



M. Sarda, Director - SEML



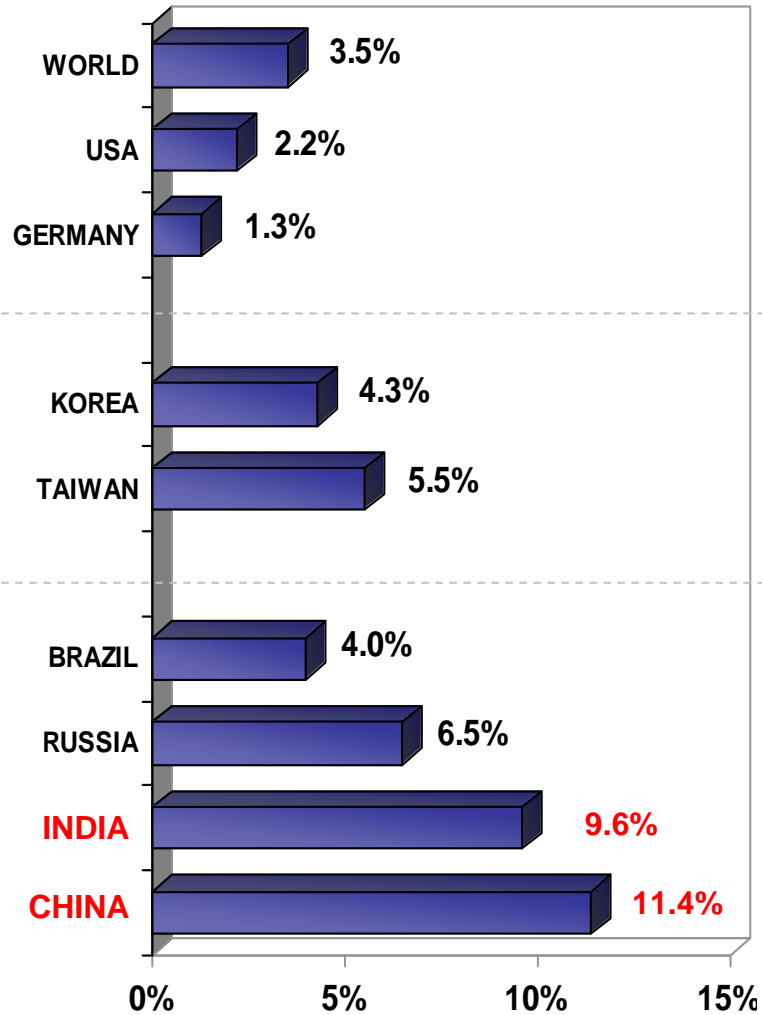
34TH IMnI ANNUAL CONFERENCE
TAJ MAHAL HOTEL, NEW DELHI
AUGUST 31 – SEPTEMBER 2, 2008

INDIAN MANGANESE INDUSTRY OVERVIEW

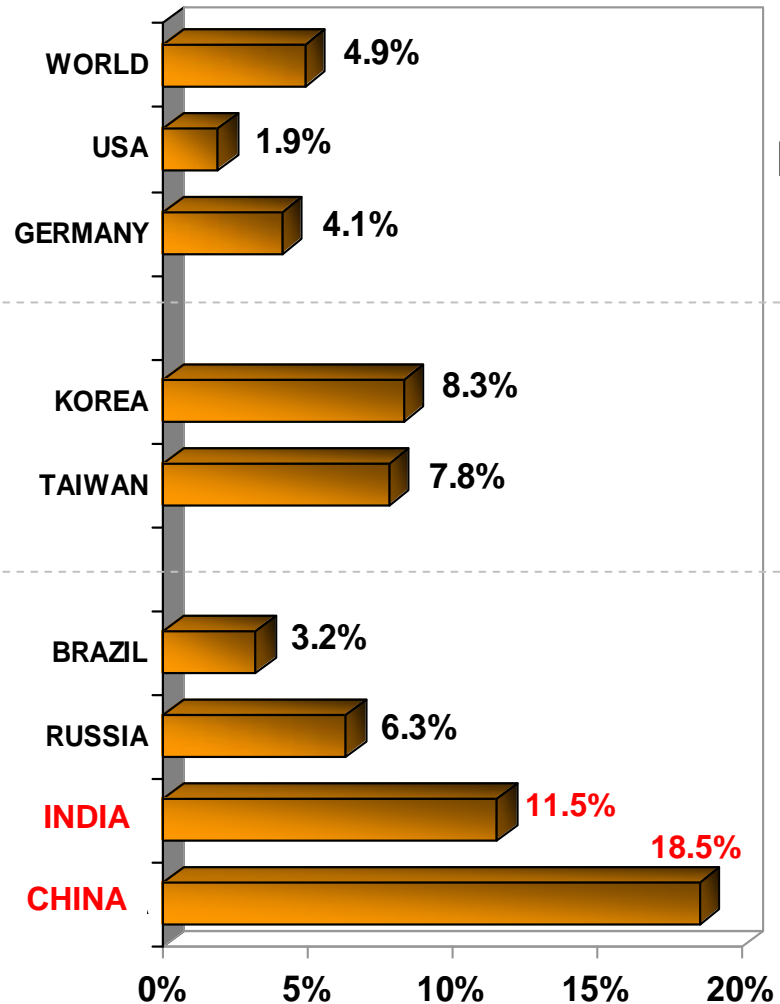
- **INTRODUCTION**
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- INDIAN STEEL INDUSTRY SNAPSHOT
- INDIAN MANGANESE INDUSTRY OVERVIEW
 - MANGANESE INDUSTRY CROSSECTION
 - MANGANESE ALLOY SCENARIO
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- OUTLOOK FOR INDIAN MANGANESE INDUSTRY

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GDP GROWTH



INDUSTRIAL GROWTH



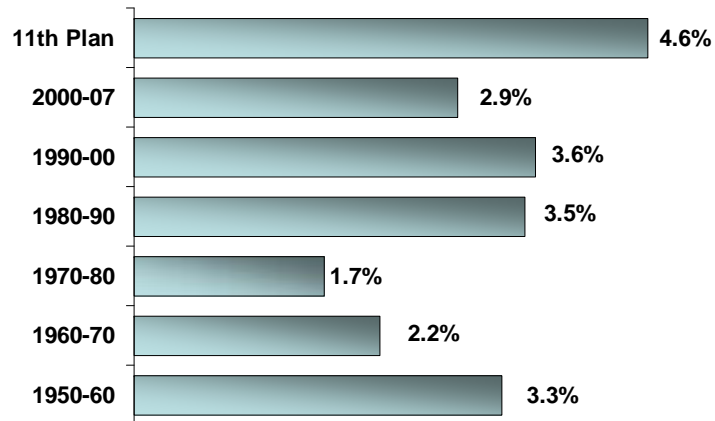
Mature Economies

Supporting Economies

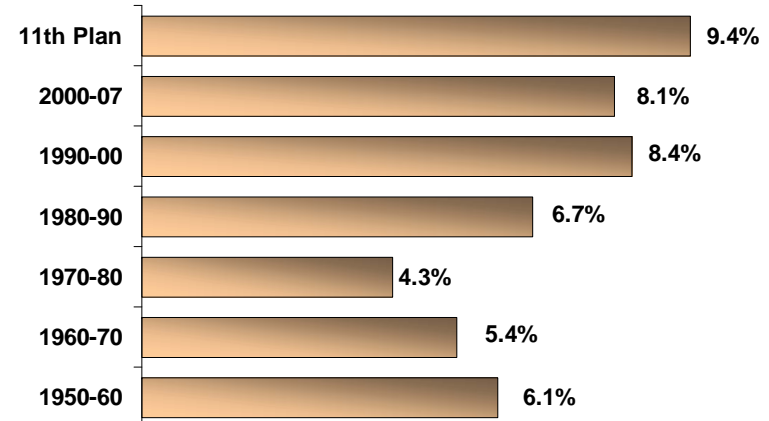
Emerging Economies

Source: WTO, IMF, EUROSTATE

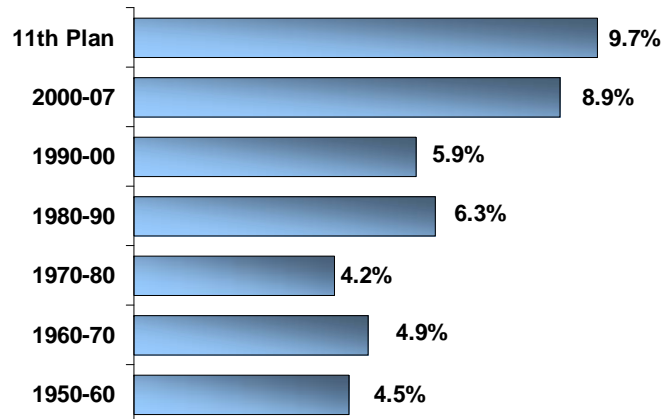
AGRICULTURE (CAGR 5.7%)



