China's magnesite industry

Mike O'Driscoll, IM, SME 2009, 22-25 February 2009, Denver

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UPCOMING EVENTS 2009

MagMin 2009
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10-12 May 2009
Hotel Okura, Amsterdam, The Netherlands
Outline

1. The Big Picture
2. China’s magnesite industry
3. Situation in China
4. Influence on world market
5. Market outlook
6. Summary & conclusions
1. The Big Picture

Early 2006: a leading trader commented:

“I feel that once the Chinese government is introducing a new tax to curb the export of minerals, obviously they do not worry about the competitiveness of Chinese minerals in the international market any more.”
1. The Big Picture

Early 2006: a leading trader commented:

“The overseas buyer will either be forced to pay a significantly higher price for Chinese minerals or buy from an alternative source.”
1. The Big Picture

August 2008: a western producer & consumer stated:

“At the end of 2009 we should be independent regarding supply of [Chinese] DBM and FM.”

“A similar strategy should be the base for any serious producer of magnesia based refractory products.”
1. The Big Picture

January 2009: leading Western traders:

“Everything has stalled!”

“Lower pricing is anticipated in 2009”

“Demand will be the key, as first quarter purchase quantities are expected to be well below normal historic levels.”
2. China’s magnesite industry

Resources – 3,319m. tonnes

2. China’s magnesite industry

Magnesite mined – 8.36m. tonnes

2. China’s magnesite industry

Magnesia produced – 4.1m. tonnes

PRODUCTION OF 8.2MT OF MGO - DBM, CCM AND FM (%)

- China 50%
- Russia 13%
- North Korea 1%
- India 3%
- Greece 2%
- Slovakia 6%
- Others 2%
- Spain 3%
- Turkey 6%
- Australia 3%
- Austria 5%
- Brazil 5%
- Canada 1%

Resource & production location

Tibet magnesite

Shandong magnesite

Bayuquan port

Liaoning magnesite
2. China’s magnesite industry

Haicheng Dashiqiao Belt

2. China’s magnesite industry

Haicheng Dashiqiao Belt

2. China’s magnesite industry

Huaziyui mine, Liaoning
2. China’s magnesite industry

Pailou Mine, Liaoning
2. China’s magnesite industry

Pailou Mine, Liaoning
2. China’s magnesite industry

Pailou Mine, Liaoning
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Pailou Mine, Liaoning
2. China’s magnesite industry

Trucking ore from Pailou Mine, Liaoning
China's magnesite industry

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2. China's magnesite industry

CCM Shaft kilns, Pailou, Liaoning
2. China’s magnesite industry

CCM shaft kilns, Liaoning
“Valley of the Kilns”, Haicheng, Liaoning
China's magnesite industry

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DBM shaft kiln, Dashiqiao
2. China’s magnesite industry

Fusing CCM, Dashiqiao, Liaoning
2. China’s magnesite industry

Fused magnesia ingots, Dashiqiao, Liaoning
2. China’s magnesite industry

Breaking up FM ingots, Dashiqiao, Liaoning
2. China’s magnesite industry

Bagged powdered DBM, Haicheng-Dashiqiao, Liaoning
2. China’s magnesite industry

Loading DBM, Bayuquan, Liaoning
2. China’s magnesite industry

Tunnel kiln & DBM refractory bricks, Dashiqiao, Liaoning
3. Situation in China

- Poor mine planning/extraction
- Depletion of quality resources
- Fuel/power costs & availability
- Olympic Games ban impact
- Export smuggling curtailed
- Streamlining supply base
- Resource & capacity investment
- Domestic demand priority
- Export quota reduced by 45,000t
- Export tax, VAT, licence fee
4. Influence on world market

- Shortage of supply
- Capacity expansions in West
- Grade diversification, restart
4. Influence on world market
Capacity expansions in West

- Baymag CCM, DBM, FM
- Mag de Rubian CCM
- Magnezit CCM, DBM, FM
- Premier CCM
- MMMS CCM
- Bommag DBM, FM
- Kumans DBM, FM
- Penoles CCM, FM
- Magnesita DBM
- DSP CCM
- RHI-Jinding DBM
- Tata Ref. DBM
- Qmag CCM, DBM, FM
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4. Influence on world market
Capacity expansions in West

Bringing on stream by 2010

384,000 CCM
MMMS, Manistee, USA

1.2m. DBM

120,750 FM
4. Influence on world market

- Shortage of supply
- Capacity expansions in West
- Grade diversification, restart
- M&A activity, PE interest
4. Influence on world market

M&A activity, PE interest

- M&A
  - UCM, Imerys
  - Minco, Penoles
  - Morton Salt, MMMS
  - Calmag, Bomex
  - Slovmag, Magnezit
  - Dalmia/Eswar
  - LWB, Magnesita
  - Magnohrom, XXX?
  - SMZ, XXX?

- Private equity interest
  - Magnesita, GPI/Gavea
  - Qmag, RCF
4. Influence on world market

- Shortage of supply
- Capacity expansions in West
- Grade diversification, restart
- M&A activity, PE interest
- Legal challenge to China policy
- Investment in China
- Alternative source emergence
4. Influence on world market

China investment, emerging alternative sources

- **Overseas investment in China**
  - RHI-Jinding
  - Tata Refractories

- **Emerging alternatives**
  - Magnezit, Russia
  - Quintermina, North Korea
  - Elsewhere?...Jordan, Saudi Arabia
5. Market outlook

Early 2008: outlook positive for refractories – DBM, FM

- **RHI**: “The steel sector can look to the future with confidence.”
- 7-8% pa growth to 2012
- Steel, cement
- BRIC regions
5. Market outlook

• **Late 2008: financial crisis – economic recession**

• **Market slowdown in 2009**

  Construction ➔ Steel ➔ Refractory
  Automobiles ➔ Glass ➔ demand
  ➔ Cement ➔ DBM Demand

• **Magnesia prices falling**

• **Capacity expansion projects concern**
5. Market outlook

Global steel output decline in 2008

Global steel production in 2008

2009 Steel industry expected to contract 7-8%

Source: Worldsteel
5. Market outlook

DBM price rise and fall 2002-09

DBM94/95
Q1 09 price expected to drop to $450-480/t

DBM90
Q1 09 price expected to drop to <$400/t
5. Market outlook

- **Steel bright spots**: China, India, South Korea
- **Non-refractory market opportunities**

- Environmental CCM/Mg(OH)2
- Specialities CCM/Mg(OH)2
- Hydrometallurgy Ni laterite processing CCM
- Agrimarkets CCM
6. Summary & conclusions

- During 1980-90s China dominated magnesia exports
- Western producers diversified from DBM or exited
- 2000s saw China govt. policy of export reduction, and focus on domestic markets, conserve raw materials, export finished products, eg. refractories
- Resulting in magnesia supply shortages, rising prices, consumers scrabbling to secure future supply
- Encouraged producers outside China to expand/emerge
- 2009: markets impacted by economic recession
- Prices will drop, project caution, market demand “on hold” – China unchanged – West still demands magnesia
Thank you for your kind attention