

Delivering new TiO₂ pigment capacity for the global market

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- **A large Chinese chemical company**
- **Company name changed from Lomon Billions Group to LB Group in 2021**
- **Global Headquarters in Jiaozuo, Henan Province**



Our Global HQ in Jiaozuo

5 main synergistic product lines

- **Titanium**

- High-performance titanium dioxide (TiO_2) pigments
- Titanium sponge, used to make titanium alloy and pure titanium metal
- Titanium alloy, used in the manufacture of air and space craft

- **Zirconium**

- ZOC used to coat some TiO_2 pigments and in automotive catalysts
- ZrO_2 used as a powder grinding media and in ceramics

- **Ferrous sulfate**

- For feed additives, water treatment flocculants, feedstock material for iron oxide manufacture, industrial catalysts, and iron fertilizers

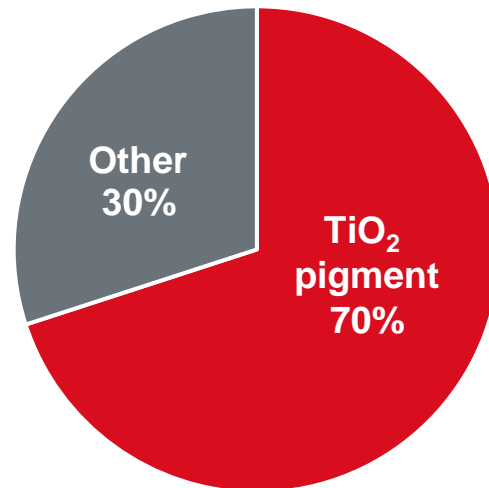
- **Ilmenite, slag & synthetic rutile**

- Feedstock material for TiO_2 pigment manufacture

- **Lithium**

- For energy batteries

Approx. % of Revenue, H1 2022



China's global titanium dioxide (TiO₂) pigment producer



One of the **world's top 3 manufacturers** of high performance TiO₂ pigments

- **#1** in China and Asia

>30 years of TiO₂ manufacturing experience

Listed on the Shenzhen Stock Exchange since **2011**

~1215kt TiO₂ pigment nameplate capacity, with more available early 2023

6 partially integrated TiO₂ pigment plants in China

- **4** sulfate-process and **2** chloride-process plants

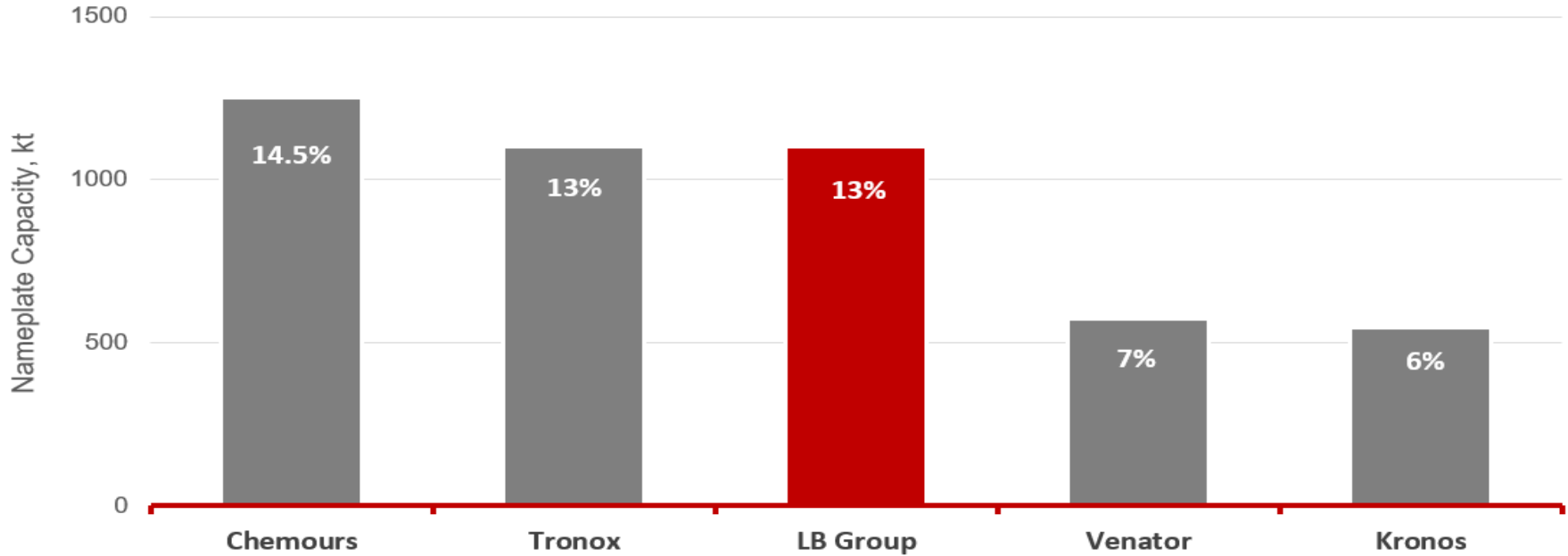
