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> CHINA MAGNESIUM MARKET MONTHLY REPORT

SAMPLE



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CMM9 THE HEADS UP

Price (FOB)	Produ	ction
US\$ 2,899 /t	78.	5kt
Mar 23 M Feb 24	Mar 23 🔨	Feb 24
m-o-m ▼ 2.4% y-o-y ▼ 12.2%	m-o-m y-o-y	0.5%
Cost	Expo	orts
US\$ 2,128 /t	19.9	9kt
Mar 23 Feb 24	Dec 22 ~~~	∽ Dec 23
Mar 23	Dec 22 VV m-o-m	Dec 2312.6%
m-o-m ▼ 1.3%	m-o-m	12.6%
m-o-m ▼ 1.3%	m-o-m	12.6% 6.4%
m-o-m ▼ 1.3% y-o-y ▼ 4.4%	m-o-m y-o-y	12.6% 6.4%
m-o-m ▼ 1.3% y-o-y ▼ 4.4%	m-o-m y-o-y	12.6% 6.4%
m-o-m ▼ 1.3% y-o-y ▼ 4.4% Average Margin US\$350/t	m-o-m y-o-y	12.6% 6.4% cories 5kt

[PRICES - Primary Mg]

- Average Feb price US\$2,899/t FOB Tianjin (-2.4% m-o-m).
- Prices down following the CNY holiday, as persistent sluggish demand and growing inventories weighed on market sentiment.
- Outlook: Growing inventories and limited production cutbacks likely to create further price headwinds.

[PRODUCTION – Primary Mg]

- Production rates running higher as a result of continued restarting of smelters in Fugu, Shaanxi after completing upgrades to their semicoke furnaces to achieve compliance with new policy.
- However, as prices fell sharply in late Feb, some smelters planned to cut or suspended production, which would reduce output in March and potentially improve.

[CASH COSTS – Primary Mg]

- Production costs fell to an average US\$2,128/t (-1.3% m-o-m) thanks to lower raw materials input prices (dolomite and FeSi).
- However, average profit margins fell sharply (-6.3% m-o-m) due to plummeting prices.

[INVENTORY - Primary Mg]

• Inventories in China continued to increase (+12.8% m-o-m) to 60.5kt, due to normal production of Mg smelters but suspension of downstream alloy producers during CNY holiday.

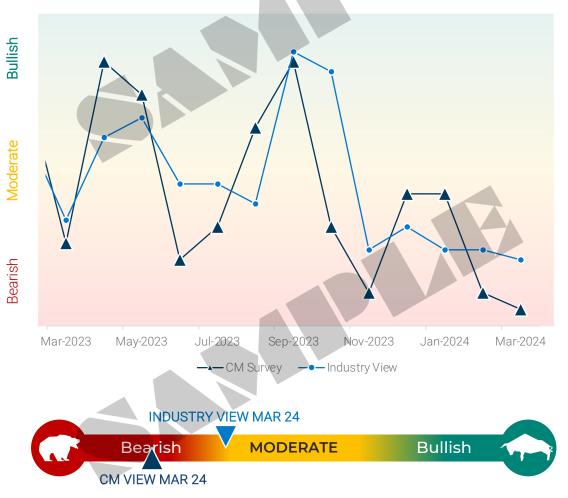


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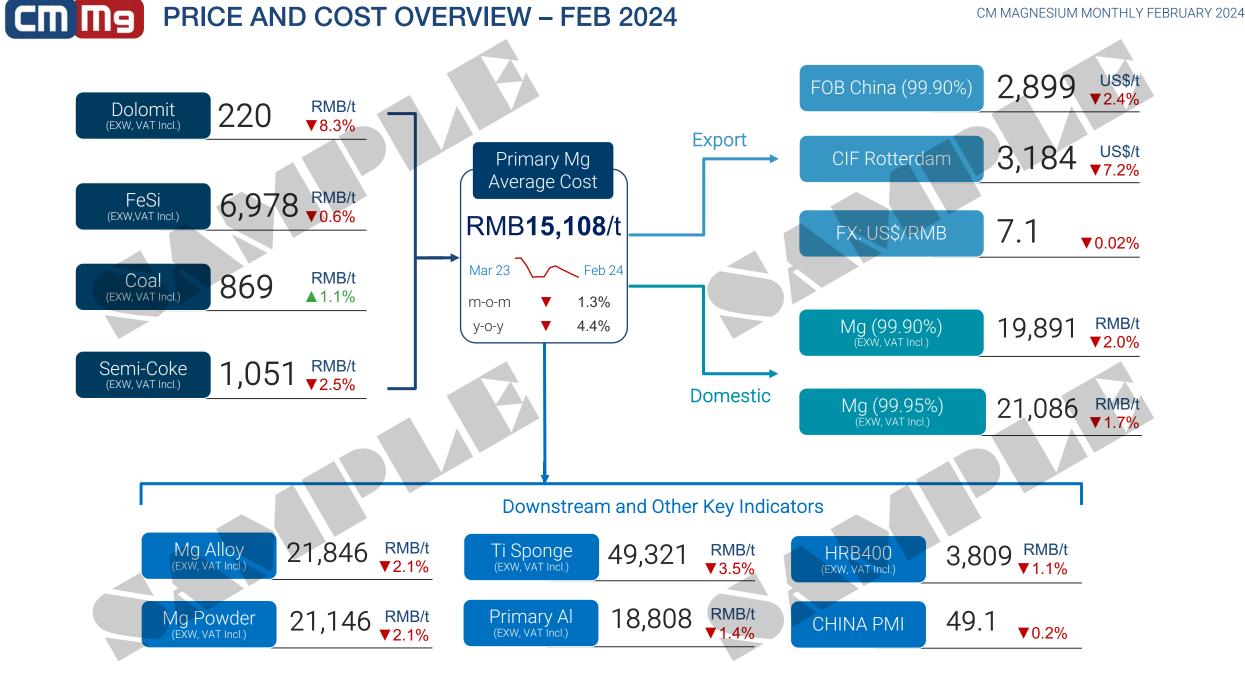
Although some Mg smelters are planning production cuts and downstream buyers look to replenish stocks, most market participants still lack confidence in China's economy and remain cautious heading into Q2 2024.

