

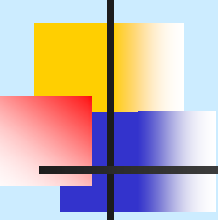
2005 China EMM Industry Overview



Tan Zhuzhong, President of the National Friendship Association of
EMM Industry

Changsha · Hunan

2006. 3. 21

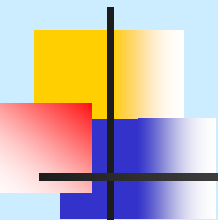


2005 was a critical year for the Chinese EMM industry. The government announced new policies one after another; the market changed constantly; production capacity was seriously in surplus; the price dropped significantly. The Chinese EMM industry faced a time of challenge and new adjustment.



1, 2005 China EMM Industry Development Condition

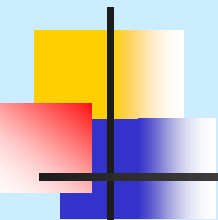
- ***Capacity, output and export volume***
- *By the end of 2005, the number of enterprises in China producing EMM had reached 156, with a capacity of 1.049 million tpa. The number of new enterprises established compared to that of 2004 increased by 15, an increase of 10.6%.*
- *The capacity increased by 123,500 tpa, an increase of 13%.*



20 new enterprises with 190,000tpa in total are currently under construction. The majority of these enterprises will open in early 2006.

In 2005, China produced 566,400 tons EMM, exported 271,806 tons overseas (this figure does not include 13,213 tons Mn Metal ex Shanxi Yiwang Ferroalloy Co., Ltd).

In comparison to 2004, the output increased 14.9% and exports increased 6.7%.



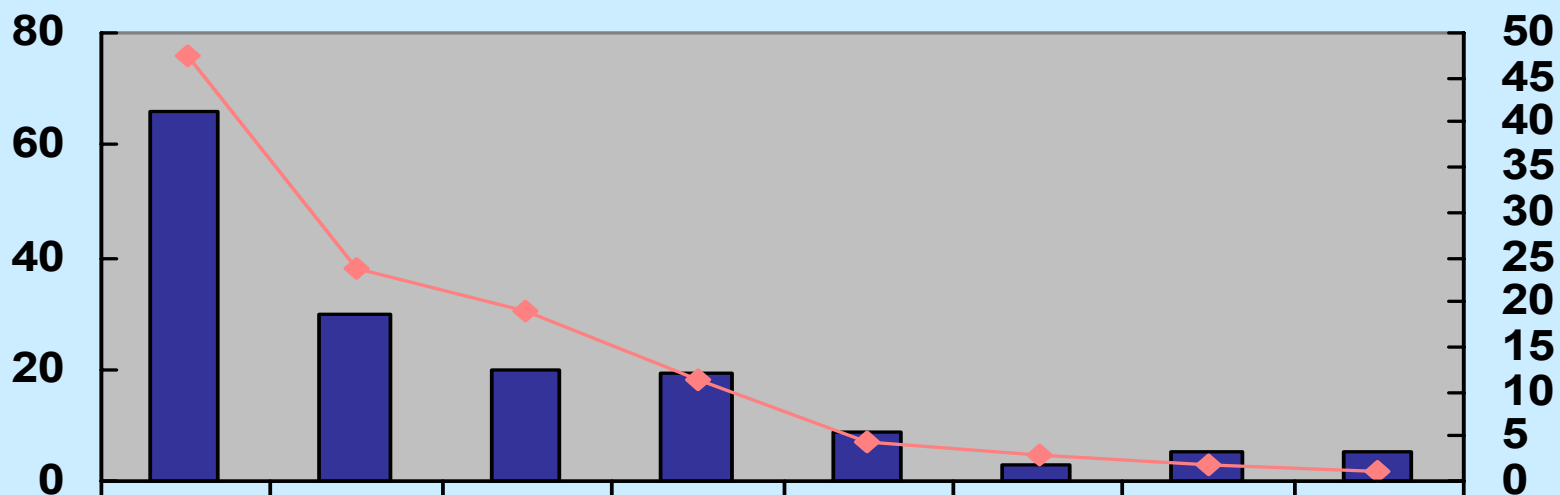
- *China EMM enterprises are located mainly in 10 provinces: Hunan, Guizhou, Chongqing, Guangxi, Sichuan, Hubei, Shaanxi and so on. The four provinces of Hunan, Guizhou, Chongqing, Guangxi comprise more than 90% of total productivity.*

