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INTENSIFIED UNCERTAINTIES OF LITHIUM SUPPLY AND DEMAND IN THE CONTEXT OF COVID-19

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China's domestic prices versus export prices

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•Short and medium-term increments remain in Australia and South America

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•Vigilance against overcapacity

04 •Uncertainties across upstream and downstream industrial chains intensify amid the Covid-19
•Supply-side delay
•Demand-side is below expected
•Market outlook under the uncertainties

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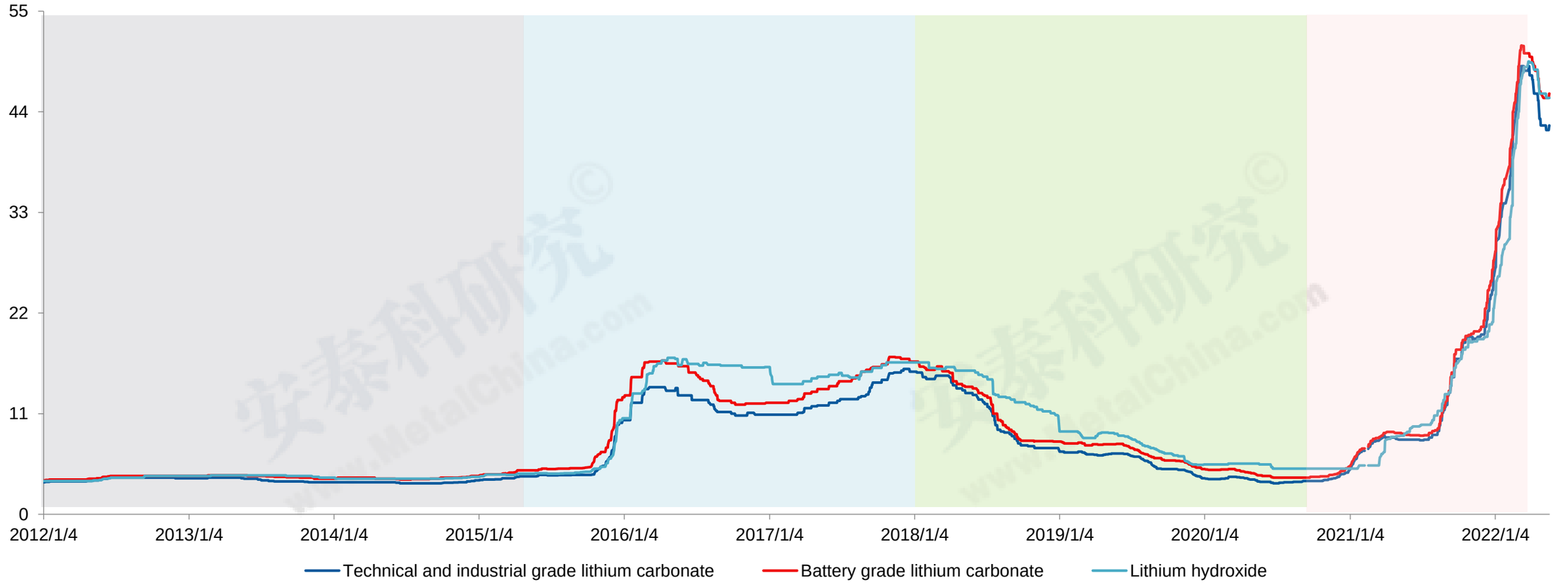
Review of China's Lithium Price Trend



Lithium prices stabilized in 36,000-50,000 yuan/t in 2012-Mid 2015

Burgeoning NEV industry in China (LFP demand) lead spikes in lithium price

Beyond-expected supply pull down lithium prices, imbalance between supply and demand drag lithium salt prices tumbled around the cost line, Chinese lithium industry is forced to restructure

Demand is recovering at an accelerated rate, and supply growth is far less than demand

Sources: Antaike

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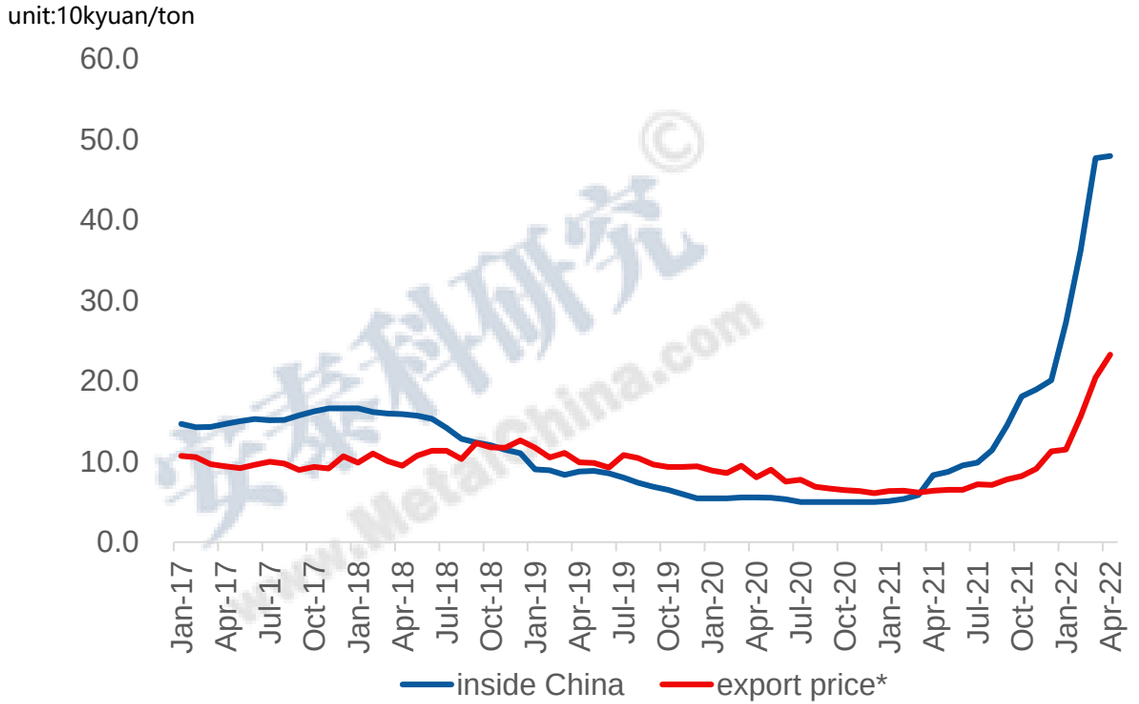
Export price and domestic comparison

Lithium Carbonate Price Comparison

Lithium hydroxide price comparison



*：The export price has been converted into taxes .

Sources: China customs，Antaike

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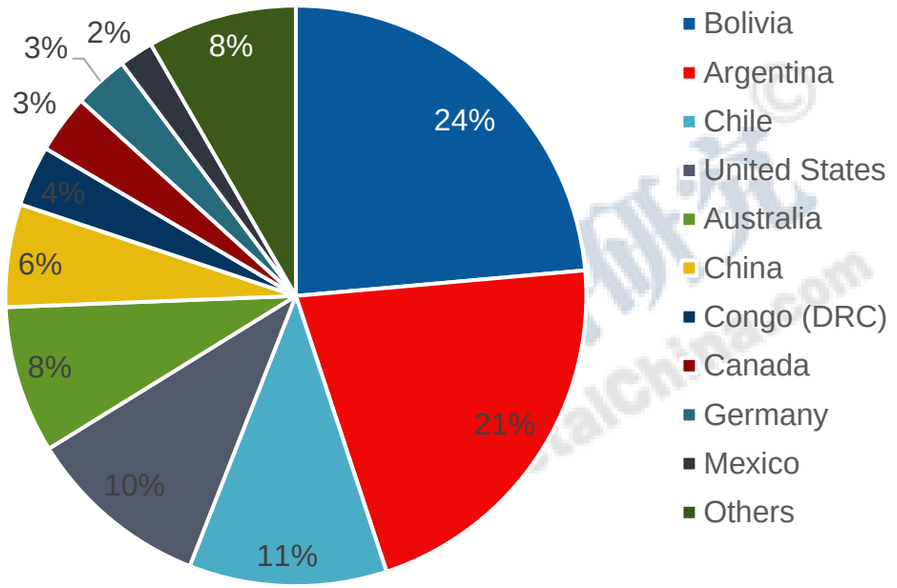
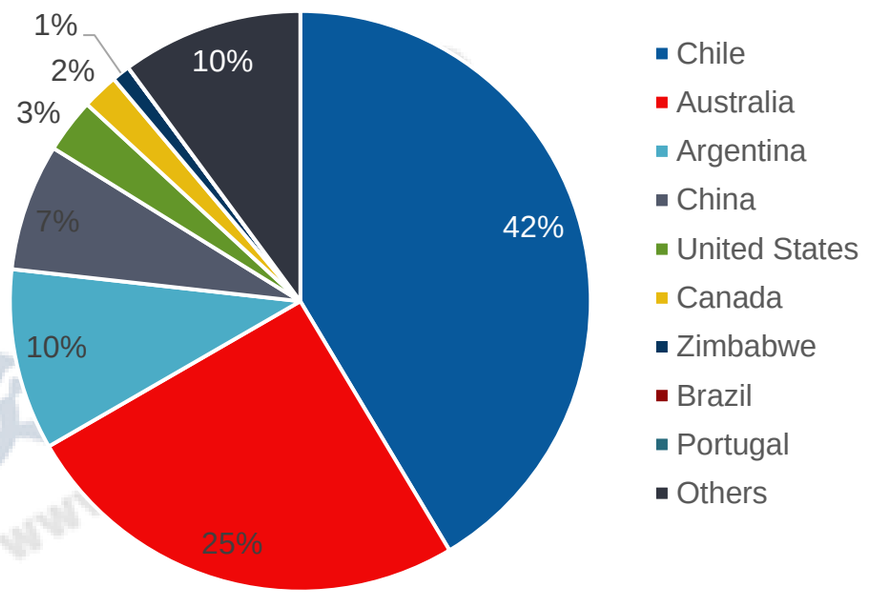
Global lithium resources and proved reserves

