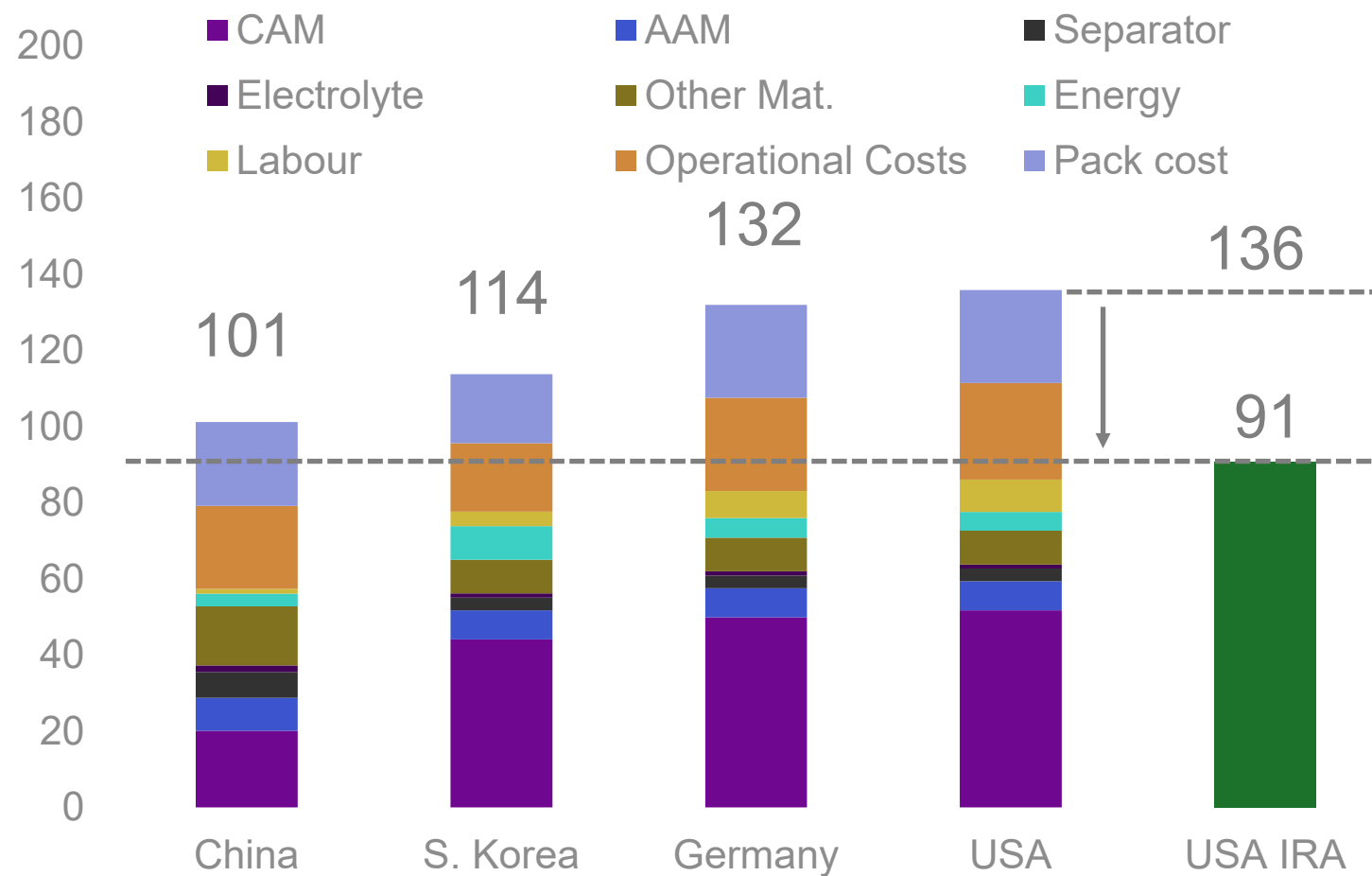


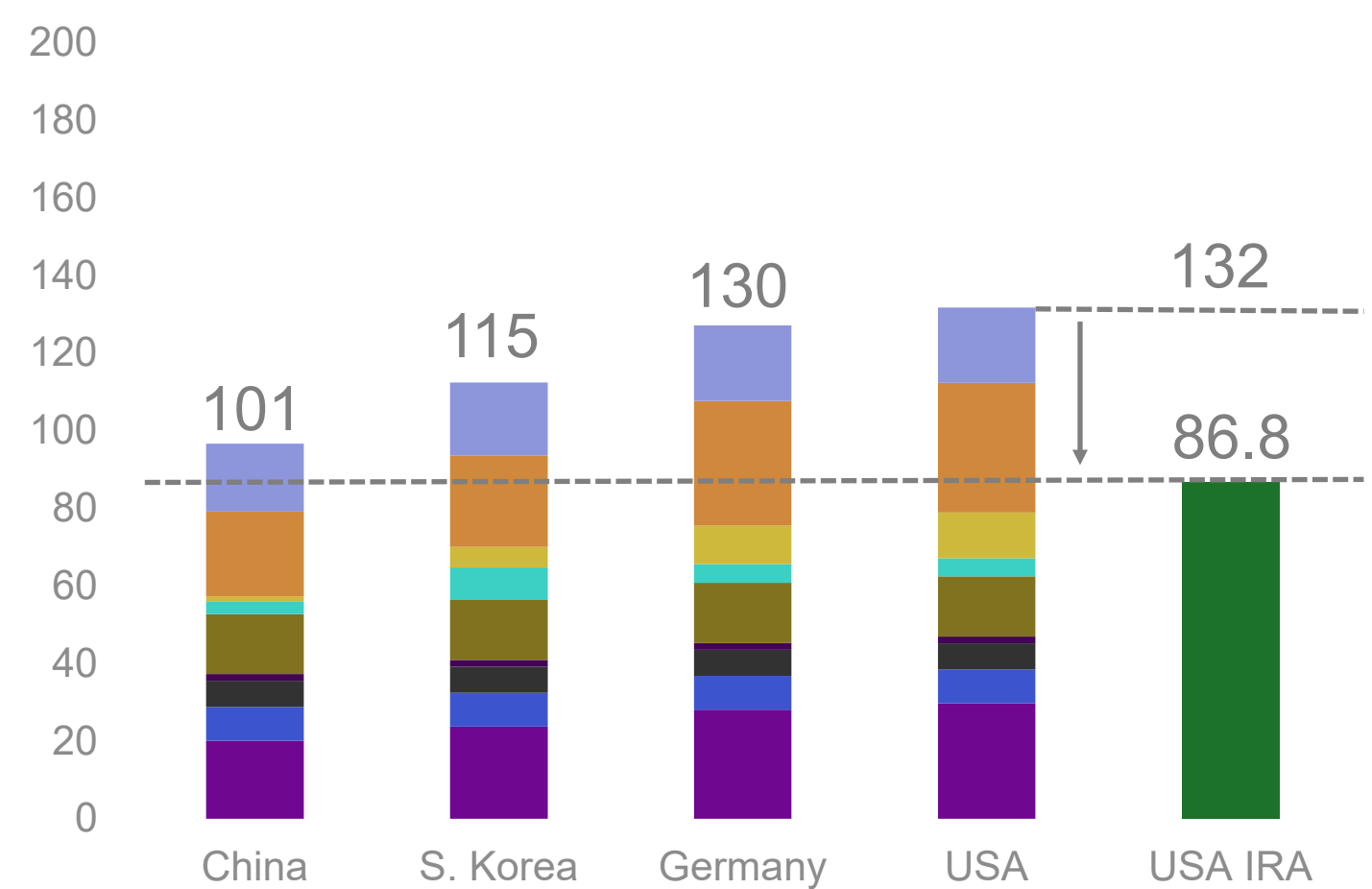


The IRA tax credit 45X could bring US pack costs below those in China

NCM 811 Cell cost \$/kWh, Oct 2023



LFP Cell cost \$/kWh, Oct 2023

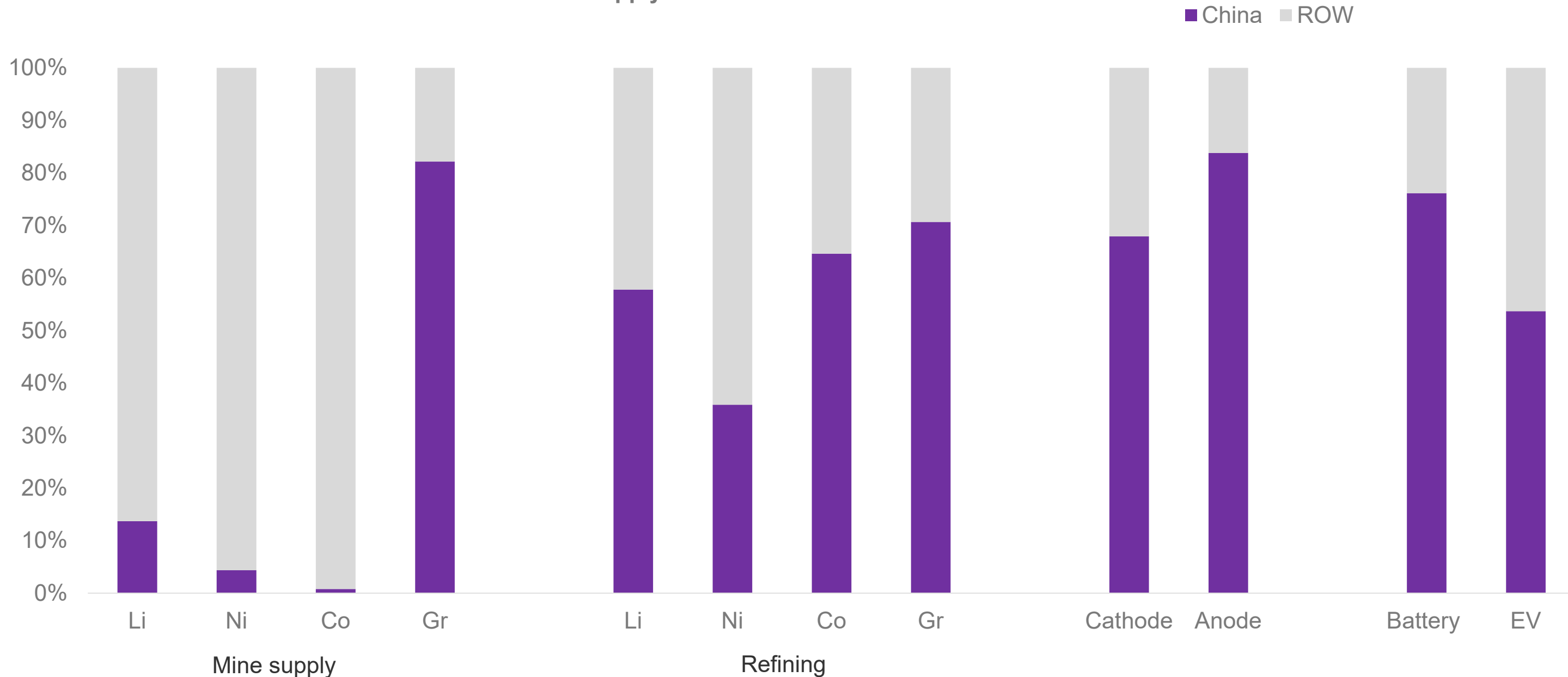


