

*Zinc...essential for life*



# *Opportunities for Zinc Growth in India*



## **2013 IZA Annual Meeting Cancun, Mexico**



***Kenneth de Souza- IZA  
Rahul Sharma- IZA***



*Zinc...essential for life*

# *Outline*

- India's Steel Demand
- Market Opportunities in India
- Market Development Activities
- Is India the next China?

# India's rural economy ...

Zinc...essential for life





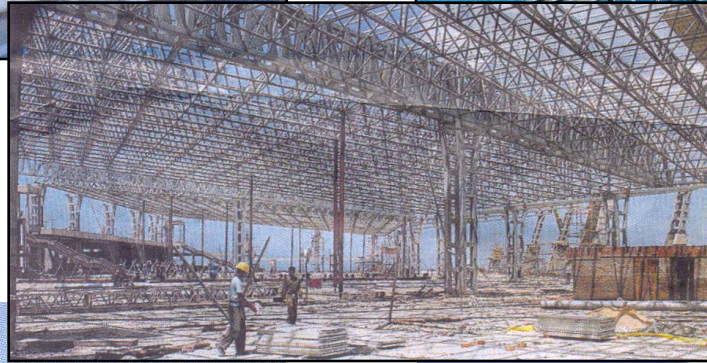
*... is changing to modern*

*Zinc...essential for life*





*.... and ultra modern*



Zinc...essential for life





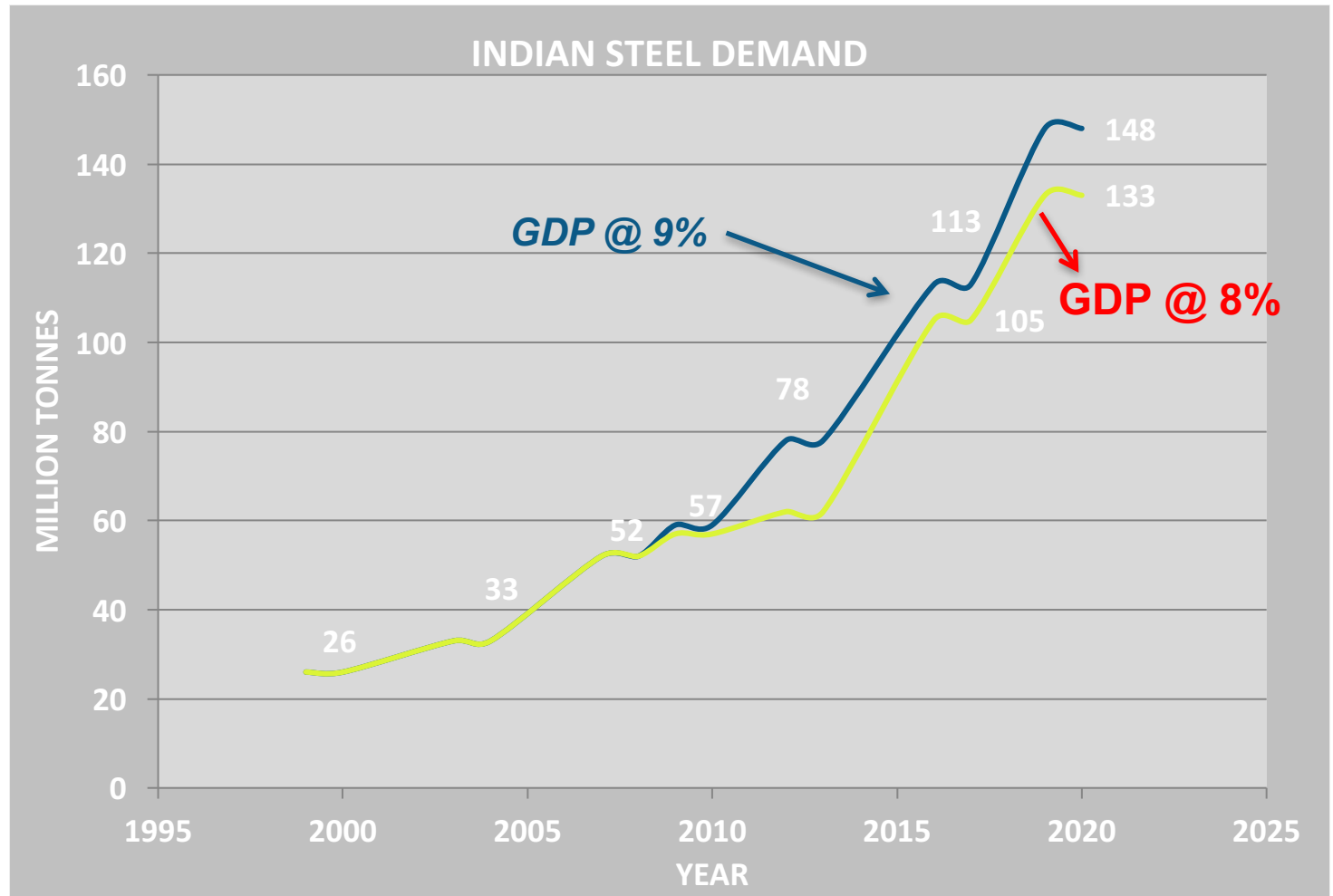
*Zinc...essential for life*

# *Outline*

- **India's Steel Demand**
- Market Opportunities in India
- Market Development Activities
- Is India the next China?



# Indian Steel Demand & Projections



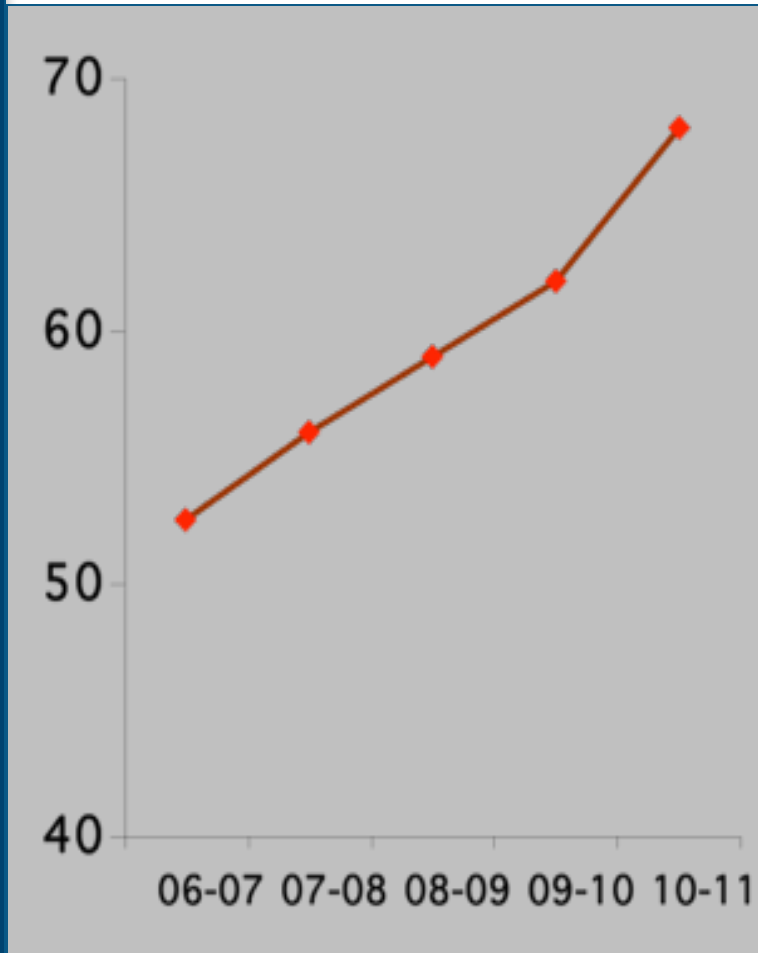
Data Source: OECD Paris Meeting, May 2011

