Review & Outlook of Chinese Aluminum & Anode Industry

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September, 2022

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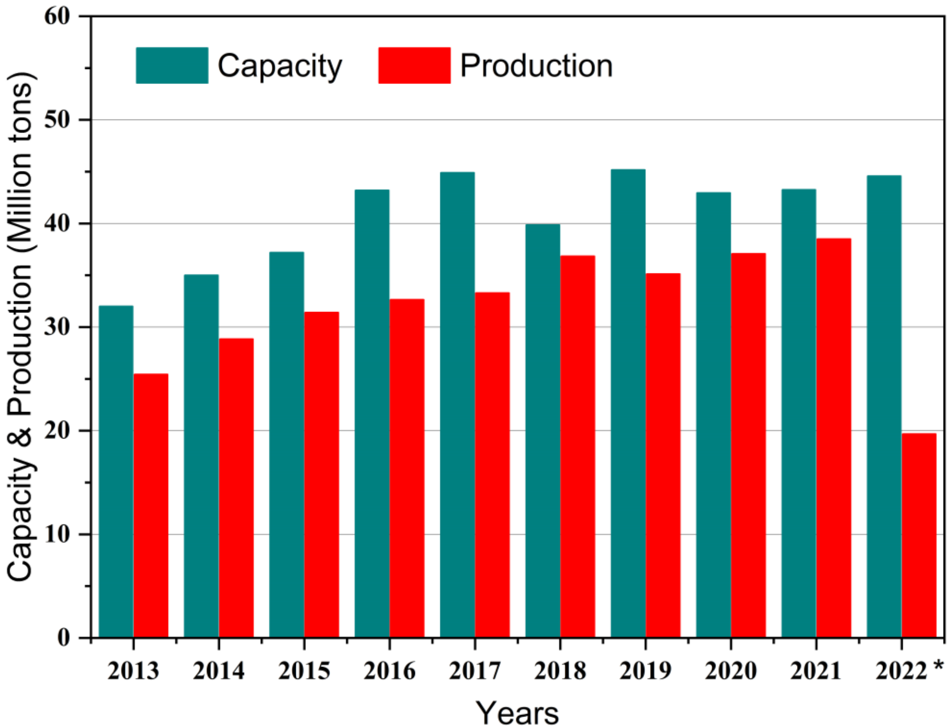
Part I

1. Review of Chinese Aluminum Industry

1. Review of Chinese Aluminum Industry

Capacity & Production in China in the Past Years



*** represents the aluminum production of first half year in 2022**

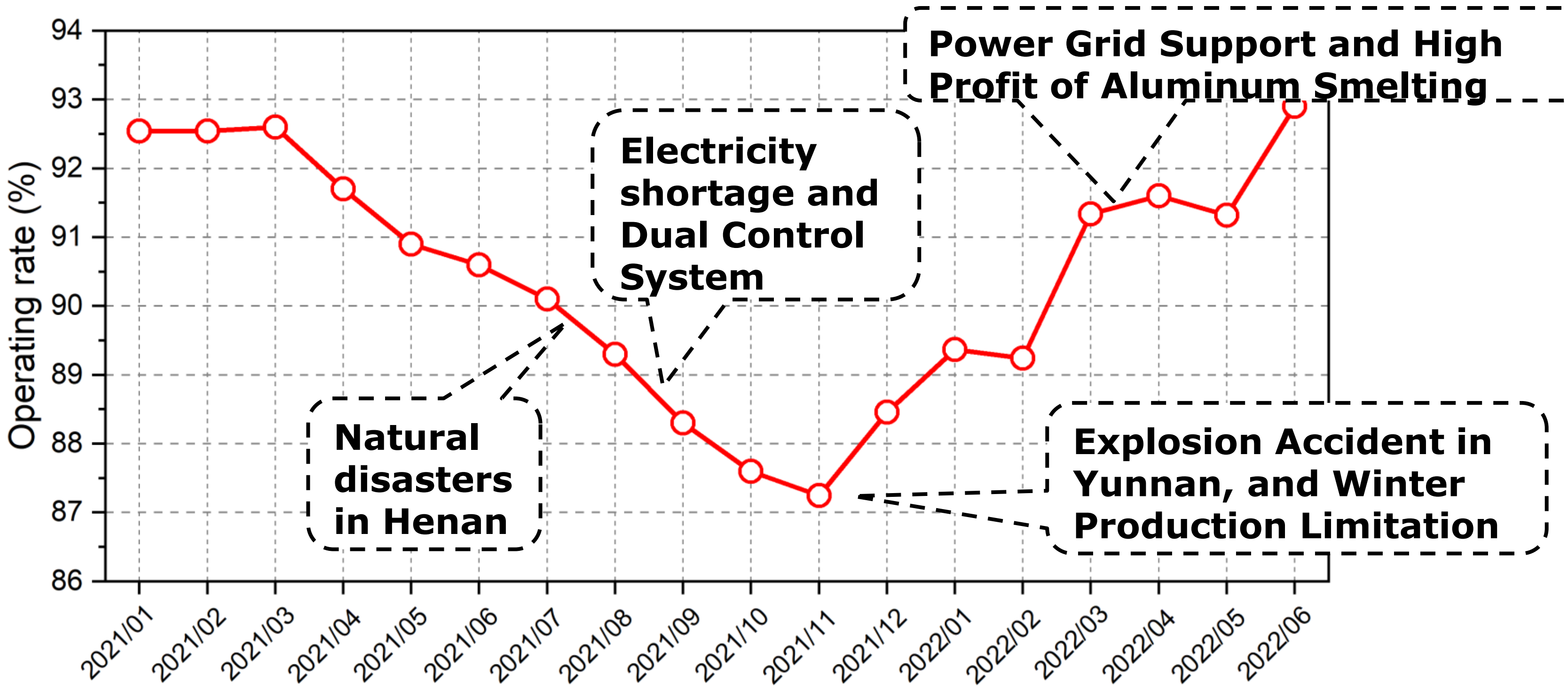
(1) Under the supply side reform policy and dual-carbon goals the total smelter capacity was kept almost constant and the production were slightly fluctuated.