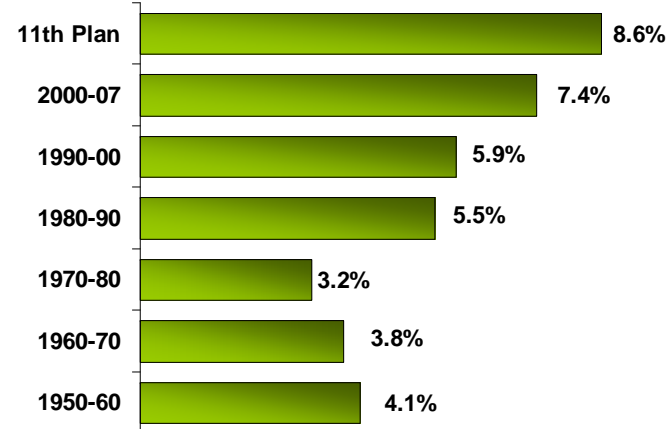
INDUSTRY (CAGR 7.5%)



SERVICES (CAGR 13.7%)



GDP GROWTH (CAGR 13.4%)

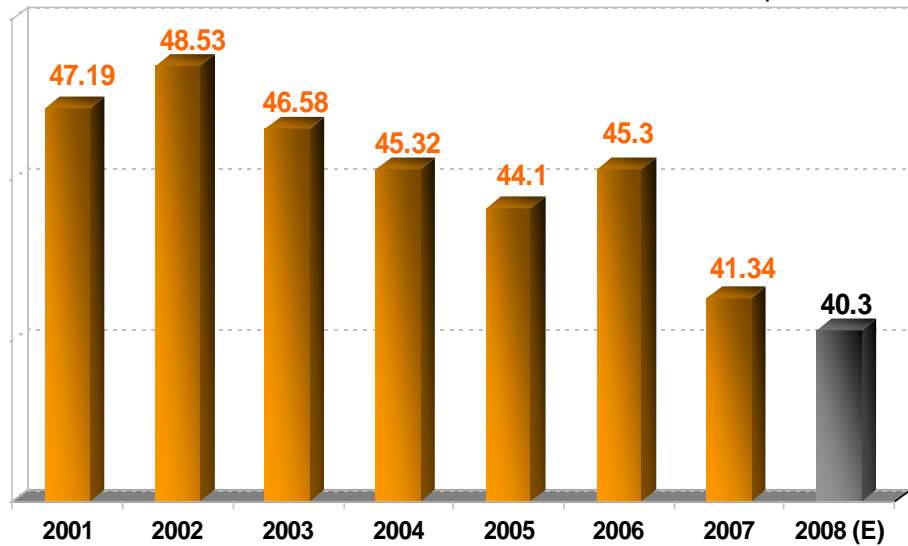


Source: Planning Commission, CSO, RBI

INDIAN ECONOMY VALUES



US \$ ~ INR

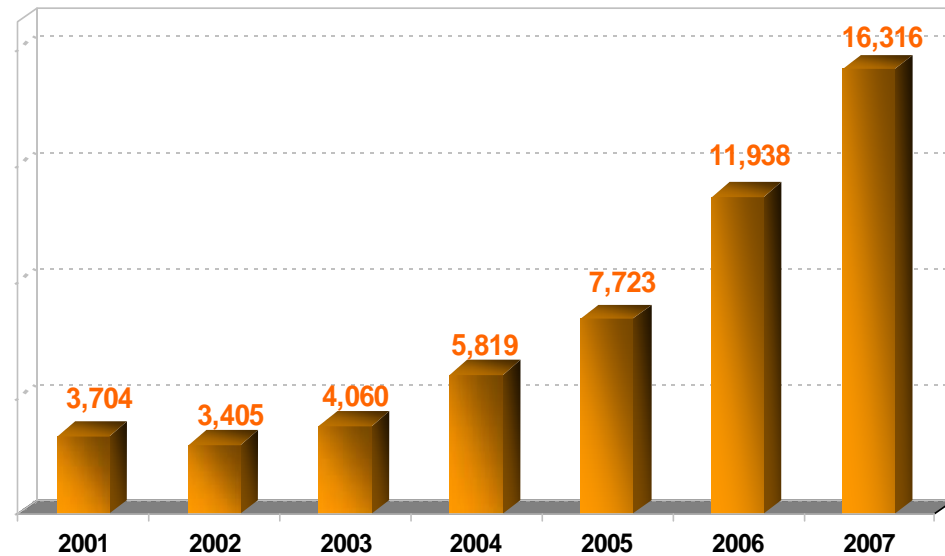


2008 / 2002

1.2 x

Source: Reserve Bank of India

BSE INDEX



2007 / 2002

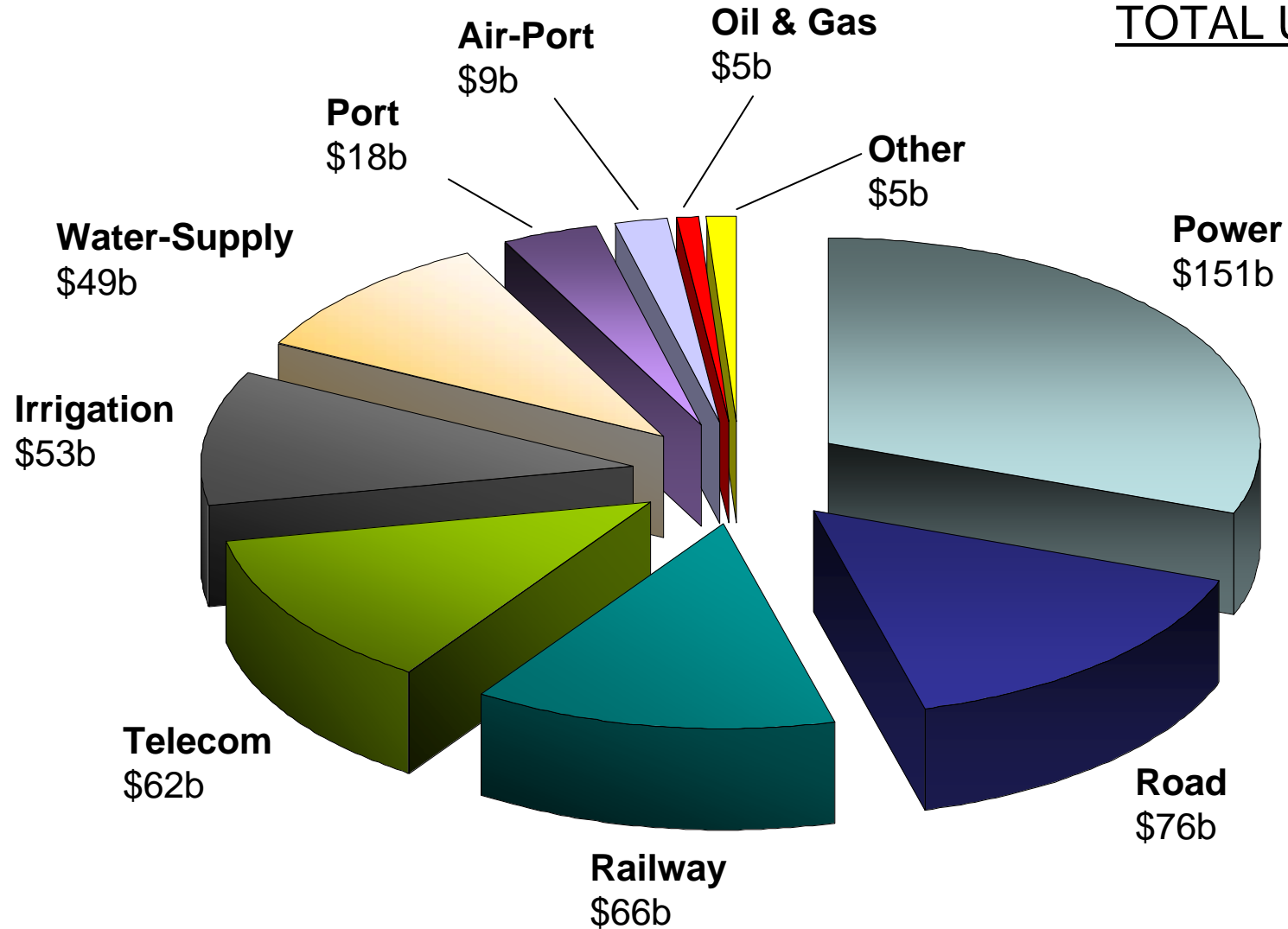
4.8 x

Source: Bombay Stock Exchange

INDIAN INFRASTRUCTURE INVESTMENT

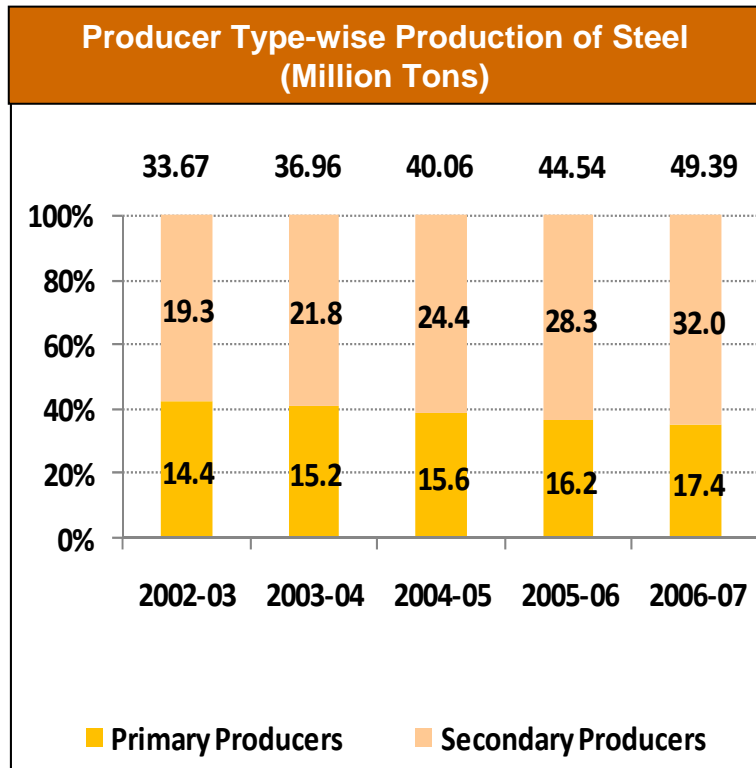


TOTAL USD 494 B



Source: 11th Planning Commission