- *According to the official newest statistical data, Hunan Xiangxi Mineral Group was the biggest EMM exportation company in 2005. China produces 80% of the world EMM supply. In 2005 China exported 285,019 tons of EMM, as compared to 269,802 tons in 2004, a growth of 5.6%.*

2005 China EMM factory number and capacity

Factory No.

Capa:10kt

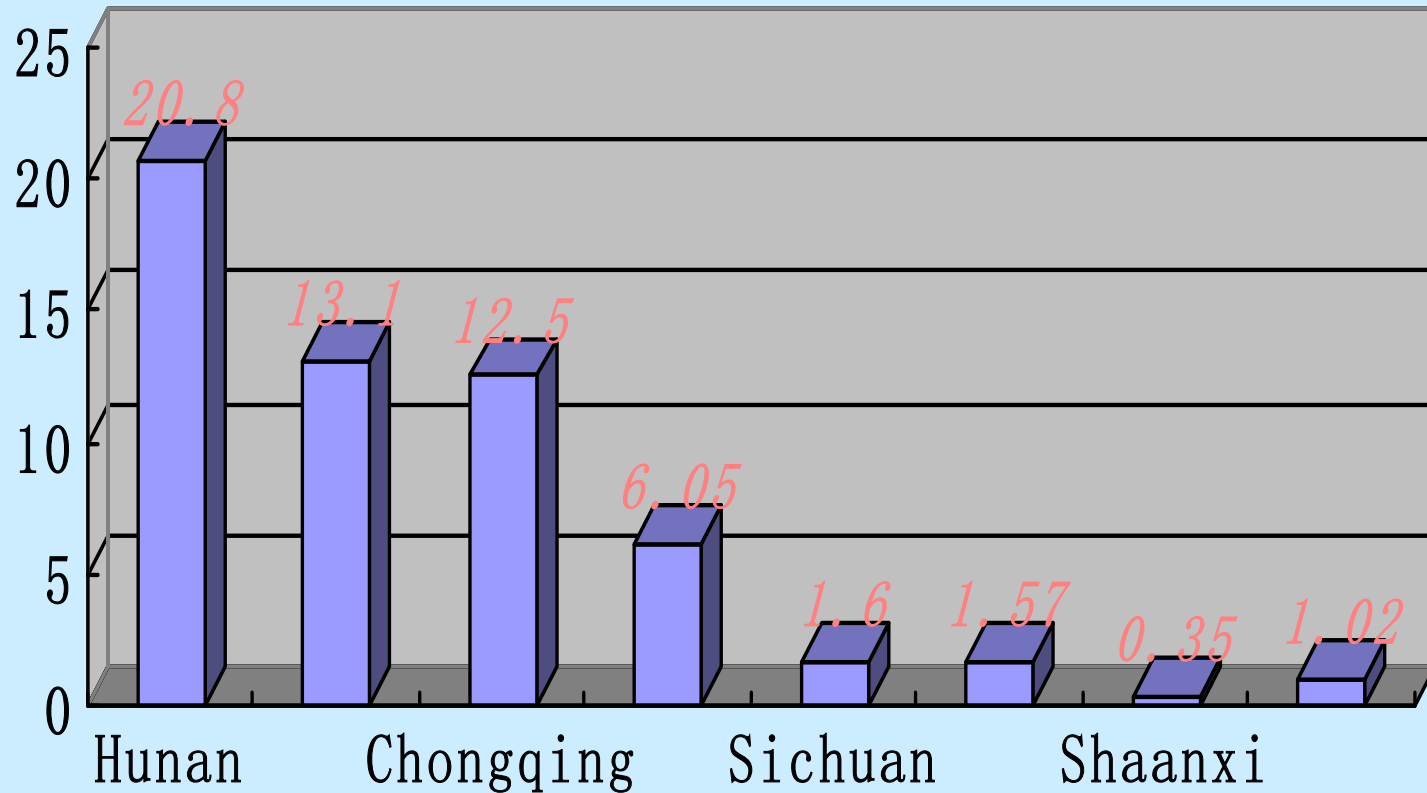


	Hunan	Guizhou	Chongqing	Guangxi	Sichuan	Hubei	Shaanxi	Others
--	-------	---------	-----------	---------	---------	-------	---------	--------