(2) The primary aluminum output was 38.5 million tons in 2021 and the production in the first half of 2022 was 19.68 million tons, increased by 1.07% at the same period compared with 2021.

(3) The Chinese smelter capacity reached 43.2 million tons in 2021, closing to the restricted top level of 45 million tons.

1. Review of Chinese Aluminum Industry

Monthly Operating rate in Chinese Smelters in 2021 & First Half of 2022



(1) A low monthly operating rate was carried out in last one year in China due to the natural disaster in Henan, power shortage in Guizhou and Yunan, explosion accident in Yunnan smelter and production limitation in Winter season.

(2) The operating rate is rising in the first half of 2022 with the epidemic dissipation, power grid support and higher profit of aluminum smelting.

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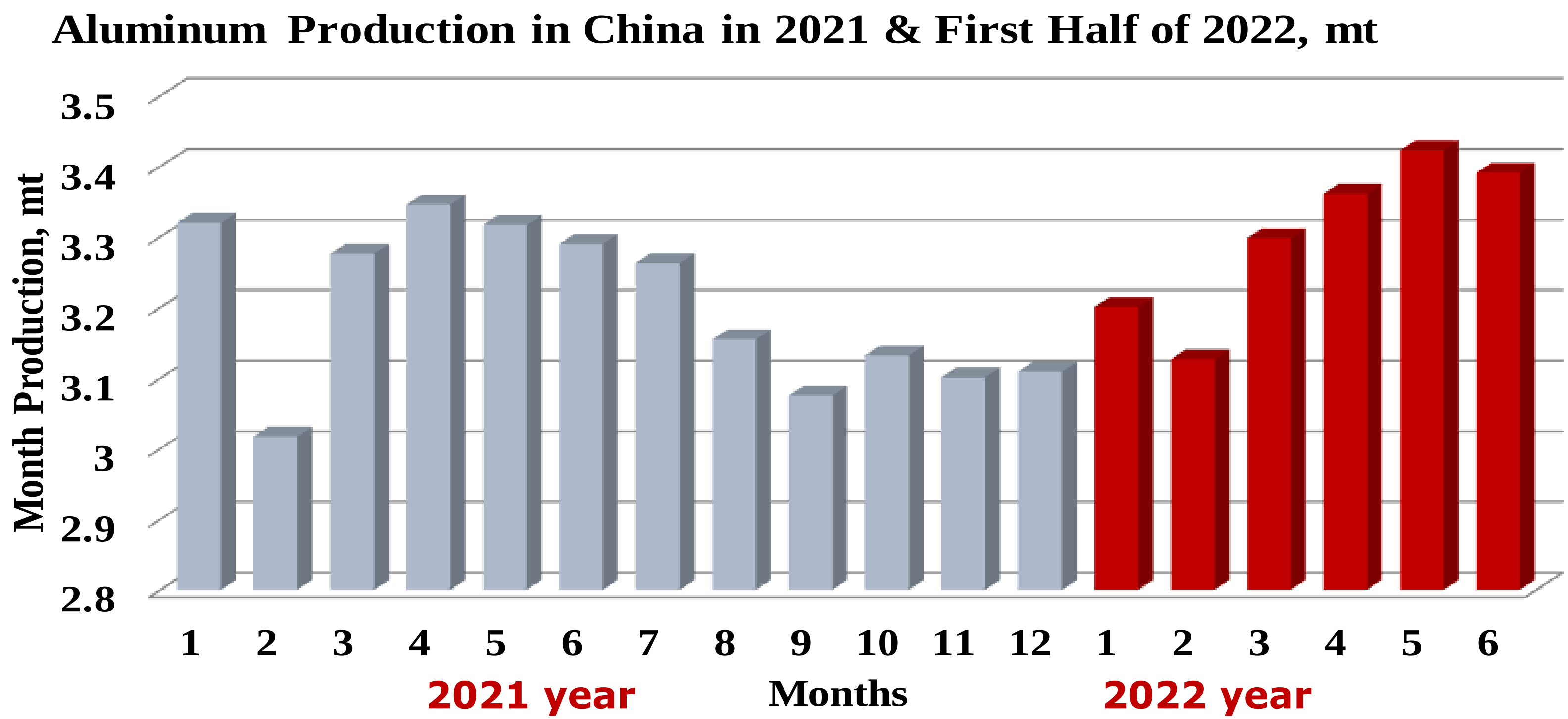
Monthly Production in China in 2021 & First Half of 2022