CM OUTLOOK VS MARKET OUTLOOK



Mg INDUSTRY SENTIMENT SURVEY FOR MAR

No. Company		Province Products	Droduste	Outlook Sentiment		
INO.	Company	Province	Frounce		Moderate	Bullish
1	Fugu Jinchuan	Shaanxi	Primary Mg		•	
2	Fugu Jujinbang	Shaanxi	Primary Mg		•	
3	Fugu Jinchuan Hongtai	Shaanxi	Primary Mg, Mg alloy	•		
4	Fugu Tianlong	Shaanxi	Primary Mg	•		
5	Fugu Yide	Shaanxi	Primary Mg		•	
6	Fugu Jingfu	Shaanxi	Primary Mg	•		
7	Fugu Moyuan Dingtai	Shaanxi	Primary Mg			
8	Wenxi Yinguang	Shanxi	Primary Mg, Mg alloy	•		
9	Fugu Haotian	Shaanxi	Primary Mg		•	
10	Inner Mongolia Jinshi	Shaanxi	Primary Mg		•	
11	Wenxi Bada	Shanxi	Primary Mg, Mg alloy		•	
12	Nanjing Meiming	Jiangsu	Mg alloy	•	•	
13	Chaoyang Jinda	Liaoning	Titanium sponge		•	
14	Xinjiang Shengmei	Xinjiang	Primary Mg		•	
15	Heilongjiang Jixi Tiancheng	Heilongjiang	Primary Mg		•	
16	Fugu Sanxin	Shaanxi	Primary Mg		•	
	CI	·	•			



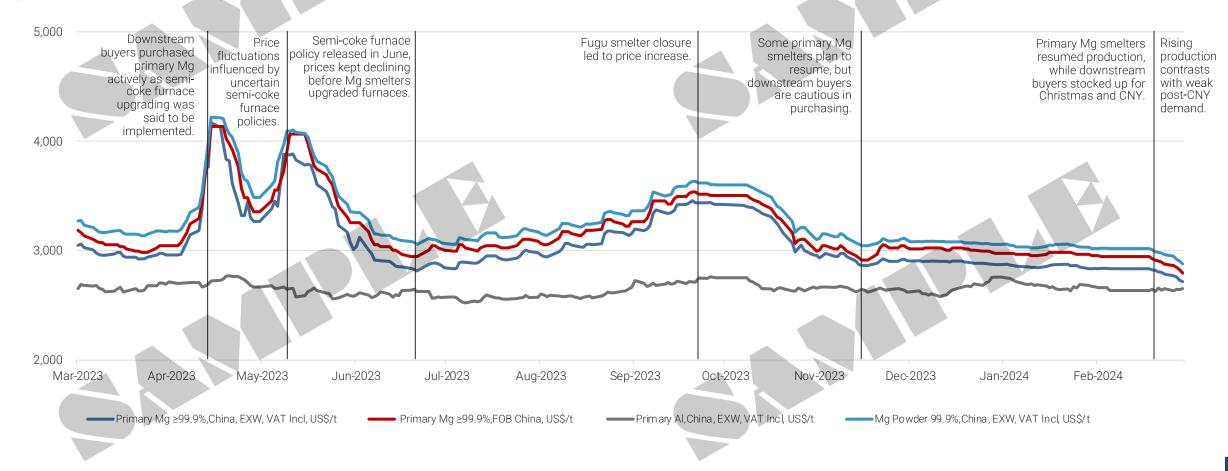
4 Source: CM, Cnfeol, AM, Public Sources



Prices lower following the CNY holiday, as persistent sluggish demand and growing inventories weigh on sentiment.

CHINA PRIMARY MAGNESIUM PRICES

(Mar 2023 - Feb 2024, US\$/t)

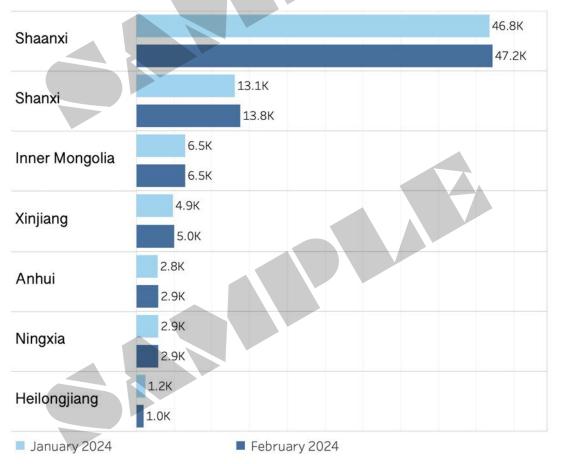




Output up 1.4% m-o-m to 79kt, indicating no discernible production cuts or suspensions during CNY holiday.