Factory	66	30	20	19	9	3	5	5
Output	47.5	23.6	19	11.4	4.35	3	1.8	1.15

2005 China EMM output in provinces

Output: 10kt

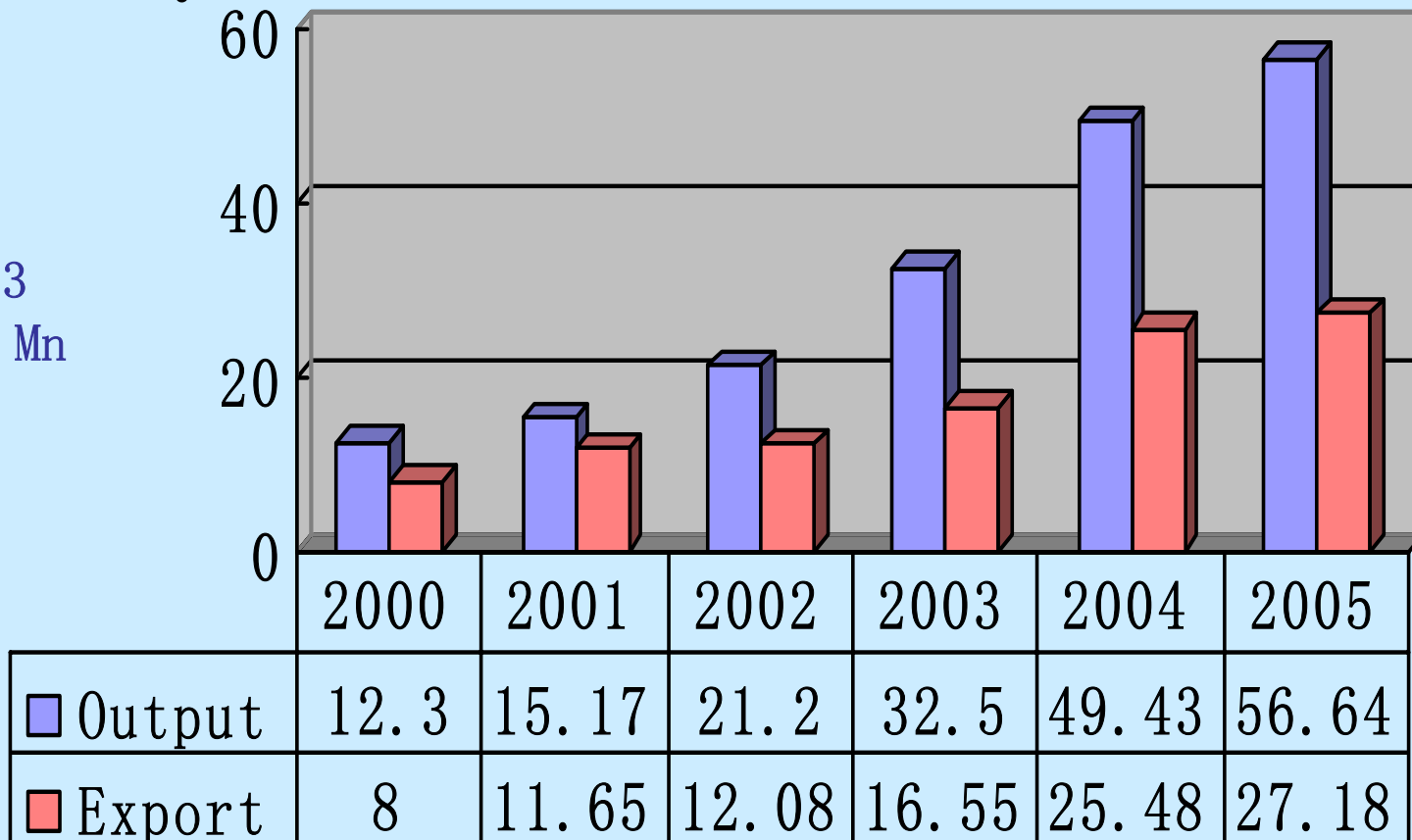


2000-2005 China EMM output & Export

Quantity:10k

t

Note:
2000-2003
including Mn
metal





2005 Capacity over 10ktpa enterprises in China

No.	Name	Capacity (10ktpa)	Output in 2005 (10kmt)
1	Tycoon	5.0	2.70
2	Kingray	3.0	2.68
3	Wuling/CQ	4.2	2.67
4	Dameng	3.6	2.53
5	Dongfang	3.2	2.08
6	Wuling/GZ	2.3	1.50
7	Jinxui Chem	1.7	1.15