Vertically integrated in feedstock

- **#2** ilmenite producer in China

~10,000 employees worldwide

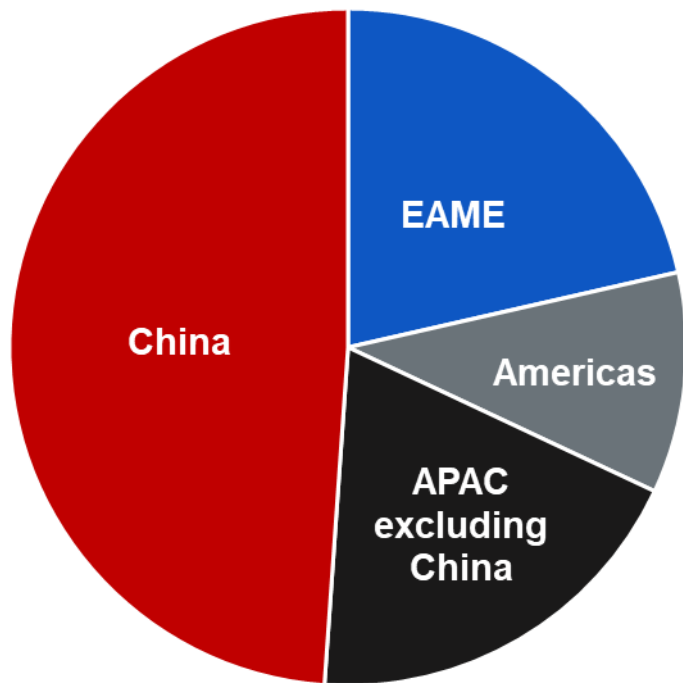


One of the top 3 global TiO₂ producers



Management estimates & SEC Filings
Based on estimates for end of 2021 capacities

Worldwide sales



~50% export sales in 2021

Significant sales in each region

#1 TiO₂ exporter from China

Exporting for >20 years

A growing global presence

CHINA

Global HQ & technology center in Jiaozuo, Henan Province

6 TiO₂ pigment production plants in 5 locations:

- Deyang in Sichuan Province
- Jiaozuo in Henan Province
- Xiangyang in Hubei Province
- Chuxiong in Yunnan Province
- Jinchang in Gansu Province

Sales offices in:

- Chengdu in Sichuan Province
- Zhengzhou in Henan Province
- Shanghai
- Hong Kong

Ilmenite mine in Panzhihua, Sichuan Province

NORTH AMERICA

North American HQ in Chicago

EUROPE

European HQ in the UK



Titanium Production Capacity

1	JIAOZUO, HENAN PROVINCE GLOBAL HQ	250 kt sulfate TiO_2 400 kt chloride TiO_2 300 kt titanium slag and synthetic rutile
2	CHUXIONG, YUNNAN PROVINCE	160 kt* chloride TiO_2 80 kt titanium slag 35 kt titanium metal
3	DEYANG, SICHUAN PROVINCE	255 kt sulfate TiO_2
4	XIANGYANG, HUBEI PROVINCE	150 kt sulfate TiO_2
5	JINCHANG, GANSU PROVINCE	100 kt** intermediate TiO_2 (calciner discharge) 15 kt titanium metal
6	PANZHIHUA, SICHUAN PROVINCE	800 kt ilmenite 3000 kt iron ore concentrate

*Further 100kt capacity expected online in early 2023

**Further 100kt available in 2023



Chuxiong site (former Xinli)