CHINA PRIMARY MAGNESIUM PRODUCTION BY PROVINCE

(Feb 2024, t)



CHINA PRIMARY MAGNESIUM PRODUCTION RATES

(end-Feb 2024, kt, %)

Province	Jan-Feb	Production Annualised	Capacity Annualised	Utilisation
Shaanxi	93.9	563.6	935.0	60%
Shanxi	26.8	160.8	356.0	45%
Inner Mongolia	13.0	78.0	115.0	68%
Xinjiang	9.9	59.2	57.0	104%
Other	13.7	82.2	181.0	45%
Total	157.3	943.8	1,644.0	57%

6 Source: CM Group, Cnfeol



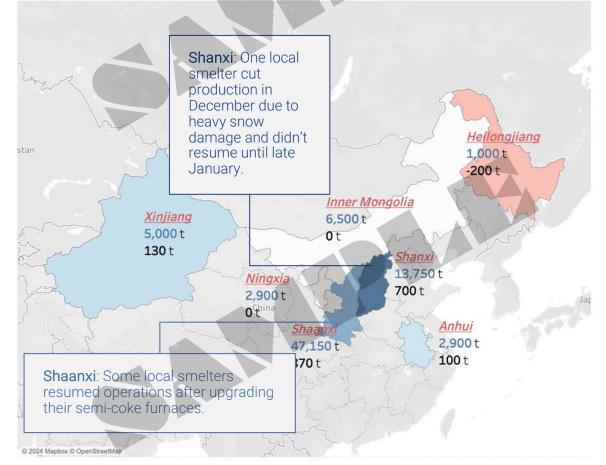
Production increases mainly driven by smelters in Shaanxi, who expanded their operations following the upgrade of semi-coke furnaces.

PRODUCTION BY LEADING PRODUCER



PRODUCTION CHANGES

(Jan vs Feb 2024, t)

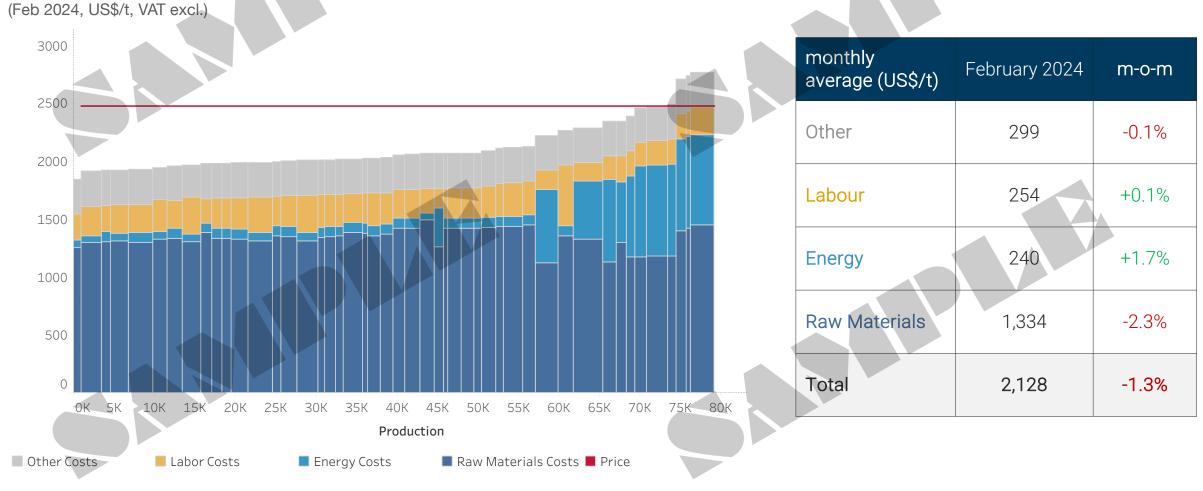


7 Source: CM Group, Cnfeol



Small drop in average production costs due to lower cost raw materials (FeSi and dolomite) prices

CHINA PRIMARY MAGNESIUM CASH COST BREAK DOWN

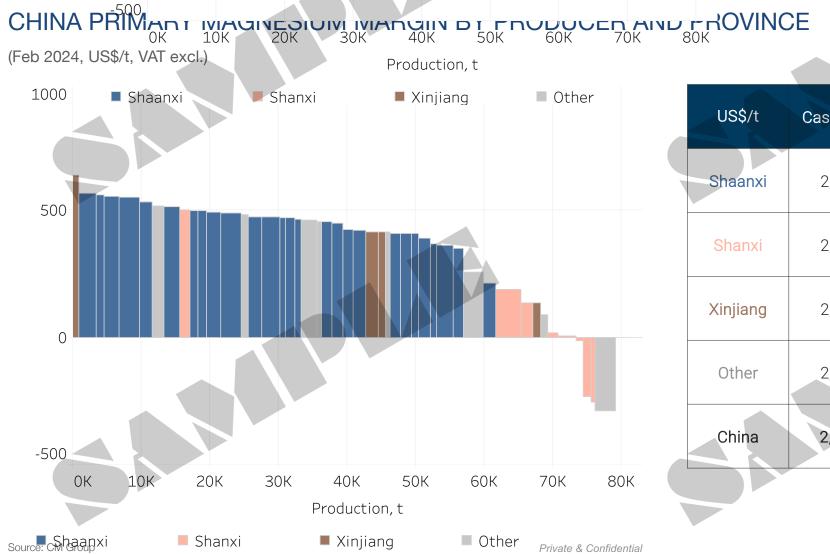


Further dip in pri

M

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e Shaanxi cash negative in February.