(1) The monthly aluminum production in the second half of 2021 was relatively lower, decreasing from 3.3 million tons to 3.05 million tons due to the mentioned above.

(2) The monthly aluminum production increased gradually in the first half of 2022, and recovered to the level in the first half of 2021.

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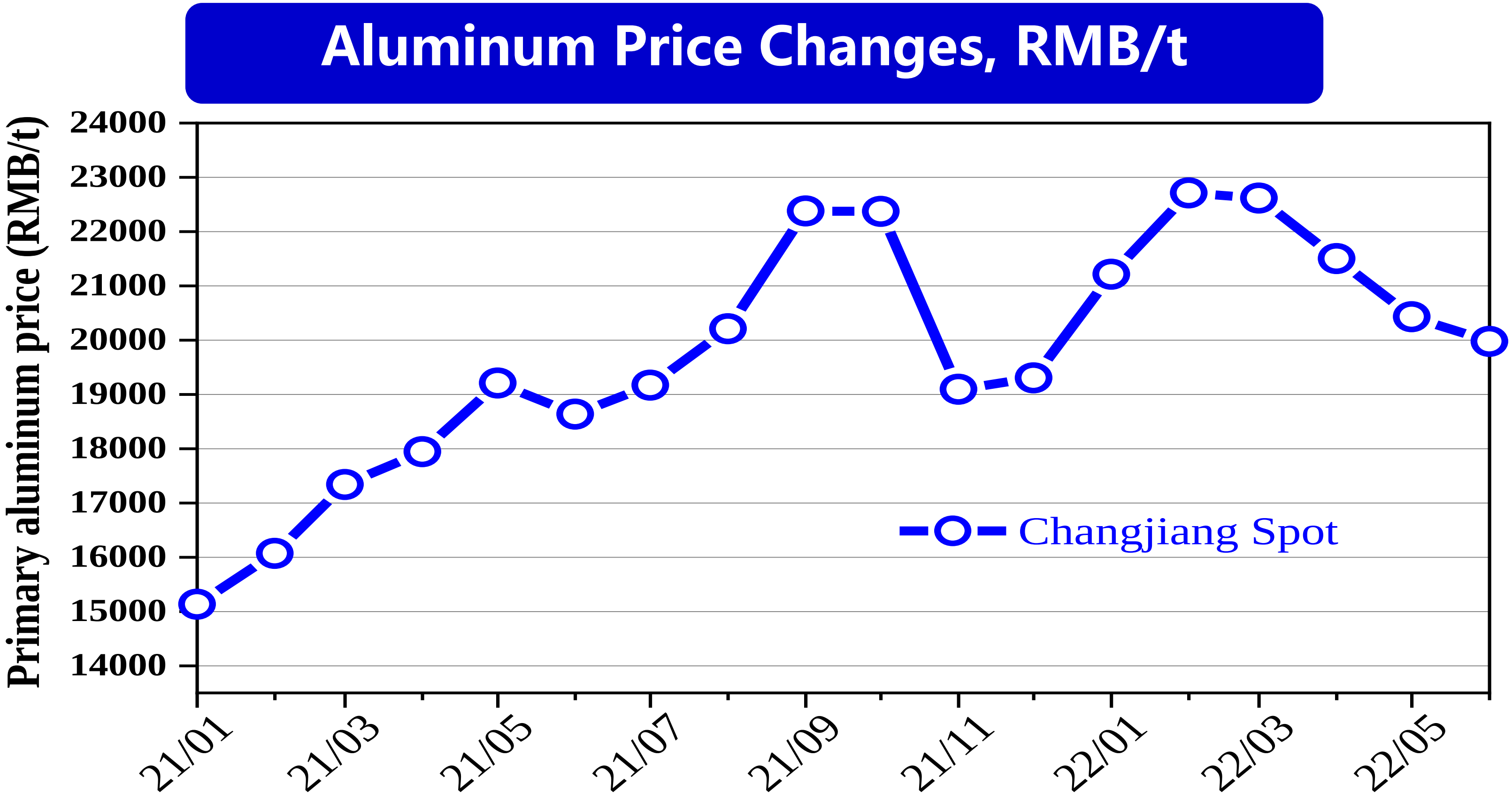
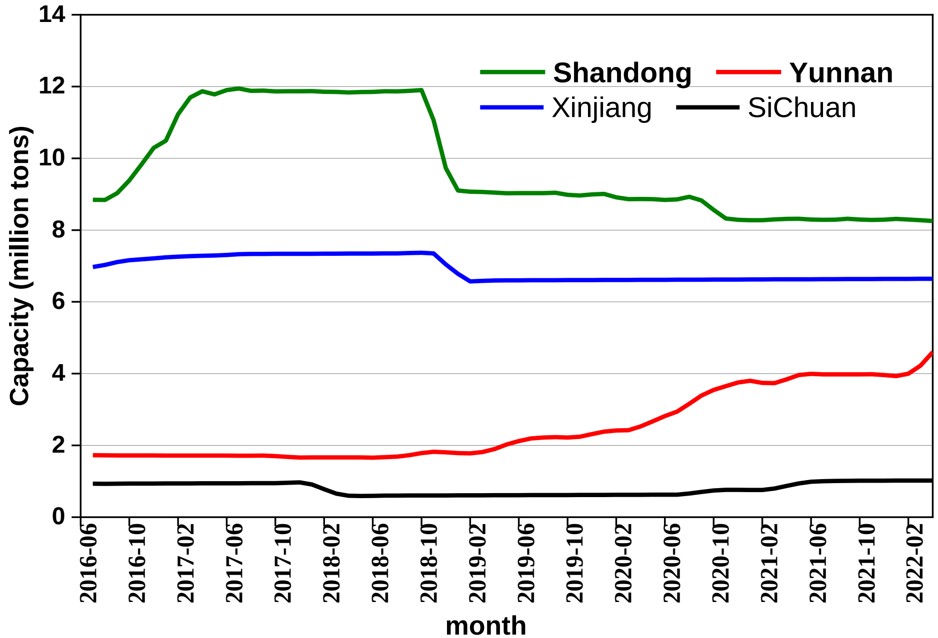