Source: Fastmarkets Battery Cost Index October 2023



Global distribution of the value chain

China dominates the middle and downstream of the supply chain

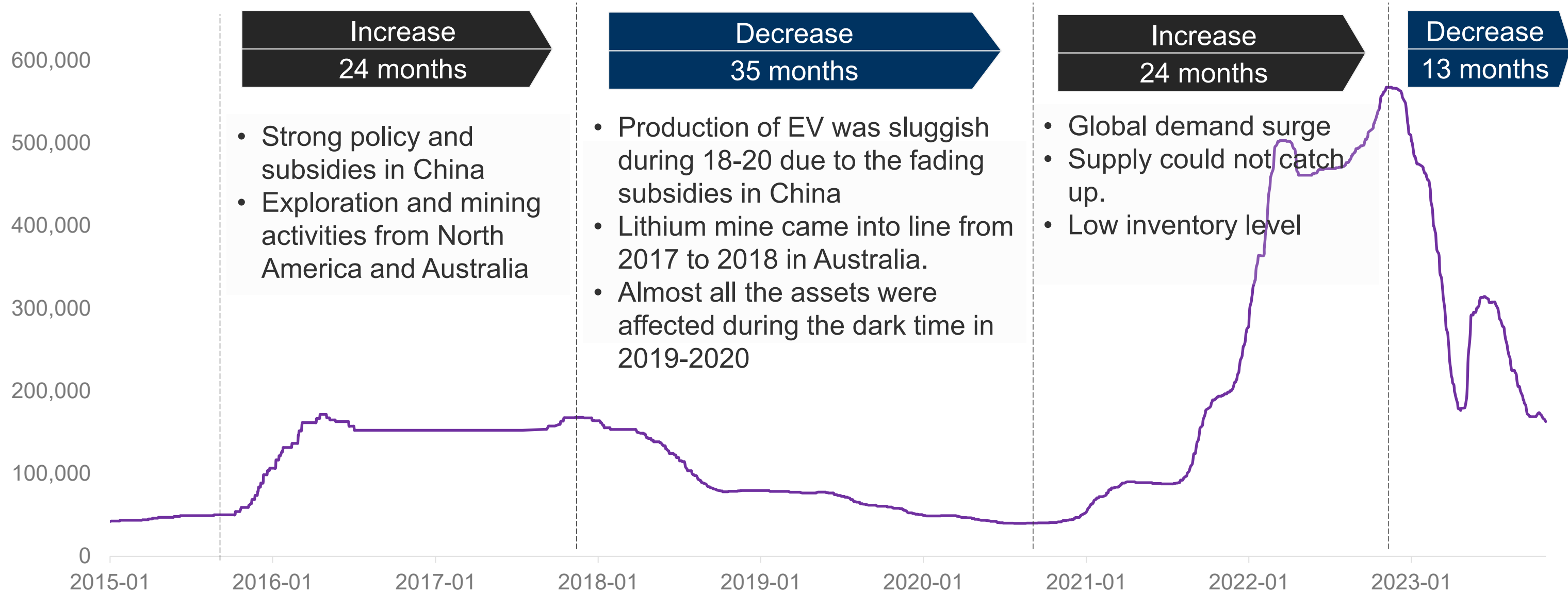


Source: IEA, Fastmarkets



Falling prices are disincentivizing investment

Historical price of lithium carbonate (2015-2023)
RMB/tonne LCE



Source: Fastmarkets

Shifting demand picture, highly reliant on Indonesian feed

Demand: stainless steel still dominates but batteries growing quickly

- China dominates stainless steel production and the battery supply chain
- These need distinct types of nickel, requiring a massive investment in nickel refining and processing capacity
- Primary nickel consumption to grow by approximately 1 million tonnes over the next five years