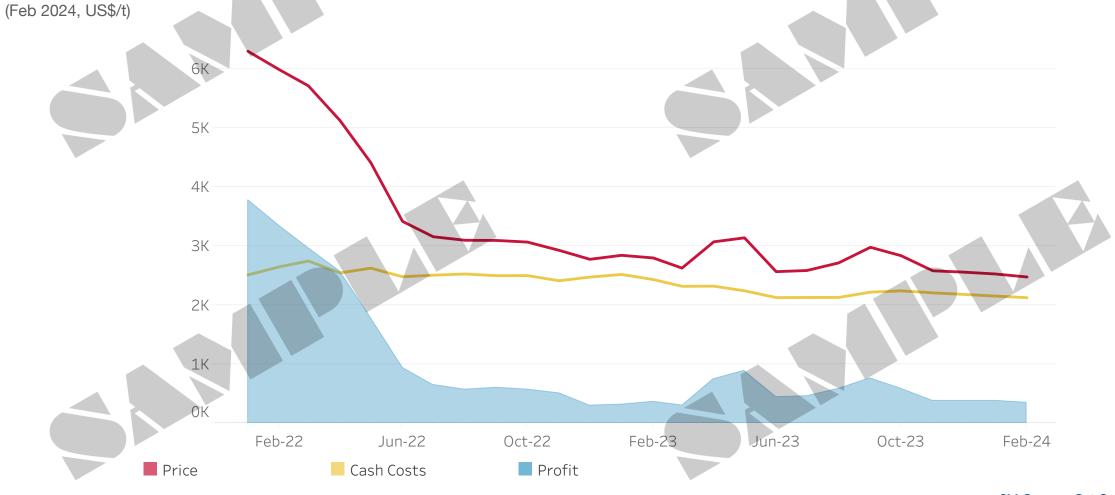
US\$/t	Cash Cost	m-o-m	Margin	m-o-m
Shaanxi	2,017	-1.6%	461	-3.6%
Shanxi	2,388	-0.6%	89	-29.6%
Xinjiang	2,138	-1.5%	340	-5.1%
Other	2,246	-1.2%	232	-9.1%
China	2,128	-1.3%	350	-6.3%
			11	

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Margins squeezed due to persistently low pricing environment and negative outlook

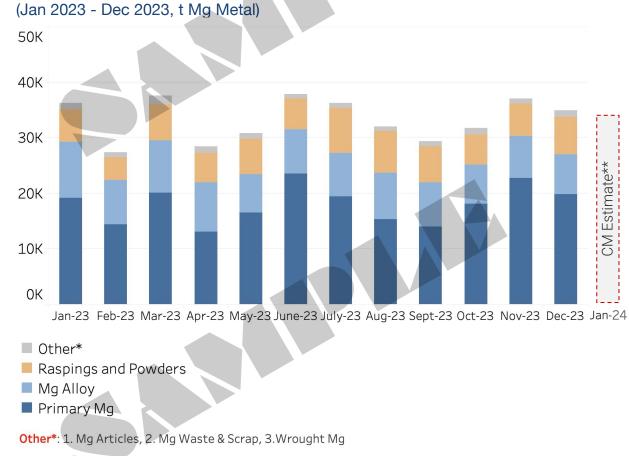
MONTHLY AVERAGE CHINA PRIMARY MAGNESIUM CASH COST AND MARGIN





Sustained weak demand from export markets creating further price headwinds.

MONTHLY EXPORTS OF CHINA MAGNESIUM PRODUCTS



** CM estimate due to delay in release of China Customs data

CHINA MAGNESIUM PRODUCTS EXPORTS

(Nov – Dec 2023, t)

Magnesium Products	Nov 23	Dec 23	m-o-m	у-о-у
Primary Mg	22,752	19,885	-12.6%	-6.4%
Mg Alloy	8,062	7,597	-5.8%	-33.7%
Raspings, Turnings, Granules, Powders	5,896	6,854	+16.2%	-44.5%
Mg Waste & Scrap	181	591	+227.1%	+26.6%
Other Mg Products*	432	339	-21.4%	+124.2%
Wrought Mg	350	358	+2.2%	+10.7%