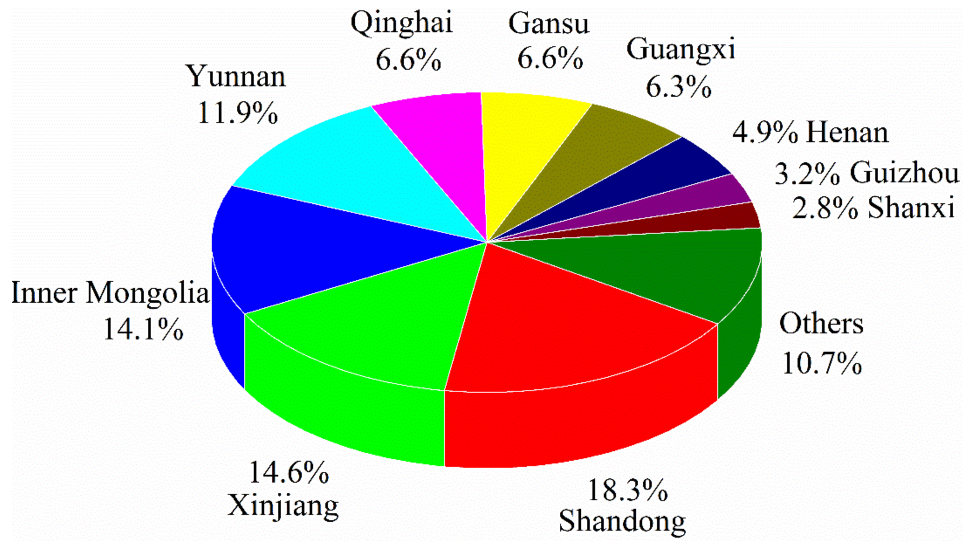
(1) **The aluminum price experienced a great increase throughout the year 2021, but dropped sharply in November of 2021 due to intervention of Chinese Government.**

(2) **The aluminum price quickly increased in the first quarter of 2022, but a downward trend was shown in the second quarter of 2022, which was mainly influenced by the Russia-Ukraine Conflict.**

1. Review of Chinese Aluminum Industry

Provincial Smelter Capacity Change





Provincial Smelter Capacity proportion in 2021

(1) With the capacity replacement and transfer policy, about 4 million tons capacity were transferred to Yunnan and Sichuan from Shandong and Xinjiang in past 3 years.

