



# BOOM OR BUST: COPPER AND LITHIUM IN THE GREEN TECH ERA

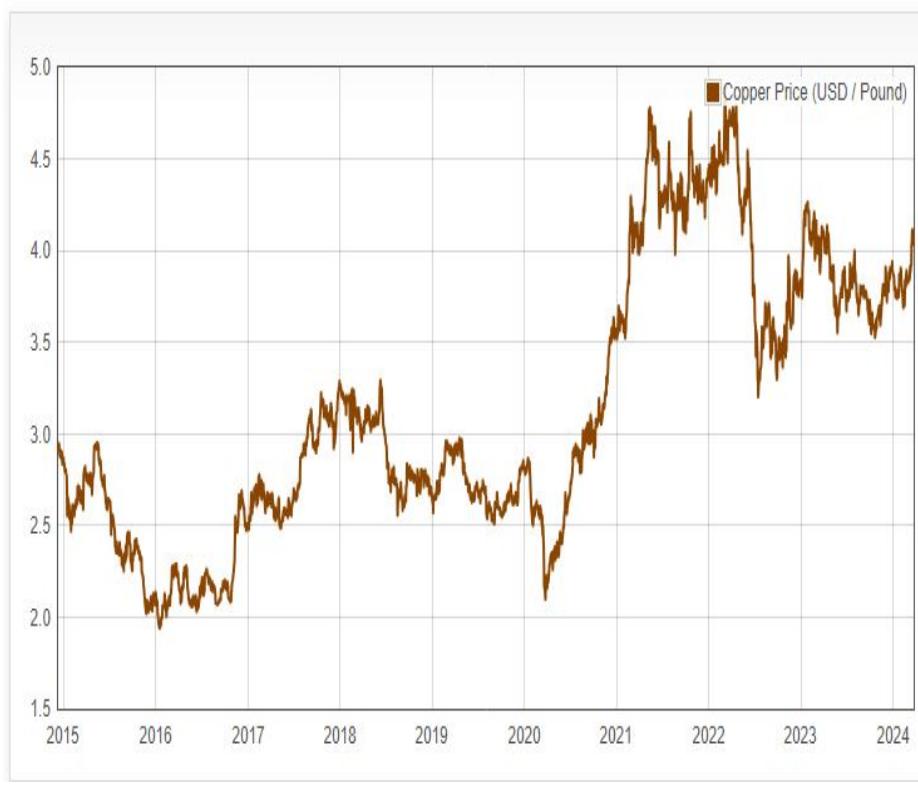
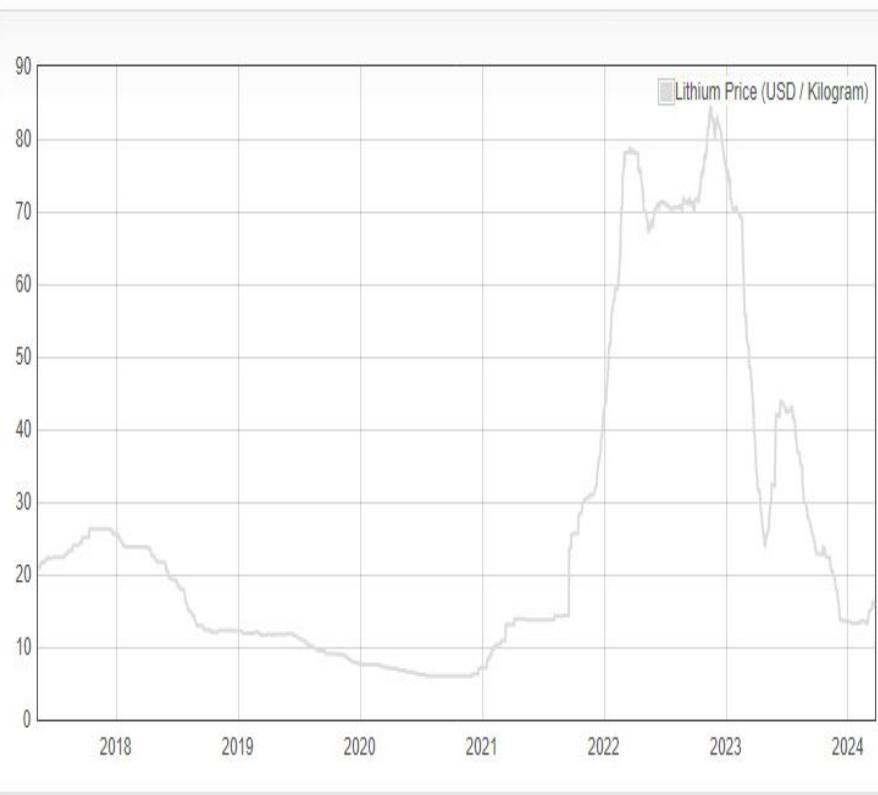


## Disclaimer:

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# Price Recovery:



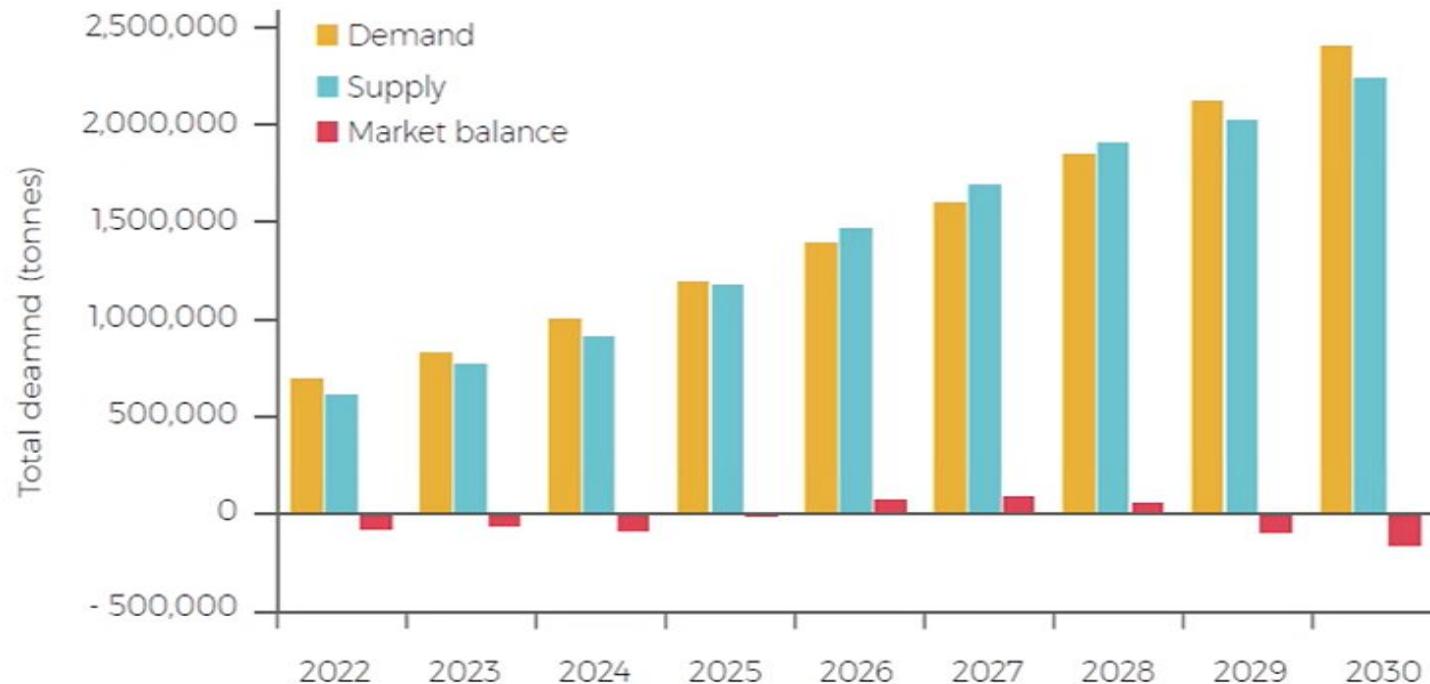
## Lithium: We need lots, there is lots

<b>Property</b>	<b>Country/Region</b>	<b>Development Stage</b>	<b>Primary Reserves and Resources (t)</b>
Uyuni Salt Flat	Bolivia	Construction Started	39,000,000
Cauchari-Olaroz	Argentina	Construction Started	9,938,000
Alberta	Canada	Prefeas/Scoping	9,878,000
Bonnie Claire	USA	Prefeas/Scoping	8,358,700
Lithium Nevada	USA	Feasibility Started	7,321,000
Manono	Dem. Rep. C	Feasibility Complete	6,640,000
<b>Salar de Olaroz</b>	<b>Argentina</b>	<b>Expansion</b>	<b>6,600,000</b>
Vulcan	Germany	Feasibility Started	6,415,046
<b>Chaerhan Lake</b>	<b>China</b>	<b>Operating</b>	<b>5,600,000</b>
McDermitt	USA	Prefeas/Scoping	5,373,000
Cuenca Centenario-Ra	Argentina	Feasibility Started	4,015,000
<b>Greenbushes</b>	<b>Australia</b>	<b>Operating</b>	<b>3,716,327</b>

