

# Coke Production and Demand in India

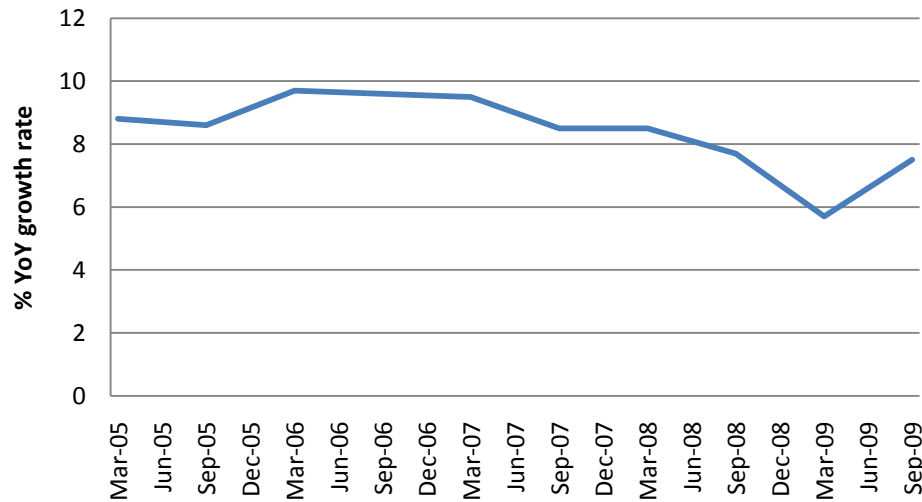
**Arun Kumar Jagatramka**  
**Chairman and Managing Director**  
**Gujarat NRE Coke Ltd**



# The Tiger is on its prowl!!

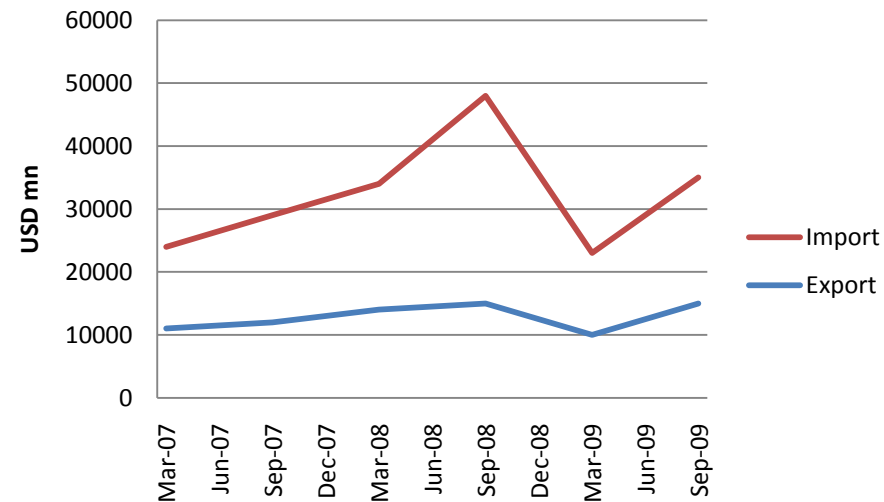
## The next decade would invariably be the Indian Growth Story

### GDP Growth



GDP growth is expected to be over 7% this fiscal year.

