

# Cobalt Congress



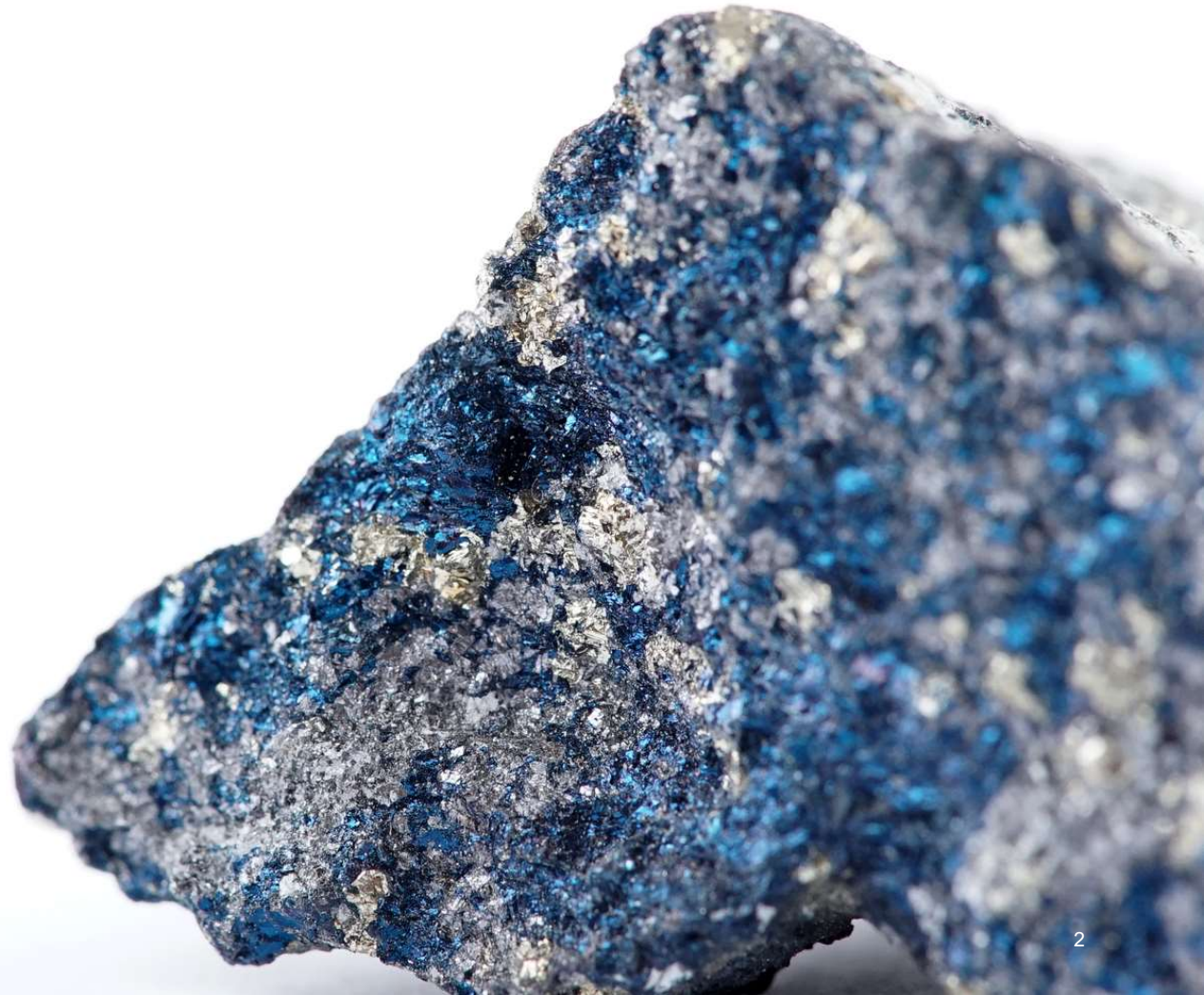
2023



# Cobalt Pricing and Outlook



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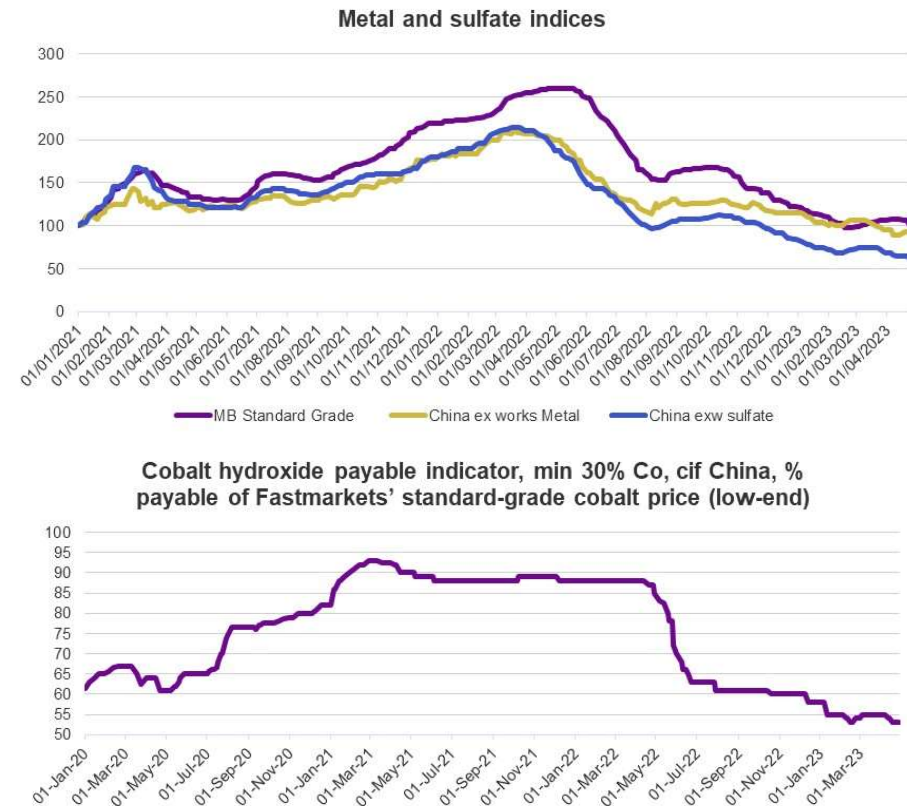


# Recent volatility in the cobalt market



## Plummeting cobalt prices across the value chain from April 2022

- Major highs in 2021 and 2022 on production & logistics disruptions amid recovering demand
- Q2 – easing of covid & weather-related supply chain issues in the DRC & South Africa
- Lengthening supply of hydroxide as logistics issues ease
- Falling demand from consumer electronics and NMC CAM producers
- Market players across the value chain destocking into bearish prices