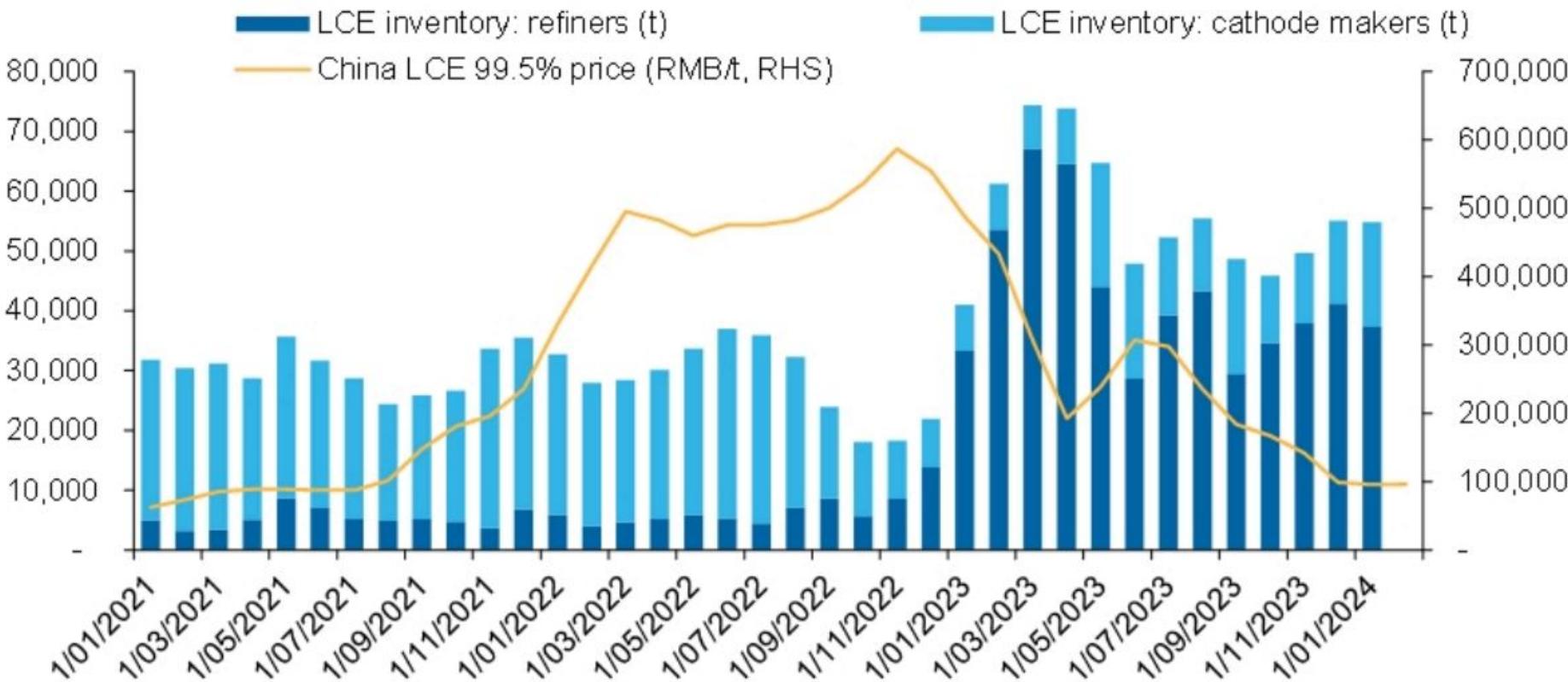
# Lithium: Small changes = big effects

## Industry deficits over medium to long term

### Lithium supply forecast 2022-2030



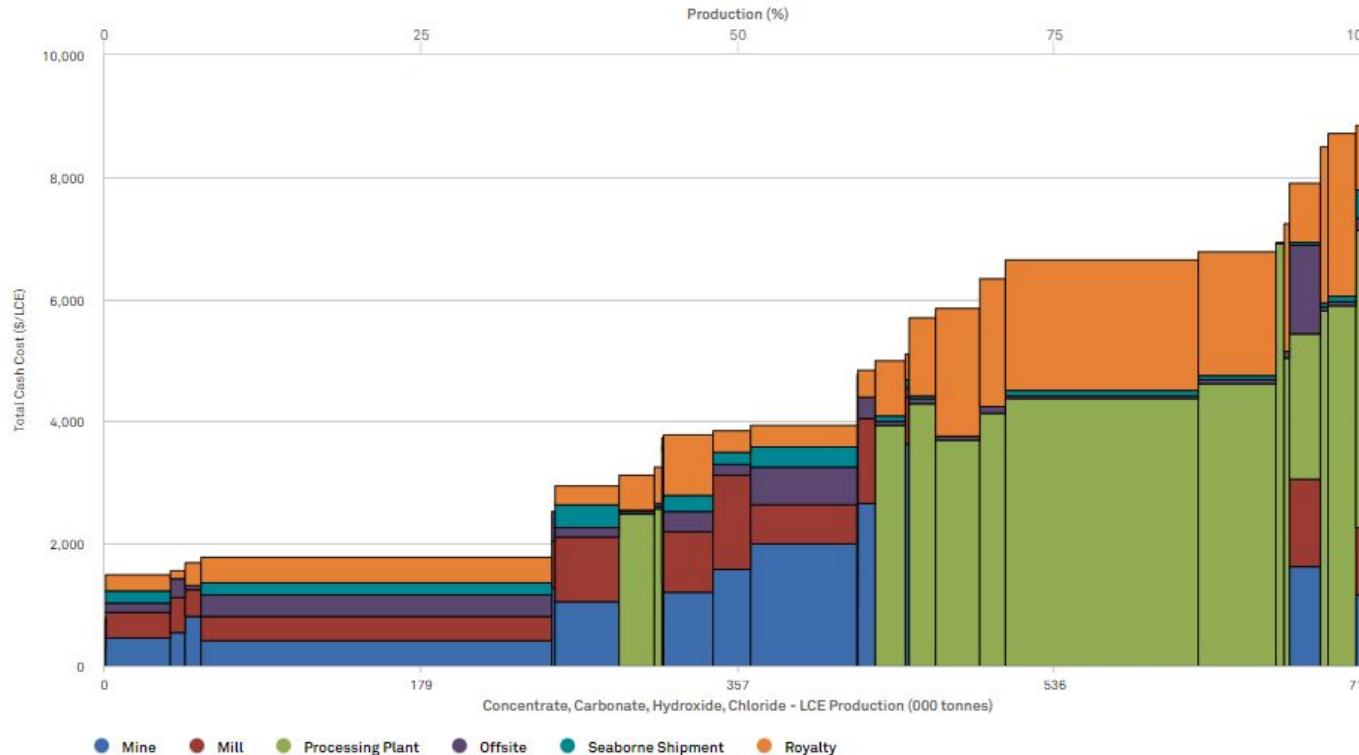
# Lithium: Inventories are mostly for traders