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Source: IFAPA

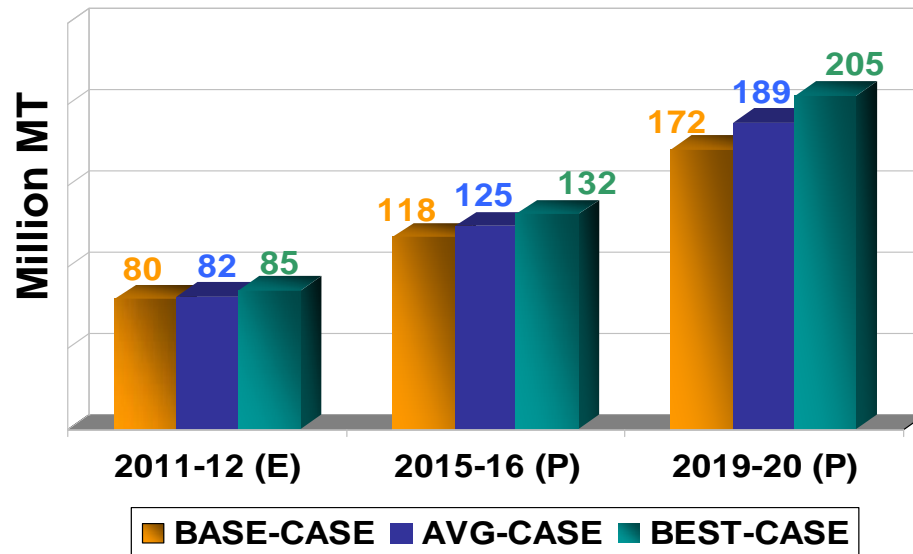
- Primary Producers include SAIL, RINL, and TSL
- Secondary Producers include JSW Steel Ltd, ESSAR Steel Ltd, Ispat Industries Ltd, Jindal Steel & Power Ltd and other small producers

Production of Crude Steel ('000 Tons)

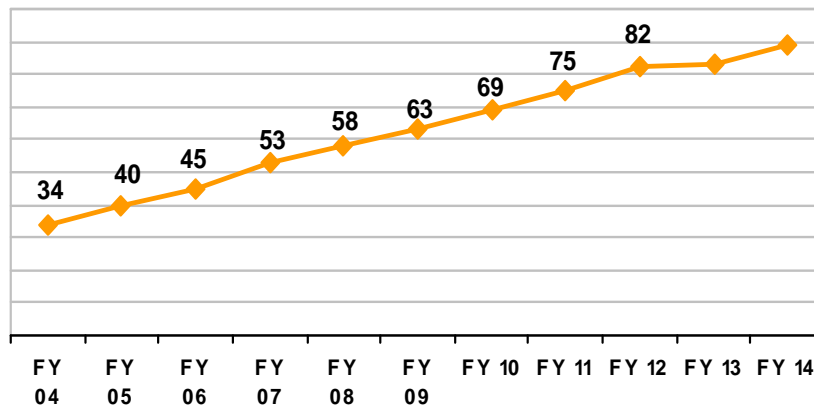
	2007-08				Actual as Percentage of Target
	Target		Actual		
Primary Producers	22,535	37%	22,104	41%	98.1%
Secondary Producers	39,000	63%	31,800	59%	81.5%
Total	61,535	100%	53,904	100%	87.6%