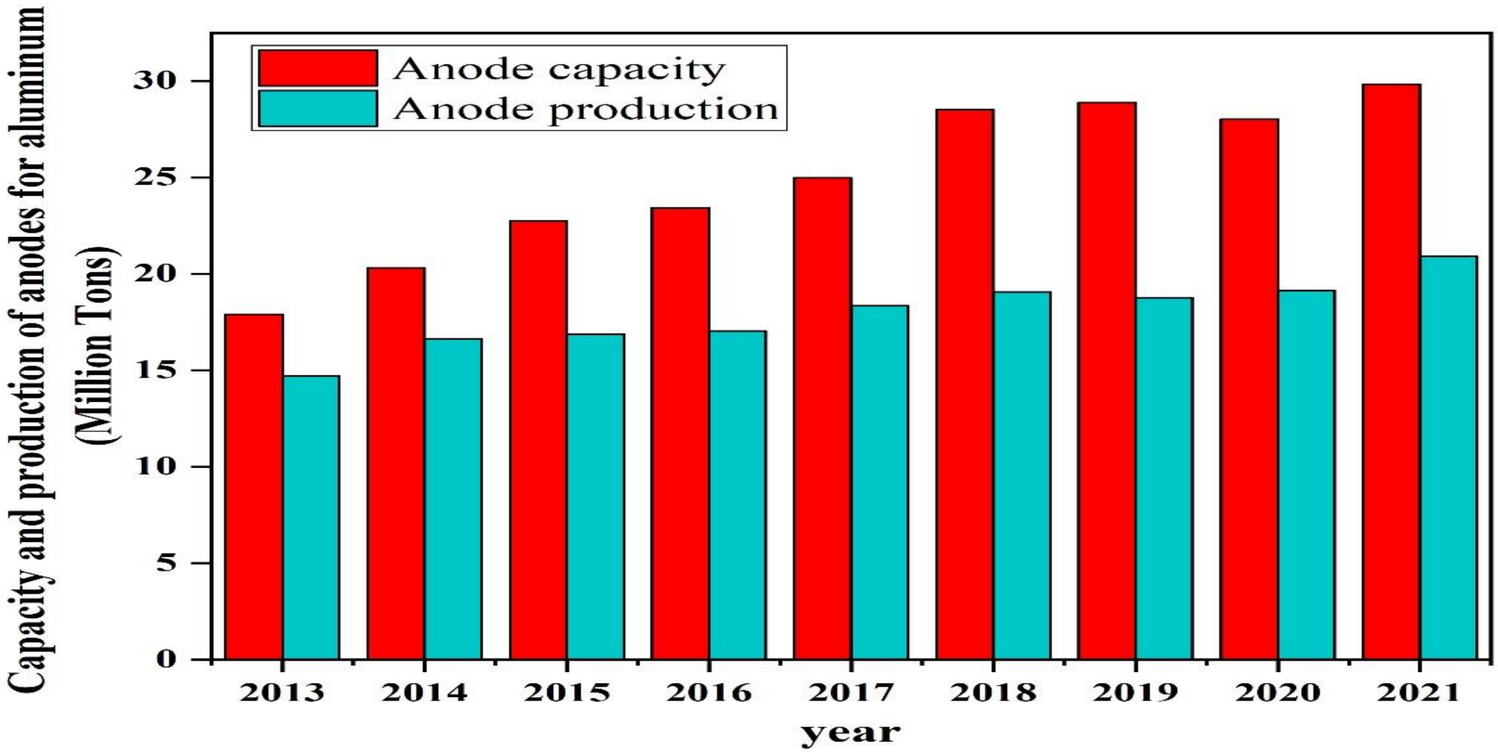
(2) In 2021, the smelter capacity in Shandong was reduced to a proportion of 18.3%, but still was the largest provincial capacity. The capacity in Xinjiang reduced to 14.6%, while the capacity in Yunnan increased to 11.9%.

Part II

2. Review of Chinese Anode Industry

2. Review of Chinese Anode Industry

Anode Capacity Changes & Growth Rates in China



(1) The anode capacity was kept at the level of 25 to 30 million tons in the past 4 years.

(2) The anode production was kept stable in the period from 2018 to 2020. But it was increased to 20.98 million tons in 2021, by 5.2% compared to 2020, which was benefited from the promoted aluminum production.