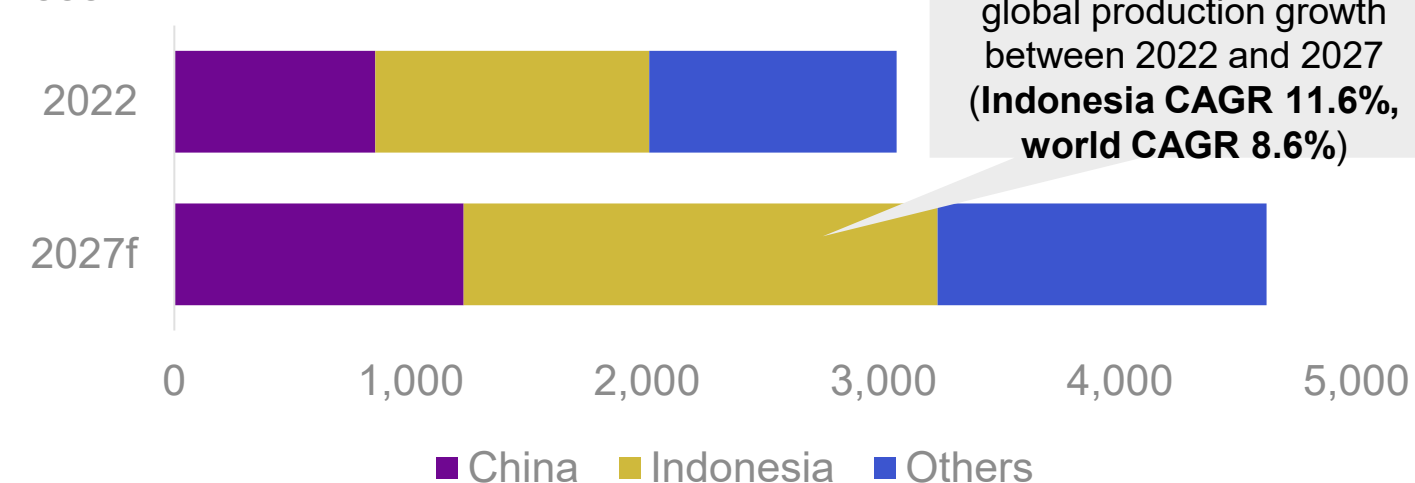
Mid MB-NI-0244 - Nickel sulfate min 21%, max 22.5%; cobalt 10ppm max, exw China, yuan/tonne



Supply: all roads lead to Indonesia

- Indonesia has emerged as the main producer of mined material (15% in 2010, 54% in 2023e) and refined production (1% in 2010 and 43% in 2023e).
- Indonesia's dominance of nickel supply will continue to rise, both on the mined and refined side.
- One issue is Indonesia's ESG standards

Refined nickel supply by country '000 tonnes nickel



Source: Fastmarkets Long Term Forecasts



China's graphite export controls shock market

China natural graphite market share



~ **60%** of global natural graphite



~ **99%** of natural graphite pre-AAM (uSPG)



~ **90%** of natural graphite AAM (cSPG)