**Capacity still short of Demand – Imports will continue**



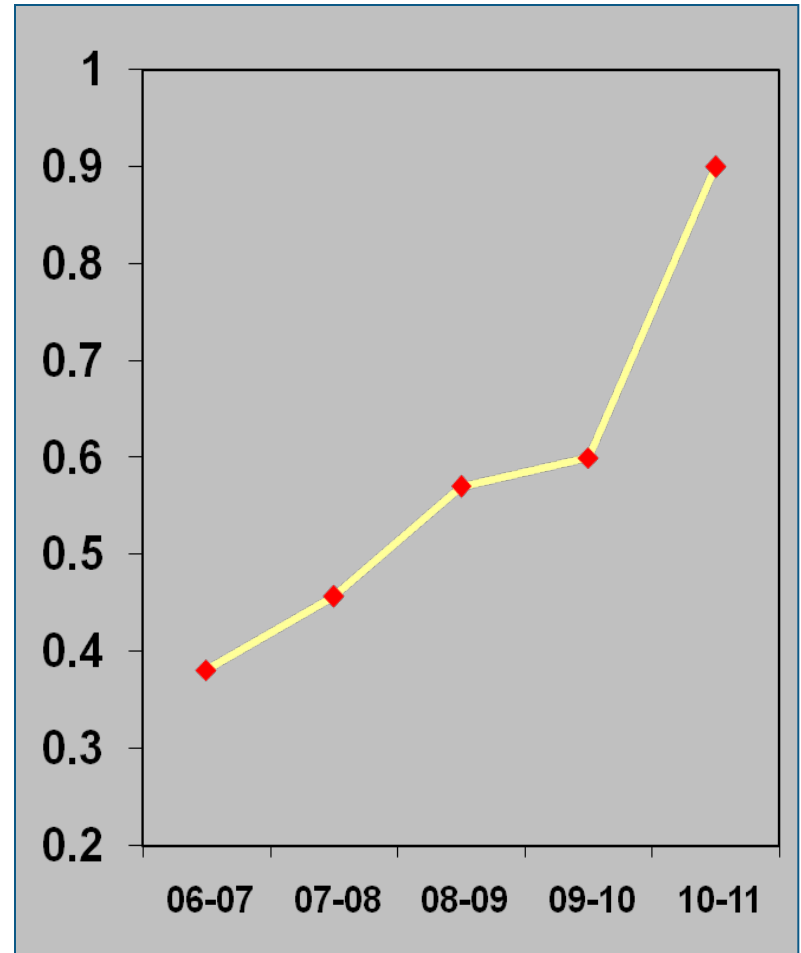


# India's Steel and Zinc Production



**STEEL**

(million tonnes)



**ZINC**

**India: Fourth Largest Steel Producer after China, Japan & USA (WSA)**



## Expected Capacity Additions

| Year-ending 31 March              | Crude steel capacity (millions of tonnes) |             |             |             |             |              |
|-----------------------------------|---|-------------|-------------|-------------|-------------|--------------|
|                                   | 2007                                      | 2008        | 2009        | 2010        | 2012        | 2015 F       |
| Tata Steel (India)                | 5   | 5           | 6.8         | 6.8         | 6.8         | 12.7         |
| Essar Steel (India)               | 4.6                                       | 4.6         | 4.6         | 4.6         | 9.2         | 9.2          |
| Ispat                             | 3.6                                       | 3.6         | 3.6         | 3.6         | 3.6         | 3.6          |
| JSW Steel                         | 3.8                                       | 3.8         | 3.8         | 7.8         | 11          | 11           |
| RINL                              | 3.5                                       | 3.5         | 3.5         | 3.5         | 3.5         | 6.3          |
| JSPL                              | 2.9                                       | 2.9         | 2.9         | 2.9         | 4.9         | 6.9          |
| SAIL                              | 13.8                                      | 13.8        | 13.8        | 13.8        | 15.9        | 24.7         |
| Bhushan Steel                     | 0.3                                       | 0.3         | 0.3         | 0.3         | 2.2         | 5.1          |
| Bhushan Power & Steel             | 1.4                                       | 1.4         | 1.4         | 1.4         | 1.4         | 1.4          |
| Others                            | 17.9                                      | 20.9        | 25.6        | 28          | 28          | 31.6         |
| <b>Total crude Steel Capacity</b> | <b>56.8</b>                               | <b>59.8</b> | <b>66.3</b> | <b>72.8</b> | <b>86.6</b> | <b>112.5</b> |

Source : "India Steel Sector:India-An outperformer in Steel" , BNP Paribas Securities via Thomson research, 19 October 2010