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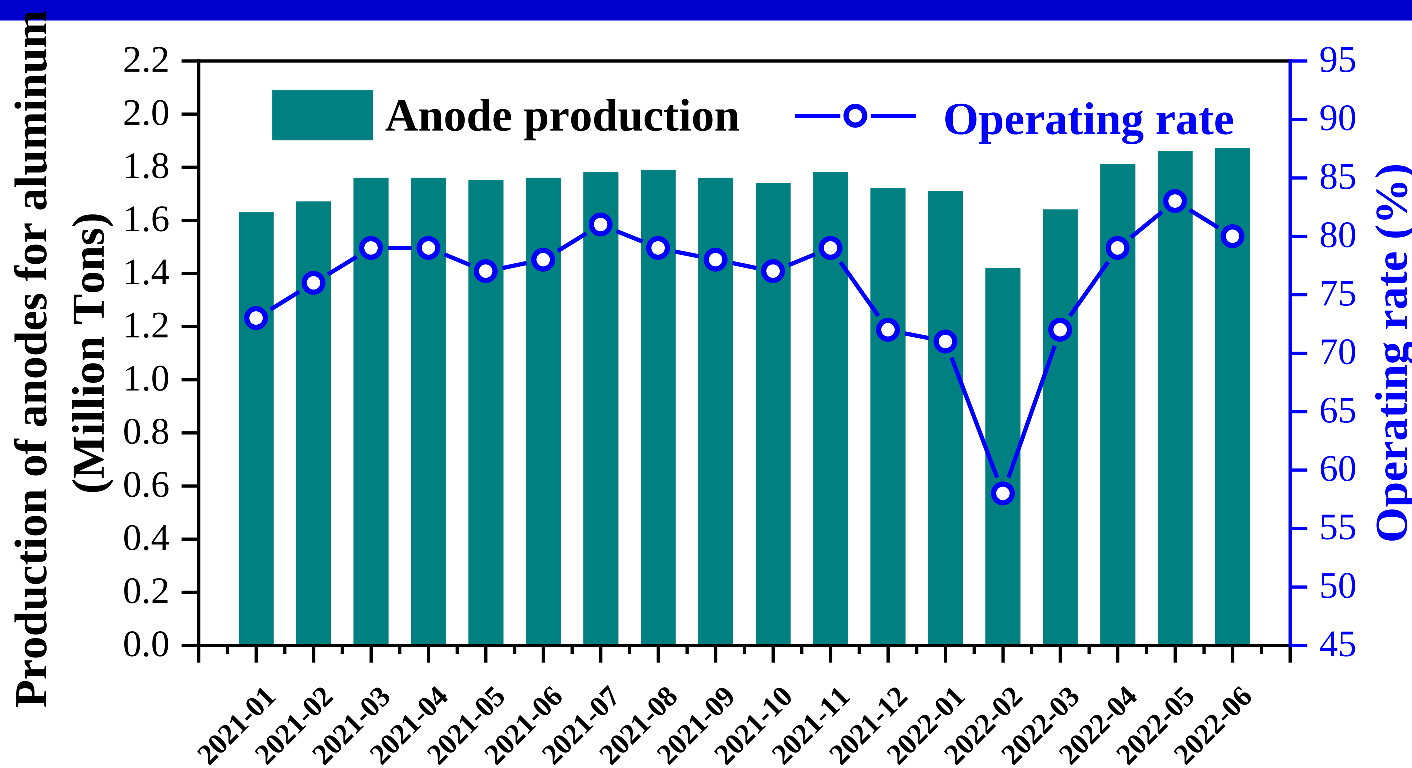
Monthly Anode Production & Operating Rate



(1) The monthly anode production maintained 1.4 million tons, the operating rate was about 75% in 2021 and first half of 2022 due to the strong demand from smelters.

(2) The monthly anode production and operating rate had a sharp drop in the February 2022 due to environmental protection control in the Winter season, tight supply of raw materials and transportation obstruction caused by the epidemic.

