Factors driving the outlook for Mn ore

Metal Bulletin 22nd International Ferroalloys Conference
5-7 November 2006

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Global Mn ore demand vs Crude steel production

Crude steel
CAGR: 00-05: 6.2%pa

Mn demand
CAGR: 00-05: 7.2%pa

*Note: 2006 Mn unit demand = actual
H1 IMnI demand annualised

Source: IMnI, IISI, CRU
Global Mn ore production vs Crude steel production

- **High Grade Mn ore** (Mn content \(\geq 44\%\))
  - CAGR: 11.2% pa
  - *Note: 2006 Mn unit demand = actual H1 IMnI demand annualised

- **Mid Grade Mn ore** (30% < Mn content < 44%Mn)
  - CAGR: 2.5% pa

- **Low Grade Mn ore** (Mn content \(\leq 30\%\))
  - CAGR: 12.5% pa

Source: IMnI, ISI, CRU
Global Mn alloy demand

- **SiMn**
  - 2000: 3,000 Kt
  - 2005: 5,000 Kt
  - CAGR: 7.3% pa
  - ▲: 6.9%

- **HCFeMn**
  - 2000: 3,000 Kt
  - 2005: 4,000 Kt
  - CAGR: 2.4% pa
  - ▲: 5.9%

- **Refined**
  - 2000: 1,000 Kt
  - 2005: 1,000 Kt
  - CAGR: 10.3% pa
  - ▲: 1.4%

*Note: 2006 Mn unit demand = actual H1 IMnI demand annualised

Source: IMnI
Global HG Mn ore production vs HCFeMn demand

Source: IMnI

*Note: 2006 Mn unit demand = actual
H1 IMnI demand annualised
Global HG Mn ore production vs China Mn ore imports

- Global HG Mn ore production
- China Mn Ore Imports

Source: IMnI, Global Trade Information Services Inc (GTI)

*Note: 2006 Mn unit demand = actual
H1 IMn/GTI data annualised
Global Mn ore supply - annual

Kt Mn ore

Source: IMnI

±7mt

*Note: 2006 Mn unit supply = actual
H1 IMnI supply data annualised
Mn ore supply/demand balance

Source: IMnI

-2,000 -1,500 -1,000 -500 0 500 1,000 1,500 2,000

Kt Mn ore

Oversupply

Undersupply
China Mn ore imports

- CY03: Major HG: 1.7 mt, Others: 1.2 mt
- CY04: Major HG: 2.7 mt, Others: 2.0 mt
- CY05: Major HG: 2.5 mt, Others: 1.9 mt
- CY06 Ann: Major HG: 4.2 mt, Others: 1.5 mt

59% 57% 57% 74%
Conclusion

1. Demand for manganese units is increasing in line with the growth in steel production

2. Since 2003, there has been a much larger increase in the production of high grade ore than other ores. Much of this additional high grade ore has gone to China due to the technical requirements for high grade ore for alloy production

3. IMnI numbers suggest that capacity considerably exceeds demand in the Manganese ore market

4. Trade statistics suggest in the first half of 2006 the major producing countries increased their market share in China in this oversupplied market