Refurbished and restarted; expansion plans for all areas



Chloride Pigment

- Original production line restarted January 2020; design is the same as Jiaozuo line 1
 - Theoretical capacity of 100kt, currently operating at ~60kt – plans to debottleneck
- Additional 2 new lines, each with 100kt capacity; design the same as Jiaozuo lines 2, 3 & 4
 - First new line now online (Q4 2022)
 - Second new line expected early 2023

Titanium Slag Smelting

- Current capacity around 80kt
- Investing to increase future capacity to around 200kt

Titanium Sponge

- Currently 35kt capacity, expanding to a future capacity of around 50kt



Jiaozuo chloride TiO_2 pigment

Extensive investment in expanding capability



Original 100ktpa capacity line, commissioned 2015

- Highly consistent production output

200kt chloride pigment capacity commissioned in 2020

- Gradual ramp-up to maximum capacity ongoing

Expansion project complete

- New 100kt line (line 4) commissioned
- Now online

Total capacity now 400kt



Summary of chloride-process TiO₂ production



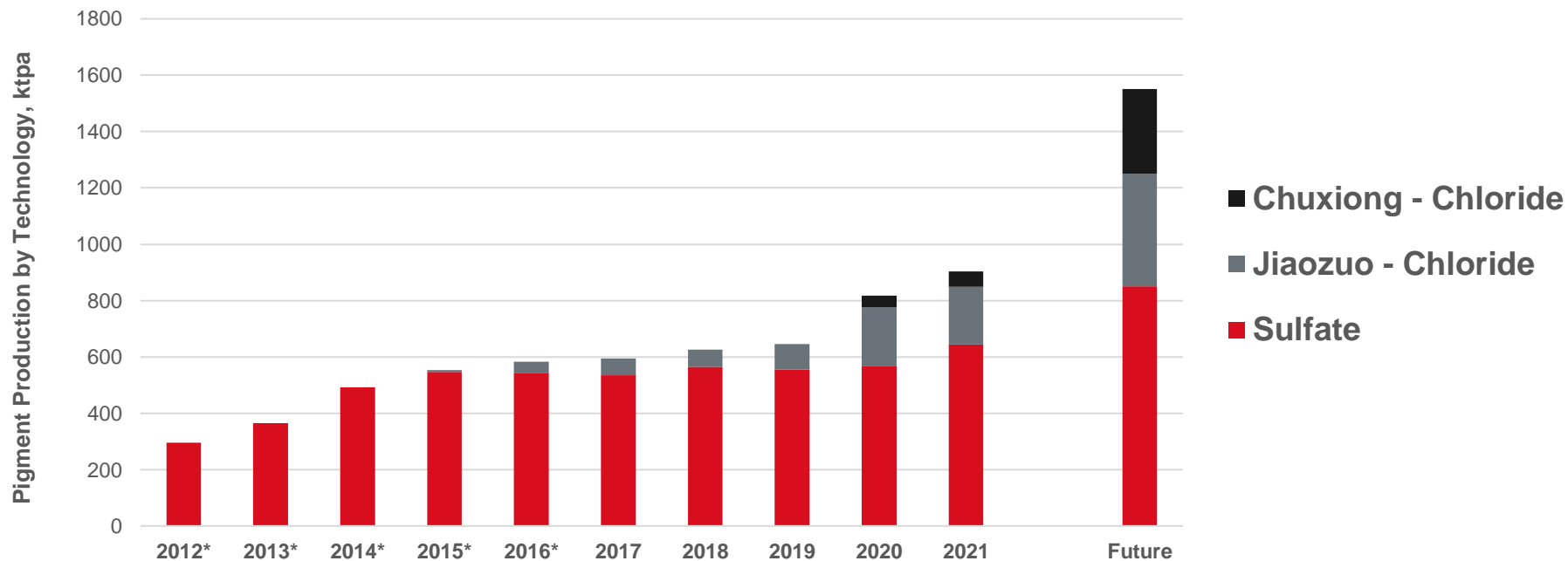
	Jiaozuo	Chuxiong (Xinli)
Current capacity	~400kt	~160kt
2021 output	~205kt	~55kt
New developments	New 100kt line Now online	2 new 100kt lines 100kt now online; further 100kt in 2023
Future plan	Ramping up of production rates to achieve maximum capacity	Capacity of 300kt across 3 lines
Total Capacity	~700kt chloride-process TiO ₂ pigment capacity by 2025	