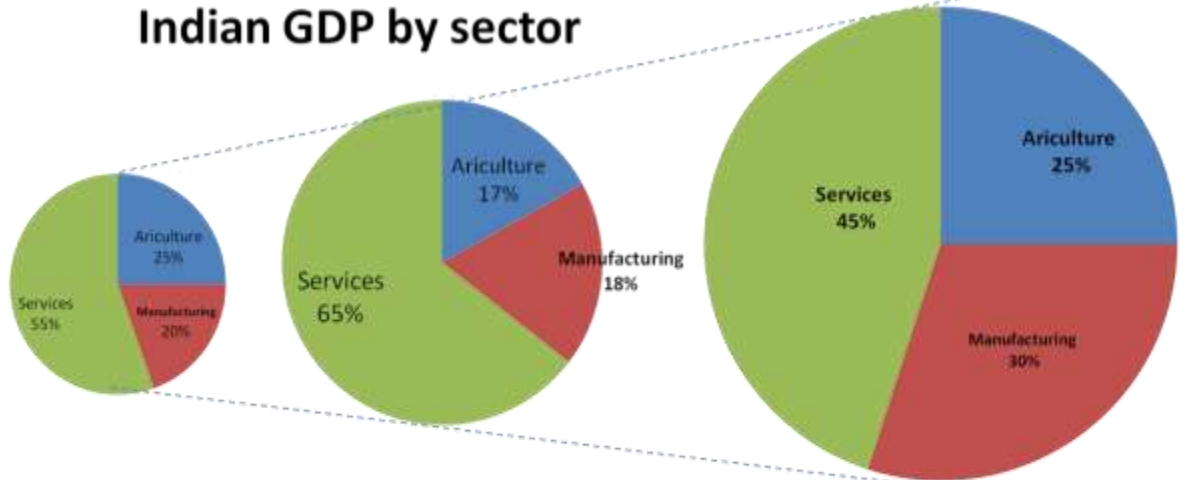
### Export - Import



Growth in exports and imports suggest that Indian economy is on the move

# Manufacturing to take the hot seat

Indian GDP by sector



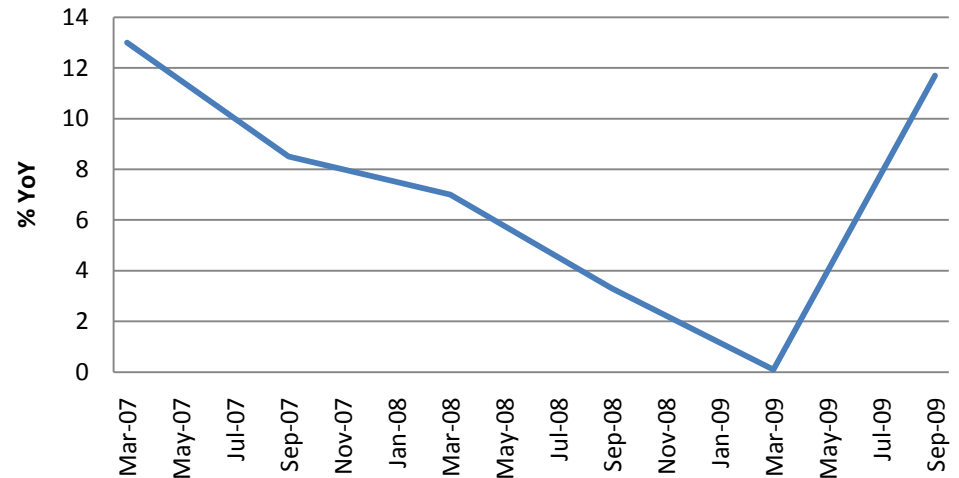
1999-2000

2008-09

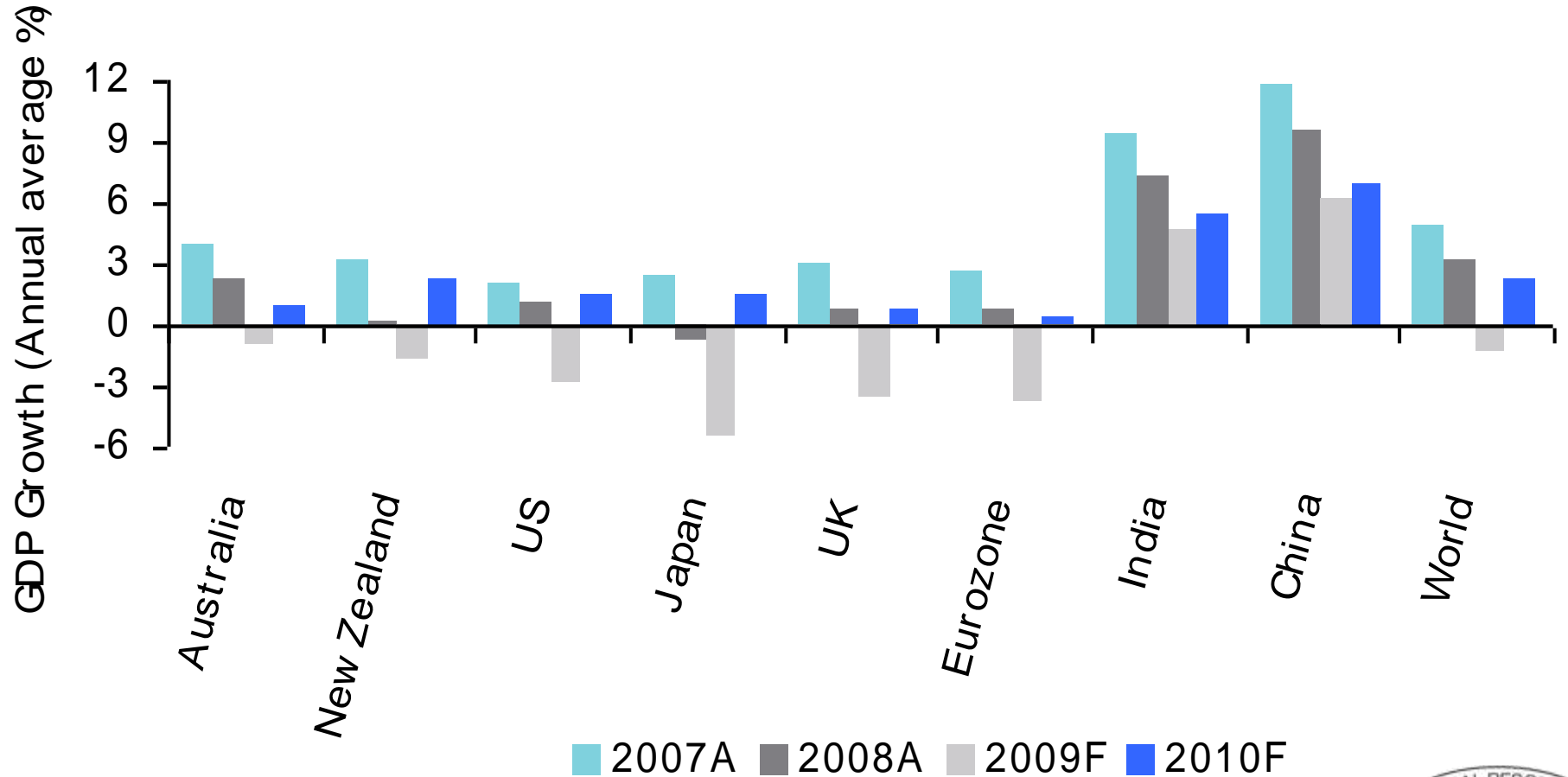
Sharp increase in IIP further proves the point.