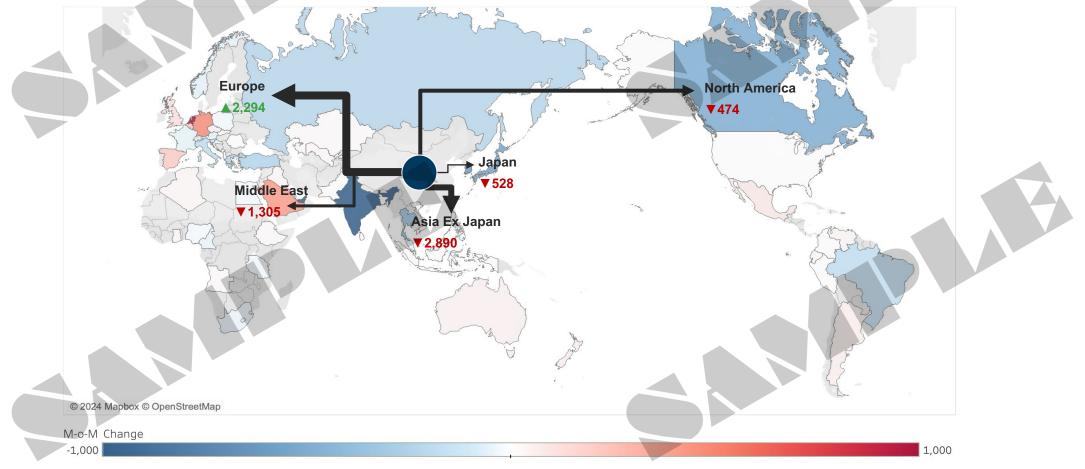


CM MAGNESIUM MONTHLY FEBRUARY 2024

Most major export markets remained weak through February

CHINA PRIMARY MAGNESIUM EXPORTS (M-O-M CHANGE) BY COUNTRY

(December 2023. t)



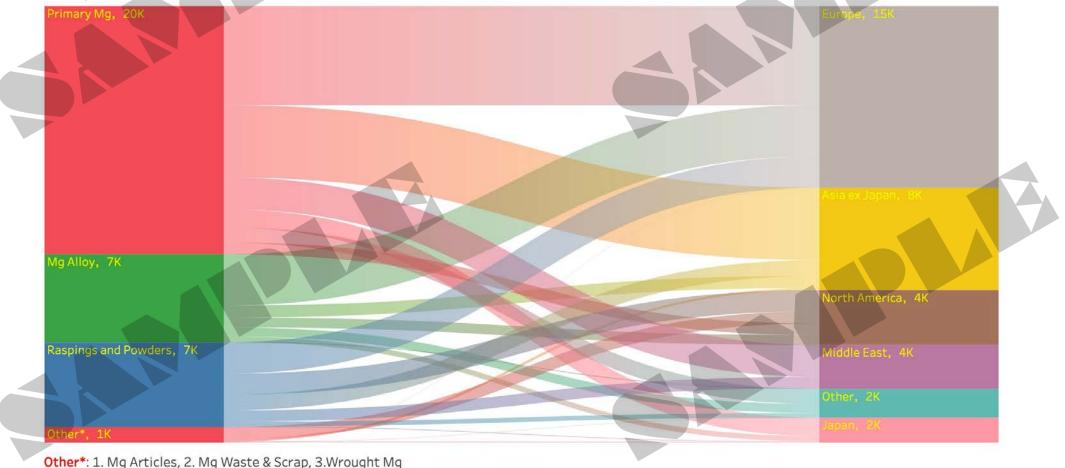


CM MAGNESIUM MONTHLY FEBRUARY 2024

Trade flows in December confirmed export markets remained weak.

CHINA PRIMARY MAGNESIUM EXPORT TRADE FLOW BY PRODUCT, BY DESTINATION

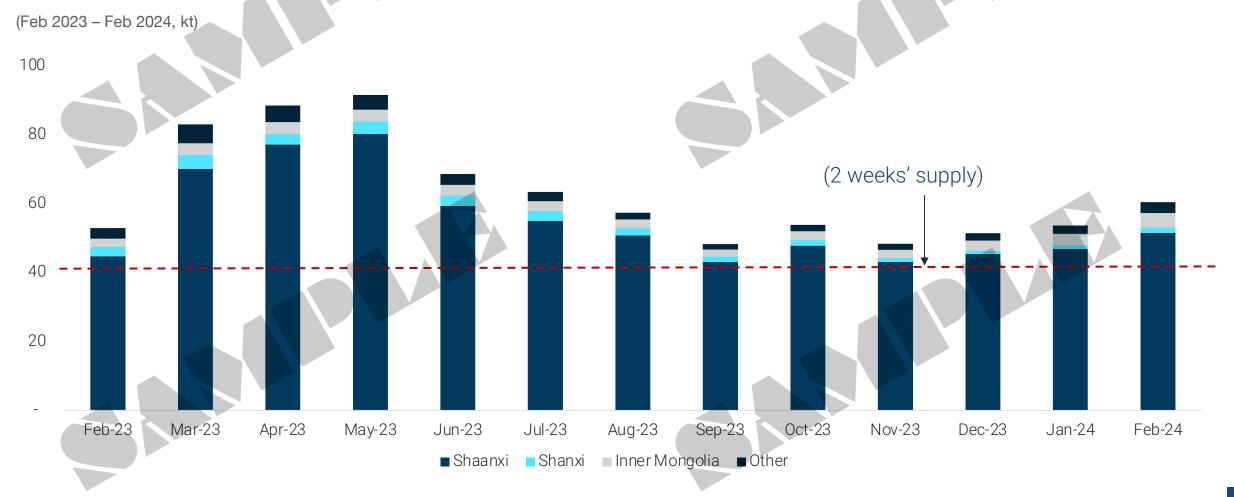
(December 2023, t)





Higher production rates during CNY holiday, while downstream alloy users suspended operations, resulting in domestic inventories increasing to 60.5kt (+12.8% m-o-m).

CHINA PRIMARY MAGNESIUM INVENTORY BY PROVINCE





Production cuts at high-cost smelters not enough to stop a bearish price outlook heading into Q2.

CM VIEW

PRICE HEADWINDS

- Inventories build during the CNY holiday period.
- Downstream producers facing a shortage of orders amid economic weakness, leading to reduced purchasing activity.
- Industry insiders showing reduced confidence as prices decline, adopting a predominantly cautious "wait-and-see" approach.