New sulfate capacity

- Unfinished TiO₂ pigment (calciner discharge) will be produced at LB Group subsidiary in Jinchang, Gansu Province
- 100kt capacity available Q4 2022; further 100kt available 2023
- **Takes current “black end” capacity to 1315kt**
- Pigment will be finished at other LB Group production sites
- Construction of 200kt finishing plant at Xiangyang underway
 - expected on-line in 2023
- **Future Xiangyang capacity for finished pigment will be ~350kt**



Significant production increases planned



* Proforma Lomon Billions: Sichuan Lomon Titanium + Henan Billions

Portfolio of high-performance TiO₂ pigments



A balanced portfolio of sulfate and chloride-process TiO₂ pigments

- Products tailored to specific end-uses within each major application area
- Developed for the global market in collaboration with customers

Strengthening global competitiveness

- Access to a wider range of geographical markets and applications
- Strong product offer to suit market preferences



Vertically integrated in feedstock

Chloride slag smelters in Henan and Yunnan, China

Synthetic Rutile facilities in Henan, China

Ilmenite / iron ore mine in Sichuan, China and ilmenite ore mine in Yunnan, China

- Currently ~60% self-sufficient for sulfate pigment feedstock

Multi-billion dollar investment to develop production of titanium rich material in LB Group's mine in Panzhihua.

Feedstock for:

- Chloride-process TiO_2 pigment
- Titanium sponge and titanium alloy production

Objective is to be fully integrated for both sulfate and chloride-process pigment feedstock



Investing for the future

Investing to become

- Global leader in TiO_2 pigment production
- Fully vertically integrated in feedstock
- Horizontally integrated in other areas of the titanium industry

Investing for sustainable production

- Replacing use of third-party coal-fired energy with clean energy source
- Investing to reduce, reuse or recycle waste by-products

Investing in technical excellence

- Modern manufacturing techniques, with state-of-the-art equipment
- Purpose-built 12,000m² technology center
- Continued investment in chloride technology
- Development of an extensive portfolio of high-performance pigments



CHINA UPDATE



China's approach to carbon

National strategy and targets



Medium to long-term plan to reduce carbon and greenhouse gas emissions

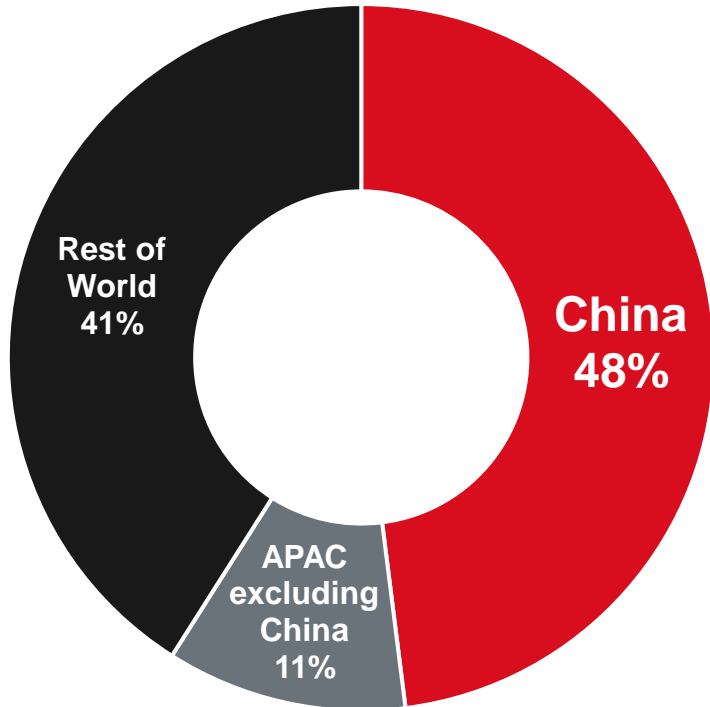
By **2025**, the following targets should be met:

- 13.5% lower energy consumption per unit of GDP than in 2020
- 18% lower carbon emissions per unit of GDP than in 2020
- Around 20% non-fossil fuel energy consumption
- Reach 24.1% forest coverage rate (18 billion cubic meters)