Manufacturing has almost 80% weight in IIP and grew by 12.7% in Nov 2009

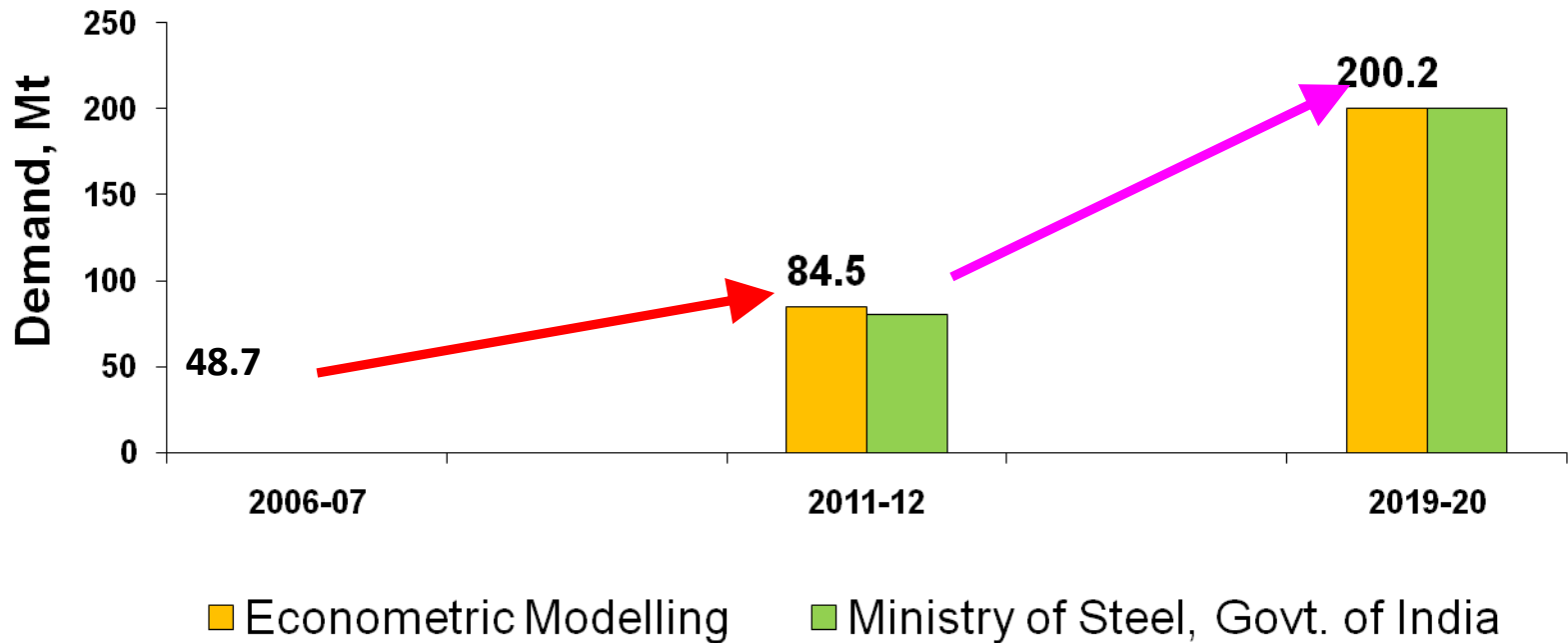
IIP



# India is poised to become the 3<sup>rd</sup> largest economy well before 2050



# Leading to major growth in steel demand

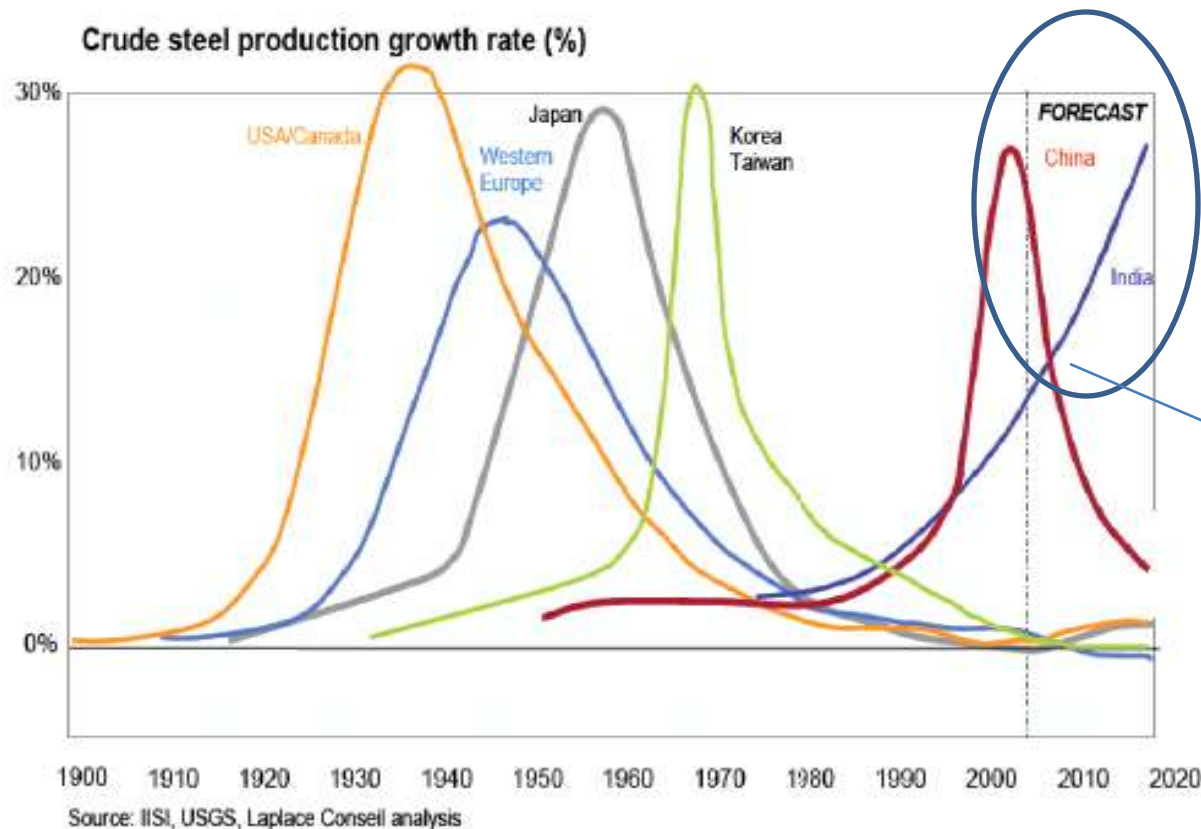


Demand triggered by :

- Greater usage of steel in general, particularly in rural India.
- Increased usage in construction/infrastructure in urban India.
- Boom in the auto industry.

Production target of 180-200 Mt matches the demand forecast  
(includes small amount of export)

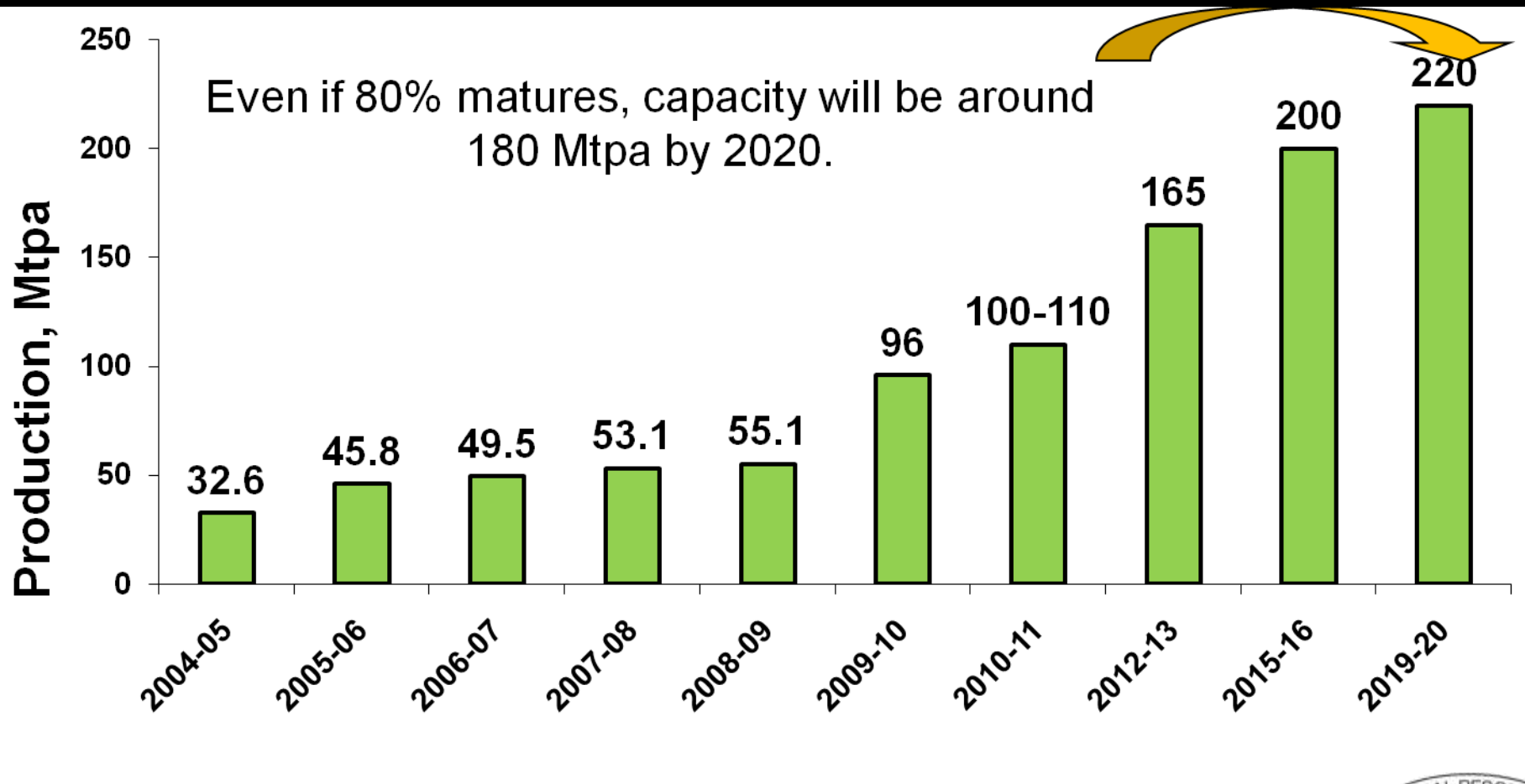
# Steel development pattern supports strong growth



India's long term steel development pattern is similar to most countries, following the same pattern of more than a century old

China has already reached its peak in growth rate, while India is on the rise.....