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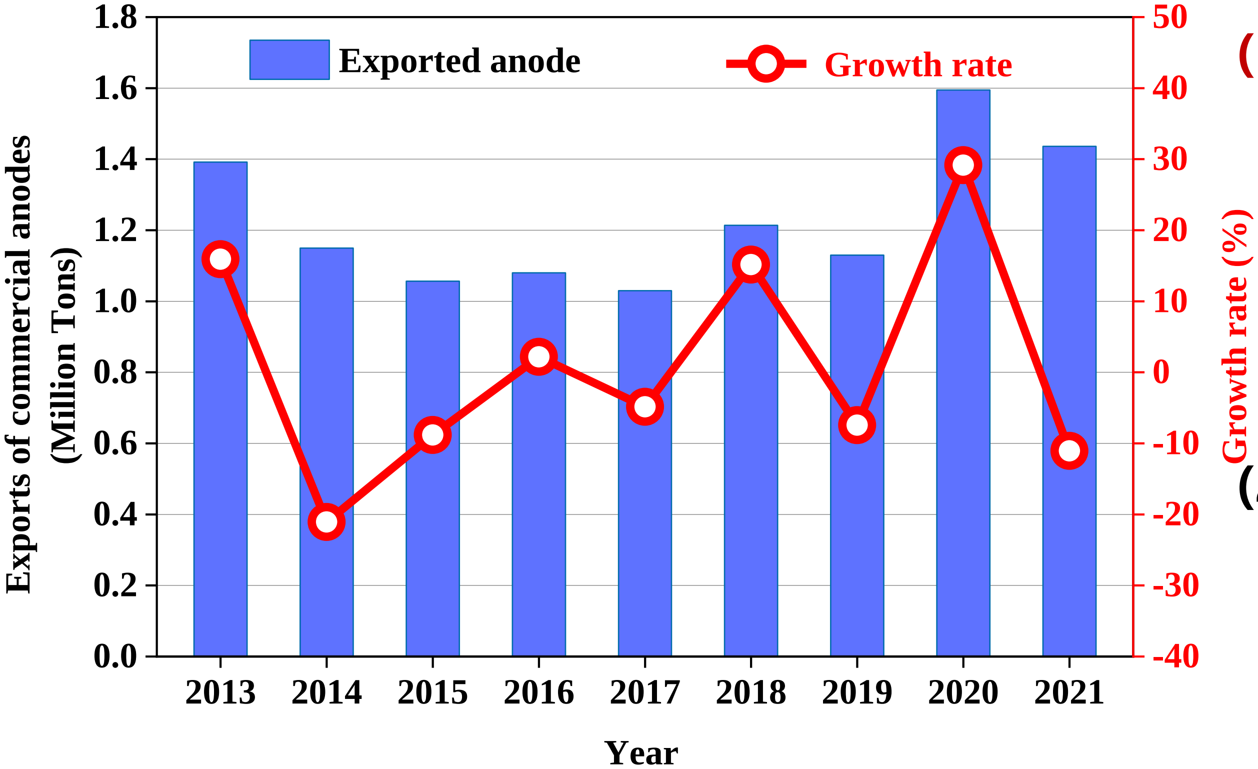
Chinese Anode Export & Its Growth Rates



(1) **About 1.44 million tons** of anode were exported in 2021, decreased by about **10.0%** compared with 2020.

(2) The anode exports was increased and reached to **0.8 million tons** in the first half of 2022.

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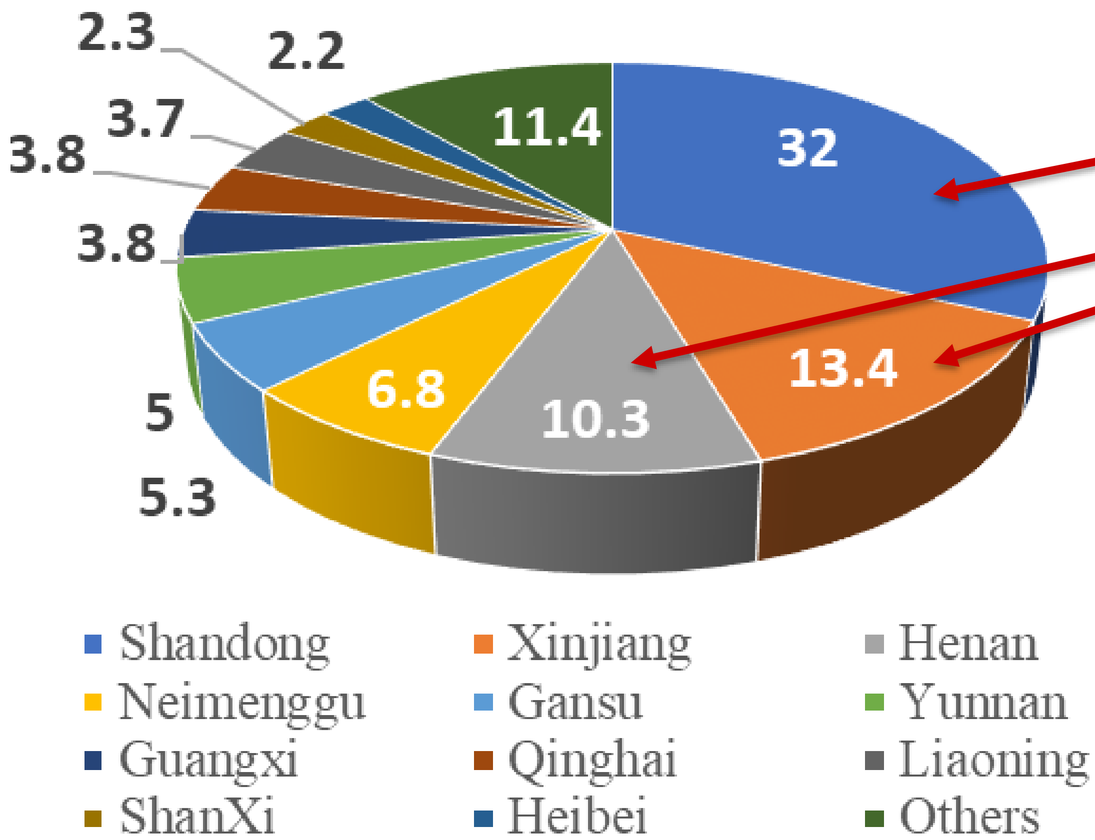
Anode Capacity Distribution in the Different Provinces



(1) Shandong, Xinjiang and Henan Provinces had a relatively large share of anode capacity in 2021.