Source: *White Paper on China's Double Carbon Big Data Index*

China ~48% of global TiO₂ capacity in 2021



APAC nearly 60% of global capacity

Removal of capacity by Western suppliers

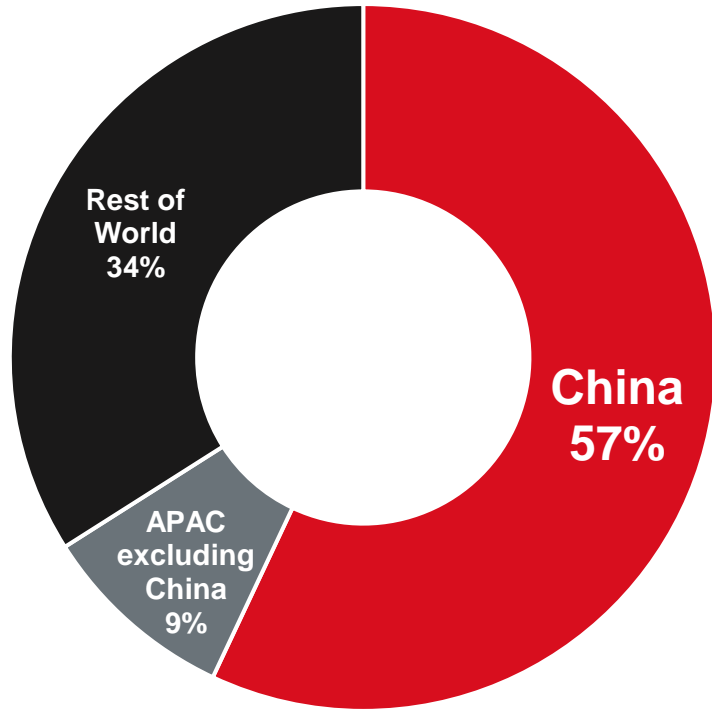
No significant expansion plans outside China

LB Group expansion plans will further increase China's proportion of global capacity

- Approx. 550kt additional capacity vs. 2021 chart

Approx. 1300kt of capacity increases announced by 12 other companies in China, coming on-line in next 2-3 years

What might the future look like?



China could be ~55-60% of global capacity

Assumes:

The 48% on previous slide is relatively accurate

No further capacity removal East or West

No significant expansion outside China

Announced expansion plans in China are realized!!

China's chloride-process TiO₂ pigment capability

Significant growth in last 5 years

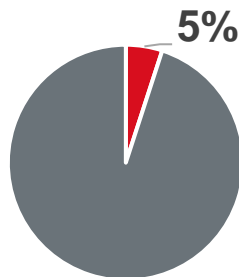


Chart Key:

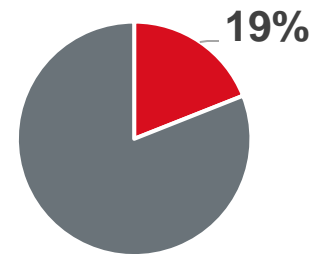
Chloride-process ■

Sulfate-process ■

2017



2022



Total (SP & CP) nameplate TiO ₂ production capacity	~3700kt	~5200kt*
No. of chloride-process TiO ₂ pigment producers	2	5

*Source: BAIINFO

2021 vs. 2022 market conditions in China



2021

GDP increased by 8.1%, very strong demand in most sectors

Production impacted due to COVID in some areas; other producers running at high rates

Extremely low inventory levels

Significant increase in prices during the course of the year

Unprecedented shipping costs and container shortage make exports unattractive

2022

Demand becoming more subdued as the year progresses

Production may increase relative to '21, though some recent slowdown at smaller producers

Increasing inventory levels

Sharp decrease in prices in Q3

Shipping costs beginning to stabilize and even reduce on some routes – exports more attractive

- Margins are not sustainable at current levels
- Government policies used to stimulate economic recovery
 - May 24th: State Council of China issued a package of measures to stabilize the economy
 - Sept. 28th: Premier Li Keqiang called for “solid efforts” to implement economic recovery policies
 - Within China, Q4 seen as a critical time for ensuring implementation of policies
- Continued improvement in shipping will make exports / exporting increasingly attractive



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