## *Indian Flat Rolled, Long Products & Coated Steel Consumption (M Tonnes)*

| <i>Category</i>                   | <i>2005-06</i> | <i>2006-07</i> | <i>2007-08</i> | <i>2008-09</i> | <i>2009-10</i> | <i>2010-11</i> |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Flat Rolled Steel</b>          | 17.22          | 21.11          | 22.02          | 21.92          | 24.52          | 27.00          |
| <b>Long Products</b>              | 22.17          | 24.73          | 26.30          | 27.00          | 30.48          | 33.46          |
| <b>Coated Steel Production</b>    | <b>3.78</b>    | <b>4.39</b>    | <b>4.38</b>    | <b>4.58</b>    | <b>5.62</b>    | <b>5.55</b>    |
| <b>Coated Steel * Consumption</b> | <b>2.05</b>    | <b>2.40</b>    | <b>2.62</b>    | <b>3.33</b>    | <b>4.51</b>    | <b>4.68</b>    |
| <b>% Coated Steel**</b>           | <b>9.8 %</b>   | <b>9.4 %</b>   | <b>9.9 %</b>   | <b>12.6 %</b>  | <b>15.0 %</b>  | <b>14.4 %</b>  |

Data source: JPC Indian Steel

\* Consumption = (Production + Imports) - Exports

\*\*Coated Steel consumption as % of Flat Rolled Consumption

***% Coated Steel usage in USA is 27%***





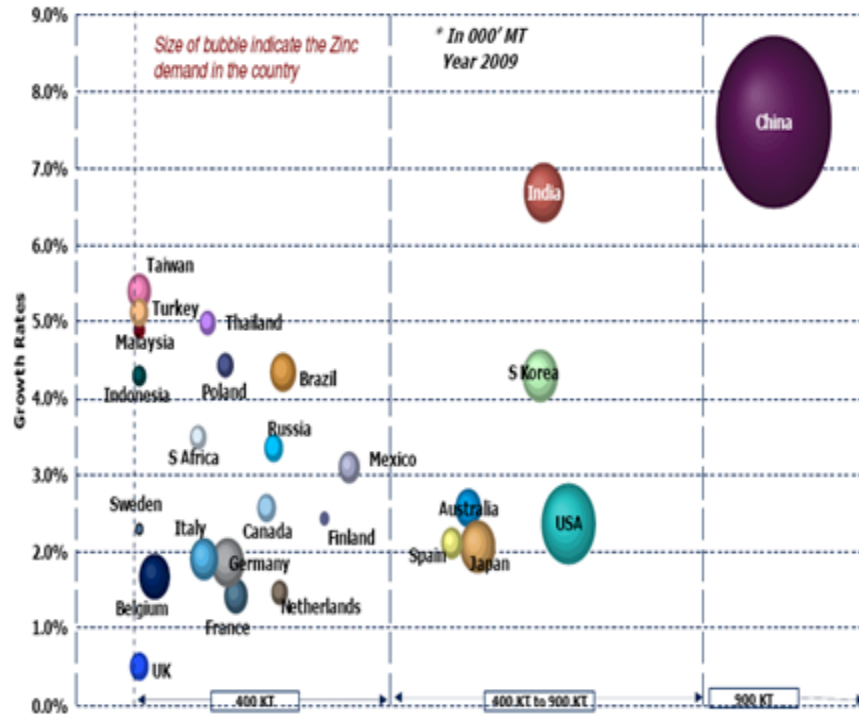
*Zinc...essential for life*

# *Outline*

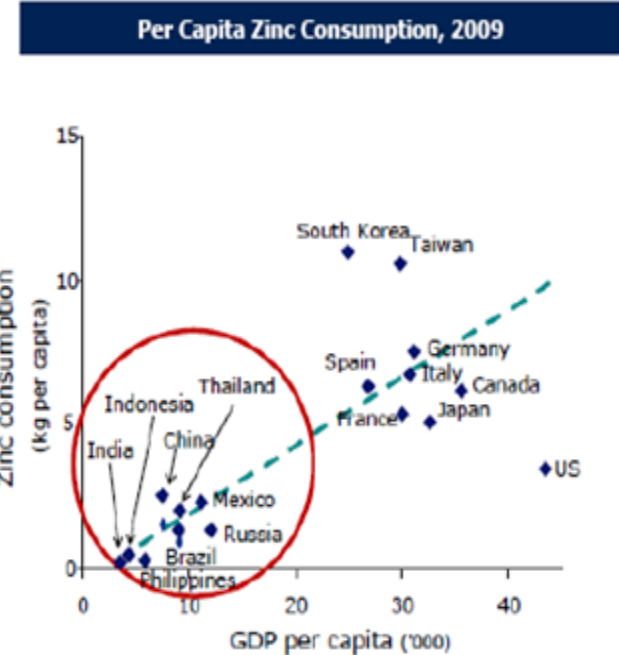
- India's Steel Demand
- **Market Opportunities in India**
- Market Development Activities
- Is India the next China?