Global lithium resources and proportion (by country, 2021)



Global lithium proved reserves and proportion (by country, 2021)



Sources: USGS2021,Antaike

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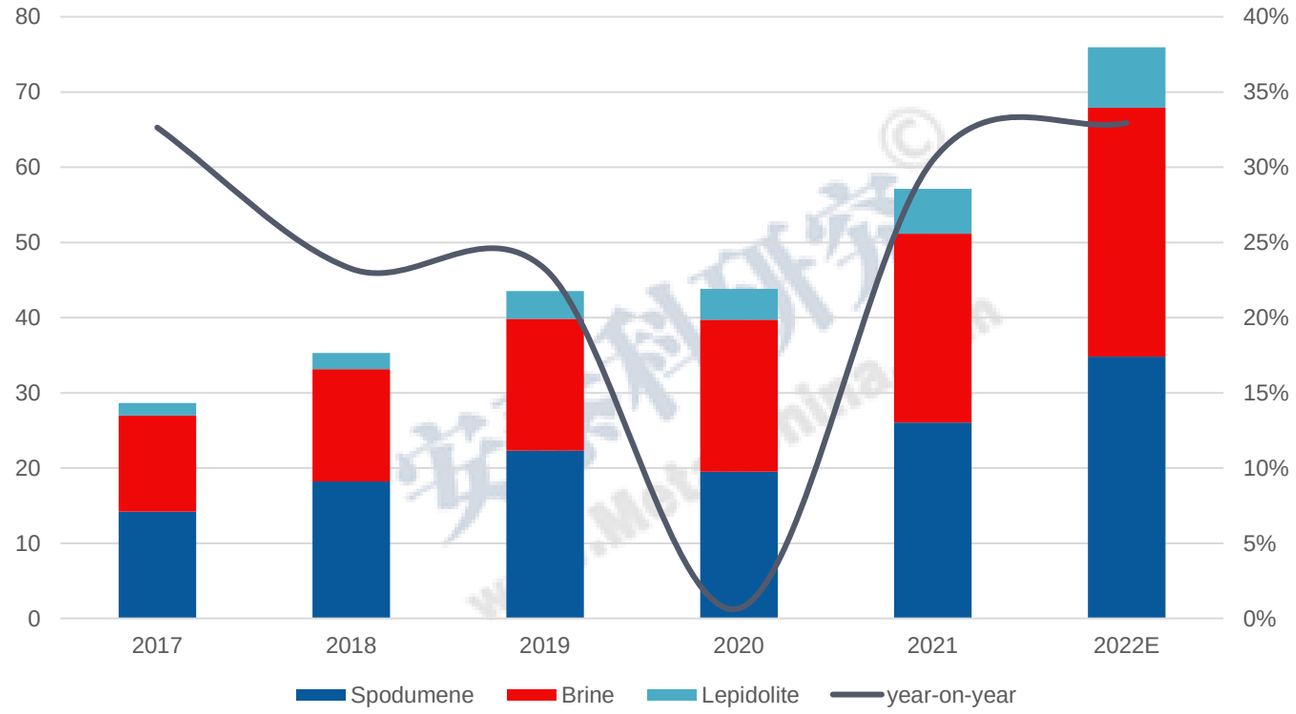
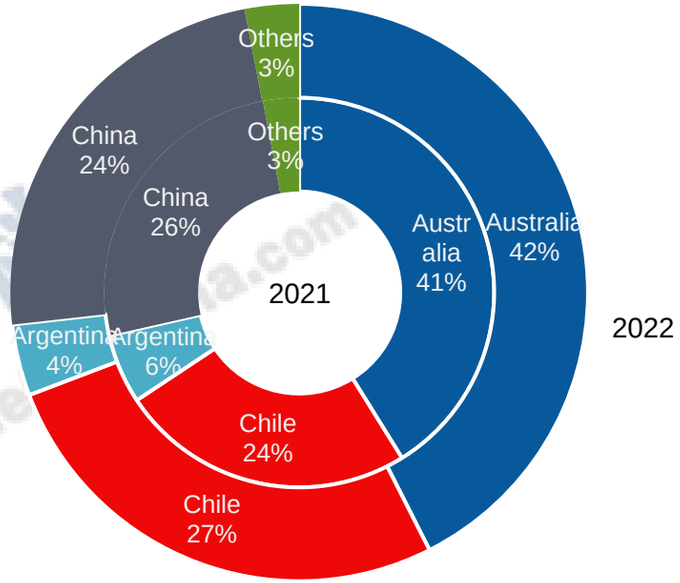
Global lithium raw material output

Global lithium mine production



Source countries of global lithium mineral products



Sources: Antaike

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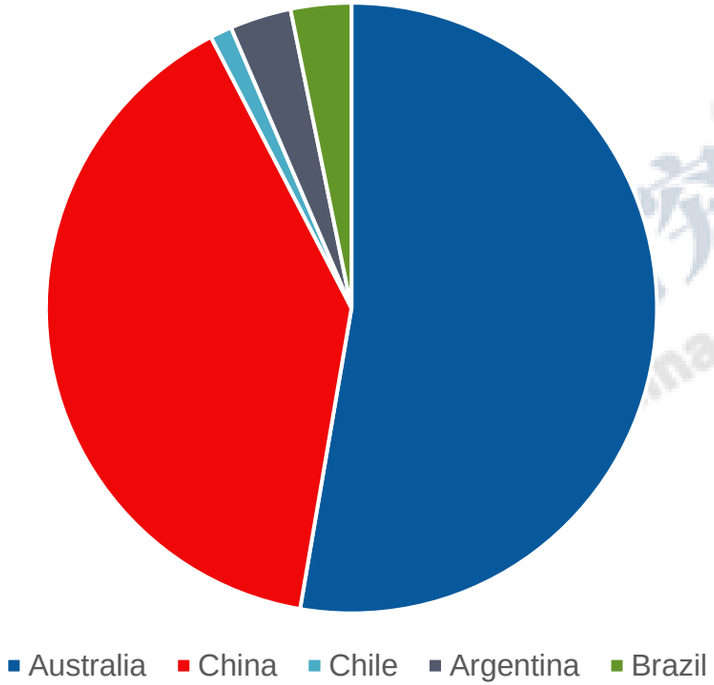
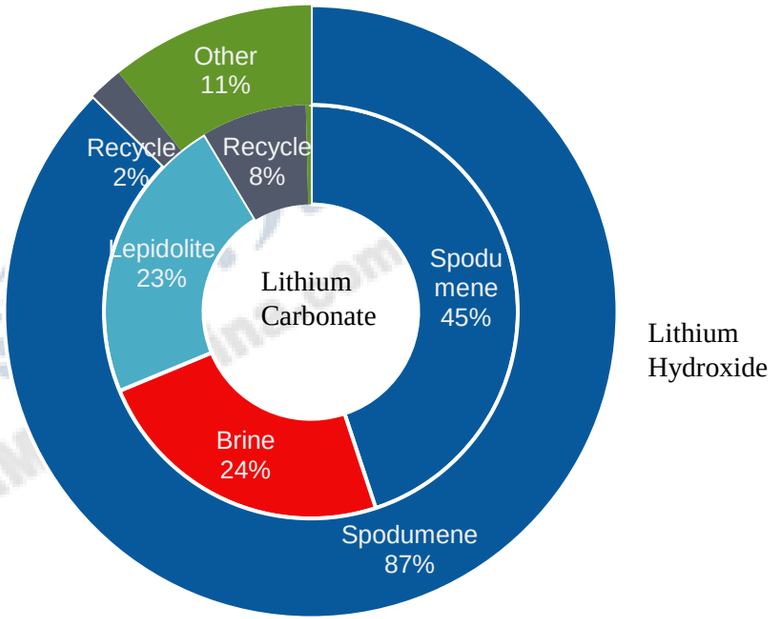
The raw materials supply of China lithium products

China Lithium production depends on the Australia ore supply



Sources of Lithium Carbonate and Lithium Hydroxide



Sources: Antaike

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Source of lithium ore

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Three Lakes One Mine → **Three Lakes Seven Mines** → **Diversification**

- Argentina Hombre Muerto（FMC）
- Chile Atacama （SQM）
- US SilverPeak (Chemetall)
- Australia Greenbushes（Talison）

- Argentina Hombre Muerto（Livent）
- Chile Atacama（SQM&ALB）
- Argentina Olaroz (Orocobre)
- Australia Greenbushes （Talison）
  Australia Mt Marion（GF）
- Australia Mt Cattlin（ Galaxy ）
- Australia pilbra（Pilbara）
- Australia Bald Hill（Alita）
- Australia Wodgina（ ALB）
- Australia Altura（ Acquired by Pilbara ）