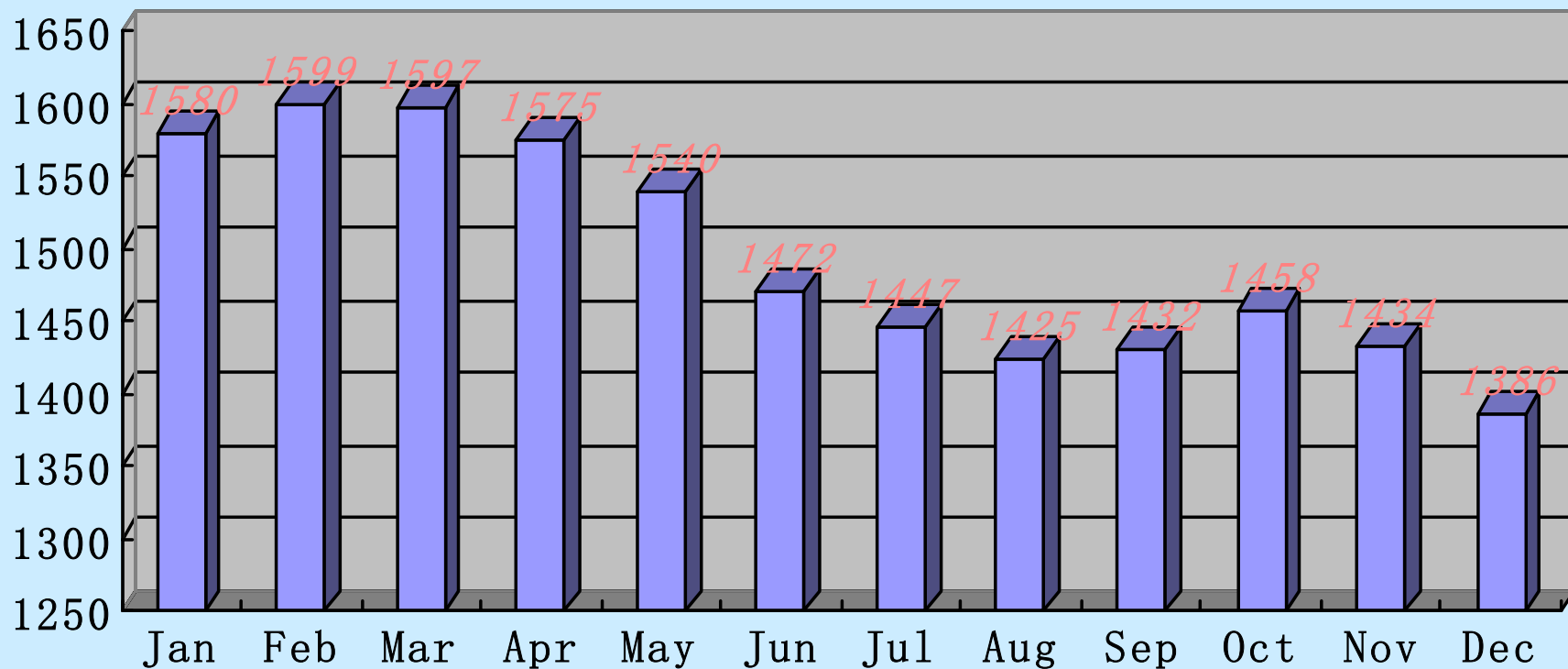
2005 top 10 EMM export companies

No.	Name
1	Xiangxi Mineral Group
2	Guangxi Gameng
3	Hunan Tycoon
4	Hunan Hongjiang
5	Hunan Jishou Foreign Trade
6	Hunan Zhenxing Chemical
7	Hunan Dongfang
8	Shanxi Yiwang Ferroalloy Co., Ltd
9	Changsha Xingye
10	Guangxi Pingxiang Huatei



2005 monthly price (FOB)

Unit: US\$/mt

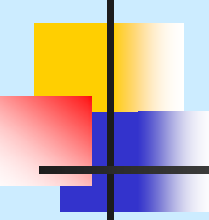


2, Technical Progress

In 2005 advancements in production technology made by the Chinese EMM industry can be seen by marked decrease in energy consumption. The electrolysis power has fallen to 6100kwh/mt, SeO2 consumption from 2.5kg/mt to 1.5kg/mt. The lowest has achieved 1.0kg/mt. The moisture of residue content reduced from 35% to 25%. Cr-free passivator has received promoted application in factory.


- *Large scale equipment has mad progress too. For the 500m3 reactor, the single cell has an output of 280kg per day and the 500m2 new filter presser are succeeding in the application.*

- *New capacity of 50,000tpa has already been added. An additional capacity of 80,000tpa will be completed in two years.*



As a result of technical and equipment improvements, production technology has been continually improved. Production cost has therefore been reduced as well. The cost in an advanced enterprise was below US\$1,150/mt. Now there are 5 enterprises with capacity over 30,000tpa. They will play an important role to stabilize China and the world EMM market.

Environmental protection policies concerning EMM plants have already allowed the Chinese government to take strong action. In 2005 the Chinese President Hu Jintao made two important written comments directed towards the EMM industry. All levels of government have started the EP improvement since the 4th quarter of last year. This work is on going.