PRICE TAILWINDS

- Production cuts were observed by several smelters.
 - Certain downstream buyers, with low inventory levels, may opt to replenish their stocks.
 - Given the lower price of primary Mg relative to primary Al, some downstream users may consider substituting Mg for Al, thereby increasing demand.



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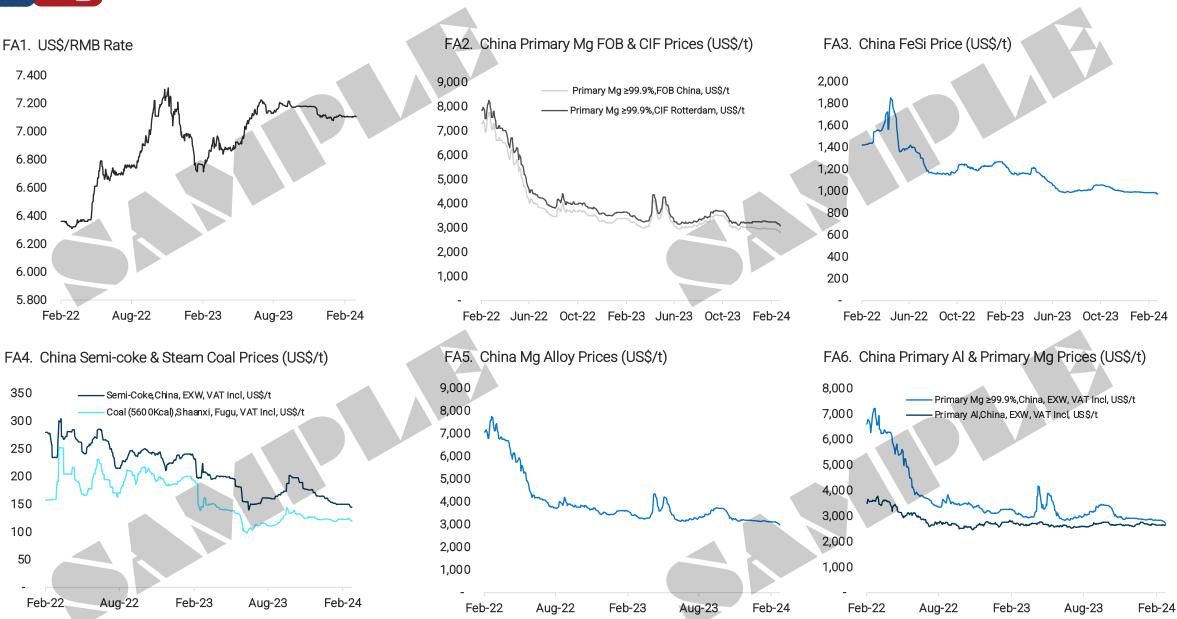
Region	Date	Details
Shaanxi-China	2-Feb	Fugu Shengxin Magnesium Co., Ltd suspended magnesium production on 20th January 2024 due to interrupted semi-coke gas supply amid high costs as well as depressed magnesium prices. The company's production in January is 1,000 t. [AM]
Shaanxi-China	1-Mar	Shenmu Dongfeng Magnesium Co., Ltd reduced primary magnesium production in middle February due to the loss of semi-coke and continuously declining magnesium price. The daily output was cut to 40 t from 60 t and total output in February dropped to 1,300 t, down 400 t m-o-m. [AM]
Shaanxi-China	6-Mar	Due to the loss of semi-coke and falling primary magnesium price, Fugu Jinchuan Magnesium Co., Ltd cut daily production to 30 t from 60 t on 5 th March 2024 and production in March is estimated to around 1,000 t, down 600 t m-o-m. [AM]
Shaanxi-China	6-Mar	Fugu Haotian planned to reduce 30% primary magnesium production in middle March attributable to weak market and losses. The company's production is estimated at 2,200 tonnes in March, down 500 tonnes m-o-m. [AM]
Shaanxi-China (New Project)	5-Feb	The 30ktpy high-performance magnesium-based light alloy and deep processing project of Fugu Dongfangrui Coal and Electricity Group Xifeng Activated Carbon Co., Ltd. has been approved by Fugu Development, Reform and Technology Bureau on 8 th January 2024. The project includes 30ktpy primary magnesium production line, 15ktpy magnesium alloy die-casting production line, and 15ktpy magnesium alloy profile and plate production line. The project plans to invest 396.0331 million yuan and will start construction in October 2024.
Australia	19-Jan	Latrobe Magnesium continues to ramp up activities as it closes in on the commissioning stage and early product sales at its unique demonstration plant in Victoria. Latrobe is utilising a world-first patented process that will extract and sell magnesium metal and cementitious material from industrial fly ash, which is currently a waste resource from the nearby Yallourn brown coal power generation. Following construction and testing of the pilot plant, the company aims to build a commercial plant with a capacity of more than 10,000 t per annum of magnesium. [smallcaps.com.au]



