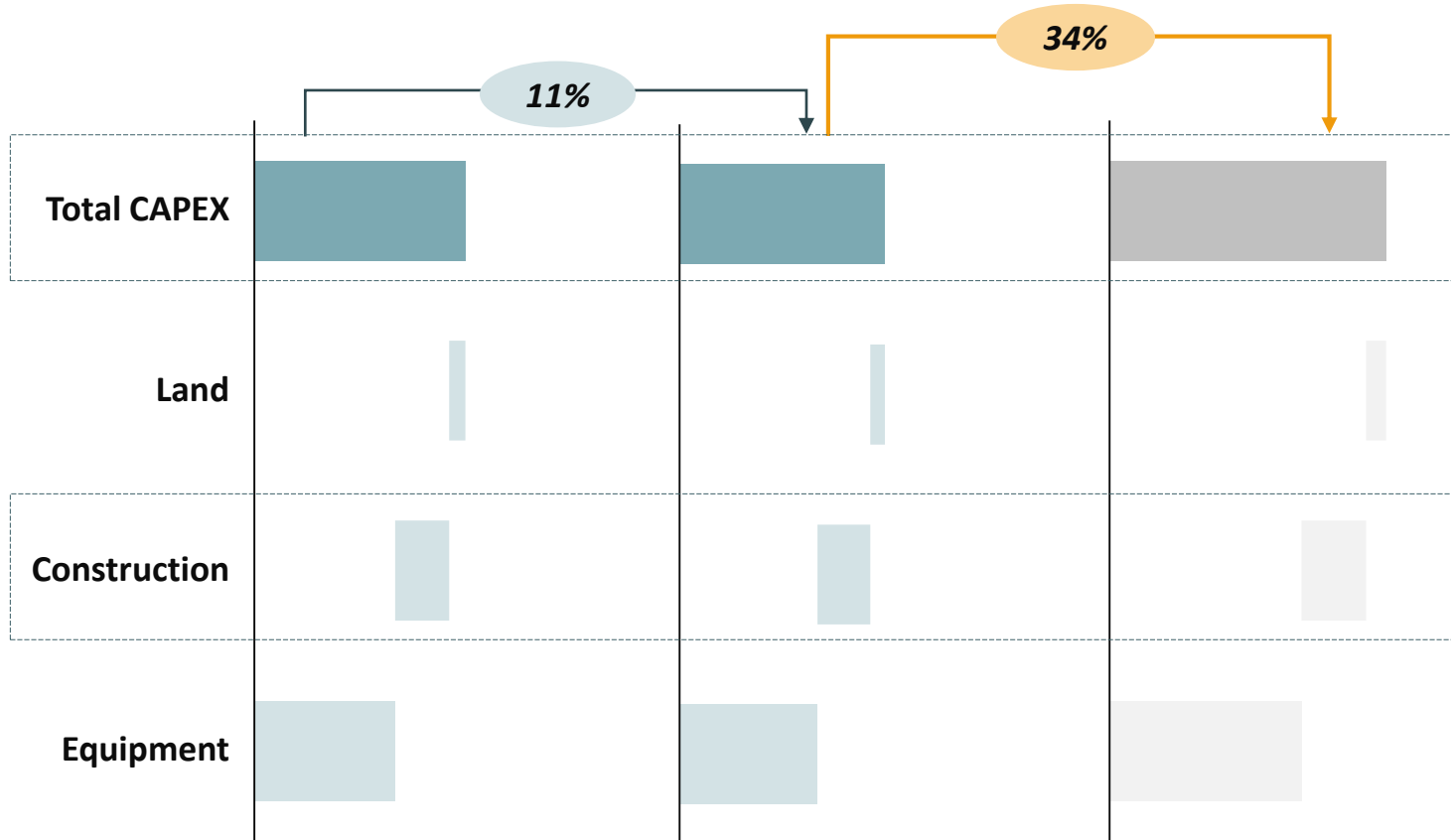
NCM 6-series CAPEX

Unit: Million RMB/GWh

LFP CAPEX

Unit: Million RMB/GWh

SMM Analysis



- ✓ The energy density of LFP batteries is low, and under the condition of producing the same amount batteries, **CAPEX /GWh of LFP is much higher (~xx%) than NCM**
- ✓ Compared with LFP batteries, NCM batteries have more stringent moisture requirements for the production environment.....
- ✓ Compared with NCM batteries, LFP has a **lower energy density**, requires more cells per GWh and production line to support production, so the construction investment is higher.....