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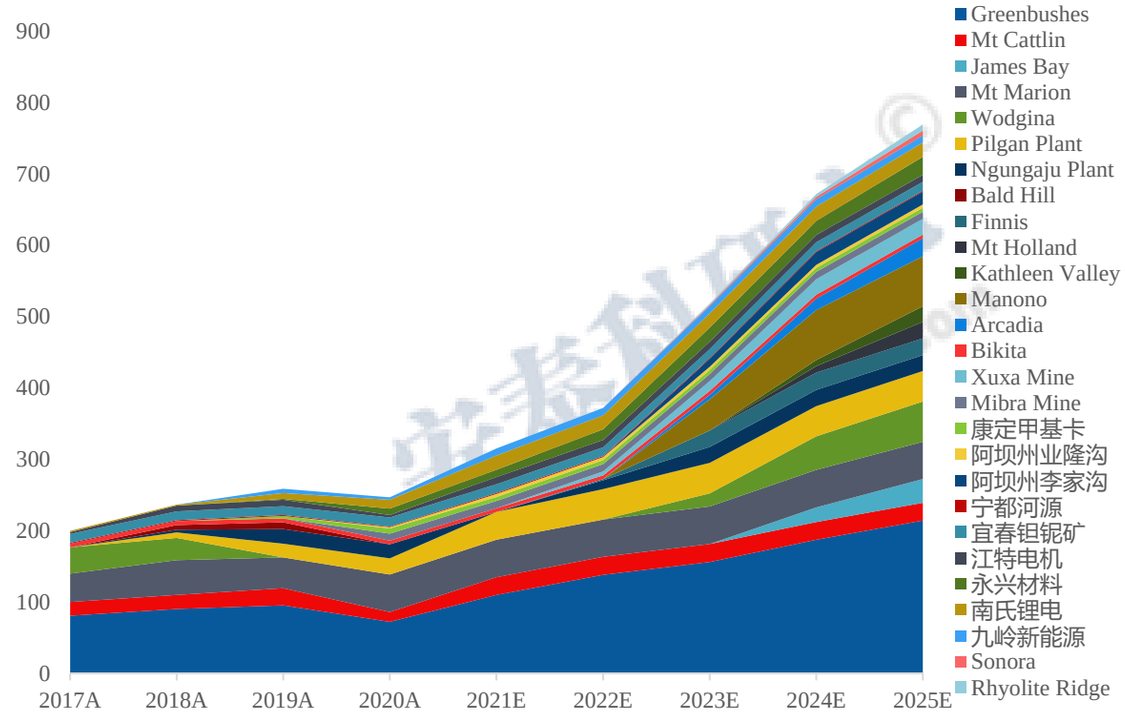
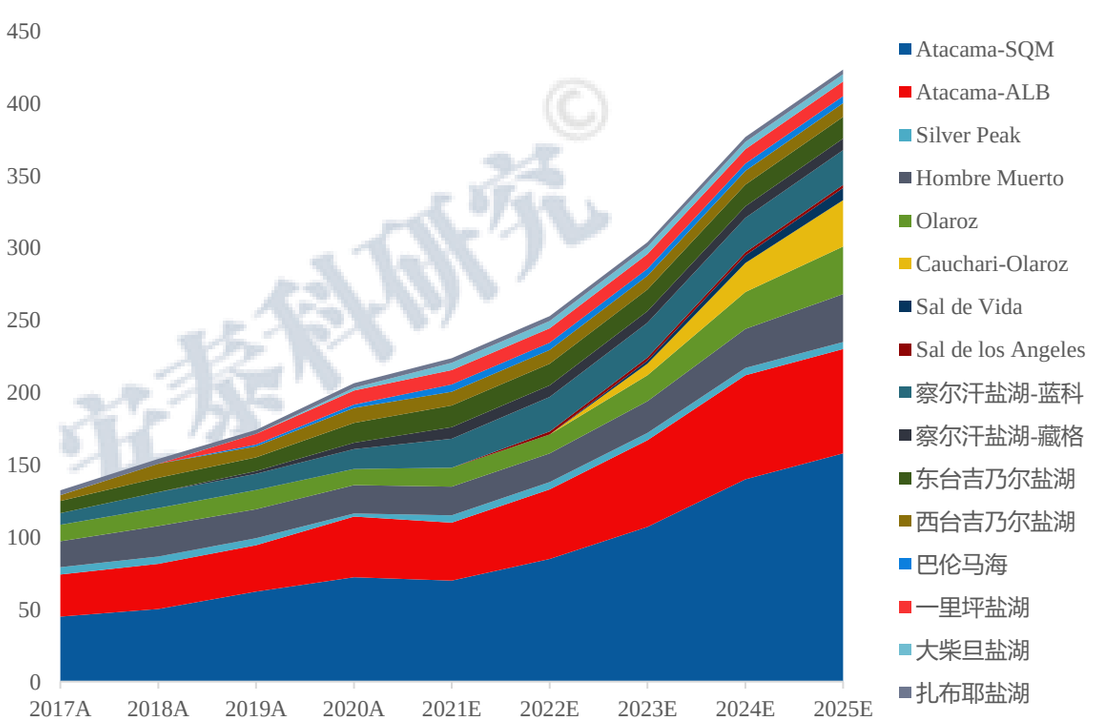
Changes in global lithium resource capacity from 2017 to 2025

Global Hard Rock Mineral Capacity Change (kt LCE) 2017-2025



Global brine capacity change (kt LCE) from 2017 to 2025



Sources: Antaike

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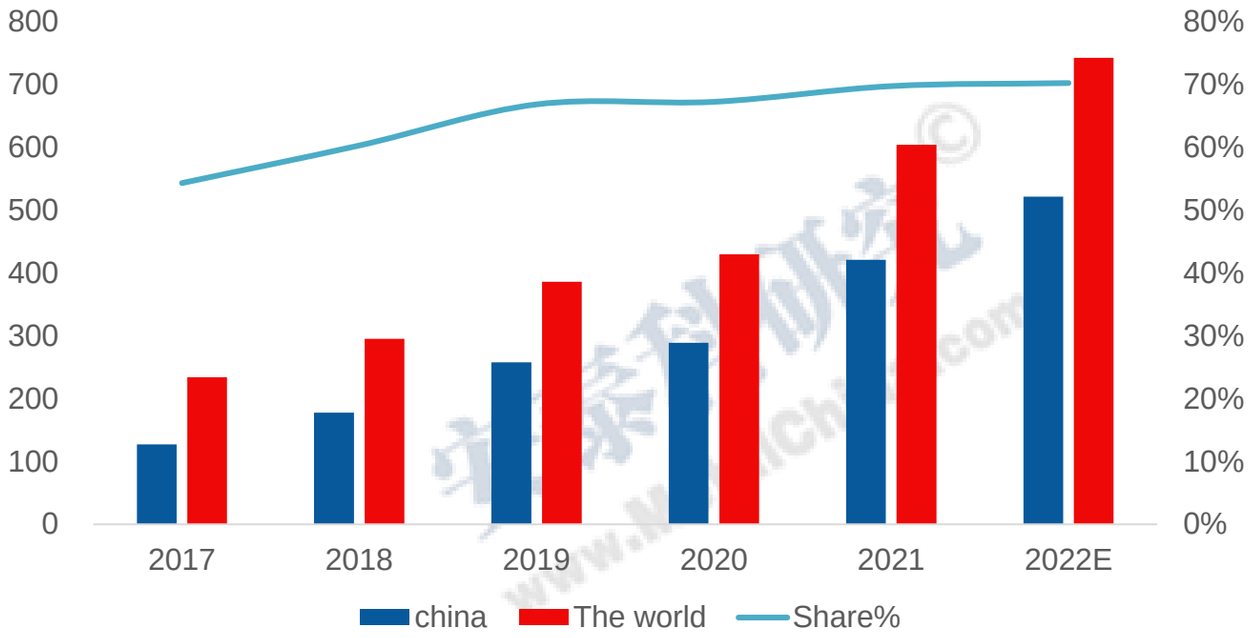
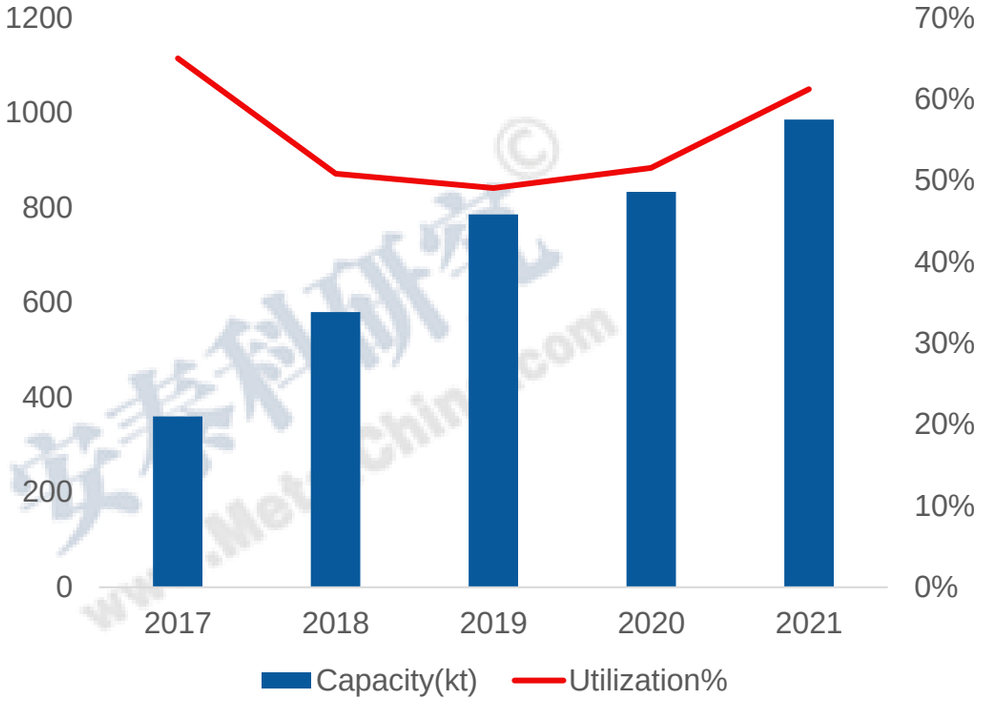
Global VS China lithium salts output