# And how does it translates to the future of Indian Steel Production



# Indian steel expansion pipeline

Company	Existing capacity	Capacity additions by 2011-12	Total capacity expected by 2011-12	Total capacity proposed by 2019-20
SAIL	12.5	7.7	20.2	23.1
RINL	2.9	3.4	6.3	16.3
Tata Steel	6.8	3.0	9.8	22.8
Essar Steel	4.6	5.4	10.0	16.0
JSW Steel	6.6	3.2	9.8	29.8
JSPL	2.4	1.2	3.6	25.8
Ispat Industries	3.0		3.0	5.8
POSCO			-	12.0
Arcelor-Mittal			-	24.0
Bhushan Power & Steel	1.5		1.5	1.5
Bhushan Steel	2.2	2.8	5.0	5.0
Others & Secondary	21.9	9.1	31.0	31.0
<b>Total</b>	<b>64.4</b>	<b>35.8</b>	<b>100.2</b>	<b>213.0</b>

# India has everything

(Or can procure from the global  
mall in the very short term)

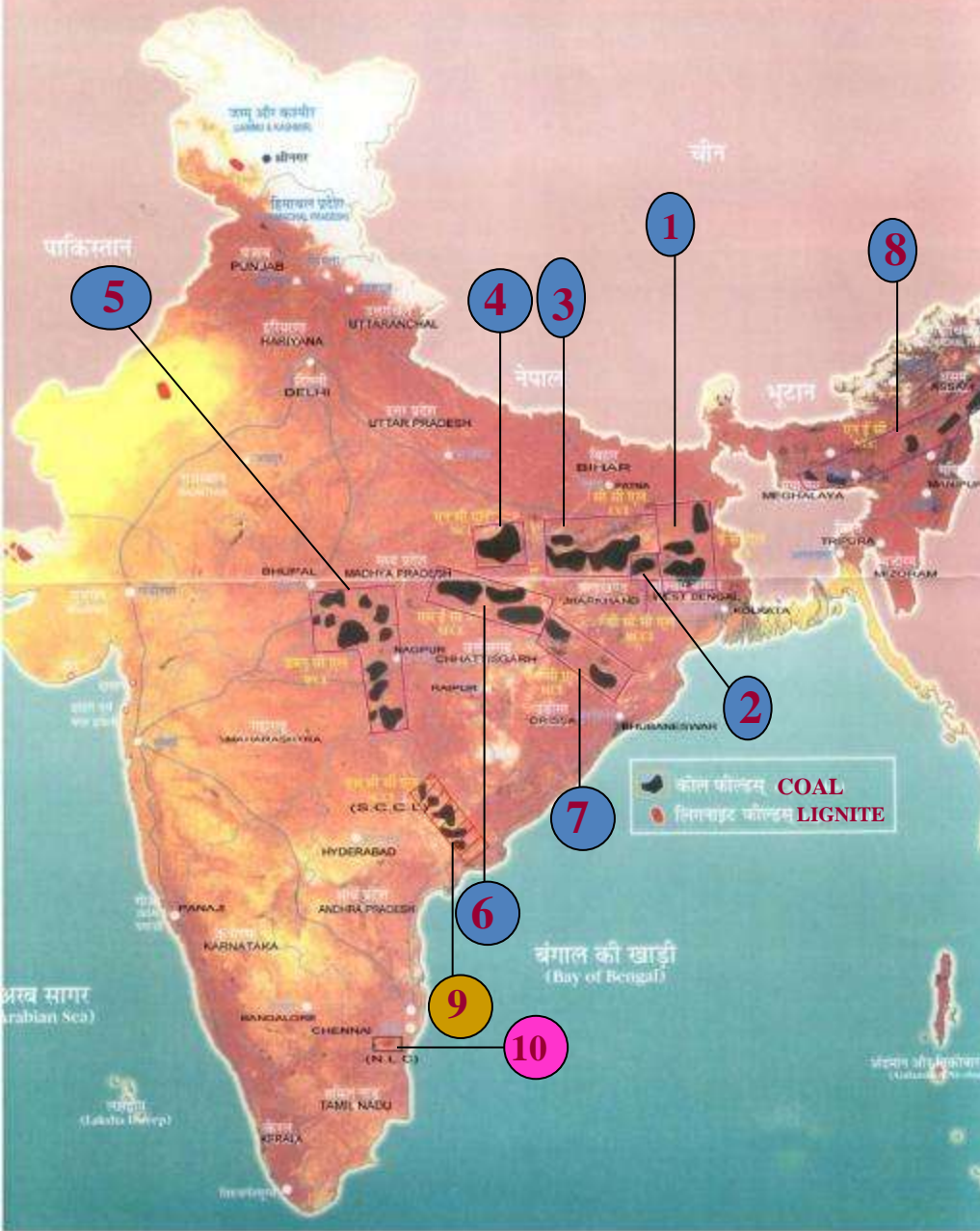
**EXCEPT**

**Coking Coal & Coke**



Only villain in this love story is coking coal and coke

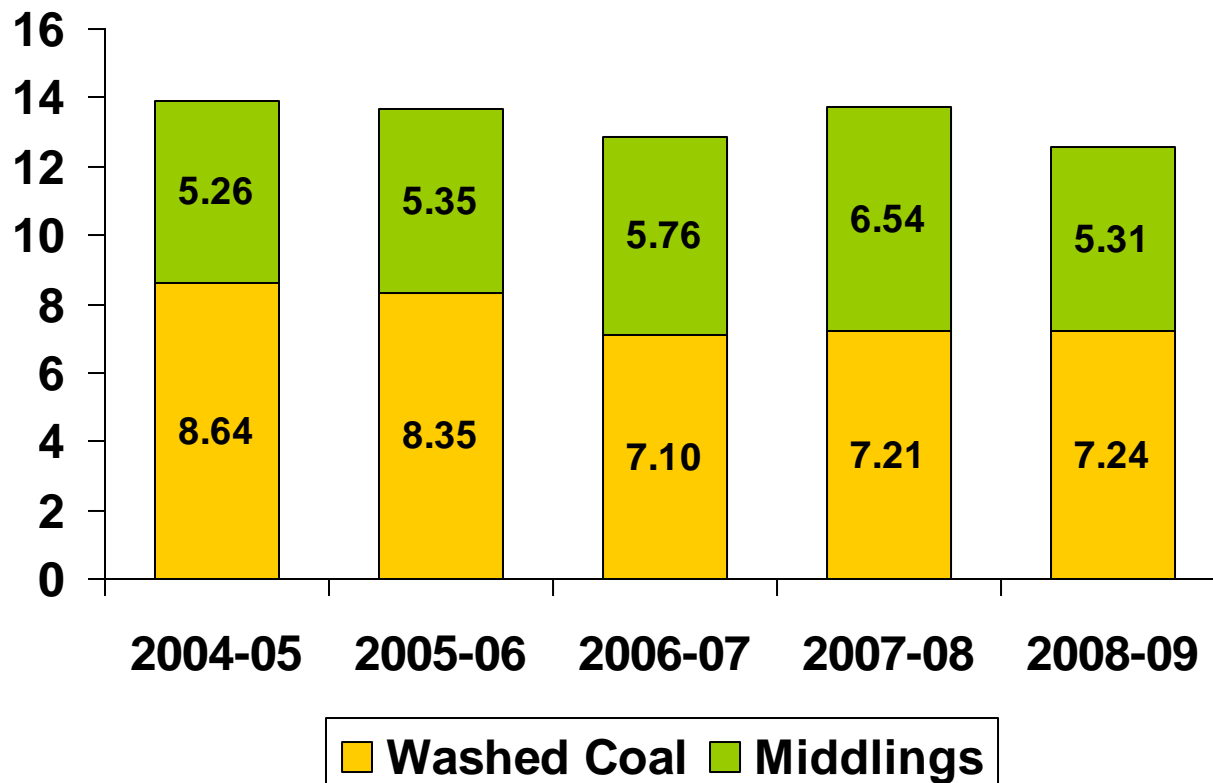
# COAL AND LIGNITE RESOURCES IN INDIA



- Although India has large coal reserves it is very short of prime HCC
- Domestic Coking coal is:-
  - High ash
  - Tends to have poor coke strength
  - Requires imported high quality HCC
  - Not really suitable for PCI
- Urgent need for washeries and for expansion and development of new coal blocks
- Coal Reserves are in the East demand is increasing in the West