The key area is the three counties in the triangle of Hunan, Chongqing and Guizhou provinces. In this region, more than 60% of China's total EMM capacity is located. There are 42 enterprises. The government standard is very strict. Companies are required to properly treat their effluent. Waste gas is required to clean enough to discharge after processing. Residues will be collected in the residue site where the water does not seep into the ground. It sets an acceptable standard for discharge level of Mn+, Cr+, ammonia nitrogen and so on in the waste water after processing.

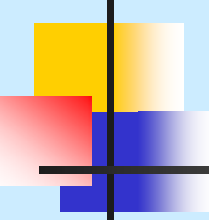
Other EMM factories will adhere to the standard strictly. Any company that does not meet these standards will be stopped or closed down.



2、 Problems facing the China EMM Industry

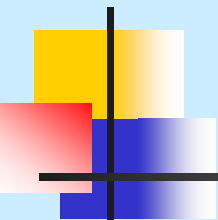
Although China's EMM industry has developed over the past 50 years, the industry faces five serious problems :

- *Reckless development has not been limited in 2005. The contradiction between over capacity and weakening market demand is more and more prominent. The price has fallen down and down from beginning of the year US\$1,500/mt (FOB) to US\$1,200/mt (FOB). It is now US\$1,150/mt (FOB), a decline of over 20%. It is already to the bottom.*



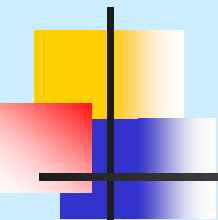
As I mentioned, the Chinese EMM industry has reached the total capacity 1.04 million tpa in 2005. However, the global market demand was only about 600,000 tons a year. The operation rate was only about 50% of the capacity. Such low utilization of capacity was extremely bad for the industry. But to the end of this year the capacity will be over 1.2 million tpa. The supply and demand problem will be more intense. The enterprises with advantages (having resources, environmental protection systems and management) might survive but others might be eliminated from the industry.