China's lithium salt output accounts for 70% of the world's



Global Lithium Smelting Capacity and Utilization



Sources: Antaike

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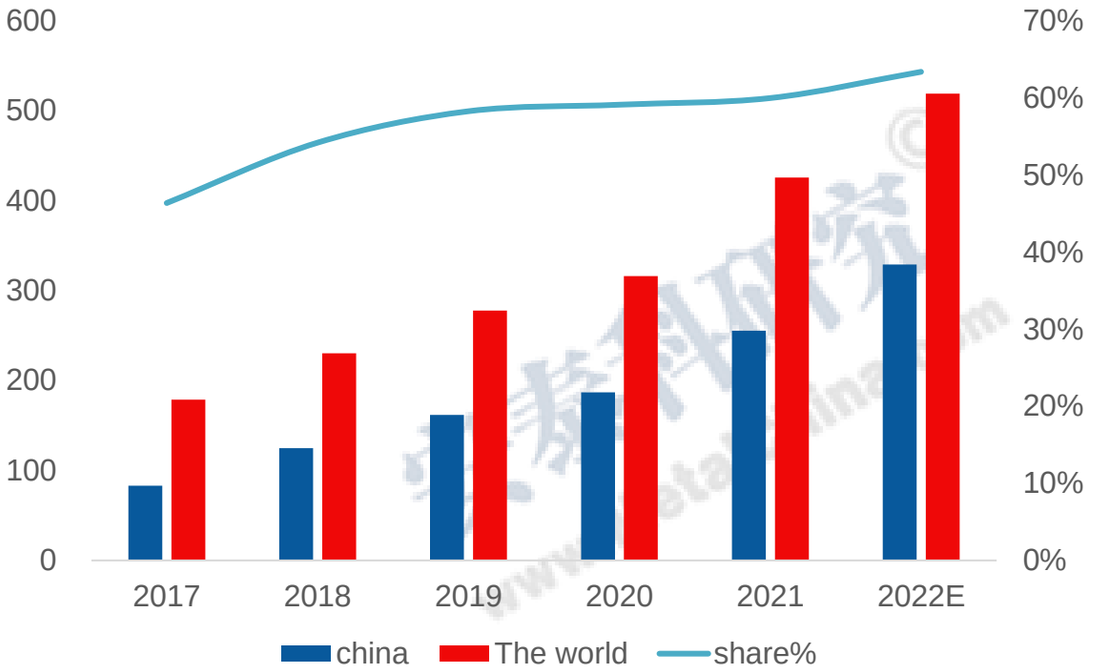
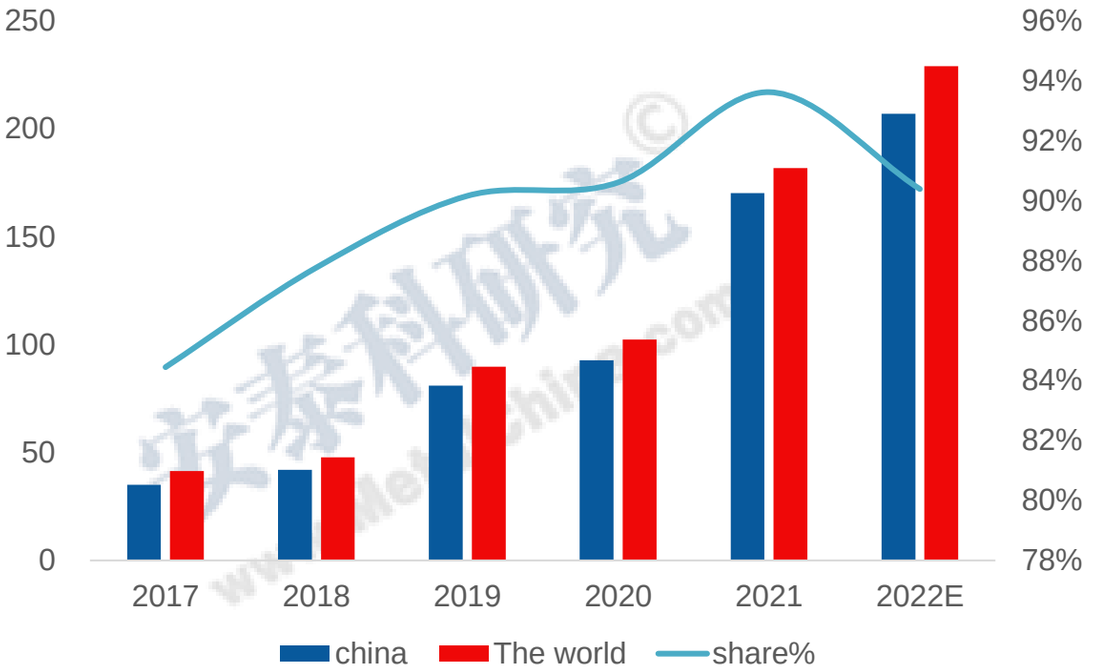
Lithium Carbonate and Lithium Hydroxide

China lithium carbonate output(kt)



China lithium hydroxide output (kt)



Sources: Antaike

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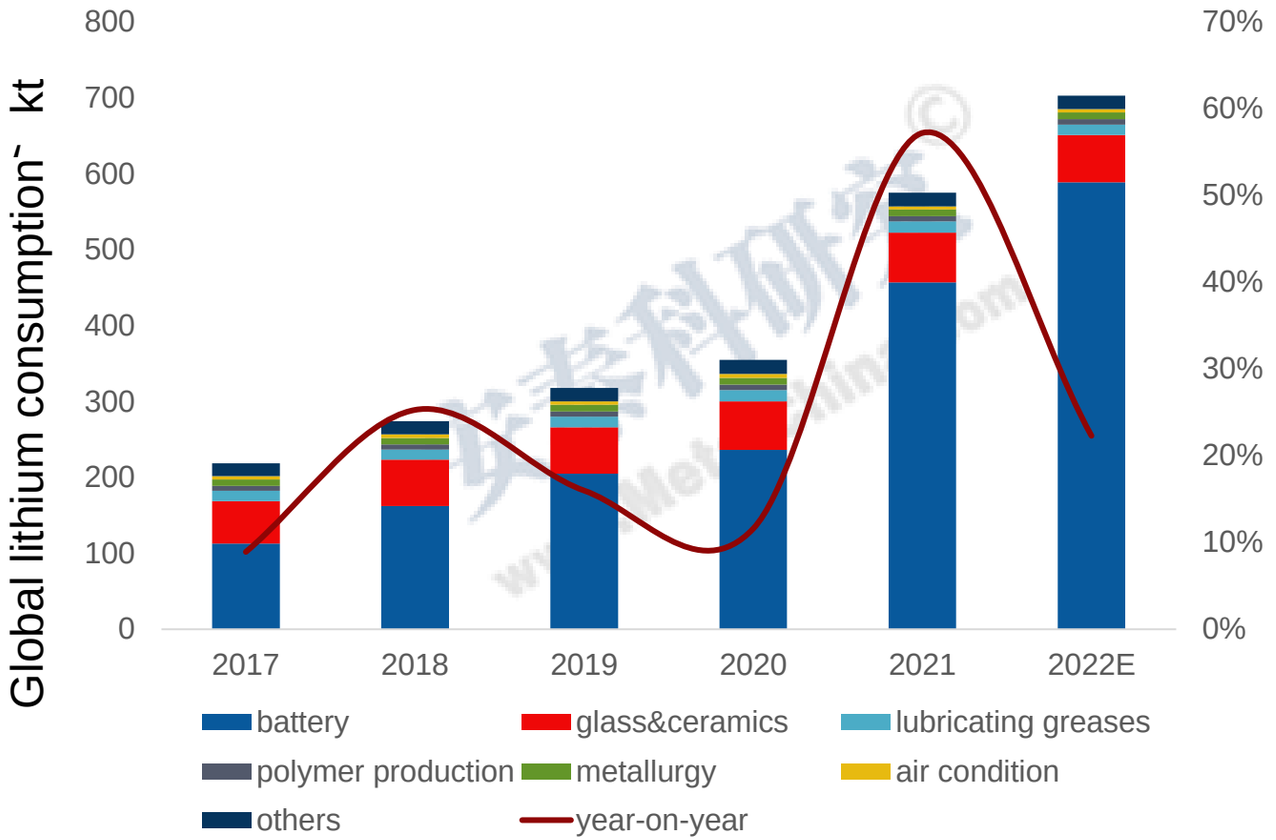
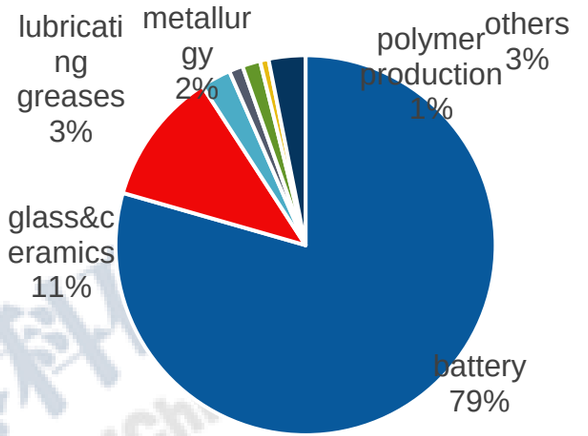
Global Lithium Consumption