# Indian Domestic coking coal

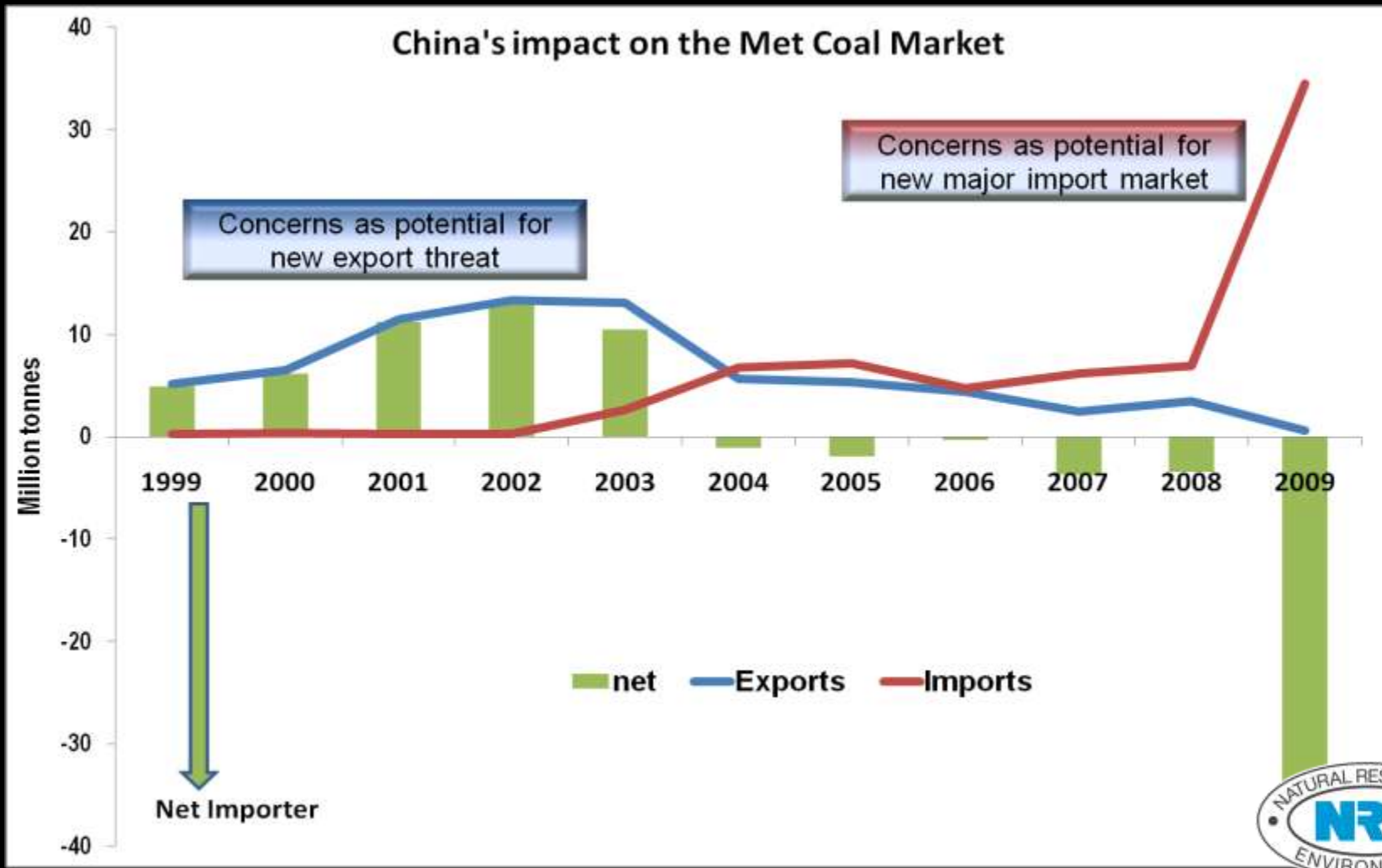
## Availability of Washed Coking Coal



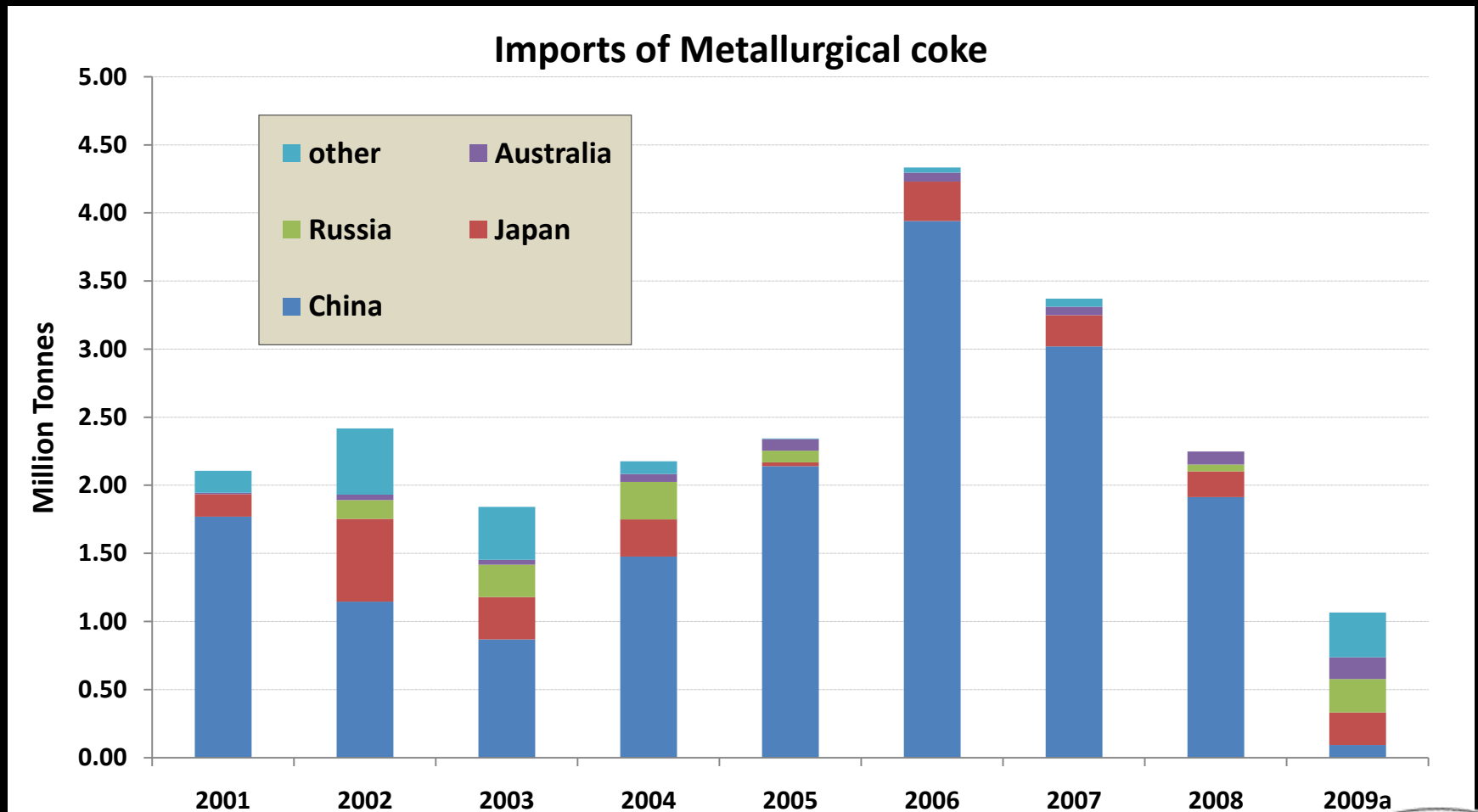
- TISCO has own domestic coking coal mines but quality SSCC
- Production of domestic coking coal has declined since 2004
- Coke production has risen by almost 30% since 2004
- Coke production posed for major growth
- **The future for Indian coking coal is imports**

# China a rising met coal competitor?

Will the move of China to be a significant importer of coking coal add competition to India's need for met coal?? What impact will this have on India?

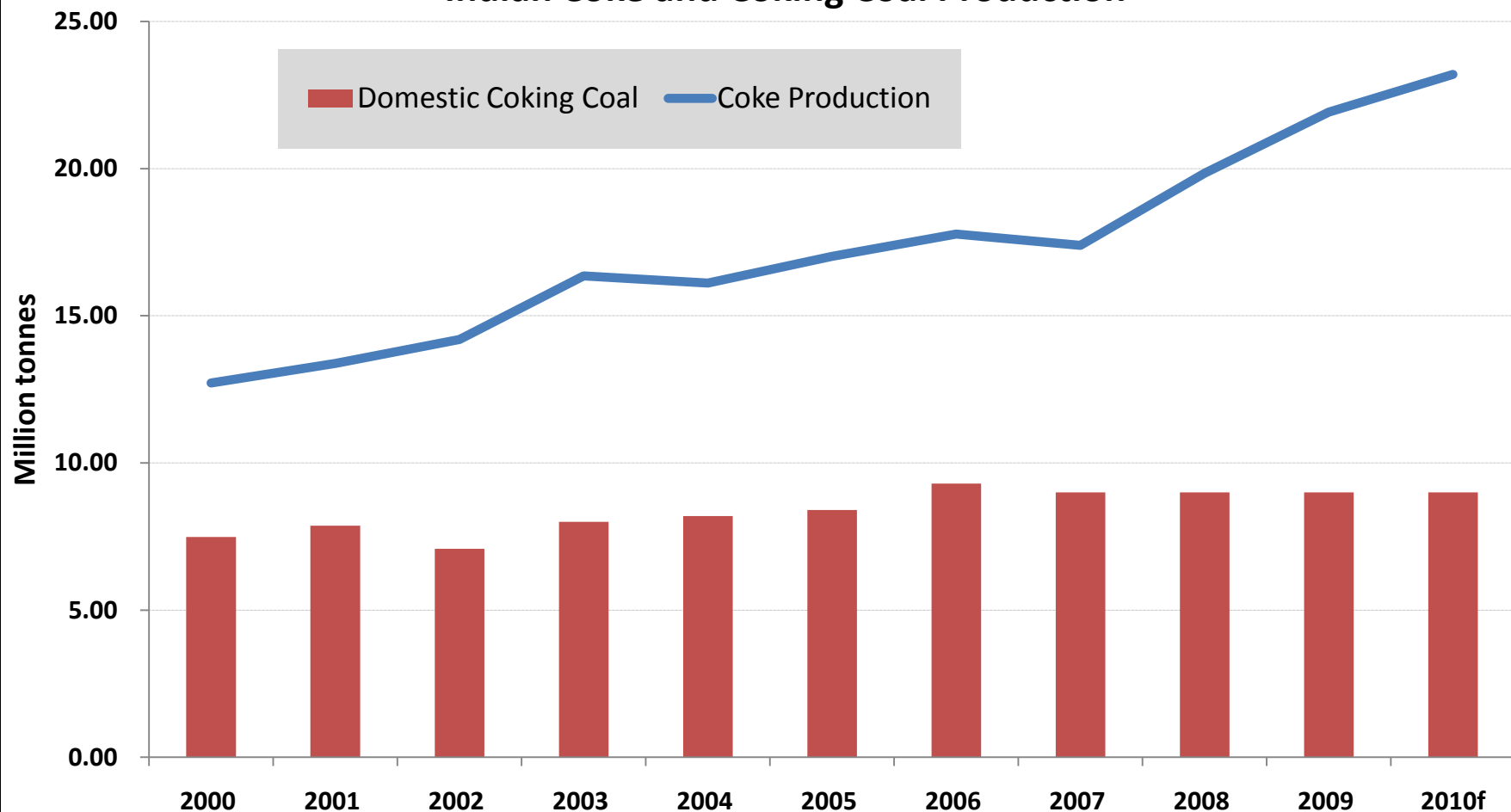


# Coke Imports and the role of China



# Growth in coke led by imported coking coal

## Indian Coke and Coking Coal Production



# Demand & Production of coke in India

Demand	Million Tonnes	Production	Million Tonnes
Integrated steel plants	14.70	Integrated steel plants	13.70
Secondary steel sector	9.74	Secondary steel sector	3.39
Foundries	3.00	Dhanbad/East coast cookeries	4.50
Others	2.00	Met coke plants (West cost)	2.70
<b>TOTAL</b>	<b>29.44</b>	<b>Total</b>	<b>24.29</b>
<b>DEFICIT</b>	<b>5.15</b>		

# Expected Indian Coke Consumption & Coking Coal Demand Projections

(Conservatively based on additional 50Mt of steel by 2012 and further 100Mt by 2020)  
(million tons)