Source: jpcindiansteel.nic.in

PROJECTED STEEL DEMAND



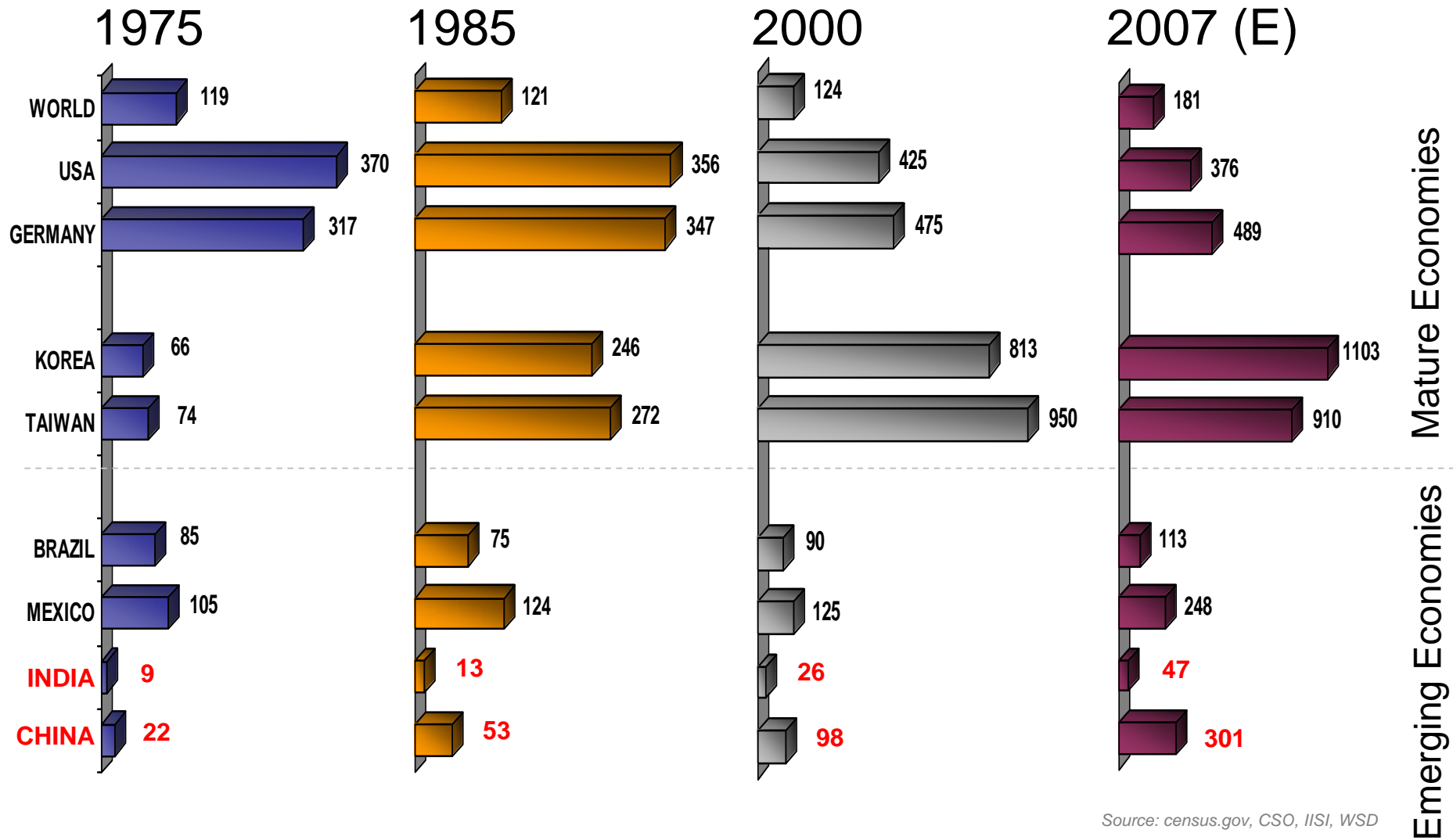
PROJECTED CRUDE STEEL PRODUCTION



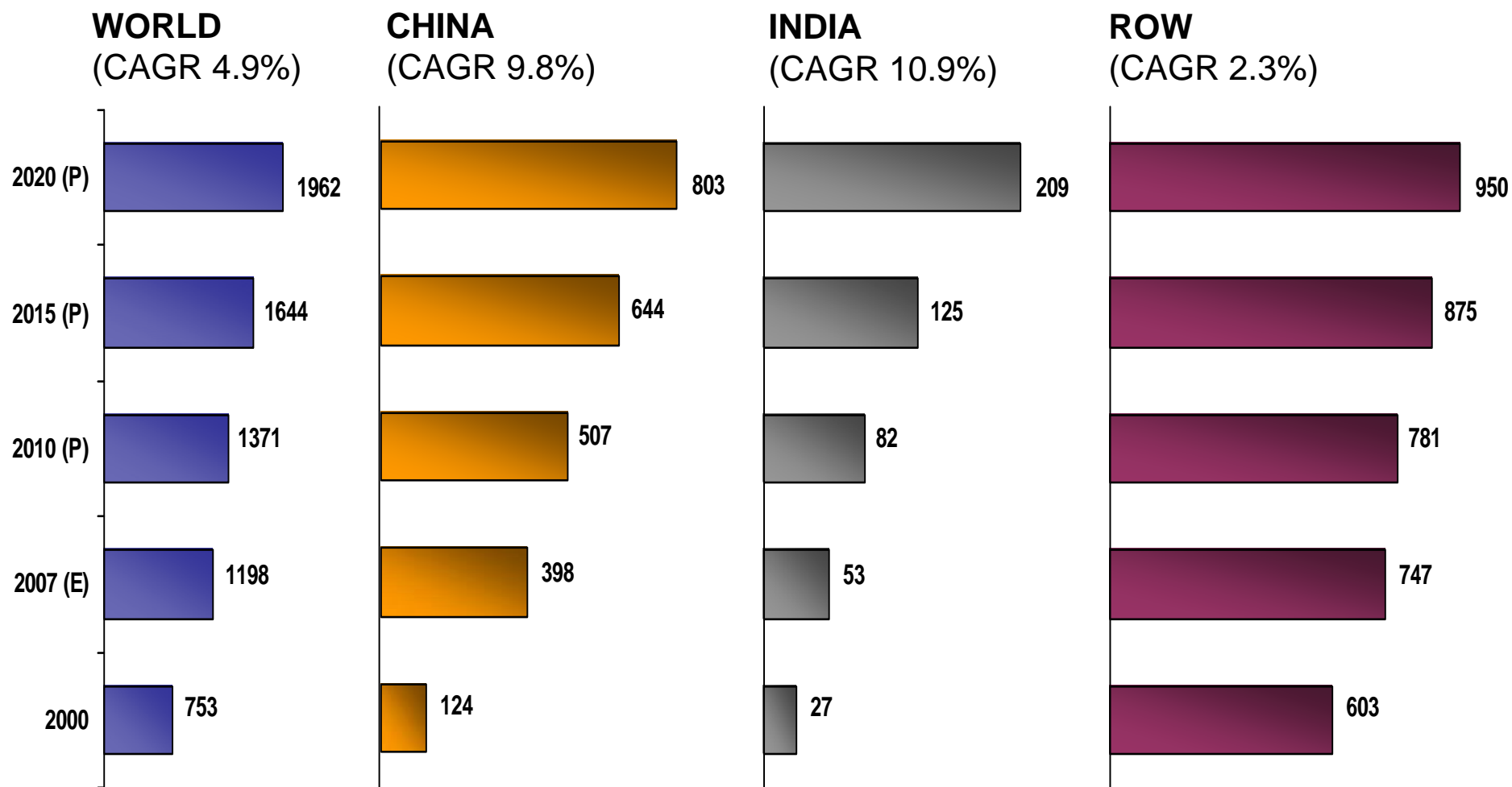
Source: Steel World

- World steel production - 1.3 BMT
- Indian steel production - 53 MMT
- With growth rate of 9% second to china – 16%
- India crude steel production is expected to grow at + 8% YOY basis
- Projected steel demand is also slated to grow at 10% with proposed infrastructure projects

PER-CAPITA STEEL CONSUMPTION



WORLD STEEL DEMAND PROJECTION



Source: WSD, IISI, CSO

MAJOR STEEL EXPANSIONS IN INDIA



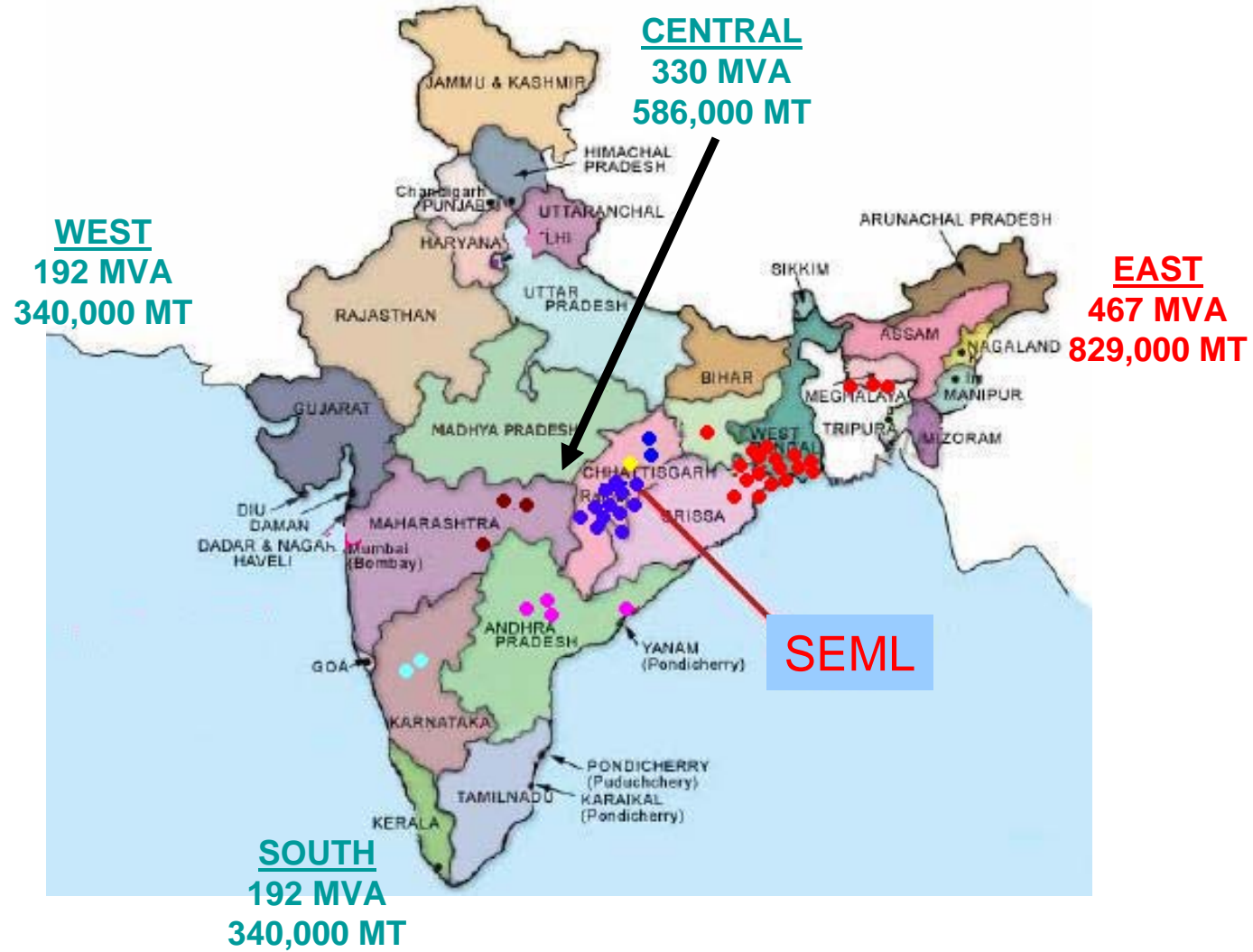
Million MT

Company	Addition	Location	Commencement
Tata Steel	2.40	Jamshedpur	2007-08
	0.60	Kalinganagar	2008-09
Essar Steel	2.20	Gujarat	2005-06
	4.00	Orissa	2009-10
	1.80		2009-10
Ispat Industries	0.60	Dolvi, Alibaug	2005-06
Jindal South West	3.00	Bellary	2008-09
	3.00		2010-11
SAIL	7.00	Various	2011-12
Rashtriya Ispat Nigam	3.00	Vishakhapatnam	2009-10
	1.80	Vishakhapatnam	2011-12
Bhushan Steel & Strip	1.50	Orissa	2008-09
Tube investment of India	1.25	Orissa	2007-08
	10.00	Orissa	N.A.
Bhushan Steel	2.00	Orissa	2008-09
TOTAL	42.15		