# Indian Zinc Market

Zinc...essential for life



Source: Hindustan Zinc Limited



**India: High Growth, High Demand Market, but one of Lowest in Per Capita Zinc Consumption**

# Infrastructure Investments

## Sector

Power

Telecom

Highways

Ports

Aviation

US \$500 Billion in  
2007 - 2012



**US \$1 Trillion in  
2012 - 2017**







# Indian Auto Production and Growth History

| Category            | 2007-08           | 2008-09           | 2009-10           | 2010-11           | 2011-12           |
|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Passenger Cars      | 1,777,583         | 1,838,593         | 2,357,411         | 2,982,772         | 3,123,528         |
| Commercial Vehicles | 549,006           | 416,870           | 567,556           | 760,735           | 911,574           |
| 3-Wheelers          | 500,660           | 497,020           | 619,194           | 799,553           | 877,711           |
| 2-Wheelers          | 8,026,681         | 8,419,792         | 10,512,903        | 13,349,349        | 15,453,619        |
| <b>Grand Total</b>  | <b>10,853,930</b> | <b>11,172,275</b> | <b>14,057,064</b> | <b>17,892,409</b> | <b>20,366,432</b> |

Data source: Society of Indian Automobile Manufacturers

**Production growing at > 25%  
per year since 2008**



# Opportunity for zinc coated sheet steel in Indian Automobiles

Assumptions:

- 400 kilograms of 50G/50G coated steel per vehicle
- Skin panels - 40% (160 kg @ 0.7mm)
- Inner panels - 50% (200 kg @ 0.8mm)
- Structural - 10% (40 kg @ 1.2mm)
- Engineered scrap (Offal) @ 25%
- Actual zinc coating 10% over specification minimum
- 3.124 Million units in 2011

**Result:**

**Zinc content in 400 kilograms of 50G/50G coated steel per vehicle = 10.618kg zinc per vehicle;**  
**➤ or 16,600 Tonnes per annum growing!**



# Zinc Opportunity in Construction sector

Assumptions:

- Average coating weight is 100 GSM
- Engineered scrap (Offal) @ 5%
- Actual zinc coating 10% over specification minimum
- 5.5 Million tonnes produced in 2011



**Result:**

**Zinc and zinc-alloy coated steel growth, together with coating weight increase, is likely to create >100,000 Tonnes new zinc demand within 4 years**





*Zinc...essential for life*

# *Outline*

- India's Steel Demand
- Market Opportunities in India
- **Market Development Activities**
- Is India the next China?





*Zinc...essential for life*

## *Work - in - Process ...*

- Automotive company meetings
- Development of Specifications & Standards with BIS
- Corrosion testing program
- Indian Sheet Steel Building Institute





## *Production of Passenger Cars & Utility Vehicles in India*

| Manufacturer          | 2009 - 10 | 2010 - 11 | 2011 - 12 | 2012 -13 |
|-----------------------|-----------|-----------|-----------|----------|
| <b>Maruti/Suzuki</b>  | 870,790   | 1,132,739 | 1,133,935 | +        |
| <b>Hyundai Motors</b> | 314,981   | 359,351   | 630,715   | +        |
| <b>Tata Motors</b>    | 285,846   | 352,180   | 379,764   | +        |
| <b>Mahindra</b>       | 150,627   | 171,103   | 252,925   | +        |
| <b>General Motors</b> | 87,089    | 107,216   | 110,244   | +        |
| <b>Ford</b>           | 42,840    | 107,419   | 119,440   | +        |
| <b>Toyota</b>         | 63,843    | 84,088    | 161,125   | +        |
|                       |           |           |           |          |

Data does not include Commercial vehicles



Zinc...essential for life

# Specifications and Standards

- Bureau of Indian Standards
  - *Committee membership requested*
  - *Rewrite of I -277 galvanized Standard*
  - *Developing new Standards*
- Building & Construction Code
  - *Commercial, Industrial, Institutional buildings*
  - *Residential buildings*
  - *Fire & Structural Design*