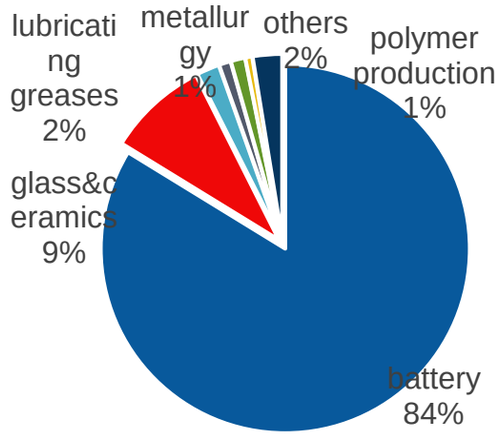
The growth rate of lithium consumption in 2022 will decline to 22.3%



Global lithium consumption structure in 2021



Global lithium consumption structure in 2022



Sources: Antaike

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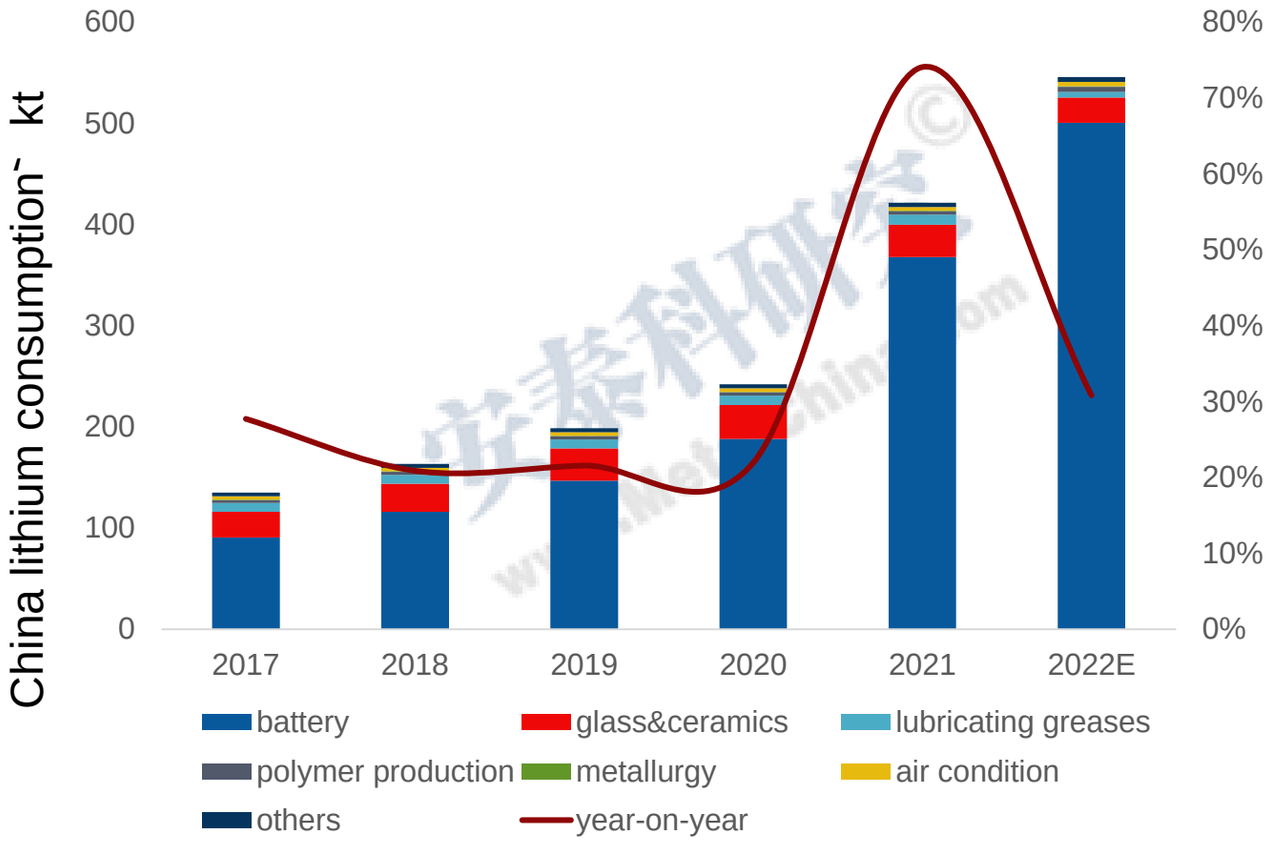
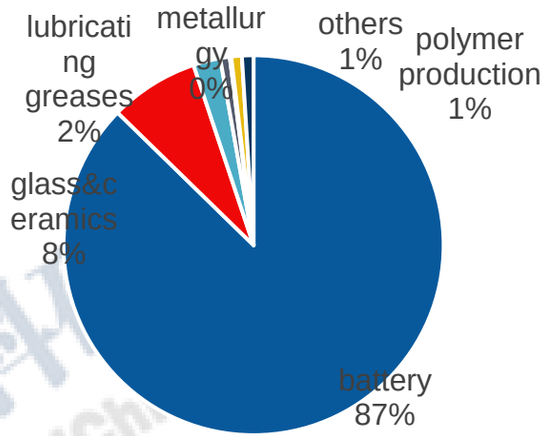
China Lithium Consumption

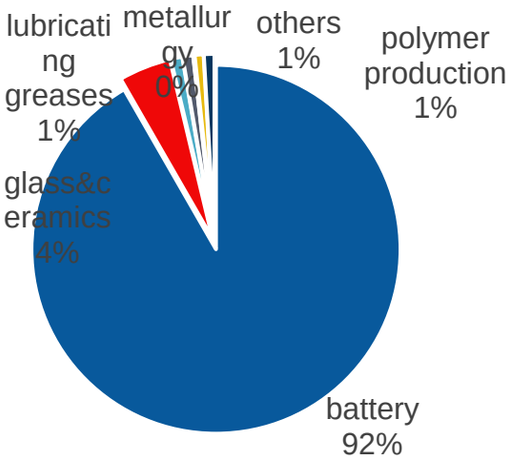
The growth rate of lithium consumption in 2022 will decline to 30.8%



China lithium consumption structure in 2021



China lithium consumption structure in 2022



Sources: Antaike

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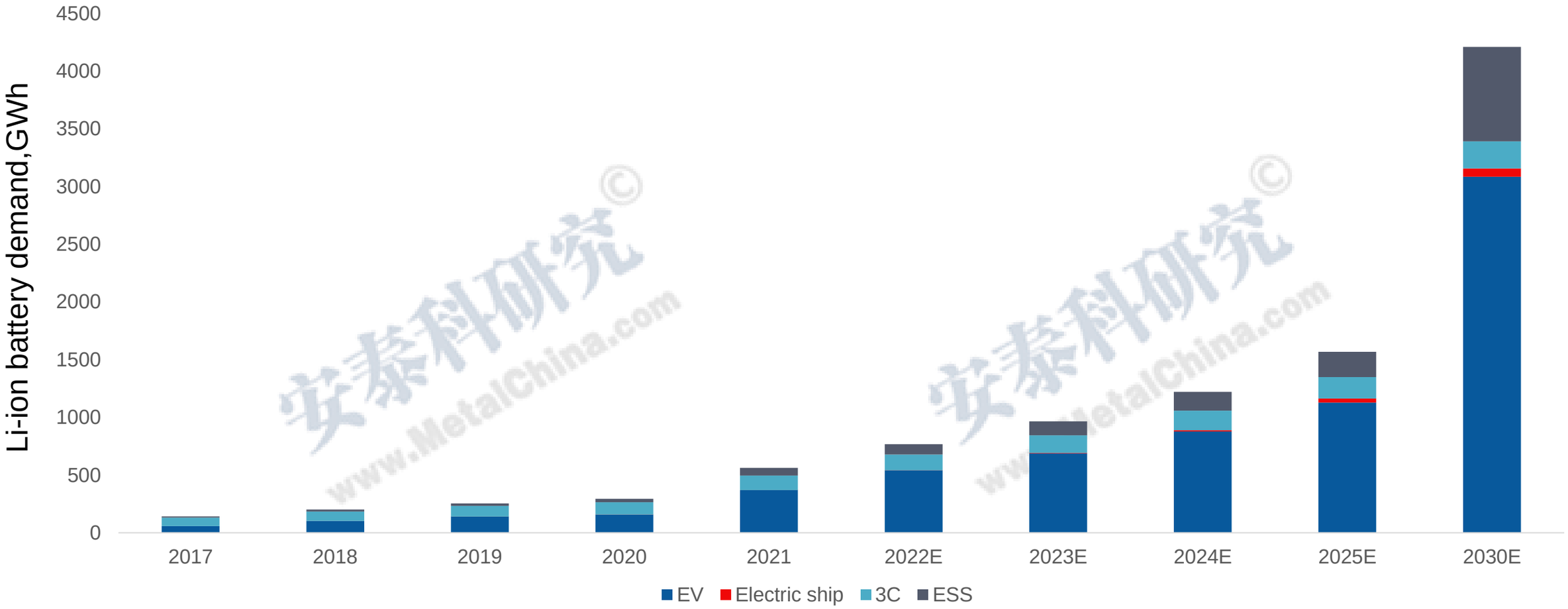
Li-ion battery demand by end-use