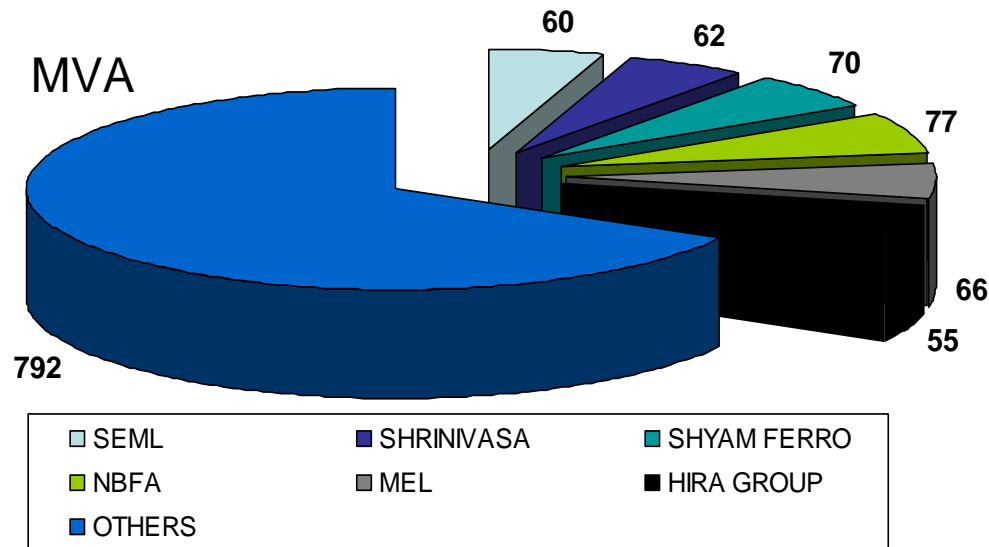
- Posco & ArcelorMittal plan to set up 10 MMT steel plant each

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MANGANESE ALLOYS PLANT LOCATIONS

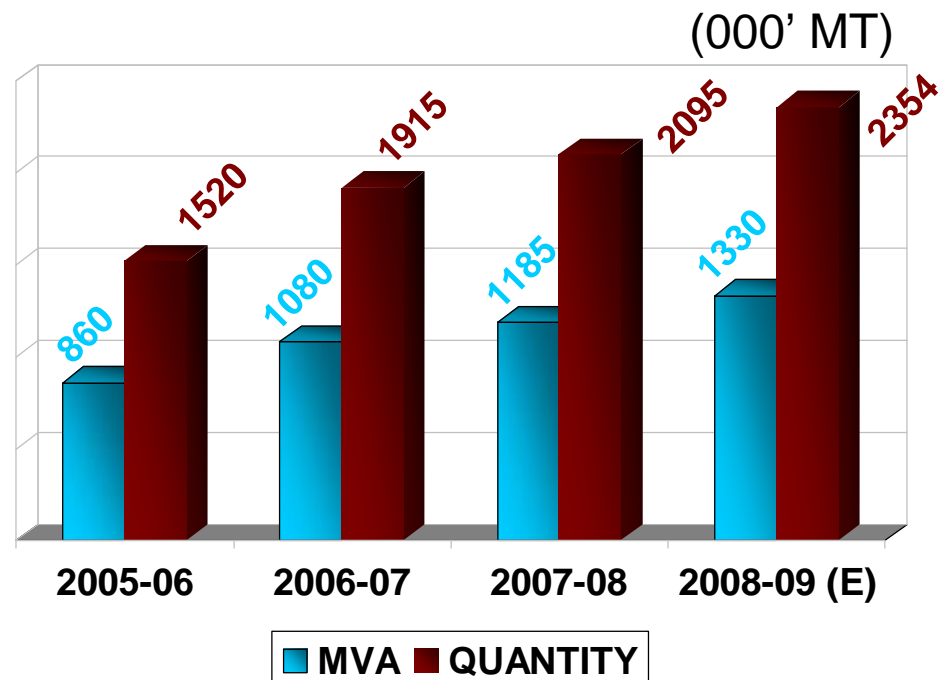


CROSS-SECTION OF INDIAN MANGANESE INDUSTRY



- 6 Producers contribute 33% of total capacity
- 70 plants; 150 furnaces
- 4 – 33 MVA; Total 1185 MVA

Actual Production
75% of Installed



NEW & PROPOSED CAPACITY ADDITION



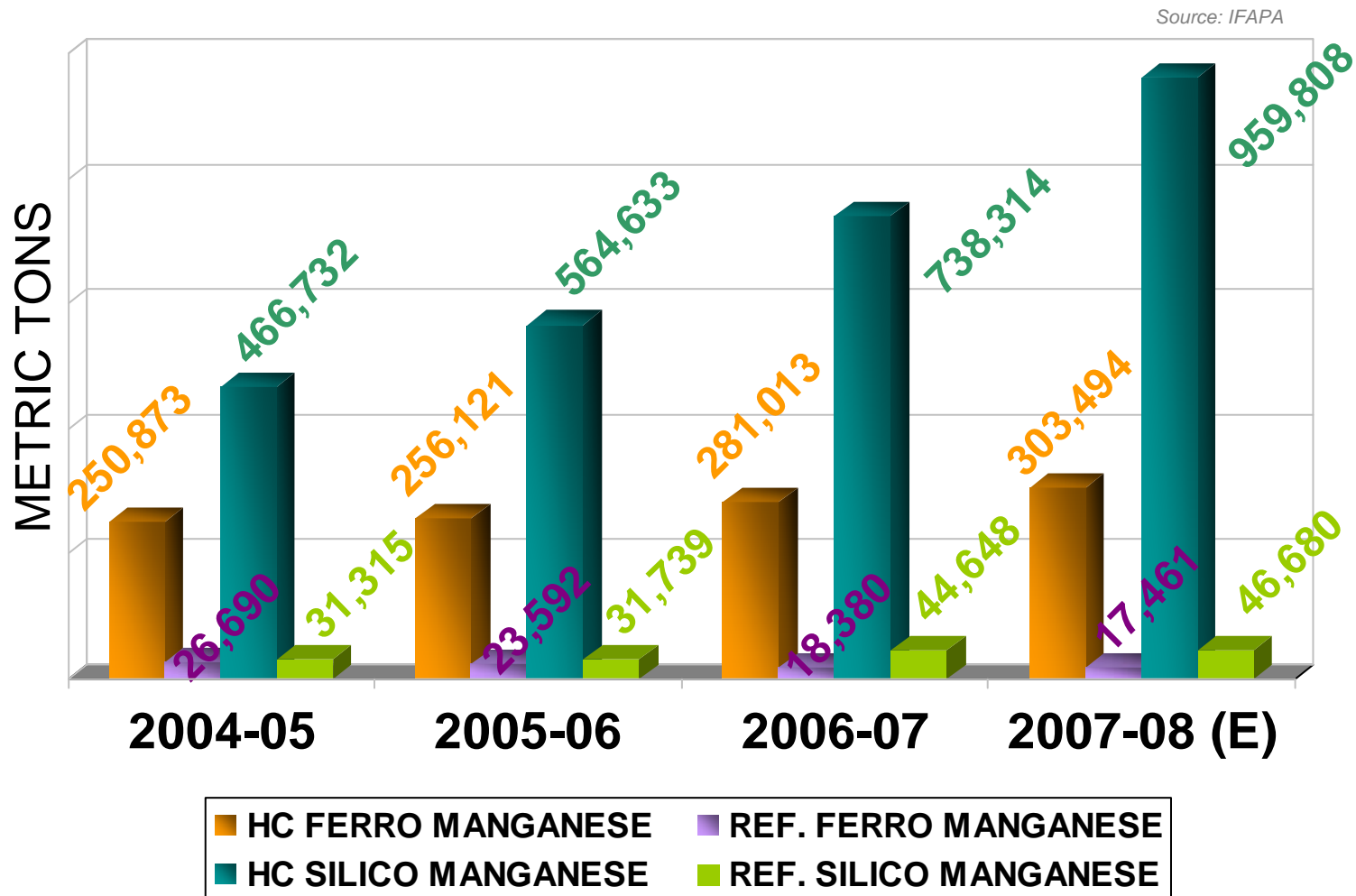
NEW FACILITIES		
COMPANY	COMMISSIONED	UNDER PLAN
SEML	-	33 MVA * 1
Jindal	24 MVA * 2	24 MVA * 1
MSP	7.5 MVA * 2	-
Runghta	9 MVA * 2	-
Jai Balaji	9 MVA * 2	-
Aarti Steel	9 MVA * 2	-
Nilkant	5 MVA * 1 9 MVA * 1	9 MVA * 1
SKS	9 MVA * 2	-
Bajrang	5 MVA * 1	9 MVA * 2
Modern India	9 MVA * 1	9 MVA * 2
TOTAL	163 MVA	102 MVA