# Lithium: the hardrock vs brine investment decision

## 2022 Lithium Production Ranked on Total Cash Cost\*

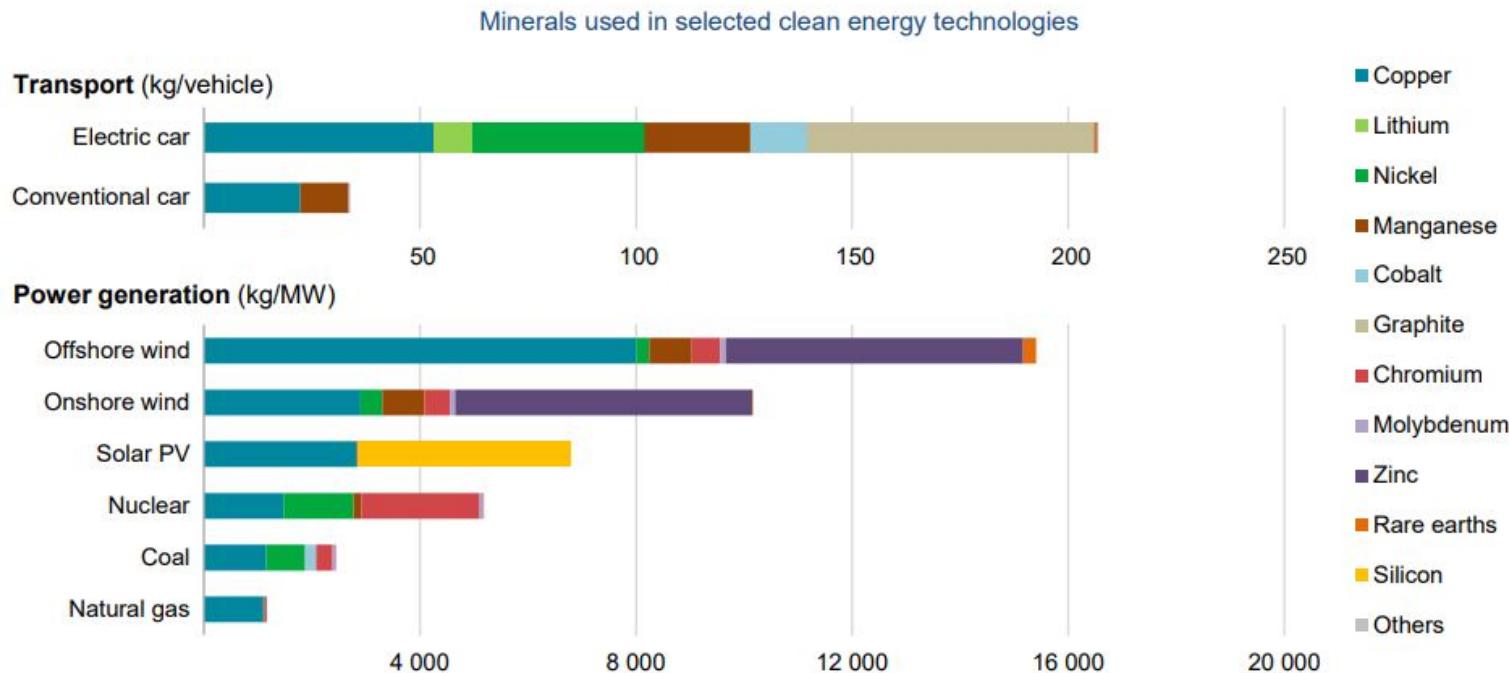
Scenario: Market Intelligence 2021 Constant USD



\*Figures pre-2022 are based on reported/actual data where available. Figures from 2022 and later are based on S&P Global Market Intelligence's estimates and forecasts. For Market Intelligence's Constant scenario, all forecasts for prices are in constant 2021 US dollars (e.g. wage rates, electricity prices, reagent or fuel costs and metal prices).