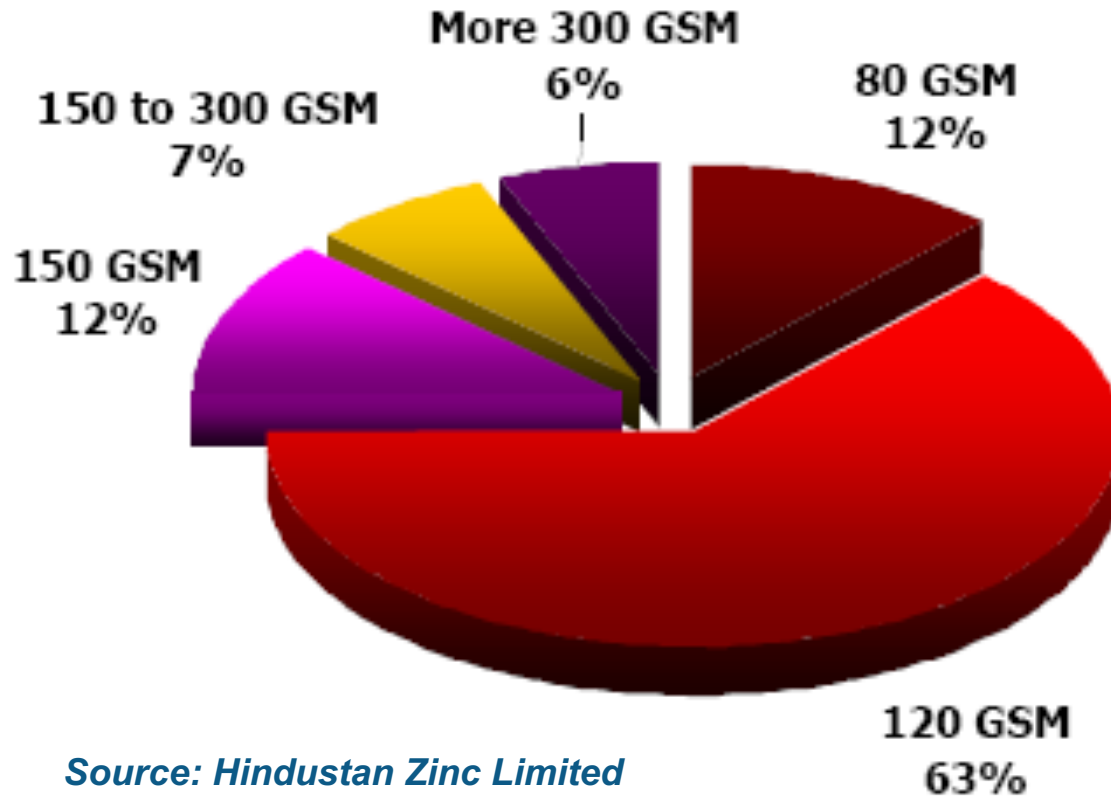


भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS



# Growing Zinc Demand – Coating Weights

GPGC Sales by GSM 2009 - 2010 (domestic)



Source: Hindustan Zinc Limited

**Potential of ~100,000 MT of additional zinc if minimum coating weight increases to 150 GSM**





# Corrosion Testing Program

- Need performance data for hot dip zinc and zinc-alloy coated steel in India
- All steel mills support sample exposure testing program
- Samples prepared; 4 exposure locations selected
- Statistical results ( $W = kT^N$ ) within 4 years



# Indian Sheet Steel Building Institute

- IZA creating National Steel Building Institute
- Modelled after very successful Canadian Sheet Steel Building Institute
- Focus on technical issues in construction sector initially (conventional, pre-engineered & hybrid structures) - research; technical seminars for engineers/architects; sustainability
- Membership made up of steel mills, suppliers, fastener companies (technical market development personnel)
- Meetings managed by IZA India





*Zinc...essential for life*

# *Outline*

- India's Steel Demand
- Market Opportunities in India
- Market Development Activities
- **Is India the next China?**



## *Comparing India and China\**



- 13 year head start for China
- Steel Production - 9.5 times higher
- Industrial Output - 8.0 times higher
- Construction & Infrastructure spending - 8.0 times higher
- Car production - 5.0 times higher