PROPOSED FACILITIES		
COMPANY	PROPOSED CAPACITY (MVA)	No. OF UNITS
Cosmic Ferro Alloys Pvt. Ltd	9	5
Maithan Group	9	8
Patni Group	16	6
Patni Group	9	6
Modern India Con-Cast Ltd.	9	6
Corporate Ispat Ltd.	12	8
Lalwani Ferro Alloys Pvt. Ltd.	9	2
Centom	9	4
Rohit Ferro Tech	9	6

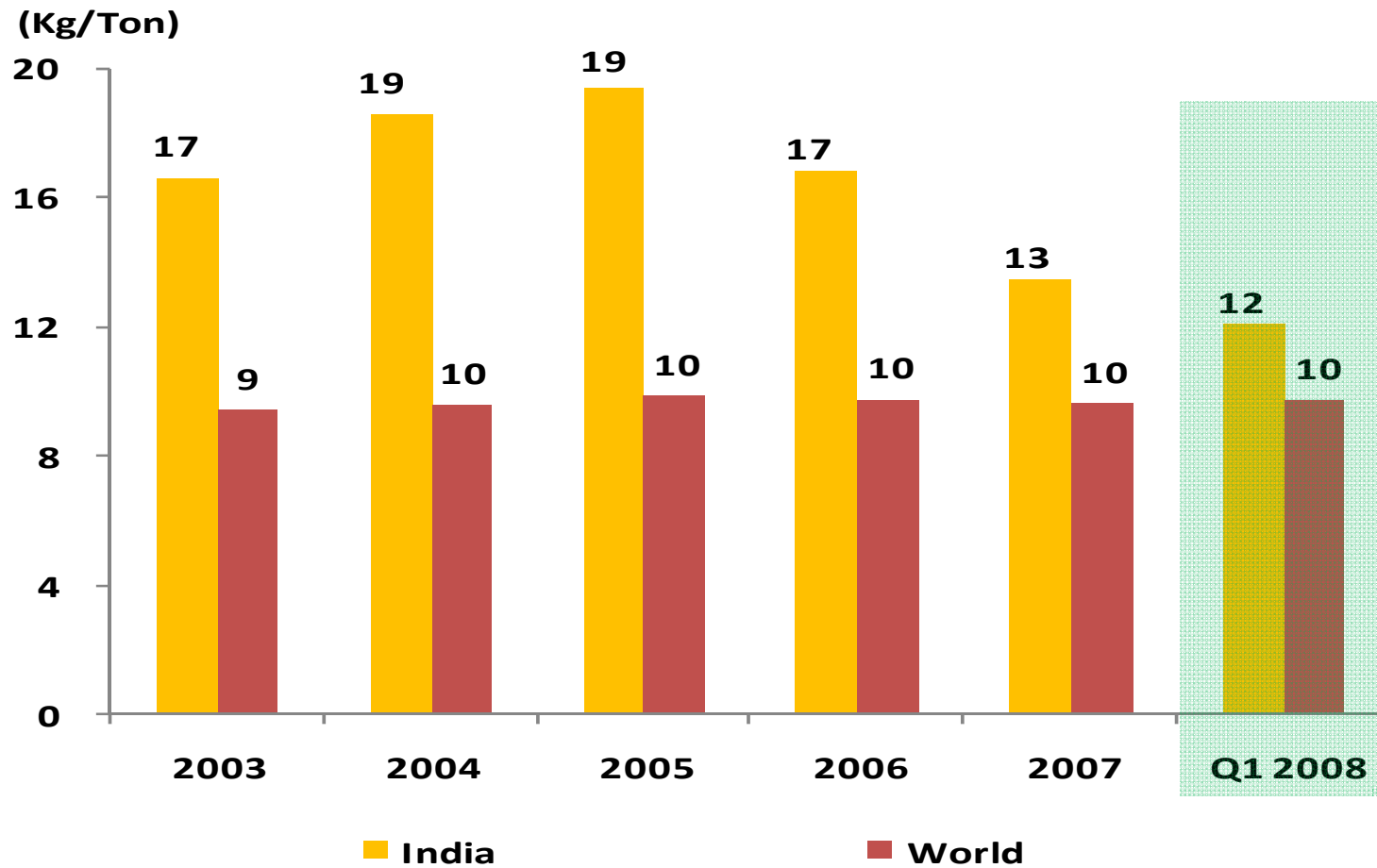
Source: SEML Data Base

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INDIAN MANGANESE ALLOY PRODUCTION - GRADES

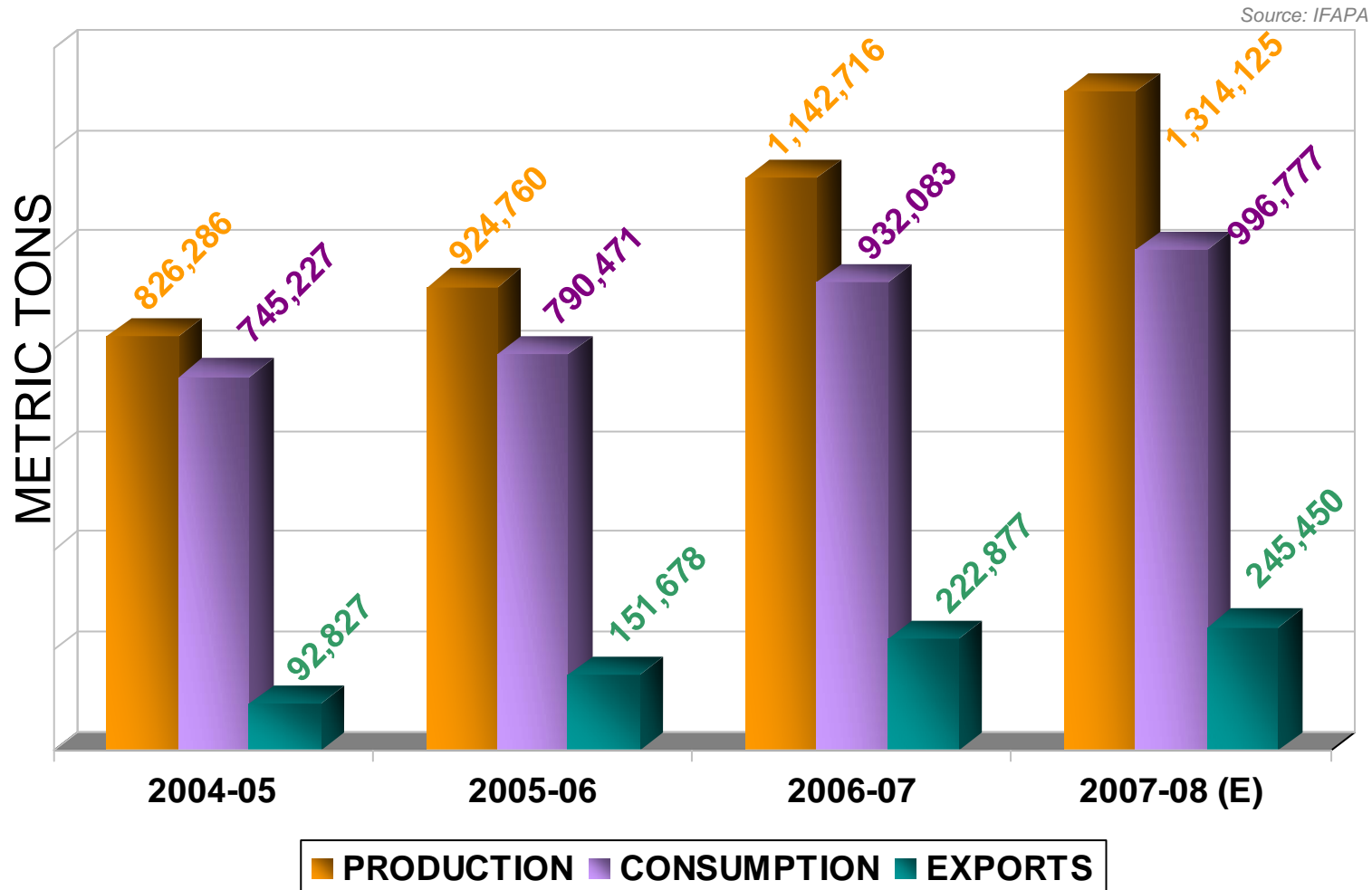


UNIT CONSUMPTION OF MANGANESE ALLOY



Source: IMnI

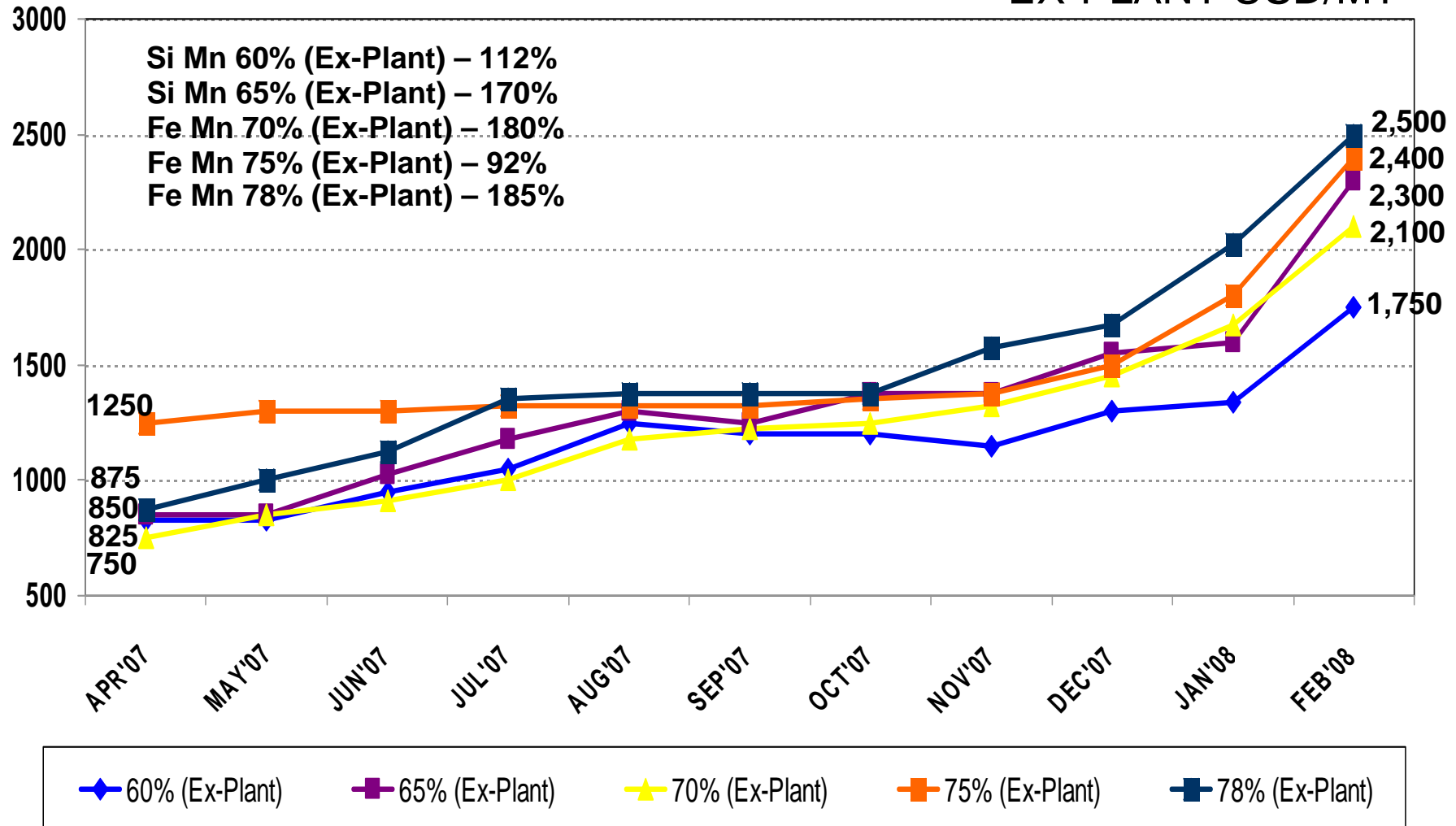
INDIAN MANGANESE TRADE DATA



MANGANESE ALLOY INDIAN PRICES - SPOT



EX-PLANT USD/MT



Source: MMR, SEML DATA BASE, STEEL INSIGHTS

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INDIAN MANGANESE ORE RESERVES