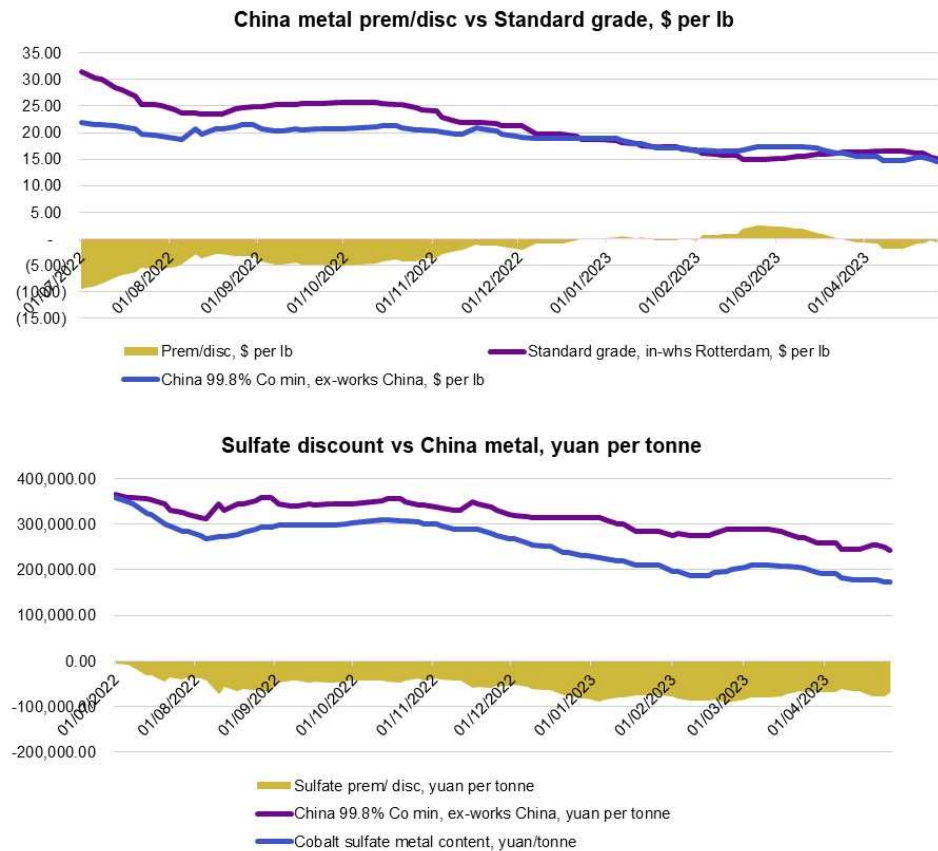
Source: Fastmarkets

# Cobalt recovery has been slow to build in early 2023



## Weak market sentiment in Q1 2023

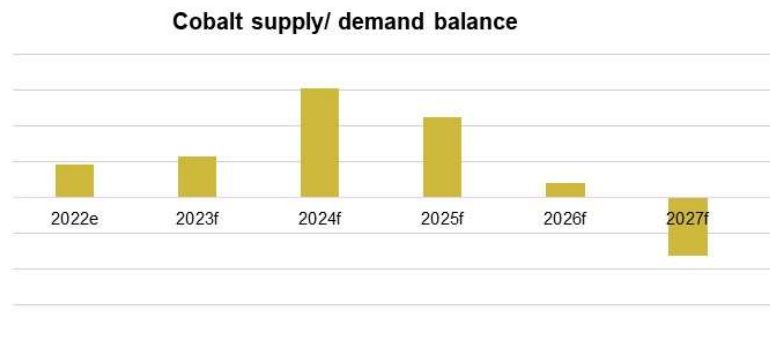
- Expectations in Q1 2023 were of a stronger recovery post Lunar New Year holiday
- Minor bump on restocking & trader activity has since eroded back to lower metal pricing levels
- Battery value chain has destocked into falling price environment – lithium falls have weakened demand across battery metals
- Sulfate disconnect with metal has widened – limited CAM demand, EV producers cut sticker prices following removal of subsidies in China
- Seasonal restocking and uptick in Q2 has been weak
- Current low hydroxide prices are close to production costs



# Demand & pricing outlook

## Recovery in end-use sectors amid capacity additions

- Weaker **cobalt metal** prices in Q2 forecast to recover in H2 2023 on growing demand and further stockpiling
- Improved consumer spending and electronics renewal on new generation 5G smartphones to support **cobalt tetroxide** demand
- Firming demand in H2 from the NMC-EV sector to see **cobalt sulfate** prices improve despite the growth of LFP-based EV demand in China and Western markets
- The expected return of CMOC's Tenke units in H2 and major brown & greenfield expansions to continue to pressure **cobalt hydroxide** payables & prices in 2023