(2) Shandong province had the highest share of anode capacity, reaching 32% of the total capacity in China.

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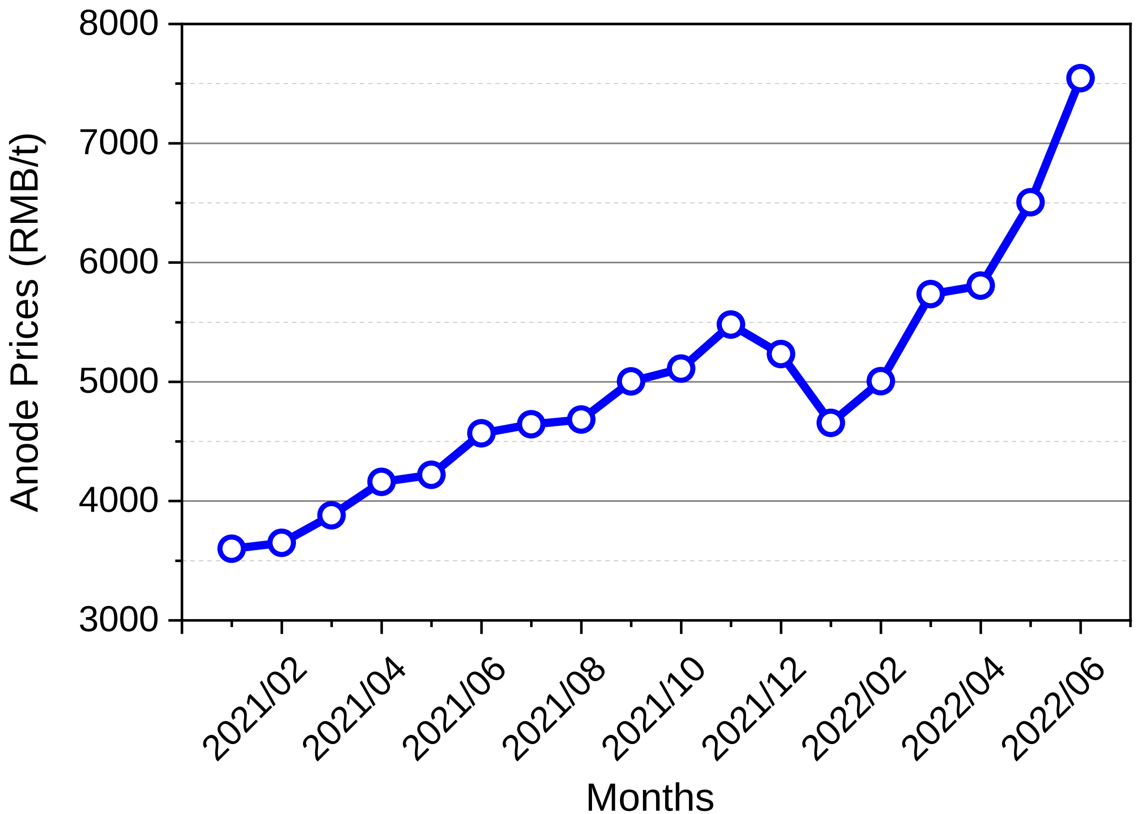
Monthly Anode Prices Changes , RMB/t



(1) **The anode price has been greatly increased since January 2021 with the cost increase of raw materials for anode such as coke and pitch and the increase of primary aluminum production and its price.**

(2) **The anode price exceeds 7500 RMB/t up to now.**

Part III

3. Outlook of Chinese Aluminum & Anode Industry

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(1) It is expected that the demand for light-weight materials in photovoltaic and new-energy vehicles will be promoted to steadily increase aluminum consumption in China in the next years.

(2) The smelter capacity is kept stable and will be controlled at a relatively steady level in China in the future. And the capacity replacement is going on and some capacity will be transferred from the East China areas to North China and South-west China areas with abundant green power resources such as wind power, photovoltaic power and hydro power etc.

(3) The primary aluminum production in China has been changed with the demand and its price due to existing higher capacity.

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(4) About 10 million tons smelter capacity are planned to be constructed in Yunnan by the capacity transfer policy and will be put into operation in 2025. The Yunnan smelter capacity will occupy a leading position in China at that time.

(5) The Chinese anode production mainly depends on the aluminum output in China and the anode capacity will be going on transferring to the places where the new smelter will be built for a lower delivery cost.

(6) The anode price in China is going up with the price rising of its raw materials and local smelter production. The anode export will depend on the world market situation.

Thanks for your attention!

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