Sources: Antaike

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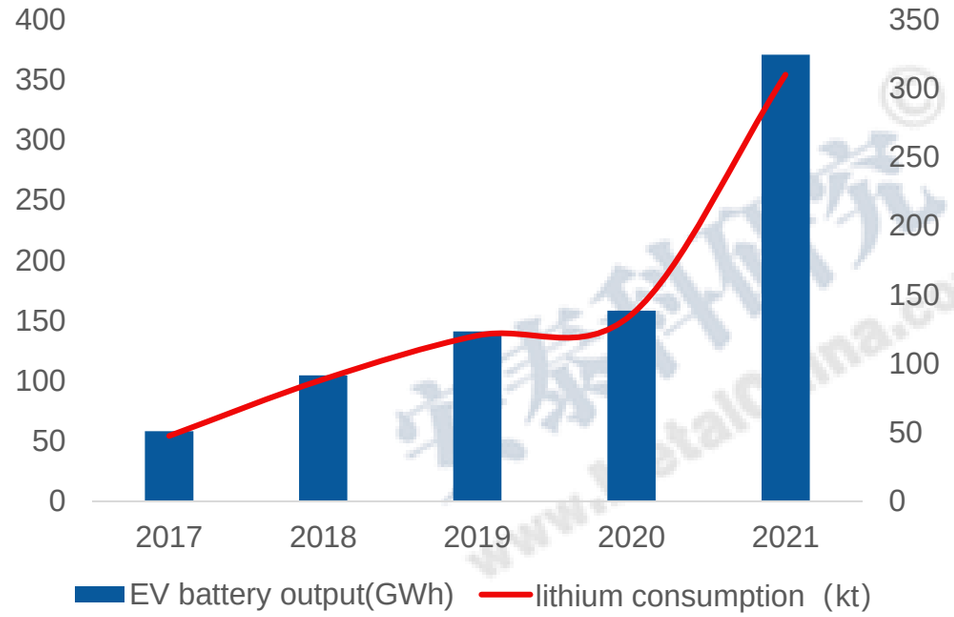
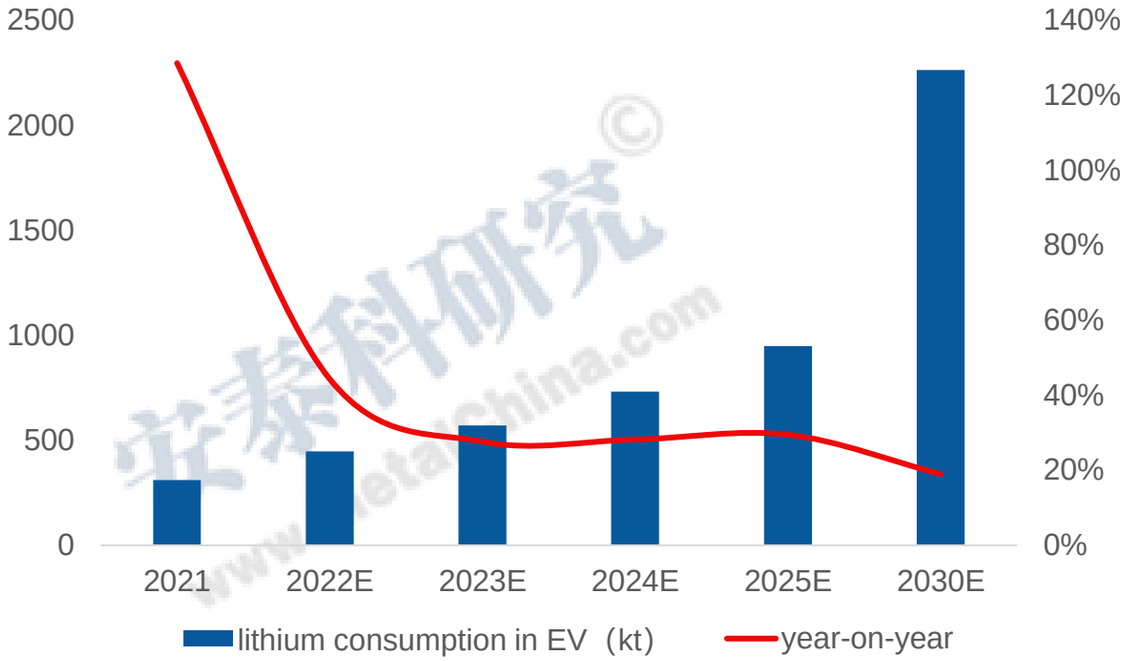
EVs account for the largest proportion of lithium consumption

Global EV battery output and Li consumption 2017-2021



EV drives the Li consumption in a long term



Sources: Antaike

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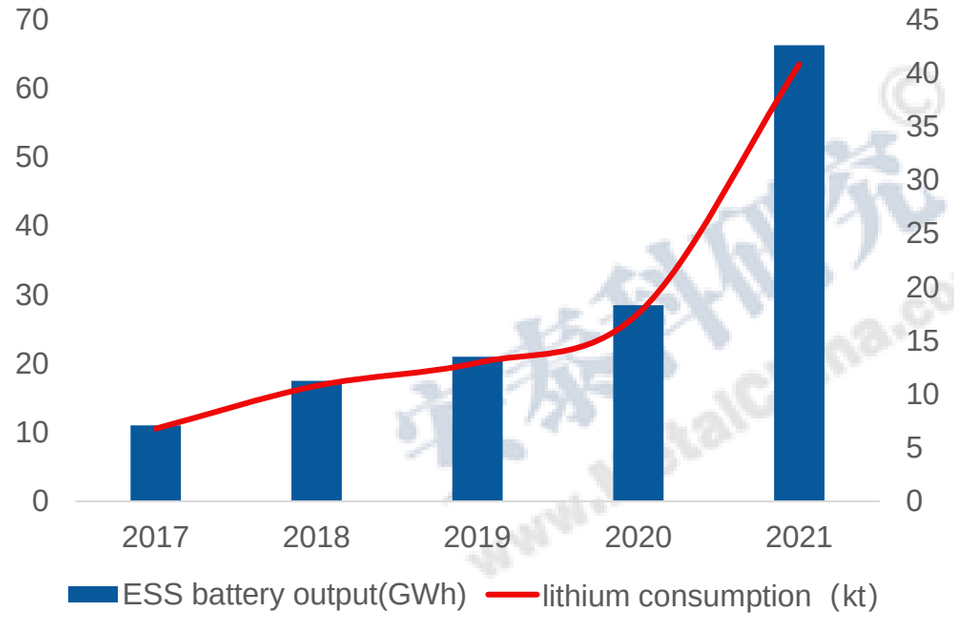
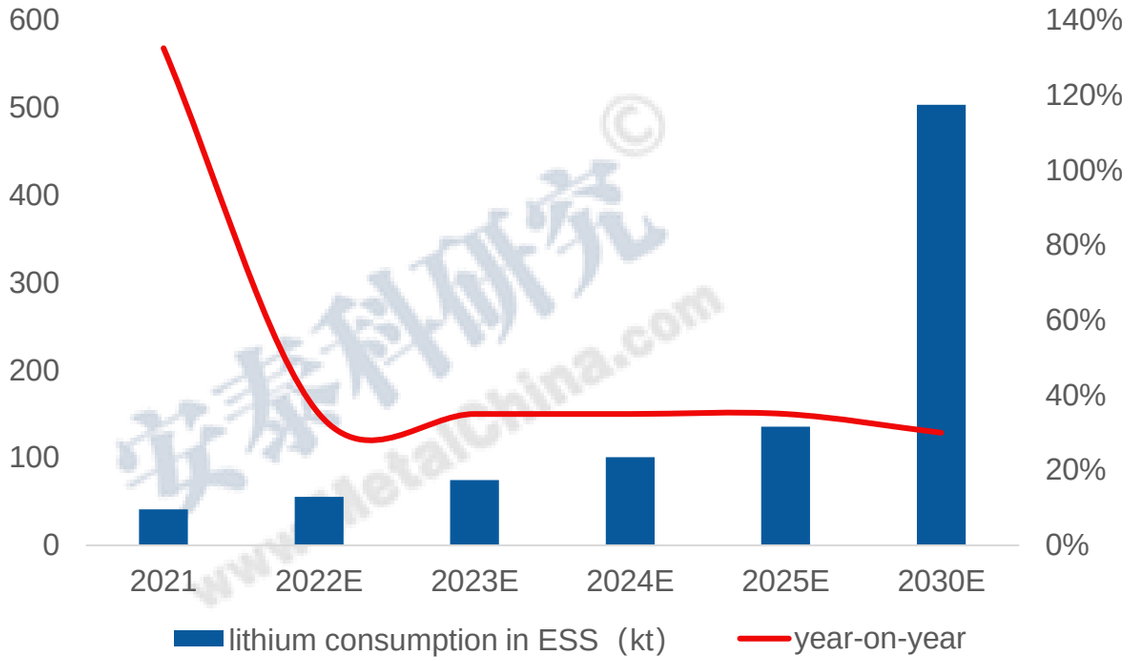
ESS battery consumption grows the fastest