Region	Date	Details
US	14-Dec	US Department of Defense forms \$28M partnership with Magrathea Magrathea, a company developing innovative technology for the production of carbon neutral light metal from seawater and brines, has formed a \$28M public-private partnership with the US Department of Defense (DOD). [energyindustryreview.com]
EU	14-Dec	Critical materials in EU-Kazakhstan cooperation Critical materials represent a blueprint for a new chapter in the EU-Kazakhstan cooperation. Out of the 34 critical materials listed by the EU, Kazakhstan produces 18. These include bismuth, gallium, rare earth elements, silicon, vanadium, tungsten, tin, tantalum, niobium, magnesium, lithium, indium, graphite, and cobalt. [astanatimes.com]
EU	23-Feb	Verde Magnesium showcased its sustainable project within Clean Transition Dialogue on CRM in Brussels. [audiovisual.ec.europa.eu]
US	8-Feb	Establishing sustainable magnesium production in Europe: MFE Magnesium For Europe GmbH was founded in 2021 to establish a clean, green and competitive magnesium production in Kupres, Bosnia-Herzegovina, Europe. Magnesium (Mg) metal is a unique, strategically important, and critical raw material for many downstream industries such as aircraft, vehicle, and steel manufacturing and notably aluminium (Al) alloy production. No substitute materials can rival Mg's powerful combination of light weight, sturdiness, and relatively low cost. At present, the European industry is entirely reliant on Asian primary Mg supplies. Another challenge for Europe's Mg-consuming industries is the increasing pressure on them to become climate-neutral and the relatively large CO ₂ footprint of conventional magnesium production. [innovationnewsnetwork.com]

INDUSTRY PRICES CM M9

CM MAGNESIUM MONTHLY FEBRUARY 2024



Aug-22

Feb-22

FA1. US\$/RMB Rate

7.400

7.200

7.000

6.800

6.600

6.400

6.200

6.000

5.800

350

300

250

200

150

100

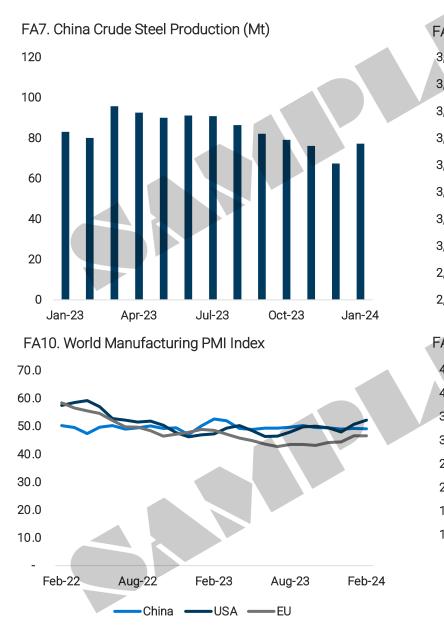
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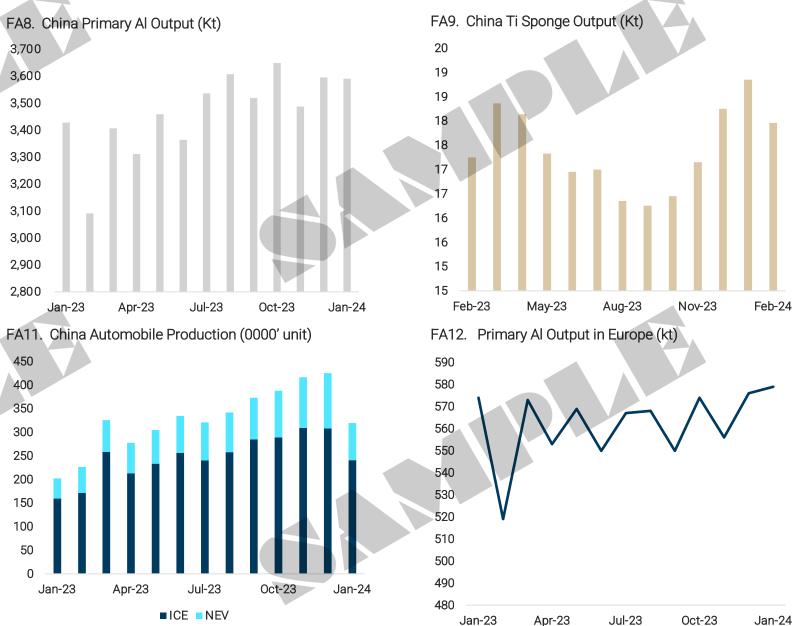
Feb-22

Aug-22

CM MAGNESIUM MONTHLY FEBRUARY 2024

CMM9 PRODUCTION AND PMI





19 Source: CM Group, AM, CNFEOL, Public Sources



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- Price Forecasting
- Cost Engineering
- Special Industry Focus Reports
- Regular Industry Assessments
- Strategic Outlook Reports
- Market Monitors

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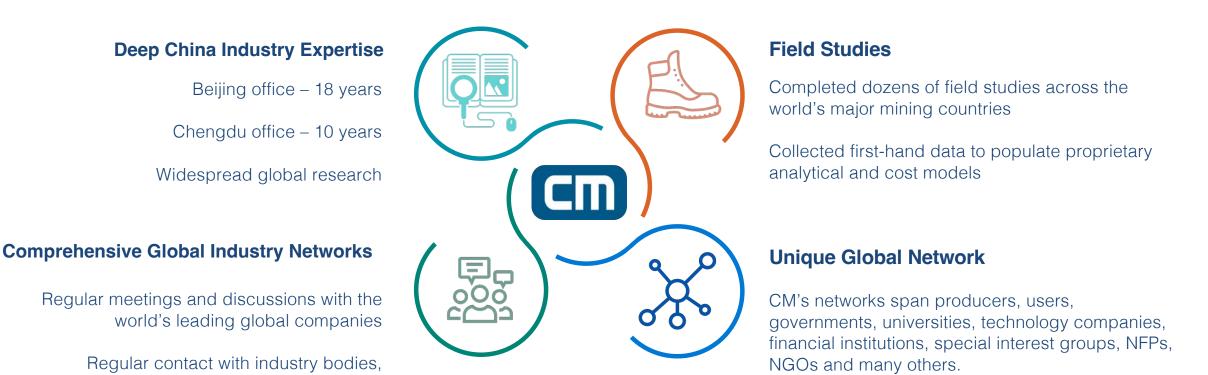