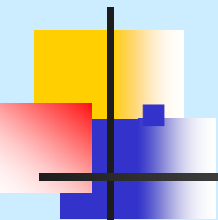
To get rid of the current problem, the most important answer is to eliminate some poor condition enterprises, or at least 300,000-400,000tpa of production capacity.



It takes time and it is a difficult work to eliminate poor condition enterprises. But we believe through the market adjustment, the policy adjustment, strict environmental protection law enforcement and so on, we can achieve our goal in one or two years gradually.

China EMM industry has little consolidation. There are 52 small enterprise less than 5,000tpa each, accounting for 1/3 of all companies. Only a few are competitive but most of others lack competitive strength. Therefore, price coordination is very difficult to realize,. Oppositely, price competition is more and more intense. They cannot through the reduction of output, improve supply and demand relation to realize the stable EMM price goal. Instead they reduce the sales price to compete. This will result in low prices for a long time to come. It is not favorable for the industry's sustainable development.

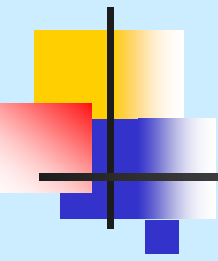
- 
-
- *Anticipation of the revaluation of the RMB exchange rate brings new pressures on EMM exports.*
 - *Since July 21, 2005, the RMB has risen 2.1%. In August 2005, the tax rebate policy was abolished. These two issues caused Chinese EMM exports to be reduced by nearly US\$200/mt. If in 2006 RMB revalues once again, this can bring renewed pressure on EMM export prices.*
 - *Manganese ore supply is tight in some areas.*
 - *At present, the overwhelming majority of China's EMM enterprises use low-grade manganese carbonate ore as the raw material. It consumes 7-8 tons ore for one ton EMM. It consumes about 5 million tons ore a year. In addition, in recent years, over-mining and sponadic mining have significantly reduced the ore returns-ratio. One ton ore consumes nearly 2 tons resources. Therefore, the EMM industry will be faced with an ore shortage in 3-4 years.*

- 
-
- *The EP improvement task has heavy responsibilities*
 - *Since the 4th quarter of 2005, the national EPB carried out an environmental protection campaign to renovate existing EMM factories in the triangle of Hunan, Chongqing, and Guizhou provinces. It has had good results but has not yet been completed. Other EMM factories may continue to have more environmental problems. A long time is needed for all factories to achieve the designated standard.*




3、 *Forecast*

- *In the past few years, following a period of rapid development, the Chinese EMM industry has entered a new regulatory period. It faces an unprecedented difficulty now. But we believe the industry can meet these challenges and emerge stronger than ever.*



The industry must achieve supply and demand basic balance through elimination of inefficient technology and production processes both through market and policy adjustments.

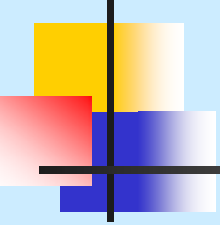
- *The industry must enhance the EP and the comprehensive resource utilization level, and continually improve energy conservation. It will achieve 6000kwh/mt of energy consumption in 2-3 years time, attain a manganese returns-ratio of 80%, and ensure that waste water is properly treated.*



The industry must continue to encourage scientific and technological progress, and equipment improvement. The main industry parameters (temperature, current capacity, the PH value and so on) must realize automatic detection gradually. Formulation newly EMM enterprise enters the condition. New factories which do not achieve these conditions must be blocked.

- *The industry must encourage consolidation through merger and reorganization to establish several companies with capacities greater than 50,000 tpa.*
- *Developing EMM new market.*

Through the above key steps, the Chinese EMM industry will be able to emerge as a stable and strong industry by 2010.



Thanks!