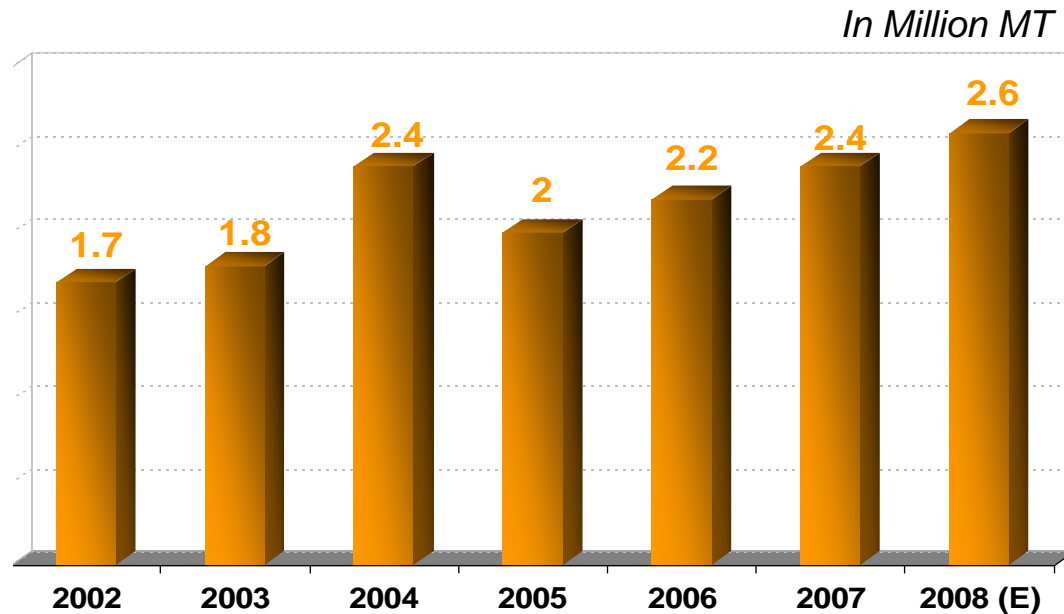


(MMT)

STATE	Proven	Probable	Possible	Total
Andhra Pradesh	2.46	3.85	11.73	18.04
Gujarat	-	-	2.95	2.95
Goa	0.03	2.86	16.20	19.09
Jharkhand	0.69	5.05	7.48	13.22
Karnataka	6.74	19.22	63.52	89.48
Madhya Pradesh	22.80	27.48	34.94	85.22
Maharashtra	11.54	17.18	13.17	41.89
Orissa	31.44	60.71	92.25	184.40
Rajasthan	1.15	1.80	3.02	5.97
Total	75.85	138.15	245.26	459.26

Source: Indian Mineral Book 2006

INDIAN MANGANESE ORE PRODUCTION



Source: Indian Mineral Book 2006

MAJOR PRODUCERS IN 2007-08

In Million MT

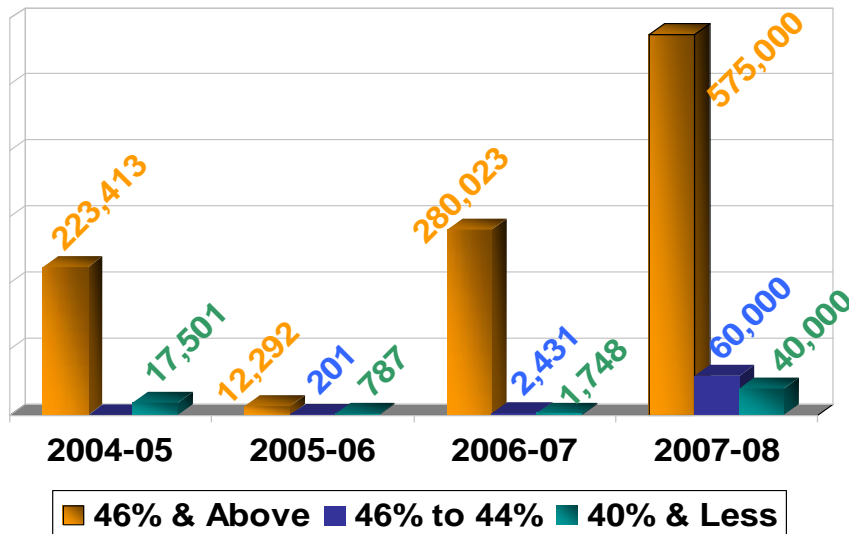
MOIL	1.30
OMC	0.25
Sandur	0.23
Rungta	0.18
OMDC	0.04
Others	0.45
OMM	0.08
Khandelwal	0.10
Trivedi	0.04
Rai	0.04
Total	2.71