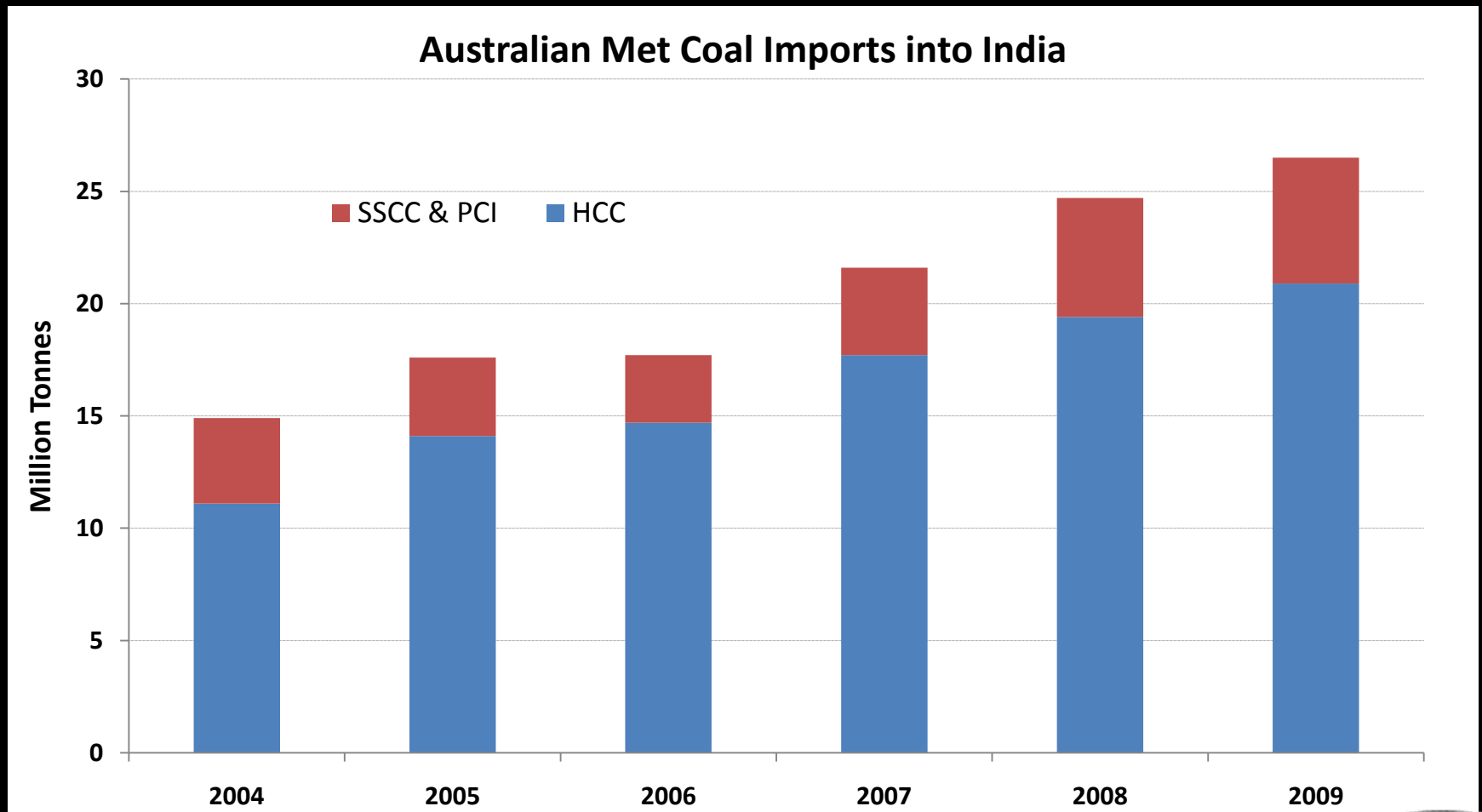
Year	2005	2007	2012	2020
Coke Consumption	21	25	60	120
Coking coal reqd.	28	35	84	170
Indian coal	8	8	9	12
<b>Nett import demand (equivalent coal)</b>	<b>20</b>	<b>27</b>	<b>75</b>	<b>158</b>

Urgent need for coking coal to meet India's growth – a partner required. A major opportunity for Australia

Source: Internal Company es



# Australia – India's partner in future growth



# Australian Coal Production & Exports

Australian Financial years	2006-07	2007-08	2008-09	2009-10
<b>Production (Mt)</b>				
Thermal Coal	181.1	185.1	200.5	190.7
Metallurgical Coal	142.6	140.1	135.4	136.3
Total	323.7	325.2	335.9	327
<b>Exports (Mt):</b>				
Thermal Coal	115.6	115.1	130.5	122.5
Metallurgical Coal	132	137	119	128
Total	243.6	252.1	249.5	250.5
<b>Export Value (A\$ m)</b>				
Thermal coal	6,758	8,365	17,589	9,815
Metallurgical Coal	15,039	16,038	34,464	18,628
Total	21,797	24,403	52,053	28,443

# Gujarat NRE ..Operations...

**Largest Independent Met Coke Producer in India**  
**A fully integrated Coke Maker**

**HARD COKING COAL**  
**(NSW, AUSTRALIA)**  
RESOURCES 574 MMT

**Gujarat NRE Coking Coal Ltd**  
**(ASX: GNM)**

NRE NO. 1 – 316 million tonnes  
NRE Wongawilli – 258 million tonnes

**In Australia**

## Waste Heat Recovery Power Plants

Khambhalia*	15 MW
Bachau*	15 MW
Dharwad*	30 MW
<b>Total</b>	<b>60 MW</b>

Wind Power                      87.5 MW

**STEEL UNIT**  
**TMT BARS : 0.311 MMTPA**

**In India**

**LOW ASH**  
**METALLURGICAL COKE**

**1.25 MMTPA**

**KHAMBHALIA UNIT**  
0.358 MILLION MTPA

**BHACHAU UNIT**  
0.324 MILLION MTPA

**DHARWAD UNIT**  
0.25 MILLION MTPA

**BNCL**  
**DHARWAD UNIT**  
0.324 MILLION MTPA



# Gujarat NRE in India

## (Gujarat NRE Coke Ltd)

- 4<sup>th</sup> best performing stock of the decade
- Ranked 7<sup>th</sup> by Business Today in 10 year profit growth (BT 500 ranking)
- Current Installed capacity of Met Coke production of 1.25 MTPA, which is scheduled to rise to 4 MTPA in 4-5 years
- New coke making facility at Dharwad got operational in 2009/10.
- Proposed met coke capacity increase by setting up Greenfield projects of 1 MTPA each in Andhra Pradesh & Gujarat
- Lowest per ton capital cost in the industry
- Work on proposed coal washery in Dharwad under progress, to be operation in next FY