*\* Estimates based on E&Y Global Steel 2011 Outlook report*

***India is Growing Fast but will lag  
China by 6 to 18 years***





Zinc...essential for life

## ***In Conclusion ....***



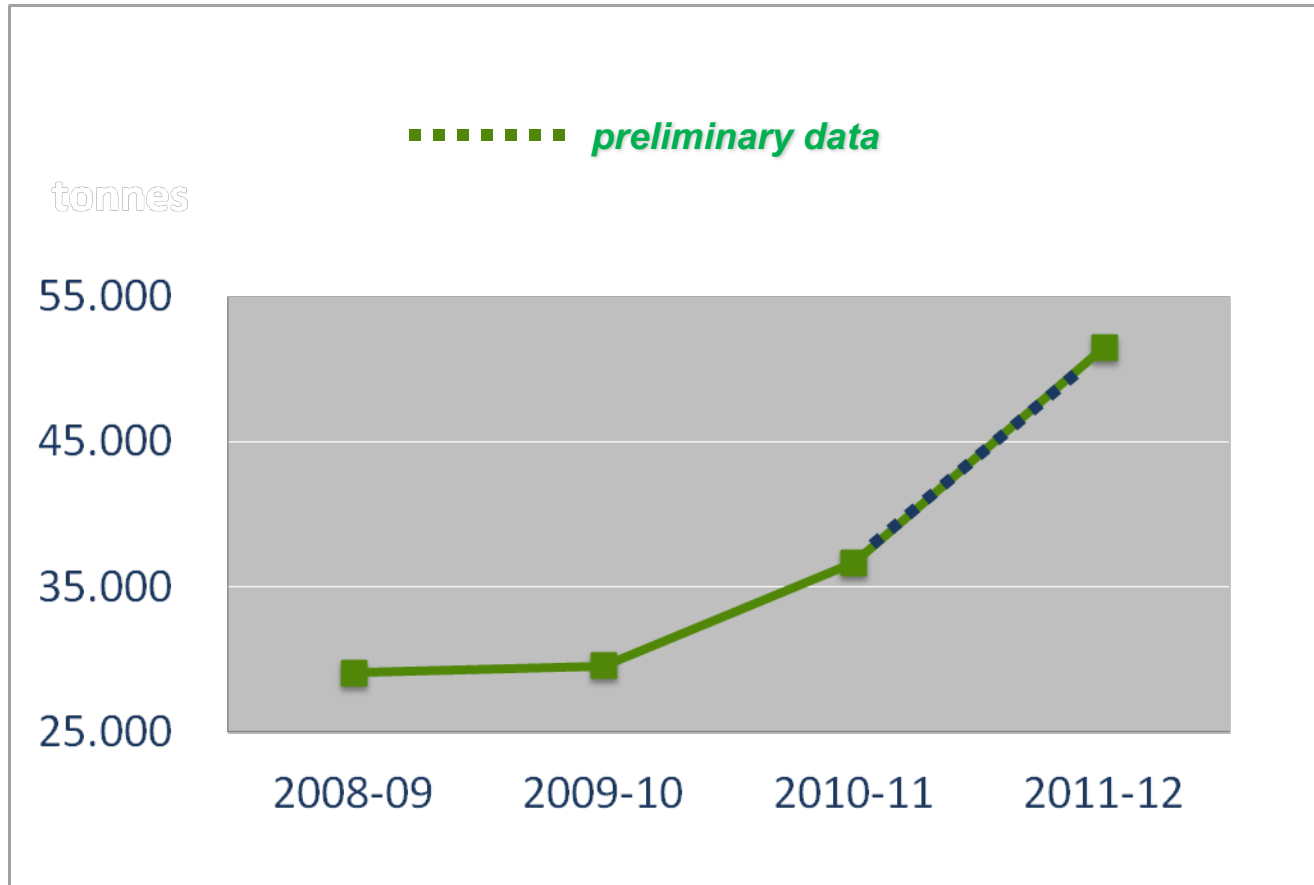
- Ideal circumstances to grow ...
  - Consistent GDP growth of > 8%
  - Domestic steel demand (10% annual growth)
  - Low per capita steel consumption (54kg versus 190kg world average)
  - Priority on infrastructure spending
  - Construction & Manufacturing growth
  - Increasing steel capacity

***5 year Growth opportunity: 300,000 Tonnes of zinc***

# Consumption of Zinc in Indian Fertilizer Market

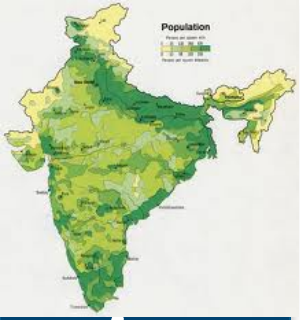


Zinc...essential for life



Source: FAI

**Total market opportunity = 200,000 tonnes**



# India CFC Diecasting Program

- Plant audits and technical assistance to 4 leading plants, conduct industry-wide workshop