- Sandur exports majority of its production

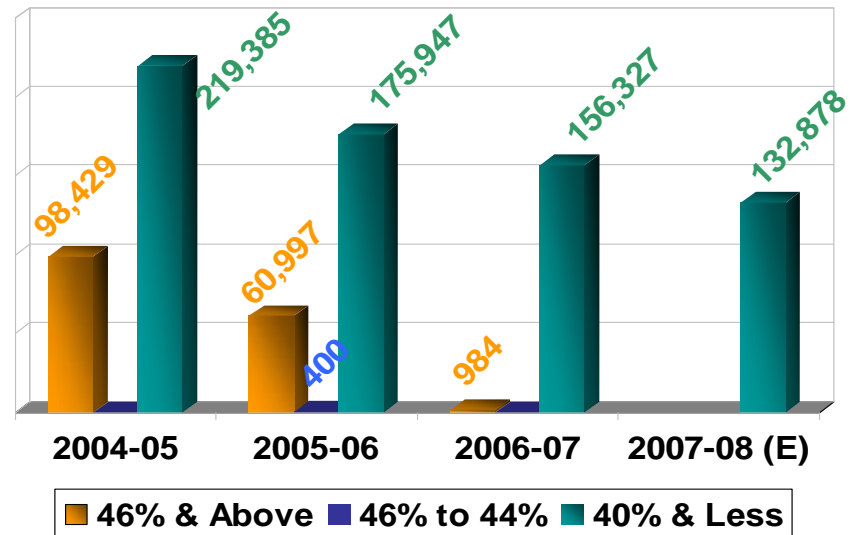
INDIAN MANGANESE ORE IMPORTS & EXPORTS



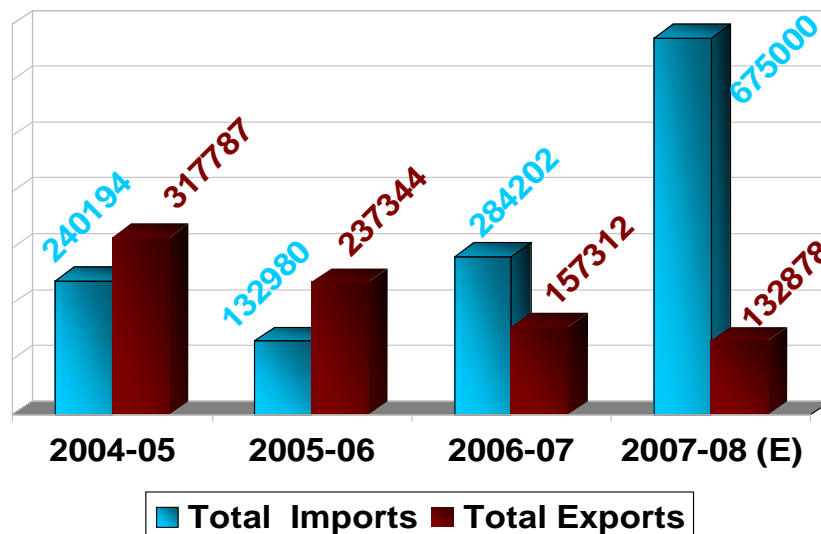
GRADES-IMPORT



GRADES-EXPORT



TOTAL ORE IMPORTS & EXPORTS



MANGANESE ORE IMPORTERS / EXPORTERS



FY 2007-08

IMPORTERS	TONS	EXPORTERS
SEML	115,000	ASSAMANG, BHP
NBFA	52,000	CML, SODEMI
SHYAM	112,000	ERAMET, BHP
IMPEX	70,000	BHP
CORPORATE	100,000	BHP
JINDAL	20,000	BHP
INDSIL	11,000	BRAZIL, INDONESIA
SHAH	25,000	CML
MAITHAN	100,000	BHP
CLUSTER	70,000	CML, ERAMET
TOTAL	675,000	

Source: SEML DATA BASE , PORT REPORTS

PROJECTED MANGANESE ORE DEMAND SUPPLY - INDIA

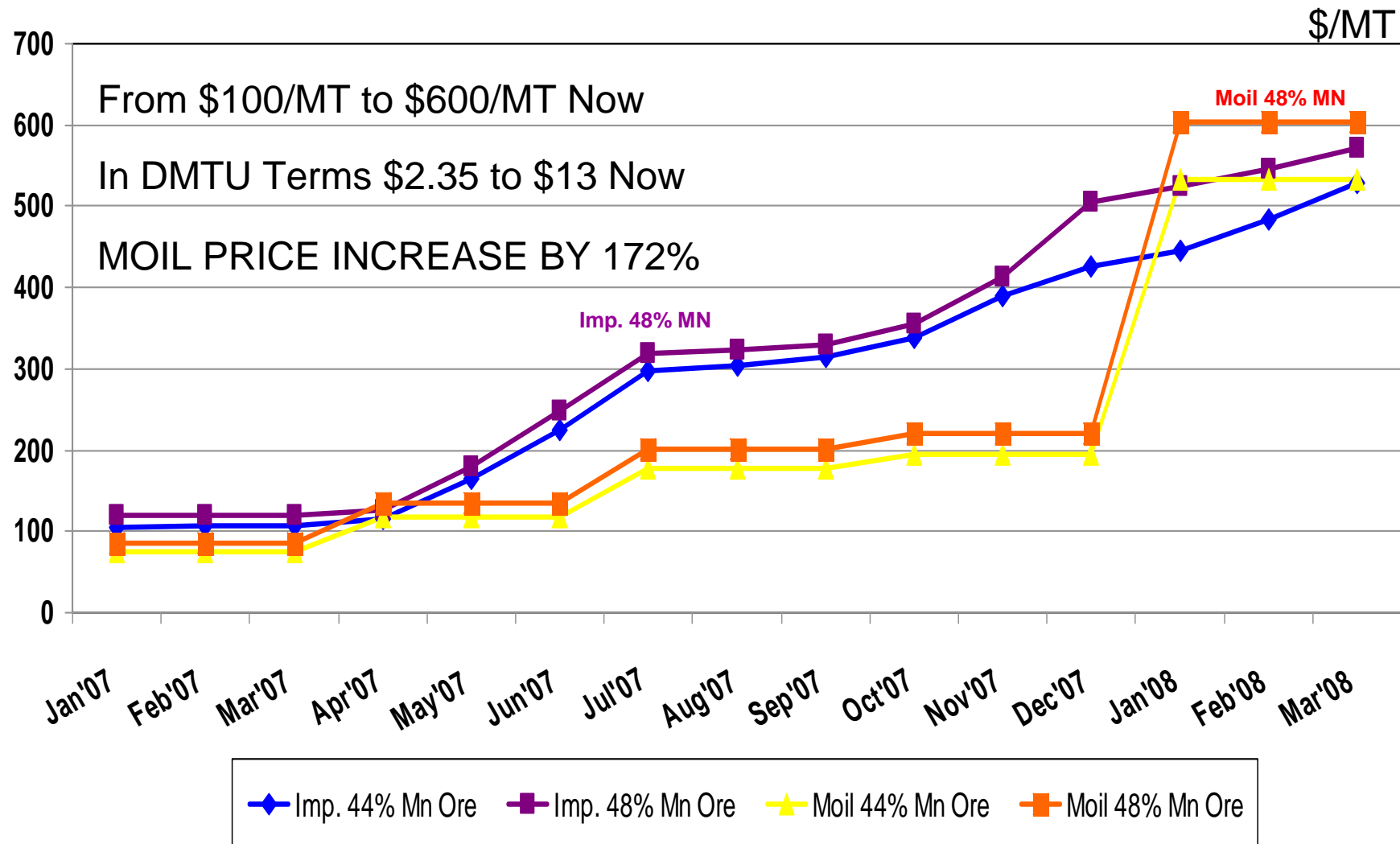


(IN MILLION TONS)

Year	STEEL PRODUCTION	MN ALLOYS PRODUCTION	MN ORE DEMAND	MN AVAILABILTY	SHORTFALL
2010	82	1.45	3.70	3.01	0.69
2015	125	2.16	5.28	3.29	1.99
2020	189	3.27	8.54	4.81	3.73

Source: National steel Policy

MANGANESE ORE PRICES – DOMESTIC & IMPORTS



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- Coke prices at all time high
- Coke exports curbed from China
- High sulphur and high phosphorous content in Indian cokes

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Country	Tariff (US cents/Kwh)
India	6.51
China	5.81
Brazil	2.75
USA	2.50
Venezuela	1.90
Norway	1.85
South Africa	1.75
Canada	1.50

Source: Powerline

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INDIA'S COMPETITIVENESS IN MANGANESE ALLOY



	Ore	Power	Reductants	Logistics	Labour	Overall
Africa	3	3	2	3	1	12
CIS	2	2	2	3	2	11
Latin America	2	2	2	2	2	10
India	2	1	2	3	2	10
Scandinavia	2	3	1	1	3	10
China	1	1	3	3	2	10
Japan, Korea, & Taiwan	1	1	2	3	1	8
Europe	1	2	1	3	1	8

3 = Advantageous Availability; 2 = Moderate Availability; 1 = Low Availability

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- Production to expand
- Imports of manganese ore will continue
- India to become a major exporter of manganese alloys to the EU and the Middle-East
- Profits for producers to shrink
- Domestic steel industry growth setting pace for the manganese alloy industry
- Manganese alloy prices will remain stable
- India's dominance to increase in coming years in Manganese Alloys