- Restocking across the value chain once market gets a signal of improving downstream demand will support prices
- Surplus expected in the cobalt market in the short term – unlikely to last for too long as production adjusts and demand recovers



**19,500,000**

Cobalt-containing EV unit sales in 2030

**15%**

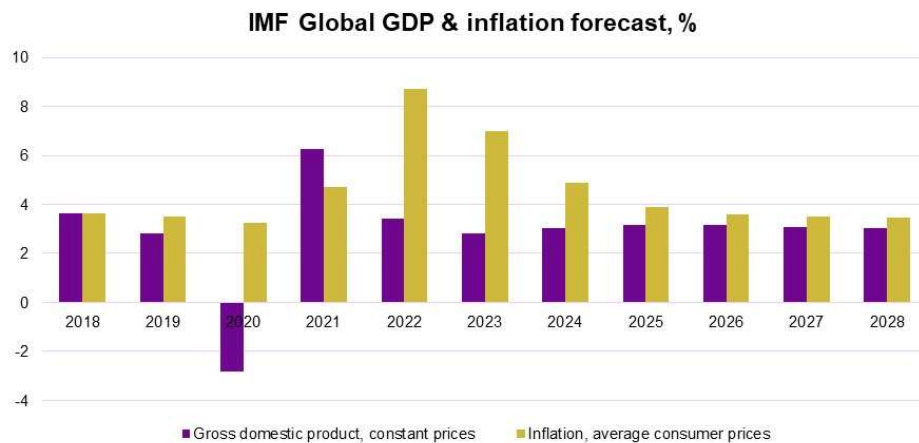
Cobalt demand CAGR from xEV  
2022 – 2030

# Macroeconomic & structural impacts



## Short term headwinds for cobalt – bullish long-term outlook

- Uncertain global macroeconomic outlook, inflationary pressure and high interest rates
- Legislative action to strengthen domestic supply chains – US IRA, EU Critical Raw Materials Act
- ESG standards and consumer preference for responsibly sourced battery metals
- Reduced cobalt loadings in NMC chemistries & greater LFP penetration outside of China
- Diversification of supply in the cobalt market
- Demand growth & supply-side additions in copper and nickel markets



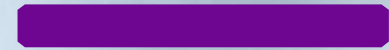
**3%**

IMF average annual global GDP growth forecast 2023 - 2028

**27% & 68%**

Demand growth from 2022 – 2030 in copper and nickel respectively (Fastmarkets)

# Thank you



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