governments and other industry groups

CM's core capability is to gather, usually from first principles, high-quality industry data, which we then assimilate, synthesise and analyse, to provide our clients with deep insights and a unique perspective.

Typical output from CM's consulting services include supply-side analyses, detailed cost reports (including global and regional cost curves), technical and operational project assessments, market supply-demand balances and outlooks, logistics reviews and price forecasts.

A STRONG TEAM WITH SPECIALIST SKILLS AND DEEP INDUSTRY KNOWLEDGE



CM's passion is to generate industry-leading insights based on analysis of quality data.

• Our approach can be summarized in three key stages

CM GROUP

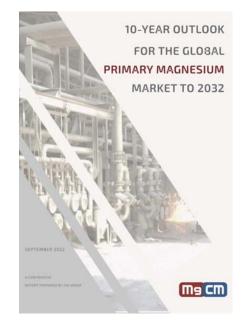
- 1) Data typically we employ both top-down and bottom-up methodologies invariably though, we find ourselves 'in amongst the weeds' gathering our own data and populating our own models,
- 2) Analysis a clear thinking approach to building models and interpreting their output, and
- 3) Generating insights considering all the possibilities in the context of our analyses and our understanding of industry behaviour.
- Each year we conduct dozens of targeted field studies; to mines, refineries, smelters, technology institutes and government departments. Our teams are trained to follow an audit trail, wherever it may take them. It's the foundation of solid, reliable data that provides a springboard for synthesis and analysis. Our extensive fieldwork over many years has resulted in CM building its own proprietary databases and models, which we refine with every project we take on.

CM brings to this project knowledge, experience and a broad network spanning not only the full aluminium value chain, but also many of the industries considered to be competitor materials to aluminium, including copper, plastics, carbon, steel and other light metals such as magnesium and titanium. CM's network includes a wide range of research companies, universities and research and tech organisations as diverse as Apple, The Overseas Development Institute (ODI), The Centre for International Economics (CIE) and Australia's CSIRO. Our network provides a springboard to engage with a wide range of leading global industrial organisations to complete this project.



Major Projects – Magnesium

- China Magnesium Industry Monthly Report (2021 Present)
- The 10-Year Strategic Outlook for the Global Primary Mg Industry (2022)
- The 10-Year Price Outlook for the Global Primary Market (2022)
- Strategic Assessment of Global Primary Magnesium Technology and markets (2022)
- Mg Industry Update and Review for CM Aluminium Clients (2021)
- Raw Material Analysis, Testing Program and Pre-feasibility Assessment of Brucite-based Primary Mg Project (2020)
- Global Primary Magnesium Industry Outlook and Cost Assessment (2019)
- Primary Magnesium Industry Update Half Yearly (2019)
- 10-Year Strategic Outlook for the Global Primary Mg Industry Including Supply Demand Balance Forecast (2018)
- Detailed Market Study For Magnesium Smelter Project in Abu Dhabi (2014)
- Assessment of the Potential for Mg Use in the Global Automotive Industry (2014)
- The 10-Year Strategic Outlook for the Global Primary Mg Industry Including Supply Demand Balance Forecast (2014)
- Market Assessment, Outlook and Technology for the Production of Mg
- Mg Sheet for the 3C and Automotive Industries (2013)
- The 10-Year Strategic Outlook for the Global Primary Mg Industry (2013)





Production surges in Shaanxi in December, as more capacity returns following semi-coke policy release. Prices likely to remain under pressure, with the market remaining weak heading into the Chinese New Year Holiday.

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CM's Presentations at IMA Annual World Magnesium Conference

- 2023 Calgary Global Magnesium Industry Overview (May 2023)
- 2022 Update of China's Domestic Primary Magnesium Industry (February 2022)
- 2021 Global Primary Magnesium Industry Update

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- 2020 Global Primary Magnesium Industry Update
- 2019 Global Primary Magnesium Market Update and China-based Primary Production
- 2018 New Orleans 2017 Global Primary Magnesium Supply Demand Balance and Outlook
- 2017 Singapore Global Primary Magnesium Supply and Demand Balance 2016
- 2016 Rome Global Primary Magnesium Supply and Demand Balance 2015
- 2015 Vancouver Global Primary Magnesium Supply and Demand Balance 2014
- 2013 Xi'an The Global Primary Magnesium Supply and Demand Balance 2013
- 2012 San Francisco The Global Mg Industry in 2011, The Impact of Chinese Production, Costs and Shipments
- 2011 Prague The Global Primary Magnesium Supply and Demand Balance 2010
- 2010 Hong Kong An Overview of the Global Primary Magnesium Industry
- 2009 San Francisco An Overview of the Global Primary Magnesium Industry
- 2008 Stuttgart An Overview of the Global Primary Magnesium Industry





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