## Indian Railways

- Close collaboration on Zn spraying of tracks, renovation of stations with galvanized steel



## CFC General Galvanizing

- Quality control and management training and market development



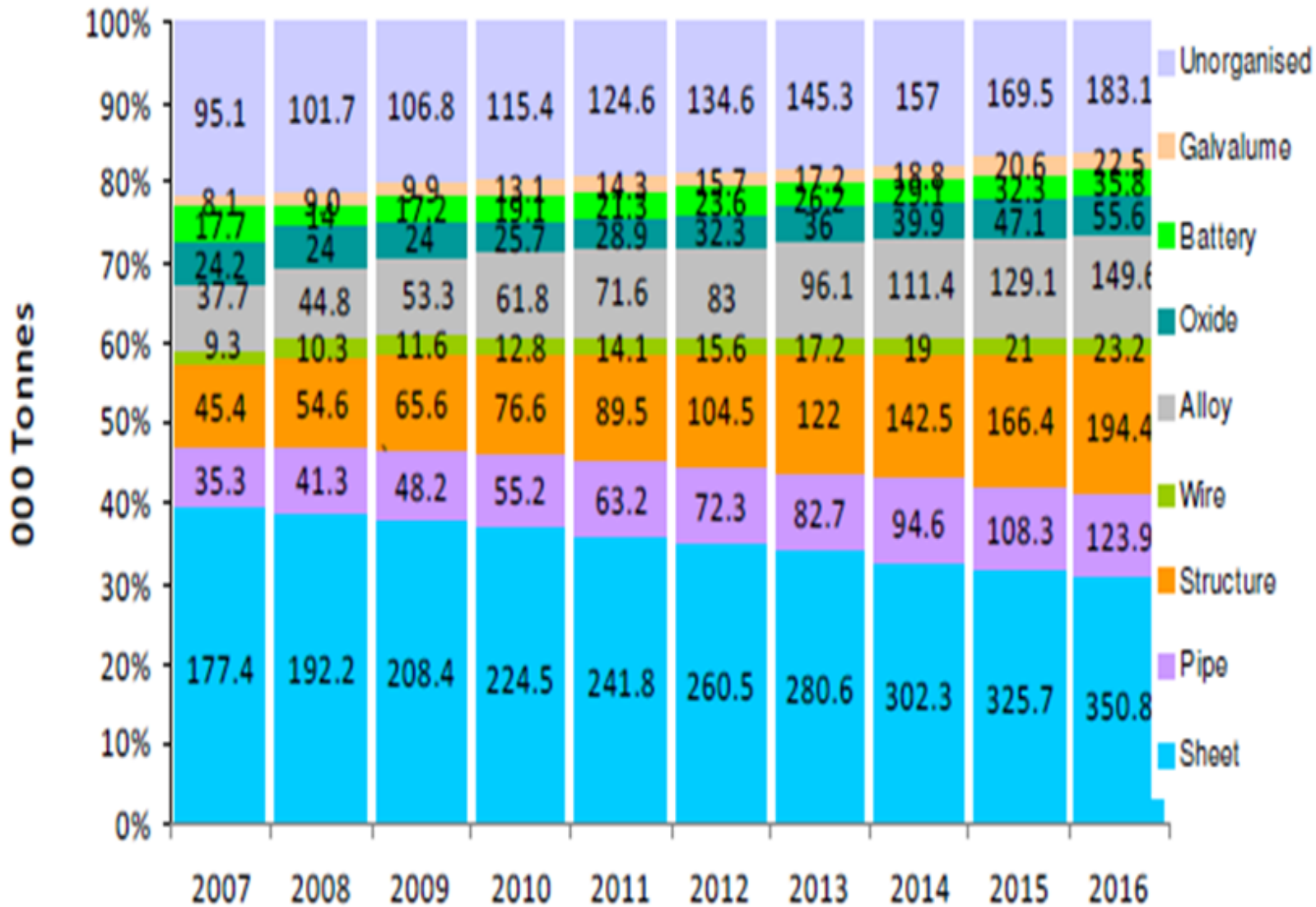
Zinc...essential for



Zinc...essential for life



# Zinc Demand Forecast Trend







*Zinc...essential for life*



**ZINC**  
ZINC

**Thank You**

**Namaste**