China synthetic graphite market share



~ **57%** of global synthetic graphite output



~ **95%** - of synthetic graphite AAM output

China graphite AAM market share



~ **93%** of global AAM production

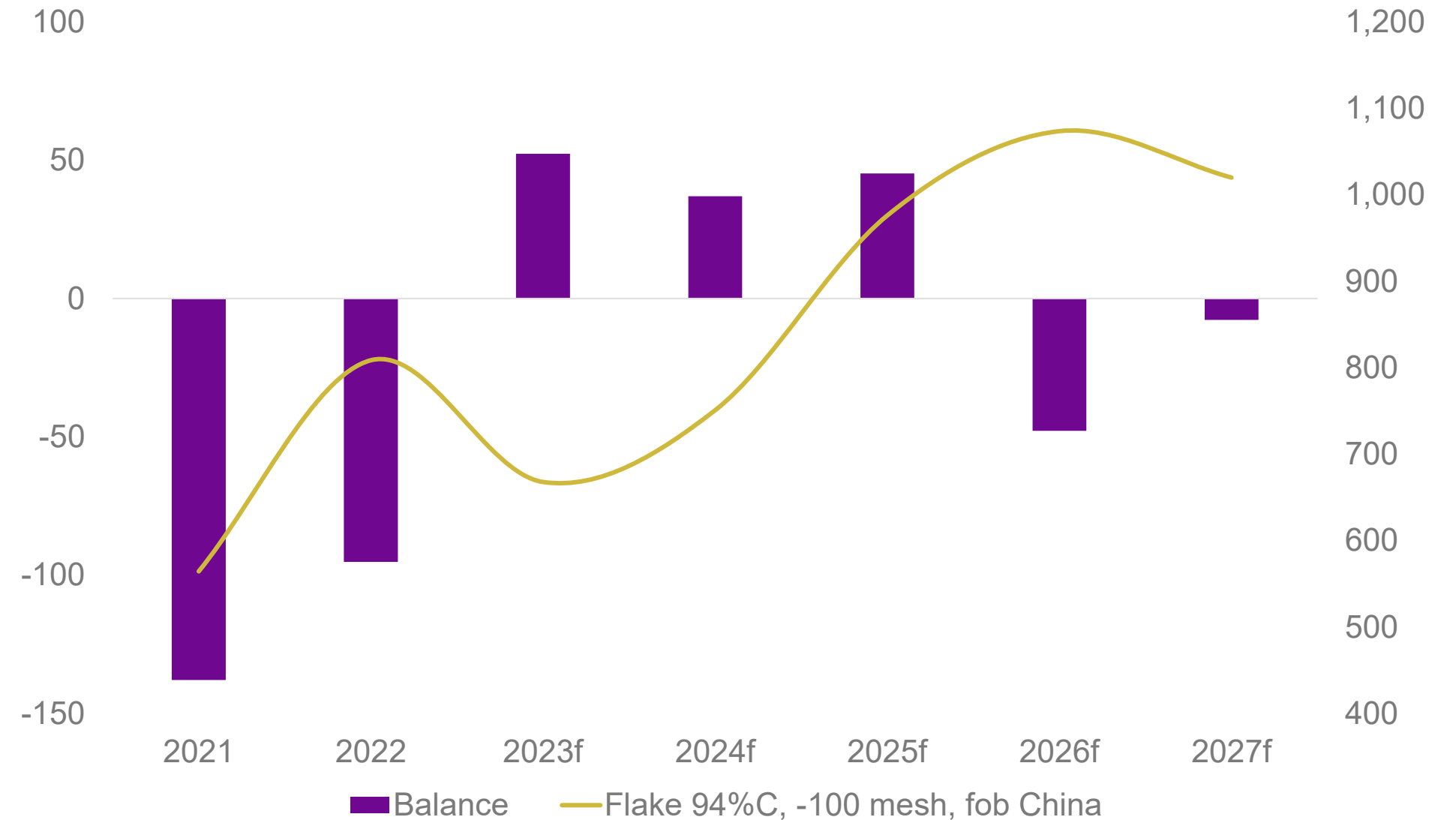


Higher prices needed to encourage ex-China supply

Market well supplied for now, but not diversified

- **Chinese supply sufficient** to meet global demand
- Any **restriction to Chinese supply** will propel prices higher globally
- **Higher prices necessary** for ex-China projects to proceed and succeed
- **Premium pricing** expected to develop to support ESG-friendly, localized, diversified, ex-China graphite supply

Total graphite battery balance vs price
'000 tonnes (LHS), \$/tonne (RHS)