# Copper: Here is the grain of truth

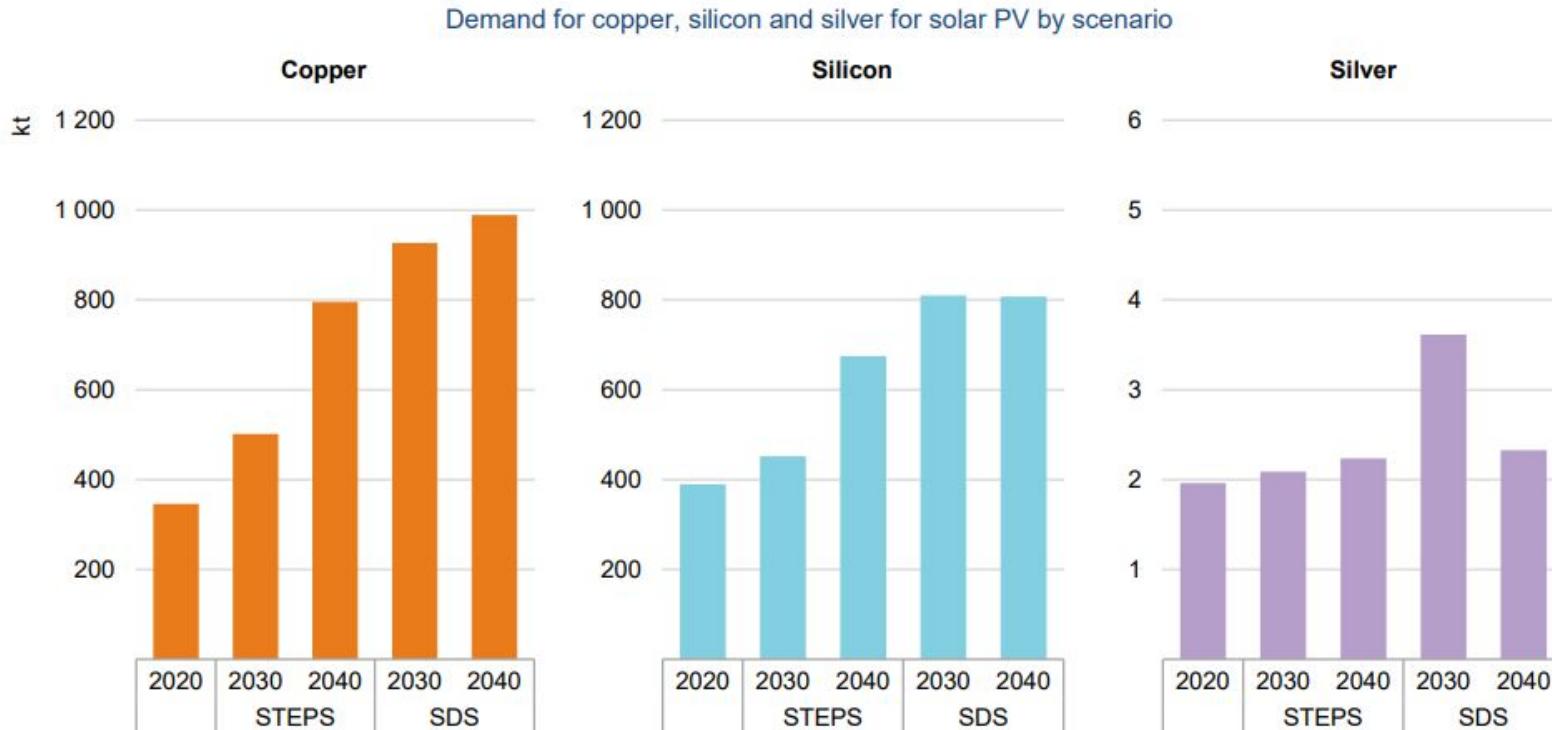
The rapid deployment of clean energy technologies as part of energy transitions implies a significant increase in demand for minerals



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Notes: kg = kilogramme; MW = megawatt. Steel and aluminium not included. See Chapter 1 and Annex for details on the assumptions and methodologies.