Global ESS battery output and Li consumption 2017-2021



EV drives the Li consumption in a long term



Sources: Antaike

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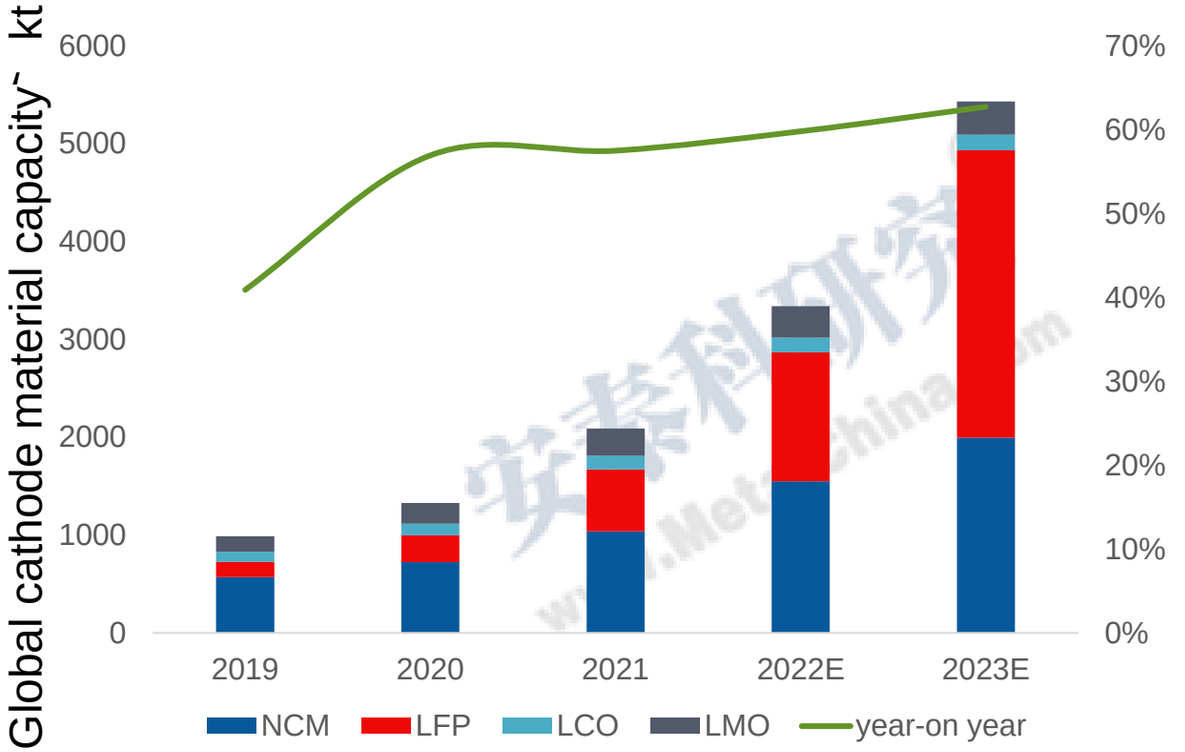
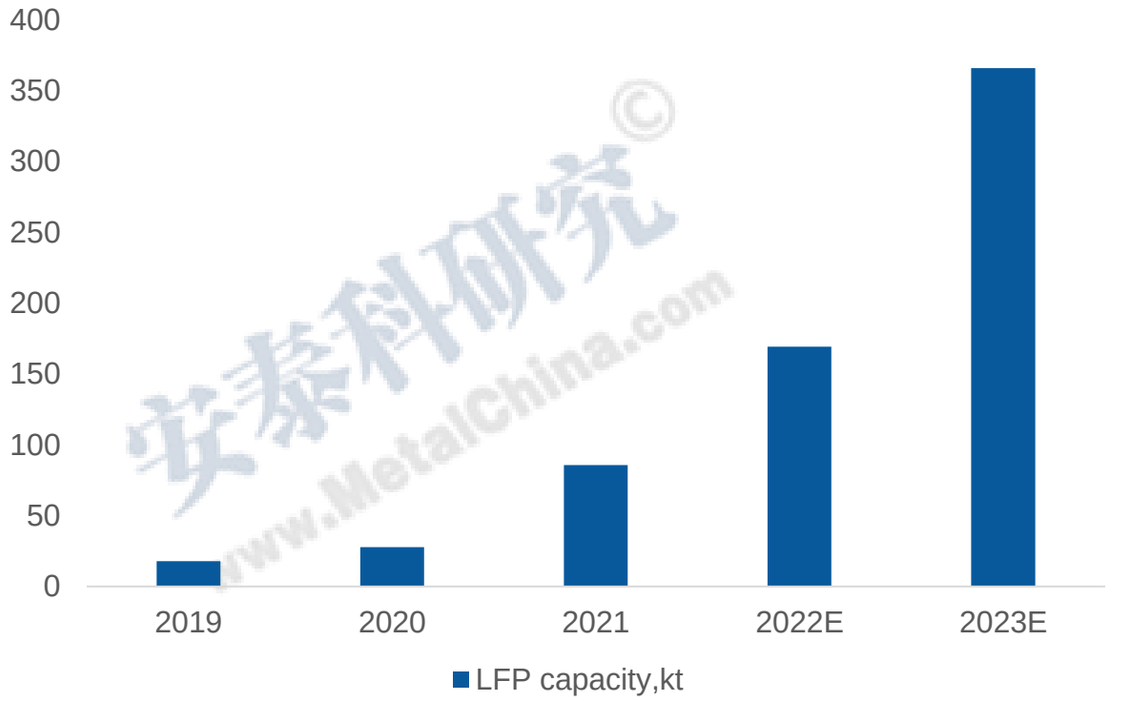
Cathode material capacity expansion

LFP capacity expansion fastest



LFP production capacity at the end of 2019-2022



Sources: Antaike

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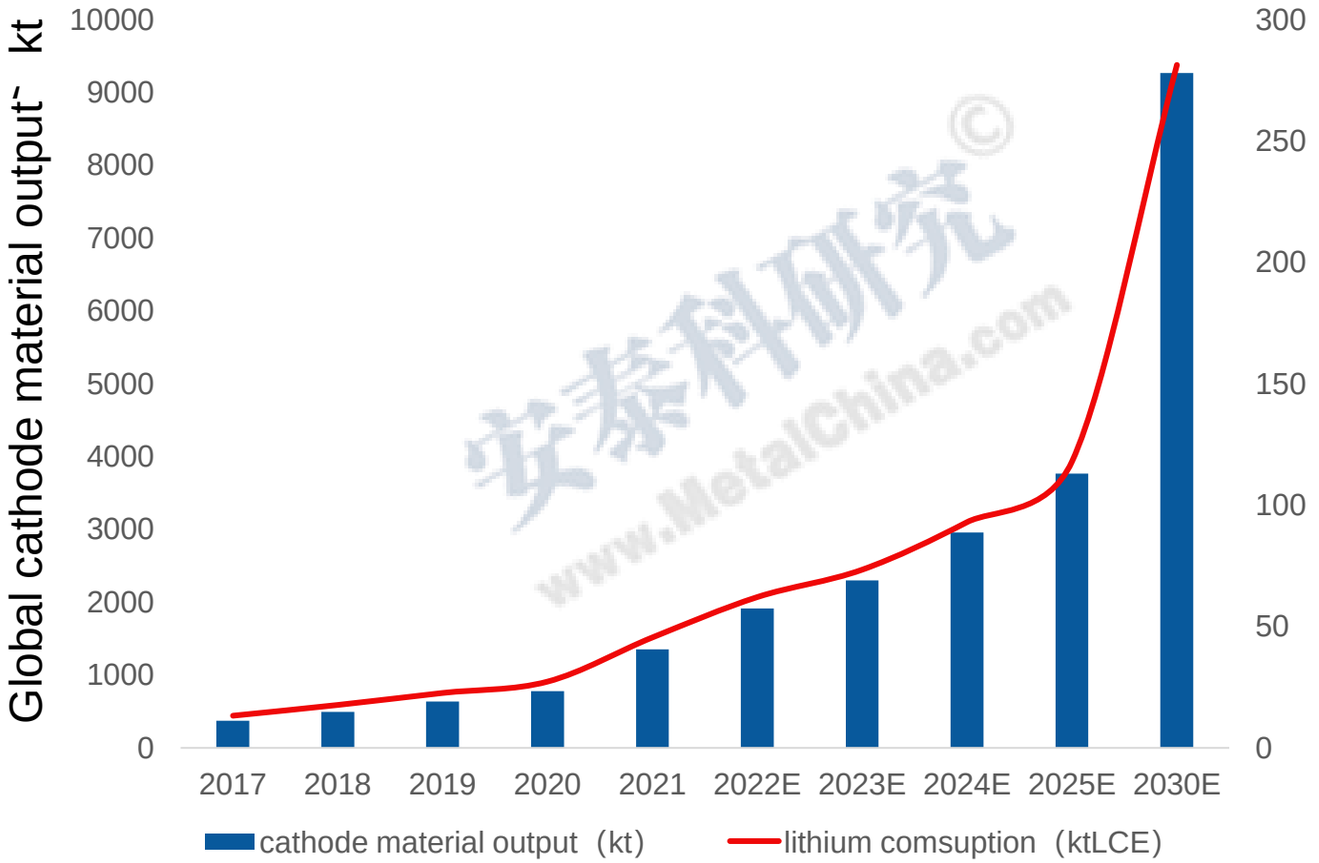
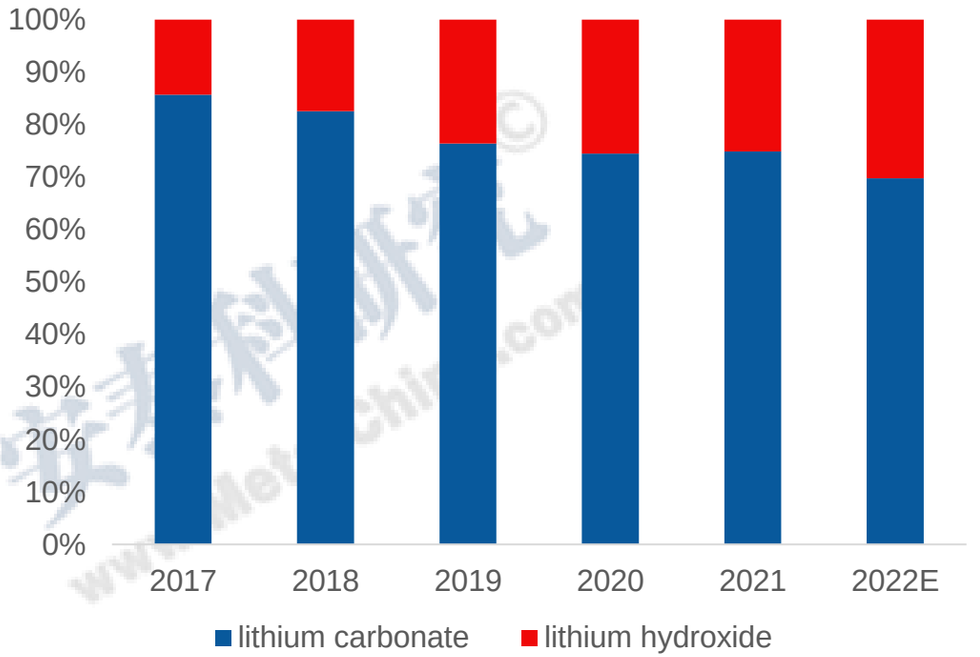
Cathode material lithium consumption