# Our Journey Down Under

<u>Activity</u>	<u>Year</u>
<u>Acquired NRE No1 mine</u>	<u>Dec 2004</u>
<u>Acquired Avondale mine</u>	<u>June 2005</u>
<u>Re opened NRE No1 mine</u>	<u>Sept 2005</u>
<u>ASX listing raising a total of \$22m</u>	<u>July 2007</u>
<u>Wonga mains project commenced to access Wongawilli seam</u>	<u>Sept 2007</u>
<u>Acquires ASX listed Gujarat NRE Resources – Avondale/Huntley</u>	<u>Dec 2007</u>
<u>Completes acquisition of Elouera colliery from BHP</u>	<u>Dec 2007</u>
<u>Commenced Development at Wongawilli Colliery</u>	<u>Feb 2008</u>
<u>Start of Wongawilli colliery (Elouera &amp; Avondale consolidated as Wongawilli)</u>	<u>April 2008</u>
<u>Production from both the mines reaches nearly 1 million MT</u>	<u>March 2009</u>
<u>Start of long wall at Wongawilli mines</u>	<u>August 2009</u>

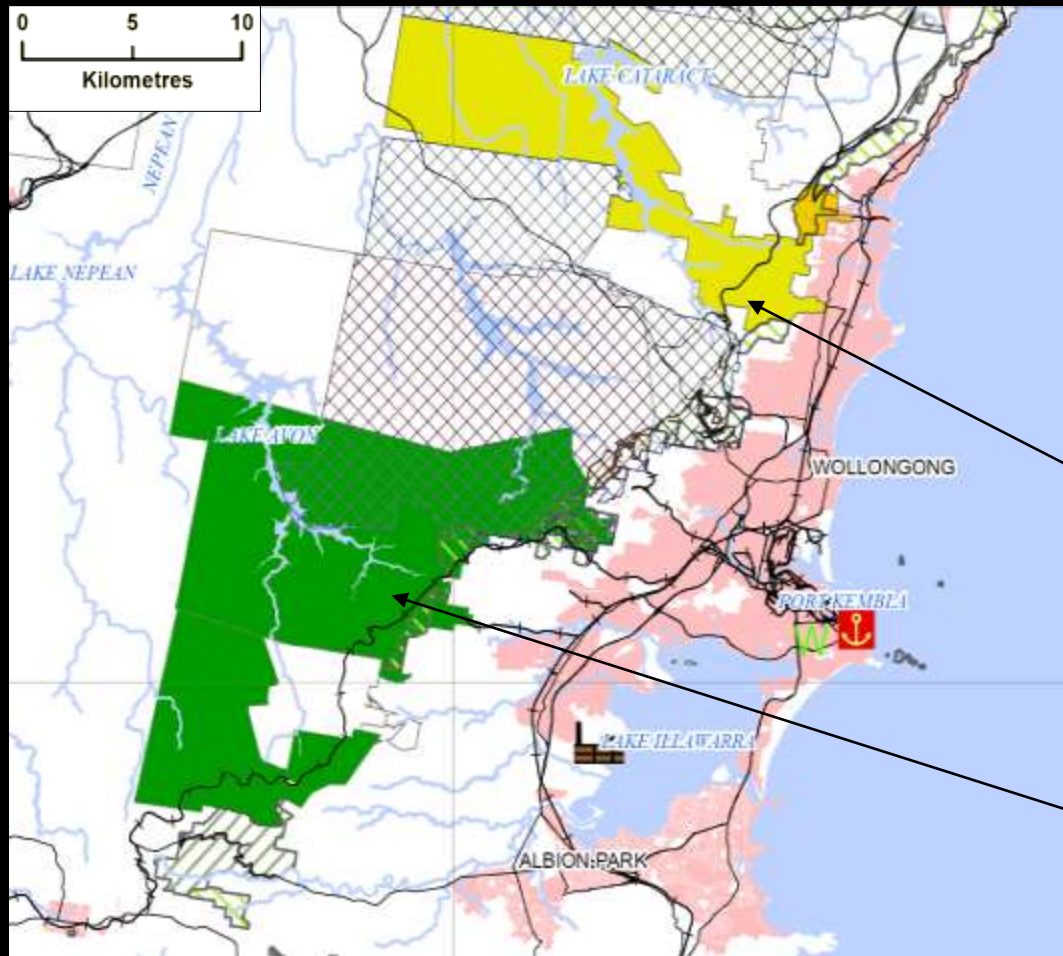


# Operational Highlights

- Current annual production around 1.5Mtpa of coking coal, expected to rise to 6Mtpa in about 4-5 years
- Already invested around \$300 million with plans to further invest \$500 million for the development of its Australian mines
- Longwall mining commenced at NRE Wongawilli
- Transporting ROM coal by rail from NRE Wongawilli and by road from NRE No. 1 to the Port
- Entire production sold to GNCL on raw/unwashed basis



# NRE Mining Operations



# Significant JORC Resource

Colliery	Seam	Resource (Mt)				Seam Quality Summary		
		Measured	Indicated	Inferred	Total		Bulli	Wongawilli
NRE No. 1	Bulli	12.4	31.7	15.1	59.2	Ash % (adb)	9.6	10.0
	Balgownie	0.0	34.1	41.5	75.6	CSN	5.5	>9
	Wongawilli	0.0	59.3	121.5	180.8	IM	0.8	0.9
	<b>Total</b>	<b>12.4</b>	<b>125.1</b>	<b>178.1</b>	<b>315.6</b>	VM%	21.7	24.7
NRE Wongawilli	Bulli	0.0	8.0	25.0	33.0	Ro Max	1.3	1.2
	Wongawilli	21.0	16.0	114.0	151.0	Fluidity	1,800	2,000
	Tongarra	0.0	0.0	74.0	74.0	Sulphur	0.38	0.59
	<b>Total</b>	<b>21.0</b>	<b>24.0</b>	<b>213.0</b>	<b>258.0</b>	Phosphur	0.039	0.01
<b>Total Resource</b>		<b>33.4</b>	<b>149.1</b>	<b>391.1</b>	<b>573.6</b>			



# Coking Coal Production

Mine	Seam	2008/9 Mt	2009/10 Mt	2010/11 Mt	2011/12 Mt	2012/13 Mt	2013/14 Mt
NRE No1	Bulli	0.7	0.5	0.4	0.4	0.4	0.3
	Wongawilli	0.0	0.1	0.2	1.5	3.1	2.9
	Balgownie	0.0	0.0	0.0	0.0	0.3	0.3
<b>Total</b>		<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>1.9</b>	<b>3.8</b>	<b>3.5</b>
Wongawilli	Wongawilli	0.2	1.2	1.5	1.6	1.6	2.5
	Bulli	0.0	0.0	0.1	0.2	0.2	0.2
	Tongara	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>		<b>0.2</b>	<b>1.2</b>	<b>1.6</b>	<b>1.8</b>	<b>1.8</b>	<b>2.7</b>
<b>Total Production</b>		<b>0.9</b>	<b>1.8</b>	<b>2.2</b>	<b>3.7</b>	<b>5.6</b>	<b>6.2</b>

# GUJARAT NRE PROTECTING INDIA'S COAL RESOURCE FOR TOMORROW



We produce met coke – critical to keep India's  
steel dreams burning



# Thank you

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Company has  
invested US \$100  
million in  
**Green Energy**  
87.5 MW of  
Wind Power

Proposed 240 MW  
power generation in  
next 4-5 years by  
waste heat recovery