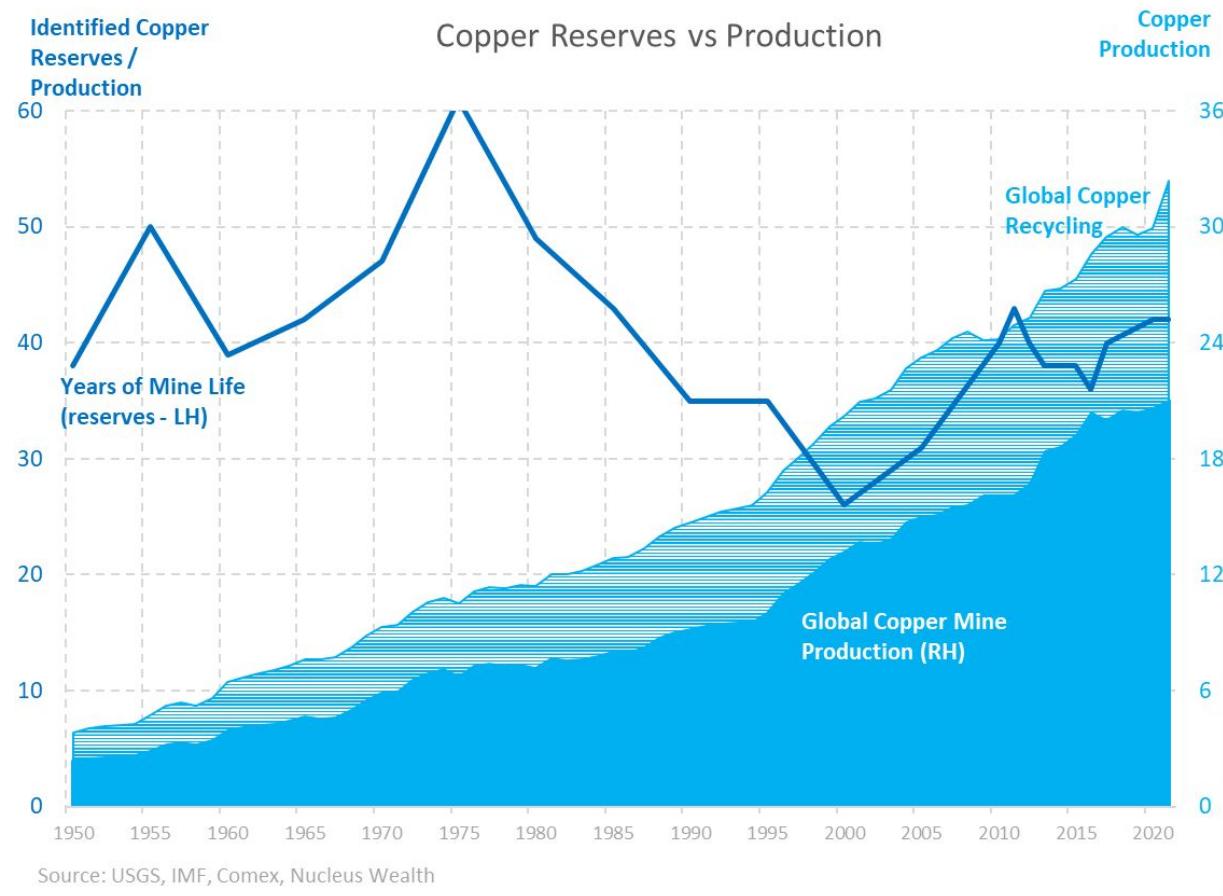
# Copper: Lots of growth in green demand



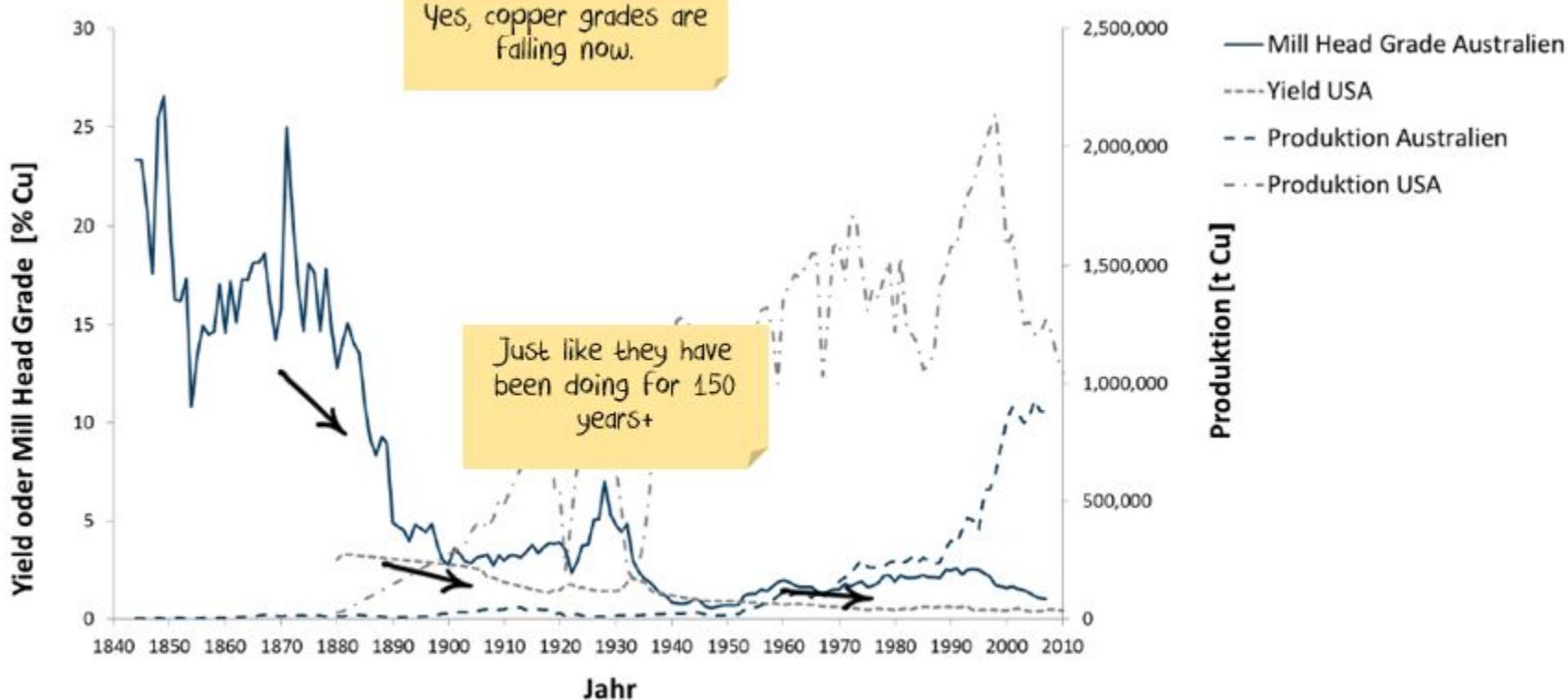
Note: kt = thousand tonnes.