Global cathode material output is expected to be 9.3MT in 2030



Lithium carbonate consumption accounts for the majority



Sources: Antaike

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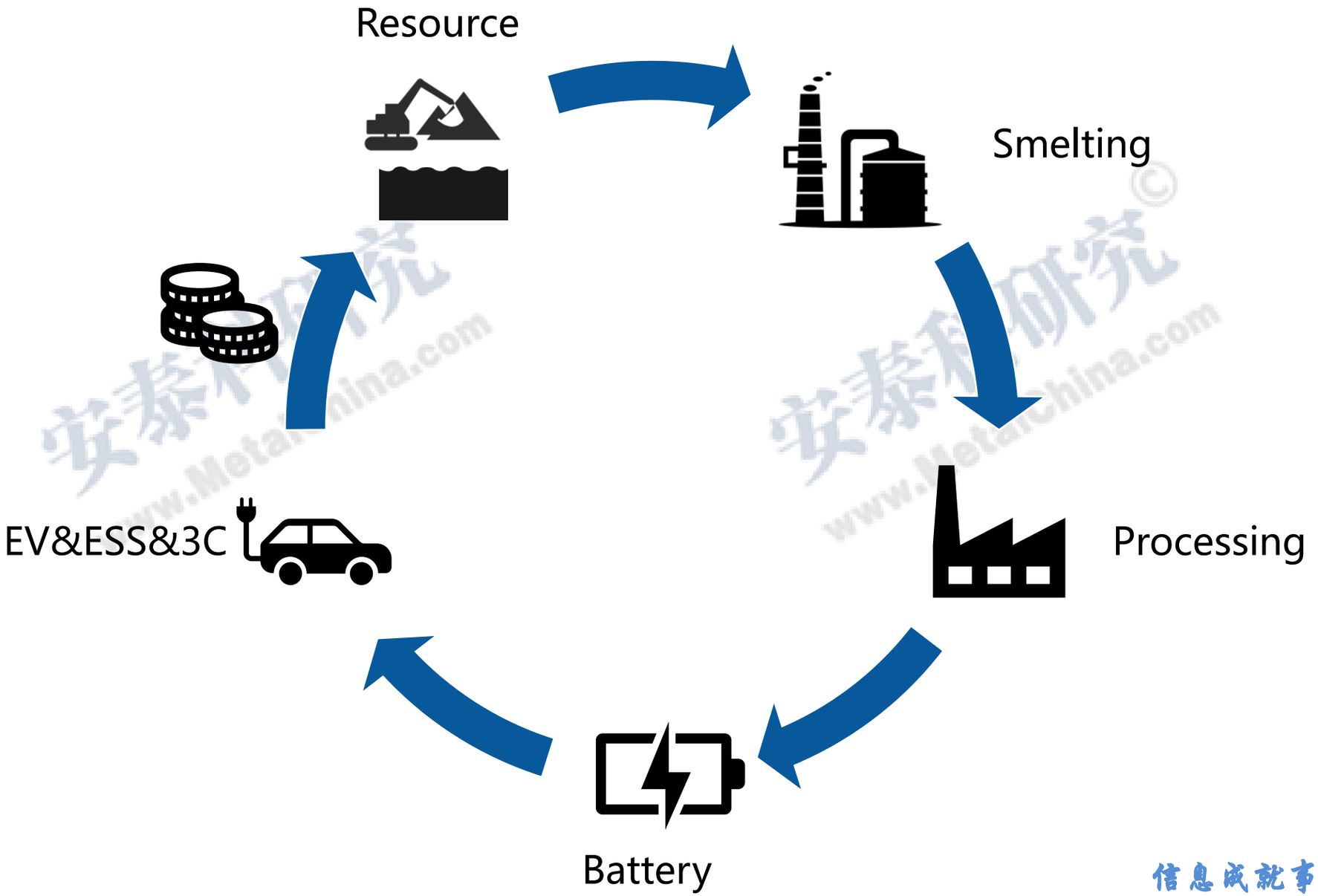
The impact of Covid19 on logistics



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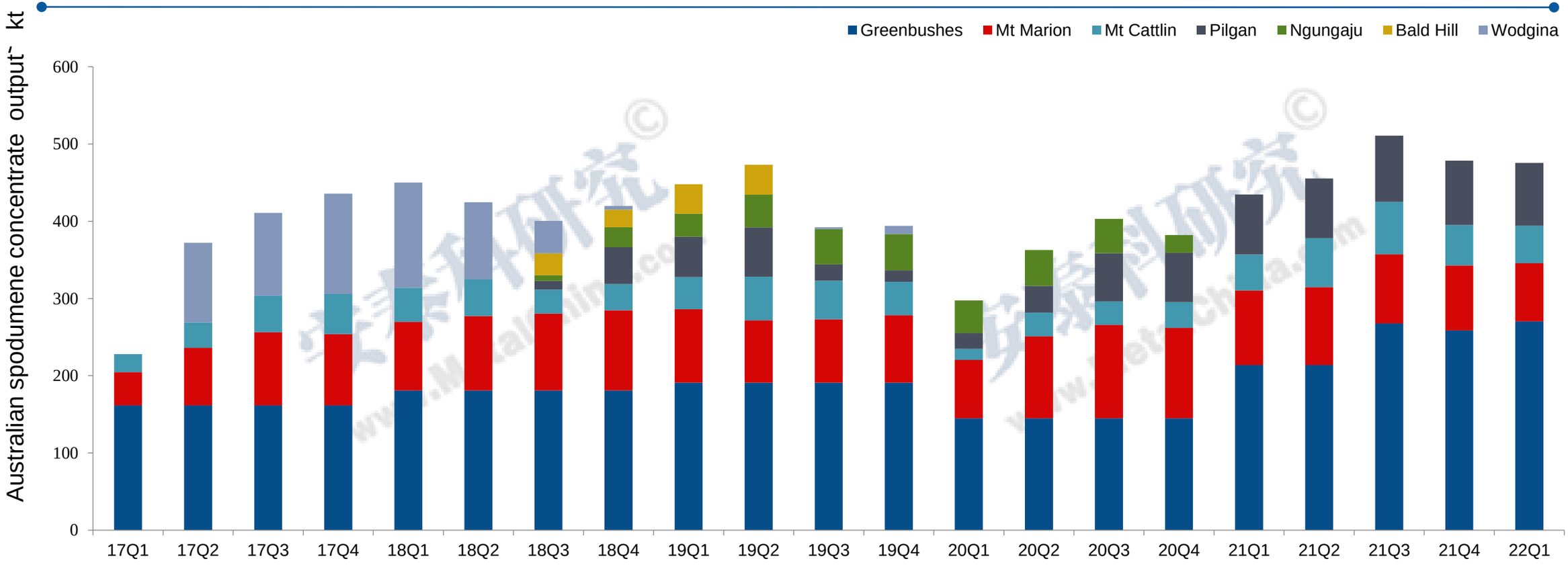
Intensified Uncertainties of Lithium Supply

The progress of mine expansion and resumption in Australia is not as good as expected



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Intensified Uncertainties of Lithium Supply

- Delays in construction of overseas salt lake projects are relatively common.
- Due to the poor global logistics chain caused by the epidemic, the equipment and materials of many projects cannot be delivered to the project site in time.
- The EIA approval time for new projects is long;
- Many countries include lithium as a key or strategic metal, and nationalism is on the rise.
- The local community groups where the resources are located have great influence and can influence the progress of the project.

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Intensified Uncertainties of Lithium demand

- The unexpected outbreak of Covid-19 has disrupted supply chains in some regions, with plants shutdown and demand decrease.

- Great downward pressure on global economy brought by the Covid-19 result in uncertainties of high growth in consumption

- Highly spike lithium prices, and remains uncertainties to see whether or not constrain end-use consumption.

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Market Outlook

3C Electronics	EV&ESS	Industrial field	Medicine
• Weak transaction • accumulation	• Maintain a growth rate of more than 40% • policy orientation	• The building ceramics industry has declined significantly	• low demand • slightly increased

- Tight supply-demand balance in 2022, logistics disturbance due to the pandemic resurfaces push up prices temporarily.
- **Supply side:** resource increments will be 189±10kt in 2022, increments from recycling side be about 25kt.
- **Consumption side:** rising commodity and energy prices restrain consumption; lithium consumption is likely to be below expected in 2022.
- **Price:** price is expected to stay high-level fluctuation in short term, with average lithium carbonate price climbing to 450,000 yuan/t in 1H22, and annual average price up to 500,000 yuan/t expected in 2022.
- **Price trend:** lithium price back to the range of 300,000 yuan/t in the following 2-3 years.

Sources: Antaike

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