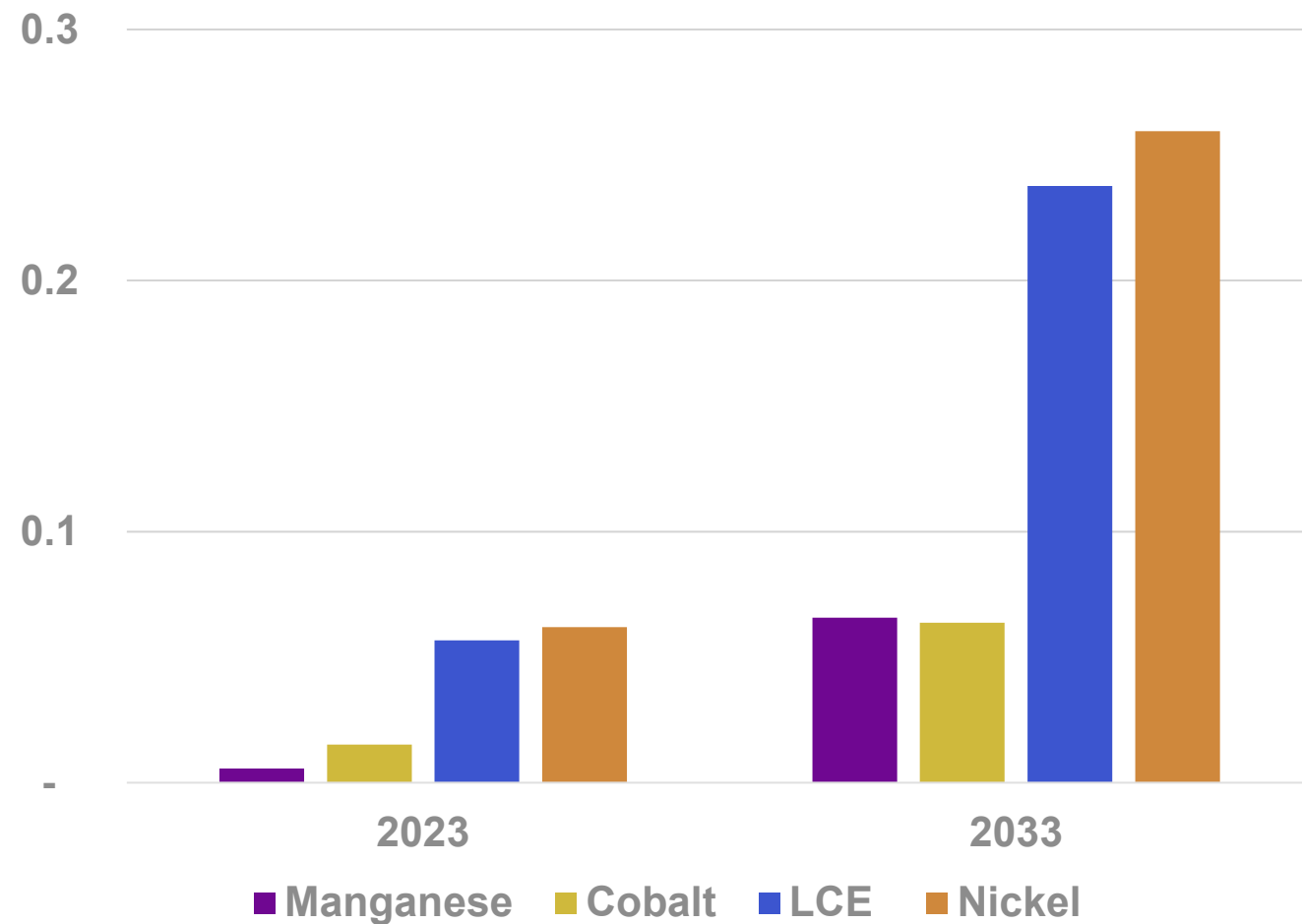


Source: Fastmarkets Long Term Forecasts



By 2033, 13% of metal supply from recycling

23Q2 Secondary metal supply million tonnes



Metal supply from battery recycling:

- **Mn:** 10,000 tonnes in 2023 and 110,000 tonnes 2033
- **Co:** 26,000 tonnes in 2023 and 113,000 tonnes in 2033
- **LCE:** 90,000 tonnes in 2023 and 432,000 tonnes in 2033
- **Co:** 26,000 tonnes in 2023 and 113,000 tonnes in 2033

Battery recycling % of total metal supply:

- 5% in 2023 and 13% in 2033

Source: Fastmarkets Battery Recycling Outlook