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# Copper: But green demand is a drop in the bucket



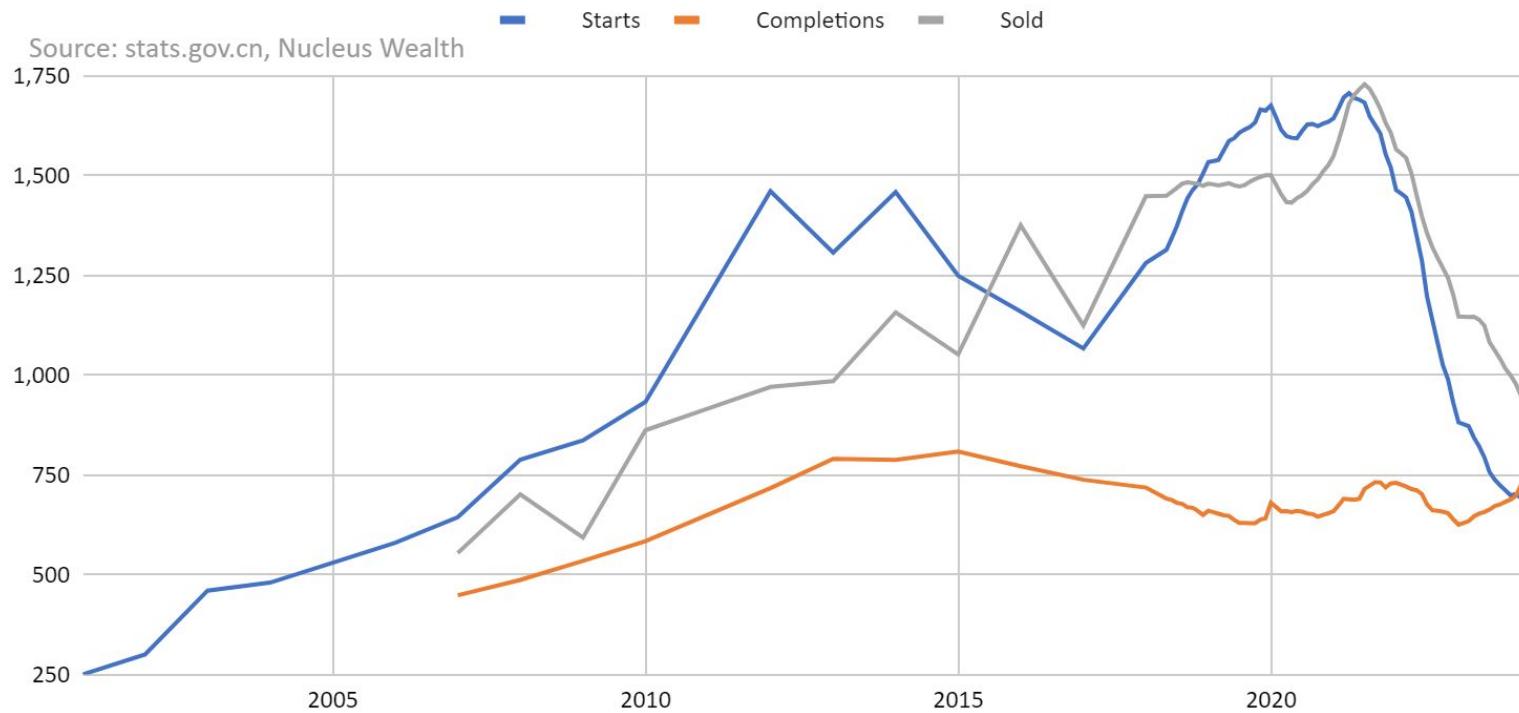
# Copper: Grades are bad. Like they have always been



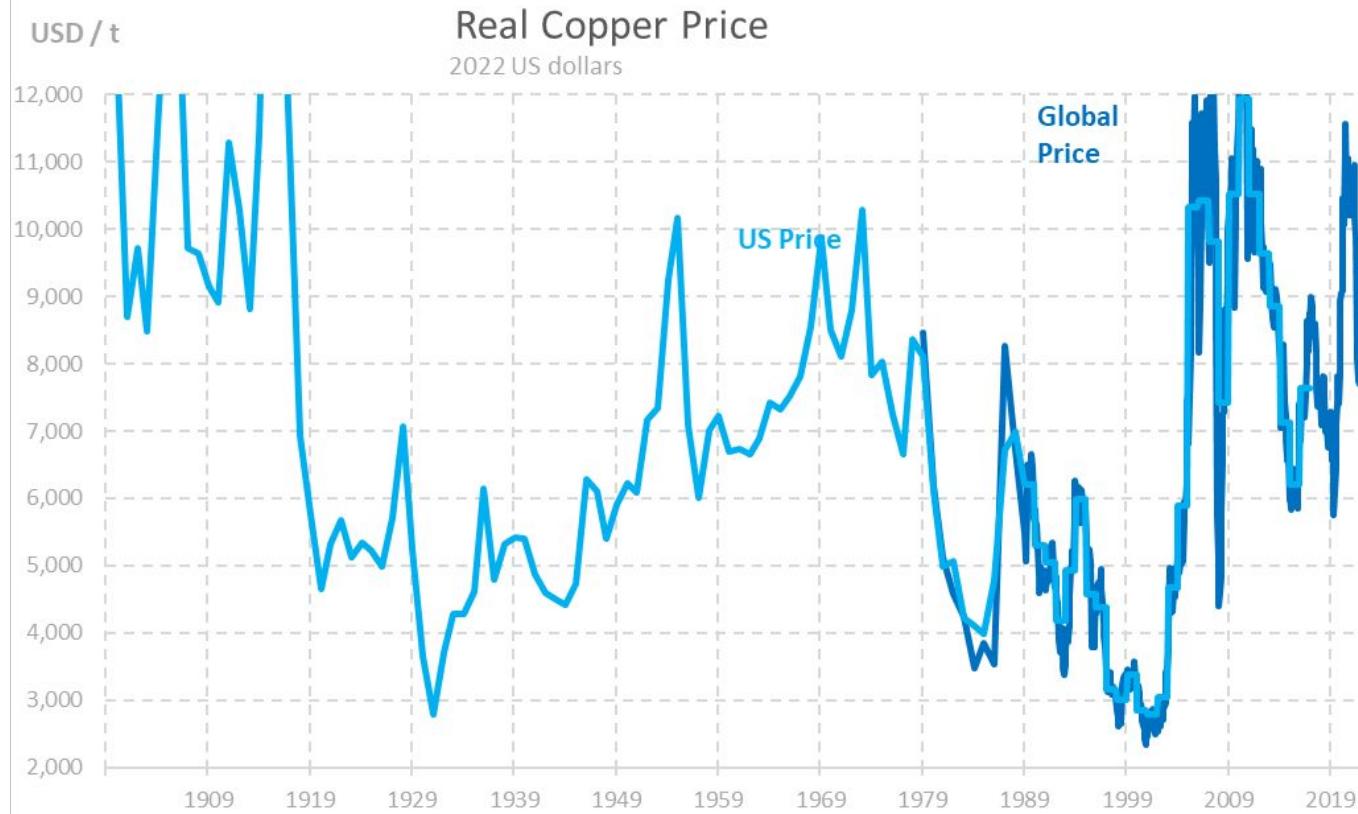
Source: Nadine Rotzer & Mario Schmidt Decreasing metal ore grades 2018, Nucleus Wealth

# Copper: Lots of growth in green demand

China Residential Floorspace (millions of sqm, rolling 12 months)



# Copper



Source: USGS, IMF, Comex, Nucleus Wealth

## Choose themes to screen from your portfolio away from (i.e. remove stocks)

Climate Change



War



Human Rights



Health



Vices



Animal Rights



Religion



Asset Class



Thematic



### Climate Change

- No Fossil Fuels (Worst Offenders) ?
- No Fossil Fuels (Any) ?
- No Coal Seam Gas or Fracking ?
- No Nuclear Power ?
- No Old Growth Forest Logging ?

# Personalise Your Portfolio

## Screens

You can exclude the below to customise your portfolio

Climate Change	War	Human Rights	Health	Vices
Animal Rights	Religion	Asset Class	Thematic	

- No Fossil Fuels (Worst Offenders) [?](#)
- No Fossil Fuels (Any) [?](#)
- No Coal Seam Gas or Fracking [?](#)
- No Nuclear Power [?](#)
- No Old Growth Forest Logging [?](#)

## Tilts

You can add the below to customise your portfolio

Investment Style Factors	Climate Change	Technology
Consumption	Commodities	Military

- Quality Stocks [?](#)
- Value Stocks [?](#)
- Growth Stocks [?](#)
- Defensives [?](#)

Personalise your portfolio now 



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Investment Choice

Risk Profile

**Build Your Portfolio**

Ethical Overlay

Review

Applicants

Bank Details

Compliance

Final Review

## Portfolio Tilts



Quality Stocks

Value Stocks

Growth Stocks

Oil & Gas Stocks

Gold Stocks

Agribusiness

Large Technology Stocks

Cloud Computing Stocks

Robotics/AI

Video Gaming

Cybersecurity

Clean Energy

Defensives

Battery Supply Chain

Nuclear Power

Defense Contractors

Travel

Luxury Goods

Logistics

Global Communication Services

Global Consumer Discretionary

Global Consumer Staples

Global Energy

Global Financials

Global Health Care

Global Industrials

Global Information Technology

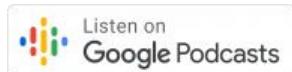
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